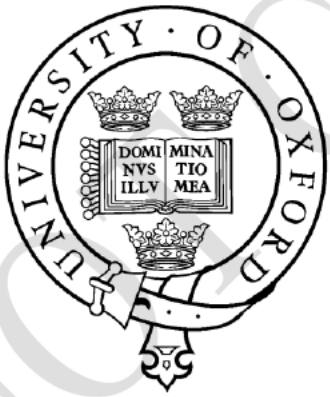
# Gilded wreaths of the Late Classical and Hellenistic Periods

# Volume I




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**A thesis submitted for the degree of**
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# VOLUME I: TABLE OF CONTENTS

**ABSTRACT** .....

**ACKNOWLEDGEMENTS** .....

**CHAPTER 1: INTRODUCTION** ..... 1

1.1 Definitions ..... 1

1.2 History of research ..... 4

1.3 Methodology ..... 5

1.3.1 Uncertainties as to what was originally part of a gilded wreath ..... 5

1.3.3 Selection of material and scientific methodology ..... 8

1.4 Structure ..... 9

1.5 Types ..... 10

1.6 General points ..... 10

**CHAPTER 2: MACEDONIA** ..... 18

1. Introduction ..... 18

2. Typology and development ..... 20

2.1 Before 375 ..... 20

2.2 375-340 ..... 22

2.3 340-300 ..... 26

2.5 Third and second centuries ..... 41

3. Contexts and grave goods ..... 41

3.1 Types of graves and burial practices ..... 41

3.2 Grave goods ..... 44

4. General issues ..... 48

4.1 Origins ..... 48

4.2 Workshops ..... 48

4.3 Colour ..... 50

4.4 Social strata using wreaths ..... 51

4.5 Use in life? ..... 52

4.6 Placement of wreaths ..... 53

4.7 Mementoes of military honour? ..... 54

4.8 Religion ..... 56

4.9 Multiple wreaths in same grave ..... 60

4.10 Significance of gilded wreaths in Macedonia ..... 62

**CHAPTER 3: SOUTHERN AND CENTRAL GREECE** ..... 82

3.1. Introduction ..... 82

3.2. Typology and development ..... 83

3.2.1 Boeotia, Attica and Euboea ..... 83

3.2.2 Peloponnese ..... 88

DO NOT COPY

3.2.3 Epirus and the Ionian Isles ..... 93
3.2.4 Thessaly ..... 97
3.3. Burial contexts: practices, graves and goods ..... 99
3.3.1 Boeotia, Attica and Euboea ..... 101
3.3.2 Peloponnese ..... 102
3.3.3 Epirus ..... 104
3.3.4 Thessaly ..... 106
3.4. Issues arising, origins and significance ..... 109
3.4.1 Origins ..... 109
3.4.2 Special burials/aorai ..... 110
3.4.3 Helmets ..... 111
3.4.4 Significance ..... 114
**CHAPTER 4: SOUTH EAST AEGEAN** ..... 126
4.1 Introduction ..... 126
4.2 Typology and development ..... 129
4.3 Burial contexts ..... 136
4.3.1 Grave types, burial practices, gender ..... 136
4.3.2 Grave goods and social status ..... 141
4.4 Origins ..... 143
Artistic and cultural links of Rhodes ..... 144
4.5 Functions and significance ..... 145
4.5. Worn by the living? ..... 145
4.5.2 Possible religious and philosphical associations ..... 146
**CHAPTER 5: SOUTHERN ITALY** ..... 151
5.1 Introduction ..... 151
5.2 Typology and chronology ..... 153
5.3 Burial contexts ..... 162
5.3.1 General ..... 162
5.3.2 Taras ..... 163
5.3.3 Metapontion, Herakleia and Egnazia ..... 174
5.3.4 Calabria ..... 176
5.3.5 Lucania ..... 177
5.4 Origins ..... 178
5.5 Significance ..... 180
**CHAPTER 6: MATERIALS** ..... 195
6.1 Introduction ..... 195
6.1.1 Outline of chapter ..... 195
6.1.2 Chaîne opératoire ..... 197

DO NOT COPY

6.1.3 Preservation of materials (stage 6) ..... 197
6.1.4 Methodology ..... 200
6.2 Raw materials and their preparation (stage 2) ..... 206
6.2.1 Gold ..... 206
6.2.2 Copper ..... 208
6.2.3 Clays ..... 209
6.2.4 Pigments ..... 212
6.2.5 Adhesives and binders ..... 215
6.3 Gilding ..... 215
6.4 Materials used on wreaths: results of analysis ..... 221
6.4.1 Gold ..... 221
6.4.2 Copper not bronze ..... 225
6.4.3 Clay fabric ..... 231
6.4.4 Clay coatings: white and yellow ..... 232
6.4.5 Red and blue coatings and pigments ..... 242
6.4.6 Adhesives ..... 247
6.4.7 Textiles ..... 249
6.4.8 Lead ..... 250
6.4.9 Bone ..... 250
6.4.10 Wood ..... 251
6.4.11 White substances on back of circlets ..... 251
6.5 Conclusions ..... 252
**CHAPTER 7: DESIGN TYPES AND TECHNOLOGY** ..... 254
7.1 Introduction ..... 254
7.2 Design, typology and timeline (stage 1 of chaîne opératoire) ..... 254
7.2.1 Design and timeline ..... 254
7.2.2 Types and development ..... 260
7.2.3 Plants represented ..... 267
7.3 Preparing materials and combining elements (stages 3 and 4) ..... 274
7.3.1 Gilding ..... 274
7.3.2 Circlets ..... 275
7.3.3 Leaves ..... 278
7.3.4 Stems ..... 286
7.3.5 Berries and acorns ..... 294
7.3.6 Grapes, rosettes and insects ..... 296
7.3.7 Flowers ..... 297
7.3.8 Medallions ..... 299
7.4 Concluding points ..... 299

DO NOT COPY

7.4.1 Time taken to make a wreath ..... 299
7.4.2. Workshops ..... 299
7.4.3 Use in life? ..... 300
**CHAPTER 8: ORIGINS AND WIDER CONTEXT** ..... 302
8.1 Introduction ..... 302
8.2 Earliest gilded wreaths ..... 302
8.3 Possible influences from similar items ..... 305
8.3.1 Gilded silver items (Table 8 parts 1 and 2) ..... 305
8.3.2 Leaves and branches ..... 308
8.3.3 Terracotta flowers and fruits ..... 315
8.3.4 Gold and silver wreaths (Table 8, part 2) ..... 315
8.3.5 Terracotta amphora wreaths (Table 8 part 3) ..... 318
8.3.6 Gilded terracotta jewellery, gilded and tinned vessels ..... 320
8.3.7 Natural wreaths ..... 321
8.4 Artistic and cultural influences ..... 324
8.5 Conclusions ..... 327
**CHAPTER 9: FUNCTIONS AND SIGNIFICANCE** ..... 331
9.1 Wreaths in various contexts ..... 331
9.1 Were the wreaths worn in life? ..... 331
9.2 Transition from sanctuary to grave ..... 332
9.2 Significance of plants and insects represented ..... 335
9.3 Possible reasons for burial in the grave: occasions when they were used ..... 339
(i) Wreathed statues and metal wreaths awarded as a civic honour ..... 340
(ii) Athletes and victors ..... 343
(iii) Helmet wreaths and military honour? ..... 346
(iv) Women and girls ..... 349
(v) Death and funerary use ..... 352
(v) Religious use: gods, priest(ess), worshipper ..... 354
(vi) Initiates ..... 356
(vii) Symposium and banquets ..... 362
9.4 Conclusions ..... 364
**CHAPTER 10: CONCLUSIONS** ..... 366
Appendix: Methodology of scientific investigations ..... 375
**BIBLIOGRAPHY, SOURCES AND ABBREVIATIONS** .....
Abbreviations ..... i
Sources ..... ii-iii
Bibliography ..... iii-xxxviii

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# ABSTRACT

This thesis is the first major piece of research in the last 30 years to focus specifically on gilded wreaths. It is the result of close study of some 170 wreaths in Greece and Southern Italy, dating to the Late Classical and Hellenistic periods. This allowed the wreaths to be classified into seven main types, the earliest of which were found in Macedonia in Northern Greece. Wreaths of a different design, making more use of clay and less of copper, are also presented, which are mainly from central and southern Greece. The wreaths from Southern Italy make a useful contrast, similar in many ways to the material in Greece, but with some resemblance to earlier items from Italy such as wreath-diadems. The materials used to make the wreaths have been analysed with hand-held XRF and, in some instances, a Scanning Electron Microscope; the results are presented here for the first time. Very little analytical work has been done before on gilded wreaths, which made use of a range of materials including copper, gold and clay. Most of the wreaths are in fragments and not on view in the museums, and so are described in some detail, with illustrations, in the catalogue. The wreaths raise intriguing questions as to why they were buried in graves but appear not to have been used in sanctuaries. They are found with males and females, young and old - did they have some sort of apotropaic function, or did they mark the status of the individual? Could they have marked various stages in life (rites de passage), such as adolescence, marriage, giving birth and death? Gilded wreaths are found often in multiples in Macedonia, sometimes with solid gold wreaths, raising further questions as to why the deceased and their families felt it necessary for them to be buried with more than one wreath. Did the wreaths have a religious significance, or were the relatives simply seeking to show their wealth in consigning this valuable material to the grave? Is it possible to tell whether their use was solely funerary, or could they have been worn also by the living? Some answers to these many questions are put forward.

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The author's photographs of the wreaths from Pergamon now in the Antikensammlung in Berlin are omitted at the request of that museum.

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# CHAPTER 1: INTRODUCTION

Gilded wreaths from Ancient Greece are an ideal subject for a thesis: they are interesting, and challenging, because made of a range of materials; they have been little studied; they are attractive to look at; and there are enough still in existence to make an appropriate subject without being overwhelming. This thesis will explore three main questions which they raise. First, *where* did they originate: was it in Macedonia, where the majority have been found, or can we trace their origins to other parts of Greece, Southern Italy or elsewhere? Secondly, *how* were they made: what materials were used, and how were they put together? Thirdly, their significance: *why* were gilded wreaths placed in graves, and what they did they mean to the people who deposited them? This last encompasses many questions, including whether their use was exclusively funerary, whether they had a religious meaning, and why we sometimes find more than one gilded wreath in a grave. Wrapped up in the question of significance is a group of issues concerning the reasons for the use of gilding: were the gilded wreaths cheaper imitations of the 'real' thing (i.e. solid gold), or did they have a particular significance in their own right?

## 1.1 Definitions

Natural wreaths were made of plants (leaves and/or flowers), and gilded wreaths imitating them are the subject of this dissertation. In ancient Greek, the word normally used for a wreath is *στέφανος*, in modern Greek *στεφάνι*, French *couronne*, German *kranz* and Italian *corona*. In English the term is sometimes translated as 'crown' or even, though this is antique, 'chaplet'. The word *στέφανος* is derived from *στέφω*, meaning to encircle[1]. There were several forms of wreath in ancient Greece, as well as further types of head-dress which are not the subject of this dissertation, although they are referred to occasionally. The s*tephane* (*στεφάνη*) was a form of diadem, an upright headdress worn by women on the front of the head which had an open space

[1] Daremberg and Saglio *Corona* I,2, C, 1520.



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at the back (**figs. 1.1 and 1.2**)[2]. 'Diadem' (*διάδημα* from *διαδέω*, to tie around) has several meanings, one of which is a strip of cloth or headband[3]. It can be made of metal in the form of a pediment, when it is a *stephane* (**fig. 1.2**). A third type was made of a strip of fabric with small decorations sewn on (**fig. 1.3**). A 'tiara' was originally a bonnet or cap worn by people from north west Asia, half spherical and fixed by a band[4]. The Great King wore a tiara encircled by a *diadema* made of cloth. The Great King's subjects also wore a *tiara*, in the supple version which fell forward, like a Phrygian cap. A *tainia*, meaning literally a strip and normally translated as 'fillet', was made from metal or a piece of cloth[5], in which case it could be tied around the head, arm or an object such as a gravestone (**fig. 1.4**). A *mitra* is a headdress made of a strip of cloth, leather or metal[6], and can sometimes be wrapped around the head like a turban[7]. There is clearly overlap between the terms *diadema, stephane, tiara* and *tainia* but what distinguishes them from wreaths is that these headdresses do not represent natural plants.

The term 'wreath-diadem' is used in this dissertation to refer to the type of item found in Southern Italy consisting of a wide metal band decorated with berries and leaves, and is given that name here because it is a cross between a diadem and a wreath (**figs. 5.3 and 8.4**).

*Fig. 1.1 The bride wearing a stephane, with a wreath hanging above her head. From an Attic red-figure loutrophoros, Ashmolean Museum 1927.4067. From Oakley and Sinos 1993, fig. 121. ©The Board of Regents of the University of Wisconsin System. Reprinted courtesy of The University of Wisconsin Press.*



[2] Cleland 2007, 181.

[3] Daremberg and Saglio III,1 *Diadema*, 119; they regard it used in this sense as having a religious significance, worn by priests and victors, and as a sign of consecration. See also Cleland 2007, *Diadem*, 47.

[4] Daremberg and Saglio V, *Tiara*, 296-298.

[5] Cleland 2007, *Tainia*, 186. Daremberg et Salio V *Taenia*, 19, regard the term as synonymous with *diadema* and *mitra*, and say that it refers to a symbol of victory and consecration.

[6] Daremberg and Saglio III, 2 *Mitra,* 1954-1956. Pindar *Isthmian,* 5 62-63 and *Olympian*, 9 83-85 refer to a *mitra* of wool brought to honour the victors; the former also refers to a wreath (*stephanos*).

[7] Cleland 2007, 127.

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*Fig. 1.2 Pedimental diadem from Santa Eufemia, 330-300, British Museum 1896,0616.1.*
*© The Trustees of the British Museum.*



*Fig. 1.3 Cloth diadems with gilded appliques (the cloth base is modern). ©Archaeological Museum of Thessaloniki, Ministry of Culture and Sports. From Grammenos 2004, 166.*



*Fig. 1.4 An athlete being awarded a tainia, on a kylix dated 490-480 by the Colmar Painter. Beazley database 41586. From Zimmermann 1987, 167, cat, 107.*



## 1.2 History of research

Tsigarida studied all kinds of metal wreaths for her MPhil and doctoral theses, dividing them into four groups: type III is silver or gilded silver and type IV is wreaths made of cheaper materials; gilded wreaths of both types fall within the scope of this dissertation[8]. Over thirty years have passed since that study was completed, and a great many wreaths have been discovered since then, particularly in Macedonia, so time is ripe for a fresh look at the material. The chapter on wreaths by Masiello in *Gli Ori di Taranto/Les Ors hellenistiques de Tarente*[9] is another seminal work, providing valuable insights on both gilded and gold wreaths, but is directly concerned only with material from Southern Italy. Blech discusses thoroughly and thoughtfully all types of wreaths, natural and metal[10], working from ancient sources and images of wreaths rather than the actual material. The drawings are a particularly strong point. Several scholars have looked at metal wreaths as a type of jewellery, including Marshall[11] and Despini[12]. There are three useful regional articles: by Kaninia, who discusses gold and gilded wreaths from Rhodes, by Asderaki, who looks at the scientific aspects of Thessalian wreaths, and by Sgourou who discusses jewellery from Thasian graves including one wreath (M40) [13]. Dagi studied the technology of some of the Macedonian gold wreaths, informed by her training as a jeweller[14]. Several scholars including Manetta and Pisani see wreaths as items of gilded terracotta jewellery, giving a different perspective[15]. Castoldi has published a thoughtful study

[8] Tsigarida 1985 and 1988. The main conclusions were published as Tsigarida 1993. Her type I is gold and II is gold combined with other materials.

[9] This book was originally published in Italian as *Gli Ori di Taranto in età ellenisticà* (1984), followed by the identical text in French, as *Les ors de Tarente* (1986) with the same page numbers; it accompanied an exhibition in Italy and Paris.

[10] Blech 1982.

[11] Marshall 1911.

[12] Despini 1996.

[13] Kaninia 1998; Asderaki-Tzoumerkioti 2001 and Asderaki and Rehren 2008; Sgourou 2001.

[14] Dagi 2011.

[15] Scheurleer 1982, Blanck 1976, Mathieux et Becq 2000, Manetta and Pisani 2012.



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of metal leaves and branches[16]. My own MPhil looked at gilded wreaths from Thessaly and Macedonia[17] and much of the material studied then has been incorporated into this thesis.

Four groups of scientists have studied the scientific aspects of gilded wreaths. Oddy and colleagues from the British Museum investigated gilded leaves from a Rhodian wreath (SEA8) as part of a wider study of gilding in the ancient world[18], which is useful not only for the information it gives about SEA8, but also methods of gilding in Egypt. Hatchfield and Newman looked at gilding on several surfaces from Egypt, and included a wreath believed to be from Greece in their study (T1X98)[19]; their publication is particularly useful for the information it gives about the coatings used between the gold and the substrate. Maier and colleagues studied a wreath from Southern Italy, SI 10, whose optical microscopy work is helpful in showing the layers of coating on the berries[20]. Asderaki examined several gilded wreaths from Demetrias in Thessaly for an MA dissertation and published the results in an article co-authored with Rehren[21]. They made a detailed study of most elements of these particular wreaths, which is particularly strong on the metals.

## 1.3 Methodology

### *1.3.1 Uncertainties as to what was originally part of a gilded wreath*

Single leaves have been found in sanctuaries; there is often uncertainty as to whether they were originally part of a wreath, and in some cases there is also uncertainty as to whether the material was originally gilded. Excavators such as Homolle[22], referring to epigraphical evidence of gold and silver wreaths donated to sanctuaries, tended to assume that copper or bronze leaves were once part of a wreath and in a few cases (at Nemea, Olympia and possibly Corfu) it does seem

[16] Castoldi 2014.
[17] Jeffreys 2014.
[18] Oddy *et al*. 1979.
[19] Hatchfield and Newman 1991; they suggest that the Greek wreath is from either Rhodes or Crete.
[20] Maier *et al*. 1998.
[21] Asderaki-Tzoumerkioti 2001; Asderaki and Rehren 2008.
[22] Homolle 1887, 403.

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that this was so, but in most cases it is more likely that they were either part of branches or single offerings. Because of these uncertainties they are discussed in Chapter 8 (origins and wider context) and catalogued separately in a supplementary catalogue. Where leaves were of particular interest because of an early date, permission was sought to study them to check whether they may have been part of a gilded wreath, using hand-held XRF (HHXRF) wherever possible. The scientific information obtained, including the results of the HHXRF analysis, is summarised in the supplementary catalogue and chapter 6. Chapter 8 discusses leaves and other material which are not the primary focus of study, but which is relevant to the questions of origins and significance of the wreaths.

### 1.3.2 Period covered

The earliest surviving gilded wreaths studied are believed to date to the early fourth century (M2, M27 and M40), and the latest to the mid-second century, around the time when Greece fell under Roman rule following the Battle of Corinth in 146 (P1). A wreath which is ungilded, from the late fifth century or early fourth century, was also studied (SEA3).

### 1.3.3 Geographical extent and total number

Wreaths were selected for study primarily from modern Greece, where most of the wreaths have been found, but it was also desired to look at one region outside Greece for comparison. Southern Italy was selected because it had a large number of gilded wreaths and possible predecessors. In this dissertation the term refers to Italy south of Naples, but excludes Sicily[23]. 'Macedonia' refers to the region of modern Greece which also includes Amphipolis, Thasos and Nikisiani. Thrace, which falls partly within Greece, Bulgaria, the Ukraine and Turkey, was excluded for two main reasons: first because it was thought unlikely that examining these wreaths would add anything substantial as they appeared similar to those already the subject of study. The second reason was that of practicality - in particular, language, security and the

[23] Some wreaths found in Ancona are included in Southern Italy because they may have been made in Taras.



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difficulty of obtaining the necessary permissions[24]. For similar reasons, wreaths from North Africa (Alexandria and Libya) and further east (Ai Khanoum in Afghanistan) were also excluded. However, the Antikensammlung in Berlin holds wreaths from Pergamon, so permission was sought (and obtained) to study them; they are included in the catalogue (P1 and P2) but not the regional chapters.

Information about wreaths which fall outside the geographical scope of this dissertation is summarised in Table 1.1 at the end of this chapter, in abbreviated form since they have not been examined and little is published about their archaeological context. This information is included to contribute to future research and to show their wide geographical spread[25]. It is hoped that it may prove possible to study some of them, as discrete groups, in future. Most of the wreaths fall into the same types as those in Greece, with a large number of flower wreaths (type 6) from Thrace and Alexandria (an example is at **fig. 1.5**). Virtually all are in fragments but a few have survived almost complete, including T1X22 from Bulgaria.

The total number of gilded wreaths known to the author is estimated to be around 440, including the 100 listed in Table 1.1: the figure cannot be precise because it is not always clear how many were buried in a grave or, in some cases, whether they were originally gilded.

*Fig. 1.5 Flowers from T1X29. From Zhivkova 1975, pl.10.*



[24] Permission was sought and refused to study gilded wreaths which are now in Istanbul and Çannakale.

[25] Where wreaths are included in another table, such as those from Ancona or a wreath from Libya, they are shown in table 1.1 with a T5 or T8 reference respectively rather than a T1 reference.



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### *1.3.3 Selection of material and scientific methodology*

Few gilded wreaths are on display in museums because of the fragility of the material and difficulties of conservation. Permission was obtained to study some 78 wreaths from Macedonia, 35 from southern and central Greece, 22 from Rhodes and elsewhere in the South Aegean, 29 from Southern Italy, principally Taras, three or four from Pergamon as well as some detached leaves, making about 170 in total. There is some imprecision in the figures, partly because there are several cases in Macedonia of multiple wreaths being found in a single grave, which are imperfectly preserved, so it is not always clear how many wreaths a grave originally held. Several further wreaths were viewed on display in museums at Vergina and in Southern Italy. The wreaths that appeared from the publications to be the earliest in date including M2, M27, M40, SEA3 and SEA8 were selected for study, as were those which it was thought would be representative of each type and period, and a few that had unusual features. As many as possible were examined using an optical microscope and the HHXRF, in order to determine whether there were any differences between the materials used in each of the regions. In the light of the information obtained from this preliminary study, a further selection was made from the Macedonian material for more detailed analytical work with micro-XRF (μXRF), a Scanning Electron Microscope (SEM/EDS) or Raman spectroscopy at laboratories in Thessaloniki, the results of which are set out in Chapter 6. The details of the methodology for the scientific study are described in that Chapter, amplified in the Appendix.

## *1.4 Structure*

The thesis is divided into two Volumes. The first contains the four regional studies (Macedonia, Southern and Central Greece, South East Aegean and Southern Italy) and the four cross-cutting chapters and conclusion. Within each region, wreaths are given a catalogue number or, if not studied at first-hand, a TX number, and the information known about them summarised in a table at the end of the chapter. These tables are arranged by site, in alphabetical order, and then by the location of the cemetery and grave number. There is a subdivision by area within

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Southern and Central Greece since it is not a homogeneous region. The table for Macedonia, 2.1, has a column showing the minimum number of wreaths and of persons in the grave; in other regions, there is only one wreath in a grave so this is not necessary.

The catalogue is in Volume II and contains an illustrated description of the wreaths studied, grouped by region and arranged alphabetically by site. They are given the prefix M for Macedonia, SCG for Southern and Central Greece, SEA for South East Aegean and SI for Southern Italy. The wreaths studied from Pergamon do not fall within any of the regions but are included as P1 and P2, and the leaves are given an L number in a supplementary catalogue. Each of the regional chapters follows the same pattern with the wreaths first grouped by type; development within the region is discussed, followed by consideration of their archaeological contexts which can yield important information as to the gender, age and social background of the deceased[26]. Some issues arising that are specific to those regions are also discussed. Each of these chapters ends with observations on the origins and significance of the wreaths in that region, two of the main questions addressed in the dissertation. The four regional tables have a column showing the type into which wreaths are thought to fall wherever possible, but this can rarely be done for the wreaths which have not been studied (with a TX number). Wreaths from outside the regions and items similar to wreaths are presented only briefly in Tables 1.1 and 8, since they are not usually fully described and illustrated in the publications.

In Chapters 6 and 7 one of the main questions in this thesis is addressed: how the wreaths were made, and in particular their design, the materials used and how they were put together. A time-line showing the developments in each region is in Chapter 7 at figure 7.1. Seven types are identified in section 2.2 of that chapter, summarised in section 1.5 and table 1.2. Chapter 7 also suggests identifications of the main plants represented (in section 2.3). In Chapter 8, the possible predecessors to the wreaths are discussed, such as the wreath-diadems and leaves, as

[26] In the case of Southern and Central Greece, the typology and burial contexts are broken down into areas such as Boeotia and the Peloponnese.



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is the wider context of this similar material. This chapter also looks at some of the artistic and other influences which may have led to gilded wreaths being buried in graves. Chapter 9 discusses the functions and significance of gilded wreaths, considering the various types of occasion when wreaths, natural or metal, were used and who would have been honoured with a wreath. The overall conclusions are in Chapter 10.

### *1.5 Types*

The wreaths are divided into seven main types according to their structure which are numbered in chronological order. Type 1 is the earliest and 6 the latest, although there is overlap since some types continued in use after another first appeared. Type 7 is reserved for wreaths which do not appear to have been designed to fit the human head. The principal features of each type are summarised in Table 1.2 with dates and a list of those falling into each type; the few which are too fragmentary or fall outside these types are omitted.

### *1.6 General points*

The dating given by the excavator has been adopted unless there is good reason not to do so. All dates for the archaeological material are BC/BCE. Unprovenanced material is rarely discussed, since material normally has little to contribute unless information is available as to its context. For brevity, a gilded wreath is often just called a 'wreath'.

Modern Greek names are transliterated according to the ELOT ISO 843 system, and Ancient Greek following the Library of Congress system.

References are given in the Harvard style of author-year of publication, which for consistency has been applied to references in Greek journals such as *AEMTh*, which are normally referred to elsewhere by the year on the spine of the volume. This has produced some awkward results, for which the author can only apologise, but it is trusted that by citing in the bibliography the volume number and the year on the spine, after the year of publication, for these items, no lasting confusion will be caused.

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***Table 1.1 Gilded wreaths from outside the regions studied***

| Reference number | Type/brief description | Modern country | Location | Grave number etc | Current location | Publication |
|---|---|---|---|---|---|---|
| **T1X1** | 7 | Afghanistan | Ai Khanoum, Treasury room 104 | | | Rapin 1992, 233-4, 117.15-119.1, pl.80 and O3-4 to 10, 170 pl.77. |
| **T1X2** | 6. Flowers, spherical berries | Bulgaria | Black Sea, Apollonia, Kalfata | Grave 20, no.885 | Burgas Museum? | Mladenova 1963, 291, no.885, pl.156, Tsigarida 1988 T45. |
| **T1X3** | | Bulgaria | Black Sea, Apollonia, Kalfata | Grave 4, 15, and 32, nos. 891-2 | Burgas Museum? | Mladenova 1963, 291 nos 891-3; Venedikov 1948, 12, 25-26, pl. 156-7; Tsigarida 1988 T50. |
| **T1X4** | | Bulgaria | Black Sea, Apollonia Kalfata | Grave 17 | Burgas Museum? | Mladenova 1963, 291, no.888, Tsigarida 1988 T48. |
| **T1X5** | | Bulgaria | Black Sea, Apollonia Kalfata | Grave 221, no.886 | Burgas Museum? | Mladenova 1963, 291, no.886, Tsigarida 1988 T46. |
| **T1X6** | Spherical berries, lead circlet | Bulgaria | Black Sea, Apollonia, Kalfata, | Grave 334 no. 887 | Burgas Museum? | Mladenova 1963, 291, no.887, pl.156; Tsigarida 1988 T47. |
| **T1X7** | 6. Flowers, lead circlet | Bulgaria | Black Sea, Apollonia Kalfata | Grave 346, wreath found on head of young woman | Burgas Museum? | Hermary and Keenleyside 2010, 255, pl.47c. |
| **T1X8** | 6. Flowers lead circlet | Bulgaria | Black Sea, Apollonia, Kalfata | Grave 403, no.882 | Burgas Museum? | Mladenova 1963, 290, no.882; Tsigarida 1988 T42. |
| **T1X9** | 6. Flowers lanceolate leaves, lead circlet | Bulgaria | Black Sea, Apollonia, Kalfata | Grave 405, no. 881 | Burgas Museum? | Mladenova 1963, 290, no.881, fig. 101, pl.156; Tsigarida 1988 T41. |
| **T1X10** | | Bulgaria | Black Sea, Apollonia Kalfata | Graves 408 and 310, nos. 889-890 | Burgas Museum? | Mladenova 1963, 291, nos. 889-890, Tsigarida 1988 T49. |
| **T1X11** | 4? Rosettes | Bulgaria | Black Sea, Apollonia Kalfata | Grave 667, no.884 | Burgas Museum? | Mladenova 1963, 291, no.884, fig.102, Tsigarida 1988 T44. |
| **T1X12** | 6. Flowers | Bulgaria | Black Sea, Apollonia, Kalfata | Grave 671, no.883 | Burgas Museum? | Mladenova 1963, 290-291, no.883, pl.156; Tsigarida 1988 T43. |
| **T1X13** | Wooden circlet, fabric, lead, remains of leaves, berries | Bulgaria | Black Sea, Apollonia, Mapes | Large tumulus Grave b male skeleton | Was Louvre 1775. May no longer survive | Seure 1924, 337; Tsigarida 1988 T40. |
| **T1X13A May not be a wreath** | Gilded copper leaves, terracotta flowers | Bulgaria | Black Sea, Apollonia, Mapes | Large tumulus Grave a female skeleton | Was Louvre 1776. Sofia 3668. May no longer survive | Seure 1924, 336. |
| **T1X14** | 4? Rosettes | Bulgaria | Black Sea, Apollonia Maritime Garden | Grave 687, 703, 694, 715 and 761, nos. 900-4 | Burgas Museum? | Mladenova 1963, 291, nos.900-4, pl.157 ; Tsigarida 1988 T57. |
| **T1X15** | 3 or 4 Ivy leaves rosettes | Bulgaria | Black Sea, Apollonia Maritime Garden | Grave 690, no. 895 | Burgas Museum? | Mladenova 1963, 291-2, no.895, pl.157; Tsigarida 1988 T52. |
| **T1X16** | 4? Rosettes | Bulgaria | Black Sea, Apollonia Maritime Garden cemetery | Grave 695, no.898 | Burgas Museum? | Mladenova 1963, 292, no.898, pl.157; Tsigarida 1988 T55. |
| **T1X17** | 3? Triangular leaves, spherical berries | Bulgaria | Black Sea, Apollonia Maritime Garden | Grave 704, no. 896 | Burgas Museum? | Mladenova 1963, 292, no.896, fig. 103, pl.157; Tsigarida 1988 T53. |
| **T1X18** | 3? Ivy | Bulgaria | Black Sea, Apollonia | Grave 708, no.899 | Burgas Museum? | Mladenova 1963, 292, no.899 ; Tsigarida 1988 T56. |

| Reference number | Type/brief description | Modern country | Location | Grave number etc | Current location | Publication |
|---|---|---|---|---|---|---|
| **T1X19** | 3? Ivy leaves, spherical berries | Bulgaria | Black Sea, Apollonia Maritime Garden cemetery | Grave 733, no.897 | Burgas Museum? | Mladenova 1963, 292, no.897, pl.157. |
| **T1X20** | | Bulgaria | Black Sea, Apollonia Maritime Garden | | Burgas Museum? | Mladenova 1963, 292, no. 905; Tsigarida 1988 T.58. |
| **T1X21** | Lanceoloate leaves, oval berries, lead circlet | Bulgaria | Black Sea, Apollonia Saint Marina | Grave 894 | Burgas Museum? | Mladenova 1963, 291, no.894, pl.157; Tsigarida 1988 T.51. |
| **T1X22** | 31 spherical berries and four-petalled flowers; gilded leaf fragments, lead circlet | Bulgaria | Black Sea, Mesambria (Nesebar) | Grave 1 | Nesebar Museum | Čimbuleva 1969, 168-169, fig. 121; Tsigarida 1988 T62. |
| **T1X23** | 25 spherical berries, rosettes, two bunches of grapes, gilded | Bulgaria | Black Sea, Mesambria (Nesebar) | Grave 2 | Nesebar Museum | Čimbuleva 1969, 169-171, fig. 122 ; Tsigarida 1988 T63. See also Čimbuleva 2005. |
| **T1X24** | 22 rosettes, traces of white coating and gilding | Bulgaria | Black Sea, Mesambria (Nesebar) | Grave 4 | Nesebar Museum | Čimbuleva 1969, 172-3, fig. 124. See also Čimbuleva 2005. |
| **T1X25** | | Bulgaria | Black Sea, Mogilanska Mogila Vratza | | | Tonkova 2013, 417. |
| **T1X26** | Spherical and oval berries, bell-shaped flowers | Bulgaria | Kazlanlak, Golyama Kosmatka tumulus | | Kazanlak Museum Iskra | Dimitrova 2015, 114, 316-7, Cat. 73, fig. 269 left. |
| **T1X26a** | Spherical and oval berries, bell-shaped flowers | Bulgaria | Kazlanlak, Golyama Kosmatka tumulus | | Kazanlak Museum Iskra | Dimitrova 2015, 114, 325, Cat. 85, fig. 269 right. |
| **T1X27** | Spherical berries? | Bulgaria | Kazanlak, Golyama Arsenalka | | Kazanlak Museum | Kitov and Dimitrova 1998-9, 38-9. |
| **T1X28** | Rosettes | Bulgaria | Kazanlak, Sarafora Mogila | | Kazanlak Museum | Kitov and Dimitrova 1998-9, 40. |
| **T1X29** | 6. Flowers | Bulgaria | Kazanlak | | Kazanlak Museum | Zhivkova 1975, 24-26, pl.10. |
| **T1X30** | 6. Flowers, myrtle leaves, oval berries | Bulgaria | Kazanlak Dolno Izvorovo tumulus | | Kazanlak Museum | Nehrisov and Pavin 2011, fig. 22. |
| **T1X31** | | Bulgaria | Mezek | | | Tonkova 2013, 417. |
| **T1X32** | 2. Gilded copper leaves, oval berries, myrtle seedpods | Bulgaria | Plovdiv, Starosel Peychova Mogila | | | Kitov 2003, 514 fig. 13. |
| **T1X33** | Gilded copper leaves | Bulgaria | Plovdiv Momina tumulus | | | Tonkova and Ivanov 2011, 13. |
| **T1X34** | | Bulgaria | Yambol, Kabyle | | | Tonkova 2013, 419; Stoyanov *et al.* 2013, 313 and figs.. 37-39. |
| **T1X35** | | Bulgaria | Yambol, Kabyle | | | Stoyanov *et al.* 2013, 313-4, figs. 40 and 41. |
| **T1X36** | | Bulgaria | Yambol, Kabyle | | | Dimitrova 1971, 38, fig. 3 ; Tsigarida 1988 T59. |
| **T1X37** | 2 and 6. Oval berries, spherical berries, myrtle leaves, flowers, bone circlet | Cyprus | Salamis | Tumulus 77 | Nicosia | Karageorghis 1976, 195-6, pl. 160, 176-179, 289. |
| **T1X38** | 7. Not gilded | Cyprus | Limnitis | Temenos | Berlin Antikensammlung TC8211, 166-168, | Ohnefalsch-Richter 1893, 377, pl. 43,5. |
| **T1X39** | 2 | Cyprus | Amathus | Grave 354 | | Karageorghis 1982, 685-744, 700-701, fig. 49. |

| Reference number | Type/brief description | Modern country | Location | Grave number etc | Current location | Publication |
|---|---|---|---|---|---|---|
| **T1X40** | 3? Myrtle leaves and spherical berries, lead circlet | Egypt | Alexandria | Sciatbi | Alexandria AM 16152 | Breccia 1912 cat. 47 (urn) pl. XXXVII, 167, 526, fig. 91. Breccia also refers to 11007, 11008, 15594, 15587, 15588, 15595-601, 18028, 18031, 19333, 19334, 19335, 18026, 19336. |
| **T1X41** | 3 Ivy leaves and rosettes | Egypt | Alexandria | Sciatbi | 18029 | Breccia 1912, 167, cat. 523 and 525, pl. 77.243. |
| **T1X42** | 3 Ivy leaves and spherical berries, grapes | Egypt | Alexandria | Sciatbi | 19332 | Breccia 1912, 167, cat. 524, pl. 77.244. |
| **T1X43** | 6 | Egypt | Alexandria | Sciatbi | | Breccia 1915, pl.VI fig. 1. |
| **T1X44** | 6 | Egypt | Alexandria | Sciatbi | | Breccia 1915, 20, pl. VI fig. 2. |
| **T1X45** | 6 | Egypt | Alexandria | Sciatbi | | Breccia 1915, 21, pl. VII fig. 3. |
| **T1X46** | 6 | Egypt | Alexandria | Sciatbi | | Breccia 1915, pl. VII, fig. 4. |
| **T1X47** | 6 | Egypt | Alexandria | Sciatbi | | Breccia 1915, 22, pl. VII, fig. 5; Tsigarida 1988 E.164. |
| **T1X48** | 6 | Egypt | Alexandria | Sciatbi | | Breccia 1915, 21. Tsigarida 1988 E.165. |
| **T1X49** | 6 | Egypt | Alexandria | Ibramieh | | Breccia 1915, 21, pl. VIII, fig. 6. |
| **T1X50** | 6 | Egypt | Alexandria | Sciatbi | | Breccia 1915, 21, pl. IX, fig. 7. |
| **T1X51** | 6 | Egypt | Alexandria | Sciatbi | | Breccia 1915, pl. XI fig. 1. |
| **T1X52** | 6 | Egypt | Alexandria | Sciatbi | 18027 | Breccia 1912. 166 cat. 519 pl. 76.241; Tsigarida 1988 E.167, pl.42. |
| **T1X53** | 6 | Egypt | Alexandria | Sciatbi | 11056 | Breccia 1912, 166, cat.518, pl.76.240; Tsigarida 1988 E.166 and pl.41b. |
| **T1X54** | 6 | Egypt | Alexandria | Sciatbi | 17960 | Breccia 1912, 166 cat. 520, pl.77.242 Tsigarida 1988 E.168. |
| **T1X55** | 6 | Egypt | Alexandria | Sciatbi | 18030 | Breccia 1912, 166, no.521, pl.77.245; Tsigarida 1988 E.169. |
| **T1X56** | 6 | Egypt | Alexandria | Sciatbi | 11000 | Breccia 1912, 166, no.522.E.170. |
| **T1X57** | 6 | Egypt | Kafir Ammar, Grave 237 | Petrie Museum, UC 37110 | | Petrie Museum on-line catalogue. |
| **T1X58** | 2? Many spherical berries, lanceolate leaves, bone circlet | Greece | Abdera, Thrace | Touzla Giol tumulus, Grave III | | Kallintzi and Papaikonomou 2006 fig. 1 |
| **T1X59** | 2 Few spherical berries, lanceolate leaves, bone circlet | Greece | Abdera Thrace | | Abdera AM on display | Unpublished. |
| **T1X60** | 2 oval berries, lanceolate leaves, bone circlet | Greece | Abdera, Thrace | | Abdera AM on display | Unpublished. |
| **T1X61** | Oval berries, lanceolate leaves | Greece | Abdera, Thrace | | Abdera AM on display | Unpublished. |
| **T1X61A** | Spherical berries, lead circlet | Greece | Abdera Thrace | | Abdera AM on display | Unpublished. |
| **T1X62** | 6. Four flowers | Greece | Abdera? Thrace (if from Mesembria, could be T1X61) | | Komotini AM on display | Unpublished. |
| **T1X63** | | Greece | Abdera, Thrace | | | Koukouli-Chrysanthaki *AD* 26 (1971) *Chron* 419; Tsigarida 1988 T39. |
| **T1X64** | 3? Four rosettes | Greece | Arzos, Thrace | | | Triantaphyllos *AD* 30 (1975) *Chron* B2, 303, pl 206. |

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| Reference number | Type/brief description | Modern country | Location | Grave number etc | Current location | Publication |
|---|---|---|---|---|---|---|
| **T1X65** | 6. Three flowers | Greece | Mesembria, Thrace (see above T1X60) | | Komotini AM? | Lazaridis 1953, 423, fig. 12. |
| **T1X66** | 3. Lead circlet spherical berries lanceolate leaves | Greece | Samothrace, Thrace | R1-2, 51.112 | | Dusenbery 1998, 991. |
| **T1X67** | 6. Terracotta flower (8 petals), lead circlet | Greece | Samothrace Thrace | S120-7 (64 SN279-5) | | Dusenbery 1998, 992. |
| **T1X68** | 3. Acorns, lead circlet | Greece | Samothrace Thrace | S123-6 and S123-7 (60.12/60.72) | | Dusenbery 1998, 992. |
| **T1X69** | 3. Lead circlet, spherical berries | Greece | Samothrace Thrace | S124-6 57.104/57.420/57.807/57 SN.010-1 | | Dusenbery 1998, 993. |
| **T1X70** | 3. 51 berries, lead circlet | Greece | Samothrace Thrace | H17-5 (55.224) | | Dusenbery 1998, 993. |
| **T1X71** | 3. 78 spherical berries, lead circlet | Greece | Samothrace Thrace | H13-5 (54.452) | | Dusenbery 1998, 993. |
| **T1X72** | 3. Ivy leaves | Greece | Santorini, Cyclades | Sellada, Grave 33 | | Hiller von Gaetringen 1905, 40. |
| **T1X73** | Lanceolate leaf | Greece | Santorini Cyclades | Sellada Grave 34 | | Hiller von Gaetringen 1905, 41. |
| **T5X1** | 2 | Italy | Ancona | via Nicola Matas | Ancona AM? Inv 6882 | Colivicchi 2002, 78 and fig. 1.1. |
| **T5X2** | 2? | Italy | Ancona | via Goito | Ancona AM? Inv 21472 | Colivicchi 2002, 84 and fig. 3.4. |
| **T5X2A** | 2? | Italy | Ancona | Corso Tripoli | Ancona AM? | Colivicchi 2002, 215 and fig. 31.7. |
| **T1X74** | Myrtle lead circlet | Italy | Monte Pitti | Grave B1/1891 | MAF 78559 (B/1891), MAF 78566 C/1891 | Cianferoni and Romualdi 1992, 27, fig. 4041 1992, 27, figs. 40 and 41; Coen 2007, 158 and 7; Coen 1997, 48 and 284. |
| **T1X75** | Numerous fragments in gilded 'bronze' (leaves), gilded clay rosettes, bone circlet | Italy | Sovana | Poggio Grezzano, Grave 1 | Florence AM 78559 78566 | Pancrazzi 1971, 177, n.167, 101. |
| **T1X76** | Not gilded | Italy | Sicily | | | Stampolidis and Tasoulas 2004, 251, cat. 177. |
| **May not be a wreath** | Terracotta-gilt cluster of grapes | Libya | Cyrenaica | | British Museum 1866, 0415, 208 | Marshall 1911 2158; Thorn 1998, 572-3. Presented by George Dennis Consul at Benghazi 1866. |
| **T1X77** | 6 | Libya | Cyrenaica | | Louvre D4424 | Besques 1988, 55, fig. 1; Besques 1992, 81, pl 47a. |
| **May not be wreath** | Rosettes | | Cyrenaica | | Louvre D4425 | Besques 1992 81 pl.47b. |
| **May not be wreath** | Buttons? | | Cyrenaica | | Louvre D4426 | Besques 1992, 81 pl. 47c. |
| **T1X78** | 5. Ivy leaves (clay) | | Cyrenaica | | Louvre D4427 | Besques 1992, 81 pl. 48a. |
| **T1X79** | Myrtle leaves | | Cyrenaica | | Louvre D4428 | Besques 1992, 81, pl.48b. |
| **T1X80** | Acorns | | Cyrenaica | | Louvre D4433 | Besques 1992, pl.48, d. |
| **T8X1** | Gilded silver | Libya | Cyrenaica | Aslaia | | Vickers and Bazama 1971, 69-84. |
| **T1X81** | 4. Bell flowers | Romania | Tomis grave 15 | | 15548-9 | Bukovala 1967, 68 fig. 43d and f; Tsigarida 1988 T68. |
| **T1X82** | 4. Rosettes | Romania | Tomis grave 16 | | 215 | Bukovala 1967, 70-1, fig. 44e; Tsigarida 1988 T69. |

| Reference number | Type/brief description | Modern country | Location | Grave number etc | Current location | Publication |
|---|---|---|---|---|---|---|
| **T1X83** | | Romania | Tomis grave 340 | | 12.034 | Bukovala 1967, 77. |
| **T1X84** | 4. Rosettes | Romania | Tomis grave 357 | | 4962 | Bukovala 1967, 42; Tsigarida 1988 T67. |
| **T1X85** | | Romania | Vojvodovo | | | Aladzov 1966, 55 fig. 7; Tsigarida 1988 T 70. |
| **T1X86** | Two wreaths | Romania | Callatis Mangalia (Moesia Inferior) | | | *Fasti Archaeologici* 1959, no.3196; Tsigarida 1988 T60. Found with papyrus with Greek writing. |
| **T1X87** | 6 | Turkey | Dardanelles N. Shore | | Budapest MFA | *Ancient Art* 5, MFA Budapest, 79 |
| **T1X88** | Leaves and strip | Turkey | Ephesus | Artemision | | Klebinder-Gauss 2007, 187-188, Items XII/11.2 (leaves) Kat 947-949, pl.93; other items XII.11.3, Kat. 950-962, pl. 92-95. |
| **T1X89** | | Turkey | Ilgardere | | Çanakkale AM Depot | Körpe 2004, 141. |
| **T1X90** | Many gilded terracotta berries and stems | Turkey | Lampsacus | Grave in base of tumulus. Found inside vase | Istanbul AM ? may no longer survive | Reinach 1903, 39. |
| **T1X91** | Fragments of gold, glass, berry | Turkey | Myrina | Grave 116 ? | Louvre 610? May no longer survive | Pottier and Reinach 1887, 100, 105, 200, 578 cat. 470. |
| **T1X92** | Glass, terracotta berries | Turkey | Myrina | | Louvre 607? | Pottier and Reinach 1887, 100, 105, 200, cat. 542, cat. 583-584. |
| **T1X92A** | 4. Bell-shaped flowers, spherical berries, lead circlet | Turkey | Parion | TSM11 | | Çelikbaş 2019, 249-250. |
| **T2X92B** | 4. Bell-shaped flowers, spherical berries, lead circlet | Turkey | Parion | TSM12 | | Çelikbaş 2019, 259 |
| **P1** | 7 | Turkey | Pergamon | Palace ruins at top of Acropolis | Berlin Antikensammlung | Grussinger 2011 2011, 496; Conze 1913, 249. |
| **P2** | 7 | Turkey | Pergamon | Palace ruins at top of Acropolis | Berlin Antikensammlung | Grussinger 2011 2011, 496; Conze 193, 249. |
| **T1X93** | 3? | Turkey | Pergamon Tumulus II | | Istanbul AM | Jacobsthal 1908, 432 and pl. XXVI; Grussinger 2011 2011, Abb 8. |
| **May not be a wreath** | Described as earring of 'leech' type | UK | | | British Museum 1906, 0415. 1 | Marshall 1911 cat. 2167 (presented by Cecil H. Smith 1906). Marshall 1911 cat. 2168 is four small terracotta-gilt pendants, one of which is a bunch of grapes. |
| **T1X94** | Silver gilt | UK | Unprovenanced | | British Museum 1980,0202.2 Blacas Collection | Marshall 1911, 1630. |
| **May not be a wreath** | Bronze laurel leaf | UK | Unprovenanced | | 1878,1019.149, (donated by Augustus Meyrick) | https://www.britishmuseum.org/collection/object/G_1878-1019-149. |
| **T1X95** | | Ukraine | Crimea | Olbia | Kassel | Sevinç and Treister 236; Naumann-Steckner 1980, no.3. |
| **T1X96** | | Ukraine | Crimea | Olbia | Kassel | Naumann-Steckner 1980, cat 4 pl.2. |
| **T1X97** | Four rosettes and 31 spherical berries | UK | Unprovenanced | | British Museum 1927, 0113. 29 | Unpublished. |
| **T1X98** | 3. Ivy leaves, spherical berries | USA | May be Rhodes or Crete | | Boston MFA 81.333, | Comstock and Vermeule 1971, 200, cat. 253. |

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| Reference number | Type/brief description | Modern country | Location | Grave number etc | Current location | Publication |
|---|---|---|---|---|---|---|
| **T1X99** | 2? Lanceolate leaves, spherical berries, central ornament | USA | Italy Palestrina? | | 02.306 | Comstock and Vermuele 1971, 222, cat. 307. (Castellani). |

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***Table 1.2 Wreaths listed by type***

| Type | Circlet | Leaves | Berries | Flowers | Plant | Date | Wreaths by cat. no. | Main region/area |
|---|---|---|---|---|---|---|---|---|
| 1 | Bone, round in cross-section | Lanceolate | Few, oval | Not usually (except M27) | Myrtle | 1st half 4th c. | M2, M27, M40, SEA6, SEA8, SEA10, SEA20 | Macedonia and Rhodes |
| 2 | (1) Bone (2) Wood | Mainly lanceolate, earlier rounded, later straight edged | Generally oval | No | Predominantly myrtle but also oak | 2nd qu. and 2nd half of 4th c. | M1, M4, M5, M6, M7, M8, M9, M10, M11, M12, M13, M14, M15, M16, M17, M18, M19, M20, M22, M23, M24, M25, M26, M28, M29, M30, M31, M32, M33, M34, M35, M39, M41, M42, M43, M44, SCG6, SCG7, SCG8, SCG10, SCG11, SCG14, SCG19, SCG20, SEA7, SEA11, SEA12, SI 1, SI 6, SI 7?, SI 12, SI 14, SI 22 | Macedonia and Epirus |
| 3 | (1) Bone or wood (2) Lead | Lanceolate or ivy | Generally spherical | Rosettes | Mainly ivy | 3rd/2nd c. | M14, M37, M39, SCG15, SCG16, SCG21?, SCG24, SCG25, SCG27?, SCG31, SCG32, SCG34, SCG35, SEA2, SEA13, SEA14, SEA17, SI 4, SI5?, SI9?, SI 10, SI 11, SI 13, SI 17 ?, SI20, SI 21, SI 24, SI26, SI 27, | Macedonia, Southern Italy, Rhodes |
| 4 | Lead | Lanceolate, sparse | Generally spherical | Moulded bell-shaped (SCG1 maybe prototype) | Mixture including myrtle | 4th, 3rd c. | M3, SCG1, T3X27, T3X26, SCG16, SCG17, SCG18, SCG22, SCG23, SCG26?, SEA1, SEA4?, SEA5, SEA16, SI 5?, SI 7?, SI 9?, SI 16. | Boeotia, Peloponnese Thessaly, SEA |
| 5 | Lead | Clay | Spherical | Rosettes | Mixture | 3rd c. | SCG3, SCG4, SCG5, SCG12? | SCG |
| 6 | Lead in some cases | | | Large flowers - myrtle, roses etc | Mixture | 1st qu. 3rd c. | M15, M21, M23, M24, M25, M36, SCG2, T3X21 | Macedonia and Peloponnese |
| 7 | Twisted wire? | Lanceolate or ivy | Spherical | | Various including oak and myrtle | Last qu. 4th c. | SCG12?, SCG13, SCG33, SI 25, T2X89 | Epirus and Macedonia |

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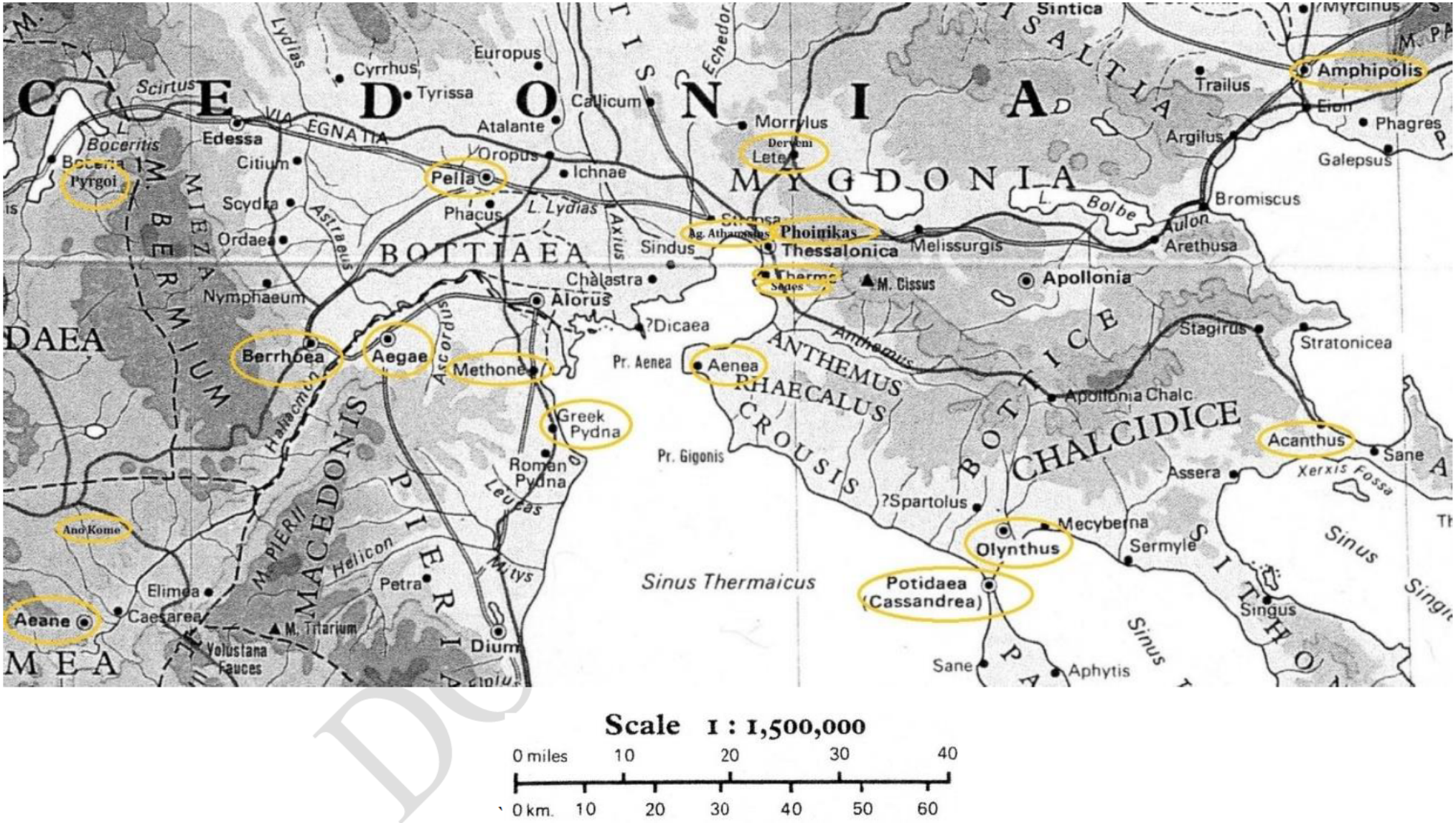
# CHAPTER 2: MACEDONIA

## 1. Introduction

Macedonia has the greatest concentration of gilded wreaths with at least 182 specimens, which were in use there for about 100 years. Study of this region is therefore central to this dissertation. The area covered (**fig. 2.1**) corresponds to modern Macedonia and Western Thrace, including Amphipolis, Thasos and Nikisiani. Information about the wreaths and the grave goods found with them is summarised in **Table 2.1** at the end of the chapter. They are first grouped by type, and developments in design traced, with some discussion of the most interesting wreaths. This is followed by consideration of their archaeological context – types of grave, burial practices and grave goods. Some of the many issues arising are then discussed - were the wreaths ever used by the living? How wealthy were their owners? Why, in Macedonia but not elsewhere, were several wreaths sometimes placed in the same grave, and why were there occasionally gold as well as gilded wreaths? Did they bear the same significance when buried with men and women, young and old?

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*Fig. 2.1 Map of Macedonia showing the main sites discussed. Thasos lies just off the map to the east, and Nikisiani to the north east. From Hammond 1981.*



The date of the grave is taken to be the date of the wreath, but whether this assumption is correct depends on the answer to the question whether the wreaths were created for use in life before burial, which will be discussed in section 4.5. The date given by the excavators is cited in table 2.1 and the catalogue, but in the second part of the fourth century the chronology of some of the graves is not settled, so in these cases alternative dates or bands are also given. In an article published in 1998, Touratsoglou dated some of the graves principally by reference to the coins, but the position is not yet completely clear, partly because the dating of some of the coins remains debateable[27]. The position is further complicated by the division of views as to whether Tomb II in the Great Tumulus at Vergina is that of Philip II or not: if it is his, the grave should be dated to shortly after his death in 336, but Borza and Palagia argue that it is rather the tomb of Philip Arrhidaios and should be dated shortly after 317[28]. As matters stand, Tomb II is still not fully published[29].

## 2. Typology and development

### *2.1 Before 375*

Three wreaths of type 1, dated to the first quarter of the fourth century, were found in the west of Macedonia at Aiani (M2), as well as in the centre, at Olynthos (M27), and the east on Thasos (M40) (**fig. 2.2**). All three have a circlet which is round in cross-section (**figs. 2.3, 2.4 and M27.3**), as is also attested on four Rhodian wreaths (SEA6, SEA8, SEA10 and SEA20). The holes on the Macedonian wreaths are pierced on the same level, and there is no indication that the stems were buried in the circlet as in Rhodes so do not provide evidence that they were designed to be worn by the living. M2 is dated by the excavator as early fourth century probably

[27] Touratsoglou 1998. As far as the coins are concerned, le Rider 1977 gives a date for a quarter stater of Philip II in Derveni B of 340-328 or 336-328, and Price 1979 gives 336-323.

[28] Borza and Palagia 2007, 117. See note 41 below.

[29] Andronikos published a preliminary study in 1984, and Drougou published the pottery in 2005. Zimi studied the silverware (Zimi 2011).



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by the design of the grave[30] and M27 to approximately the same date by the pottery [31]. The latter wreath is now in a poor state of preservation, but once had lanceolate leaves and five-petalled copper flowers with a central motif (**fig. 2.5**), recalling the flowers on SEA20 (**fig. 4.5**). The flowers are beautifully made, each in two parts, by hammering onto a former or mould. M40 is dated by a silver *hemiekton* coin[32] and is very like M2. These wreaths, and their dating, are important because they are evidence supporting the hypothesis that the earliest gilded wreaths are from Macedonia.

*Fig. 2.2 Map of Macedonia, showing location of the sites where wreaths from the first half of the fourth century were found. From Kottaridi and Walker (eds) 2011, map 1. The yellow and brown areas were part of Macedon during the reign of Alexander I (498-454).*




[30] Karamitrou-Mentessidi 2008, 51.

[31] Robinson 1950, 350 and 352. Robinson 1935, 226. The bowl dated to the early fourth c. is 34-XIV-6 (767) (Robinson 1950, 352), but is not illustrated.

[32] Sgourou 2001, 329.

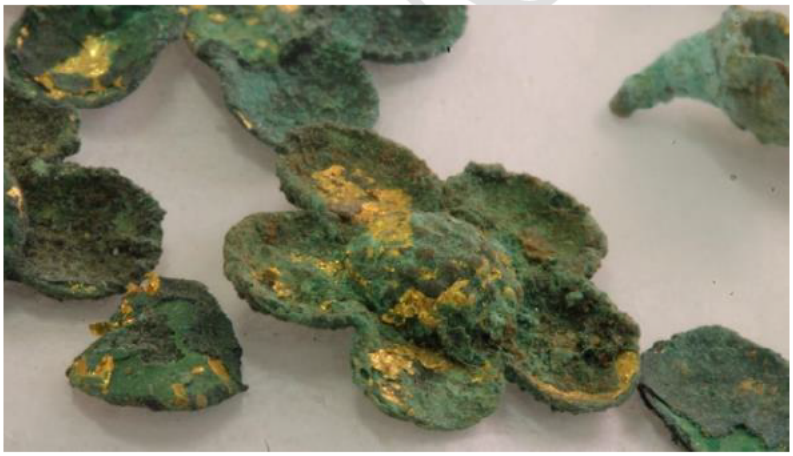
*Fig. 2.3 Elements of wreath M2 (Leivadia Tomb A), Archaeological Museum of Aiani: the round cross section can be seen on the left. © Hellenic Ministry of Culture and Sports.*

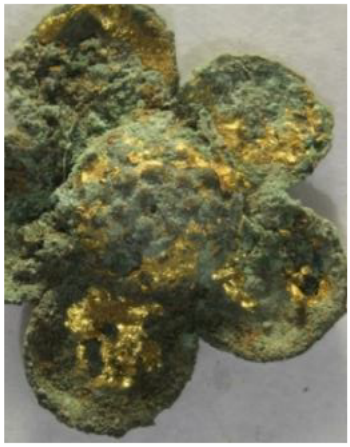


*Fig. 2.4 Detail of some of berries and circlet from M40 (Ergatikes Katoikies II), Archaeological Museum of Thasos. © Ministry of Culture and Sports/Ephorate of Kavala and Thasos.*



*Fig. 2.5 Five-petalled flower from M27 (Olynthos) with central boss. © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*





### *2.2 375-340*

At least 12 wreaths dated to approximately 375-340 were found in Central Macedonia at Phoinikas (M30-35), Vergina Stenomakri Toumba (M42-M44) and Mieza (M22) (**fig. 2.1**). All except M22 were luxury items with gilded stems and circlets; on M30-33 there were also

expensive fabrics and on M42 a coloured bole. The Phoinikas wreaths (M30-35) were found in three cist graves. Those of grave 5, the earliest, are dated by the excavator to the second quarter of the century principally from a coin of Amyntas III, the pottery and five fibulae[33]. It contained four virtually identical wreaths, and the remains of one woman (M30-33). They are in a remarkable state of preservation and similar to one of the wreaths in grave 3 and a further wreath in grave 2 (**fig. 2.6** shows M32, **fig. 2.7** M30 and **figs. M34.10** and **M35.3** the wreaths in the other two graves). Cist grave 3 held a young female and at least three wreaths (M34) one of which had holes pierced on more than one level of the bone circlet resembling the ivory circlet on one of the wreaths from Stenomakri Toumba, Vergina, M43 (**figs. M34.5 and M43.9**). Cist grave 2 held one wreath (M35), with a young male, in a bronze kados and fragments of a second or the same wreath on the pyre[34]. The wreaths from all three graves are of type 2, having bone circlets with flat backs, allowing them to sit against the wooden circlets, and the leaves are lanceolate-shaped, some with veins, others not. The berries are oval, and some have a small cross, indicating myrtle.

*Fig. 2.6 Part of M32(Phoinikas 5,3). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



[33] Amyntas III died in 370. For dating: Tsimbidou-Avloniti 2009, 439. Musgrave 2007 put the age of the woman at 45-60. The wreaths from these cist graves will be published in Tsimbidou-Avloniti and Jeffreys forthcoming.

[34] Musgrave 2007 suggested he was aged about 20. Knucklebones tend to indicate an adolescent, but are also sometimes found in adult graves.



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*Fig. 2.7 M30 (Phoinikas 5,1) showing the fabric either side of the wooden circlet.*
*© Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*




Fine fabrics have been preserved with the wreaths from grave 5. At least one layer seems to have been wrapped around the wooden circlet, showing that it was an integral part of the wreath (**fig. 2.7**). All the fabrics bear holes about 1mm in diameter, matching the size of the stems and some are coloured purple (**fig. 2.8**). The gilded bone circlet was clearly intended to be visible. The purpose of using fabrics on a wreath is unclear: one possibility is that they were to make the wooden circlet into a headband or *mitra*[35], cushioning the head from the stems and wood. Alternatively, they may have been part of a *tegidion*, a type of veil that covered the face and came into fashion in the fourth century[36]. On this hypothesis, one fabric would have passed over the back of the head and a second hung down to cover the face for which the fine gauze would have been appropriate (**figs. 2.9a and b**). A third possibility is that the wreath was used with a conventional himation veil, as a straightforward and decorative way of keeping it in position. There is no way of knowing at present whether the wreaths from Phoinikas are

[35] See page 2.
[36] Llewellyn-Jones 2003, 62.

evidence for a wider use of fabrics on wreaths, since no others are known, but their presence in the female graves, and not the male, is significant. Whatever their precise use, their presence tends to suggest that the wreaths were worn while the woman was still alive, as it is difficult to see why one or more wreaths with fabrics as an integral part would have been created exclusively for use in the grave.

*Fig. 2.8 Fine fabrics found with M30 (Phoinikas 5,1), showing purple colour and square holes (photograph by Dimosthenis Kechagias). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*

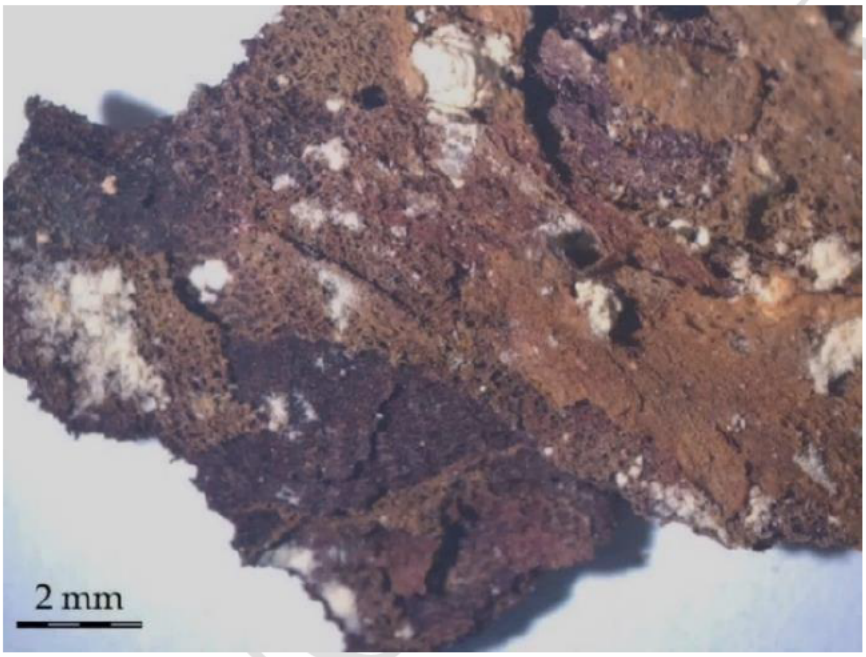



*Fig. 2.9a Figurine from Alexandria wearing tegidion veil. Graeco-Roman Museum, Alexandria. From Llewellyn-Jones 2003, 63.*



*Fig. 2.9b Possible arrangement of tegidion veil with wreath with one fabric going over the back of the head and the other hanging over the face. The bone circlet has been shown over the veil; the wooden is hidden underneath.*



Further impressive wreaths dated to around the middle of the fourth century - M42, M43 and M44 - were found in Stenomakri Toumba at Vergina[37]. The wreath fragments of M42, found on the pyre above the grave, include part of a bone circlet, gilded myrtle leaves and over 250 berries, some of which have a red or pink coating, used as a bole, similar to that found on berries from M16 and M10 (**figs. 2.19, 2.13** and **7.52**). The gold on these berries is brilliant and may have been burnished with an agate tool on the bole base. Two further wreaths (M43) were found in the pyre for male grave Γ. One particularly fine item had oak leaves and acorns, some of which appear to have been coated with a pink bole beneath the gold, and a circlet made of ivory (**figs. M43.6 and M43.9**). Further wreaths (M44) were found in grave A, the latest of the three. Fragments of a less impressive wreath, of type 2, were found at Mieza, which was a less wealthy cemetery (M22)[38]. T2X73 (Pydna) is also thought to date to around the middle of the fourth century[39].

### *2.3 340-300*

The wreaths which are dated by the excavators to the third quarter of the fourth century are from many locations in Macedonia including Aineia (M5-M13), Amphipolis (T2X19-20), Katerini (T2X51), Oraiokastro (T2X57-58), Pydna (T2X70-72, T2X74 and T2X82) and Vergina/Aigai (T2X88 and T2X90). Of these, M5-13 have been studied and are of type 2. They were luxury items with gilded stems and circlets. Wreaths from Pella (M28) and Thasos (M41) are slightly less luxurious but also likely to date from about this time. The number of wreaths increased even further during the final decades the fourth century, reflecting the wealth flowing to Macedonia as the veterans returned[40] and the locations cover a broad area (**fig. 2.1**). Many are of type 2 (M1, T2X2, T2X6, T2X53-54, M16-20, M23-26, M29, M39), but ivy

[37] For dating, see Kyriakou 2008, 273-274.
[38] Romiopoulou and Touratsoglou 1998, 115 and 130.
[39] Besios 1988, 212 and Besios 2010, 286 and 290-291.
[40] Themelis and Touratsoglou 1997, 222-3 and Zimi 2011, 21, who notes the widespread use of precious vessels at this time.



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wreaths of type 3 appear including M14, M37 and M39, and also those of type 6 with painted flowers (M4, M14, M23-M25, M36, M38, T2X18, T2X64, T2X74B and T2X13). Further wreaths with flowers which may be type 6 (not seen) were found at Amphipolis (T2X39) and Pydna (T2X76 and T2X77). Many type 6 wreaths have painted flowers in addition to leaves and berries; there are a few items (including T2X18 and T2X64) which appear to have consisted only of flowers. Lead begins to be used on the circlets, to support the greater weight of the rosettes, berries and flowers, possibly concealed inside a padded roll.

Fragments of several gilded wreaths were found in the pyre above Tomb II in the Great Tumulus at Vergina (Aigai) (T2X88), which many scholars believe to that of King Philip II (died 336) although others claim that it is that of Philip Arrhidaios (died 317)[41]. The gilded wreath fragments, T2X88, have been arranged in the museum display in two groups, but there appear to be at least four wreaths, representing ivy, oak and myrtle, since there are terracotta acorns, myrtle berries and ivy rosettes, leaves and berries (**figs. 2.10 and 2.11**). The large number of ivy berries suggests there was more than one such wreath. It is not clear which wreath was worn during the cremation, though there are indications that it was the gold oak wreath[42], but the gilded wreaths were clearly burnt as the fragments of bone circlet have been whitened by high temperature. The ivy wreaths appear to be type 3 and the myrtle type 2, but they have not been examined.

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[41] Kottaridi 2011a, 42, believes firmly that it is Philip's; see also Ignatiadou 2002. Others have expressed the contrary view, including Borza and Palagia 2007, who nevertheless accept that it is a royal grave which they propose is that of Philip Arrhidaios. Touratsoglou and Themelis doubt implicitly that it is Philip's. For the similarity of some of the items in Derveni B to Vergina II, see Themelis and Touratsoglou 1997, 183 and 200 including a silver askos, very like one at Vergina (item B3). There has been no suggestion that the Derveni graves should be dated any earlier than about 320, and the excavators put it later still.

[42] Kottaridi 2001, 367.

*Fig. 2.10 Fragments of copper, gilded myrtle berries, acorns and fragments of bone circlet as well as fragments of bone (from the skull?) T2X88. ©Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports.* ***OMITTED from internet version***

*Fig. 2.11 Ivy berries, fragments of stem etc T2X88. ©Archaeological Museum of Vergina, Hellenic Ministry of Culture and Sports.* ***Omitted from internet version***

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The graves at Aineia produced 12 finely made wreaths which are interesting for many reasons, one of which is that they are all very similar, though grave III, the earliest, predates the last (IV and I) by about 20 years[43]. Possible explanations for the similarity between the wreaths in the three graves and the pyres will be discussed in section 4.9. Cist grave III, which held the body of a mature adult woman, is an example of a grave with multiple (six) wreaths, which are almost identical (M5-10)[44], the best preserved of which are M5 and M9 (**figs. 2.12 and 7.2**). Another, M8, was found around the neck of a bronze urn containing the ashes of the dead woman[45]; above the grave were the remains of the funeral pyre, with M10. Some of the berries have a coloured bole under the gold, identical to berries from Derveni (M16 and M18) (**figs. 2.13, 2.19 and M18.7**), and similar also to some of the berries from M42 (**fig. 7.52**). The bole on all these berries was probably originally yellow and was transformed to red (hematite) by the effect of heat (see Chapter 6 page 242). Mound A at Aineia contained a further cist grave, II, which held M11 and the remains of a woman who was pregnant or had just given birth[46] and had fine wall-paintings (**figs. 2.35 and 2.36**). The pyre from Aineia Mound B contained more gilded wreaths and the remains of a man, and there were yet further wreaths in grave I, Mound A[47] (M13 and M12). Some of the berries on at least one of the wreaths from Pyre B (M13) have a coloured bole beneath the gold (**fig. 2.14**).

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[43] Vokotopoulou 1990, 133 puts grave III at the beginning of the third quarter and graves IV and I at the end (Vokotopoulou 1990, 133). The last two are believed to be contemporary with Derveni A and B by Touratsoglou (2002, 245-247).

[44] For the human remains: Musgrave 1990b (in Vokotopoulou 1990, 302). All the wreaths from Aineia and Derveni are discussed in Jeffreys 2019b.

[45] Vokotopoulou 1990, 52.

[46] Musgrave 1990b.

[47] Vokotopoulou 1990, 78-81.

*Fig. 2.12 Wreath from Aineia, M9 (MTh.7574). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



*Fig. 2.13 Berry from M10 (Aineia grave III, pyre). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*

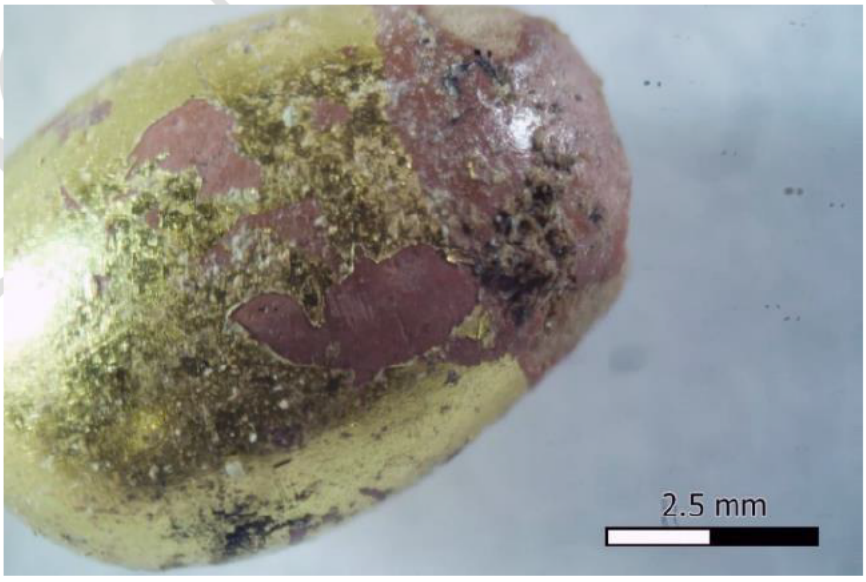


*Fig. 2.14 Coloured berries from pyre B Aineia IV (M13) The blue is almost certainly discolouration from copper corrosion.*
*© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



Type 2 wreaths were also found at Pella (M28) (**fig. M28.1**) and Thasos (M41) (**fig. M41.1**) which cannot be easily dated, since M28 was found in fill, though with a pelike (discussed in chapter 9, page 350) and the second without pottery, but from the rounded shape of the leaves both should be dated to about the 330s. A gilded silver oak wreath with a flat back was found in Pydna, T2X80, and is thought to have decorated the lid of a wooden box containing the cremated remains of a man (**fig. 2.15**)[48].

*Fig. 2.15 (Modern) box with T2X80 from Pydna.*
*From Descamps-Lequime 2011, 538.*



[48] Besios 1985, 54; Grammenos 2007, 119; Descamps-Lequime 2011, 538. The modern rectangular box does not however match the curvature of the wreath, and the lid may have been a different shape.

The cist graves at Derveni, ancient Lete[49], contained at least 16 wreaths in five graves. Graves A, B, Δ and E held multiple wreaths which have many similarities to those from Aineia. All are examples of type 2, and although most represent myrtle, there is an oak wreath amongst M16 (grave A) and possibly an olive wreath in M19 (grave E). The three or four wreaths from Derveni Δ (M18) are similar to those from A (M16), and some of the berries labelled B112/ Δ20 could be from either B or Δ. These three graves are believed to be of approximately the same date[50]; B is dated to 'around 320' by Ignatiadou and 'after 320' by Touratsoglou[51], but given the similarity of the berries from B/Δ and A to those from M10, the earlier date is preferable, which is also supported by the shape of the myrtle leaves from graves A (**fig. M16.8**) and Δ (**fig. M18.12**). Grave E, a female grave, is thought by Touratsoglou to be the earliest in the sequence (dated to 330-320[52]). Derveni B contained the cremated remains of two people, a man aged 35-50 and a younger woman[53], as well as at least three gilded wreaths (M17), one of which is smaller than the others (**figs. M17.1 and 2.17**), and one in the eponymous Crater[54]. Grave A held a male and at least six gilded wreaths of different sizes (M16), five of which were found in the pyre area, including one representing oak which has signs of melting (**fig. 2.20**). The small leaves have chased veins and some of the berries have a red or yellowish bole, although the straight edges of the gold suggest that the colour was intended to be partially visible (**fig. 2.18**); further berries and acorns with a coating (now red) came from the pyre (**figs. 2.19 and 2.21**). Grave Z contained only one wreath (M20) and a female. The workmanship on the wreaths from grave A, in particular, is of high quality, as can be seen in the gilded stems (**fig. 7.49**) and the careful design of the oak leaves.

[49] Tzanavari 2017, 193.
[50] Themelis and Touratsoglou 1997, 221.
[51] Ignatiadou 2017, 261; Touratsoglou 1998, 245.
[52] Touratsoglou 1998, 247.
[53] Musgrave 1990a, 310-311.
[54] Themelis and Touratsoglou 1997, 62.

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*Fig. 2.17 Circlets from M17 (Derveni B, B110) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



*Fig. 2.18 Oval berries with straight line in gold M16 (Derveni A, A58) © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*




*Fig. 2.19 Red-coated berry from M16 (Derveni A, A117γ) (x6.4). © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*



*Fig. 2.20 Oak and myrtle leaves from M16 (Derveni A). © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*

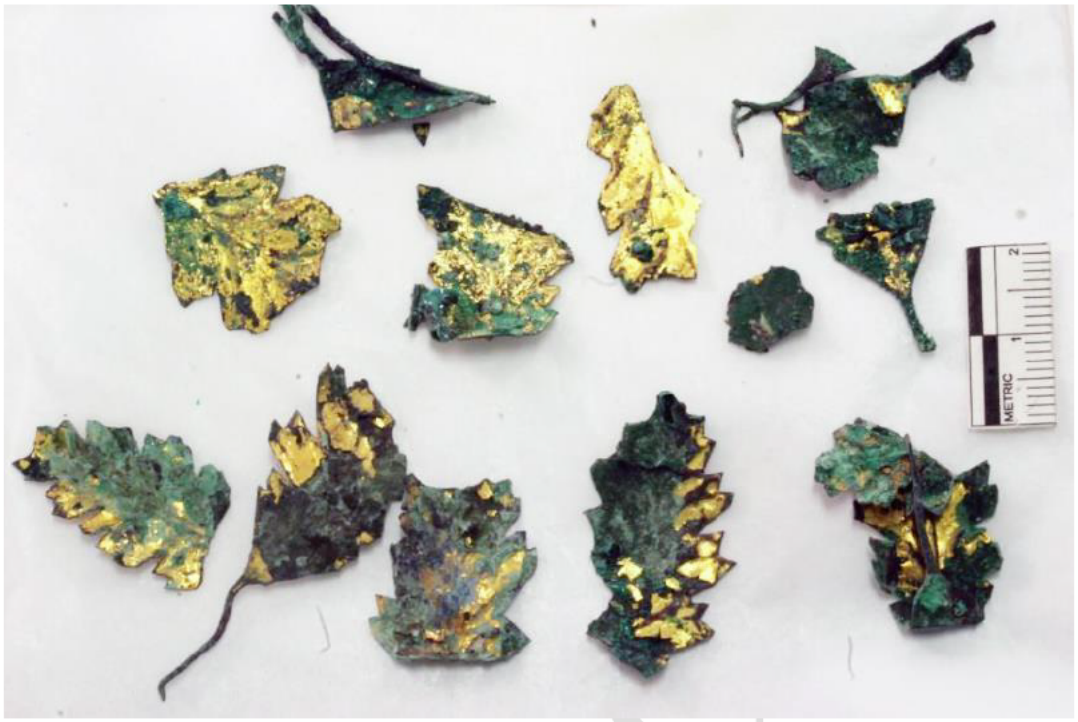



*Fig. 2.21 Acorns from M16 (Derveni A, A102δ). © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*



Another spectacular wreath, M37, of type 3, was found in the Macedonian Tomb at Potidaia, dated by the excavator to the last 15 years of the fourth century[55], which has ivy leaves and small rosettes, as well as terracotta grapes, ivy berries and two insects, which appear to be a grasshopper and a cicada (**fig. 2.22**). It is one of the earliest gilded ivy wreaths, and has a lead

[55] Sismanidis 1997a, 29.

as well as a wooden circlet, to support the extra weight of the grapes and rosettes. It is similar to SI 1 but believed to pre-date it (see chapter 5, page 158).

*Fig. 2.22 M 37 (Potidaia) with the grasshopper (on the left), ivy flowers, grapes, ivy berries and part of a leaf. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



A further grave with multiple wreaths was found at Sedes, cist grave Γ, thought to be that of a young woman and containing four gilded wreaths (M39), dated to after 320[56]. At least one represents myrtle (type 2) and another ivy (type 3). There are also remains of a delicate ivory circlet (no type), with traces of Tyrian purple (**fig. 2.23**) as well as a tiny rosette mounted on a stem, which was probably bent around a wooden or lead circlet (**fig. M39.9**). Copper petals would have come from a different wreath (**fig. M39.8**) and spirals once supported berries. Large rosettes fit onto long stems (**fig. 2.24**), which were wrapped around a wooden circlet, and there are also painted flowers, so at least one wreath is type 6 (**fig. 2.25**). These were clearly wreaths for a member of the elite.

*Fig. 2.23 Fragments of ivory circlet with Tyrian purple on M39 (Sedes, MTh 15370). © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*



[56] Touratsoglou 1998, 246.

*Fig. 2.24 Rosettes on thick stems M39 (Sedes, MTh5535). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



*Fig. 2.25 Painted flowers from M39 (Sedes MTh28253). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*

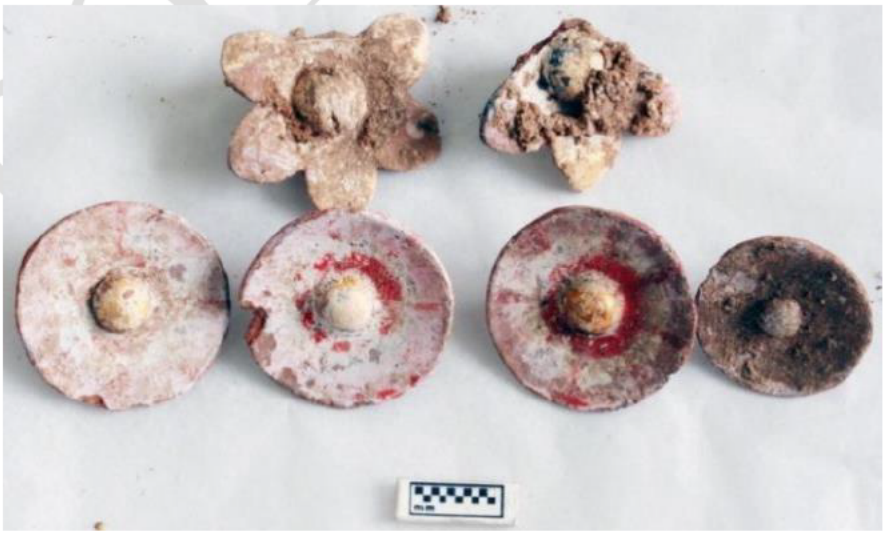



Flowers became increasingly common in the last quarter of the fourth century, and are different on every wreath, suggesting they were made locally. A wreaths, or wreaths, with scant remains of leaves, and several painted and gilded flowers, as well as pointed berries or flower buds, were found in a Macedonian Tomb at Pyrgoi, Eordaia (M38)[57] with the remains of three individuals: a man aged 35-50, a woman aged over 50 and a child of one or two. The gilded flowers with six petals are probably myrtle and the painted round flowers may represent *Lychnis*

[57] Karamitrou-Mentessidi 1998, 35.

*coronea*[58] (**fig. 2.26**). The Macedonian Tomb at Agios Athanasios contained the remains of a myrtle wreath (M1), as well as what appears to be an almond (**fig. M1.7**), and five pointed gilded objects similar to those from M38 – perhaps acorns or flower buds. A pit grave at Ano Komi, in Eordaia, contained the remains of a young woman, buried with a myrtle wreath (M4) which had oval berries, painted red at one end so the colour could be seen (**fig. 2.27**). Grave 1467 at Akanthos held the remains of a young inhumed male buried in a lekane[59] with five wreaths (M14), one of which was ivy, and which probably also had the gilded clay cicada found in the same grave. Four- and six-petalled gilded flowers formed part of one of the wreaths and there are also pink and white marguerite-like flowers (**fig. 2.28**). Cinnabar was used for the red, and the same pigment, mixed with white, appears to have been used to make the pink[60]. At Pella, painted clay flowers were found in a cist grave (T2X64)[61] which appear to have made a wreath of type 6 composed only of flowers. A collection of similar flowers, which originally had copper or bronze stems, from Amphipolis (T2X18) would have been used in the same way – perhaps as depicted on *protomai* from Amphipolis (on view in Kavala AM and at Pella (**fig. 7.8)**).

*Fig. 2.26 Painted flowers from M38 (Pyrgoi). © Hellenic Ministry of Culture and Sports.*



[58] For the identification of the flowers, see Chapter 7, pages 271-274.
[59] Kaltsas 1998, 83-85.
[60] See chapter 6, page 246.
[61] Karamanoli-Siganidou 1984, 261.

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*Fig. 2.27 Three berries from M4 (Ano Komi). © Hellenic Ministry of Culture and Sports.*



*Fig. 2.28 Flowers from M14 (Akanthos, I.49.429) © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*





The cist graves at Nikisiani held some particularly interesting wreaths, all apparently using colour, raising the question of whether the individuals may have been members of one particular family or religious group. Graves A, B and Γ (c.315) are thought to be male burials, whereas Grave Δ (c.305) held a young girl. Grave A had two wreaths (types 6 and 2) (M23)[62], grave B three (M24)[63], Γ three (M26)[64] and Δ three (M25). A 'jewel' was found with M23, made of rock crystal or glass; it is not clear whether it was once part of the wreath, but as there is no visible means of attaching the bronze support, it is more likely to have been part of another item, such as a sceptre[65] (**fig. M23.4**). Some of the wood and bone circlets now have a blue residue found to be azurite, but which may be corrosion (M24 and M25) or red, at least some

[62] Lazaridis *et al.* 1992, 22-26; Touratsoglou 1998, 248.
[63] Lazaridis *et al.* 1992, 25-26 ; Touratsoglou 1998, 250.
[64] Lazaridis *et al.* 1992, 38 and 18; Touratsoglou 1998, 250.
[65] Such as the late third/early second century sceptre found in Canosa now on display in MArTA inv. 22439.

of which appears to have been intended to be seen (M26) (**figs. 2.29-31 and 6.25**). Some of the flowers have blue and red paint (**fig. 7.7**), and several of the berries were painted to show the colours (**fig. 2.32).** The red on the berries from M25 and the centre of one of the flowers is cinnabar, whereas the red on the circlet M26 is hematite, a less expensive pigment which was nevertheless intended to be seen as the wooden circlets were never gilded. The green colour found on some of the berries is almost certainly azurite, which dehydrates to green malachite with age.

*Fig. 2.29 Fragments of circlets with blue colour (M24, Nikisiani Δ388, Archaeological Museum of Kavala)*
*© Hellenic Ministry of Culture and Sports/Ephorate of Kavala and Thasos.*




*Fig. 2.30 Circlet with blue colour (M25 Nikisiani Δ366, Archaeological Museum of Kavala)*
*© Ministry of Culture and Sports/Ephorate of Kavala and Thasos.*




*Fig. 2.31 Red on circlet from M24 (Nikisiani Δ388, Archaeological Museum of Kavala)*
*© Ministry of Culture and Sports/Ephorate of Kavala and Thasos.*



*Fig. 2.32 Berries from M25 with blue and red paint (Nikisiani Δ, Δ365, Archaeological Museum of Kavala). ©Ministry of Culture and Sports/Ephorate of Kavala and Thasos.*



More coloured flowers were found in the Macedonian Tomb at Phoinikas (M36) dated to the last quarter of the fourth century or beginning of the third[66]. The tomb, though robbed, contained at least one gilded wreath on base A, which supported a kline. A subsequent burial on bench B held an inhumation, accompanied by two gilded wreaths with clay flowers, possibly representing lily, rose and *Lychnis coronea*[67] (**fig. 2.33**). Analysis showed that there was cinnabar on the flowers (details in Chapter 6 section 6.4.5).

*Fig. 2.33 Flowers from M36 (Phoinikas Macedonian Tomb, MTh17442). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*




Many further wreaths from this period have been found at sites including Agrosykia, Kassandreia, Katerini, Lakkoma, Mesimeri, Pydna, Sourouti and Thermi which based on

[66] Tsimbidou-Avloniti 2005, 45.

[67] See Chapter 7, pages 273 and 298.

publications appear to be type 2. The only wreath which appears to be significantly different from those discussed above was found in Vergina, in the 'Tomb of the Prince' (T2X89). It is much larger than would fit a human head, and may have been intended for a helmet, or decorated a statue, or perhaps even a shield (type 7).

### *2.5 Third and second centuries*

The number of wreaths found in contexts dated after the first quarter of the the third century reduces significantly, reflecting the economic decline in Macedonia[68]. Karyochori in Eordaia produced one wreath in a pit grave, dated to the first quarter of the third century (M21). It has coloured flowers, perhaps roses, similar to M23, as well as fragments of leaves (**fig. 2.34**). A wreath from Aiani (M3) probably dates to the third century, since it is similar to SCG22 and 23 from Demetrias, and is a rare example of a type 4 wreath from Macedonia.



*Fig. 2.34 Flowers from M21(Karyochori). © Ministry of Culture and Sports.*

Further wreaths from this period include T2X47, T2X69 and T2X91.

## 3. Contexts and grave goods

All the gilded wreaths have been found in cemeteries[69].

### *3.1 Types of graves and burial practices*

The wreaths are mainly from cist graves, including Derveni (M16-M20), Lakkoma (T2X53-4),

[68] See note 736 for the economic decline after 274.

[69] One *gold* wreath which accompanied a burial was found in surroundings of the sanctuary of Eukleia in Aigai (Kyriakou 2014, 5-6).

Nikisiani (M23-M26), Phoinikas (M30-35), Pella (M29), Thasos (M40 and 41) and Vergina/Aigai (M42-43) as well as a few in pit (M3, M5, M21, M22 and M44) or tiled graves (M27). Many were found in monumental tombs, beginning with 'Royal Tomb A' at Aiani[70] (M2), followed by Macedonian Tombs at Pyrgoi (M38), Agios Athanasios (M1), Phoinikas (M36), Potidaia (M37), Vergina (T2X88 and 89), Katerini (T2X51), and Mesimeri (T2X55). Indeed, it is difficult to find an important grave which did *not* contain at least one gilded wreath. It is clear from the type of grave used, as well as the other goods such as silver objects and clear glass (details in table 2.1), that gilded wreaths were buried with members of the top echelons of society as well as, during the last quarter of the fourth century and the third, some of the slightly less well off.

More wreaths were found with inhumations (54) than cremations (37), though still a high proportion with cremations compared with other regions. Several were found in the pyre area itself, including at Vergina (T2X88, M42-4), Derveni (M16 and 17) and Aineia (M10 and M13). The structure of the pyres at Derveni was studied by Themelis and Touratsoglou who found that above grave B there was an elaborate wooden structure, with posts and columns, which they suggest recalls the chariot used to transport the body of Alexander the Great[71]. Enclosed wooden structures of this kind, also found at Vergina Stenomakri Toumba A and B and Aineia Mound B, would have produced a very high temperature[72]. At Stenomakri Toumba Γ the pyre is thought to have consisted of an open wooden structure, which may explain why the material (M43) is in better condition than that from graves B and A, since the temperature would have been lower [73]. It is not always clear which gilded wreath (if any) was worn by the deceased on the pyre, but several show signs of burning including T2X88, M33A, M34, M16 and M42. Cremations had a particular significance in Macedonia. Andronikos first put forward the idea

[70] Karamitrou-Mentessidi 2008, 48.
[71] Themelis and Touratsoglou 1997, 207.
[72] Stenomakri Toumba: Kyriakou 2008, 249; Mound B Aineia: Vokotopoulou 1990, 133.
[73] Kyriakou 2008, 274-5.



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that the burial in the Great Tumulus, Tomb II, at Vergina/Aigai imitated that of the Homeric heroes, whose white bones were carefully washed after the cremation and placed in a golden urn, as recounted in the *Odyssey* (24.40)[74], and this idea has been developed by Kottaridi, who emphasises the purifying effect of fire on the pollution of death[75].

In Macedonia, unlike other regions, there appears to have been a preponderance of use with males: of those whose gender can be determined with relative certainty, at least 37 were found with males as against 26 with females. The identification as male or female is based on studies of the bones if available or if not, diagnostic grave goods such as earrings for women and weapons for men. Some were adolescents, and in one case (T2X14) a woman was buried with four children.

Some wreaths are found in groups of graves, including those in four cist graves in the eastern cemetery at Amphipolis, thought to be those of an important local family; all had wreaths, and grave I also had painted walls, similar to those at Aineia II, and contained the inhumed body of a young girl, aged around 11, as well as T2X13[76]. Grave 2 held the bodies of a woman and four children, one of whom was a neonate, as well as T2X14, and grave 3 held older male and a flower wreath (T2X15); grave 4 also held a gilded wreath (T2X16). The group of cist graves at Derveni containing M16-20 and those at Phoinikas with M30-M36 may also have held members of the same family. Another group of graves, at Pella (with M29, T2X62A, T2X61, T2X62 and T2X63), may have been those of initiates, discussed below in section 4.8, and the group of graves at Nikisiani with M23-M26, each with coloured items, must have contained burials which were in some way associated. At Pydna Methoni, the graves which held T2X70-72 seem to have formed part of a family group[77].

[74] Andronikos 1984, 170.
[75] Kottaridi 2001, in particular 369.
[76] Malama 2003, 123 and 2007, 735-736.
[77] Besios 1990b, 83.

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Most graves contained only one deceased, but burials of what may be a couple are found at Derveni (M17), Aineia (M13), Karyochori (M21), Potidaia (M37), Thasos (M41) and Stenomakri Toumba, Vergina (M43). The Macedonian Tomb at Phoinikas with M36 contained no less than 10 individuals[78]. At least 23 graves contained multiple wreaths summarised in table 2.2 which will be discussed in section 4.9.

### *3.2 Grave goods*

The cremated human remains of both sexes were placed in fine containers often also containing a gilded wreath including M34 (bronze kados), M8 (bronze kalpis), M16 (bronze volute crater), M17 (the Derveni Crater), T2X74 (bronze crater with a decoration of maenads on an elaborate stand [79]), T2X80 (box with gilded Dionysiac decoration) and T2X88 (gold larnax). Several wreaths were found in hydriai, including T2X32A and T2X78 in addition to M8. These vessels were also used for the ritual cleansing of the deceased[80] and are seen as referring to the cult of Demeter, as well as to the nuptial bath[81], but a further reason for placing a hydria in a grave may have been to provide water for the dead person to drink, since the dead are always thirsty in Hades[82]. Hydriai were primarily associated with women, who collected water and tended the dead.

There were fewer funeral goods with the earliest wreaths (types 1 and 2, discussed in sections 2.1 and 2.2 above), although those which were found tend to be of high quality, including those from the largely robbed graves at Stenomakri Toumba (Vergina), and those from cist graves 2,3 and 4 at Phoinikas.

Most of the gilded wreaths from the second half of the fourth century were accompanied by luxury items, which increased in number in the last quarter. Silver vessels are mainly restricted

[78] Musgrave 2007.
[79] Besios 1988, 212; Vokotopoulou 1994, 189; Ignatiadou 2014, 49.
[80] Reeder 1995, 220.
[81] Tzanavari 2017, 195.
[82] Reeder 1995, 220.



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to the final quarter, although there are a few from the third quarter of the century[83]. Many male graves contained symposium vessels and other symposium items including those with M16 and M17 (silver and bronze vessels), M24 (bronze strainer and ladle), M43, as well as T2X49, T2X53, T2X74, T2X78, T2X88 and T2X89. Several female graves contained silver vessels (M4[84], M20, M25, T2X64 and M39), and M5-10 were accompanied by a glass calyx-skyphos and gilt clay kotyle. Some fine pottery was found with both women and men including the remains of at least 15 white ground hydriai in the pyre with M43, and imported Attic vessels with several wreaths including M5-10, M16 and M17, M37 and M39[85], as well as T2X33, T2X53, M22, T2X64 and T2X67-8. Clay drinking vessels (skyphoi) are found in some female graves including M4, T2X13, T2X63 and T2X66. The latest research by Kotitsa indicates that several apparently plain, black glaze vessels, imported from Attica, including many from Derveni A (M16) and B (M17), Aineia III (M5-10) and Pydna, as well as some from Stenomakri Toumba Γ (Vergina) (M43), and the female grave at Sedes (M39), were originally tin-coated, in order to make them even more luxurious[86]. Another sign of luxury can be seen in the precious clear glass kline decorations which accompanied the wreaths from many sites; some of these graves also had clear glass vessels and other objects, increasing in number in the last quarter of the fourth century[87].

The men were often buried with weapons as well as wreaths, including T2X88[88], and several with the remains of horse trappings, such as M42, M43 and M44 (Vergina[89]), weapons were

[83] Touloumtzidou 2011, 691 and Zimi 2011, Chapter 4.

[84] Touloumtzidou 2011, 699 and 678.

[85] Stenomakri with M43:Kyriakou 2008, 164; Aineia with M5-10: Vokotopoulou 1990, 56 (inv. 7550), 57 (inv.7540 and 7541), 58 (inv.7545); Derveni with M16 and M17: Themelis and Touratsoglou 1997, 212; Sedes with M39:Kotzias 1937, 890.

[86] Derveni A and B: Kotitsa 2016, 697 and Appendix II; all sites: Kotitsa 2016, Table and Kotitsa 2012, 117; Aineia III:Kotitsa and Nazlis 2010 .

[87] Aineia: Ignatiadou 2013, 365-366; Vergina, Great Tumulus, Tomb II: Ignatiadou 2013, 368-369; Derveni A, B, Δ, H: Ignatiadou 2013, 371-372; Phoinikas Macedonian Tomb: Ignatiadou 2013, 375; Pydna:Ignatiadou 2013, 376-382; Katerini A: Ignatiadou 2013, 376; Nikisiani Γ: Ignatiadou 2013, 383; Olynthos (T2X56): Ignatiadou 2013, 383; Pella: Ignatiadou 2013, 384-387; Potidaia: Ignatiadou 2013, 387 ; Pyrgoi: Ignatiadou 2013, 387; Sedes: Ignatiadou 2013, 388.

[88] Kottaridi 2011a.

[89] Kyriakou 2008, 274 and 262.



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also found at Agios Athanasios (M1), Derveni A and B (M16 and M17), Phoinikas (M36), and the men in the graves in Pydna which held T2X73 and T2X70. The males were occasionally accompanied by a necklace with large gilded beads[90] (**fig. M43.5**).

Many graves included items of possible religious significance, including the gilded silver diadem found with T2X88[91], Dionysiac appliques on klinai (e.g. M37 and T2X72) and on the box found with T2X80, the Derveni Crater (M17), the Orphic papyrus (M16), gilded silver ivy leaves at Aiani (M2) and the ivy wreaths themselves (including M14, M37, M39, T2X27, T2X32A, T2X73 (gold wreath), T2X54 and T2X88). There were also many ritual vessels including the phialai found with M24 (male), M21 (female) and T2X82 (female). The grave with T2X82, suggested by Ignatiadou to be that of a priestess, at Makrygialos, Pydna, held rare red glass, as well as phialai and a glass seal depicting a female figure (Aphrodite) spinning[92]. Knives were found in the male graves T2X15 and T2X62A, possibly indicating priests.

Several wreaths were found in graves with craters; Ignatiadou proposes that these burials (including the men with M17 and M16, T2X74 and M42-44, whose tumulus was marked with a marble volute crater at Stenomakri Toumba) have an Orphic-Pythagorean character[93]. Glass gaming sets were found in two graves from Pydna and in Derveni B which the deceased may possibly have used for divination[94]: at Pydna, T2X73 was found with such a set and a gold ivy wreath, and a further gaming set was in a grave which held wreaths T2X70[95]. M17 was found with a glass gaming set and a box of medical equipment making it certain that the man buried here was a healer[96]. The iron rings with M14 and T2X26 may indicate an initiate of the Kabeiroi[97], but there are other possible explanations for these (valuable) items.

[90] Aineia, Mound B, Vokotopoulou 1997,81.
[91] The diadem is the marker of a high priest and ruler – Kottaridi 2002, 80.
[92] Ignatiadou 2012a.
[93] Ignatiadou 2014, 49.
[94] For the possible use of glass gaming pieces by healers, see Ignatiadou 2015, 112.
[95] Besios 1990b, 71.
[96] Ignatiadou 2017, 262.
[97] Bremmer 2014, 29. Pliny refers to iron rings coated with gold as souvenirs of such initiation (NH33.23).

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The women were often buried with valuable jewellery, including M40, which was with a gold diadem[98]. At Phoinikas the woman in grave 5 with M30-M33 was accompanied by five gold bow-fibulae as well as fine fabrics (discussed above), and the girl in grave 3 with M34 by fine gold jewellery as well as a peplos sewn with gilded clay discs with an eight-pointed star. In the kalpis with M8 the excavator found gold jewellery as well as the bones, and M4, M19-21, M25, T2X63 and T2X64 were also accompanied by gold jewellery.

Aineia II, containing M11, was decorated with valuable offerings of a different kind - wall-paintings depicting the *gynaikeion*, showing various objects hanging on the wall, including a green-coloured wreath, which Vokotopoulou suggests represents a gilded wreath but may simply indicate a natural one (**fig. 2.35**), and a yellow or gold wreath which looks as if it is composed of small flowers (**fig. 2.36**)[99]. Many of the objects depicted have multiple symbolism, such as the mirror and the dove, referring to marriage and Aphrodite, and are thought to depict the personal possessions of the deceased[100]; some if not all the paintings show objects that were also deposited in the tomb[101]. The ball with the yellow wreaths may show the passage from childhood to adulthood[102].

*Fig. 2.35 Painted green wreath from Aineia grave II. ©Hellenic Ministry of Culture and Sports /Ephorate of the Periphery of Thessaloniki/Archaeological Resources Fund. From Vokotopoulou 1990, pl.1.*



[98] Sgourou and Agelarakis 2001, 329 and 332-3.
[99] Vokotopoulou 1990, 44.
[100] Tzanavari 2017, 195, referring to the similar depictions on the walls of a cist grave at Derveni.
[101] Brecoulaki 2006, 335.
[102] Eisenfeld 2016, 12.



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*Fig. 2.36 Painted fillet, yellow or gold wreath, and protome from Aineia, grave II. ©Hellenic Ministry of Culture and Sports/Ephorate of the Periphery of Thessaloniki/Archaeological Resources Fund. From Vokotopoulou 1997, pl.3.*



Most of these grave goods indicate great wealth, but some of the wreaths at Amphipolis, Akanthos and Pella were found in graves furnished only with skyphoi and strigils (e.g. T2X22, T2X28, T2X33, T2X62, T2X65), which seem have been for those of more moderate means.

## 4. General issues

### *4.1 Origins*

The three gilded wreaths of type 1 (M2, M27 and M39) pre-date their counterparts in Rhodes by at least twenty years. Wreaths of type 2 are found in considerable numbers in Macedonia, and also pre-date any others of this type. The origin of both therefore seems to be in Macedonia. Ivy wreaths (type 3) may well have originated in Macedonia also, although they are not found in great numbers, so the type seems to have been developed elsewhere, in particular in Southern Italy. Wreaths with large flowers (type 6), of which there are at least ten in Macedonia, and only one elsewhere (T3X21) may well have originated there. The wider questions of whence the artistic techniques and cultural influences emanated will be considered in Chapter 8.

### *4.2 Workshops*

It is difficult to say what type of craftsman would have produced gilded wreaths – metalworker, jeweller or potter? - but in the light of the range of materials and skills involved, it seems most likely that the wreath workshops were composed of specialists in gilding, metalwork and working in clay. Although there are distinct similarities between some of the silver items found

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in grave Δ at Nikisiani and those in Derveni Z, leading Themelis to suggest a common metallurgical workshop for these items, the wreaths from the same graves (M26 and M20) are quite different[103]: had the wreaths been made by the metal-workers who made the silver items, we might have expected more similarity in the wreaths.

There are differences between wreaths found in different places, ranging from subtle (as in the shape of petals) to marked (such as the use of colour), despite the basic design and materials being the same. Similarities between some of the features found on wreaths at a considerable distance from each other such as the coloured berries at Ano Komi (M4) and Nikisiani (M22-26) are more likely to be due to fashions being passed on by itinerant craftsman or word of mouth than to their being the products of a single workshop. The wreaths from all the Nikisiani graves are unusual and similar to each other, and suggest a local workshop. The berries from graves A, B and Δ at Derveni (M16-18) have a coloured coating like that found at Aineia (M10 and 13). These places are relatively close (about 30km), so here we may have a common workshop. A coloured coating was also used for berries in Stenomakri Toumb at Vergina/Aigai (M42 and M43), although these are believed to be earlier than some of those from Aineia and all of those from Derveni, and it is some 60km away, so the similarities with M42 and M43 are more likely to be due to an itinerant craftsman or word of mouth. The wreaths from these three sites are so refined and so beautifully made that if any were made in 'court' workshops, these are good candidates. The wreaths from Stenomakri Toumba Γ (M43), Derveni A (M16) and Nikisiani Γ (M26), although all representing the relatively rare oak, are products of different workshops, as can be seen by the different way of rendering the cups of the acorns and the leaves[104].

[103] Themelis 2000, 512. Comparison with the wreaths from Sevasti, Toumba Pappa (T2X74) would also be useful, since Themelis also found distinct similarities between the silver from this grave and that from Nikisiani Δ (p.511).
[104] See pages 295 (acorns) and 285 (leaves).



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An ivy wreath of type 3, M37, bears an apparent resemblance to SI 1, but on examination there are many differences[105], and the Macedonian wreath is dated at least 20 years earlier than the South Italian, so they must be products of different workshops. M38 has pointed buds similar to those found on a South Italian wreath (SI 20), another rare feature, but as the Macedonian wreath is about a century earlier than the South Italian, the likeness must be a coincidence.

### *4.3 Colour*

A feature found almost exclusively in Macedonia is the use of red and blue on berries (including M4 and M25) (**figs M4.2 and 2.32**) and and of red on circlets at Nikisiani (M24, M25) (**figs. 6.25 and 2.31**). Red and blue are also found on many flowers in Macedonia, but much more rarely elsewhere. The red on many of the berries was probably transformed from yellow ochre through the effect of heat from the pyre (e.g. M10, M16, M18 and M42). Cinnabar and Tyrian purple were used where the red was intended to be visible, and hematite or yellow ochre was mainly used as a bole. The red and blue on M25 were not intended to imitate the dark purplish colour of myrtle berries since both were used on seedpods representing the same plant (**fig. 2.32**) and it would seem therefore that these colours were selected for decorative and perhaps religious reasons. The pale yellow/whitish colour on berries and circlets was almost certainly used for practical reasons - in case a patch was missed when gilding, and possibly to enhance the colour of the gold.

Red, blue and yellow appear on diadems or wreaths depicted on the walls of tombs, as at Pydna Korinos[106] (**fig. 2.37**). Red was often the colour for the fillets depicted on tomb walls and white ground vases, which have an exclusively funerary association[107]. There are dangers of over-interpretation in this, but red as the colour of blood can be regarded as symbolising life and

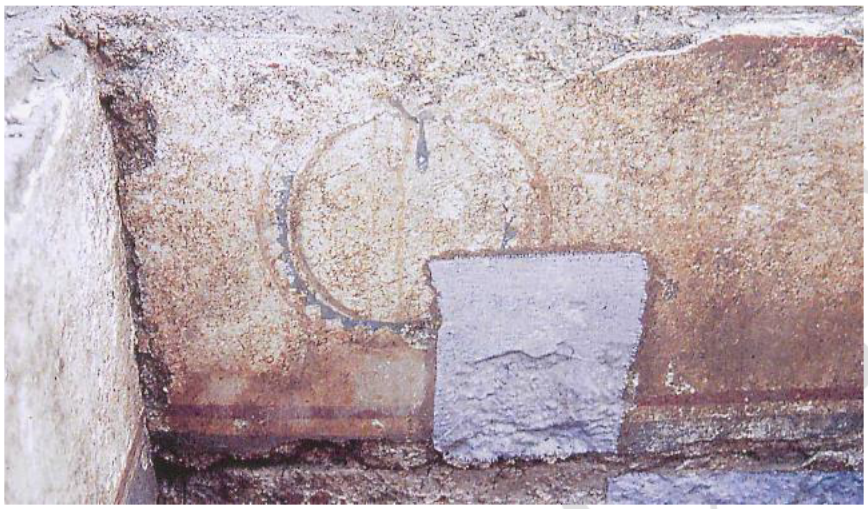
[105] See pages 158-159.
[106] Brecoulaki 2006, 241, who saw the colours on the diadems and described them as red and blue.
[107] Tzanavari 2017, 195.



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fertility and blue the sky and the gods[108]; use of the two together could therefore symbolise life after death, indicating the hope that the deceased would have a new life in the Other World.

*Fig. 2.37 Diadem on wall of tomb from Korinos, Mound B, 3.2001*
*From Brecoulaki 2006, pl.84, with kind permission.*



### *4.4 Social strata using wreaths*

In the first 75 years of the fourth century, the wreaths are clearly those of the elite; many of those studied have gilded stems and circlets and were found in graves with goods indicating great wealth. In the final quarter of the century, it appears that wreaths were widely used in a prosperous community (making up 50 or so of those studied) and may have extended beyond the elite to more ordinary people, as for example at Akanthos, Pella and Amphipolis, which all had large cemeteries, although the wreaths also continued to be buried with the elite. It is difficult to gauge exactly how many people were buried with wreaths, but we get some idea by looking at Akanthos where 19 graves of those excavated from the Archaic, Classical and Hellenistic periods in 1979 are estimated to have had gilded wreaths: about 10% of those with offerings, and around 2% of the total [109]. At Amphipolis, 32 wreaths were found in the 1956 excavations out of a total of 128 graves (over 20%)[110]. The true figure may be even higher: in

[108] Red: see for example Blakolmer 2017, 5-6. Blue: Ferruzza 2016, 212.
[109] Kaltsas 1998, 21.
[110] Romiopoulou 2013, 242.



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Pella one of the excavators comments that gilded wreaths were found in almost all graves in the eastern cemetery[111], and the excavators in Veroia refer to 'many' gilded wreaths being found in the rock-cut chamber tombs[112], suggesting that more wreaths were found at these sites than are catalogued in the publications.

### *4.5 Use in life?*

Were any of these wreaths worn in life? The burial of so many, very similar, wreaths in graves at the same site, as at Aineia and Phoinikas, raises some interesting questions. The most plausible explanation is that *all* the wreaths in graves III, II and I at Aineia were made at about the same time during the lifetime of the first person to be buried (i.e. the woman in grave III), rather than being made at the time of death, and thus, possibly, used in life. The four wreaths found with the older woman in Phoinikas cist grave 5 (M30-33) are also similar, as are some of those in graves 2 and 3, with the same implication, particularly since all are elaborate wreaths. Metal and natural wreaths are sometimes depicted on the walls in Macedonian graves as if they were hanging on a wall in the home. Examples include a green myrtle wreath painted on one wall of grave II at Aineia, depicted with a nail holding it up (**fig. 2.35**), and a yellow fillet or wreath on another wall in the same grave (**fig. 2.36**). There are many other instances of painted wreaths including a green ivy wreath in cist grave 3, Korinos, Pydna (**fig. 2.37**) (which also contained gilded wreaths T2X84) and cist grave 1 at Derveni with green wreaths and a gold-coloured wreath placed on a pyxis[113]. Yet another is cist grave 4 in Pella, which has wall paintings showing a wreath with yellow leaves, and a natural olive wreath with a dark blue circlet and leaves in light green[114]. Some of these graves also contained gilded wreaths and held mature women, including Aineia II. Cist grave 1 at Derveni/Lete had been robbed but it is

[111] Lilimbaki-Akamati 1996a, 152.
[112] Drougou and Touratsoglou 1980, 178.
[113] Korinos: Besios 1994, 177 and Brecoulaki 2006, pl.84; cist grave 1 in Derveni/Lete: Brecoulaki 2006, 255 and 325; Tzanavari 1996, 467-8 and 2017, 217.
[114] Lilimbaki-Akamati 1996a, 86; Brecoulaki 2006, 255.



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likely to have held a female, since four alabastra which are often found with women, escaped the robbers[115]. Cist grave 4 at Pella did not contain a gilded wreath, but was clearly that of a woman, since a necklace of the kind worn by women was found, as well as alabastra[116]. All of these paintings therefore seem to have been in graves of mature females, and thus probably depicted wreaths in the gynaikeion, as at Aineia II.

The fact that some of the objects depicted on the grave walls were also grave offerings may suggest that the painted objects are in a sense substitutes for real objects, but Brecoulaki invites us to go beyond this and see the objects depicted (which also include mirrors and other items from the home) as female attributes, in the same way that weapons are for a male[117]. Similarly, Tzanavari sees the objects as the personal belongings of a married woman, and as grave goods which are symbols of a luxurious life and of social status[118].

It seems therefore that both natural and metal wreaths were used to decorate the home as well as the grave, suggesting that they may in some instances have had a use in life, if only for particular occasions. This should not be taken to imply, however, that it is being suggested here that *all* gilded wreaths were habitually worn by the living: on the contrary, it is unlikely that wreaths except perhaps roll wreaths would have been worn because of their fragility, although occasional ceremonial use is possible.

### *4.6 Placement of wreaths*

Wreaths are sometimes found in position on the head in inhumations. They appear to have been placed around the body at Sedes, Akanthos and possibly Aineia III[119] which Kotzias suggested was done to protect the individual in the Netherworld[120] but this positioning may be coincidental

[115] Tzanavari 2017. Alabastra are however also found with males, as for example at Agios Athanasios and Derveni B: Ignatiadou suggests that the alabastra could have been associated with the doctor's set also found there (Ignatiadou 2015, 92).

[116] Lilimbaki-Akamati 1996a, 85-90.

[117] Brecoulaki 2006, 335.

[118] Tzanavari 2017, 194.

[119] See catalogue entries for M39, M14 and M5.

[120] Kotzias 1937, 885.



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due to the wreaths having originally been placed on the walls of the grave. Their placement around the neck of a hydria or other vessel, for example at Aineia III and the 'Tomb of the Prince', was surely intended to mimic a wreath in its natural place on the head since the human remains were often stacked inside the vase from the foot bones upwards[121]. If the funeral vessel did not have an actual wreath around the neck, it often had a painted wreath, as for example a hydria from Amphipolis (**fig. 2.38**).

*Fig. 2.38 Hydria with painted gold wreath and lead cover. Museum of Amphipolis MA3403. From Descamps-Lequime 2011, 332.*



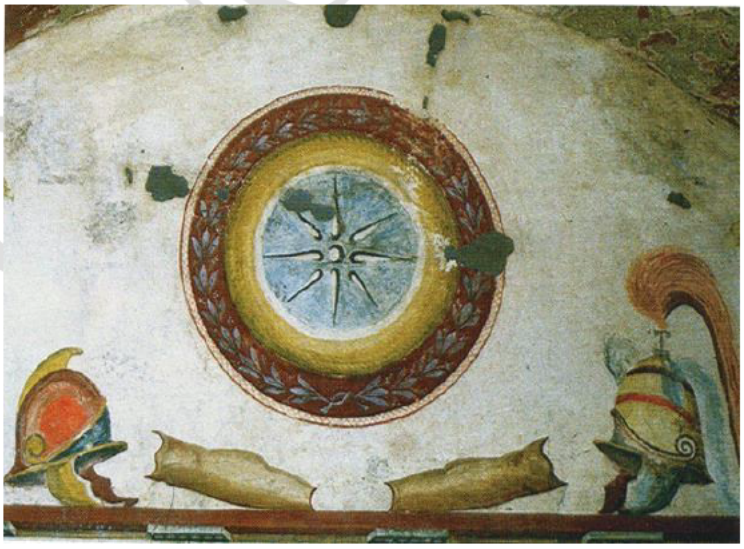
### *4.7 Mementoes of military honour?*

One striking feature of the gilded wreaths in Macedonia is the large number found in graves of men who were probably high-ranking military officers. Some of these men may have been *hetairoi* (Companions) of the king, and would have been the wealthiest in their day, who probably accompanied Philip or Alexander on campaign (or both).

[121] Andronikos 1984, 232; Grévin and Bailet also found this was the case in relation to some of the *hydriai* studied in Alexandria (2001, 292-3).

The association of wreaths with military men seems clear: they were sometimes worn on helmets (see Chapter 9, section 3(iii)), and Macedonian shields appear occasionally to have been decorated with something that looks very much like a wreath, as depicted for example at Leukadia (**fig. 2.39**). The remains of those who died on campaign were returned home[122], probably often in a larnax or box. Arrian refers to Alexander being given gold wreaths by ambassadors from Greek cities, who themselves wore them, 'as if they had come on a sacred embassy to honour a god'[123]. Alexander also gave gold wreaths to some of his commanders, and more generally wreaths (of unknown composition) to ordinary soldiers, in recognition of their valour[124]. Honorific wreaths were sometimes placed on the walls of the grave [125], suggesting the original gold wreaths may have been placed on the walls of the home. Could the gilded items in graves of high-ranking military officers have been commemorating gifts made by Alexander, and buried in the grave as a memento? - much as one might make a copy of a trophy or a medal today and in some cases be buried with it.

*Fig. 2.39 Macedonian shield on north wall of tomb of Lyson and Kallikles at Leukadia. From Brecoulaki 2006, pl.81, with kind permission.*



[122] Diodorus Siculus, 18.36.
[123] Arrian VII, 23, 2.
[124] Arrian VII, 5, 4-5.
[125] Kotzias 1937, 885.

### *4.8 Religion*

As will be discussed in Chapter 9, section 3(v), wreaths were worn by both worshippers and the gods, and there appear to be associations between the grave goods buried with wreaths and several deities. There is much evidence of objects associated with Dionysus in Macedonian graves, including the ivy wreaths, symposium vessels and kline decorations which generally have Dionysiac scenes (such as the klinai with M38) as well as the gilded ivy leaves with M2. The gold ivy wreath at Apollonia is suggested by Adam-Veleni to have belonged to a Companion who was a priest of Dionysus[126].

The Dionysiac Mysteries were linked in the view of many scholars with Orphism and some of the wreaths, as mentioned above (page 46), were found with men whom Ignatiadou proposes were followers of particular Orphic/Pythagorean beliefs; she suggests that the crater, in which their remains were buried, symbolises the primeval cosmic container of knowledge from which the soul would be drawn for the next reincarnation[127]. If this is correct, then some gilded wreaths may have been attributes of men who held specific religious beliefs. One of these men was buried not only with M16, but the Derveni Papyrus, which comprises philosophical comments on a poem by Orpheus, and seems to accept the Orphic story of Dionysus as the son of Zeus and Persephone and the ancestor of mankind[128].

This is not to say that all Macedonian wreaths, or all wreaths with a Dionysiac association, were buried with individuals who held these particular Orphic/Pythagorean beliefs or that they were initiates in the Mysteries of Dionysus. There is however evidence that *some* of the gilded wreaths were buried with initiates. An inscribed gold leaf was found in a grave at Pella with M29 and a further such leaf was found in the pyre above a neighbouring grave which held T2X63[129], the former dedicated by Poseidippos to Persephone and the latter with the name

[126] Adam-Veleni 2002, 278.
[127] Ignatiadou 2014, 49-50.
[128] Graf 2013, 65.
[129] Lilimbaki-Akamati 1996a, 82. Inv. 89.75 (pl. 27 α) and 89.86 (pl. 29α).



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Philoxena (**fig. 2.40).** A group of initiates seem to have been buried together in this cemetery since the graves with the leaves were near a building with a façade like an Ionic temple and further wreaths were found nearby in graves 2,10 and 11 (T2X62A, T2X61 and T2X62)[130] (**fig. 2.41**). A yet further inscribed leaf was found in Macedonian Tomb B at Pella with two gold wreaths[131]. Amphipolis Eastern Cemetery also appears to have contained at least one group of initiates: a gold leaf with an inscription reading 'Pure (unstained), holy of (belonging to) Dionysos Bacchios, I am Archeboule of Antidoros' was not itself accompanied by a metal wreath, but was found in grave 45 adjoining grave 44 which was within the same peribolos, and in which an ivy wreath was found around the neck of a cremation urn (T2X32A)[132]. This inscription is one of those which refers to Dionysus as an intermediary between the initiate and Persephone[133]. Several further wreaths found in this cemetery were buried with grave goods that may have associations with Dionysus, such as figurines of actors (T2X13, T2X16) and a figurine of a hermaphrodite (T2X37)[134]. As Malama and Tzifopoulos point out, Amphipolis is close to Mount Pangaeon which was closely associated with both Dionysus and Orpheus, and many finds from the cemeteries are strong evidence of the worship of Dionysus, though not necessarily Dionysus Bacchios[135]. Yet more were found in the Pydna cemeteries: the female named as 'Phylomaga' on a gold band found with T2X72 at Methoni also appears to have been an initiate[136]; her kline had ivory decorations with Dionysiac scenes[137], including a female (maenad?) seated on a rock holding a thyrsus (who looks very like the figure of Persephone on

[130] A further five gilded wreaths and one gold were found in the Eastern Cemetery in Pella in later excavations Lilimbaki-Akamati and Akamatis 2014, 261. Grave 92/8 contained a necklace made of similar materials to a gilded wreath (Lilimbaki-Akamati and Akamatis 2014, 49) as well as a third inscribed leaf.

[131] Chrysostomou 1995, 141.

[132] Malama and Tzifopoulos 2016, 57; Malama 2003, 117-118. The deceased in grave 45 may of course have had a natural wreath.

[133] Malama and Tzifopoulos 2016, 61-62. The leaves at Pelinna have a similar reference.

[134] Other figurines found at Amphipolis in graves dated to the late fourth/early third century with wreaths appear to have associations with Attis (T2X20 and T2X32, Romiopoulou 2013,119 and 137 respectively).

[135] Malama and Tzifopoulos 2016, 63-65.

[136] The band is illustrated in Besios 2010, 309 and Tzifopoulos 2010, 35.

[137] Besios 1990b,79.



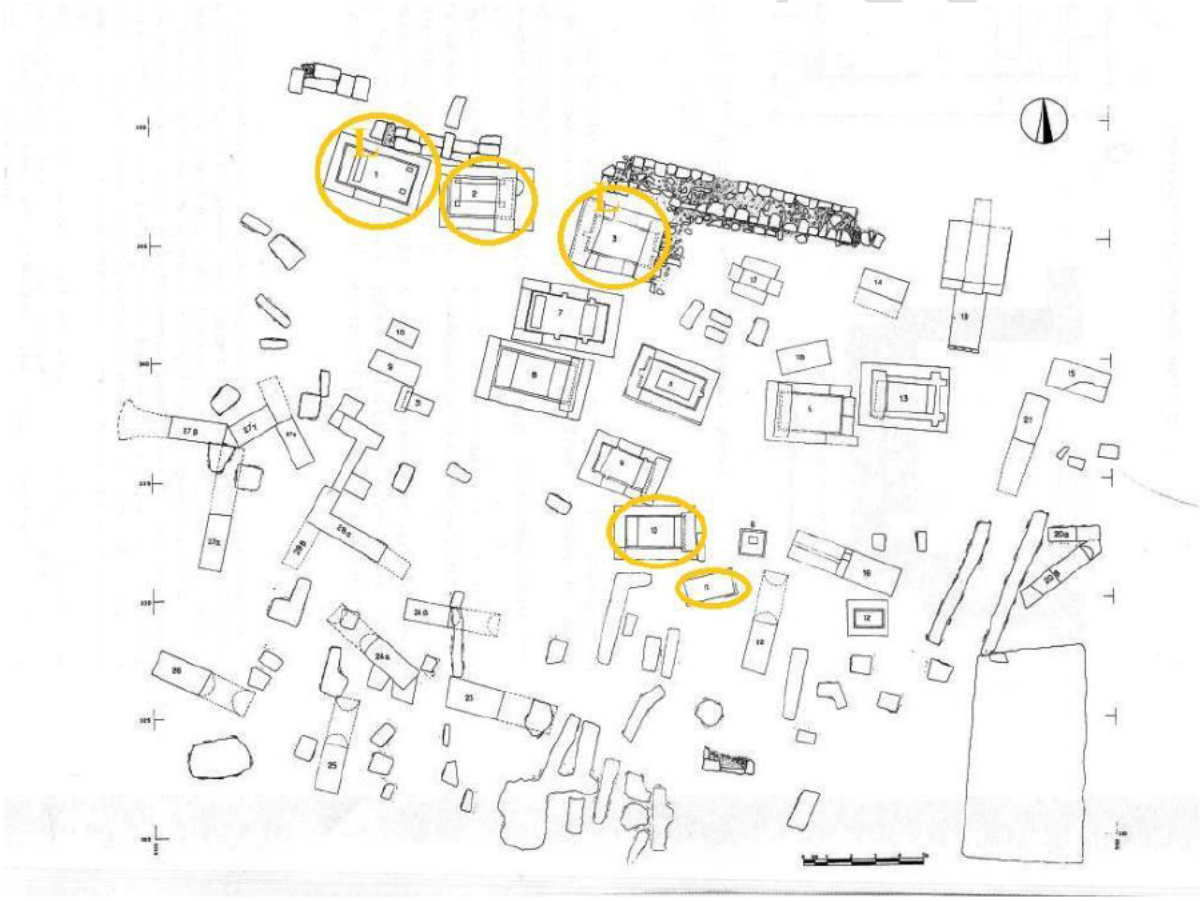
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a plaque with M39)[138]. An incised strip with the name Phylomaga was found at Methoni with T2X72 and T2X77A at Alykes Kitrous was accompanied by incised gold coins[139].

*Fig. 2.40 Leaf with name of Poseidippos, inv. 89.75, found with M29. Archaeological Museum of Pella. ©Hellenic Ministry of Culture and Sports/Ephorate of Antiquities of Pella. From Vlachopoulos and Tsiaphaki 2017,63.*



*Fig. 2.41 Plan of part of eastern cemetery at Pella showing graves with gilded wreaths in yellow circles or ovals and inscribed leaves (labelled L in gold). ©Hellenic Ministry of Culture and Sports/ Ephorate of Antiquities of Pella/ Archaeological Resources Fund. Adapted from Lilimbaki-Akamati 1996a, 76.*



Amongst the other initiates in Macedonia who may have worn wreaths were those who participated in the Mysteries of the Kabeiroi on Samothrace into which both Philip and Olympias were initiated[140]. Demeter and Kore were also widely venerated in Macedonia, and

[138] For the plaque found at Sedes with M39, see Grammenos 2007, 150.

[139] Phylomaga strip with T2X72: Tzifopoulos 2010, 34-35; for the gold coins with T2X77A, Tzifopoulos 2010, 32-34.

[140] Plutarch *Alexander*, II, 2.

examples of this are in the 'Tomb of Eurydike' at Aigai, the Thesmophoria at Pella and Amphipolis and the sanctuary at Lete. Tzanavari suggests that the painted representations of myrtle foliage in cist grave 1 at Lete indicate that the deceased had taken part in rites of passage or initiation and been placed under the protection of these divinities[141]. She also suggests that the girl buried with M39 may have been a priestess of Demeter[142]. Wreaths are depicted on many figurines found at the Thesmophorion in Thasos[143], which probably represent worshippers rather than deities[144].

The flower wreaths (type 6) from Pella and several other sites may refer to Aphrodite Antheia or to Persephone. A *protome*, identified by Vokotopoulou as Aphrodite Antheia[145], is depicted in one of the wall-paintings at Aineia II and at Kassandreia, and is of a type also found at Olynthos[146]. The goddess is thought by some scholars to have a 'chthonic' aspect, as was suggested by Lilimbaki-Akamati in connection with the *protomai* from Pella who are depicted wearing flower wreaths or diadems[147], although she mentions Persephone as a possible alternative, or a human bride[148]. T2X82, of unknown type, was found with a glass seal which depicts a woman spinning, suggesting that the female buried in the grave was a priestess of Aphrodite[149].

Although there is room for argument about how many gilded wreaths do so, at least *some* would therefore seem to mark the status of those buried with them as initiates into Dionysiac or other Mysteries, and/or as priests/priestesses.

[141] Tzanavari 2017, 196-197.
[142] Tzanavari 2017, 197.
[143] Muller 1996, 469-470.
[144] Muller 2017-8, 161
[145] Vokotopoulou 1990, 44 ; Moschonisiotou 1992, 353; Brecoulaki 2006, 333.
[146] Robinson 1952, pl.20.
[147] More recently several scholars have expressed scepticism about possible chthonic associations – see note 787.
[148] Lilimbaki-Akamati 1994, 251-252.
[149] Ignatiadou 2012a.



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### *4.9 Multiple wreaths in same grave*

Multiple wreaths have been found in at least 28 graves in Macedonia (**table 2.2**) which in this context I use to mean two or more wreaths buried with one person. I have adopted a cautious approach when it is not clear how many persons were buried in one grave, so I have not included graves with two wreaths if there was more than one person in the grave. Multiple wreaths were found with men and women, mature and young. A gold wreath was found in addition to multiple gilded wreaths in at least six graves (see table 2.2), and with a single gilded wreath in a further seven (T2X17, M36, T2X51, T2X52, T2X60, T2X69, T2X80 and T2X89). This phenomenon is not found in other regions; the only other common examples of multiple objects being found in the same grave are perfume bottles, figurines and skyphoi. The simplest explanation is that the multiple wreaths were donations by members of the grieving person's family or friends as a particular mark of honour, but the similarity of the wreaths in graves III, II, I and IV at Aineia, many of which were on the pyre, suggests that they were made at about the same time, and as it is difficult to see how they could all have been made in the short interval between death and burial, and it is I suggest most likely they were made during the lifetime of the woman in Aineia III. She was the first to be buried, since the burials in tombs I and IV are thought to be up to 25 years later. The wreaths in the earliest of the graves, III, could have been her personal possessions rather than gifts at the graveside. This is supported by the paintings on the walls of Aineia II showing wreaths (some of which are most likely natural) and other objects from the *gynaikeion* hanging on the wall. The same argument applies to the very similar wreaths in the Phoinikas cist graves 5, 3 and 2, which again are separated in time.

I have considered several possible explanations for the presence of multiple wreaths. On the occasions when four or more are found, they may have been used at the corner of the funeral kline, as in the case of the Sedes wreaths[150] or of a diphros (stool). A second possibility is that gilded wreaths were worn by the deceased at various stages of life, marking rites of passage

[150] Kotzias 1937, 885.



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(from childhood to adolescence, from adolescence to adulthood, marriage, childbirth, death), and ultimately placed in the grave to mark the final passage, those used at an earlier stage having been retained and perhaps displayed on the wall. I would however have expected to see differences in the wreaths found in the same grave if they had been used at various stages of a person's life, which may be the case at Derveni A and B, but does not fit Aineia III, where the wreaths are identical.

Some of the multiple wreaths found in the same grave represent different plants, for which a third possible explanation, assuming that each plant was a different indicator, is that they were used to mark different statuses of an individual – as priest or priestess (ivy or myrtle[151]), married person (myrtle), military leader (oak), initiate (ivy, myrtle), warrior (myrtle?), Orphic devotee, healer (myrtle?). There is no literary or other evidence for this, but it would provide a plausible explanation for the multiple wreaths in the mature male graves at Vergina (T2X88), Derveni (M16, M17, M18) and Nikisiani (M23, M24, M26), as well as Pydna Methoni (T2X70, healer, warrior/military leader), Pydna Toumba Pappa 3 (T2X73 healer, warrior/military leader, priest) and Toumba Pappa 2 (T2X 74, Orphic devotee, warrior) and Lakkoma (T2X53-54, possibly a priest[152]). The young boy buried with five wreaths at Akanthos (M14) may have been an initiate of Dionysus and also of the Kabeiroi, since he was buried with an ivy wreath (Dionysus) and an iron ring (Kabeiroi). As discussed in the previous section, at least two of the females with multiple wreaths have been plausibly proposed to be priestesses (M39 and T2X82). The suggestion of marking different statuses is however less satisfactory as an explanation for the wreaths which are very similar, if not identical, as at Phoinikas 5 and Aineia III, which I suggest are more likely to have been wedding gifts buried with the recipients, who died as mature women. Some of the wreaths, on this hypothesis, would have been used in their graves and others preserved for later burials. The multiple wreaths found with young girls (M39, T2X79,

[151] Myrtle on M39: Tzanavari 2017,197; for ivy's association with priests, see note 126.

[152] The suggestion that T2X70 and T2X73 may have been buried with healers is based on the gaming materials also found (see note 94). Lakkoma: Tsimbidou-Avloniti 2016, 766.



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M25, M35) could mark the marriage they never had and the particular poignancy of their death (*aorai*) (two of these, M25 and T2X79, are also buried with multiple figurines).

***Table 2.2 Analysis of graves with multiple wreaths***

| Cat /TX no | Location | MN. wreaths | Plants | No. Indivs | M/F | Mature/ young | Status | Gold wreath? |
|---|---|---|---|---|---|---|---|---|
| M5-10 | Aineia III | 6 | All myrtle | 1 | F | Mature | Married? | |
| M13 | Aineia IV | 3 | All myrtle | 2 | M | | | |
| M14 | Akanthos 1467 | 5 | Ivy, myrtle | 1 | M | Young | Young boy, priest, double initiate? | |
| T2X3-5 | Akanthos 700 | 3 | Myrtle | 1 | F | Mature? | Married? | |
| M16 | Derveni A | 6 | Oak, myrtle | 2 | M and F | Mature | Orphic devotee, priest, warrior, military leader | Yes |
| M17 | Derveni B | 3 | Myrtle | 2 | M and F | Mature | Initiate, priest, healer, warrior | yes |
| M18 | Derveni Δ | 3 | Myrtle | 2 | M | Mature | Warrior | yes |
| M19 | Derveni E | 2 | Myrtle and possibly olive | 1 | F | | | |
| T2X53-54 | Lakkoma | 4 | Myrtle, ivy and possibly vine | 1 | M | Mature | Priest? | |
| T2X55 | Mesimeri | 4 | Not known | 1 | M | | Warrior | |
| M23 | Nikisiani A | 2 | Myrtle, flowers | 1 | M | | Warrior | |
| M24 | Nikisiani B | 3 | Myrtle, flowers | 1 | M | | Warrior/ priest | |
| M25 | Nikisiani Δ | 3 | Myrtle, possibly olive, flowers | 1 | F | Child | *Aore* | |
| M26 | Nikisiani Γ | 3 | Oak and myrtle | 2 | M | | Military leader | |
| M30-33A | Phoinikas 5 | 4-5 | Myrtle | 1 | F | Mature | Married woman | |
| T2X56 | Olynthos 598 | 2+ | Oak, ivy?, flowers | 1 | M | Mature | | |
| M35 | Phoinikas 3 | 3 | Myrtle | 1 | F | Young | *Aore?* | |
| M34 | Phoinikas 2 | 2 | Myrtle | 1 | M | Young | Young boy | |
| T2X70 | Pydna Methoni 1 | 2 | | 1 | M | Mature | Warrior/military leader, healer | |
| T2X71 | Pydna Methoni 3 | 2 | | 1 | M | Mature | Warrior | |
| T2X73 | Pydna Sevasti Toumba Pappa3 | 2+ | | 1 | M | | Warrior/military leader, healer, priest/initiate | Yes (ivy) |
| T2X74 | Pydna Sevasti Toumba Pappa 2 | 2 | Myrtle | 1 | M | | Warrior, Orphic devotee | yes |
| T2X75 | Pydna Alykes Kitrous pit grave 2 | 2 | | 1 | M | | | Gold diadems |
| T2X79 | Pydna Alykes Kitrous 14 | 3 | | 1 | F | Young? | *Aore*? | |
| T2X81 | Pydna Alykes Kitrous 71 | 2+ | | ? used twice | F | | | |
| T2X82 | Pydna Makrygialos 12 | 5 | | 1 | F | Mature | Priestess of Aphrodite? | |
| M39 | Sedes C | 4 | Myrtle, ivy | 1 | F | Young | Priestess? | |
| T2X88 | Vergina | 4 | Myrtle, ivy (at least two) | 1 | M | Mature? | Ruler, high priest, military leader, double initiate | yes |

### *4.10 Significance of gilded wreaths in Macedonia*

There is unlikely to be one single, unifying, explanation for why gilded wreaths were used in graves in Macedonia. They are found in some, but not all, graves, at various levels of society,

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and in the graves of women, men and, in some cases, children. At its most prosaic level, use of these valuable materials demonstrated the wealth of the deceased, and their relatives – showing that they could afford to consign gold and other valuables to the flames and the soil. As with the tinned vessels studied by Kotitsa, the gilded wreaths would have shone with the brilliance of the metal, and made a strong impression on those present when they were buried in the grave[153].

Even though the wreaths are a conspicuous form of display, however, there does seem to be more involved. Several pre-date the period when the greatest luxury was used in graves, including M40 and M27. One feature to emerge from this study of the Macedonian gilded wreaths, as distinct from other luxury goods, is that a number have been found in graves which pre-date the middle of the fourth century, as shown in sections 2.1 and 2.2. In contrast, many other luxury items are found in later graves: the vast majority of silver items are dated to the last quarter of the fourth century, coinciding with the return of the veterans from the east, and although some of these vessels are a little earlier, they are not found in great numbers [154]. The same is true of the valuable items made of clear glass, which are found in increasing numbers in the final quarter of the fourth century[155]. Tinned imported vessels, a further luxury item, are found in some of the graves from around the middle of the fourth century which also yielded wreaths, including M43 (Stenomakri Toumba, Vergina) and M5-M10 (Aineia III), but these too increased in number in the late fourth century.

As will be discussed in Chapter 8, gilded wreaths seem to have come into use in Macedonia before gold wreaths[156], possibly because they used less gold than pure gold wreaths and would have been more economical. However, it is clear that the gilded wreaths continued to be used

[153] Kotitsa and Nazlis 2010, 272; Kotitsa 2012, 123.

[154] Touloumtzidou 2011, 691 places the bulk of the silver material in the period 330/320 to the early third century, whereas Zimi 2011, 101, lays more emphasis on the material pre-dating the return of the veterans.

[155] Ignatiadou 2013, 325-326.

[156] The earliest gold wreaths for which there is secure dating were found at Apollonia and Pydna, dating to the third quarter of the fourth century (see note 697).



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by the elite even after gold became widely available in the last quarter of the fourth century. There can be no question therefore but that gilded wreaths were regarded as appropriate for the highest echelons of society, both when they first appeared and at later stages. One of the earliest wreaths was found in a royal grave, at Aiani (M2), and T2X88 also accompanied a royal burial - whether it was that of Philip II or Philip Archidaos. The relatives of the men in Derveni A and B, to give one further example, could undoubtedly have afforded to replace the gilded wreaths with solid gold had they wished. It would seem that they remained in use because they were seen as the proper way to honour the dead who were special for one reason or another, who would appear to include kings, heroic figures, some mature women and *aorai*. They were also no doubt, as Zimi suggests in relation to silver vessels, symbols of the high esteem which the deceased enjoyed in his (or her) lifetime[157] and may even in some cases have been commemorating awards by the king, as tentatively suggested above. Whether gilded wreaths were also used in life is unclear: it seems unlikely on the whole, although it is conceivable that some may have been worn occasionally. It is also likely that some also marked certain religious beliefs or initiation.

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[157] Zimi 2011, 26.

## *Table 2.1 Macedonian wreaths*

| Cat no./ Table no. | Type | Site | Location | MN wreaths/ Individuals | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M1** | 2 | Agios Athanasios | Agios Athanasios | 2/2 | Myrtle and oak? almond ? | Gilded terracotta berries and copper leaves | M | Last qu.4th | C | Macedonian | Ivory decoration from kline, armour, alabastron with inscription 'krokos', gold quarter stater of Philip II. | AMTh; 19422, 19423 | Tsimbidou-Avloniti 2005, 160. |
| **M2** | 1 | Aiani | Leivadia Royal Tomb A | 1/1 | Myrtle | Bone circlet | | Beg. 4th | | Chamber | Gold roundels with Macedonian star, 12 gilded silver ivy leaves. Robbed. | Display Aiani | Karamitrou-Mentessidi 2008,51. |
| **M3** | 4 | Aiani | E cemetery T. 178 | 1/1 | Myrtle | Bone circlet, clay berries | M | Late 3rd? | I | Pit | Robbed. Iron spear tip. | Stores Aiani | Karamitrou-Mentessidi 2010, 45. |
| **M4** | 2 | A. Komi | Zigres, plot of Sp. Papaionnou | 1/1 | Myrtle | Red coating on terracotta berries, gilded copper leaves, bone circlet | F | c.320 | I | Pit | Unguentarium, gold jewellery, black-glaze bowl and plate, lekythos, askos, silver perfume container, knucklebones, bronze kylix, bronze lebes, bronze oinochoe, bronze phiale, bronze hydria, clay skyphos, silver spool 'saltcellar'. | Kozani AM | Karamitrou-Mentessidi *AD* 38 (1983) *Chr.* B2 307-311; dating of Touratsoglou 1998, 247 'after 320'. |
| **M5** | 2 | Aineia | Grave III, Mound A. | 6/1 | Myrtle | Gilded bone circlet, fragment of wooden circlet, gilded leaves and berries | F | Beg. 3rd qu. 4th | C | Cist | Alabastra, bronze mirror, glass calyx-skyphos, gilt clay kotyle, 8 Attic, 2 locally made vases coated with yellow paint, terracotta and bronze buttons. | AMTh display; 7570 as labelled in exhibi-tion case | Vokotopoulou 1990, 66. |
| **M6** | 2 | Aineia | Grave III, Mound A | | Myrtle | Gilded bone circlet, gilded leaves and berries | | Beg. 3rd quarter 4th | C | Cist | See entry for M5. | Stores AMTh; 7571 (pl.38γ) | Vokotopoulou 1990, 66. |
| **M7** | 2 | Aineia | Grave III, Mound A | | Myrtle | | | Beg. 3rd qu. 4th | C | Cist | See entry for M5. | AMTh stores; material published as 7572 (pl.39e) | Vokotopoulou 1990,66. |
| **M8** | 2 | Aineia | Grave III, Mound A | | Myrtle | Gilded bone circlet, fragment of wooden circlet, gilded leaves | | Beg. 3rd qu. 4th | C | Cist | Found around neck of kalpis, which contained human bones, a gold ring and gold fibulae, button or medallion, fragment of glass from alabastron. | AMTh stores; 7573 (pl. 38δ) | Vokotopoulou 1990, 52 and 66. |

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| Cat no./ Table no. | Type | Site | Location | MN wreaths/ Individuals | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M9** | 2 | Aineia | Grave III | | Myrtle | Gilded bone circlet, fragment of wooden circlet, gilded leaves and berries | | Beg. 3rd qu. 4th | C | Cist | See entry for M5. | AMTh on display; 7574 (pl. 38β) | Vokotopoulou 1990, 66. |
| **M10** | 2 | Aineia | Grave III, pyre, Mound A | | Myrtle | Gilded bone circlet gilded leaves berries | | Beg. 3rd qu. 4th | C | Cist | 2 protomai, alabastra, kline decorations, gilt terracotta figures of Muses, gilt clay buttons, eighth stater of Philip II. | AMTh stores | Vokotopoulou 1990, 51, 132. |
| **M11** | 2 | Aineia | Probably Grave II, Mound A | 1/1 | Myrtle | Wooden circlet, gilded leaves berries, unidentified material | F heavily preg-nant | Mid-3rd qu 4th | C | Cist grave decorated with paintings | Fragments of ivory from kline, buttons, Cypriot style amphoriskos, alabastra. | AMTh stores; 7591 | Vokotopoulou 1990, 130. |
| **M12** | 2 | Aineia | grave I mound A? | 1/1 | Myrtle | Gilded bone circlet, gilded leaves berries | M | End 3rd qu. 4th/ after 320 | C | | Gilded acorn beads, coin of Philip II. Robbed. | AMTh on display; 7591 as labelled on display | Vokotopoulou 1990, 28; dating given by Touratsoglou 1998, 246 'after 320'. |
| **M13** | 2 | Aineia | pyre mound B (grave IV) | 3/2 | Myrtle | Berries with coloured coatings | | End 3rd qu. 4th/ after 320 | C | Cist | Glass and ivory from kline, 100 gilt terracotta buttons with head of Athena, kyathos, 1/8 stater Philip II from Pella. Gilded acorn berries. | AMTh stores | Vokotopoulou 1990, 80, 83 Touratsoglou 1998, 247 gives 'after 320'. |
| **T2X1** | 2 | Akanthos | Grave 1370 | 1/1 | Myrtle | Four fragments of bone circlet, myrtle leaf and berry | M | 4th c. | | Clazo-menian (reused) | Figurine of pig, strigil, shell and knucklebone. | Not known; 943 | Kaltsas 1998, 47. |
| **M14** | 2,3,6 | Akanthos | Grave 1467 | 5/1 | Myrtle and ivy, cicada | Four-petalled clay flowers and larger painted flowers, spherical berries, leaves | M young | End 4th | I | Lekane | Knucklebones, pots, iron ring, iron strigil, clay figurine, 3 tetradrachms. | AMTh stores; where-abouts of 1100 (ivy) not known 887, 888, 939, 940, 941, 1100 | Kaltsas 1998, 83-85. |
| **M15** | 2 | Akanthos | Grave 1512 | 1/1 | Myrtle ? | Copper stems, leaves, gilded berries | young | End 4th | C | | Wreath found in RF pelike showing Amazanomachy and with cremated bones. | AMTh stores; exc. no. I.117.144 | Kaltsas 1998, 102. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **T2X2** | 2 | Akanthos | Grave 649 | 1/1 | | Bone circlet, berries | F young | Last qu. 4th | | | | AMTh stores; exc. No. I.8.47 | Unpublished. |
| **T2X3** | 2 | Akanthos | Grave 700, plot 49 | 3/1 | Myrtle | Bone circlet, gilded berries | F | Hellen-istic | | Pit | | AMTh stores; 7469-7471 | Unpublished. |
| **T2X4** | 2 | Akanthos | Grave 700 | | Myrtle | Bone circlet, gilded berries | | | | | | AMTh stores; 7470 | Unpublished. |
| **T2X5** | 2 | Akanthos | grave700 | | Myrtle | Bone circlet, gilded berries | | | | | | AMTh stores; 7471 | Unpublished. |
| **T2X6** | 2 | Akanthos | Grave 976 | 1/1 | Myrtle ? | Bone circlet, leaves | F | 2nd half 4th | I | | | AMTh stores; I 73 472 | Unpublished. |
| **T2X7** | 3 | Akanthos | tome B1, plot 96 | | Myrtle ? | Lead circlet, leaves | | | | | | AMTh stores; I 96 20 | Unpublished. |
| **T2X6** | 3 | Akanthos | tome B2 | | Myrtle ? | Gilded flower, lead circlet, copper stems | | | | | | AMTh stores | Unpublished. |
| **T2X6** | 3 | Akanthos | tome B1, plot 96 | | Myrtle ? | Lead circlet, copper leaves | | | | | | AMTh stores; I 96 19 | Unpublished. |
| **T2X6** | 3 | Akanthos | 1205 | 1/1 | Olive? | | M | Hellen-istic | | Pit | | AMTh stores; I.116.14 | Unpublished. |
| **T2X7** | 3 | Akanthos | 1082 | 1/1 | Myrtle ? | Lead circlet, berries | | 4th | I | | | AMTh stores | Unpublished. |
| **T2X9** | 2 | Akanthos | 1088 | 1/1 | Myrtle ? | Bone circlet, berries | | 4th | I | | | AMTh stores | Unpublished. |
| **T2X10** | 2 | Akanthos | Plot 73 | | Myrtle | Bone circlet, gilded leaf, berry | | Hellen-istic | | | | AMTh stores | Unpublished. |
| **T2X11** | 2 | Akanthos | Plot 73 | | Myrtle | Gilded bone circlet, berries | | Hellen-istic | | | | AMTh stores | Unpublished. |
| **T2X12** | 2 | Akanthos | Plot 73 | | Myrtle ? | Bone circlet, berries | | Hellen-istic | | | | AMTh stores | Unpublished. |
| **T2X13** | 6 | Amphipolis | Eastern necropolis, sector | 1/1 | | Bone circlet, 8 painted flowers | F about 11 | Late 4th | I | Cist | Wall paintings similar to Aineia II. Clay alabastra, protome, gold coin of Philip II, figurine of woman with tragic face, figurine of | | Malama 2003, 121. Malama 2007 733 and pl. 12. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Lamda cist grave 1 | | | | | | | | woman wearing wreath, black glaze skyphos and gold olive leaf | | |
| **T2X14** | | Amphipolis | Cist grave 2 | 1/1 | Myrtle | 8 gilded petalled rosettes | F and 4 child-ren (inc. neo-nate) | Late 4th, early 3rd | I | Cist | Robbed. Earrings, gold threads of fabric, knucklebones, ladle, black glaze kantharos-kylix (West Slope) | | Malama 2003, 121 and Malama 2007, 735. |
| **T2X15** | | Amphipolis | Cist grave 3 | 1/1 | Gilded flower | | M older | Late 4th, early 3rd | I | | Iron knife, bone object, fragments of glass plaques from kline | | Malama 2007, 735. |
| **T2X16** | | Amphipolis | Cist grave 4 | | | | M older man | Late 4th, early 3rd | I | Cist | Robbed. Figurine comic actor, glass buttons, bronze omphalia, iron and bronze nails | | Malama 2007, 736. |
| **T2X17** | | Amphipolis | Tsagezi, grave 1 | 1/3 | Olive? | | | Late 4th early 3rd | I | Chamber | Silver hydria, gold oak wreath and gold necklace, fragments of box, glass material, silver fabrics | | Makaronas 1940, 495. |
| **T2X18** | 6 | Amphipolis | Not known | | Flow-ers | Painted terracotta | | Hellen-istic | | | | Kavala AM on display; P1630, 1631, 1882, 2210 | Lazaridis 1969, 131-2. |
| **T2X19** | | Amphipolis | grave 8 | | | Clay berries and two gilded heads of women with flowers, gilded copper leaves | F | 3rd qu.4th | I | | Alabastra, askoi, aryballoi, skyphoi, thelastro, figurines – group of children, seated woman, protomai, iron strigil, 20 iron nails | | Romiopoulou 2013, 117. |
| **T2X20** | | Amphipolis | grave 9 | | | Gilded berries and gilded copper frag-ments- necklace or wreath? | | Last qu.4th | I | | Jug. Figure of dancer or initiate | | Romiopoulou 2013, 118-9. |
| **T2X21** | | Amphipolis | grave 11 | | | 88 Gilded fruits and gilded clay beads and bone circlet | | Last qu.4th | I | | Alabaster, skyphoi, kantharos, | | Romiopoulou 2013, 120. |
| **T2X22** | | Amphipolis | grave 12 | | | 56 Clay beads of fruits and gilded copper stems | M ? | Last qu.4th | C | | Skyphos, base skyphos | | Romiopoulou 2013, 120. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T2X20 | | Amphipolis | grave 13 | | | Fragments gilded wreath bone circlet | M | 3rd qu.4th | I | | Aryballos, hydria, fragments sword, fragments strigil. | | Romiopoulou 2013, 120-121. |
| T2X21 | | Amphipolis | grave 14 | | | Gilded copper leaves and copper circlet, 12 clay gilded flowers | M ? | | I | | Lamp, figurine woman standing, fragments seated women, bronze coin Alexander the Great. | | Romiopoulou 2013, 122. |
| T2X25 | | Amphipolis | grave 26 | | | Clay gilded fruits, copper leaves | M ? | | I | | Unguentaria, skyphos, protomai, figurines, iron strigil. Only burial B has finds (bigger than A). | | Romiopoulou 2013, 126. |
| T2X26 | | Amphipolis | grave 29 | | | Gilded copper remains and gilded clay fruits, lead circlet | | 325-300/ 290 | I | | Fragments pelike, unguentarium, skyphos, figurine group, head of woman, seated woman, iron ring. | | Romiopoulou 2013, 128. |
| T2X27 | | Amphipolis | grave 32 | | Ivy and grapes | 11 clay pine cones or bunches of grapes, 17 gilded clay rosettes | | 300-285/80 | I | | Lamp, skyphoi, kantharos, head of woman, iron strigil. Only 1 burial has finds. | | Romiopoulou 2013, 129-130. |
| T2X28 | | Amphipolis | grave 37 | | | Gilded copper branches, lead circlet | | | I | | Flask, fragments oinochoe. | | Romiopoulou 2013, 130-131. |
| T2X29 | | Amphipolis | grave 40 | | | 23 gilded clay fruits | | | I | | | | Romiopoulou 2013, 132. |
| T2X30 | | Amphipolis | grave 41 | | | Clay gilded fruits, copper branches, lead circlet | | 300-285/80 | I | | Kantharos, aryballoi, skyphoi, Eros, Artemis? Child figurine, seated woman, other figurines, bronze coin Philip II, 2 shells. | | Romiopoulou 2013, 133-4. |
| T2X31 | | Amphipolis | grave 42 | | | Copper leaves and stems and 29 clay fruits | | 350-325-320 | I | | Askos, aryballos, copper disk of mirror. | | Romiopoulou 2013, 136. |
| T2X32 | | Amphipolis | grave 43 | | | Gilded copper stems and 39 gilded clay fruits-beads | | 350-325/ 20 | I | | Amphoriskos, skypoi, alabastra, kantharos, aryballoi, jugs, unguentarium, cockerel, male figurine. | | Romiopoulou 2013, 136-7. |
| T2X32A | | Amphipolis | Section H Grave 44 | | Ivy | Hydria, with gilded ivy wreath, bones had trace of purple fabric | | | C | Theke | The wreath was found around the hydria. | | Malama 2003, 117. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T2X33 | | Amphipolis | grave 54 | | | Clay fruits and berries and small copper stem | | | I | | Attic kantharos. | | Romiopoulou 2013, 147. |
| T2X34 | | Amphipolis | grave 59 | | | Copper stems | | | I | | | | Romiopoulou 2013, 148. |
| T2X35 | | Amphipolis | grave 60 | | | 26 gilded clay fruits and copper gilded stems, bone circlet | | 325-300/ 290 | I | Pit coffin | Alabastra, skyphos, figurines. | | Romiopoulou 2013, 148. |
| T2X36 | | Amphipolis | grave 61 | | | 6 clay fruits | | 325-300/ 290 | I | Pit coffin | Alabastra, skyphos, aryters, fragment protome and other figurines. | | Romiopoulou 2013, 149. |
| T2X37 | | Amphipolis | grave 63 | | | 94 gilded fruits, bone circlet | | 325-300/ 290 | I | Pit coffin | Fragments pelike, alabastra, figurines women and hermaphrodite, part of bronze mirror, fragments, BG pottery. | | Romiopoulou 213,150. |
| T2X38 | | Amphipolis | grave 67 | | | 110 gilded fruits, bone circlet | | 325-300 /290 | I | Sarcophagus in rock cut grave | RF pelike with Aphrodite as swan, alabastron, unguentarium, figurines, strigil. | | Romiopoulou 213,151-3. |
| T2X39 | 6? | Amphipolis | grave 68 | | | Remains wreath - 17 gilded leaves, 12 gilded berries, remains stems 10 five petalled flowers with traces colour (yellow and red) beneath gilding | | 325-300 /290 | I | | Figurines. | | Romiopoulou 213,153. |
| T2X40 | | Amphipolis | grave 71 | | | Gilded leaves perhaps from fabric (ie not wreath) | | | I | | Alabastron, lagynos, lamp, unguentarium, bowl. | | Romiopoulou 2013, 158. |
| T2X41 | | Amphipolis | grave 72 | | | Fragments gilded wreath 116 gilded berries, lead circlet | | 325-300/ 290 | I | | Alabastron, kantharos, lagynos, lamp bowl, strigil. | | Romiopoulou 213, 158-9. |
| T2X42 | | Amphipolis | grave 85 | | | Remains gilded wreath? 6 gilded fruits, clay flower | | | I | | Unguentarium bowl, figurines, 2 coins Philip II. | | Romiopoulou 2013, 165. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T2X43 | | Amphipolis | grave 86 | | | Remains gilded wreath. | | | I | | | | Romiopoulou 2013, 165. |
| T2X44 | | Amphipolis | grave 90 | | | 160 gilded berries, 2 large, 2 small gilded flowers, lead circlet | | 325-300/ 290 | I | | Large phiale in shape of lekane. | | Romiopoulou 2013, 168. |
| T2X45 | | Amphipolis | Grave 91 | | | 34 large gilded clay berries and 9 small. Fragments leaves and circlet. Part of gold strip on skull (diary record) | | 325-300/-290 | I | | Aryter, skyphos, bronze coin of Philip II, gold button, 2 gold rings. | | Romiopoulou 2013, 168. |
| T2X46 | | Amphipolis | Grave 128 | | | 7 gilded clay berries, copper stems, Lead circlet | | 325-200 /290 | I | | Alabastra, bronze coins of Alexander the Great . | | Romiopoulou 2013, 192. |
| M16 | 2 | Derveni | A | 6/1 | Oak myrtle and olive | Wood and bone circlet, berries, leaves | M | After 320 | C | Cist | Bronze volute crater with bones and wreath, clay and bronze pots, knucklebones, symposium vessels, Cypriot amphora, roundels with head of Athena from kline. Spearheads, bronze greaves, silver and bronze sheet, remains of horse's harness, carbonized scroll with Orphic text. | AMTh; A60, A4, A4b, A56, A58, A95b, A96d, A98d, A99e, A102d, A114a, A117c | Themelis and Touratsoglou 1997, 58. Approx. contem-porary with B (Ignatiadou 2014, 46). |
| M17 | 2 | Derveni | B | 3/2 | Myrtle | Wood and bone circlets, berries, leaves | M and F | After 320 | C | Cist | Medical box, gold myrtle wreath, Derveni Crater with Dionysiac imagery, silver symposium vessels, iron weapons, fragments of leather (from shield?), horse trappings, game counters. | AMTh | Themelis and Touratsoglou 1997, 89. Dating Touratsoglou 1998, 245. |
| M18 | 2 | Derveni | D | 3/2 | Myrtle | Wood and bone circlets, berries, leaves | M | After 320 | C | Cist | Gold myrtle wreath. Weapons. | AMTh; Δ18, Δ19 (?), Δ20, Δ21 | Themelis and Touratsoglou 1997, 110-111. Dating Touratsoglou 1998, 246. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M19** | 2 | Derveni | E | 2/1 | Olive? | Wood and bone circlets, berries, leaves | F | 330-320 | C | Cist | Bronze coin Philip II, remains of kline, alabastra, rusty iron, plaques with scenes, fragments of two protomai with polos and veil, sea shell, quarter stater of Alexander III, gold necklace bead shaped like amphoriskos. | AMTh; E4, E34. | Themelis and Touratsoglou 1997, 119. Dating Touratsoglou 1998, 247. |
| **M20** | 2 | Derveni | Z | 1/2 | Myrtle ? | Wood and bone circlets, berries, leaves | F and poss-ibly also M | Late fourth early 3rd/ /300-280 | C | Pit | Silver calyx cup, several bronze vessels, gold jewellery, pair of gilded astoid cups, small bg bowls, guttus type askos, bolsal cup. The wreath fragments probably come from Z rather than H. | AMTh; Z30 and Z31 | Themelis and Touratsoglou 123-124. |
| **T2X47** | | Kalamoto (Kalindoia) | Chamber B | 2/? | Oak and others | 21 gilded clay berries; 2 larger gilded clay acorns; large number of gilded copper fragments and stems | F | 5 burials from beg.3rd to mid-2nd | | Chamber | Handle-less skyphos, 5 lamps, plates, unguentaria, pyxides, kantharoi, closed vases and other pottery, figurines, glass vases of 'Phoenician' type, 'buttons' or 'lenses' decoration of furniture, necklace beads, iron nails. | | Sismanidis 2002, 131 and fig. 14. |
| **M21** | 6 | Karyochori | Grave 4 | 1/2 | Myrtle | Gilded berries, leaves, flowers | F 1.69 tall and M | 1st qu. 3rd | I | Pit | Gold jewellery and silver gilded ring, phiale and BG skyphos, 8 clay vessels, some local. Protome, 2 bronze coins, knucklebones. | Kozani AM | Karamitrou-Mentessidi 2005, 560-565. |
| **T2X48** | | Kassan-dreia | Agios Mamas, grave 2 | 1/1 | | Clay fruits | F young | Late 4th to first half 3rd | I | Stone sarco-phagus | Painted grave (Aphrodite Antheia?). Gold mouth piece, 2 gold earrings and 2 bracelets. | | Moschonisiotou 1992, 352. |
| **T2X49** | | Kassan-dreia | Agios Mamas grave 3 | 1/1 | | | M | Late 4th to first half 3rd | I | Stone sarco-phagus | Gold mouth piece, silver kantharos, ladle, iron spearhead and large iron sword. Woollen clothing, purple and gold. | | Moschonisiotou 1992 353. |
| **T2X50** | 3? | Kassan-dreia | Grave B | 1/1 | Myrtle | Wood and lead circlet, copper stems, gilded oval berries, gilded myrtle leaves | F; young girl | Last 15 years of 4th | I | Sarcophagus in tumulus | Intact grave. Wreath found on head of deceased. Silver necklace on neck of girl, 2 gilded clay earrings in position on ears, gold ring on left hand, glass bead various small objects probably from necklace, three gilded clay beads, 33 Gilded clay beads (? from wreath),3 small bronze rings, 123 knucklebones, 2 small alabastra, clay alabastron, small figurine of comic actor large female protome, small female | Find 12.336 | Sismanidis 1997b 302 and fig. 7. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | protome, 2 bronze coins from time of Philip and of Alexander the Great (328). | | |
| **T2X51** | 2 | Katerini | Grave A | 2/2 | Myrtle | | M | 3rd qu.4th | C | Macedonian | Alabastrino and clay alabaster, 20 disk shaped rosettes with 8 petals, gilded beads, gold myrtle leaves and gold berries, lamp, coin of Amyntas II, solid metal strip, gold thread, iron sword with gold decoration, kline decorations, shield, pectoral. | AMTh; 28536, 28538, 28551, 28538, 28534, 28551, 28540, 28545, 28532, 28551, 28540, 28537 | Schmidt-Dounas 2017, 93-97. |
| **T2X52** | 2 | Katerini | Grave B | 1/1 | Myrtle | Oval berries, gilded leaves | M | Last qu. 4th | C | Cist | Gold myrtle wreath, kline decorations, shield, skyphoi, iron stopper, 4 iron strigils, gilded clay beads. | AMTh; 29584 | Schmidt-Dounas 2017, 161-2. |
| **T2X53 53A 53B** | 2 | Lakkoma | Cist grave | 4/1 | Myrtle | Gilded bone, wood, oval berries, gilded copper | M | Las qu. 4th | I | Cist | Robbed, but kline with jewellery including 2 golden pins, gilded bronze collar and 2 rings, vessels, local pottery, lamp, Attic bg symposium vessels, 2 iron strigils and leather aryballos, quarter stater of Philip II. | AMTh; IST 3283-3285 | Tsimbidou-Avloniti 2016, 765, 772. |
| **T2X54** | 2 | Lakkoma | Cist grave | | Ivy and possibly vine | 12 bunches of grapes (2 sizes); 164 large spherical ivy berries, 39 smaller, gilded bone and wood circlets, gilded copper leaves | | See previous entry | | See previous entry | See previous entry. It is not certain whether the grapes come from the wreath or were sewn onto a cloth diadem. | AMTh; IST 3286 | Tsimbidou-Avloniti 2016, 765, 774. |
| **T2X55** | | Mesimeri | Grave Γ | 4/1 | Not known | | M | Hellenistic | | Macedonian in tumulus | At least 4 wreaths. Grave plundered but also found gilded silver protome of satyr from decoration of vase, iron sword, iron nails, fragments of bronze and silver vessels, clay transport amphora, glass decorations from kline. | AMTh? | Vokotopoulou 1989, 284. |
| **M22** | 2 | Mieza | Grave 126 | 1/1 | Myrtle | Bone circlet | F? | First half of 4th | I | Pit grave | Attic black glaze Bolsal kylix, exaleiptron, oinochoe, fragment of bronze, canaster, fragment of pottery. | Veroia A.M | Romiopoulou and Touratsoglou 1998, 115. |

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| **M23** | 2,6 | Nikisiani | A | 2/1 | Myrtle Flower 5 petals | Wood, lead, gilded copper, azurite, clay. Oval and spherical berries, painted flowers | M | After 315 | I | Cist | 2 silver calyx cups, clay alabasters, transport amphora, three bronze coins of Philip II, one of Alexander the Great and one of Cassander, human tooth, glass 'eye' from kline, glass jewel. | Kavala AM | Lazaridei *et al.* 1992; dating Touratsoglou 1998, 248. |
| **M24** | 2,6 | Nikisiani | B | 3/1 | Myrtle | Bone, wood, flowers with six petals and white coating, oval berries | M | After 305 | Not known | | Lobed silver phiale, bronze strainer and ladle, 2 BG skyphoi, transport amphora, coins including Philip II, Alexander the Great, Cassander and Antigonus Gonatas. | Kavala AM | Lazaridis *et al.* 1992; dating Touratsoglou 1998, 250. |
| **M25** | 2,6 | Nikisiani | Δ | 3/1 | Olive, myrtle | Wood, bone, clay, gilded copper, oval berries, flowers with 8 petals, white coating, azurite | F body of child. | After 305 | I | Cist | Figurines on chest and sides of deceased. Gilded wreath on skull, 2 more between skull and shoulders. Vases, skyphos with ash. RF skyphos 23 bronze coins of Philip II, Alexander the Great and Cassander. 2 BG skyphoi, silver calyx cup, RF skyphos, figurines, gold jewel. | Kavala AM | Lazaridis *et al.* 1992; dating Touratsoglou 1998, 250. |
| **M26** | 2 | Nikisiani | Γ | 3/1 | Oak and myrtle or olive | Wood, bone, gilded copper, clay | M | Early 3rd (after 295/4); last qu. 4th. (Zimi 2011, 174) | C | Cist | Olive or myrtle wreath found with skull. Oak wreath at feet, silver kantharos with 2 gold staters of Philip II, 13 tetradrachms of Philip II and Alexander III and 68 bronze coins of Alex. III and Cassander. Pointed amphora, bone plaques, ash in one of silver kantharoi, fabric, burnt wood. 3 glass buttons probably from kline. | Kavala AM | Lazaridis *et al.* 1992, 18 and 26-31. Dating Touratsoglou 1998, 251. |
| **T2X55A** | | Nikisiani | E | | | | M | Late 4th early 3rd | C | Cist | Wreath may not have survived. Iron strigil, gold stater Philip II and 124 bronze coins. 2 bronze kantharoi, BG skyphos, bronze ladle, silver calyx. Alabastron. Rings. | | Lazaridis *et al.* 1992, 18 and 39-41. |
| **M27** | 1 | Olynthos | Grave 72 Riverside Cemetery | 1/1 | Myrtle | Gilded bone, gilded copper, oval berries | | Early 4th | | Trench with Laconian tiles | 4 black-glazed skyphoi, iron strigil. | AMTh | Robinson 1941, 159 and pl. XXVIII; Robinson 1950, 349, 352; Robinson 1942, 17-18. |
| **M27A** | | Olynthos? | | 1 | Ivy | Gilded stems, two ivy berries, | | | | | The material is kept with M27, but is unlikely to be from the same wreath (see catalogue, Vol.II, pages 85 and 88). It is more like the material from M39 (Sedes) which has very similar stems, or could conceivably from from T2X56. | AMTh | |

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| **T2X56** | | Olynthos | Chamber tomb 598 | 2/1. | Oak, ivy? | Bone circlet, gilded one side. 16 petal-like objects with wires;115 gilded berries with projecting wire (45 drop-shaped and 45 squat with incision – ivy?); 24 acorns and one long ovoid | | 2nd half 4th | | Chamber, wooden roof | Robbed. Nails for suspension on walls. Kline with glass decoration, alabastra, bronze coin of Chalcidians, late 5th-4th pottery. Part of figurine, thin bone plaque from kline. | AMTh | Robinson 1942, 123-4; for dating, see Ignatiadou 2013, 263-4. |
| **T2X57** | 2 | Oraiokastro | Grave 1 | 1/1 | Myrtle | | | 3rd qu 4th? | C | | Fragments found in funerary vase with protomai representing Persephone or Aphrodite. | AMTh; 19887 | Soueref. and Mathaiou 2000, 233 and fig. 7. |
| **T2X58** | 2 | Oraiokastro | Grave 4 | 1/1 | Myrtle | | | 3rd qu 4th? | C | | Fragments found in funerary vase. | AMTh; 19890 | Soueref and Mathaiou 2000, 233 and fig. 11. |
| **T2X59** | 2 | Pella | Agrosykia grave A | 1 | Myrtle | | | c.320? | C | Tumulus | Tomb robbed. Bronze buttons, nails. | Pella AM | Chrysoatomou P. 2000 340, Chrysostomou et al. 2007, 294-5. |
| **T2X60** | 2 | Pella | Agrosykia grave B | 2 | Myrtle and ivy /grapes | Bone, copper, gold | F? | c.320 | C | Small tumulus | Alabastra, buttons, iron conical object, bronze ring, iron nails with fragments of wood (to hang objects such as wreaths, strigils etc?), iron strigils, gold myrtle, wreath, eighth stater. It is not certain that the grapes came from one of the wreaths. | Pella AM | Chrysostomou P. 2000 341, Chrysostomou et al. 2007, 295. (contemporary with Derveni B). |
| **T2X61** | 2? | Pella | Cist grave 10, eastern cemetery | 1/1 | Myrtle ? | Bone and wood circlet, gilded copper leaves. | | End-4th, beg.3rd | I | Cist | 2 iron strigils, bronze nail, bronze vessel handle, three small bronze rings, bronze coin of Kassander, unguentaria, lamp, bone cylindrical object with rings, skyphos, iron nails with traces of wood and 12 glass lenses, other pieces of kline in bone. | 89.71a, 89.130 | Lilimbaki-Akamati 1996a, 94. |
| **T2X62** | 2? | Pella | Cist grave 11, eastern cemetery | 1/1 | | Fragments of circlet and leaves | | Late 4th | I | Cist | Unguentarium. | | Lilimbaki-Akamati 1996a, 99. |

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| **M28** | 2 | Pella | E. cemetery | 1/1? | Myrtle | Wooden circlet, oval berries, gilded leaves | F | 3rd quarter 4th or later | C | not found in grave but in fill | In RF Kerch pelike with scenes of mystic marriage Dionysus and Ariadne, and of epaulia with Ariadne and Aphrodite. Cover: black glaze phiale | Pella AM | Karamanoli-Siganidou 1984, 261. |
| **M29** | 2 | Pella | Cist grave 1, E cemetery | 1/1 | Myrtle | Gilded bone and wood circlet, oval and spherical berries, gilded copper leaves | Adult M | 2nd half 4th c. | I | Cist | Grave with painted walls. glass, iron and bone from kline, iron strigil, iron fibula, 46 knucklebones, 41 gilded acorn-shaped beads, bone bead, alabastron, female figurine, gold leaf referring to Persephone, and to the initiate Poseidippos. | Pella AM 89/119, 89/120, 89/122 | Lilimbaki-Akamati 1996a, 79 and pl.26 Leaf: Lilimbaki-Akamati 1992, 95.. |
| **T2X62A** | | Pella | Cist grave 2 | 1/1 | Myrtle | Gilded bone circlet, gilded copper leaves, spherical and oval berries | Adult M about 40 | End 4th | I | Cist | Fragments from a wreath were strewn above the grave. Contents: pieces of alabastra, figurine, strigil, knife. | Pella AM | Lilimbaki-Akamati 1996a, 81. |
| **T2X63** | | Pella | Cist grave 3 | 1/1 | Myrtle | Gilded myrtle berries, oval and spherical with a cross, fragments of bone circlet and gilded copper leaves. | F | End 4th | | Cist | Nails from box, glass lenses, 2 small rings, bone tool, skyphos, lamp, plate, gold ring, gold earrings, gold leaf of laurel with name Philoxena. | Pella AM | Lilimbaki-Akamati 1996a, 82. |
| **T2X64** | 6 | Pella | E. cemetery | 1+/1 | Flow-ers | | F | 3rd quarter 4th or later | | Cist | Bronze coin of Alexander the Great, gold necklace with rosettes and spear-shaped leaves, 2 gold earrings, gold ring, bronze mirror, RF Attic pyxis, lead pyxis, silver unguentarium, remains bone box and a few clay figurines | Pella on display | Karamanoli-Siganidou 1984 261. |
| **T2X65** | | Pella | E. cemetery 91/5 | | Myrtle ? | Bone circlet | | End 4th | | Rock cut Cist | Spherical necklace beads, kline decoration, small bronze nails, 2 iron strigils, unguentarium | Pella AM | Lilimbaki-Akamati and Akamatis 2014, 31. |
| **T2X66** | | Pella | E. Cemetery 91/6 | | Ivy? | Spherical berries | | 2nd qu. 3rd | | Rock cut Cist | Lid of small pyxis, bg skyphos, unguentaria, pyxis, small silver fragments with gilding. | Pella AM | Lilimbaki-Akamati and Akamatis 2014, 33. |
| **T2X67** | | Pella | E.Cemetery 92/22 | | | Copper circlet (possible that further elements are in 92/21) | | Last quarter 4th | | Rock cut Cist | Unguentarium, Attic bolsal, baby feeder, Attic lekythos, fragments Attic RF vases, alabastron, protome. | Pella AM | Lilimbaki-Akamati and Akamatis 2014, 84. |

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| **T2X68** | | Pella | E. Cemetery 92/61 | | Myrtle | | | Last quarter 4th | | Tile-covered | Unguentarium, Attic bf skyphos, iron horse trapping, bronze rings, fragment of strigil, bronze ring. | Pella AM | Lilimbaki-Akamati and Akamatis 2014, 112. |
| **T2X69** | | Pella | E. Cemetery 92/69 | | | Spherical berries, copper stems | | 1st quarter 3rd | | Cist | BG skyphos, figurine of young boy, gold myrtle wreath, iron nails. | Pella AM | Lilimbaki-Akamati and Akamatis 2014, 69, 396. |
| **T2X69A** | | Pella | W. Cemetery Archontiko, 724 | | | | M | Last qu. 4th | C | Pit | 3 clay vases (oinochoe, bowl, Bolsal-type skyphos), bronze kantharos, clay head of beardless youth. | Pella AM | Chrysostomou 2011, 316. |
| **M30-33A** | 2 | Phoinikas | Cist grave 5 (4 wreaths) | 4-5/1 | Myrtle | Gilded leaves, wooden circlet, fabric, gilded berries, leaves | F 45-50 | 2nd quarter 4th | C | Cist | 4-5 wreaths. Gold fabric with bones of deceased, 5 gold bow-shaped brooches, 5 pins, gold ring with engraved bezel and coin of Amyntas III, alabastra, lekythoi. | AMTh | Tsimbidou-Avloniti 1988 263 and Tsimbidou-Avloniti 2009, 439. Tsimbidou-Avloniti 1988, 263. |
| **M34** | 2 | Phoinikas | Cist grave 3 | 3/1 | Myrtle | Gilded leaves, wooden circlet, fabric?, gilded berries, leaves | F | 2nd qu. 4th | C | Cist | At least 2 wreaths. Large cist grave with thick layer with remnants of pyre, on which deceased had been placed on kline. Second kline with ivory decoration held unglazed vase containing cremated bones and gold pendant, necklaces, clay pyxis, alabaster grindstone and peplos sewn with discs. BG base. | AMTh; 18620, large box labelled Taphos II | Tsimbidou-Avloniti 1988 263 and Tsimbidou-Avloniti 2009, 439. |
| **M35** | 2 | Phoinikas | Cist grave 2 | 1 or 2/1 | Myrtle | Gilded leaves, wooden circlet, gilded berries, leaves | M about 20 | Mid-4th | C | Cist | 2 alabastra, bronze kados with cremated remains, knucklebones. | AMTh; 18630 18600 | Tsimbiodu-Avlonite 2009, 439; Tsimbidou-Avloniti1988, 262. |
| **M36** | 6,3 | Phoinikas | Macedon-ian Tomb | 4+/10 | Flow-ers | Painted flowers, gilded leaves, gilded spherical berries, lead circlet | | 325-320 | C and I | Macedonian | Robbed. Painted façade with figures shaking hands. Gold oak leaf, thought to be from gold wreath. Fragments of gold necklaces and gold wreath, ivory decoration from kline. Silver drachma of Alexander III, spears. | AMTh; 17442 17434 | Tsimbidou-Avloniti 2005, 67, 73. |
| **M37** | 3 | Potidaia | Macedon-ian Tomb | 1/2 | Ivy and vine | lead and wood | | Around 300 | | Macedonian | Robbed in modern times. 2 stone klinai with Dionysiac decoration. Iron strigil, 2 alabastra, clay alabastron, small black-glaze kantharos, , figurine of small boy, about 50 ivory fragments perhaps from box. | AMTH on display; 9749 | Sismanidis 1997a, 28; Sismanidis 1989, 223-224 ; Sismanidis 1987, 73-81 ; 1989 *AD* 39 (1984) *Chron* 224. |

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| **T2X69A** | | Potidaia | Petriotika, plot 613, grave B | 1 | | | F girl | | I | Sarcophagus | 2 gilded clay earrings, gold ring, 4 alabstra, 2 large protomai, 123 knucklebones, 2 bronze coins. | | Sismanidis 1990, AD 41 (1986) *Chron*146-7. |
| **T2X70** | | Pydna | Grave 1, Methoni | 2/1 | | | M | 3rd qu. 4th. | C | Theke | Robbed. Decorations from wooden kline, bronze strainer, fragments from transport amphorae, alabastra and bg skyphos, gold obol of Philip II, double gold fibula, gold ring, iron spearheads, iron arrow heads, 3 ivory cubes with glass gaming pieces, gilded beads, male necklace beads, fragments of gilded wreaths. | | Besios 1990b, 72; Besios 1990a, 142; Besios 2010, 306-8. Dating Touratsoglou 1998, 245 gives around 323; Ignatiadou 2013, 217 gives 350-325. |
| **T2X71** | | Pydna | Grave 3 Methoni | 3/1 | | | M | 3rd qu. 4th | C | Theke | Remains of wooden kline decoration, wooden larnax with burnt bones of deceased and gilded wreath above it, 4 bronze vases and 8 clay vases, bronze kados, strainer, kantharos, phiale, pottery, gilded and tinned calyces, further gilded wreaths. | | Besios 1990a, 142; Besios 1990b, 73; Besios 2010 310-313. |
| **T2X72** | | Pydna | Grave 2 Methoni | 1/1 | | | F | 3rd qu. 4th | I | Cist | Ivory decoration from kline, from Dionysiac cycle including maenad with torch, 2 small earrings and a strip with the deceased's name Phylomaga, pottery, gilded wreath and iron scissors or shears. | | Besios 1990a 142-3; Besios 1990b, 82; Besios 2010 309. |
| **T2X73** | | Pydna | Sevasti Toumba Pappa grave 3 | 2/1 | | | M | Around 350 | C | Pit | Bronze kados with burnt human remains, bronze lekane and lebytas on tripod, a pair of bronze greaves. Remains of shield. Whole of kline was covered with gilded copper wreaths, necklaces, clay alabastra, iron strigils, gold wreath of ivy, 5 ivory dice with many glass gaming pieces and a gold fibula. Purple fabric. Many clay disks with head of Athena. | | Besios 1988, 212; other finds: Besios 2010, 286, 290-291. |
| **T2X74** | | Pydna | Sevasti Toumba Pappa, grave 2 | 3/1 | | | M 22-30 (adoles-cent as separ-ate burial) | After 336 | C | Cist in tumulus | Large bronze crater on stand with burnt bones of deceased with gold wreath and silver coin of Alexander the Great. Gilded wreath above bones. 5 silver symposium vessels, clay kantharos, iron weapons, 3 iron strigils. Amongst burnt remains from pyre remains of decoration of kline, clay vases, remains of gilded wreaths, clay necklace beads, fragments of gold wreath, gold fibula, iron strigils, iron lip of aryballos. Iron spearheads. | | Besios 1988, 212 ; Besios 2010, 286-289 . Antikas and Wynn-Antikas 2013 (human remains and fig. 17 shows wreath fragments); Vokotopoulou 1994 (crater). Dating Touratsoglou 1998, 243. |

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| T2X75 | | Pydna | Alykes Kitrous pit grave 2 | 2/1 | | | M | 2nd half 4th | I | Pit in tumulus | Wooden kline, 2 calyces (BG), strigil. | | Besios 1986, 55. |
| T2X76 | | Pydna | Alykes Kitrous theke 1 | 1/1 | Flow-ers | Clay and copper | child | End 4th | C | Theke in tumulus | 2 gold diadems, knucklebones, unguentaria, strigil, lamp. | | Besios 1986, 55. |
| T2X77 | | Pydna | Alykes Kitrous, Cist grave 1 | 1/1 | Flow-ers | Clay and copper | child | End 4th beg 3rd | | Cist | Gold diadem, 5 figurines, clay skyphos, knucklebones. | | Besios 1986, 57. |
| T2X77A | | Pydna | Alykes Kitrous grave 8, Chryso-koides plot | 2 | | | M | | | Pit in two parts | 4 clay vessels, incised gold coins of Philip II, ivory decorations on kline. | | Tzifopoulos 2010, 32; Besios 1995, 247 mentions the coins, but not the wreaths. |
| T2X78 | | Pydna | Alykes Kitrous, cist grave 20 | 1/1 | | | | 2nd half 4th | | Cist | Bronze hydria used as urn, symposium vessels, ceramic and alabaster vases, figurine, knucklebones, iron strigils. | | Besios 1995, 247. |
| T2X79 | | Pydna | Alykes Kitrous, cg14 | 3/1 | | | F young | Late 4th | | Pit | 3 wreaths, one on head, gold earring, silver coin, gold danake, knucklebones, squat lekythoi, figurines, protomai. | | Besios 1991, 190. |
| T2X80 | 7 | Pydna | Sphendami | 1/1 | Oak | Gilded silver | M | Last quarter 4th | | | Gilded silver wreath on box. Gold myrtle wreath. Silver calyx with engraved ivy. | AMTh Pu 4285 | Besios 1985, 54; Grammenos 2007, 119; Descamps-Lequime 2011, 538. |
| T2X81 | | Pydna | Alykes Kitrous 71 | 2+/? | | | F | Helleni stic | | Cist | Used at least twice. 6 fibulae, ring, coin of Alexander the Great ivory from earlier kline. Several gilded wreaths. | | Besios 2003, 375; Besios 2010, 236-7. |
| T2X82 | | Pydna | Makry-gialos field 279, grave 12 | 5/1 | | | F | 3rd qu. 4th | | Pit | Wooden kline, alabastra, ceramic, glass and bronze pottery, red glass calyx cup, figurines, bronze vessels (phialai, oinochoe, strainer), gilded ceramic mastoid vessel, bronze mirror, 5 gilded wreaths, coin Alexander the Great. 2 glass vessels and glass seal depicting woman spinning (Aphrodite). | | Besios 1995, 246; Ignatiadou 2012a, 69 (haematinon bowl). |
| T2X82A | | Pydna | Makry-gialos 15 | 1/1 | | | | 2nd half 4th | | Cist in shape of theke | Iron strigil. Wooden box with remains of deceased, placed on furniture, probably diphros. | | Besios 1995, 246. |

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| **T2X83** | | Pydna | Makry-gialos 5 | 1/1 | | | F | 2nd half 4th | C | Cist (theke) | Gold jewellery, figurines, glass and clay vases, bronze mirror, ivory decorations from box. Wreath inside wooden box. | | Besios 1995, 246; Besios 2010, 203. |
| **T2X84** | | Pydna | Korinos, Mound B, 3.2001 grave 3 | 2/2 | | | | End 4th/beg 3rd | | Cist (theke) in Macedonian | Robbed. Wall paintings with representation of wreaths and diadems. Wooden klinai. Fragments of ivory with human figures, bronze greaves, clay vases, fragments of wreaths, clay and copper gilded necklace beads, flowers which decorated bronze vases, handle of mirror, 2 bronze coins. | | Besios 1994, 177; Besios 2010, 277, 284. |
| **M38** | 6 | Pyrgoi | Macedon-ian Tomb | 1/3 | Myrtle | Gilded copper leaves, painted flowers, berries or buds | | Beg. last qu. 4th | I | Macedonian | Secondary burial. Skyphos, 2 strigils, bronze coin of Philip II RF Kerch pelike. Remains of 3 persons: man aged 35-50, woman over 50 and child of 1 or 2. | | Karamitrou-Mentessidi 1998 and pl. 7; Karamitrou-Mentessidi 1997. |
| **M39** | 2,3 none | Sedes | Gamma | 4/1 | Myrtle, ivy | Gilded bone circlet | F young woman | After 320 | I | Cist | Eighth stater of Philip II, alabastra, pyxis with West Slope decoration, black glaze kotyle, gold diadem, gold ring, gold necklace and earrings, gold fibula, gilded plaques (one showing Demeter), bronze phiale, mirror, silver calyx cup. On 4 corners of the kline 4 gilded wreaths, and iron strigil on the pyre. Gilded grapes scattered inside grave, perhaps from decoration of a fabric and discs with star, gorgon or head of Athena. Bread roll with conical shape. | AMTh | Kotzias 1937, 885; dating Touratsoglou 1998, 366. |
| **T2X85** | 2 | Souroti | Grave 2 | | Myrtle | Gilded leaves, spherical berries | F | | | | Pair of gold earrings, ring | | Souereph and Chavela 2002, 174 and pl.12. |
| **T2X86** | | Thessalo-niki | Grave 224 | 1/1 | | | | End 4th-beg. 3rd | I | Pit | 2 unguentaria, 2 bg skyphoi type A, kantharos-kylix with West Splope decoration, iron strigil and over 60 knucklebones, some with holes, others with addition of lead weights, silver drachma of Alexander III and seven bronze coins of Kassander. | | Tzanavari and Tsimbidou-Avloniti 2018, 76. |
| **T2X87** | | Thessalo-niki | Grave 33 | 1/1 | | | | First qu. 3rd | | | Gilded wreath with coin of Kassander, unguentarium, skyphos type A. | | Tzanavari and Tsimbidou-Avloniti 2018, 77. |
| **M40** | 1 | Thasos | Ergatikes Katoikies grave II | 1/1 | Myrtle | Round bone circlet, gilded berries with cross (two sizes) | F 25-28 | Early 4th | I | Cist | Gold diadem with Gorgon's head and bee, gold ring with bezel, silver hemiekton coin, lekythos, iron strigil. | Thasos AM | Sgourou 2001. |

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| **M41** | 2 | Thasos | Soultou grave II | 1/2 | Myrtle | Lead circlet, gilded bronze leaves | M 65 and one other | 4th | I | Cist | Strigils, and 2 cylindrical ivory beads. | Thasos AM | Koukouli-Chrysanthaki et al 1997, 769-794. |
| **T2X87A** | | Thermi | Plot 464, grave 2 | 1/1 | | | F | About 300? | | Cist | | | Skarlatidou 2007, 82. |
| **T2X87B** | 6 | Thermi | | 1/1 | | Gilded clay flower, gilded copper fragments, clay rosette, pink and white | | | | | | | Grammenos *et al.* 1990, 283-4 and pl.6. |
| **T2X88** | | Vergina | Tomb II - Great Tumulus | | Oak and ? myrtle or olive | Bone | | Just after 336 or after 317/6 | C | Macedonian | Immensely rich tomb silver vessels, kline, ivory heads, armour, gilded diadem, gold wreath, bronze vessels, lantern, iron tripod, ceramics. | Vergina AM on display | Andronikos 1984; Kottaridi 2011a, 60-61. |
| **T2X89** | 7 | Vergina | Tomb of Prince Tomb III | | Myrtle ? Olive? | Bone or ivory and leather | | end 4th (c. 310) | | Macedonian | Silver vessels, gold wreath, 2 cauldrons, iron lamp stand, armour, 2 gold sheets with relief decoration, kline | Vergina AM on display | Andronikos 1984, 202, 217. |
| **T2X90** | | Vergina | Heuzey A | 1/1 | | | M | c.330-320 | I | Macedonian | Robbed. 2 gold fibulae of Illyrian type, male necklace, pottery, coins. | | Drougou 1995-2000, 236. |
| **M42** | 2 or 1 | Vergina | Tomb B Stenomakri | 4/1 | Myrtle | | | 2nd quarter 4th | C | Cist | At least 15 white ground hydriai, nine strigils, decorative elements from box, parts of horse bit. | Vergina AM B76-80 | Kyriakou 2008, 108. |
| **M43** | 2 | Vergina | Tomb Γ | 1/1 | Oak and ? myrtle or olive | Bone or ivory | M | Mid-4th | C | Cist | Tinned askos, alabastra, hydraiai, lekythoi, fragments silver kalyx, weapons, fragments of kline. Bones in metal casket. Tomb of man but remains of woman transferred to A came from Γ. Painted myrtle wreath on inside of grave. | Vergina AM | Kyriakou 2008, 152. |
| **M44** | 2 or 1 | Vergina | Tomb A Stenomakri | 2/2 | Myrtle | Bone | M | Mid-4th | C | Pit | Kline, finely executed weapons. Female probably from Γ. | Vergina AM | Kyriakou 2008, 72-74. |
| **T2X91** | | Vergina | Tomb with Tetrastyle Façade | 2/2 | Myrtle and flower | Myrtle leaf, three berries, two stems, flower | M | | | | Four amphorae, one oinochoe, 6 small skyphoi, 6 items of pottery, 6 unguentaria, 3 pyxides, 2 earrings in gold, one Illyrian pin, one gold ring, fragments of an iron spearhead, one swordhilt in iron, one iron strigil, terracotta ram, 3 lamps, one base for stele and four bronze coins. | | Pantermali 1972, 166 and pl.V. |

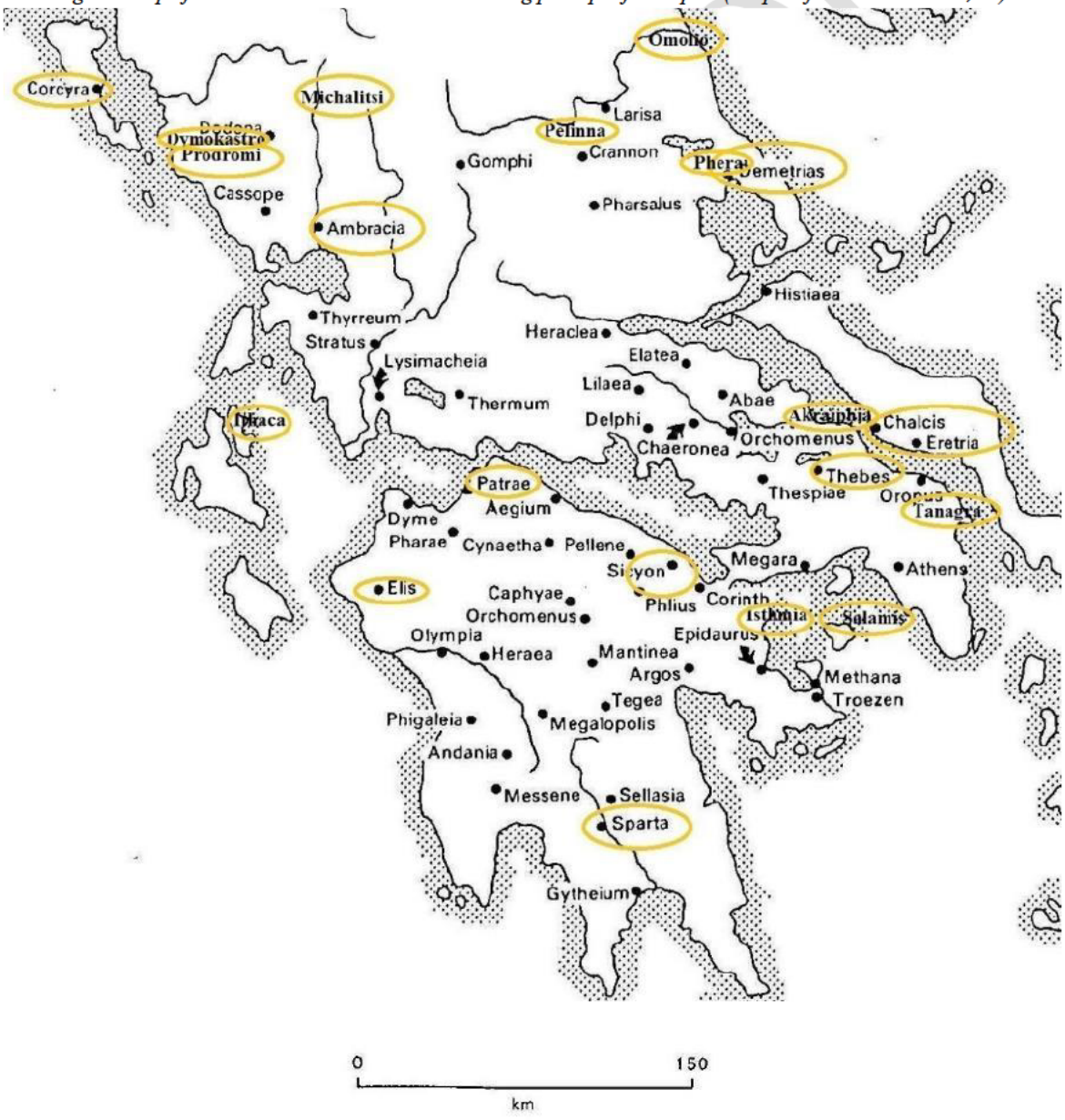
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# CHAPTER 3: SOUTHERN AND CENTRAL GREECE

## 3.1. Introduction

This chapter discusses wreaths to the south of Macedonia; the principal find-spots are shown in **fig. 3.1** and the information about the wreaths is summarised in **Table 3** at the end of this chapter, subdivided into areas, since the burial practices are not the same throughout. At least 67 wreaths are known from the region, although publication is sporadic, so the real number may well be higher.

*Fig. 3.1 Map of Southern and Central Greece showing principal finds-spots (adapted from Talbert 1985, 72).*



## 3.2. Typology and development

### *3.2.1 Boeotia, Attica and Euboea*

At least fourteen surviving wreaths are known from this area, mainly of types 4 and 5, many characterised by the use of gilded clay and little metal. The earliest surviving wreath which can be securely dated (by accompanying local pottery) is from the end of the second quarter of the fourth century and was found at Akraiphia, SCG1[158] (**fig. SCG1.2**). It has charred berries, scant remains of leaves, and what appear to be hand-made conical flowers (predecessor of type 4); there are now no visible traces of gilding and it is possible that it was never gilded (**fig. 3.2**). Further fourth century graves at Akraiphia contained wreaths with moulded bell-shaped flowers and spherical berries (type 4); one example, T3X5, was found in a pit grave (**fig. 3.3**)[159]. The number and the regularity of the flowers and berries and lack of leaves are noticeable; these features lead me to suggest tentatively that they may once have formed part of a kind of wreath where evenly sized items would have been essential for the overall effect which, in the case of the flowers and possibly the berries, would have been achieved by moulding. Some figurines from Boeotia show a female wearing a headdress which may depict how they were used; one such figurine was found in a grave that also contained bell-shaped flowers that were once part of a wreath (T3X11) and there are further examples of similar figurines in the Louvre and the British Museum (**fig. 3.4**)[160].

[158] Sabetai 2012, 309, gives this date for the black glaze mug (inv.43745), of local manufacture, found in the grave.
[159] Andreiomenou 2001, 169, note 93. It was not possible to study T3X5 since it could not be located. Andreiomenou 2006, 203.
[160] The headdress is however seen by most scholars as mainly composed of hair (or a wig) dressed in curls and/or plaits (Higgins 1954, 226, cat. 849 and 850; Mollard-Besques 1954, 93, cat. C59). Higgins suggests the figures may be carrying wedding gifts; Mollard-Besques suggests they may be associated with the cults at the Kabeirion in Thebes.

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*Fig. 3.2 Conical flower from SCG1 Akraiphia. © Hellenic Ministry of Culture and Sports/Ephorate of Boeotia.*



*Fig. 3.3 Bell-shaped flowers and spherical berries from Akraiphia, T3X5. From Andreiomenou 2001, 190. © Hellenic Ministry of Culture and Sports/Ephorate of Boeotia/Archaeological Resources Fund.*

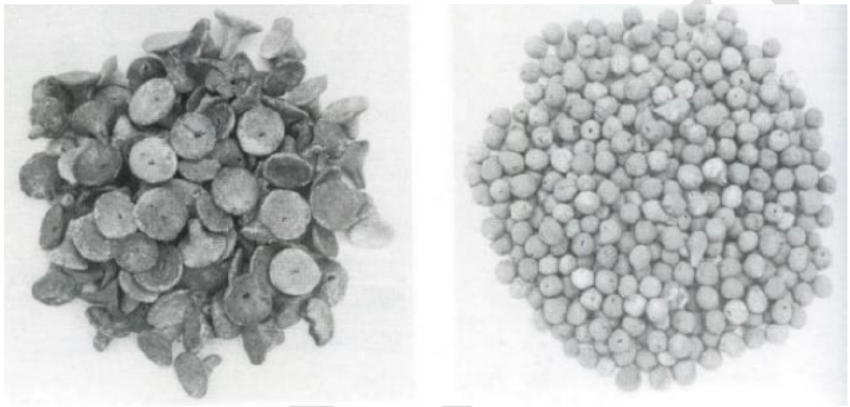


*Fig. 3.4 Figurine from Thebes wearing headdress with rounded items (flowers or curls?), late fifth or early fourth century (Musée du Louvre, acq.1912, CA1914).*



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A different kind of gilded wreath was found at Tanagra dating to the end of the third century (SCG3-5); the leaves are made of clay with a yellow or white coating beneath the gold (**fig. 3.6**)[161]. They represent ivy and oak and are likely to have been part of ring or roll wreaths (type 5), since they resemble the leaves depicted on such wreaths (**fig. 3.7** is an example of a figurine from Boeotia).

*Fig. 3.6 Gilded oak leaves from Tanagra, SCG5. Schimatari AM © Ministry of Culture and Sports/Ephorate of Boeotia*



*Fig. 3.7 Figurine wearing a roll wreath from Haliartos. Archaeological Museum of Thebes. From Aravantinos 2010, 325. © Hellenic Ministry of Culture and Sports/Ephorate of Boeotia/Archaeological Resources Fund*



SCG2, also from Tanagra, consists of gilded flowers with distinct petals, which are smaller than those found on type 6 wreaths (**fig. 3.8**). Andreiomenou refers to clay motifs being found in graves at Akraiphia, consisting of rosettes, flowers or maenads[162] (**fig. 3.9**) which resemble appliques of the Muses found at Aineia that were probably mounted on a fabric diadem[163], so some of the elements illustrated may be motifs from such a diadem rather than a wreath.

[161] Andreiomenou 2007, 253.
[162] Andreiomenou 1994, 103.
[163] Vokotopoulou 1990, 70-72. See also Tsigarida 2006, pl. 6.

*Fig. 3.8 Gilded flowers from Tanagra (SCG2). Schimatari AM*
*© Hellenic Ministry of Culture and Sports/Ephorate of Boeotia.*

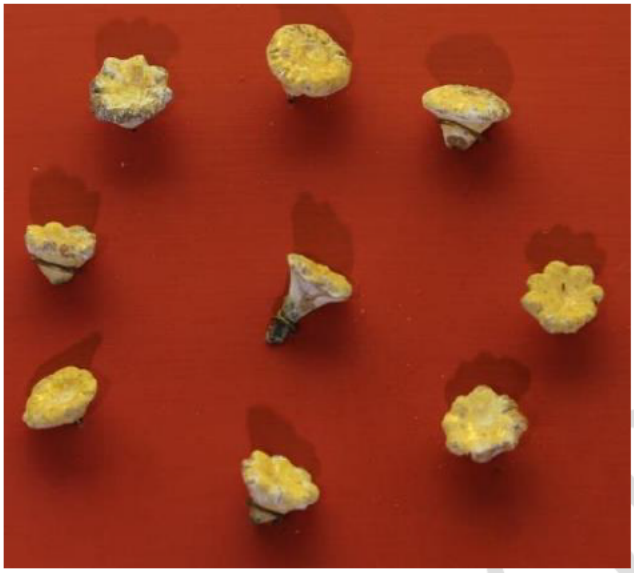
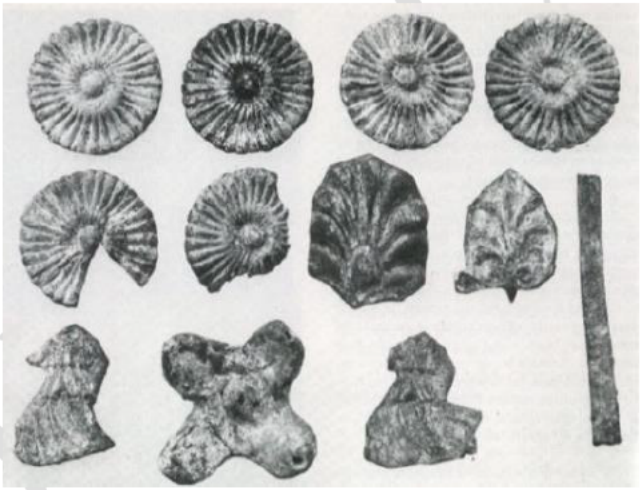


*Fig. 3.9 Motifs from Akraiphia grave MAK/XXV (1976). From Andreiomenou 1994, fig. 5. © Hellenic Ministry of Culture and Sports/Ephorate of Boeotia.*



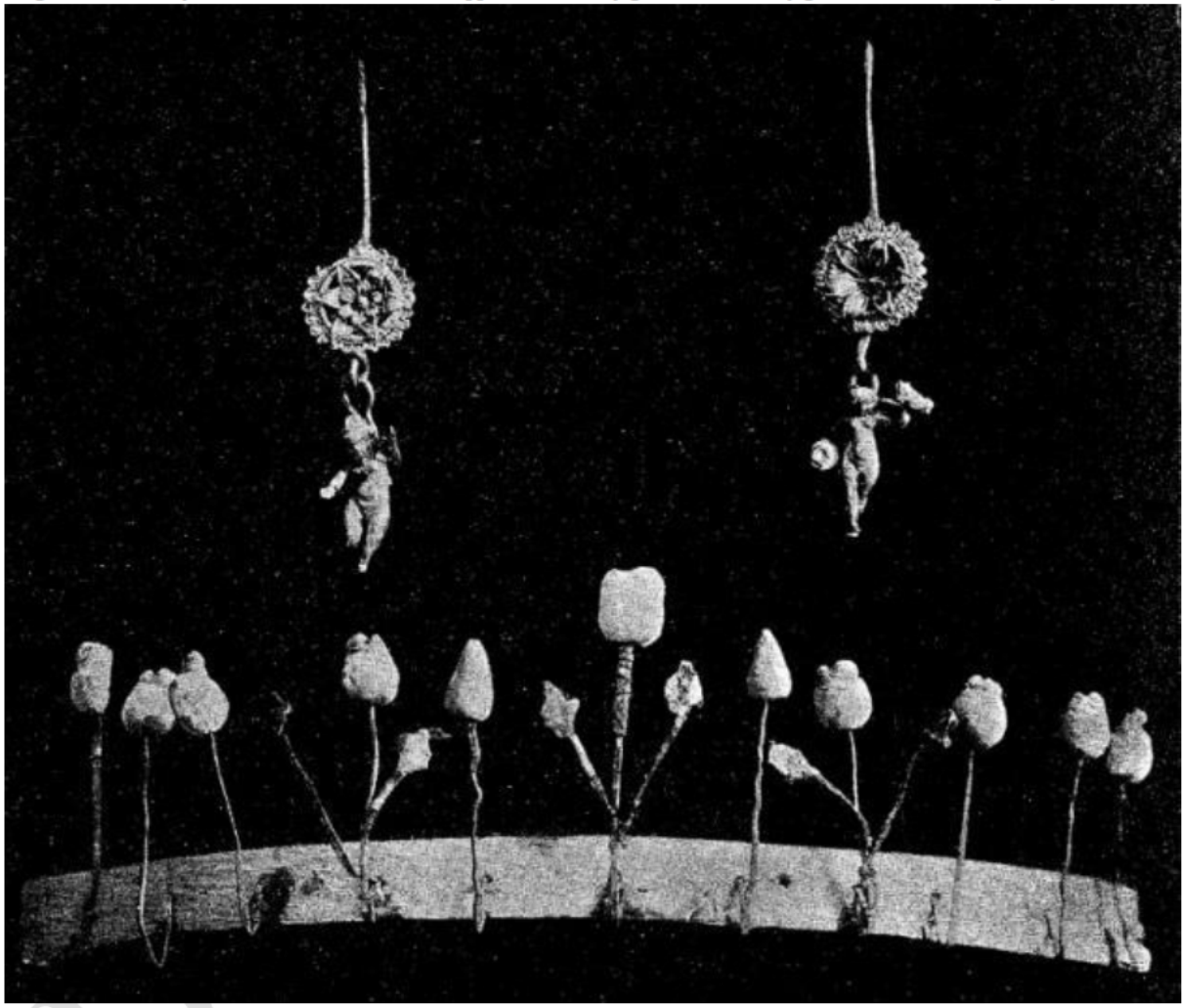
Some ungilded clay wreaths were found near Orchomenos, thought to be from a sanctuary dedicated to the Nymphs, Demeter and Kore[164]. These clay wreaths, which are made in one piece and have a flat back, are outside the scope of this dissertation and are mentioned for comparison and to show the use of clay in Boeotia.

The grave containing T3X9 is likely to be from the early third century, judging by its similarity to SCG35. It was found on the inhumed body of a woman, buried in the same grave as the ashes of a man[165] (**fig. 3.10**). It appears to have a wooden circlet and resembles SCG35 and

[164] Aravantinos *et al*. 2014.
[165] Pappadakis 1914, 127-9.

myrtle wreaths found in a tumulus at Pergamon (**fig. 3.34**). It appears to be of type 2 but has been reconsitituted with the elements pointing upwards, perhaps due to a decision by the conservators rather than to any real difference in design from the Macedonian type 2 wreaths, which were excavated much later.

*Fig. 3. 10 Wreath from Thebes, T3X9. From Pappadakis 1914, fig. 9. The Erotes figures above are not part of the wreath.*



SCG19 (type 2) has blue deposits similar to those on M24 and 25 and is likely to be of a similar date (c.305). It was said to be from Eretria[166] but is surely Macedonian in inspiration (**fig. 3.11**). The other grave goods reported to have been found with the wreath include miniature furniture, and although this does not necessarily suggest a child, its small size, no more than 10.7cm in diameter, does.

[166] Hasselin Rous 2017, 4.

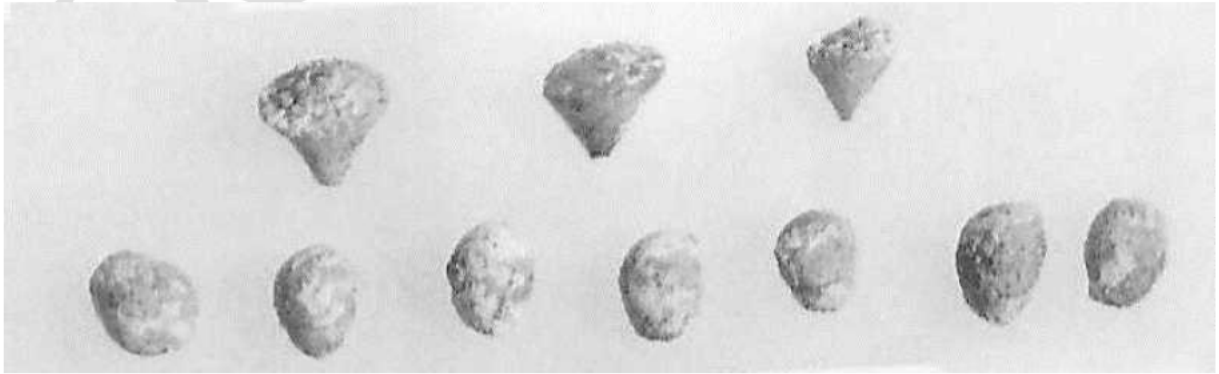
*Fig. 3.11 Wreath in Louvre (Bj2414), SCG19. © Musée du Louvre*



### *3.2.2 Peloponnese*

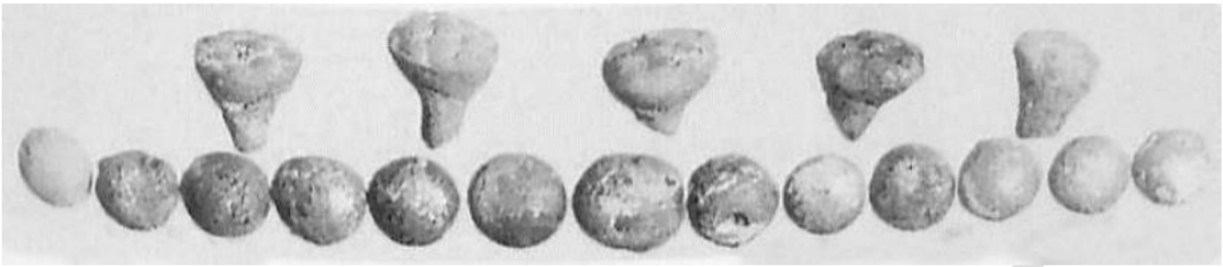
Some 17 wreaths are listed in Table 3.1 from the Peloponnese, of types 4, 3, 2 and 6, many characterised by the use of gilded clay and little metal. Wreaths of type 4 seem to have appeared in the Peloponnese in the mid-fourth century, about the same time as in Boeotia. The earliest wreaths of this type had oval berries, and the later spherical berries or buds. At least two were found near Elis (**figs. 3.12-13**): T3X27, with oval berries, was accompanied by a skyphos from the mid-fourth century and T3X26, which has spherical berries or buds, by pottery the latest of which is from the second half of the fourth century[167].

*Fig. 3.12 Flowers and berries from T3X27, Elis AM inv. Δ495 and 496. From Arapogianni 2000, 193© Hellenic Ministry of Culture and Sports/Ephorate of Ilia/Archaeological Resources Fund*



[167] T3X27: Arapogianni 2000, 194-195, and T3X26: Arapogianni 2000, 198-199.

*Fig. 3.13 Fragments of wreath from pithos 2, T3X26. Elis AM inv. Δ499 and 500. From Arapogianni 2000, 197. © Hellenic Ministry of Culture and Sports/Ephorate of Ilia/Archaeological Resources Fund*



At least one type 2 wreath was found in the east of the Peloponnese: SCG20 was excavated near Isthmia and judging by the pottery should be dated after 338. The few surviving fragments of circlet are narrow, at just under 3mm wide, suggesting a child's wreath, though there may have been some shrinking in the pyre, but the oval berries are of normal size, around 7-9mm long. Some have a red coating under the gold leaf, one of the few examples of a coloured coating outside Macedonia (**fig. 3.14**). Only one leaf has been well preserved; it is relatively full in shape and thicker than leaves normally are.

*Fig. 3.14 Berries from SCG20 with red coating (IM5044) © Hellenic Ministry of Culture and Sports.*



T3X17 was found neaby at Leuko Potamo, Examilia [168]; it is on view at Corinth AM but is not published and there is as yet no contextual information so it cannot be dated accurately, although the shape of the leaves and oval berries suggest the fourth century. It appears to have been made for the neck of an amphora and is categorised as type 7 (not made for the head) (**fig. 3.15**). The bronze amphora appears to be earlier – comparing it with vessels with similar decoration it could be from second half of the fifth century[169]. There are no traces of a circlet,

[168] This wreath is on display in Corinth AM.

[169] Similar bronze vessels include the crater from Derveni A which is dated to c. 400 (Themelis and Touratsoglou 1997, 31); a volute crater probably from Taranto, BM 1865, 0103.43, is dated by the curators at the



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and the fragments have been attached to the vase on the front, only, and do not continue around the back. The design is similar to wreaths from Sciatbi which appear to have been designed to be placed on the front of the vessel, rather than on the head, described by Breccia as 'half garlands' (**fig. 3.16**) and which he dates to the early third century[170].

*Fig. 3.15 T3X17 Wreath on neck of amphora found at Examilia (on display, Corinth AM) (omitted)*

*Fig. 3.16 Hydria from Sciatbi with 'half garland' (from Breccia 1915, pl. 8, fig.6).*



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British Museum to first half of fifth century https://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?asset; a bronze hydria with a similar rim and akanthos leaf decoration on the handle was found at Apollonia (Sakellariou 1997, 50) and is dated to the second half of the fifth century.

[170] Breccia 1915, 18, 21. For dating: Breccia 1915, 20.

A wreath found in Patras, T3X21, is a rare example of type 6 outside Macedonia, with large coloured flowers (**fig. 3.17**). It is not yet fully published[171], but a nearby grave in the same cemetery, containing T3X23 (type 3/4) has been dated to the early third century[172] (**fig. 3.18**). It can be seen from the teeth that both individuals were young, and from the gold earrings still on the skull of T3X23 that this was a female. Two further similar wreaths are on display in Patras Archaeological Museum, again still in position on the skull[173], one which is of type 2 (**T3X23A and B)**, with a bone circlet and oval berries, and probably a little earlier.

*Fig. 3.17 Flowered wreath found on skull in Patras AM (T3X21). © Ephorate of Antiquities of Achaia, Hellenic Ministry of Culture and Sports.*

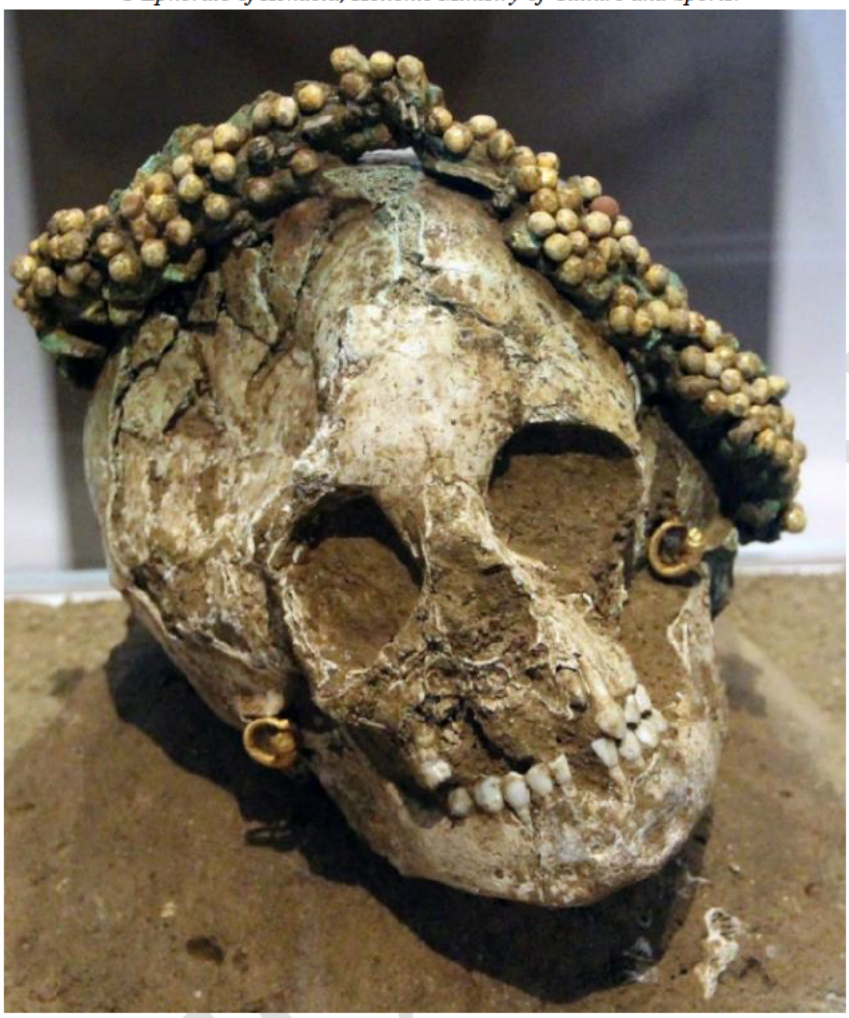


[171] It is described in Kolonas and Stavropoulou-Gatsi 2017, 157-158 and fig. 169 and mentioned without details in Stavropoulou-Gatsi 1993, 157.

[172] Petropoulos 2005, 69.

[173] In cases 67 and 68 (Kolonas and Stavropoulou-Gatsi 2017, 157-158). What appear to be yet further wreaths are referred to in Petropoulos 2005, 59 (T2X22) and Papapostolou 1984, 95 (T3X24).

*Fig. 3.18 T3X23 in Patras AM.*
*© Ephorate of Achaeia, Hellenic Ministry of Culture and Sports.*



Remains of ungilded bronze and copper leaves have been found at Nemea, one of which is still joined to a bronze circlet showing that it was part of a wreath (**figs. 3.19 and L4.4**). At least

*Fig. 3.19 Leaf L4 (Nemea AM, BR139), showing leaf still attached to circlet. © Hellenic Ministry of Culture and Sports.*



some of these are likely to be from statues commemorating victorious athletes, a few fragments of which, found near the Temple of Zeus (c. 330), have survived[174]. Many of the leaves were found in the foundation fill of the temple and should probably be dated to the fifth or early fourth century[175]. It is unlikely they were ever gilded: the excavator does not mention this and no trace of gold was found on analysis. Further wreath fragments, as well as odd leaves, have been found at Oympia[176], and also appear to have been ungilded (**fig. 3.20**). Some of these are about twice the natural size[177] and if used on a wreath would probably have decorated a statue[178]. Similar leaves were found at Isthmia (L3) and may have been used in the same way.

*Fig. 3.20 Fragments and leaves in Olympia:AM - a fragment of circlet is in the lower part of the photograph, in the centre. From Hatzi 2008, 399. © Hellenic Ministry of Culture and Sports/Ephorate of Ilia/Archaeological Receipts Fund*



### *3.2.3 Epirus and the Ionian Isles*

Epirus has produced at least 17 wreaths, of most types, and one which appears to be of a local type (SCG9). There are more similarities with the Macedonian and Thessalian wreaths than the South Italian, except in the case of L2 and T3X16. The leaves L2 are dated to the fifth century and will be discussed in chapter 8 with other leaves. They appear to have been gilded, using a method of wrapping with gold foil (**fig. 7.20**).

[174] Miller 2004, 41; Miller 1977, 6.

[175] Miller 1977, 6 and 9. A celery leaf was found in an area of pure white clay resembling that in the Early Stadium, used for running (Miller 2015, 301)

[176] Bol 1978, 66-67.

[177] And about twice the size of those found in Isthmia and Nemea.

[178] The circlets are also large: Bol calculated that the diameter would have been about twice the diameter of a human head (1978, 67), so perhaps used on a statue of a god.

Many of the Epirot wreaths represent oak and are mainly of type 2, but the earliest appears to be a local type. Several clay acorns and other wreath fragments were excavated at Dymokastro (SCG9) (**figs. 3.21 and 3.22**), thought to date to the second half of the fourth century[179]. The acorns are similar in shape to those on on SCG7 and on SEA4 (**fig. SEA4.5**) but they appear to have been made by hand rather than moulded, since the markings on the cups are not the same. Further examples of acorns found at Orraon (SCG12) and in the Ioannina Basin (T3X13) have a flat back, similar to the acorns on the Thessalian wreath SCG33 and are probably roughly contemporary (third century)[180]. The flat backs raise the question of whether these items were used on a box, although a roll wreath is an alternative (type 5). The oak leaves on SCG11 (**fig. 3.23**) are similar to those on the Macedonian wreath M16 (**fig. M16.7**), and the moulded acorns also recall M16 in shape, although they do not have the coloured bole (**figs. SCG11A.1 and 2.21**). Three wreaths from Ambrakia (SCG6-8) are poorly preserved, but appear to represent myrtle and oak and to be of type 2 (**fig. 3.24**). The white coating beneath on the gold on the circlet on SCG7 recalls that used in Southern Italy on many wreaths.

*Fig. 3.21 Acorns from SCG9 Dymokastro Igoumenitsa AM). © Ministry of Culture and Sports.*



*Fig. 3.22 Acorns from SCG9 (Dymokastro), Igoumenitsa AM. The incised lines on the acorn on the far left are different from those on the top acorn in fig. 3.21. © Ministry of Culture and Sports.*



[179] Preka-Alexandri 2019.

[180] These or very similar acorns are described in *AD* 54 (1999), *Chron* B1, 456 where they are referred to as being from a necklace.

*Fig. 3.23 Fragments of oak leaves from SCG11 (Michalitsi, Preveza AM 3996) © Hellenic Ministry of Culture and Sports.*

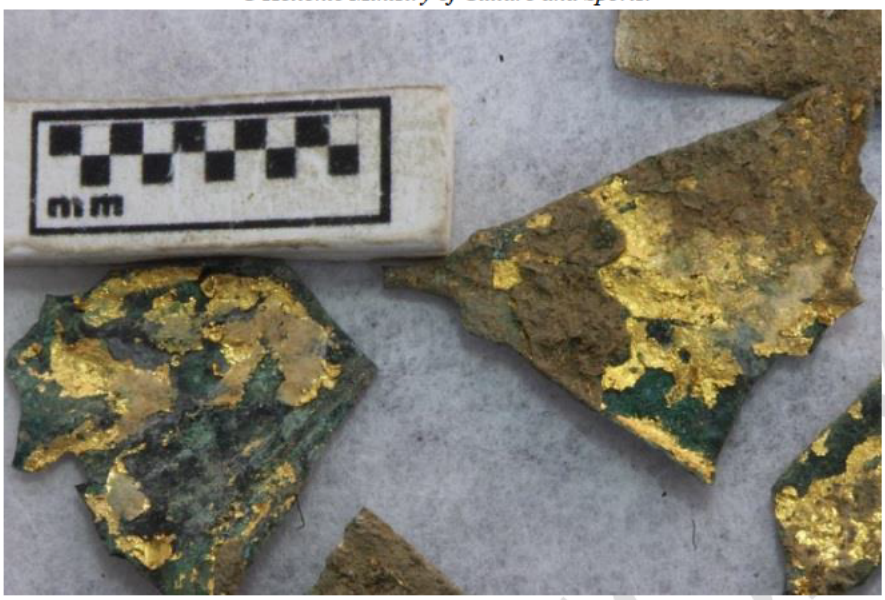


*Fig. 3.24 Fragments of SCG7 (Ambrakia, Arta AM 6004). The white coating on the circlet is in the centre. © Hellenic Ministry of Culture and Sports.*



A fine wreath, SCG13 (type 7), from Prodromi, appears to have been found inside a hydria[181], but fragments of wood on an iron helmet found in the same grave suggest the wreath may originally have been worn around it, which would also explain the flatness of the acorns and

[181] Choremis 1980, 6, although he suggests the fragments may originally have been around the neck of the hydria. He was not the first to handle the material. The hydria is illustrated in Choremis 1980, fig.2.

lack of a bone circlet (**figs. 3.25-26**). An alternative possibility is that it was designed to fit around the neck of the hydria.

*Fig. 3.25 SCG13, Prodromi, Igoumenitsa AM © Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia.*



*Fig. 3.26 Detail of iron helmet from Prodromi (Igoumenitsa AM). What appears to be a fragment of wood from a circlet is indicated in the oval.*
*© Hellenic Ministry of Culture and Sports/Ephorate of Thesprotia.*



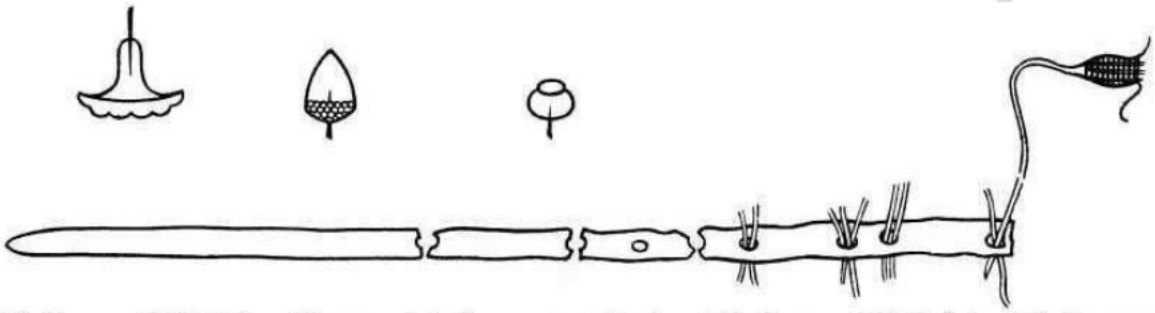
Wreaths with spherical berries and moulded flowers (mainly type 4) were found in a complex of cist graves at Riziani in Epirus (SCG14-18). They mainly date to the third century, although there was more than one burial in some of the graves[182].

A bell-shaped flower, acorn, ivy berry and lead circlet (type 3?) were found on the chest of an infant at Stavros on Ithaca (T3X16) (**fig. 3.27**). A lekane in the same grave was originally dated

[182] Metallinou 2019 and Kanta-Kitsou *et al.* 2008, 124.

to the fifth century but is very similar to one found in the Agora of Athens, dated to c. 300 - a more likely date for the wreath given the lead circlet[183]. The wreath looks similar to one found at Cariati (T5X4), and it may have been influenced by wreaths in Southern Italy, although many other finds in the Ithaca cemetery are associated with Ithaca's founder city Corinth[184].

*Fig. 3.27 Elements of T3X16. From Waterhouse 1952, 235, fig. 7.*



### *3.2.4 Thessaly*

At least 17 wreaths are known from Thessaly, from the third and second centuries. Most of the nine Demetrias wreaths are poorly preserved, but those in the best condition, SCG22-23, are of type 4, and appear to represent myrtle but with possibly ivy elements (**figs. 3.28, 7.55 and SCG23.4**). Although Demetrias was a Macedonian foundation, they are more like the wreaths found in Epirus and Boeotia than Macedonia.

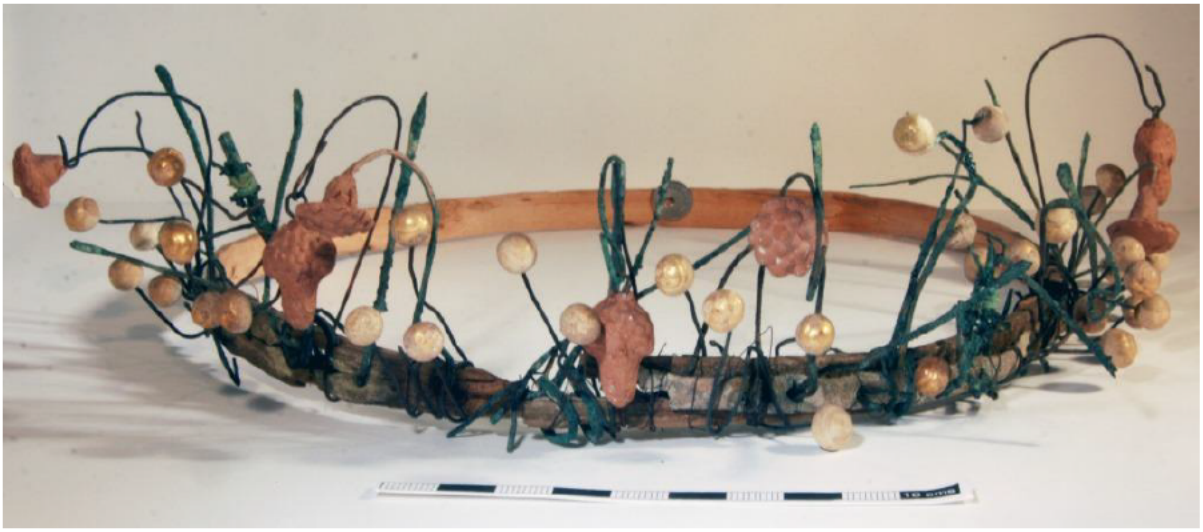
*Fig. 3.28 SCG22 (Demetrias, Volos AM, BE18043 and 18060) with two types of flowers. © Ministry of Culture and Sports/Ephorate of Magnesia*



[183] Original dating for Athenian Agora lekane P16742, NN1856: Waterhouse 1952, 227, but see now Rotroff 1997, 387, who gives ca.300. The lekane from Ithaca is shown in Waterhouse 1952, pl.49f.
[184] Waterhouse 1952, 242.

SCG35 has ivy berries as well as bunches of grapes and a lead circlet (type 3) (**fig. 3.29**) and dates to the second quarter of the third century[185]. Although it is similar in some respects to M37 and SI 1 there are differences, with the hooked stems in particular. Two further wreaths were found in a tumulus at Pelinna, SCG31 and 32. Sarcophagus A, dated by a bronze coin of Antigonus Gonatas to the early third century, contained in addition to SCG31 an adult female as well as a child.

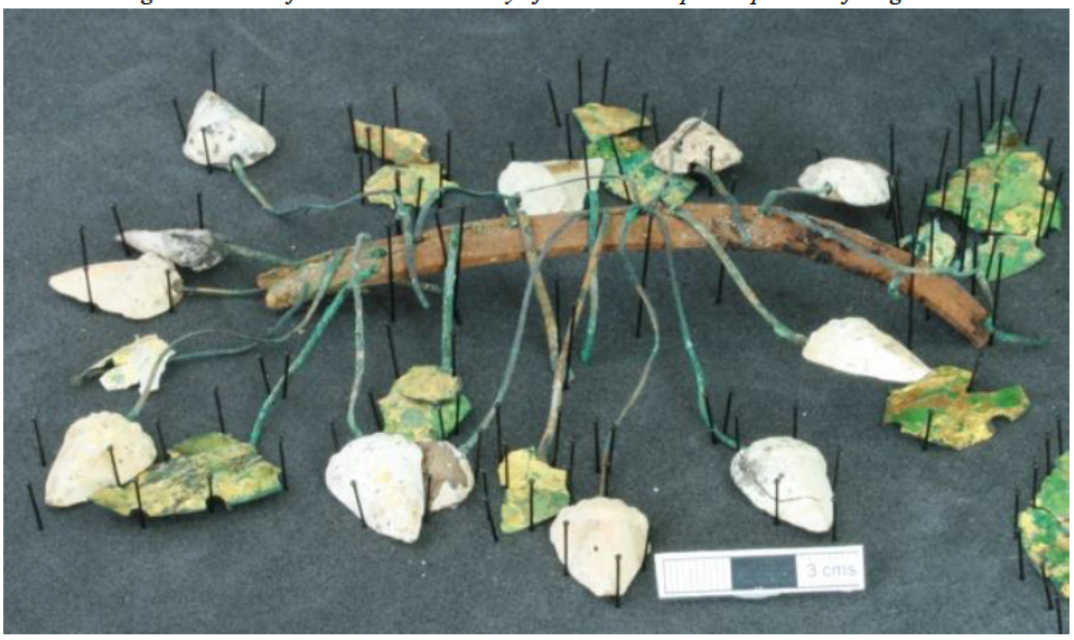
*Fig. 3.29 SCG35 Pilaf Tepe, X12081 National Archaeological Museum, Athens © Ministry of Culture and Sports.*



SCG33 is from the third century (**fig. 3.30**)[186]. The flat back of the acorns, long stems and gilding on only one side of the leaves suggest that this may originally have been used on a roll wreath (type 5). Its gilded copper leaves have semi-circular indentations not found elsewhere, probably produced with a punch.

[185] Based on the finds of the grave (Stamatopoulou pers. comm 5.5. 2014).
[186] Adrymi-Sismani 1989, 38.

*Fig. 3.30 SCG33 from Pherai © Ministry of Culture and Sports/Ephorate of Magnesia*




## 3.3. Burial contexts: practices, graves and goods

In this as in the other regions, most of the surviving gilded wreaths were found in graves. None has been found in residential contexts, even in settlements such Dymokastro in Epirus which produced at least one gilded wreath in a grave (SCG9)[187]. It is possible however that leaves found in a sanctuary which were once gilded did form part of a wreath (L2)[188]; further, non-gilded, leaves, such as L1 are also from sanctuaries.

The larger cemeteries in the region give an indication of the proportion of burials with wreaths: in Demetrias (Thessaly) nine were found in 1995/1996 in the northern cemetery, which revealed a total of some 919 graves and 3,500 movable finds[189] - about 1%. At Akraiphia Grava (Boeotia) only one wreath (SCG1) was found buried in one of 226 graves, in a cemetery with burials dating mainly to the third and second centuries[190] - about 0.5%. A higher proportion of graves with gilded wreaths was found at Ambrakia (Epirus): three graves held a wreath, out of 121[191], about 3%.

[187] Riginos summarises the finds from residential contexts at Dymokastro in 2009 *AD* 55 (2000) *Chron* B1, 664-5; 2012 *AD* 56-59 (2001-4) *Chron* B5, 233-4, 267-270, 311; 2013, *AD* 60 (2005) *Chron* B1, 558.

[188] A wreath from Sparta, T8X15, of gold and gilded silver, was also found in a sanctuary, and is discussed in Chapter 8.

[189] The rescue excavations in 1995/6 are briefly described in Nikolaou 2000, 309.

[190] Sabetai 2000, 301.

[191] Kyrkou 2017, 446.

In this, as in the other regions studied apart from Macedonia, only one wreath seems to have been found with each burial, and there are no examples of multiple wreaths. At Riziani (Epirus), fragments of more than one wreath (SCG16) were found in a grave which contained two burials, one of a number in a group thought to be a family peribolos containing the graves of an important family in the reign of King Pyrrhus (SCG14-18)[192]. Further wreaths in the region were found in small groups of graves which were probably those of members of the same family, including SCG31 and 32, in two graves in the same tumulus at Pelinna, and at Tanagra, SCG3 and T3X8 are from two cist graves in a family peribolos[193]. At Michalitsi (SCG11), Parapotomos (T3X15) and Omolio (SCG30) there were two burials in the same grave, probably those of a couple, each accompanied by only one wreath.

Wreaths were found with both men and women, though where gender can be safely attributed, there are more with females (13) than males (4-5). In some cases, as for example where an adult was found with a child, it is reasonable to assume that the adult was female even if no osteological analysis has been performed, as in the case of the sarcophagus containing SCG31 which was buried with jewellery, an adult and a child[194], and the burial with SCG23 which contained an adult and a young child[195]. Grave goods are not relied on here for gender identification except in clear cases, such as earrings (e.g.T3X23 and T3X31), or weapons. As Houby-Neilsen has shown, during Hellenistic times in Athens strigils were sometimes found in female graves and mirrors in male graves[196]. A larger proportion of children and young persons appears to have been buried with wreaths in this region than elsewhere: at least nine (about 15%).

[192] Metallinou 2019, 242. Kanta-Kitsou *et al.* 2008, 121.

[193] Andreiomenou 2007, 248-251.

[194] See cat. SCG31 and note 218.

[195] In Thessaly it was normal for children to be buried in the same cemetery as adults -Stamatopoulou 1999, vol. 1, 83.

[196] Both objects were probably meant to recall body treatments and more generally luxury and leisure - Houby-Neilsen 1997, 242. Pologiorgi, writing about the grave in Salamis with a mirror and T3X4, is rightly cautious in attributing gender (2008, 163).



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The wreaths were accompanied by grave goods which were not generally as lavish as those in Macedonia, partly due to showy funerals being avoided, in particular in Boeotia[197] and Attica. Those in female graves were found with articles of the *toilette* including pyxides and jewellery and mirrors accompanied seven wreaths (SCG1, T3X4, T3X9 (which has a Dionysiac scene), T3X14, T3X26, SCG16 and SCG23). The few male graves with wreaths had fewer objects including symposium vessels and strigils. Lanterns were found in three graves (with SCG22, 23 and 35) and lamps in at least ten.

A larger proportion of wreaths was found with inhumations (39) than cremations (11).

### *3.3.1 Boeotia, Attica and Euboea*

The burial context of two wreaths, from Boeotia, and Salamis, is particularly significant. Some parts of SCG1 were burnt and found with fragments of bone and necklace beads in a burnt layer about 30cm above the skeleton of a young woman aged about 19, whereas further wreath fragments were found beside the body (**fig. 3.31**). Sabetai hints at a possible burning ritual for the upper material[198], and the wreath may have been treated as an *enagismos*. The burial goods are unusually lavish for this period and place, and Sabetai proposes that the wreath, which she regards as myrtle, accompanied a special burial, the spherical buds referring to the young woman's death before or soon after marriage[199]. Myrtle is the most common plant on wreaths, and the same spherical objects are also found with adult males (e.g. SCG32 and SCG13), so do not necessarily indicate a young girl, but nevertheless her argument that the grave was that of a young woman who died prematurely is persuasive. The wreath from Salamis, T3X4, was found with a bronze mirror, which with its cover was used for offerings within the grave- they were an heirloom since they are at least 50 years older than the pyxides found in the same grave[200].

[197] Sabetai 2012, 311.

[198] Sabetai 2012. The possibility of a burning ritual is also mentioned in her article on the cemetery at Grava, 1995, 302.

[199] Sabetai 2012, 311-312.

[200] Pologiorgi 2008, 166 and 159-161, with illustrations of the pyxides Π8-10. The mirror, M17, is shown in Pologiorgi 2008, 173.



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The grave, from its small size, also seems to have held a young girl. The unusual burial practices in both cases suggest that the person buried was accorded special honour appropriate for an *aore* (see below page 354 and note 852).

*Fig. 3.31 Grave 144 as found. Some of the wreath fragments from SCG1 were found about 30cm above the skull, on the upper level. With the kind permission of Dr Sabetai and the Ephorate of Boeotia (also in Sabetai 2012, fig. 1). ©Hellenic Ministry of Culture and Sports/Ephorate of Boeotia.*




### *3.3.2 Peloponnese*

More wreaths were found in this area with inhumations (at least seven) than cremations (three), the latter accompanying what appear to be Macedonian-type burials and wreaths (SCG20, T3X17 and T3X29). SCG20 was found in a small tumulus in the West Foundation at Isthmia containing a rectangular pit filled with ash and carbonized wood, an enigmatic structure believed now to be a funerary monument built in three phases, beginning as a modest mound over a shallow pit filled with burnt material including iron weapons, which was later covered by a larger oblong tumulus and finally a much larger ashlar monument surrounded by a stone parapet that was soon destroyed[201]. The wreath fragments are from the first or second phase and the weapons from the first. The monument is described as 'strikingly un-Corinthian' by Jackson, who studied the weapons, which are similar to many found in Macedonian graves and were deliberately damaged[202]. The absence of any human bones, which would have been

[201] Jackson 2015, 132.
[202] Jackson 2015, 139 and 160.

retained in part from a cremation, is puzzling, and several possible explanations occur, the most likely being either that the bones were kept in a separate container, such as a larnax, which was stolen by grave robbers, or that they did not survive owing to environmental conditions, which would be particularly likely if this was the burial of a child. The finds are a mixture of Macedonian elements, such as the 'killed' weapons, and local, including a Corinthian amphora and pyxis (**figs. SCG20.2 and SCG20.3**). The eight glass 'lenses' and a rectangular piece of glass found in the pit are from a *kline* burnt on a pyre[203] (**fig. 3.32**). Based on the funerary assemblage, it would seem that the person or persons buried here followed Macedonian modes of burial.

*Fig. 3.32 Glass 'lens' found with wreath fragments, Isthmia AM, IM5073. ©Hellenic Ministry of Culture and Sports.*




A wreath was found on the funerary pyre of what appears to be a Macedonian-type burial at Sikyon, since the excavation also yielded gilded vases and *phialai*[204]. There was a Macedonian garrison here and the excavator suggests that this wreath could have been cremated with an officer, on the basis of the material found[205]. Cassander also installed a garrison in Patras in 319, and Petropoulos proposes that the grave which contained T3X23 was that of a Macedonian inhabitant, commenting that most similar earrings were found in Macedonia[206]. The human

[203] Raubitschek 1998, 71 treats the glass material as part of the wreath but similar glass objects have been found in at least 70 graves in Macedonia, of the same shape and size, generally used to decorate the *kline* - Ignatiadou 2013, 234-311; Ignatiadou in Ignatiadou (sc. ed.) 2010, 223, 224, 229, 321, 328, 332.

[204] Krystalli-Votsi 2013, 510-514.

[205] Krystalli-Votsi 2013, 517-518.

[206] Petropoulos 2005, 70.

remains were found inside an unusual bronze vessel, which also held an egg. He does not see this as evidence of Orphic cult, but as an indication that the deceased was a young woman who died before she could be married (an *aore*)[207].

In contrast to the Macedonian-style burials, one of the type 4 wreaths from Elis (T3X26) was found with inhumed human remains in a pithos, a local burial practice. It was accompanied by finds including a phiale and a bronze mirror cover, consistent with pithoi generally holding the most valuable goods[208]. T3X27 was in a cist grave[209] accompanied by small gilded motifs which were probably from a box or a diadem.

### *3.3.3 Epirus*

In this area, there are again more inhumations (at least eight) than cremations (at least three). Dakaris suggests that the presence of Macedonian coins with SCG11 as well as in other graves in the cemetery at Michalitsi indicates that they were associated with the Macedonian garrison in Ambrakia installed by Philip II[210]. This would explain the Macedonian style of SCG10-11 at Michalitsi and SCG6-8 from Ambrakia. SCG8 was accompanied by a silver olive leaf and a pair of gilded terracotta earrings resembling many found in Taras and Macedonia[211]. Ambrakia, a Corinthian foundation, was an important port linking cities in the Macedonia and the Peloponnese with the Ionian Isles and Italy, so would have been subject to influences from all sides.

The man buried with SCG13 was in a tumulus with armour and weapons including two helmets and a sword (**fig. 3.33**), and was high-ranking, judging by their quality[212] . The hydria in which the bones were placed had Dionysiac decorations and the grave also held a key. It appears to be isolated, and a further unusual feature of the tumulus, found also at Kassandreia in

[207] Petropoulos 2005, 68. See note 220 for further eggs.
[208] Arapogianni 2000, 196.
[209] Arapogianni 2000, 192-193.
[210] SCG11 is dated to after 340 by Dakaris 1963, 192.
[211] Kyrkou 2017, 451.
[212] The weapons are very similar to those at Agios Athanasios (Tsimbidou-Avloniti 2011, 354).



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Macedonia, is a rectangular area to the north of the grave used for offerings containing ash, bones and pottery sherds[213].

*Fig. 3.33 Armour and coins found in grave with warrior from Prodromi. From Choremis 1985, pl.99.*
*©Hellenic Ministry of Culture and Sports/Archaeological Resources Fund*



SCG9 from Dymokastro also accompanied a warrior, since it was found with two iron swords, as well as a copper or bronze vessel for oil. The grave was part of a complex of 18, but the wreath was found in the central (cist) grave and appears to have been the most important in the group (**fig. SCG9.1**)[214]. The burial complex at Riziani contained several inhumations and

[213] Choremis 1980, 6. For Kassandreia, see Sismanidis 1997b, 300.
[214] Preka-Alexandri 2019.

cremations, and it appears that more than one person (male and female) was buried in grave E, which contained SCG16, since the burial goods date from different periods and some indicate males (sword) and others females (jewellery).

### *3.3.4 Thessaly*

In Thessaly, the wreaths were found preponderantly with inhumations (14) and only two cremations; the two methods were used concurrently in the area at this time[215]. Demetrias yielded at least ten wreaths, five in pit graves and two in cist graves, one in a tile-covered grave and the rest in fill. Two well-furnished graves yielded wreaths: SCG23 was found with the remains of a woman and child as well as pottery, a mirror and a lamp, and SCG22 with a silver kylix and a bronze lantern (see cat. SCG22 and 23). The other graves with wreaths are less well-furnished containing items such as a skyphos, a strigil and nails. Nikolaou excavated and studied the northern cemetery, and describes the burial goods from the third and second centures found with males and females as items of daily life, such as pottery, and items of personal use, such as jewellery and strigils, although she suggests that as offerings to the deceased they also had a symbolic character, such as the obol, used to pay Charon[216].

The graves at Omolio (SCG30)[217], Pelinna A (SCG31) and Pilaf Tepe (SCG35) held gold items as well as wreaths. The latter two held particularly interesting grave goods, which in the case of Pelinna (SCG31) clearly had a religious association. These objects included two inscribed gold ivy leaves lying on the woman's breast, as well as two teeth of a child, fine gold thread and silver rings perhaps from a box[218]. On the cover slab of the sarcophagus was a clay figurine of a comic actor sitting on an altar, thought to have a Dionysiac association and there may also

[215] Stamatopoulou 1999, vol 1, 63-64.

[216] Nikolaou 2016, 179. The pottery accompanying SCG23 and SCG22 is unpublished, and I am most grateful to Mrs Nikolaou for providing me with the information about the objects found in these and other graves in Demetrias which held wreaths (Nikolaou pers. comm. January 2014).

[217] Miller Stella 1979, 6 and 56-7.

[218] Tziaphalias refers to a new-born in this grave (1992, 136), but the teeth kept with the wreath fragments are the milk teeth of a young child (see cat. SCG31, in particular **fig. SCG31.5**).



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have been a figurine of a maenad as well as two bowls each with an image of an egg[219]. Karapanou and Katakouta suggest the bowls refer to the Orphic idea that the earth and sky were created from the two halves of an egg and that the group of objects indicates that the deceased in grave A was an initiate into a mystery cult[220]. The other sarcophagus in the same tumulus had been robbed, and contained the inhumed remains of an adult male, but no indication of any religious affiliation[221]. A stone theke in the tumulus which held a third burial contained a gold danake like that in sarcophagus A but no wreath[222].

SCG35 was found in a grave in a tumulus which also held the body of a ram (in a separate grave). The goods included a fine silver urn and four gold fillets. A conical piece of wood was also found, on which there were objects made of very fragile wood or roots, perhaps made of vine, with fine gold strips wrapped around them[223]. What appear to be similar objects were found in the contemporary Tumulus II at Pergamon which also held gilded wreaths[224] (**fig. 3.34**); here the root-like material was identified by Jacobsthal as waterlily (lotus?). The function of these objects is unclear but Jacobsthal saw them as substitutes for a woollen fillet, presumably wrapped around the arm. The person with SCG35 was assumed by Edmonds[225] to be male, but analytical work on the bones is awaited. Rams can be associated with the Underworld gods and the Mysteries[226] and the unusual nature of this burial raises the question of whether the individual was a priest/ess.

[219] Karapanou and Katakouta 2004, 118; maenad: Tsatsanoglou and Parassoglou 1987, 4, but doubted by Karapanou and Katakouta.

[220] Karapanou and Katakouta 2004, 123. A similar skyphos was found in neighbouring Pagasai with a hollowed-out shape of an egg, dating to the late fifth century, which also held two lekythoi with painted myrtle wreaths (Batziou-Eustathiou *et al.* 2012, 216 and 319). Batziou and Eustathiou agree with Karapanou and Katakouta as to the Orphic significance.

[221] Some fine gold thread is kept with the wreath fragments from both graves and fragments of iron, possibly from the strigil, have been placed with the wreath from Sarcophagus A, so the wreath fragments may have been mixed up. Tziaphalias said they were very similar (1992, 137).

[222] Tziaphalias 1992, 134-5.

[223] Edmonds 1900, 24. My supervisor, Dr Stamatopoulou, allowed me to see these objects when I studied the wreath in the National Archaeological Museum.

[224] Jacobsthal,1908, pl. 26. Four or five gilded wreaths, at least two of which are myrtle, were found at Pergamon as well as a gold oak wreath, and two swords. Ute Kelp has kindly discussed these wreaths with me.

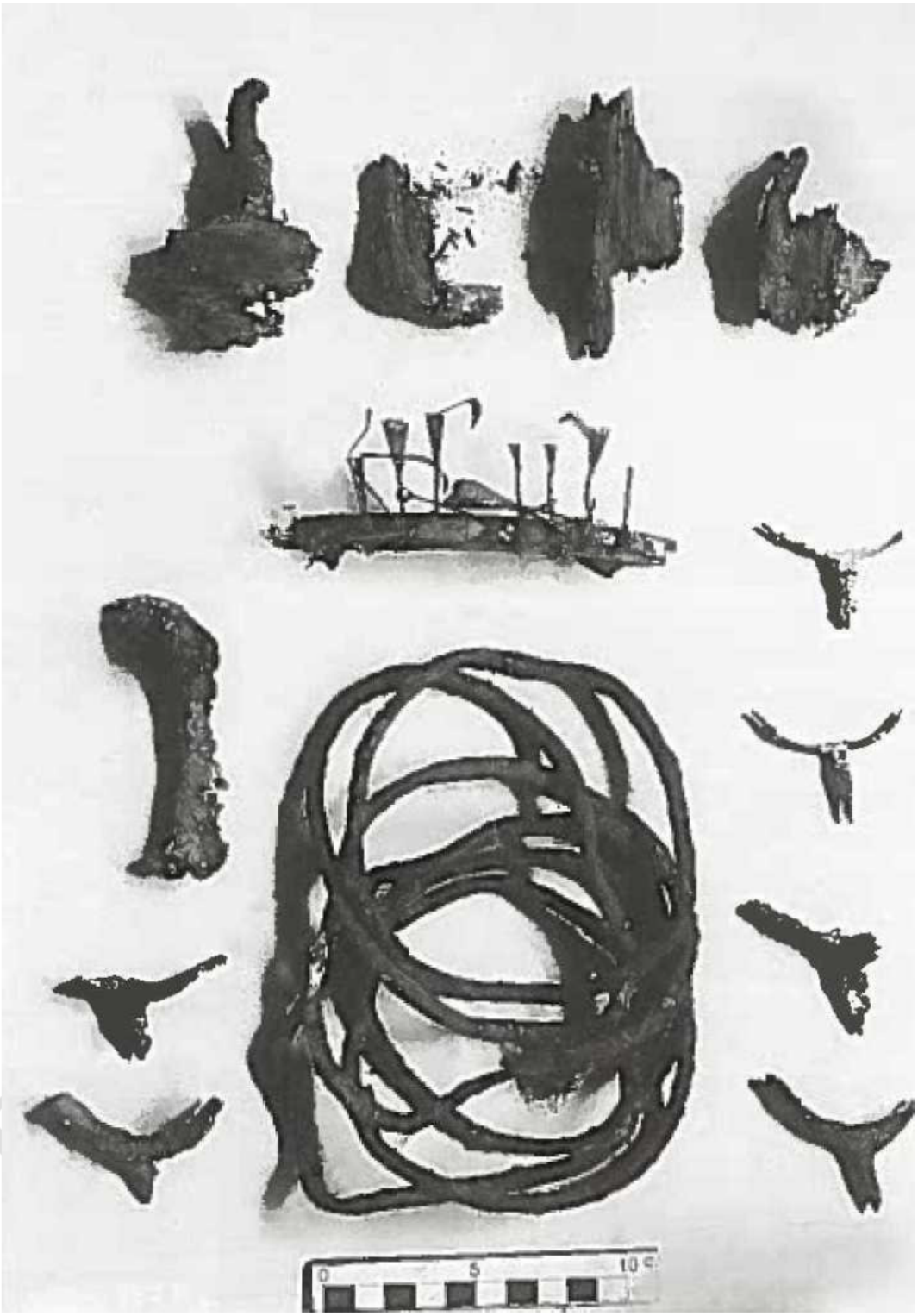
[225] Edmonds 1900, 25.

[226] Bremmer 2014, 26.



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*Fig. 3.34 Material from Tumulus II, Pergamon. The root-like objects are at the bottom and one of the gilded myrtle wreaths is in the middle. From Grussinger 2011, 299.*



## 3.4. Issues arising, origins and significance

### *3.4.1 Origins*

Natural wreaths were used from at least the fifth century in graves in Attica[227], but there is no reliable, surviving, evidence for the use of *gilded* wreaths in this region before the middle of the fourth century. The cemetery of Akraiphia produced a great deal of bronze jewellery up to the time of the Persian Wars[228], but nothing like a gilded wreath appears until the end of the second quarter of the fourth century. Type 2 wreaths only seem to have been used in graves after Chaironea, at Isthmia and Sikyon in the Peloponnese, and Michalitisi and Ambrakia in Epirus. Scholars view them as either Macedonian or the result of contact with Macedonia[229], which can be explained by the presence of garrisons, but contacts were reinforced in Epirus by conclusion of a treaty with the Molossians in 358-7 and the marriage of Philip II to Olympias (the mother of Alexander the Great)[230]. The type 4 wreaths found in Boeotia (SCG1 and its successors), the Peloponnese (T3X26-27) and Epirus (SCG16 and 18) may on the other hand have sprung from local traditions. The dating of these wreaths is not fully established, but they appear to be earlier than similar wreaths elsewhere such as M3. The design of the type 4 wreaths is likely to be due, at least in part, to the dislike of luxury in funerary goods in Boeotia discussed by Sabetai[231] as well as the tradition of using clay for figurines.

Some of the Epirot wreaths have similarities with items found in Taras, including the white coating on SCG7, but there is no other reason to think they originated in Southern Italy[232]. Wreaths are frequently depicted on grave stelae in Epirus, often representing oak (**fig. 3.35**),

[227] A natural wreath was found with a funerary urn at Kalyvia: see chapter 8, page 322. A wreath which may have been earlier is said to have been found on the head of a woman in a marble sarcophagus on the Sacred Way a short distance from Mount Poikilon (T3X2) (Fauvel 1807, 363).

[228] See for example Andreiomenou 1997, 81.

[229] Michalitsi: Dakaris 1963, 192; Isthmia: Jackson 2015, 139 and 160; Sikyon: Krystalli-Votsi 2013, 517-518.

[230] Hammond 1994, 30.

[231] Sabetai 2012, 311-2.

[232] Cf. Kyrkou 2017, 455.



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although myrtle is also found. Dakaris suggests that these representations, and also metal oak wreaths, are relics of a local, Thesprotian, tradition[233] but influence from Macedonia is likely.

*Fig. 3.35 Grave stele with oak wreath, commemorating Euphanes in Arta AM. From Riginos 2008,71. ©Ephorate of Arta/Archaeological Resources Fund*



### *3.4.2 Special burials/aorai*

Sabetai suggested that wreaths with spherical objects possibly representing myrtle buds on SCG1 indicate that the deceased was an *aore*[234], but this was not necessarily so, as males (SCG 13 and SCG15) and older women (SCG31) are sometimes accompanied by such wreaths (Table 3.2). Nevertheless, a large proportion of wreaths, at least ten, so over 10% of all those found

[233] Dakaris 1967-8, 402, referring to the Talares of the Pindus and the Talaianis of the Tomaros, who were Thesprotian tribes. The suggestion is repeated in Palaiokrassa 2016, 64.

[234] Sabetai 2012, 310.

in the region, were buried with females who either died as young girls or were buried with a young child as can be seen from Table 3.2, where the highlighting in yellow indicates the young females. The young females were accompanied by unusually rich grave goods and the wreath may well have been another marker of this special status.

***Table 3.2 Wreaths with spherical berries or buds***

| Reference | Shape of berries or buds | Adult/young person | Gender |
|---|---|---|---|
| T3X4 | Spherical | Young | Female |
| T3X14 | None | Young girl | Female |
| SCG1 | Spherical | Young (18-25) | Female |
| T3X23 | Spherical | Young | Female |
| T3X27 | Oval (myrtle seedpods?) | Not known | Male? |
| SCG23 | Spherical (two sizes), and myrtle berries with a cross | Adult | Female with child |
| SCG32 | Spherical and a few oval | Not known | The grave contained a male, but the berries were possibly mixed up with those from the female grave (SCG31) |
| SCG15 | Small oval (myrtle berries?) and large spherical (buds?) | Adults | Two males (probably) |
| SCG22 | Spherical | Not known | Not known (two burials in grave) |
| SCG8 | Spherical | Not known | Female |
| SCG13 | Spherical | Adult | Male |
| T3X11 | | Young | Female |
| SCG19 | Myrtle seedpods | Young | Female |
| T3X16 | Ivy berry | Infant | Not known |
| T3X21 | Spherical | Young | Not known |
| T3X31 | Not known | Young | Female |
| SCG1 | Spherical | Adult | Young woman |
| SCG31 | Spherical | Adult | Woman buried with young child |

### *3.4.3 Helmets*

There are many associations between helmets and wreaths in this region. Some wreaths seem to have been worn on Athenian helmets, judging by black figure vases such as one from Phaleron (NAM 558), as early as the third quarter of the fifth century (**fig. 3.36**), which Karouzou proposes was used as an urn for the bones of a warrior[235]. Wreaths are also shown on helmets on several black limestone funerary stelae from Boeotia, depicting warriors named

[235] Karouzou 1954, group III Hg, 10.

as Saugenes, Rhynchon and Byillei, and dated to around 410[236] (**figs. 3.37-38**)[237]. The Epirot King Pyrrhus is known to have worn a wreath on his helmet, which he removed to prevent him being recognised in battle[238], suggesting the wreath was metal. A pilos helmet preserved in Ioannina has an engraved wreath showing that they were worn by soldiers other than kings and generals (**fig. 3.40**) since this was the basic type of helmet for the Macedonian foot-soldier[239]. It would appear, therefore, that wreaths had a particular significance for soldiers.

*Fig. 3.36 Helmet with wreath from Phalero NAM 558, 575-550. National Archaeological Museum, Athens; adapted from photograph by Giannis Patrikianos© Hellenic Ministry of Culture and Sports/Archaeological Receipts Fund.*



[236] Schild-Xenidou 2008, 289-291.
[237] A further relief depicting Mnason shows a warrior wearing a pilos helmet but no wreath.
[238] Plutarch describes Pyrrhus removing the wreath which distinguished his helmet before plunging into the thick of the fighting (*Pyrrhus*, XXXIV,1).
[239] Vokotopoulou 1980, 241. Ioannina AM 4633.

*Fig. 3.37 Incised grave stele of Rhynchon wearing pilos helmet with wreath. Thebes AM Inv.55. From Schild-Xenidou 2008 pl. 22.*

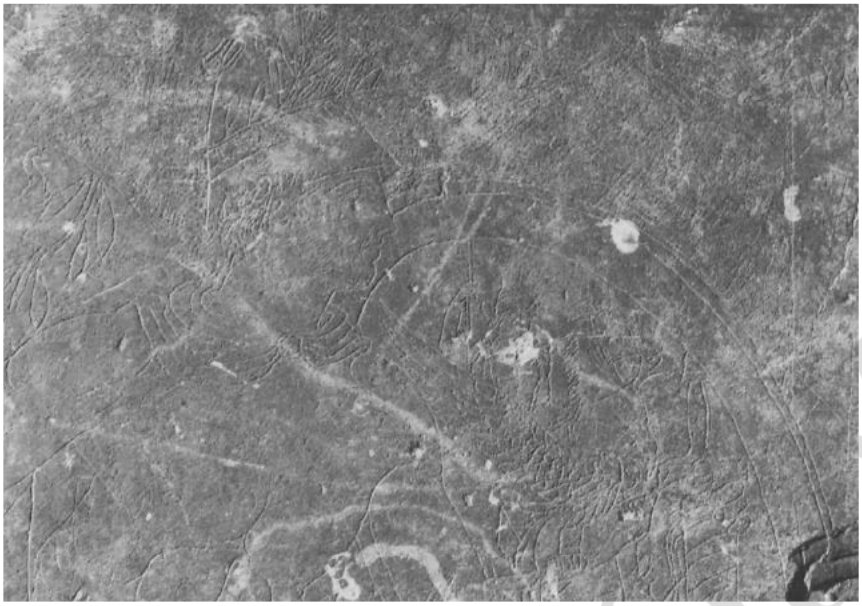


*Fig. 3.39 Stele of Saugenes. Thebes AM Inv. 56. From Kalogeropoulou 1968, 94.*



*Fig. 3.40 Engraved wreath on helmet from Epirus, Ioannina AM Inv. 4633.*
*© Hellenic Ministry of Culture and Sports.*



### *3.4.4 Significance*

All surviving gilded wreaths from the region were found in graves, with the possible exceptions of a gilded silver wreath from Sparta (T8X15) and some leaves which may have formed part of a wreath in Corfu (L2). There were many further dedications of gold and silver wreaths in sanctuaries[240] and fragments of ungilded wreaths honouring athletes and the gods were found in such places at Nemea (L4), Isthmia (L3) and Olympia, almost certainly originally placed on statues (see page 93). Clay wreaths were also found in sanctuaries at Argos and Orchomenos[241] and small lead wreaths at Sparta[242] and Halieis[243]. It is clear that wreaths were used in the region in other contexts before the practice began of using gilded wreaths in graves. Hatzi proposes that the practice of honouring with wreaths at Olympia indicates that the merit of the victor (who was thought to have been chosen by the gods) was equal to that of gods and heroes[244]. If

[240] See page 333.

[241] Argos: Vollgraff 1907, 156. The clay wreaths found in sanctuaries at Argos date to Archaic times, and are thought to have been dedicated to Hera (Hall 1995, 597-8). Baumbach interprets even earlier terracotta rings, dating to the eighth century, as wreaths which would have been hung on the wall (Baumbach 2004, 44-45). The clay wreaths at Orchomenos are from the second half of the fourth century: Aravantinos et al. 2014, 59-60

[242] Dawkins 1929 pl.180.

[243] Jameson 1969, 321 and pl. 80e.

[244] Hatzi 2008, 185.

this is correct, then the deposit of a wreath in a grave may be seen as a mark of honour for those of exceptional merit, later used for warriors (SCG9, SCG13, SCG20 and SCG30).

Gilded wreaths are found with the affluent, and predominantly with females throughout the region; a large proportion appear to be young women who died in childbirth or before marriage (Table 3.2). Some of the graves which contained wreaths and young females were marked by unusual burial practices, as at Salamis (T3X4) and Akraiphia (SCG1), and in the latter the wreath itself may have been treated as an *enagismos* (see page 101). At Prodromi, there also appears to have been an area to the north of the male grave used for burnt offerings (see page 105).

As in other regions, the main plant represented on the wreaths appears to be myrtle, although oak features on several from Epirus, ivy on five or six (mainly from Boeotia), and on some wreaths (including SCG13 and T3X16 as well as those from Demetrias) more than one plant is represented. Oak is frequently associated with the oracle of Zeus at Dodona, but Dakaris traced it back to the worship of Ge, which preceded that of Zeus at Dodona[245]. Oak also had a royal connection – it was used by Pyrrhus to emphasise his own relationship to Zeus, and oak wreaths are shown on coins issued by the Molossian mint from this time[246]. It is possible that it is not exclusively associated with males in Epirus as a gilded oak wreath (SCG11) appears to have been found with a female[247]. The flower decoration of the small clay wreaths found in the rural sanctuary near Orchomenos may refer to Demeter, Kore and the Nymphs[248]. The flower wreath from Patras (T3X21) appears to have marguerites and roses as well as myrtle, all of which can be associated with Aphrodite as well as Demeter and Kore[249].

Religion is likely to have played a significant role in the use of wreaths in this region, as

[245] Dakaris 1967-8, 389.

[246] Zachos 2008, 60; Pantermalis *et al.* 2016, 185 and 186.

[247] Dakaris 1963, 192, states that this wreath accompanied a female, probably because it was found with a necklace of the kind worn by women, but as this is the sole example of an oak wreath said to be found with a female, the attribution cannot be regarded as certain.

[248] Aravantinos *et al.* 2014, 60.

[249] See Chapter 9, pages 336 and 338.



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elsewhere. Daumas' suggestion that their depiction marked the initiation of the warrior into the Kabeiroi, and who thereby acquired strength, would provide an attractive explanation for the use of wreaths on helmets, but they may simply have been a mark of honour for a fallen warrior, as suggested by Schachter[250]. Several wreaths were found in contexts which suggest that the deceased was an initiate of Dionysus or otherwise refer to the god. Although there are fewer ivy wreaths in the region than in Southern Italy, they are found in both Thebes and Tanagra, and several wreaths were found with Dionysiac grave goods, including SCG13, SCG31, T3X11 and T3X9. Thebes is considered by some to have been the centre of Dionysiac worship[251], and the god had close links with the Kabeiroi, who were also associated with the city[252].

The two inscribed ivy leaves found with SCG31 are the clearest evidence for a link between Dionysiac initiation and wreaths, and give an unusual insight into the possible religious beliefs of the deceased who was buried with a wreath, in this case a mature woman with a young child, although the inscriptions have been interpreted in different ways. Graf comments on the opening line, which refers to the deceased as 'the thrice happy one', that the state of ecstatic bliss at a graveside is most unusual, and suggests that Bacchic initiates may have had special burial rites, expressing joy about the life to come[253]. The texts continue in the second line 'Say to Persephone that Bacchios himself freed you[254], implying a deliverance of the soul by Dionysus, either by intercession with Persephone, or through initiation rites[255]. The association of Dionysus with Persephone is seen by many scholars as characteristic of Orphism[256]. A further line seems to say that the deceased will have wine as their fortunate honour, that Graf sees as a

[250] Daumas 1998, 200. Schachter 2016, 201 is dubious about Daumas' suggestion, partly on the ground that the Kabeirion in Thebes was in the fifth century a relatively small sanctuary belonging to a small group of Thebans. See also Blech 1987, 105-106, who refers to the Spartans going into battle, wreathed and wearing purple robes, to the music of flutes.

[251] Demand 1982, 55.

[252] See for example Roller in Jeammet 2010, 250.

[253] Graf 2013, 164.

[254] Edmonds 2011, 36-7.

[255] Bernabé and San Cristóbal 2011, 95-6; Betz 2011, 114-5.

[256] Bernabé and San Cristóbal 2011, 91; Graf 1993, 234.



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reference to the symposium of the blessed[257], which in the context of a female burial is striking. The meaning of the intermediate lines, mentioning a bull and a ram having jumped into the milk; is obscure; Graf regards them as an expression of bliss or embarking on a new life[258] or they may be a reference to some part of the Dionysiac ritual[259]. Faraone, emphasing the precipitate action, proposes that they refer to dances or ritual actions that the initiate performed in imitation of Dionysus or his nurses[260].

There is however no consistent pattern of gilded wreaths being found with inscribed gold tablets in this region: none of the other inscribed gold tablets from Thessaly or the Peloponnese (Elis) appears to have been found with a gilded wreath, although one (from Elis) was found with what may have been a gold diadem, and one from Aigion with 12 gold leaves which may have been from a wreath; some of the gold tablets themselves are in the shape of a leaf[261]. Of the gilded wreaths, only SCG31 clearly appears to mark an initiate in one of the Mysteries. The possible links between the two will be discussed further in Chapter 9.

Male initiates of the Kabeiroi are depicted on vases wearing wreaths or carrying branches. The god Kabiros wore a headdress with ivy, and a wreath or a fillet seems to have been a particular stage of initiation into the Kabeirian mysteries, which were also marked by dancing and it appears that initiates wore a headband knotted in a special way at banquets, as an alternative to a wreath (**figs. 3.41 and 3.42**)[262]. Other possible indications of initiates of the Kabeiroi are not however found in the region, with the possible exception of an iron ring in the same grave as SCG15.

[257] Graf 1993, 246.

[258] Graf 1993, 246.

[259] As mentioned above (page 107), the ram was associated with Mysteries and underworld deities – Bremmer 2014, 26 and 41-42.

[260] Faraone 2011, 313

[261] Two inscribed gold leaves were found (in separate graves) in Aigion, which read 'mystes', giving the names Dexilaos and Philon (Papakosta L. 1987, *AD* 42 (1987) B1, 153), and another in Elis, which gives the name 'Euxene' (Papathanasopolos G.A. *AD* 24 (1969) *Chron* B1, 153 and pl. 153β).

[262] Schachter 1986, 101; Bremmer 2014, 45; Daumas 1998, 30-31 and 33-34.



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*Fig. 3.41 Initiate dancing, wearing a mask with branches and holding a wreath. From Wolters and Bruns 1940, M3, Inv.425, pl.33,4.*



*Fig. 3.42 Kabiros wearing a headdress. National Archaeological Museum Athens Inv. 10426. Photo by Kostas Xenikakis © Hellenic Ministry of Culture and Sports/Archaeological Receipts Fund.*




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## *Table 3.1 Gilded wreaths in Southern and Central Greece*

| Cat./ Table no. | Type | Area | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **T3X1** | | Aitolia-Acarnania | Alikyrna, grave 4 | Myrtle | Copper leaves and berries | | Early Hellenistic | | Cist | Looted. | 648 | Dekoulakou I. *AD* 26 (1971) *Chron* B2 325 and pl. 301η. |
| **T3X2** | | Attica | Near Sacred Way | | Gilded copper | | 5th?? | I | Marble sarcophagus | Comb, remains of a musical instrument and sandals. | May no longer survive | Fauvel 1807, 363-364. |
| **T3X3** | 5 | Attica? | | | Gilded clay leaves | | | | | | On display in Louvre ; Acq. Rayet, 1874 MNB 611-1,2,2 | Besques 1972, 4 and pl. 3,e. |
| **T3X4** | | Attica (Salamis) | Ambelakia, grave 2 | Myrtle? | 20 spherical berries copper stems gilded copper leaf fragments | F child | 1st qu. 3rd | I | Sarcophagus | Bronze mirror with Aphrodite, gold thread, 2 pyxides with cover, cover of a third pyxis and large nail. 6 small bone objects inside the smaller pyxis, and several discs, probably game counters, small bronze ring, sea shell. | On display Salamis AM | Pologiorgi 2008, 171-2; Pologiorgi 2010, 483-484. |
| **T3X5** | 4 | Boeotia | Akraiphia ΔΔ/116 | | Flowers in clay Berries in clay | | 330/320 | C | Pit | | 7528 Could not be located in Thebes AM. | Andreiomenou 2001 n. 93, figs..54 and 55. Date given on table 3, page 172. |
| **T3X6** | 4? | Boeotia | Akraiphia ΠΑΠ 196 | Myrtle? | Berries in clay | | | | | | 7528a. | Andreiomenou 2001, n. 94; Andreiomenou 1997, 81 and fig. 10. |
| **T3X7** | | Boeotia | Akraiphia ΚΗΦ/XXVI | Myrtle? | Berries in clay | | | | | | 7937. | Andreiomenou 1994,103, n.15, fig. 4. |
| **SCG1** | 4? | Boeotia | Akraiphia Grava Grave 144 | Myrtle? | Blackened clay spherical berries and bell-shaped flowers | F young | 2nd qu. 4th (late in that qu.) | I? | Cist | Bulas amphoriskos, black glaze jug, bronze mirror, bronze handle, glass necklace, strigil, bronze 'needle'. | Thebes AM | Sabetai 2012, 305-314. |
| **SCG2** | 6? | Boeotia | Tanagra B/16 | | | | Late 3rd | | Cist grave in family peribolos | Perfume bottles, glass beads, knucklebone, gilded clay decorations perhaps from box. | Schimatari AM on display 21312, 21314-7. | Andreiomenou 2007, 251-252 and pl. 141. |
| **SCG3** | 5 | Boeotia | Tanagra B/50 | Oak and ivy | | | Late 3rd | | Cist grave in family peribolos | Robbed. 7 perfume bottles, fragments plain kylices, 12 iron nails. | 26069,2606, 26068 | Andreiomenou, 2007, 250-251 and pl. 140. |
| **T3X8** | | Boeotia | Tanagra B/53 | Gilded clay 'olive' leaves without hole | | | Late 3rd | | Cist in family peribolos | Robbed. 4 perfume bottles, 7 red strips, kylix, other clay items, bg phiale, unglazed pottery,2 kylices, 17 bronze nails. | 23102 Not available for study at Schimatari AM. | Andreiomenou, 2007, 248-250. |

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| Cat./ Table no. | Type | Area | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCG4 | 5 | Boeotia | Tanagra Grave A/61 | Ivy rosettes and leaves | | | Late 3rd | | | | Schimatari AM 26066, 26067. | Andreiomenou 2007, 252-3. |
| SCG5 | 5 | Boeotia | Tanagra | Ivy and oak | Clay leaves | | Late 3rd | | | | Schimatari AM 21309, 21308, 21310. | |
| T3X9 | 2 or 3? | Boeotia | Thebes | Myrtle | Myrtle berries | F | After 338 early Macedonian | I | Cist | Second burial (cremation) in same grave (male). Amphora, plates, lekane, crater, amphoriskos and perfume bottles, gold earrings, 2 pyxides, key, other fragments, mirror case with Dionysiac scene. | NAM 11337. | Pappadakis 1914, 127-8. |
| T3X10 | 3? | Boeotia | Thebes | Ivy | Rosettes gilded clay | | 2nd c. | | | | Thebes AM on display | |
| T3X11 | 4 | Boeotia | Thebes Grave N404 NE cemetery | | Pinkish clay bell-shaped flowers and stems | F child | 4th c. (seated figurine dated to mid-4th) | I | Cist | Found intact. Outside grave 8 figurines and 2 RF craters with Dionysiac scenes. Inside: 4 figurines, glass beads made up as bracelets, bronze needles, 2 gilded beads, knucklebones. | Thebes AM on display | Aravantinos 2011, 142. Figurines: Inv. 33907, 33908, Jeammet 2003, cat. 93 and 188. |
| SCG6 | 2 | Epirus | Ambrakia grave xxxiv | Myrtle? | Gilded copper leaves and gilded circlet | | Late 4th? | I | Cist | Kotyle, 2 lamps, lid and lagynos. | Arta 6002-3 | Kyrkou 2017, 450. |
| SCG7 | 2 | Epirus | Ambrakia grave xxxviii | Oak and ? myrtle | Gilded copper leaves, gilded circlet and acorns | | Late 4th/early 3rd | I | Cist (two burials) | Two black glaze skyphoi (late fourth-early Third) and iron strigil. | Arta 6004 | Kyrkou 2017, 450. |
| SCG8 | 2? | Epirus | Ambrakia grave xlviii | Myrtle? | Spherical berries, gilded leaves | F | | C | Cist | Amphora with lead stopper, small oinochoe, silver leaf, aryter, small vase, skyphos and pair of gilded terracotta earrings. | Arta 6007 | Kyrkou 2017, 451. |
| T3X12 | 5? | Epirus | Dourouti | Oak | acorns | | | | | | On display Ioannina AM (described as being from necklace) | |
| SCG9 | Local type | Epirus | Dymokastro | Oak | 18 clay acorns, copper stems, three gilded oak leaves and a flower | | 2nd half of 4th | | Cist in tumulus | 2 iron swords (one of which was almost destroyed), small bronze perfume or oil container. | On display Igoumenitsa AM Th. 2756 | Kanta-Kitsou. *et al.* 2008, 118 ; Preka-Alexandri 2019. |
| T3X13 | 5? | Epirus | Ioannina May be from south east of Ioannina Ag. Apostoloi | Oak | 18 clay acorns on display; 35 found. Gilded wires. | F | Late 3rd? | C | Cist | 54 elipsoid beads and 35 beads in shape of acorn with traces of gilding. Small bronze kados (same workshop as kados found in Vitsa). 2 perfume bottles, plate. 2 deceased: the small kados held ashes,and is dated to third | On display Ioannina AM | Pliakou 2005, *AD* 54 (1999) *Chron* B1, 456 (described as necklace). |

| Cat./ Table no. | Type | Area | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | qu. 4th and main burial in grave dated to late third beginning 2nd. | | |
| T3X14 | | Epirus | Michalitsi grave 1 | | Gilded leaves | F young girl | | I | Cist | Wreath found around head of girl. 2 bronze rings, small bronze mirror cover on lekane, silver coin of Corinth. Strigil, clay amphoriskos. 2 burials. | | Dakaris 1963, 189. |
| SCG 10 | 2 | Epirus | Michalitsi Grave 9? | Myrtle | Gilded leaves | M | 3rd qu. 4th | C | Cist | With male: oinochoe, fragment of strigil, 4 bronze coins one of Philip II, 3 from Corfu. | Preveza AM (Nikopolis) 3994a | Dakaris 1963, 190. |
| SCG 11 | 2 | Epirus | Michalitsi grave 9 | Oak | Gilded leaves | | Last qu.4th | I | Cist | 2 burials in grave, mature male and woman (later burial). On head of woman 10 necklace beads and fragments of gilded wreath with oak leaves and acorns. | Preveza (Nikopolis) AM | Dakaris 1963, 190. |
| SCG 11A | | Epirus | Michalitsi grave 9? | Oak | Clay acorns | F | Last qu. 4th | | Cist | 2 burials in grave, mature male and woman (later burial). On head of woman 10 necklace beads and fragments of gilded wreath with oak leaves and acorns. | Preveza (Nikopolis) 3966 | Dakaris 1963, 190. |
| SCG 12 | 5 or 7 | Epirus | Orraon (Ammotopos) | | | | 3rd? | | | | On display Arta AM | |
| T3X15 | | Epirus | Parapotamos grave 12 | | | | Hellenistic | I | Cist grave in tumulus | 2 deceased and further human remains, belonging to male 45-55. Bronze ring by one skull. Pair of gold earrings and fragments probably from a wreath. | | Preka-Alexandri 1997, 170 and 206. |
| SCG 13 | 7 | Epirus | Prodromi Thesprotias | Oak and myrtle | Gilded clay acorns, gilded spherical objects and gilded copper leaves and stems | M | 3rd qu.4th | C | Cist | 2 iron helmets, one with silver decoration, thorax, sword with scabbard, key, fragment of strigil, bronze hydria with Dionysiac decoration used as urn. | Igoumenitsa AM on display | Choremis 1980, 3-20; Choremis 1985, 223. |
| SCG14 | 2? | Epirus | Riziani Graves α and β | Myrtle? | Fragments of gilded leaves | F | Late 4th/early 3rd | C | Grave 1: cist | Grave 1: gilded clay roundels with Medusa head, small earring and ring, miniature clay vessel, clay apples and almonds, figurine, skyphos, knucklebone, coin and clay pyxis lid (last two not associated with wreath). | Igoumenitsa AM 8126, 8130, 8133, 8166 | Metallinou 2019, 238. |
| SCG15 | 3 | Epirus | Riziani Grave γ | Myrtle? | 51 spherical berries and 4 small oval berries, lead circlet, stems | M&M | Late 4th/early 3rd? | I | Cist | 2 lamps, 2 jugs, small black glaze vessel, iron ring, gold diadem (strip) with words ΚΛΕΟΜΑΧΕ ΧΑΙΡΕ. Traces of cremation also. | Igoumenitsa AM 7979, 10175, 7969 | Metallinou 2019, 238. |
| SCG16 | 3? and 4 | Epirus | Riziani Grave ε | | 28 spherical berries, separate group: 89 spherical berries some with no hole and some | M incl.1 adult 1 young | Early 3rd and mid-2nd | I | Cist | Sword, perfume bottles, jewellery, silver padlock and iron key, silver handle, bronze horse trappings, bronze mirror, pyxis, black glaze kantharos. | Igoumenitsa AM 7977, 77970, 7976, 8119, 8249 | Kanta-Kitsou *et al.* 2008, 124. Metallinou 2019, 238, 242. |

| Cat./ Table no. | Type | Area | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | blackened from charring, 5 spherical berries, 14 flowers, fragments of gilded copper | | | | | and other vessels, bronze pendant, gold jewellery, gold danake. | | |
| **SCG17** | 4 | Epirus | Riziani Grave στ | Myrtle? | 8 spherical clay berries and 4 moulded bell-shaped flowers, fragment lead circlet, fragments stems and leaves | Child prob. | Late 4th/early 3rd | I | Cist | Black glaze stamnoid kados, black glaze skyphos, oionochoe, iron spear head, lamp, figurine fragments. | | Metallinou 2019, 244. |
| **SCG18** | 3? and 4 | Epirus | Riziani Grave ζ | Myrtle? | May be more than one wreath. 51 spherical clay berries and 17 moulded flowers with copper stems | Adult | Late 4th/early 3rd? | C | Cist | Lekane, three vases, 2 lamps, 2 perfume bottles (one glass), gold jewellery, glass ring. stone bezel, scissors or shears, silver spatula, 2 clay figurine heads, bone roundels from furniture. | Igoumenitsa AM on display | Kanta-Kitsou *et al.* 2008, 124. Metallinou 2019, 247. |
| **SCG19** | 2 | Attica (Euboea) | Eretria | Myrtle | Bone circlet with blue colour, clay berries, copper leaves | F child? | Late 4th/early 3rd? | C | | | Louvre Bj2414 (CA530) | Hasselin Rous et al:, 2017 |
| **T3X16** | 3? | Epirus (Ionian Isles) | Ithaca Stavros, grave XI | Oak and ivy | Acorns, ivy berry, bell-shaped flower | Infant | c.300 | I | Tile covered | Lekane | | Waterhouse 1952, 236, fig. 73. |
| **T3X17** | 7 | Peloponnese | Corinth Levko Potamo, Examilia | | | | | C? | | | On display Corinth AM | |
| **SCG20** | 2 | Peloponnese | Isthmia | Myrtle | Oval berries, some red | | After 338 | C | No human bones discovered but ash in rectangular pit in tumulus | Sword and other iron weapons, large Corinthian amphora, glass 'eyes' (from kline?), strigils, Corinthinan pyxis, Glasinac pins, pseudo-Cypriot vase, iron objects (chariot elements?). | Isthmia IM3152, 5042-7, 5055-9 | Raubitschek 1998, 68, 71. |
| **T3X18** | | Peloponnese | Kalyvia Elidas | | Few fragments gilded stems | | 4th | I | Grave pithos | Robbed. Fragment gilded brooch, fragments lekane, used as stopper. | Olympia | *AD* 53, 1998 *Chron* B1, 230; Vlachopoulos 2012, 373. |
| **T3X19** | | Peloponnese | Kolokytha | | Bone circlet with fine copper 'nails' | | 3rd to 2nd ? | I | Pithos | Bronze ring, iron object and fragments of bone. | D2830 | *AD* 47 (1992) *Chron B1*, 112; Matzanas 2013, 281. |
| **T3X20** | 2? | Peloponnese | Mageira Kouveli | Myrtle | Clay balls and gilded copper leaves and stems | | Early Hellenistic | | Cist grave | Wreath found on skull. | | Themelis, *AD* 22 (1967) *Chron*, 211. |

| Cat./ Table no. | Type | Area | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T3X21 | 6 | Peloponnese | Patras Plot Pouqueville 25-27, north cemetery | | Coloured flowers, copper or lead circlet | young | Early 3rd? | I | | | Patras AM on display case 66 | Stavropoulou-Gatsi 1993, 157. |
| T3X22 | | Peloponnese | Patras Plot Pouqueville 25-27, north cemetery, grave 15 | | Few fragments gilded wreath | | Late 4th, early 3rd | I | Pit grave | Five vases. | Patras AM | Petropoulos 2005, 59. |
| T3X23 | 3/4 | Peloponnese | Patras Plot Pouqueville 25-27, north cemetery, grave 20 | Myrtle | lead circlet, gilded lanceolate leaves and many gilded spherical berries or buds | F young girl | 1st qu. 3rd | I | Pit grave | Bronze kados, lekane, skyphos, two gold earrings and a silver coin (danake). | Patras on view, case 65, M4896 | Petropoulos 2005, 69; Kolonas and Stavropoulou-Gatsi 2017, 157. |
| T3X23A | | | Patras Kanakari Street, 84-86 | | | | | | | | Patras AM on view case 67 | Kolonas and Stavropoulou-Gatsi 2017, 158. |
| T3X23B | | | Patras Kanakari Street, 84-86 | | | | | | | | Patras AM on view case 68 | Kolonas and Stavropoulou-Gatsi 2017, 158. |
| T3X24 | 2? | Peloponnese | Patras Korinthou and Pouqueville 17-19, grave 23, | Myrtle? | Copper stems, gilded leaves and berries | | | I | Beneath Hellenistic wall | Skull, part of chest. | Patras AM | Papapostolou 1984, 95. |
| T3X25 | | Peloponnese | Saramota (Staphido-kampo Elis) | Oak and myrtle? | Bone and lead circlet, leaves and berries from gilded copper and clay | | Material in pithos: 4th c wreath 3rd-2nd (Matzanas 2013, 281) | I? | Pithos | Wreath fragments in south portion of pithos. Inside pithos: BG feeder, BG kantharos and skyphos, small phiale, kothon, lower part of kylix. Bronze coin. Two wreaths found in pithos (Matzanas) no bones preserved. | Elis AM D3116-3118 | Arapogianni *AD* 52 (1997) *Chron* B1, 249-50; Matzanas 2013, 281. |
| T3X26 | 4 | Peloponnese | Saromata (Staphido-kampo Elis) Pithos 2 | Myrtle? | Clay spheres and flowers. Remains of lead circlet (in powder) | F? | 2nd half 4th? | I | Tile covered, pithos | 2 aryballoi-shaped oinochoai, unglazed kantharos shaped vase, jugs and perfume bottle. Phiale, 3 bowls, perfume bottle, 2 lead discs and bronze mirror cover with decoration of lotus and River god. Wreath fragments found around head. 2 bronze rings. | Elis AM D499-500 | Arapogianni 2000, 196-7. |
| T3X27 | 4 | Peloponnese | Saromata (Staphido-kampo Elis) Cist grave | Myrtle | Clay oval berries and flowers | M | Mid 4th? (from skyphos) | I | Cist grave | BG skyphos iron strigil with gilded handle and fragments of another strigil gilded berries and flowers and very fine copper leaves. Fragments of gilded flower and 2 gilded rosettes, probably from a box. Iron nails around the skeleton. | Elis AM D495, D496, M1447-1449 | Arapogianni 2000, 192-3. |

| Cat./ Table no. | Type | Area | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T3X28 | | Peloponnese | Elis (Savalia?) | | | | | | Cist grave in tumulus | | Elis AM? | Matzanas 2013, 259 (2006 excavations). |
| T3X29 | Not clear | Peloponnese | Sikyon Grave E Alipheira | | Fragment of wooden circlet | | Last qu. 4th | C | Pyre above two graves | Gilded vases, phialai, pelike, Sikyon coins, gilded bronze needle, glass beads, fragments of bunt bones small bunches of grapes (? diadem). | Corinth? | Krystalli Votsi 2013, 509, 517. |
| SCG 21 | 3 | Thessaly | Demetrias n. cemetery T. 206 | Myrtle | | | Hellenistic | I | Pit | Shell, nails. | Volos AM BE 18063 | |
| SCG 22 | 4 | Thessaly | Demetrias N. cemetery T. 386 | Myrtle | Wooden circlet, bell-shaped flowers, large spherical berries | | 3rd | I | Cist 2 burials in grave | Alabastra, silver kylix, amphora, bronze lantern, aryter, iron needle, iron nails, two lamps, and a plate outside the grave. | Volos AM BE 18043 and 18060 | Asderaki and Rehren 2008, 508; Asderaki-Tzoumerkioti 2000, 317. |
| SCG23 | 4 | Thessaly | Demetrias N. cemetery T. 393 | Myrtle | Lead circlet, bell-shaped flowers, two sizes of spherical berries, myrtle berries with cross | F with child | Mid to late 3rd | I | Cist | Lead pyxides, clay pyxis, unguentaria, aryters, skyphoi, alabastra, oinochoe, mirror, needle, fruit, buttons, shells, plate, alabastra, amphora in place of skull, lantern, kylix, needle, nails, lamps, aryter. 2nd burial in lekane, child. | Volos AM BE 36271 | Nikolaou 2016, 116-124. Asderaki and Rehren 2008, 508. |
| SCG24 | 3? | Thessaly | Demetrias N. Cemetery T. 454 | Myrtle | Spherical berries, gilded copper leaves | | Hellenistic | I | Pit | Strigil, fragments of a. vase, needle. | Volos AM BE1878 and 18083, 1877 | |
| SCG25 | 3? | Thessaly, | Demetrias N. cemetery T. 499 | Myrtle | Lead circlet gilded spherical berries, gilded leaves | | 1st half 3rd? | I | Pit | Rings, nails. | Volos AM BE18044 | Asderaki and Rehren 2008; Asderaki-Tzoumerkioti 2000. |
| SCG26 | 3 or 4? | Thessaly | Demetrias N. cemetery T. 688 | Unclear | Lead circlet Gilded bell-shaped flowers, spherical berries | | 3rd? | I | Pit | Skyphos. | Volos AM BE18062 | |
| T3X30 | | Thessaly | Demetrias T. 810 | | | M | 3rd | | Pit | Skyphoi, perfume bottle. | Volos AM BE18069, 18070 | Nikolaou 2016, 164. |
| SCG27 | 3? | Thessaly | Demetrias N. cemetery T.924 | Myrtle | Lead circlet, gilded spherical berries with yellow coating, gilded leaves | | 1st half 3rd? | I | Pit | Lamp outside grave, unguentarium, strigil. | Volos AM BE18065 | Asderaki and Rehren 2008. |
| SCG28 | Not clear | Thessaly | Demetrias N. cemetery trench 6, level 6 | Myrtle | | | Hellenistic | I | Fill | Head of iron nail. | Volos AM BE 18071 | |
| SCG29 | Not clear | Thessaly | Demetrias N. cemetery trench 6, level 8 Pasa | Myrtle | Lead circlet | | Hellenistic | I | Fill | | Volos AM BE 18077 | |

| Cat./ Table no. | Type | Area | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no. | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCG30 | Not clear | Thessaly | Omolio A Chouliaras plot | Myrtle | | | Early 3rd | I | Cist | Iron spearhead. 7 bronze coins (3 of Cassander). Lamp and fragments of pottery. 2 individuals in grave. | Volos AM Omolio 1961 | Theocharis 1963, 178 |
| T3X31 | | Thessaly | Omolio grave B | | | F, young girl | Last 3rd of 4th | I | Pit | 2 small earrings, ring with bezel, terracotta protome, 2 RF pelikai. | May no longer exist | Miller 1979, 56-7; Theocharis 1963, 177 |
| SCG31 | 3? | Thessaly | Pelinna Sarcophagus A | Myrtle or ivy | Lead circlet, spherical berries | F | 2nd qu 3rd | I | Marble sarcophagus in tumulus with peribolos | Fine gold thread, 2 gold leaves (inscribed), teeth including two of a child, silver rings. Figurine of comic actor on grave slab. Lamp in aryter, lebes at feet with remains of 'newborn', gold hair spirals, 'necklace pendant' with triple chain and flowers. Gold danake in mouth. Other grave goods outside: 2 BG skyphoi, broken skyphos, feeder. | Larissa AM | Tziaphalias 1992, 136; Tsantsanoglou and Parassoglou 1987, Karapanou and Katakouta 2004. |
| SCG 32 | 3? | Thessaly | Pelinna Sarcophagus B | Myrtle? | | M | 2nd qu. 3rd | I | Marble sarcophagus in tumulus with peribolos | Robbed. Iron strigil. | Larissa AM | Tziaphalias 1992, 137. |
| SCG33 | 7? | Thessaly | Pherai Thymarakia Grave 18 | Oak | Gilded clay acorns, gilded copper oak leaves, wooden circlet | | Mid-Hellenistic | C | Stone ossuary | Nothing mentioned in publication; museum label refers to strigil. | Volos AM | Adrymi-Sismani1983, 40. |
| SCG34 | 3? | Thessaly | Phthiotic Thebes, grave 9 | Ivy? | | | Late 3rd | I | Cist | 3 rings, unguentaria, roundel with Macedonian star. | Volos AM BE47618 | Alexandrou pers. comm., Alexandrou and Almatzi 2008. |
| SCG35 | 3 | Thessaly | Pilaf Tepe | Ivy and grapes | Gilded copper leaves, gilded berries and grapes | | 2nd qu. 3rd | C | Tumulus | Silver situla, 4 gold fillets, lantern, fragile wooden items with gold strips on wooden item, pottery. | Athens NAM 12081 | Edmonds 1900. |

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# CHAPTER 4: SOUTH EAST AEGEAN

## 4.1 Introduction

Of the gilded wreaths found in the South East Aegean (**fig. 4.1**), the majority (at least 18) were from the island of Rhodes: Istrios, Kamiros and the necropolis in Rhodes Town (**fig. 4.2**). A further two were found on the neighbouring islands of Kalymnos and Nisyros, and two on Crete[263]. **Table 4** at the end of this chapter summarises available information about the wreaths from the region. In addition, some copper leaves, thought by the excavators to be from wreaths, but not apparently gilded, were found in the sanctuary of Athena in Lindos[264] and on the Altar Hill at Praisos (L5) (discussed in chapter 8). The gold and gilded wreaths were published in a thoughtful study by Kaninia[265] and the scientific aspects of SEA8 studied at the British Museum, but there is no anthropological information about the finds, and the ancient cemeteries in Rhodes Town have yet to be fully published.

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[263] SEA1 and SEA2; SEA3 was not gilded.

[264] Blinkenberg. 1931, cat. 1560 and 1561. The leaves are not in Copenhagen and are now believed to be in Istanbul (Schierup pers. comm. 27.6.2016).

[265] Kaninia 1998.

*Fig. 4.1 Map of the Dodecanese and the Carian Shore showing islands with gilded wreaths. From Higgins and Higgins 1996 fig. 14.1.*

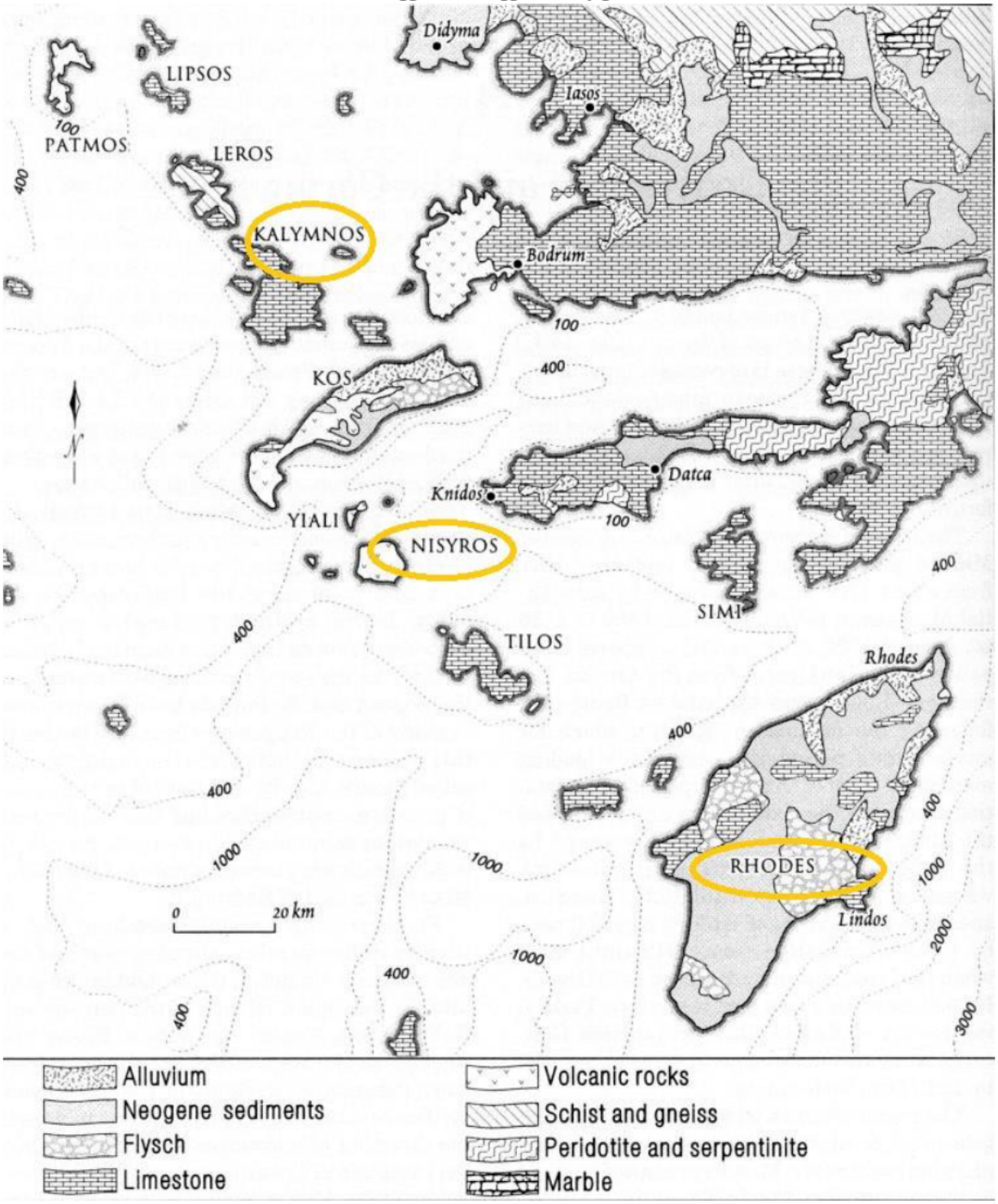


*Fig. 4.2 Map of Rhodes, adapted from Coulié et al. 2014, 320. Gilded wreaths have been found in Rhodes, Kamiros and Istrios (indicated with a yellow oval).*



## 4.2 Typology and development

The earliest but ungilded wreath, SEA3, is from Crete and is made of hammered copper, with berries of ivory. It is too large for the human head at 24 cm in diameter and the sections of circlet are held together with rivets, making it rigid, so it is likely that it was used on a statue[266]. It represents laurel, with broad leaves and berries that are closely modelled on those in nature and is dated to the late fifth/early fourth century[267]. There is no reason to doubt this early date, which is supported by the design and technology of this object.

*Fig. 4.3 Wreath from Kommos, SEA3 © Ministry of Culture and Sports/ Heraklion Archaeological Museum*



*Fig. 4.4 Detail of SEA3. © Ministry of Culture and Sports/Heraklion AM.*



Four gilded wreaths from Rhodes are of type 1: that from Kamiros (SEA8) is thought to be the earliest and is similar to three other wreaths - SEA6 (Istrios), and SEA10 and 20 from the town of Rhodes. All have a bone circlet round in cross-section which has traces of gilding on an off-white ground. The most distinctive feature of all these wreaths is that the stems of the leaves are twisted around the circlet and embedded in it (**figs. 4.6, SEA8.5, SEA6.6 and SEA10.4**). The careful embedding of the stems suggests a wish to protect the wearer from the sharp ends

[266] Shaw 1981, 229.

[267] Shaw and Shaw 2000, 348. The main part of the wreath came from a dump with items dating to the first century, but one leaf from the wreath (B293) was found in a fifth/early fourth century layer.

of the wires; if so, the wreaths were designed for living people, not the dead. The round circlet is unusual and only attested elsewhere in Macedonia on the early fourth century wreaths M27, M40 and M2. Few berries survive: only one remains on SEA10, and none on SEA6, but SEA8 did once have them although the records do not specify their number[268]. The leaves on all four wreaths are rounded and have traces of a yellowish coating. Tiny flowers were found with SEA20, which like the flowers on M27, are made of copper (**figs. 4.5 and M27.6**). All these wreaths represent myrtle. Curators at the British Museum gave a fifth century date for SEA8[269], but did not explain their reasoning, and it is much more likely that it is from the mid-fourth[270]. Kaninia proposes a date between the second half of the fourth and the beginning of the third century for the very similar wreaths SEA6, SEA10 and SEA20, but there are several factors that suggest an early date within her timespan. First, the red-figure Kerch-type pottery found with SEA6 (**fig. SEA6.1**) can be comfortably dated to the mid-fourth century. Secondly, the technical aspects of the wreaths point to a relatively early date, and in particular, the round shape of the bone circlets on all these wreaths[271], which was later replaced by the flatter shape of circlet obtained from using rib bones. A fifth century date is ruled out for SEA10 and 20 because the Rhodes necropolis was only used after the synoecism in 408/7. Relatively few graves there date to the first half of the fourth century[272] so the most likely date for the two wreaths found in Rhodes Town is the third quarter of the fourth century, perhaps quite early in that quarter, and around 350 for the Kamiros and Istrios wreaths (SEA8 and SEA6).

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[268] See cat. SEA8.

[269] Oddy *et al.* 1979, 235.

[270] The results of researches in the archives at the British Museum relating to this wreath are set out in Jeffreys 2019a.

[271] Details are in the catalogue entries for these wreaths.

[272] Patsiada 2013, 38.

*Fig. 4.5 Flowers from SEA20 (Rhodes AM M1382) © Hellenic Ministry of Culture and Sports.*



*Fig. 4.6 Detail of circlet on SEA20 (Rhodes AM M1382) © Hellenic Ministry of Culture and Sports.*



Three wreaths of type 2 (SEA7, SEA12 and SEA11) show a change in design, having straight-sided leaves made in one piece with the stems. All three represent myrtle. The stems on SEA7 pass through the pierced bone circlet and are twisted with neighbouring stems on the back of the circlet (**fig. 4.7)** and not around the circlets, as is the case with those in the first group. It would seem from comparison with M5 that there was once a wooden circlet behind the bone

circlet, and that the stems passed through both (**fig. 4.8**). SEA7 and SEA11 have oval berries, the latter with a cross indicating myrtle (**figs. SEA7.3 and SEA11.1**). The berries on SEA7 are on spiral stems, reminiscent of M36 and M39. The similarities between SEA7 and the wreaths from Aineia[273], such as M5, suggest a similar date for all these wreaths, in the third quarter of the fourth century. A similar arrangement of two circlets, though in this case made of lead and wood, applies to SEA2 (type 3) (**fig. 4.9**).

*Fig. 4.7 Twisted stems from SEA7 (M1149 Rhodes AM) © Hellenic Ministry of Culture and Sports*



*Fig. 4.8 Twisted stems from M5 Aineia 7570). The wooden circlet can just be seen on the lower right. © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*



*Fig. 4.9 SEA2 (Chania AM, M472) © Hellenic Ministry of Culture and Sports.*



[273] As was pointed out by Kaninia, 1998, 117.

In the third century, ivy wreaths of type 3 became common (SEA13, SEA14, SEA17, SEA21, SEA19, T4X2 and T4X3), on which lead was used for the circlets and the stems were bound in order to give extra support. SEA13 has rosettes which are similar to those on SI 24 and SI 29 (**fig. 4.10**), which are dated to the first quarter of the third century, but T4X2 is later, probably from the second half of the second century, judging by the cylindrical altar found with it[274]. In addition to the wreaths listed in the table, it appears that many further rosettes were found in the necropolis in Rhodes that probably belonged to wreaths but of which further parts were either destroyed or stolen[275]. The similarity of the third century ivy wreaths to some of those in Taras suggests an influence either on or from that city but the dating of the earliest material is about the same in both cities so it is not possible to say which came first.

*Fig. 4.10 Rosettes and other elements from SEA 13 (MA325, Rhodes AM) © Hellenic Ministry of Culture and Sports.*




SEA1, SEA5 and SEA16, from Crete, Nisyros and Rhodes respectively can be categorised as type 4, with moulded bell-shaped flowers, and may represent more than one plant; SEA5 also

[274] Patsiada 2013, 294.

[275] Kaninia 1998, 98. Some are illustrated in Kaninia 1998, pl. 17 and Palaiologou 2004, fig. 1, listed in Table 4 as T4X3.

has grapes. The bell-shaped flowers and spherical berries are similar to those on SCG23 and M3. SEA16 has a similar feature to that on SEA7 with the stems twisted together on the back of the circlet, but it appears from the moulded flowers and other features to be later. SEA1 is dated to the mid-third century[276] and SEA16 to 240-230[277]. The latter was found around the neck of a Hadra hydria; it is a little large to have been worn around the head and although the neck of the vase would have been smaller in diameter than the wreath, the wreath could well have been placed on the vase in a manner similar to that shown by Breccia for a hydria in Sciatbi (**figs. 4.11-12**) with the ends of the lead circlet trailing since SEA 16 has two long portions of lead, which are not pierced with a single hole, as would normally be the case if they had been intended for a string to go round the back of the head (**fig. SEA16.3**). Breccia dates the Sciatbi wreaths and hydriai to the early third century, approximately contemporary with SEA 16[278].

*Fig. 4.11 Funerary hydria from Sciatbi (16152), with wreath (note long pieces at end of circlet). From Breccia 1915, 21, fig. 1*

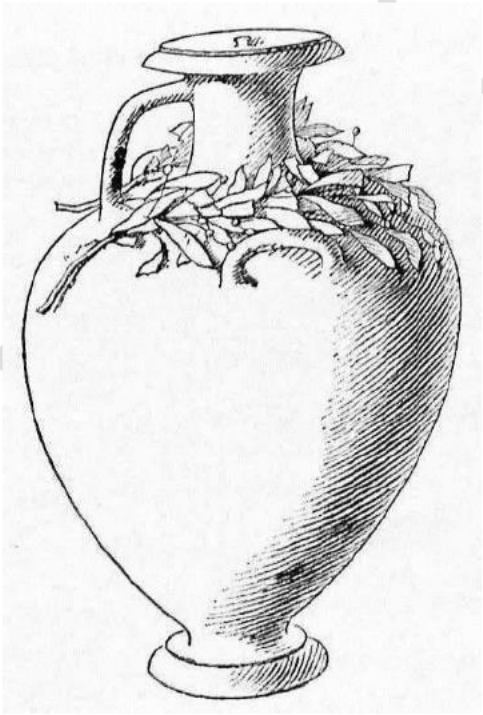
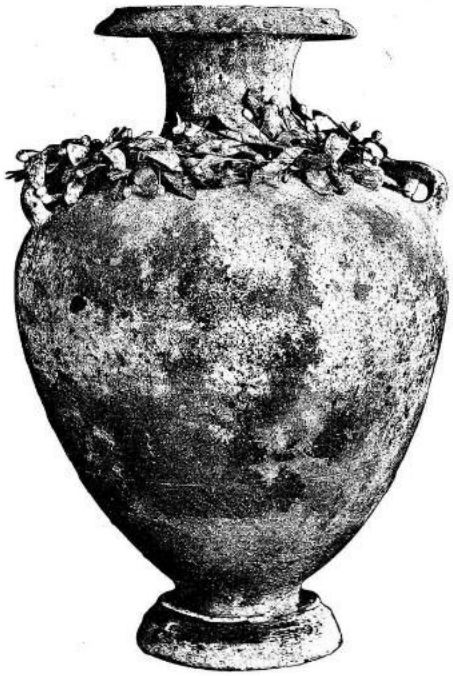


*Fig. 4.12 Hydria from Sciatbi, showing wreath around neck of vase. From Breccia 1912, cat. 50 (16152), pl.37, 47*



[276] Markoulaki and Niniou-Kindeli 1982, 98.
[277] Kaninia 1998, 118.
[278] Breccia 1915, 20.

SEA1 could also be type 5 (roll-wreath) (**fig. 4.13**), formed of fabric or flowers; it is not known exactly how roll-wreaths were made, although suggestions are made in Chapter 7, pages 263-265. A figurine showing a woman wearing a roll-wreath was found in a grave in the same funerary complex as SEA1 (**fig. 7.5**) and gives an idea of how the wreath might have looked originally. The berries on SEA1 have impressions of fabric which are very close to the holes holding the stems, suggesting that the berries once lay closely alongside the fabric (**fig. 4.14**). The fabric appears to be sprang, which did not have a weft and formed an elastic material. The lead circlet could have been contained within the fabric roll, and the berries and flowers supported on copper stems which passed through the sprang and padding (**fig. 7.6**).

*Fig. 4.13 SEA1 (M426, Chania AM). © Hellenic Ministry of Culture and Sports/Ephorate of Antiquities of Chania.*




*Fig. 4.14 Berry from SEA1 (M426, Chania AM) with impressions of red fabric. The main hole, which once supported the stem, is on the right. Photograph taken with digital microscope. © Hellenic Ministry of Culture and Sports/Ephorate of Antiquities of Chania..*



One wreath does not fit into any known types: SEA15 has a copper circlet, which would have been rigid, and thus suitable for a statue rather than a human head, but is of normal head size. As it is not pierced, the stems would have been wrapped around the circlet, as was also the case with some gold wreaths. SEA4 from Kalymnos has pointed moulded acorns, a little like those on a wreath from Epirus, SCG 9, and is probably type 4.

## 4.3 Burial contexts

### *4.3.1 Grave types, burial practices, gender*

The earliest wreath from the region, which is not gilded, was found in Crete in a votive context (SEA3) but all the gilded wreaths come from funerary contexts. The Rhodians seem to have been particularly fond of honouring the living and the dead with wreaths[279], as can be seen in inscriptions which frequently refer to gold wreaths and also in the decoration of cylindrical altars with wreaths or garlands. Most of these are from the end of the period, when the number of gilded wreaths was decreasing. These inscriptions do not seem to refer to gilded wreaths: a list of wreaths in inscriptions recording the award of wreaths to members of the *koina* refers to 'gold wreaths', or just 'wreaths', but not gilded items[280].

The necropolis of Rhodes has not been fully published, although a plan has been drawn up by Patsiada[281]. It occupied a large area, eventually extending five km beyond the defensive wall[282]. Some graves in distinct parts of the necropolis have been published, including the western area known as 'Anoikodomisi' described in two articles by Palaiologou (2004 and 2005). The location of the plots where the gilded wreaths were found, in so far as this can be established from the archaeological reports, is shown in **fig. 4.15**. Many of the wreaths were found in plots near the northern edge of the cemetery and the Hellenistic walls, but several including SEA20

[279] Fraser 1977, 23.

[280] Maillot 2015, 172-175. She calls the non-gold wreaths 'foliage crowns' or 'leaves crowns', but does not make a suggestion as to what they were made of. The inscriptions themselves do not use the word 'επίχρυσοι'.

[281] Patsiada 2013, fig. 1.

[282] Patsiada 2013, 350.

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were found in the south part of the western area, and SEA14 and SEA21 on the eastern side near Korakonero, interpreted by some as a sanctuary and others as a funerary monument[283]. This monument has a stone relief carved in the rock usually interpreted as the return of Hephaistos to Mount Olympus[284]. Bilde regards it as Dionysiac and maybe symbolising the transition of mortals to the world of the immortals[285] and mentions the possibility that the courtyard where the relief is situated was the meeting place for a Dionysiac *koinon*[286] - interesting ideas, but which in the absence of inscriptions cannot be established.

*Fig. 4.15 Plan of Rhodes necropolis, adapted from Patsiada 2013, pl. 1. The approximate location of the plots with gilded wreaths is shown in gold. The ancient roads are shown by dotted lines. No scale is given in the original, but the length of the necropolis was at least 5km from north to south. © Hellenic Ministry of Culture and Sports/Archaeological Resources Fund*




[283] Patsiada 2013, 42-43, note 87.
[284] Patsiada 2013, 43.
[285] Bilde 1999, 239-243.
[286] Bilde 1999, 238.

In the Rhodes necropolis, the earliest graves were built cist graves with ridged coping, which were followed in the fourth and third centuries by rock-cut pit graves and built or rock-cut repositories (*thekai*) for cinerary vases[287]. Enclosures (*periboloi*) were used for families or *koina*[288] and contained *thekai* and graves; chamber tombs were also probably used for families[289]. From the mid-third century onwards, monumental tomb complexes with a temple-like structure (*naiskos)* and courtyard started to appear; the wealthiest families and members of the *koina* were buried here, although simple tombs and stone respositories continued to be used by others[290]. The ancient necropolis was planned with an eye to beauty and there seems to have been a deliberate intention to exploit the landscape and make it a pleasant place. It had several open-air sanctuaries[291] and pyres were found immediately outside the Hellenistic fortifications[292].

There does not seem to be any correlation between the type of grave and gilded wreaths. T4X1 was found in a monumental tomb complex [293] and SEA13, SEA16, SEA17, SEA21 in enclosures which contained many stone repositories and graves. SEA16 and 17 may have been from the graves of members of the same family group, since they were found close together in separate *thekai*, each accompanied by a Hadra hydria (as discussed above, SEA16 was found around the neck). Few burial plots and communal tombs have so far been identified as belonging to specific *koina*[294] and none of those so identified has produced a gilded wreath, so the enclosures with wreaths were almost certainly for family groups. One wreath was found in a pit grave (SEA10) and four in, around or near funerary urns (SEA16, SEA17, SEA13 and SEA2). Two were in stone ossuaries (*osteothekai*) (SEA21 and T4X1). None has so far been

[287] Filimonos and Giannikouri 1999, 205; Patsiada 2013, 351.
[288] Bilde 1999, 228.
[289] Patsiada 2013, 353.
[290] Filimonos and Giannikouri 1999, 206.
[291] Patsiada 2013, 351.
[292] Ibid.
[293] Patsiada 2014, 294.
[294] Bilde 1999, 239 and Patsiada 2013, 369.



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found on a rectangular altar with a central boss, of the type which Fraser suggested might have held wreaths, either natural or artificial[295], but only two gilded wreaths have so far been excavated from the late Hellenistic period, the time from which these rectangular altars are thought to date. At most two wreaths have been found in any one enclosure, although there may originally have been more, but as it would appear at present, it does not seem likely that there was a general practice of burying all members of one family or of a *koinon* with a metal wreath, although individual members could of course have been honoured in this way.

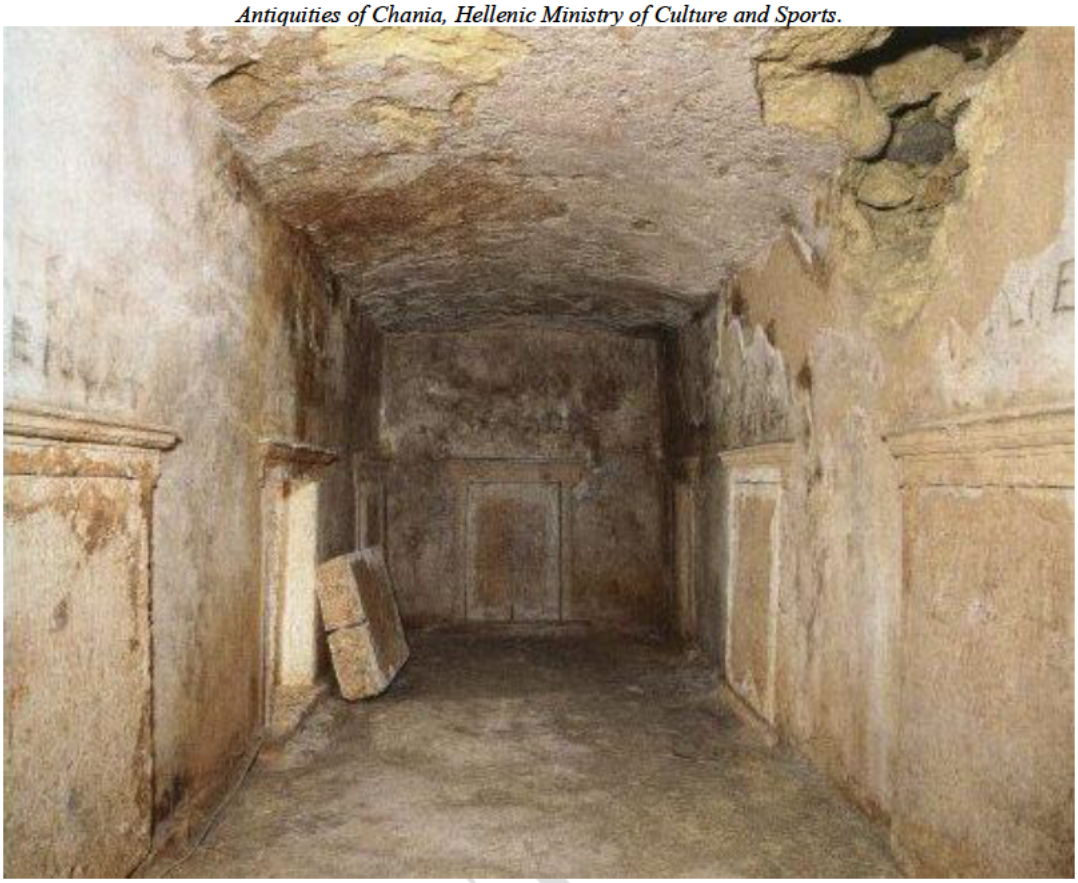
One of the wreaths in Chania, SEA1, was found in a chamber tomb, which contained 16 burials in nine chambers, all members of one family. The part of the family in chamber grave A, with the wreath, is named in inscriptions as Sombroto (the names are all Cretan)[296]. The tomb had steps down from a dromos, and was located below ground (**fig. 4.16**). It is of a type similar to those in Alexandria, but the burial type is thought to be peculiar to Western Crete[297]. At least one figurine found in the same tomb is believed to have been made in Alexandria, because of the presence of a rare pigment, huntite[298] (**fig. 7.5**). Using HHXRF it was not possible to determine whether this pigment was also used on the wreath, but mercury was found on the berries, indicating that they were at least partly coloured with the expensive pigment cinnabar[299].

The other wreath from Chania, SEA2, was found in a cist grave, and is thought to have been placed around the neck of a hydria beside the female skeleton[300].

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[295] Fraser 1977, 21-22.
[296] Markoulaki and Niniou-Kindeli 1982, 98.
[297] Andreadaki-Vlazaki 2009, 134.
[298] Maravelaki-Kalatizaki and Kalithrakas-Kontos 2003. See also page 214.
[299] Chapter 6, pages 246-247.
[300] Pologiorgi 1991, 167-168.

*Fig. 4.16 Chamber tomb in Chania where wreath SEA1 was found. From Andreadaki-Vlazaki 2009, 128. © Ephorate of Antiquities of Chania, Hellenic Ministry of Culture and Sports.*



It is not possible to say whether the wreaths from Rhodes were buried with predominantly males or females, but from the burial goods, there appear to be at least two females: SEA9 was found with jewellery, and SEA17 with a small cosmetics tool. SEA10, SEA14 and SEA 16 were found with strigils, but this is not enough, in itself, to tell us that they were in male graves. As far as Crete is concerned, SEA1 was found with a mirror in a knitted straw case, a needle and figurines, indicating that it was a burial of a female. The last of the burials in the complex was that of an adult woman, Eupatra Pitthios, whose name was inscribed above the door of the chamber[301], and this wreath is thought to have been hers. SEA2 also accompanied a female.

Gilded wreaths were found with both inhumations and cremations in the region. In Rhodes they accompanied five inhumations and six cremations (**Table 4**). Cremation was common on

[301] Markoulaki and Niniou-Kindeli 1982, 39.

the island in Hellenistic times and the ashes were placed in urns (such as Hadra *hydriai*) and stone repositories[302].

### *4.3.2 Grave goods and social status*

Most of the goods found with the wreaths in Rhodes were personal items such as jewellery and strigils, but many of the graves were robbed. Attention was lavished on the external appearance of the graves, and some precious goods escaped the robbers, including gold jewellery and wreaths[303]. In the latter part of the fourth century, the practices relating to grave goods in Rhodes were different from those in Macedonia: for example, little silverware has been found[304]. The reason for this is probably that identified by Patsiada, discussing a rare find of silver vessels and other precious items. She comments that at the end of the fourth century, Rhodes was still a young and conservative democracy and had not yet evolved into the major economic power it was to become later in the Hellenistic period[305], whereas the Macedonian political system revolved around a military aristocracy and was then at its peak of wealth.

Just over half of the wreaths studied by Kaninia were gold, and the rest gilded. The gold wreaths span the same chronological period as the gilded wreaths[306], and the two sorts of wreath appear to have been in use contemporaneously, although it seems that gold wreaths gradually took over from gilded towards the end of the period. In contrast to Macedonia, none of the graves which has yielded a gold wreath also held a gilded wreath, although T4X1 was accompanied by a gold strip, possibly a diadem. A few of the graves with gilded wreaths also held gold or silver goods, fine pottery or banqueting items: SEA9 was with a gold ring and a gold chain[307], and amongst the earlier wreaths SEA6 was found with a bronze ladle and a fragment of fine red-figure pottery

[302] Filimonos and Giannikouri 1999, 206.
[303] Filimonos and Giannikouri 1999, 215.
[304] Filimonos and Giannikouri 1999, 216.
[305] Patsiada 2014, 232. A gilded silver phiale and other silver and gold items including a diadem were found in a grave of a young girl in the western part of the necropolis in 1989 (Patsiada 2014, 220; *AD* 1990 (45) *Chron*, 471-2).
[306] Kaninia 1998,105-106.
[307] Kaninia 1998 cat. 19 and 122.



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nearby[308]. T4X1 was found with some fragments of gold and silver[309] and SEA21 with fragments of a silver phiale[310]. SEA13 and SEA16 were accompanied by Attic pottery. All these finds indicate burial with affluent members of the community, confirmed by the deposition in burial plots adjacent to major thoroughfares in several cases.

The grave goods found with the gold wreaths appear to be more luxurious than those with the gilded wreaths: Kaninia mentions one burial with purple fabric and a silver phiale accompanying gold wreath M1529[311], and both she and Filimonos and Giannikouri describe an assemblage of gold items found with another gold wreath, M678[312]. The latter observed that in general there were very few gilded items found in the assemblages which produced solid gold and suggest that because they were less valuable than gold, burying them with gold would detract from the impression of great wealth otherwise given[313]. It would seem, therefore, that in contrast to Macedonia, gold wreaths were used alone and in preference to the gilded wreaths by the richest members of society.

Zervaki proposes that two groups of gold maenads bearing strong similarities to appliques found in Amphipolis and Pydna, and possibly used on fabric diadems, were imported from Macedonia in the late fourth century[314] and Filimonos and Giannikouri suggest that in the fourth century a new wave of craftsmen came to work in Rhodes[315]. An influx of craftsmen from Macedonia to Rhodes would be consistent with the change from type 1 to type 2 in the third quarter of the fourth century. The placing of the Rhodes wreath, SEA16, around the neck of a Hadra hydria is worth particular attention. These hydriai were made in Rhodes and Crete as well as Alexandria, and chemical analysis of several Hadra vases found in Rhodes suggests a

[308] Kaninia 1998 cat. 34 and 116-117.
[309] Patsiada 2013, 294.
[310] Kaninia 1998, note 106; Zervaki 2003, 1098-1099.
[311] Kaninia 1998,110.
[312] Filimonos and Giannikouri 1999, 214; Kaninia 1998, 115.
[313] Filimonos and Giannikouri 1999, 208.
[314] Zervaki 2014, 259 and 266.
[315] Filimonos and Giannikouri 1999, 216.

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Cretan origin for the clay used[316]. The position of the wreath around the neck is the same for several wreaths found in Sciatbi (**figs. 3.16, 4.11-12**), Taras (SI 25), Aineia (M8) and Corinth (T3X17). Macedonia is the most obvious source of inspiration for the use of a wreath on the neck, as suggested by D'Amicis in relation to SI 25, and the fact that the funerary urn of Demetrius Poliorketes was decorated in this way provides further support for this view[317] even though the vase with SEA16 was from the South East Aegean.

On Kalymnos, SEA4 was found with silver fragments and a bronze hydria which had gilded elements[318], doubtless an heirloom, since it is believed to date to the first half of the fourth century.

The Sombroto family in the complex with SEA1 seems to have been from a particular social class with close connections in Ptolemaic Alexandria, and was clearly wealthy; amongst the goods was a needle under the woman's head, which may have held the fabric found with her in place[319].

## 4.4 Origins

The earliest wreath, SEA3, appears to have been designed for use on a statue and its design is different from that of the gilded wreaths, which did not appear in the region until about the middle of the fourth century. It is possible that the design for the type 1 wreaths was taken to Rhodes by an itinerant craftsman, maybe even a refugee from Olynthos, given the similarity to M27 and the rarity of the type. This type of wreath was replaced during the last quarter of the fourth century by type 2 wreaths, which had appeared earlier in Macedonia. A Macedonian garrison was installed in Rhodes in 332, when the island submitted to Alexander the Great, so it would not be surprising to see Macedonian influences appearing at about this time on the

[316] Giannikouri 2000, 235-6; Appendix by Jones at page 255.

[317] D'Amicis in *Catalogo* 3.1, 157; Plutarch, *Life of Demetrius*, LIII,2

[318] Newton 1865, 330; Newton 1856, 14-37. For the dating of the hydria, BM 1873,0614.1: https://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=461581&partId=1.

[319] Markoulaki and Niniou-Kindeli 1990, 43.



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island, which may also explain the Macedonian-style gold wreaths found in nearby Halicarnassos and Megiste[320]. Type 3 (ivy) wreaths appeared in Rhodes about the same time as in Taras, in the third century, and could have originated in either city, or in Macedonia, where this type of wreath had appeared somewhat earlier (M37). In the same century, type 4 wreaths also appeared, of which there are earlier examples in Boeotia and the Peloponnese. There is no reason to think, therefore, that any of the types of gilded wreath found in Rhodes or elsewhere in the Dodecanese originated there.

***Artistic and cultural links of Rhodes***

When discussing wreaths of type 3, Kaninia suggested the possibility of a workshop common to Taras and Rhodes[321]. Taras is the only other place where a large number of gilded ivy wreaths has so far been found, reinforcing the likelihood of trade between the two, which would also have shared cultural ties. Rhodian trading links went in all directions and it is easy to see that wreath designs could have passed from Rhodes to Taras or vice versa. It is possible that that some of the goldsmiths for which Taras was famous moved to Rhodes as the latter's weath increased in the third century, and at a later stage, Bresson suggests that wealthy members of society in Taras fled to Rhodes after its defeat by Rome in 209[322], who could also have been accompanied by goldsmiths.

Rhodes had close links with Egypt and Crete as well as Southern Italy. It was a major export centre for wine and grain, and Rhodian vessels heading to Southern Italy probably called in at Cretan ports. Ships heading west from Egypt would also have called in at ports along the south coast of Crete[323], as well as Rhodes. Hadra hydriai were made in Rhodes and Crete as well as Alexandria, and as discussed above, the clay on several Hadra vases found in Rhodes was from

[320] The Halicarnassos example (Ozet 1994) resembles MTh7417 from Stavroupolis, illustrated in Ignatiadou and Tsigarida 2011, cat. 4. The gold ivy wreath from Megisti/Kastellorizo (Kaninia 2011) resembles wreaths from Sevasti and Apollonia in Macedonia.

[321] Kaninia 1998,121.

[322] See Bresson 2002, 149-151, who lists four Tarantines in Rhodes with Greek names.

[323] Perlman 1999,151.



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Crete[324].

The city of Rhodes attracted many foreigners, and several of the inscriptions mentioning wreaths being awarded by the *koina* refer to them, as can be seen from the names commemorated, such as Antiochos from Kappadocia[325]. The *koina* seem to have started, initially, to provide foreigners in Rhodes with the same kind of opportunities as the local demesmen, but their membership was not limited to foreigners[326]. They were an important feature of life on Rhodes and one particular duty they took on was that of burying their members. Inscriptions refer to wreaths being bestowed on prominent members of the *koina*, such as Dionysodoros of Alexandria, who resided in Rhodes. A stele records that one of the *koina* honoured him with a commendation and a gold wreath (χρυσέωι στεφάνωι); these honours to be bestowed on him while he lived and after his death, the proclamation and wreathing were to be carried out once a year in the necropolis; his monument was also to be wreathed[327]. Gabrielsen proposes that that the wreath placed on the tomb was a natural one rather than gold, and indeed takes the view that no real crown was awarded in his lifetime, and only one gold crown on his death (which was replaced annually by a cheaper one)[328]. No gilded wreaths have so far been found in Rhodes in graves with either an inscription or relief depicting a wreath.

## 4.5 Functions and significance

### *4.5. Worn by the living?*

Some of the early Rhodian wreaths (type 1) which have the ends of the stems buried in the circlet may have been worn by the living, as discussed above[329]. There is no reason why the

[324] See note 316.
[325] Maillot 2015 lists wreaths awarded to many foreigners from places including Andros, Phaselis, Samos, Antioch, Alexandria, Ephesus, Syracuse, Pergamon etc.
[326] Patsiada 2013, 245.
[327] Fraser 1977, 62 and Gabrielsen 1994, 144-146.
[328] Gabrielsen 1994, 145-147.
[329] See also Kaninia 1998, 126-7.



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wreaths of type 2 and 3 should not also have been worn occasionally in this way, even if their main use was funerary. The Kommos wreath (SEA3) was not designed to be worn by a human being.

### *4.5.2 Possible religious and philosphical associations*

As is the case elsewhere, the earliest, ungilded, wreath was from a votive context: SEA3 was found at Temple C at Kommos, but it is not clear to which deity the temple was dedicated.

As discussed by Zervaki, there seems to have been particular veneration of Dionysus on Rhodes: at Kamiros, he was worshipped as *Dionysus epikarpios*, an epithet not known elsewhere, but reflecting the panhellenic view of him as god of vegetation, and in particular as protector of fruit and vine[330]. There were *koina* of his initiates in Rhodes and Lindos, and there is epigraphical evidence for his worship all over the island, including festivals in his honour from as early as the time of Demetrios Poliorketes and temples dedicated to him in Rhodes and Lindos[331]. One of the festivals honouring Dionysus was known as the Anthesteria, and according to the 5th c. AD writer Hesychius girls of marriageable age were known in Rhodes as *anthesteriades*[332]. Could there be any connection between the wreaths composed partly of flowers which are found in some of the graves and girls of marriageable age, as there appears to be in Boeotia and the Peloponnese? Such a connection is possible, but not substantiated by any direct evidence on the island: no grave goods were found with SEA20, and it is not possible to determine the age or gender of the deceased buried with further wreaths partly composed of flowers, such as SEA16. These wreaths are however of a type (4) commonly found elsewhere with both males and females, so there is no reason to associate them with girls. From the popularity of the god on the island we would expect some of Dionysus' followers to have been buried with wreaths and there is some support for this in the high proportion of ivy wreaths, but

[330] Zervaki 2014, 124.
[331] Morelli 1959, 122.
[332] Hesychius s.v. *anthesteriadas* and *anthesteria*; Burn 1987, 92; Zervaki 2014, 26, n. 62.



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not specifically by the grave goods, as in Taras[333], although this may be due to some of the wreaths being found in fill and grave robbing. However, SEA14 and SEA21 were found adjacent to Korakonero, which has a relief that may be associated with the god (see page 137). A connection with the Kabeiroi cannot be ruled out: SEA10 was found with an iron ring, perhaps indicating a Kabeirion initiate, but for which there are other possible explanations, and a sculpted representation of a pilos helmet with a wreath, which Daumas associates with such initiates but without substantiation was found on the nearby island of Kos[334] (**fig. 9.5**).

There do not appear to have been any incised gold tablets accompanying wreaths, with the possible exception of some fragments that may have been from a wreath from Sfakaki on Crete dating to the second century[335].

Even though attracted by the possible link between the wreaths and Dionysus, Kaninia like the present author found little evidence in direct support of this other than the representation of ivy[336]. She proposes that although the question should remain open, when seeking to understand the practice in Rhodes of burying wreaths with the dead, we should look for a philosophical and metaphysical inspiration rather than a civic honour, and the research done for this dissertation tends to support this view[337]. Kaninia refers to the garden-like environment of the necropolis in Rhodes and suggests that the wreaths express the philosophical wish to think about death as a re-unification with nature[338], which has many attractions. Possible religious and philosophical links of the wreaths in the wider context will be considered further in Chapter 9.

[333] See below pages 171-173.
[334] Daumas 1998, 202-203; Jacopi 1932-9, 21 records the find.
[335] Tzifopoulos 2010, 26.
[336] Kaninia 1998, 123; Kaninia 2011, 65.
[337] Kaninia 1998, 126.
[338] Kaninia 1998, 127.

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***Table 4 Gilded wreaths from the South East Aegean***

| Cat.no/ Ref no | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEA1** | 4/5 | Crete, Chania | Chamber A | Myrtle | Lead and wood circlets | F | Mid-3rd | I | Pit in chamber | 4 olpai, 4 figurines, one unguentarium, needles, fabric, tree leaf, alabastron and bronze mirror in knitted straw case (5 deceased in chamber – 3 male including children and 2 female). | Chania M426 | Markoulaki and Niniou-Kindeli 1982, 98, other finds p.43. |
| **SEA2** | 3? | Crete, Chania | Cist grave 3, Xanthididi St | Myrtle | Lead and wood | F | Late 4th/early 3rd | I | Cist | 2 olpai, bronze needle, iron strigil and part of second strigil, hydria used for burial. | Chania M472 | Pologiorgi 1991, 167. |
| **SEA3** | None | Crete, Kommos | Dump to south of Temple C and construction layer of Temple C | Laurel | Copper circlet and leaves, ivory berries | N/a | Late 5th/early 4th | | Sanctuary | Late Hellenistic material in dump. | Herakleion HM4764. B95, 100, 158, 281 and 293 | Shaw and Shaw 2000, 348. |
| **T4X0** | 2 | Crete, Cherso-niso | | Myrtle ? | Bone circlet, small oval berries | | 3rd | | | | Herakleion on display | Unpublished |
| **SEA4** | 4? | Kalym-nos | Damos, field between Prophet Ilia and Temple of Apollo | Myrtle and oak | Lead | | End 4th beginning 3rd | I | | Fragments of hydria BM 1873,0614.1; fragments of silver? | British Museum BM1856,0826. 670 | Newton 1865, 330; Newton 1856, 14-37. |
| **SEA5** | 4 | Nisyros | Ag. Ioannis grave 13 | Myrtle leaves? Grapes | | | Beg. 3rd or later | I | Cist | Few fragments of iron strigil. Robbed. | Nisyros M802 | Philimonos-Tsopotou 1980, 60-87; Kaninia 1998 cat 38. |
| **SEA6** | 1 | Istrios | Road Istrios-Apolakkias, south entrance to village | Myrtle ? | Bone | | 3rd qu.4th? | I | Cist | Alabastron MA58, amphora, RF fragments, bronze arytaina, RF crater found outside. | Rhodes M551 | Kaninia 1998 cat 34 and 116-117. |
| **SEA7** | 2 | Istrios | Road Istrios-Apolakkias, south entrance to village | Myrtle | Bone | | Last qu. 4th? | | | | Rhodes M1149 | Kaninia 1998 cat 35 and 117; *AD* 44 (1989) *Chron* B2, 505. |
| **SEA8** | 1 | Kamiros | Kechraki or nearby | Myrtle | Bone | | 2nd quarter 4th? | | | | British Museum BM 1861,0425.2 | Oddy et al.1979, Jeffreys 2019a. |
| **SEA9** | Un-clear | Rhodes | Western nec. Kaberidi | Myrtle ? | | F? | Hellenistic | I | | Olpe, gold ring, gold chain. Robbed. | Rhodes M516 | Kaninia 1998 cat 19 and 122. |
| **SEA10** | 1 | Rhodes | Central nec. Keramea grave 5 | Myrtle | Bone | M? | 3rd quarter 4th? | C? | Pit | Strigils; iron ring. Tiny copper balls, possibly from garment. | Rhodes M674 | Kaninia 1998 cat 12 and 116-7. |
| **SEA11** | 2 | Rhodes | Western nec. Giakra I | Myrtle | | | Hellenistic | I | | | Rhodes M733 | Kaninia 1998 cat 28. |

| Cat.no/ Ref no | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEA12 | 2 | Rhodes | Western nec. Karagianni Kizil Tepe | Myrtle | | | Hellenistic | I | | | Rhodes M1060 | Kaninia 1998 cat 27. |
| SEA13 | 3 | Rhodes | Western nec. Konstantinidi-Smolensky Kizil Tepe | Ivy | | | Beg. 3rd | C | Stone theke with kalpis | Attic BG kylix West Slope. | Rhodes M1061 and MA325 | *AD* 35 (1980) *Chron* B2, 538; Kaninia 1998 cat 17 and 121. 1988 *AD Meletes*,155. For plot Patsiada n. 79. |
| SEA14 | 3 | Rhodes | Grave 14 eastern nec. Karamanoli-Pogia-Papanikolaou-Phaneromeni | Ivy | | M? | 3rd | I | Pit? | 2 small olpai; iron strigil. | Rhodes M1376 | Kaninia 1998 cat 18 and 122. For burial plot, Patsiada 2013 n. 102 and n. 130. |
| SEA15 | None | Rhodes | Western nec. Kanichi | Myrtle | copper | | 3rd | | | | Rhodes M1377 | Kaninia 1998 cat 14 and 118. |
| SEA16 | 4 | Rhodes | Western nec. Kyri-Vasileiou theke 58 | Myrtle ? | Lead | M? | 240-230 | C | Stone theke containing Hadra hydriai | 2 Hadra hydriai; sharp-pointed amphoriskos; double-handled phiale; high-footed kantharos with West Slope dec. P18491; kantharos West Slope P18490; iron strigil. | Rhodes M1378 | Kaninia 1998 cat 15 and 118; *AD* 50 (1995), *Chron* B2, 791-2. For plot Patsiada 2013 n. 79. |
| SEA17 | 3 | Rhodes | Western nec. Kyri-Vasileiou theke 67 | Ivy | Lead | f? | 3rd q. 3rd | C | In Hadra hydria in stone theke | 2 phialai; 2 amphoriskoi; silver diobol; small cosmetics tool. | Rhodes M1379 | Kaninia 1998 cat 16 and 120; *AD* 50 (1995) *Chron* B2, 791-2. For plot Patsiada 2013 n. 79. |
| SEA18 | Un-clear | Rhodes | Eastern nec., theke 42, central sewer Mengavlis | ? | | | Hellenistic | | | | Rhodes M1380 and MA201 | Kaninia 1998 cat 29. |
| SEA19 | Un-clear | Rhodes | Eastern nec. central sewer Mengavlis | Ivy? | | | Hellenistic | | | | Rhodes M1381, MA203 and MA204 | Kaninia 1998 cat 30. |
| SEA20 | 1 | Rhodes | Western nec. Sepheris or Kamiros | Myrtle. One flower. | Bone | | Third quarter 4th? | | | | Rhodes M1382 | Kaninia 1998 cat 13 and 116. |
| SEA21 | 3 | Rhodes | Eastern nec. Karimalis grave 36 | Ivy | | | 2nd or 3rd qu/ third | C | Ossuary E 4771 in peribolos | Fragments of silver omphalot phiale. | Rhodes M1387 | Kaninia 1998 n. 106; Zervaki 52 *AD* (1997) *Chron* B2, 1098-1099. For plot Kaninia 2013 notes 102, 677, 744. |
| SEA22 | Un-clear | Rhodes | Ag. Ioannis? | | | | Hellenistic | | | | Rhodes MA176 | Kaninia 1998 cat 31. |
| T4X1 | | Rhodes | Western nec.. theke XXII, Lontouris, Minettos, | | | | 2nd half of 2nd | C | Ossuary E4178. Beneath foundations of naiskos | Robbed. small fragments of silver strip; gold rectangular fragment with traces of red perhaps from garment; head of iron brooch. Above theke were found: fragment of gold strip perhaps from | Rhodes AE896 | Patsiada 2013, 294. |

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| Cat.no/ Ref no | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Giannopoulos and Giannouls plots | | | | | | | diadem; glass 'lens' light green; small terracotta altar/incense burner. | | |
| **T4X2** | | Rhodes | Western nec.. Kamirou and Isiodou, Pipinou plot | Ivy | | | Late Hellenistic | | | In same group of graves: vases, marble cylindrical altar with garlands and bucrania, ossuries, stelai. | Rhodes un-numbered | Chalkiti *AD* 52 (1997) *Chron* B3, 1085 and pl.410a. |
| **T4X3** | 3 | Rhodes | Western nec.. 'Anoikodomisi' | Ivy | | | | | | | | Palaiologou 2004, 58 and Palaiologou 2005, 55. |

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# CHAPTER 5: SOUTHERN ITALY

## 5.1 Introduction

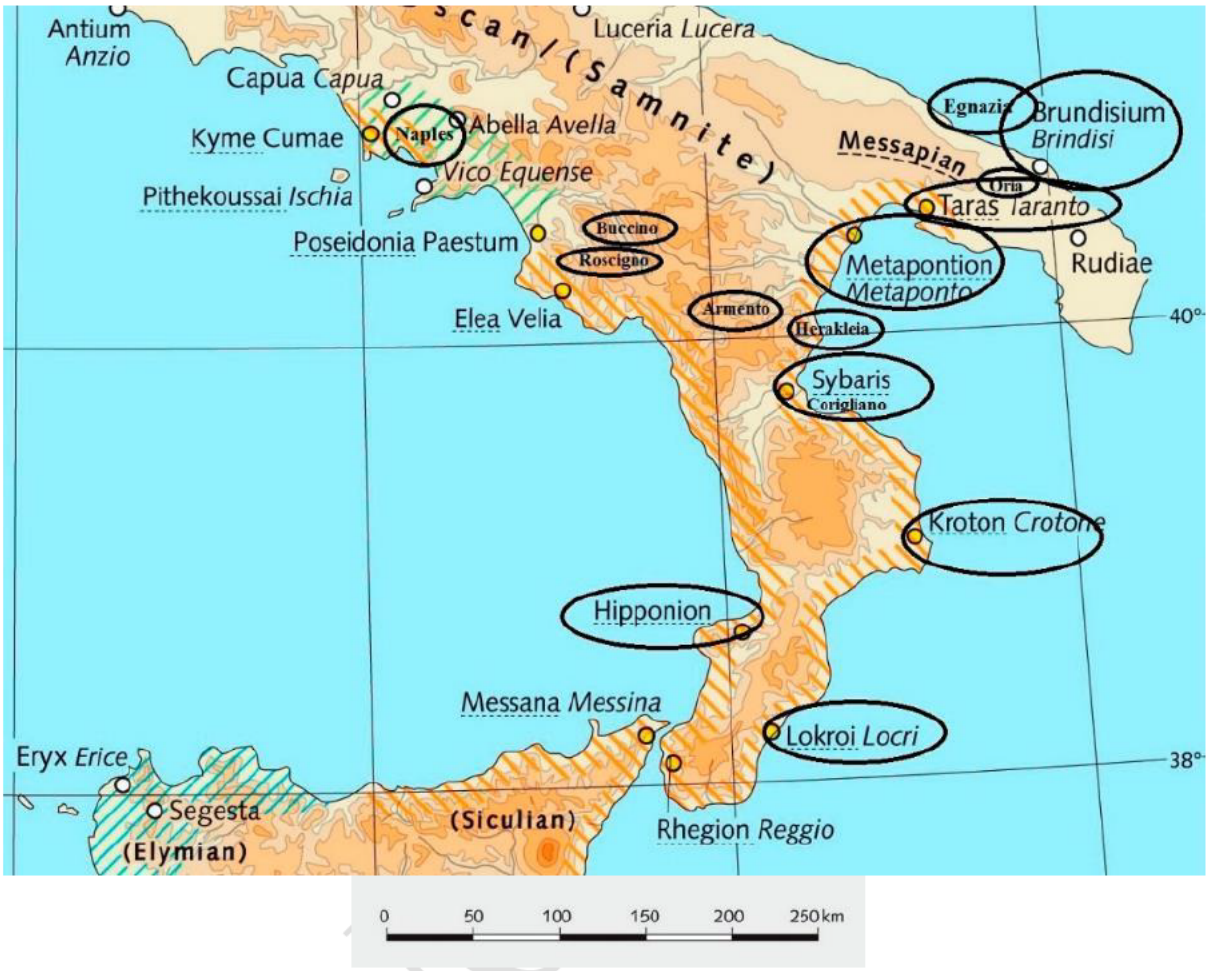
Southern Italy has yielded many gilded wreaths (at least 68), which form an important group to study. Under the rubric 'Southern Italy' wreaths are catalogued which were found to the south of Naples, but excluding Sicily. The available information is summarised in **Table 5.1** at the end of this chapter[339]. Many of these wreaths have been published, which allows their contexts to be studied[340], but unfortunately there is very little anthropological information in respect of Taras. A map showing the location of the find spots is at **fig. 5.1**, which are mainly cities founded by Greek settlers along the southern coast of Italy. Taras, founded by Sparta, was the leading city from the late fourth century until destroyed by Rome in 209. Metapontion was originally established by Achaeans from Sibaris, but came increasingly within the sphere of influence of Taras after the foundation of neighbouring Herakleia (by Taras) in 433. Several wreaths have also been found in Calabria and a few further north in Lucania.

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[339] Further items similar to wreaths but dating from before the period are discussed in Chapter 8 and listed in table 8. Wreaths from other parts of Italy are listed in Table 1.2.

[340] Including in particular the exhibition catalogue *Gli Ori di Taranto in età ellenistica* 1984/*Les ors hellénistiques de Tarente* 1986, which included many of the wreaths from Taras, and one from Metapontion.

*Fig. 5.1 Map of Southern Italy showing main locations where wreaths and other material mentioned in the text have been found. Adapted from Meiser 2010, 67, and used by courtesy of Brill.*




The dating of the material has been revised from that given by Masiello and others in *Gli Ori* because of a redating of the pottery from this period, published by Lippolis in 1994[341]. Taking into account recent excavations in Italy and Macedonia, he proposed new dates for the phases of the archaeology of Taras (**Table 5.2**). Hempel and Mattioli provided a framework of absolute chronology for these phases based on coin evidence[342] so where graves contain pottery, a date accurate to within 25 years can be arrived at.

In this chapter, the gilded wreaths are first grouped with reference to the types used in this dissertation and a chronology proposed, drawing on the Lippolis phases (summarised in **Table 5.2**). Many of the Italian wreaths have been more heavily restored than their counterparts in

[341] *Catalogo* 3.1, 239-281.
[342] *Catalogo* 3.1, 355-389.

Greece, reflecting an interpretation by curators and conservators which may well differ from that of colleagues elsewhere and which may lead to the wreaths looking more different than they actually were (such as SI 14 and the Macedonian wreaths from Aineia, M5-M9, and Deveni, M17, all of type 2). The archaeological context of the gilded wreaths is then summarised, followed by a discussion as to whether they originated in Southern Italy or elsewhere and as to their possible significance.

**Table 5.2 (retyped from Lippolis 1994, 243)**

| | | |
|---|---|---|
| Phase A | 1 | 375-350 |
| | 2 | 350-325 |
| Phase B | 1 | 325-300 |
| | 2 | 300-275 |
| Phase C | | 275-225 |
| Phase D | | 225-175 |
| Phase E | | 175-125 |
| Phase F | | 125-75 |
| Phase G | | 75BC-25AD |

## 5.2 Typology and chronology

The first wreaths in Southern Italy which still survive were made of gilded silver and date to the second half of the fourth century[343]: SI 15 has leaves with a stamped design and no berries and probably represents laurel (**fig. 5.2)** and a similar wreath, SI 23, was also found in Taras (**fig. SI 23.4**). Nothing like them has been found in Macedonia, but there is a possible parallel to the SI 23 leaves in some gold leaves on a wreath from Vulci, T8X16, which also have a stamped design (**figs. 8.7a and b**). These gilded silver Tarantine wreaths seem to be a development from the earlier wreath-diadems discussed in chapter 8 which also had a stamped design (examples are shown at **figs. 5.3 and 8.4**) but this kind of wreath appears to have died out as it is not found after the late fourth century.

[343] The Phlyax vase found with SI 15 was dated by Lo Porto 1968, 18 to c.350, so the wreath must be later than this.



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*Fig. 5.2 Silver gilt leaves with stamped design, SI 15, National Archaeological Museum of Taranto 54726. ©National Archaeological Museum of Taranto.*



*Fig. 5.3 Wreath diadem, T8X4. A stamped design can be seen on the rosettes. National Archaeological Museum of Taranto 12298. ©National Archaeological Museum of Taranto.*

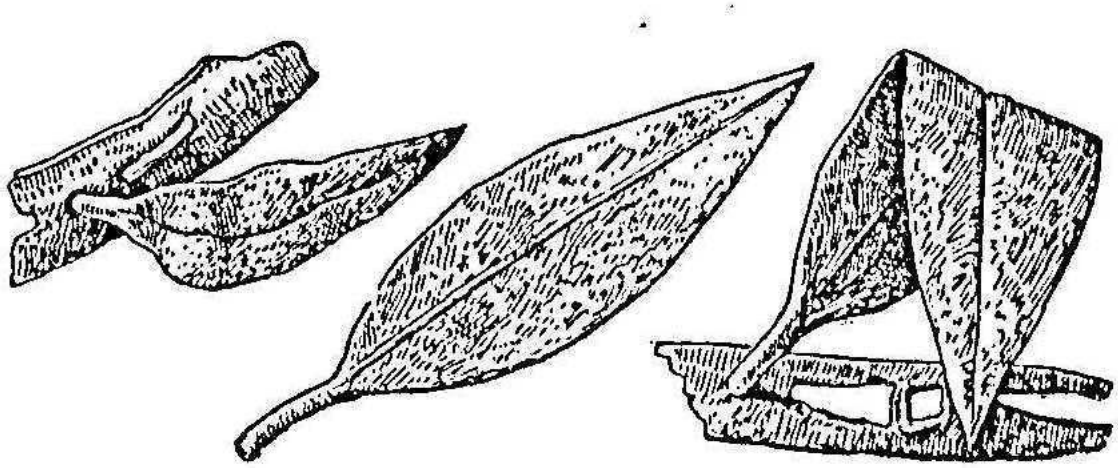


Many silver and a few copper leaves were found at the Temple of Apollo Alea at Cirò in Calabria (T5X5A); the silver leaves are said to have had traces of gilding that disappeared rapidly[344] but it is not clear if the copper leaves were also gilded[345]. Some of the silver leaves

[344] Orsi 1932, 97-8.
[345] Orsi 1932, 113-4.

belonged to wreaths since they are attached to fragments of circlets (**fig. 5.4**) although others were part of branches[346]. The material is dated to between the second half of the fifth century and the beginning of the third[347]. The design of these items differs from that of the wreaths in the Tarantine graves in that the circlet fragments are made of metal, so were perhaps used on a statue.

*Fig. 5.4 Silver leaves from Temple of Apollo Alea, T5X5A. The leaves on the left and right are attached to part of a circlet. From Orsi 1932, 97.*



One wreath found in the environs of Naples, T5X31, now in in Paris (**fig. 5.5**)[348], had a copper or bronze circlet on which leaves and berries were mounted on spiral stems; it is dated to the fourth century by Guzzo, but it is not clear whether it was ever gilded[349]. The wide metal circlet makes it look more like a diadem, and it may have been intended for a helmet or a statue rather than the human head (type 7).

[346] Orsi 1932,113. The branches and odd leaves are discussed in Chapter 8, page 312.
[347] Orsi 1932, 98.
[348] Guzzo 1993, 288 and Daremberg and Saglio *Corona*, 1634, fig. 2005.
[349] Guzzo 1993, 115.

*Fig. 5.5 Wreath found in the environs of Naples. Photograph courtesy of the Musée de l'Armée, Paris*



The earliest surviving gilded copper wreaths in Southern Italy date to the middle of the fourth century at the earliest. Fragments of a wreath said to have been gilded bronze, T5X35, from the fifth century, no longer survive[350] and the same is true for gilded bronze leaves dated to some time after 370 (T5X36)[351]. Type 2 wreaths appear in the region in the second half of the fourth century and about seven of these survive, including four from Taras (SI 6, 14, 22 and 25 - **figs. SI 6.1, 5.6, SI 22.1 and SI 25.1**) as well as slightly later wreaths found further afield at Metapontion, Egnazia and Ancona (the last almost certainly made in Taras) (T5X29, T5X6 and T5X1). Type 2 wreaths continued to be made in the third and second centuries. The leaves are of gilded copper on a narrow circlet made of bone, and there are gilded terracotta berries, generally myrtle, similar to those found in Macedonia on type 2 wreaths and although the leaves appear to have a different shape, it is possible this is because they were assembled in the 1980s from fragments and mounted on a lead base (**fig. 5.6** shows the re-constituted leaves and oval

[350] *Catalogo* 1.3, 306.
[351] *Catalogo* 1.3, 396.

berries of SI 14). SI 25 differs in that it has spherical not oval berries and lanceolate leaves and is probably a little later than the others, judging by the berries. SI 6 has a second circlet made of lead rather than wood, but its overall design is clearly type 2.

*Fig. 5.6 SI 14, National Archaeological Museum of Taranto 54461. ©National Archaeological Museum of Taranto.*



Gilded ivy wreaths emerged in Southern Italy at the end of the fourth century, of type 3, and continued in use in the third and second centuries. At least four of these were found in Taras. SI 24 is an early third century example and has a narrow lead circlet, rosettes, ivy berries and stems which were originally wrapped around the circlet (**fig. SI 24.1**). Two further examples are SI 13, with spherical berries and lead circlet and the better preserved SI 29 (**figs. SI 13.3 and 5.7**). A later example is SI 10, dating to the first half of the second century, with a circlet made of two strands of metal, probably copper, into which the heart-shaped leaves were inserted, and spherical berries (**fig. SI 10.1**).

*Fig. 5.7 SI 29, National Archaeological Museum of Taranto 28255. ©National Archaeological Museum of Taranto.*



I propose dating a fine wreath found at Metaponto to the second quarter of the third century on the basis of the pottery (see catalogue SI 1); it is categorised as type 2 as it has wooden and bone circlets. It has ivy and vine leaves as well as grapes, spherical berries and four insects - probably two cicadas and two grasshoppers (SI 1) (**fig. 5.8**). This wreath was selected for study, to compare it with M37, which also has insects - an unusual feature. They are not as similar as first appears however as the circlets on M37 are wood and lead (type 3), which does not have vine leaves, and the grasshoppers are different (the Metaponto version having incised lines, and the Macedonian not) (**figs. 5.9 and 5.10**). The Macedonian wreath is earlier, being dated to the last fifteen years of the fourth century by the excavator[352]. The nearest parallel in Italy to SI 1 is from Cariati, near Sibaris (T5X4) (**fig. 5.11**), which has an insect, acorns and what appear to

[352] Sismanidis 1997a, 29.

be myrtle leaves - an example of the many South Italian wreaths which have mixed plants. Guzzo and Lupino, writing in 1980, date the Cariati grave to the third quarter of the fourth century, but the early third is more likely, given the subsequent re-dating of pottery by Lippolis[353] and the resemblance of the wreath fragments to SI 1 and T3X16 from Ithaca.

*Fig. 5.8 SI 1, with vine and ivy leaves, four insects and grapes ©Metaponto AM.*



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[353] Guzzo-Lupino 1980, 840. For the redating of pottery, see introduction to this Chapter.

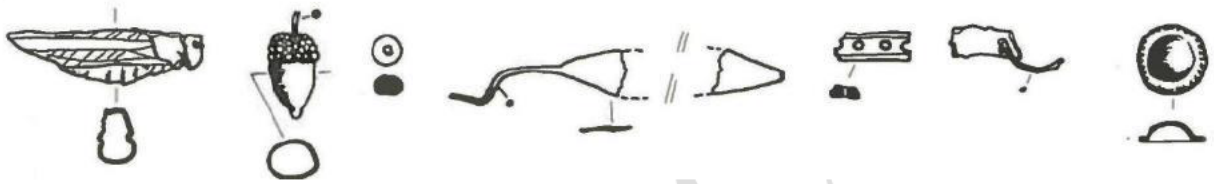
*Fig. 5.9 Grasshopper from SI1. ©Metaponto AM.*



*Fig. 5.10 Grasshopper from M37. © Archaeological Museum of Thessaloniki/Hellenic Ministry of Culture and Sports.*



*Fig. 5.11 Fragments of wreath from Cariati, Calabria, T5X4, showing insect, acorn and myrtle leaf. From Guzzo-Lupino 1980, fig.G3.*



A type 3 wreath was found further north in Buccino, T5X3, representing ivy and grapes, which is crudely made, with the stems soldered to the leaves, as on SCG33 (Pherai) (**fig. 5.12**).

*Fig. 5.12 Wreath from Buccino, T5X3. From Settis and Parra 2005, III.198.*



Many of the Tarantine type 3 wreaths have large rosettes, representing ivy flowers, and also moulded flowers and berries, and they generally do not have leaves. They depict a mixture of plants in addition to ivy. Where the circlet survives, it is lead; some have berries and flowers which were either not gilded, or only have gilding on one element, although all have a white coating. The flowers were moulded, but most of the rosettes seem to have been made by hand

although those from the late third and early second centuries such as SI 4 were moulded. This type of wreath appears to have continued in use in Southern Italy for over 100 years, from the end of the fourth century to the beginning of the second. They are grouped as type 3 wreaths, local variation, but they could also be regarded as type 4, since they have some moulded elements, or it is possible that they were roll wreaths (type 5), with the lead circlet hidden inside the roll, as they are large and it is difficult to see how the heavy rosettes could have been supported without a padded base. SI 19, from the last quarter of the fourth century, is an example of a carefully made wreath (**fig. 5.13**). It has rosettes in two different sizes, small flowers, some of which are decorated with dark blue paint, a white coating and acorns, all of which have a yellow coating and gold leaf on the top part only. There are also berries and buds. SI 8 (first quarter of the third century), SI 11 (late third century) and SI 20 are very similar (**figs. SI 8.1, SI 11.1 and SI 20.1**).

*Fig. 5.13. Flowers, rosettes and acorns from SI 19, National Archaeological Museum of Taranto 76777-66781. ©National Archaeological Museum of Taranto.*



There are many similar wreaths from Herakleia (T5X7- 25 and T5X27-28), dated by Pianu to between 350 and 270[354], but they can be no earlier than the last quarter of the fourth century, in view of their similarity to the wreaths from Taras such as SI 8, 11 and 19. Given that the city

[354] Pianu 1990, 247.

was founded by Taras, the similarity is not surprising, but the homogeneity of these wreaths is even more striking than in Taras (an example, T5X27, is at **fig. 5.14)**.

*Fig. 5.14 Wreath T5X27 from Herakleia. Siritide AM.*



T5X26 has heart-shaped ivy metal leaves which bear no sign of gilding and glass beads, not found elsewhere (**fig. 5.15**). SI 18 and SI 16 can regarded as examples of type 4, since they have several moulded bell-flowers (**figs. SI 18.3 and SI 16.2**).

*Fig. 5.15 Ivy leaves and glass beads (T5X26). Siritide AM.*



## 5.3 Burial contexts

### *5.3.1 General*

Gilded copper wreaths have been found only in funerary contexts in Southern Italy. The earlier gilded silver wreath-diadems were also found in graves but elements of polos headdresses with similar elements to those on the wreath-diadems were found in both graves and votive contexts

(an example is shown at **figs. 8.3a and b**)[355]. The original use of such items became clear with the find of a grave at Crucinia, Metaponto, which contained gilded silver strips, some of which had rosettes as well as small plaques each with a horse in profile and which when reconstructed can be seen as a polos headdress (now on view in Potenza AM)[356]. Silver leaves from a wreath, said to have been gilded, came from the Temple of Apollo Alea (T5X5A).

At first sight it would appear that more gilded wreaths were found in female (16) than male (10) graves in Southern Italy, but the anthropological information is patchy: there is none for Taras where the wreaths seem to be preponderantly from female graves, on the basis of the goods found (11 female, 3 male), but there has been bone analysis for Herakleia and Metaponto, where they appear to be buried preponderantly with males (5 male, 2 female). It seems likely that several of the Tarantine graves to which no gender has been attributed were male.

### *5.3.2 Taras*

There has as yet been no systematic publication of the cemetery of Taras, which yielded a great deal of material in rescue excavations during the development of the modern town in the second half of the 20th century. The material found in the graves has however been well published, with detailed information in a series of catalogues of objects in the museum in Taranto, MaRTA[357]. A plan of the modern city showing the location of some of the graves where wreaths were found is at **fig. 5.16**. Masiello counted 27 examples of gold wreaths and 364 wreaths of 'other materials' which were found in 11,723 graves in Taras, of which it would seem 26 were gilded (the 'other materials' will include ungilded wreaths made of terracotta beads)[358] so about 0.2%. Some have been discovered since, and the author has identified 33 gilded wreaths found in Taras (SI 2-SI 29 and T5X34-38), of the graves enumerated by Masiello.

[355] Masiello 1996 in *Arte*, 146.
[356] Bottini 1993, 767-8 and De Siena 1998, 313-314.
[357] Referred to here as *Catalogo* 1,2,3 etc, but there are further useful publications including the book referred to here as *Arte*.
[358] *Catalogo* 3.1, 302 and table 3, 311.



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*Fig. 5.16 Map of central Taranto showing location of main graves; the ovals indicate the approximate locations where some of the wreaths were found (adapted from Itinerari archeologici Taranto greca e romana). North is at the top.*



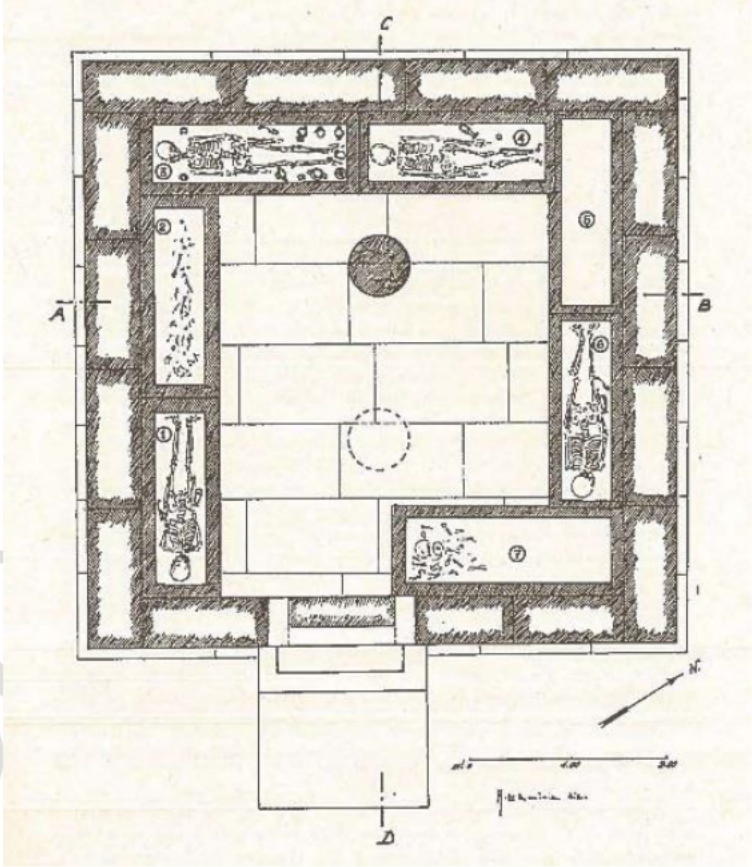

*Classical period*

No gilded wreaths survive from the Classical period, but some gold leaves thought to be from a wreath now considered lost were excavated in a complex known as the 'Athletes' Tomb' dated to the late sixth/early fifth century[359]. They are mentioned here because of their importance for any consideration of wreaths in the region. The leaves are thought to have been funerary[360], probably because of the thin gold used, rather than a prize awarded by the city, and

[359] Lippolis 1991, 46.
[360] *Catalogo* 1.3, 304.

were found in one of four sarcophagi (with strigils and a Panathenaic amphora amongst other items) which are believed to have contained the remains of male athletes[361]. The complex clearly recreated an *andron* because of the placement of the sarcophagi around the walls of the chamber (**fig. 5.17**)[362]. The sporting tradition shown in the strigils, and perhaps the wreath, seems to have been associated with the aristocratic class in the sixth century, which was strongly influenced by Pythagoreanism from about 520[363]. A 'gymnasium culture' developed in the following century and was a feature of both the oligarchic and democratic regimes in Taras[364].

*Fig. 5.17 Plan of Athletes' Tomb, from Lo Porto 1967, 47. The grave with the wreath was no. 3, top left.*




A few fragments, now considered lost, are thought to have been part of an early fifth century gilded wreath, T5X35, found with Attic vases as well as a terracotta pomegranate[365]. The

[361] Ibid.
[362] Lippolis proposes that the individual buried with the wreath was the leading figure *Catalogo* 1.3, 302.
[363] Lippolis 2004, 46.
[364] Lippolis 2004, 43-45.
[365] *Catalogo* 1.3, 304-306.

presence of knucklebones, miniature items and a small knife may suggest that the grave contained one or more children[366].

A change in funerary ritual in Taras in the fifth century is attributed by Masiello to the establishment of democracy in 473 and sumptuary laws[367]. In the middle of that century, polished terracotta wreaths appeared, coloured red with cinnabar (an example is shown in **fig. 8.21**). Use of this expensive pigment makes it clear that these items continued to be buried with the affluent, as does the fact that these wreaths were often accompanied by items such a bronze mirror, valuable vases and jewellery. This type of wreath was found with males as well as females[368].

Fragments of what was thought to be a copper or bronze wreath, T5X36, now lost, were found in a grave dated to around 370; the wreath, like strigils and alabastra found in other graves of this period, is thought to portray the individual as a 'citizen-athlete' and his high social status[369]. The grave contained red-figure Apulian pottery and an iron ring in addition to the wreath[370].

*Hellenistic period*

Details of the type of grave in which the wreaths were found in Taras and a summary of the grave goods are given in Table 5.1. One gilded wreath was found in a chamber tomb (SI 22), four in semi-chamber tombs (SI 8, 9, 12 and 20) and at least six (SI 4, 5,7, 17, 18, 21, 27) in pit graves. Chamber tombs are associated with the finest ceramics and with some exceptions, finer goods are found in pit graves than in semi-chamber tombs[371]. The semi-chamber tombs seem to have been used for family groups, as in via Tito Livio, where one wreath, SI 12, was discovered.

[366] *Catalogo* 1.3, 306.
[367] *Arte* 147.
[368] T8X26 was found with the skeleton of a boy; the mirrors found with T8X28 and fibulae with T8X23 suggest a woman.
[369] *Catalogo* 1.3, 44.
[370] *Catalogo* 1.3, 396.
[371] *Catalogo* 3.1, 301.



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As far as burial practices are concerned, of the 28 wreaths studied from Taras, at least four are believed to be from cremations, of which two were found around or in the funerary urn (SI 25 and SI 29), and at least 11 with inhumations. Cremation was practised in Taras in the seventh century, but ceased in the sixth and fifth and did not resume until the fourth century, becoming more common in the second half of that century; it is seen as an example of adoption of funerary practices from the Hellenistic world[372], although inhumation continued to be favoured.

As a rule, only one wreath is found with each burial, with the possible exceptions of the graves with SI 10 and SI 11, both of which also contained a gold oak wreath, and the late third century grave with SI 18, but the graves with SI 10 and SI 18 contained more than one burial[373]. Masiello refers to two wreaths as having been found in a single grave in via Magnaghi (T5X37-8) but no information is available about them[374] .

In Taras, at least 12 of the 28 gilded wreaths studied appear to have been found in female graves, and only three in male; the gender of the others is not clear. The attribution of male or female is derived from comments by Masiello and other excavators, who based their analysis on the accompanying grave goods, such as earrings, mirrors and necklaces (female), and strigils (male). Osteological information is unfortunately not available[375]. As noted above, in cities where there has been bone analysis, wreaths appear to have been buried preponderantly with males, so it is likely that many of the Tarantine graves not attributed by gender were male. Even so, a relatively large proportion (compared with Macedonia) appear to have been buried with females.

At least two of the females (buried with SI 12 and SI 29) are thought to have been below marriageable age. Dell'Aglio proposes that the large number of figurines in the grave with

[372] D'Amicis in *Catalogo* 3.1, 150-152.
[373] SI 11: *Gli Ori*, 461. SI 10: Gli Ori, 95 ; SI 18 : Gli Ori, 440.
[374] *Gli Ori*, 79, referring to grave 6 excavated 30.9.1983 (unpublished).
[375] D'Amicis in *Catalogo* 3.1, 150.



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SI 12 indicate that the deceased was a child or adolescent, and the pyxis that she was female and suggests that the deceased was an *aore*[376]. A mid-third century wreath, SI 29, is also suggested by the excavator to have accompanied a young girl, judging by the size of a ring found in the same grave; the fact that she was female is deduced from the presence of a cosmetics box and a flesh-coloured pigment[377]. A mirror, which D'Amicis thought had been ritually broken, was found in the same grave[378]. The Apulian pelike in which the ashes were contained is older than the other objects, dating to the last quarter of the fourth century, and was probably an heirloom[379] (**figs. 5.23-24**). It was no doubt thought appropriate to include in a young girl's grave, even though it would not have been made for her since it predates the grave by several decades.

Masiello's survey of jewellery found in graves in Taras helps to set the gilded wreaths in context[380]. Of 11,723 graves, 1,502 contained jewellery, and she suggests that this large proportion indicates local workshops[381]. She considered a complete set of jewellery to have consisted of a wreath or necklace, a finger ring and earrings: it is interesting that she sees the wreath as an alternative to the necklace (although presumably only in female graves) and thus as an item of jewellery. There is an example of what appears to be a necklace (now in Copenhagen) which contains the same elements as found on a wreath, but with small links to adapt it for use as a necklace (**fig. 5.18**).

*Fig. 5.18 Necklace from Taras, on display in National Museum of Denmark, Copenhagen.*



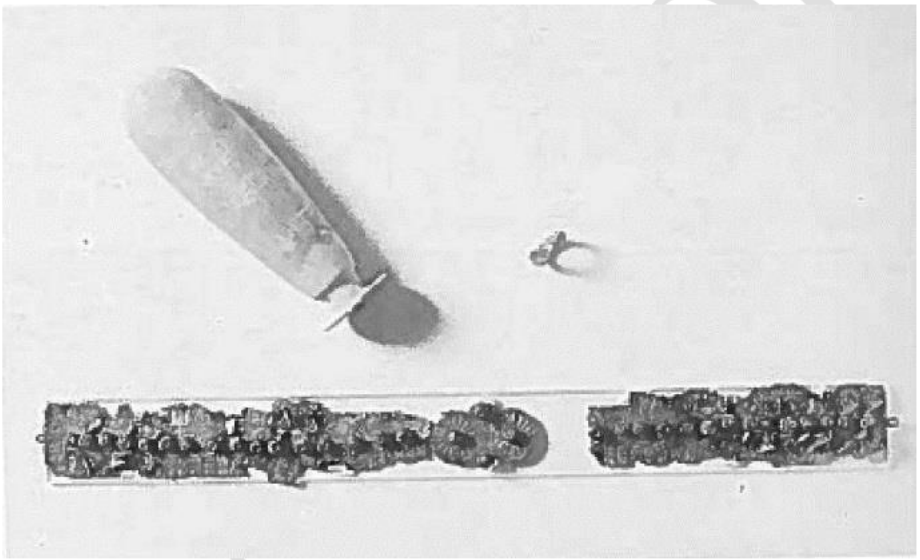
[376] Dell'Aglio 1999, 10-12.
[377] D'Amicis in *Catalogo* 3.1, 154.
[378] Ibid.
[379] D'Amicis in *Catalogo* 3.1, 156.
[380] *Catalogo* 3.1, 301-323.
[381] *Catalogo* 3.1, 302 and 309.



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Although the practice was to deposit items used in life by the deceased, such as rings and earrings, the assumption of most scholars is that gilded wreaths were too fragile for wear and thus made for funerary use. The rings at each end of some of the silver gilt wreath-diadems (T8X5 and T8X9) suggest however that at least at this earlier period they were worn on the head (**fig. 5.19**). If the ivy wreaths with the large rosettes were roll wreaths, there is no practical reason why they should not have been worn on the head in life, although there may of course have been cultural reasons why they should not have been so worn.

*Fig. 5.19 Gilded silver wreath-diadem, T8X5 with other finds from same grave. The loops at each end can be seen. From Arte 1996, 158.*



The fourth century wreaths appear to have been found with relatively few grave goods: there is no record for example of any other objects accompanying SI 25, which was placed around the neck of a bronze hydria that was clearly a valuable item[382]. The number of grave goods increased in the third century but there was a reduction at the end of that century in the number and quality of goods in all graves. The production of red-figure Apulian vases ceased at the beginning of the third century, but Gnathian ware continued, and is often found in the graves with wreaths.

[382] D'Amicis in *Catalogo* 3.1, 157 says this is the first item to have been used as a funerary urn in the Tarantine area, and sees it as an explicit reference to Macedonian custom.

One particular grave from the end of the fourth century stands out for the number and richness of the grave goods: the chamber tomb which produced SI 22. Although it had been robbed by the time it was discovered, it still had many valuable objects, including gold jewellery and a pelike and the woman buried here was clearly affluent [383] (**fig. 5.20**).

*Fig. 5.20 Some of the finds with SI 22. From Catalogo 3.1, 305.*



Trefoil oinochoai and skyphoi were part of the essential funerary equipment in graves of both males and females[384] during the late fourth and third centuries and are found in many of the graves which contained wreaths (see table 5.1). Graepler sees them as made for funerary use and explains their presence as connected with drinking wine but differentiates them from symposium vessels since they are found with women as well as men, unlike those in the Archaic graves, which are found exclusively with males. Although he sees the fourth century vessels as belonging to the 'Dionysiac sphere'[385], they can be explained as drinking vessels

[383] *Catalogo* 3.1, 305.
[384] Lippolis 1994 in *Catalogo* 3.1, 142 and 241-2.
[385] Graepler 2002, 213.

which were not necessarily for wine. Miniature items are a further feature of the Taras graves at this time, thought to emphasise the symbolic nature of the offerings, rather than that they accompanied children[386]. Graepler suggests that the reason for the value and number of grave goods decreasing later in the third century was the degradation of funerary rituals in a time of social upheaval[387], which is surely correct, with the threat of Rome at the doorstep. Most of the later vases are plain, even in the richer graves. Miniature objects dropped out of use, as did the oinochoai and skyphoi, their place being taken by undecorated pottery with a culinary use such as plates. Wreaths however continued to be used. Some graves from the end of the period in the early second century, however, contained valuable items which almost certainly belonged to members of the aristocratic elite, who were friendlier towards Rome than the pro-Carthaginian democrats[388].

Many wreaths in Taras were found with goods with Dionysiac associations including the fourth century SI 6 found with a relatively large number of items including a clay Phlyax mask and a figurine representing a female acrobat[389]. The gilded silver laurel wreath from a late fourth century grave, SI 15, was found with a Phlyax vase showing male and female actors thought by Lo Porto to portray Odysseus and Calypso (**fig. 5.21**)[390] . The other gilded laurel wreath from about the same time, SI 23, was found with a silver bezel ring depicting what is thought to be a drunken ephebe with possible Dionysiac associations[391]. The grave containing SI 12 which dates to the second half of the third century (after Taras became an 'ally' of Rome in 272)[392] also held brightly coloured figurines depicting maenads[393], who wear ivy wreaths, which are partly gilded. They have various Dionysiac attributes including a bunch of grapes

[386] Graepler 2002, 213.
[387] Graepler 2002, 215.
[388] Ibid.
[389] *Gli Ori*, 410-412.
[390] Lo Porto, 1964, 18. Green (2014, 106) suggests that it shows a man and a wife, and in particular a traveller returning home.
[391] *Gli Ori*, 88 and 283.
[392] Dell'Aglio 1999.
[393] Cf Dell'Aglio 1999, 9, who suggests they may be women making offerings.



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and musical instruments[394] (**fig. 5.22**). One figure is seated and plays a tympanum, with a smaller xoanon figure of a divinity above. Several wreaths such as SI 5, 9, 13 and 16 were found with Gnathian ware (which frequently has Dionysiac motifs[395]). Most of the wreaths found in the graves with these objects represent ivy.

*Fig. 5.21 Oinochoe (inv. 54724) found with SI 15, depicting actors perhaps portraying Odysseus and Calypso, both wearing theatrical masks. From Lo Porto 1964, 18. The man has a sprig in his helmet.*



[394] Cymbals and tambourines were characteristic of Dionysiac rites – Bremmer 2014, 106.
[395] Hurschmann 2006.

*Fig. 5.22 Figurines inv 51575 and 51576 from the grave in via Tito Livio where SI 12 was found. ©National Archaeological Museum of Taranto.*

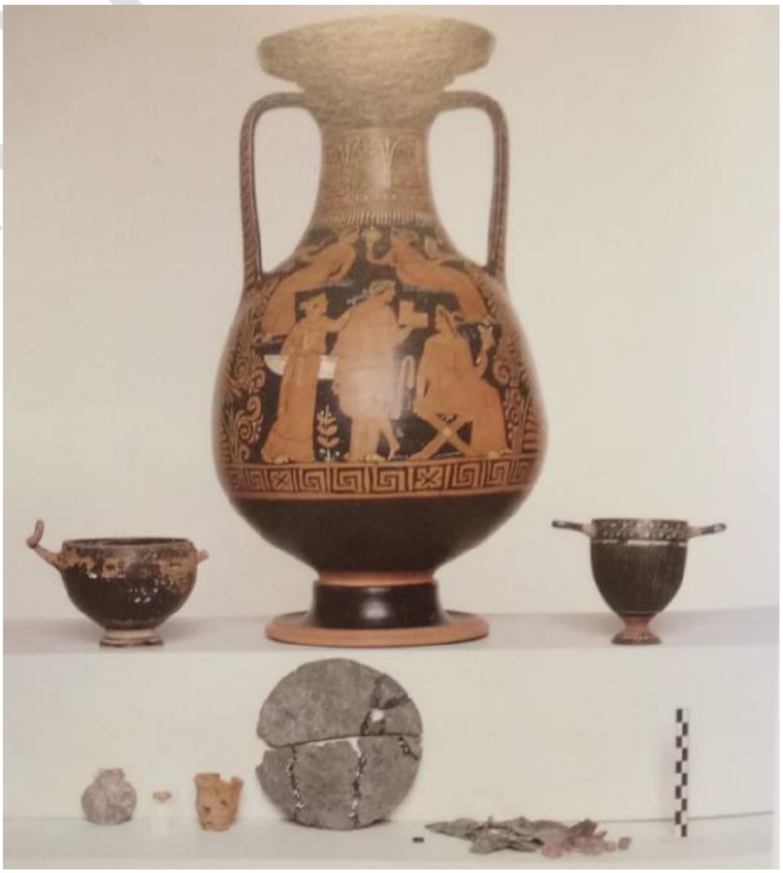




*Fig. 5.23 Pelike inv. 28249 found in grave with SI 29. From Catalogo 3.1, 152.*

*Fig. 5.24 Pelike inv.28249 and grave goods found with SI 29. From Catalogo 3.1, pl. VI.*





Fragments of a wreath, of which only round ivy berries and a lead circlet remain, were found in a grave thought to be that of a couple (SI 13), with two polychrome Gnathian vases, from the mid and late third century respectively, which were decorated with a head of a woman and of a man (**fig. SI 13.2**). Heads became common decoration on vases from the mid-fourth century onwards, and it is tempting to see them as referring to the deceased, but their meaning is still under discussion[396].

Several wreaths dated to the early second century, after the destruction of the city in 209, have been found, including SI 10 with valuable grave goods including a gold wreath[397]. SI 27 was accompanied by jewellery and is of a similar date[398]. Although some later objects were clearly inserted into earlier graves after the destruction of the city, several, including the two in question, appear to post-date the destruction in their entirety and contain a very large number of objects. Life would appear to have carried on for some people, in a manner of speaking, even after the destruction of Taras and before the foundation of the neighbouring colony of Neptunia in 122.

### *5.3.3 Metapontion, Herakleia and Egnazia*

Some 324 burials were found in the necropolis at Pantanello which date from the 6th century to the first quarter of the third century, only two of which appear to have contained wreaths (SI 1 and T5X29)[399]. It lies some 3.5km from ancient Metapontion and was one of several cemeteries in its chora and is thought to give a true cross section of the rural population[400]. 18 clusters of graves, each with between six and 45 burials, have been identified, at least some of which are thought to have been for family groups[401]. More women, generally, were found

[396] Trendall 1989, 93.
[397] *Catalogo* 3.2, 71-77.
[398] *Les Ors*, 453-454; *Catalogo* 3.2, 62-63.
[399] Carter 1998, 27; Morter and Hall in Carter 1998, 452.
[400] Carter 1998, 25-27.
[401] Carter 1998, 237.



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than men (by about two to one)[402] but the two wreaths were in male graves.

Although it is not safe to rely on grave goods alone – scarab and scaraboid rings, normally associated with males, are for example sometimes found with females[403] - Carter, whose team studied the human remains, has shown that in the case of Pantanello the grave goods go some way to indicate the gender of the deceased, though they cannot be relied upon blindly. In this necropolis, 14 strigils were buried with males and four with females and 14 mirrors with females as against four with males, although the anthropological evidence is not unambiguous in the case of two of the mirrors found with males[404].

Cist graves were the most costly at Pantanello, one of which, grave 13, contained a gilded wreath, T5X29, with the body of a man aged 40-45[405]. This grave was set apart from its neighbours, giving the impression of a carefully planned burial of a prominent individual[406]. A guttus feeder was also found, which would probably have been used for perfumed oil, as well as an iron strigil and a key, which was placed in the centre of the pelvis, a position which Carter suggests may have expressed religious affiliation or some other religious message possibly connected with the cult of chthonic deities like Persephone[407] though without further explanation.

The San Biagio wreath (SI 1) was found in a stone sarcophagus beside carved rectangular pillars, two of which bordered the tomb. Little information is given by the excavator but Gais says that the grave contained the skeleton of a young man, as well as a Gnathian pelike, a pyxis, a guttus feeder, an unguentarium and a strigil[408]. The richness and unusual nature of the wreath as well as its burial in a sarcophagus indicate that this individual was special in some way, certainly affluent, and perhaps honoured because of his youth. Like T5X29, SI I

[402] Carter 1998, 583.
[403] *Catalogo* 3.1, 311.
[404] Carter, 1998, 583-584.
[405] Carter 1998, 79 and 254.
[406] Ibid.
[407] Carter 1998, 235, 254-255 and 817-818 (key).
[408] Adamesteanu 1973, 448; Gais 1982.



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was buried with an oil container and strigil which hark back to the 'gymnasium culture' represented in the fifth century Athletes' Tomb[409].

Many wreaths were excavated at the Tarantine foundation of Herakleia, where 19 wreaths were found in 278 graves in the south necropolis (about 6.8%). Of these, five are known to have accompanied male burials and three, female[410] and two were found with children. Seven were found either in graves known as 'accordion' (*a fisarmonica*) or in cist graves, which are thought to have been the most prestigious[411]. The excavator of T5X26 suggests that glass beads found with the ivy leaves (**fig. 5.15**) were alluding to initiation practices, but does not explain her reasoning[412].

A semi-chamber tomb which was, unusually, *inside* the city walls at Egnazia had about 60 objects in addition to the terracotta and gilded copper wreaths (T5X6 and T8X21), including Apulian red-figure ceramics such as a gilded hydria, as well as Gnathian ware[413], amber beads, and silver nails. They are thought to have accompanied more than one burial[414], probably a family group.

### *5.3.4 Calabria*

The chamber tomb at Cariati from the third quarter of the fourth century[415] containing T5X4 is thought to have been the grave of members of the local Brezian elite influenced by Greek culture and to be that of a couple, with weapons, spits and firedogs[416]. The grave at Strongoli with T5X33 contained a female, judging by the lebes gamikos and the pyxides with the burials. Guzzo and Luppino point out that the male in the Cariati grave was buried with the accoutrements of a symposium, including the transport amphorae to carry the wine, and they

[409] Discussed on page 165.
[410] Pianu 1990, 234-235.
[411] Pianu 1990, 239.
[412] Nava 2000, 723.
[413] Redavid 2010, 57.
[414] *Museo Nazionale Archeologico di Egnazia* 2005, 86-87.
[415] Guzzo and Luppino 1980, 840.
[416] Guzzo and Luppino 1980, 854.



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include the wreath as one of these, but are in more difficulty with the wreath in the female grave at Strongoli, regarding it as "uncertain" whether the female was also intended to participate in a symposium, and suggesting instead that it was included in the grave goods as a prestige item rather than for any other purpose[417]. This is surely correct.

### *5.3.5 Lucania*

Two precious metal wreaths survive from Lucania at Armento and Roscigno which are mentioned here to give further background about metal wreaths in Southern Italy in the fourth and third centuries. A gold wreath was found in a grave at Armento which was apparently isolated but close to a sanctuary of Herakles; the excavators also found the cremated remains of the deceased and many damaged silver symposium vessels[418] **(fig. 5.25).** De la Genière suggests that none of the grave goods or cremation would have been used for a local man in Lucania and that the grave is likely to be that of a Macedonian or Epirot associated with Alexander the Molossian, perhaps a 'princely' warrior, and perhaps linked with the sanctuary of Herakles. The wreath is particularly interesting because the small Nike at the top bears a tablet naming the owner as Kreithonios,[419], as will be discussed in chapter 9 (page 348).

*Fig. 5.25 Gold wreath from Armento in Antikensammlung Munich, inv.2335. From Wünsche and Steinhart 2010, cat.16, 44.*



[417] Guzzo and Luppino 1980, 853.
[418] De la Genière 1989, 693, 696.
[419] Guarducci 1973, 18.

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A silver wreath at Roscigno (T8X14) and a gilded wreath at Buccino (T5X3) were both found in tumuli with such valuable goods that they were termed 'princely'[420]. The Roscigno tomb is thought to contain the remains of a male, and the Buccino grave a female. The tomb contents indicate that the deceased were steeped in Greek culture; the Roscigno tomb contained symposium materials (of which the wreath is seen by the excavator as one[421]), and the Buccino tomb a silver cup similar to that found in Nikisiani A[422], as well as silver and gold jewellery.

## 5.4 Origins

There are only two examples of gilded wreaths from Southern Italy dated to before the middle of the fourth century: the leaves which are said to have been made of gilded bronze found in a grave in Taras dated to the fifth century (T5X35), and further leaves dated to some time after 370 (T5X36)[423] Since they do not survive, it is not possible to confirm that they were indeed from gilded wreaths and if so, of what type. The earliest surviving gilded silver wreaths appear to be SI 15 and SI 23, dated to after 350, and the earliest gilded copper wreaths would be SI 14 and SI 22, both dated to the second half of the fourth century and both of type 2[424] and thus later than the earliest type 2 wreaths from Macedonia. There are no known type 1 wreaths in Southern Italy.

It is possible that the use of metal to make wreaths or similar items imitating plants may have its origins in Southern Italy, since there are several examples in precious metal pre-dating the fourth century. A gold diadem, which has elements similar to the gilded wreaths, and which was found in a votive context in Croton (T8X11), is a surviving example from the sixth/fifth centuries. Gold leaves that are thought to have been part of a wreath but which no longer

[420] Buccino: Lagi de Caro 1996, 82; Roscigno: Greco 1996, 94.
[421] Greco 1996, 100.
[422] Lagi de Caro 1996, 86 (item 37.37).
[423] T5X35: *Catalogo* 1.3, 306; T5X36: *Catalogo* 1.3, 396.
[424] See catalogue entries for the dating of all these items.



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survive were found in the Athletes' Tomb in Taras, and are also dated to the fifth century. Several gilded silver wreath-diadems dating to Archaic times have elements similar to those on type 2 gilded copper wreaths. All these items, as well as copper and silver leaves, some of which may have formed part of wreaths, will be discussed in Chapter 8 as part of the wider consideration of the origins of the gilded wreaths, but it is worth noting at this point that several of them came from Southern Italy.

Wreaths of type 3, which first appeared in the third century, representing ivy, were common in Taras and Rhodes, and could have originated in either city, or have had a common origin elsewhere, Macedonia being the most likely possibility, since M37 is believed to be some 25 years earlier than its counterpart in Italy, SI 1. The distinctive wreaths with large ivy rosettes and a white coating made with lead white almost certainly developed in Italy, however.

The close contacts between Taras and Greece (Mainland, Rhodes and Crete) until the destruction of the city by Rome in 209 and a mutual influence in art, philosophy and religion would easily explain the transfer of design of the type 2 wreaths to Southern Italy from Macedonia. There were close connections with Epirus, because of its geographical proximity. A large number of mercenaries landed in Italy from Epirus to assist the Tarantines, who had appealed to Alexander the Molossian (brother in law of Philip II). In response, Alexander went to Italy with troops and horsemen in 334/333[425]. The Tarantines later appealed to Pyrrhus, nephew of Alexander the Molossian, in 281 for help against the Romans, and he landed in Italy with 25,000 men and twenty elephants[426], eventually leaving a garrison of 8,500 men in Taras in 269. At least some of these mercenaries, from both expeditions, must have stayed in Italy and been buried there - perhaps with wreaths, although there is no evidence that any of the gilded wreaths was buried in the grave of a soldier or military leader. Wreath designs were incised on helmets in Epirus, and gold wreaths were worn on helmets in Etruria

[425] De Juliis 2000, 28

[426] De Juliis 2000, 30-31.



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in the fourth century[427], so would no doubt have been familiar to residents of Southern Italy from contact with the mercenaries, but even without this, the custom of burying people with a gilded copper wreath would have quickly caught on in the late fourth century in Taras, where gilded silver wreath-diadems had been placed in graves in Archaic times. The slight differences of design between gilded copper wreaths in Southern Italy and those in Macedonia and Epirus, but using essentially the same materials, can easily be explained by the customer describing what they wanted to a local craftsman.

Artistic contacts are believed to have gone both ways between Taras and Macedonia in the fourth century[428]. The custom of using some particular luxury items, such as the expensive fabric known as *tarantinidion*[429], may have been brought to Macedonia from Taras, or at least be *thought* to have originated there. There is an anecdote that a mercenary chief, Dokimos, used hot water to wash to the astonishment of the Macedonians; whether or not this is true, and whether or not he and the 'Tarantine' soldiers he led were really from Italy[430], it does seem that Taras was associated with a love of luxury[431], and its artists would surely have produced designs that would have appealed to the newly rich Macedonians. Tarantines may well have been attracted to work in the capital, Pella, in the fourth century and at Vergina/Aigai, where there would have been plenty of opportunity for skilled craftsmen to make prestige goods.

## 5.5 Significance

Masiello points out that the interpretation of gilded material is not easy; containing the cost was an element, but as she says, such material frequently accompanied objects in precious metals[432], suggesting that it was not the only factor.

[427] See Chapter 3, section 4.3.

[428] See Chapter 8, section 4.

[429] Cleland 2007, 187; Casadio 1994, 88. *Tarantinidion* also featured in the Dionysiac processions, as part of the opulent love of display in dress, in Alexandria (Casadio 1994, 88).

[430] Cf Griffith 1935, 246-7.

[431] Prestianni Giallombardo1993, 1281.

[432] *Catalogo* 3.1, 308



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None of the gilded wreaths from Southern Italy has, as in Macedonia, a clear association with military officers and their families, since there is no record of any of the males being buried with weapons, although at Herakleia one wreath was buried with a horse bit (T4X26)[433].

Dionysiac imagery was prevalent in Taras, and is seen on many of the grave goods, including those accompanying wreaths. The decline of the Classical era and the political turmoil in Taras arguably led to an increase in desire for security in the next life, so Dionysiac imagery became ever more dominating[434].

The many scenes on vases depicting Dionysus as part of a jolly procession composed of satyrs and maenads can be seen as showing them on their way to a symposium and implying that for his followers, death involves a journey to the symposium of the Blessed, as described by Plato (Republic, 363c-d). The Dionysiac Mysteries appear to have been linked with both Orphism and Pythagoreanism[435]. Pythagoras lived and taught in Croton and Metapontion and aspects of his teaching survived in Southern Italy until at least until the fourth century since Plato went there to meet practitioners in around 389/88[436]. There are some aspects of Pythagorean teaching which fit well with the wreaths, including the belief in reincarnation and in several sacred plants which were represented or used on wreaths[437]. Their teachings also gave more prominence to the role of women than was often the case elsewhere in Ancient Greece[438]. Some of his teachings were construed as a recommendation to abandon luxury, which led to women making deposits of clothes and other offerings at the Temple of Hera Lacinia[439].

[433] De la Genière suggested that the solid gold Armento wreath was buried with a military officer - 1989, 693, 696, but even this was not accompanied by weapons.

[434] Casadio1994, 86.

[435] Bremmer 2014, 72.

[436] Carpenter 2011, 260.

[437] Including myrtle, laurel, oak and cypress, but not poplar - Iamblichus, *De vita pythagorica*, 154. This book, thought to record some of Pythagoras' recommendations as to daily life, was however written many centuries after his death. Pliny NH 35, 160, says that Marcus Varro was interred 'in the Pythagorean style', in leaves of myrtle, olive and black poplar leaves.

[438] Pomeroy 2013, Chapter 2; Bremmer 2013, 72. Pythagoras proposed for example a single standard of sexual behaviour for husband and wife (Pomeroy 2013, 19) and addressed his remarks to women as well as men.

[439] Iamblichus *De vita pythagorica* 56. Riedweg (2002, 16) however suggests that the directive was somewhat misconstrued and was to the effect that those performing sacrifices should do so in white robes, not luxurious clothes.

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Taken literally, this would not be consistent with the use of gilded wreaths in graves, since although they were less valuable than solid gold, they were nevertheless luxury items and many were, as discussed above, found with gold jewellery.

Only one of the gilded wreaths in Southern Italy seems to have been found in a grave which also contained a fragment of gold lamella denoting an initiate, at Corigliano near Sibaris (T5X5)[440], but as far as can be ascertained, there was no gilded wreath with other tablets from Thurii (A1-4), Hipponion (B10), or Petelia (B1) (near Croton).

As Graepler says, the prevalence of Dionysiac imagery is difficult to explain but it should not be seen as expressing the same beliefs as the Bacchic-Orphism of the gold tablets[441]. The figurines of women with tympanum, representations of maenads, grapes etc, and the Phlyax pottery found with several third century gilded wreaths may not have a deep religious significance and may simply be an expression of the joyful imagery associated with the god[442]. Moraw expresses some scepticism about assumptions that every Apulian grave with a Bacchic vase was designed to hold a Dionysiac initiate[443], and I have a similar reservation about the graves with wreaths, although some of course may have done so. She suggests that in some cases these images were no more than a way of expressing a hope for a happy afterlife and the same may well be true for at least some of those who deposited wreaths in graves.

A possible alternative explanation lies in beliefs to do with fertility and rebirth, although this too raises difficulties. Discussing flowers used on graves and in South Italian vase painting, Schauenburg proposed that by 'sympathetic magic' (*Sympathiezauber*), the dead will live on[444]. Some of the flowers depicted on the vases, and possibly also the wreaths, are imaginary, and in the view of Isler-Kerenyi should be seen as growing in the Elysian Fields[445]. Evergreen

[440] Galli 1929, 114.
[441] Graepler 2002, 213.
[442] Casadio 1994, 90.
[443] Moraw 2011, 243-4.
[444] Schauenburg 1957, 203 discussed by Castoldi 2014, 76.
[445] Isler-Kerenyi 2008, 239.



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plants such as myrtle and ivy may have been another way of expressing of beliefs in fertility and rebirth, and the cicadas and grasshoppers on two of the wreaths (SI 1 and T5X4) may have a similar meaning, since these insects emerge from the ground fully grown, and were regarded by the Athenians as autochthonous[446]. Although references to 'chthonian' deities need to be treated with caution, some of the gods did have an 'earthy' aspect, including Demeter and Zeus, and an association with the Underworld[447]; these included in Italy Persephone, Demeter and Dionysus. Casadio proposes that the recumbent wreathed male figure on innumerable Tarantine terracottas, often wearing a headdress decorated with a central medallion, represents the god of the infernal regions, and suggests (tentatively) that it is Dionysus-Hades[448] (**fig. 5.26**). It cannot be ruled out that some people used wreaths in graves to seek protection from one of the 'chthonian' deities, not necessarily Dionysus, and possibly reverting to a reverence for Demeter, as shown at Oria, where items resembling elements of wreaths dating to the late sixth or fifth century have been found (T8X2), as well as terracotta fruits etc[449].

*Fig. 5.26 Fifth century figurine of reclining man wearing wreath or diadem from Taras and now in the Louvre (B145). From Higgins 1967, pl. 39c.*



[446] Davies and Kathirimthamby 1986, 124-5.
[447] Parker 2011, 81.
[448] Casadio 1994, 85.
[449] See below pages 306 and 315.



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Persephone was venerated, without Demeter, at the Thesmophorion in Locri as a goddess protecting fertility. She was seen in Southern Italy as the supreme power in the realm of the dead, who also had kourotrophic aspects as goddess of marriage and children[450]. She was the first mother of Dionysus, before his dismemberment by the Titans and rebirth of Semele. Some of the group 5 *pinakes* from Locri (fifth century) show a seated woman, wearing a wreath or diadem, with a young woman whose head is covered with a mantle who is bearing gifts[451]. This scene shows objects relating to nuptial preparations, suggested to be dedications marking the transition from girlhood to womanhood by Eisenfeld[452]. Further *pinakes* (group 6) have a scene with a young woman carrying an open box towards a larger seated woman (Persephone) holding a mirror (**figs. 5.27-8)**. This scene is interpreted by Grillo as an important ritual moment in preparation for a wedding, marking the passage from girl (Kore) to wife (Persephone)[453]. It is not clear on the pinax in fig. 5.27 what the seated woman is wearing on her head, but a drawing of the same scene shows it as a wreath or diadem (**fig. 5.28**). In a further type of pinax (2/22), Kore is depicted wearing a wreath composed of flowers when she is snatched by Hades (**fig. 5.29**). These scenes from Locri are some of the very few depicting females wearing wreaths [454], in this case probably because they are deities, but it cannot be ruled out that the wreath indicates Kore's passage to adulthood.

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[450] Eisenfeld 2016, 5, 8 and 11 in particular.

[451] Mertens Horn 2005, 51.

[452] Eisenfeld 2016, 12.

[453] Grillo 2005, 182; Grillo 2000-2003, 636.

[454] Redfield draws attention to a third type of pinax, 10/11 P50, which shows a woman playing a flute, seated with a young man. He outlines several possible interpretations, one of which that the woman is a wife and that the couple are participating in a ritual banquet (Redfield 2003, 382 and pl.25), but it is evident from a more recent publication, Lissi Caronna et al. 2007, fig. 63 and pl. CXCVII-CXCVIII, that the plaques are very fragmentary, casting doubt on Redfield's reading.

*Fig. 5.27 Pinax from Locri showing seated female figure and young girl bearing box (type 6/5). From Grillo 2005, 183.*



*Fig. 5.28 Drawing of scene from Locri (Pinax type 6/5) with young girl and seated goddess. From Grillo 2000-2003, fig. 43.*



*Fig. 5.29 Pinax type 2/22 showing Kore being snatched by Hades. From Grillo 2005, 169.*



Further assistance may be obtained from the iconography of Apulian vases. One common scene shows a wreath being offered to a naked young man in a naiskos, interpreted as marking the heroization of the deceased, often depicted as a warrior[455]. Naked young men (ephebes) are also seen with wreaths and branches, in scenes harking back to the 'gymnasium' culture referred to above (page 165). Wreaths are also frequently shown being offered to women in domestic scenes, sometimes by an ephebe, sometimes by a winged figure. The Tarantine women buried with wreaths were affluent members of society, sometimes buried in family groups, and can readily be identified with the women depicted in a domestic environment. Two Apulian vases with figural scenes, both pelikai, were found with wreaths in graves in Taras, both in female graves. The pelike with SI 29 shows on one side a woman holding a mirror, with grapes, being offered a phiale by an ephebe, and a winged figure above, who is offering a wreath – surely a reference to a courtship or wedding scene, the grapes introducing a Dionysiac element (**fig. 5.23**). On the other side is a seated woman in a domestic

[455] See for example Castoldi 2008, 257-259.

environment, holding a mirror and being offered a casket by a young man who is wearing a wreath **(fig. 5.24)**. The pelike found with SI 22 shows a standing woman holding a mirror, and a seated naked female winged figure holding yet another (**fig. 5.20**). The mirrors on both vases are most likely symbols of seduction[456]. Persephone is also holding a mirror in some of the pinakes from Locri and being offered a casket (**figs. 5.27 and 5.28**). Could the wreaths in some of the graves be marking the transition from girlhood to adulthood, and thus to a woman's marriage? As will be discussed in Chapter 9, wreaths were offered to women on marriage, and it may be that, as has been suggested in relation to Macedonia, the gilded wreaths found in the graves with Tarantine women and girls refer to this rite of passage, which is closely linked with death.

The wreaths buried with males in Taras have been suggested by Castoldi and others[457] to be a reference to their 'heroic' status after death. Some scholars see the wreaths as a type of sympotic item, to be worn by the deceased in the Isles of the Blessed at banquets at which the participants get increasingly drunk[458], which would fit with the context of the gold leaves in the Athletes' Tomb, in which the sarcophagi were arranged as at a symposium in the andron, with strigils and other aspects of the 'gymnasium culture'. This is unlikely to be the reason why the women were buried with symposium vessels and wreaths at Buccino and Strongoli (T5X3 and T5X33), since on a conventional interpretation they would not have taken part in these banquets either in this world or the next. It is surely more likely that these vessels, and the wreaths, were buried to mark the social status of the women.

In what Carpenter describes as a 'fabricated reality representing aspirations for the afterlife' a naked male figure carrying a thyrsus is shown on many vases, whom he and others interpret as

[456] The interpretation given by most modern scholars - see for example Castoldi 2014, 75.
[457] See note 455.
[458] Eg Guzzo and Luppino 1980.



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the deceased assimilated with Dionysus himself[459]. Although this is an attractive suggestion as far as men are concerned, it surely cannot be taken so far, and Carpenter does not advocate this, as to suggest that women could somehow have been seen as men in the next world, in a fabricated reality. Similarly, Moraw asks (without answering the question) whether female initiates could identify with the nude young man depicted on vases interpreted as the ideal image of the deceased[460]. A more plausible idea is that the women could have been visualised as maenads in the next world. All that can be said is that on the Apulian vases, women (other than flute girls, maenads and deities such as Persephone) do not appear to be portrayed wearing wreaths, for which one possible explanation is that respectable mortal women, such as those buried in Taras, did not wear them while alive, even if they were presented with them as gifts, and if it was anticipated that they might need them in the next world, it is not clear for what purpose.

It is impossible to find a single explanation for placing gilded wreaths in graves in Taras and other cities in Southern Italy, but they were almost certainly buried in graves for a mixture of reasons as elsewhere in the Greek world. In some cases, it is possible that it was intended to denote them as initiates; in other cases, it may have been to mark the status of males as 'heroes' in the Blessed Isles and for women to mark their transition from girlhood in womanhood. In many cases they may have been a mark of social status, or an expression of a vague hope that the deceased may live again, perhaps with a distant recollection of wreaths and similar items being connected with ideas of fertility and rebirth.

[459] Carpenter, 2011, 260-261; Moraw, 2011, 243. Carpenter 2010, 342 says that although the naked youth on vases such as the Apulian volute crater by the Painter of the Birth of Dionysus is Dionysus, for the mourners at the funeral he may also be understood as the deceased, a votary of the god who has been assimilated with him.

[460] Moraw 2011, 244.



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## *Table 5.1 Gilded wreaths from Southern Italy*

| Cat no./ ref no. | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T5X1 | 2 | Ancona | Via Matas | Myrtle | Bone circlet | Sub-adult F? | End 4th | | Pit | Terracotta necklace, oinochoe, kantharos, figurine, strigil, poculum (small impasto pot). | Ancona AM 6882 | Colivicchi 2002, 78 and Colivicchi 2008, 35 and 7. |
| T5X2 | 2? | Ancona | Corso Tripoli | Myrtle? | | | 2nd half 2nd | | Pit | Iron ring, gold threads, unguentaria, glass cup, bronze coin, strigils, lituus, nails, rod. | Ancona AM 5480 | Colivicchi 2002, 215 and Coen 2007, 157. |
| T5X2A | 2? | Ancona | Via Goito | Myrtle? | | M? | mid 3rd | | Pit | Cup, amphora, jug, strigil. | Ancona AM 21472 | Colivicchi 2002, 85-88. |
| T5X3 | 3 | Buccino | Santo Stefano, grave 270 | Ivy and grapes | Copper, spherical clay berries, lead circlet | F | Late 4th/ early 3rd | | Tumulus | Lebes gamikos, pelikai, jugs, lekanai, unguentaria, pyxis, lantern, applique, figurines, weighing scales, olpe, basin, candelabrum, mirror, silver cup, silver unguentarium, two silver plaques, pin, cosmetic set, silver pendants, silver strigil bracelet, earrings, rings, necklace, gold studs. | Museo archeo-logico nazionale di Volci di Buccino 134597 | Lagi de Caro 1996,86 and Settis and Parra 2005, III.198. |
| T5X4 | | Cariati | Salto | Oak (acorns), grass-hopper | | | 3rd qu.4th | | Chamber | Silver coin, silver gilt foot of receptacle (kantharos?), bronze armour, iron and lead fragments including strigil, fragments terracotta figurines, RF amphorae, bell craters, kantharos, skyphos, plates. | Sibari | Guzzo 1993 287; Guzzo and Lupino 1980, 827. |
| T5X5 | | Corigliano Calabro | Timpone Paladino grave 2 | Oak (acorns) | Gilded copper | | 2nd half 4th ? | | | Painted Lucanian vases, lekane with Eros, 9 small pyxides lekythos squat aryballos, remains of small lead pyxis, small piece of gold perhaps from lamella. | NK | Guzzo 1993, 287; Galli 1929, 114. |
| T5X5A | | Cirò Marina | Temple of Apollo Alea, Punta Alice | Laurel? (many leaves found) | Gilded silver and copper | | 5th-3rd | | | N.A. | Reggio di Calabria | Orsi 1932 113; Guzzo 1993, 280. |
| T5X6 | 2 | Egnazia | | Myrtle | | M and F? | Late 4th | | Semi-chamber inside city walls | Large amount of pottery. | Egnazia AM Was 54056 in MArTA, | *Gli Ori*, 74 and 85, note 50. |
| T5X7 | 3 local variation | Herakleia | Grave 30 via Belluno south necropolis | ivy | | | End 4th/beg 3rd | I | Pit | Olletta, lead ring with bezel, bronze coin | | Pianu 1990, 203 (cat. 275). |
| T5X8 | 3 local variation | Herakleia | Grave 11, plot 184 | Ivy | | | | | Chest (cist ?) | Oinochoe, unguentarium, strigil, stud. | | Pianu 1990, 99. |
| T5X9 | 3 local variation | Herakleia | Grave 23 via Agrigento | Ivy | | | End 4th | | | Crater, guttus. | | Pianu 1990, 40 (cat. 22). |

| Cat no./ ref no. | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T5X10 | 3 local variation | Herakleia | Grave 3 via Umbria south necropolis | Ivy | | | End 4th/beg 3rd | C | Pit | Wreath found around oinochoe. Also unguentarium. | | Pianu 1990, 97 (cat 89). |
| T5X11 | 3 local variation | Herakleia | Grave 38, plot 230 south necropolis | Ivy | | F | First quarter 3rd | I | Accordion | 2 lebes gamikos, olletta, oinochoe, unguentaria, pyxis, mirror, small box. | | Pianu 1990, 101(cat. 94). |
| T5X12 | 3 local variation | Herakleia | Grave 3 via Belluno south necropolis | Ivy | | | Last quarter 4th | I | Accordion | Oinochoe, small cup, urn (cinerario). | 44882 | Pianu 1990, 105 (cat. 99). |
| T5X13 | 3 local variation | Herakleia | Grave 8, via Avellino | Myrtle ? | Lead circlet | F | End 4th beg 3rd | I | Cist | Skyphos, mirror. | 45567 | Pianu 1990, 116 (cat. 114). |
| T5X14 | 3 local variation | Herakleia | Grave 4 via Latina | Ivy | | | End 4th beg 3rd | I | Cist | Small cup, strigil, handle of mirror. | | Pianu 1990, 120(cat. 119). |
| T5X15 | 3 local varia-tion/5 | Herakleia | Grave 15, plot 229 | Ivy | Lead circlet | | | | | Pelike, unguentaria, nail, jug, strigili, coin. | Policoro AM 44832 | Pianu 1990, 130 (cat. 128). |
| T5X16 | 3 local variation | Herakleia | Grave 51 via Umbria | Ivy | | | End 4th/beg 3rd | C | A pozzetta | Lekythos, unguentarium, urn. | Policoro AM 46628 | Pianu 1990, 134 (cat. 139). |
| T5X17 | 3 local variation | Herakleia | Grave 66, via Umbria | | | | End 4th | I | Pit | Amphoriscus, bell, ring. | Policoro AM 46704 | Pianu 1990, 118 (cat. 122). |
| T5X18 | 3 local variation | Herakleia | Grave 16, plot 184 | | Lead circlet | M | First half 3rd | I | Accordion | Unguentarium, ring, strigil. | Policoro AM 200699 | Pianu 1990, 156 (cat. 186). |
| T5X19 | 3 local variation | Herakleia | Grave 5, plot 180 | Ivy | Lead circlet | M | First half 3rd | | | Unguentarium, strigili, ring, coin. | Policoro Am 45538 | Pianu 1990, 159(cat. 192). |
| T5X20 | 3 local variation | Herakleia | Grave 18 via Umbria | | | | First quarter 3rd | 1 | Pit | Unguentarium. | Polocoro AM | Pianu, 1990, 160 (cat. 194). |
| T5X21 | 3 local variation | Herakleia | Grave 7 Via Belluno | | | M | End 4th beg 3rd | I | Accordion | Unguentarium, lead ring. | Policoro AM | Pianu 1990, 199(cat. 264). |
| T5X22 | 3 local variation | Herakleia | Grave 127 via Umbria | | | | | I | A cappucina | Unguentarium. | Policoro AM | Pianu 1990, 200 (cat. 265). |
| T5X23 | 3 local variation | Herakleia | Grave 30 via Belluno | Ivy | Lead circlet | | End 4th beg. 3rd | I | Pit | Olletta, ring, coin. | Policoro AM 45585 | Pianu 1990, 203 (cat. 275). |
| T5X24 | 3 local variation | Herakleia | Grave 10, plot 224 south necropolis | Ivy | | M | End 4th/beg 3rd | | Accordion | Plate, fragments iron. | Policoro AM | Pianu1990, 204 (cat 278). |

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| Cat no./ ref no. | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **T5X25** | 3 local variation | Herakleia | Grave 348 | Ivy | | | Beg. 3rd | | | Strigil, amphoretta. | Policoro AM 205504 | |
| **T5X26** | No type | Herakleia | Grave 609 s. proprieta De Giorgio | Ivy | | M | 2nd half 4th | | | Bit for horse, strigil, bronze ring, ring supports, small cup, strip of metal, silver coin. | Policoro AM 216090 | Nava 2000, 723. |
| **T5X27** | 3 local variation | Herakleia | Grave 975 | Ivy rosettes, balls 8-10 bell flowers | | | Beg.3rd | | | 4 figurines, 2 bases of figurine. | Policoro AM 216386 | Nava 2000, 723. |
| **T5X28** | 3 local variation | Herakleia | Grave 993 S..necropolis via F. Tristano 1992 | Ivy | | | Beg. 3rd | | | Unguentarium, strigil, lead ring with caduceus oinochoe. | Policoro AM 215445 | Nava 2000, 723. |
| **T5X28A (leaves, may not be be a wreath)** | | Locri | Epizefiri | | | | | | N/A | | | Settis and Parra 2005 II,34, II.40-.62, II.67. |
| **SI 1** | 2 | Meta-pontion | Grave 1/1972, San Biagio | Ivy and grapes. Grass-hoppers, cicadas | Wood and bone circlets, clay berries and insects | M? | 3rd | I | Stone with roof | Pelike, pyxis, guttus, unguentarium, strigil. | Metaponto | Adamesteanu 1973, 448, Gais 1982, 54-56. |
| **T5X29** | 2 | Meta-pontion | Grave 13, Pantanello | Probably myrtle, could be olive or laurel | Bone circlet | M 40-45 | 320-280 | I | Stone cist | Unguentarium, feeder, pot lid, iron strigil, iron key. | Metaponto | Carter 1998, 254-5, 816-7. |
| **T5X31** | 7 | Naples, sur-roundings | Not known | Laurel or myrtle | | | | | | Not known. | Paris, Musée de l'Armée 313472 | Daremberg and Saglio *Corona*, 1534, 2005; Guzzo 1993, 288. |
| **T5X33** | | Strongoli | Gangemi | | | F | | | | Silver fibulae, iron knife, RF pyxides, lebes gamikos, lekanai, amphorae, plates, bottle, skypoid pyxides. | Reggio di Calabria | Guzzo 1993 287; Guzzo-Luppino 1980, 844. |
| **SI 2** | Not enough remain to tell | Taras | Via Anfiteatro, Palazzo Acquaviva, grave 2, exc. 1909 | Myrtle | Clay berries | F ? | 2nd | I | | 4 figurines, 2 dolphins, a disc, 19 beads from necklace gold earring. | MArTA 12282 and 212227 | Unpublished. |
| **SI 3** | Not enough to tell | Taras | NK | Ivy | Gilded copper | | Hell? | | | Not known. | MArTA 12300 | *Gli Ori* 79. |

| Cat no./ ref no. | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SI 4** | 3 local variation | Taras | Madre Grazia, Borgo Oriental, | Ivy, oak and other | Flowers and berries with white coating | | Early 2nd? | I | Pit | Alabastron, 2 mirrors, basin, hinge, nails, lopas, 2 guttus, cup, 2 oinochoai, olpe, 8 unguentaria. | MArTA 14753-7 | *Catalogo* 3.2, p.92. |
| **SI 5** | 3 or 4 | Taras | Grave 10, Contrada Lupoli, Lo Jucco | Could be several | Lead circlet, berries, flowers with white coating and trace of gilding | F ? | Last quarter 4th | C | Pit | 2 oinochoai, lekythos, 4 figurines, cup, pendant, 2 fibulae. | MArTA 15774 | *Cento Anni*, 395. |
| **SI 6** | 2 | Taras | Contrada Tesoro | Myrtle | Bone and lead circlets, clay berries | F ? | Last quarter 4th | I | | Miniature mirror, silver coin, 2 bracelets, gilded bronze ring, 2 bronze disks, figurines (Aphrodite, Eros, female acrobat and 2 others), architectural fragments, clay mask, unguentarium. | MArTA 15868 | *Gli Ori*, 410. |
| **SI 7** | 2 or 4 | Taras | Contrada Corti Vecchie, via F. Crispi | Myrtle ? | Clay berries and copper leaves | M or F | 2nd half 2nd | I or C | | Pit grave with one skeleton and second skull, urn with burnt bones, 2 alabastra, 2 knucklebones, 2 phialai, laynos, unguentarium, female figurine, 2 strigils. | MArTA 25428 | *Catalogo* 3.2, 145. |
| **SI 8** | 3 local variation | Taras | Via D. Alighieri, Da Ciccio, grave 2 | Ivy and grapes | Lead circlet, bell-shaped flowers, grapes, rosettes, berries | | 1st quarter 3rd | I | Semi-chamber tomb in complex with 13 graves | Bronze bezel ring, strigil, 4 nails, oinochoe, cup. | MarTA 40044 | *Gli Ori*, cat. 20, 91 and 435. |
| **SI 9** | 3 or 4 | Taras | Via Cesare Battisti | Ivy? | Spherical berries with white coating, copper stems, | | 2nd? | I | Semi-chamber | Miniature oinochoe, Gnathian oinochoe, architectural fragments, small cup. | MArTA 50295 | NS 1936, 146, n.59. |
| **SI 10** | 3 | Taras | Via Gorizia | Ivy | Metal circlet, copper leaves with yellow coating, spherical berries | F? | 1st half 2nd | I? | | Alabastra, mirror, shells, necklace, earring, gold oak wreath, gold threads, unguentaria, small oinochoe, cup, mirror. | MArTA 50625 | *Gli Ori*, cat. 22, 93; *Catalogo* 3.2,71. |
| **SI 11** | 3 local variation | Taras | Via Battisti | Ivy | Rosettes, flowers, berries, copper stems | F | End 3rd | I | | Gold wreath (added later), mirror, pin, 3 nails, key, 6 bone rings, part of distaff, cylinders, knucklebones, kline decorations, cups, inkwell vase, 6 bowls, oinochoe, seal showing man with ivy wreath, thymiaterion, louterion. | MArTA 50710 | *Gli Ori*, 459. |
| **SI 12** | 2 | Taras | Grave 1, via Tito Livio | Myrtle | Lead circlet, copper stems, berries and leaves | F young | 2nd half 3rd | I | Semi-chamber | Louterion, pyxis with miniature lekythos and shell, oinochoe, mirror, guts, nail, cup, 6 figurines, bronze handle. | MArTA 51681 | Dell'Aglio 1999; figurines: Jeammet 2010, 162 (figs. 53 and 54); figurines and pottery Jeammet 2003, 285-289. |

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| Cat no./ ref no. | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SI 13 | 3 | Taras | Via Argentina | Ivy | Lead circlet, spherical berries, with white coating (no gold?), stems | M or F | End 3rd | | | Ring, strigil, pelike, oinochoe, cup, unguentarium. | MArTA 52454 | Unpublished. |
| SI 14 | 2 | Taras | 8 via Marche | Myrtle | Bone and wood circlets, copper leaves, oval berries | | 3rd qu. 4th? | | | Not known. | MArTA 54461 | *Gli Ori*, cat. 16, 88-89. |
| SI 15 | none | Taras | Via Abruzzo, grave 20 | Laurel | Gilded silver leaves | | Mid-4th ? | | | 3 trilobate oinochoai, silver finger ring and cup. | MArTA 54726 | *Gli Ori*, 88. |
| SI 16 | 4 | Taras | Via Batti and Via Zara, grave 10 | Ivy? | Lead | | 2nd half 3rd | I | | Gold ring, 2 nails, trilobate oinochoe. | MArTA 56586 | *Gli Ori*, 438. |
| SI 17 | 3 or 4 | Taras | Via Abruzzo, grave 59B | Ivy | Lead circlet, clay flowers and rosettes | M? | c.230 | C | Pit | Guttus, cup, amphora, strigil, 2 iron nails. | MArTA 59974 | *Catalogo* 3.1, 365. |
| SI 18 | 4 | Taras | Via Nettuno | Several inc. myrtle berries | Lead circlet, spherical berries, bell-shaped flowers, stems | F? | Late 3rd | | Pit | Earrings, 2 coins, skyphos, 2 trilobate oinochoai, 2 cups | MArTA 60501 | *Gli Ori*, 440. |
| SI 19 | 3 local variation | Taras | Via Oberdan, grave IV | Several | Rosettes, flowers, buds, berries, stems. | | Last quarter 4th | | | BG 2-handled cup, iron nail. | MArTA 66777-66781 | Unpublished. |
| SI 20 | 3 local variation | Taras | Via Sardegna, plot of Calia, grave 6 | Mixture inc. ivy | Rosettes, flowers, buds?, bell-shaped flowers, stems | F? | 2nd half 3rd | I | Semi-chamber | Earring, necklace, 2 mirrors, nail, trilobate oinochoe, 3 unguentaria, inkwell, miniature vase and cup. | MArTA 107662 | *Gli Ori*, 427. |
| SI 21 | 3 | Taras | Via Toscana and via Marche, grave 14 | Ivy? | Lead circlet, spherical berries, bell-shaped flowers, stems | | 2nd quarter 3rd | I | Pit | Lead finger ring, nail, seal ring, 2 trilobate oinochoai, 3 cups. | MArTA 107617 | *Gli Ori*, 383. |
| SI 22 | 2 | Taras | Via Umbria grave 23 | Myrtle | Bone circlet, copper leaves, berries | F? | 2nd half 4th | | chamber | Unguentaria, Bacchic figures, protome, architectural fragments, lekythos, 3 kylixes, small cups, small vase, small bowls, part of nail, oinochoe, gold and gilded erarings, trilobate oinochoe, pelike. | MArTA 110102 | *Gli Ori*, cat. 25, 94-95. |
| SI 23 | none | Taras | Via Bellini, grave 1 | Laurel | Gilded silver leaves | M? | End 4th | | | Bezel ring with ephebe. | MArTA 110291 | *Gli Ori*, cat 15, 88. |
| SI 24 | 3 | Taras | Via Toscana no. 24, grave 2 | Ivy | Lead circlet, copper leaves, spherical berries | | First qu. 3rd | | | Iron strigil, small cup and trilobate oinochoe. | MArTA 110388 | *Gli Ori*, cat 19, 90-91. |

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| Cat no./ ref no. | Type | Site | Location | Plant | Materials | M/F | Date | I/C | Type grave | Grave goods | Museum and ref. no | Publication |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SI 25** | 7? | Taras | Via Tirrenia | Myrtle? | Bone circlet, copper leaves, spherical berries | | Early 3rd? | C | | Bronze hydria (found round neck). | MArTA 113503 | *Catalogo* 3.1, 132, 157; *Gli Ori* cat 24, 94 |
| **SI 26** | 3 or 5 | Taras | Via Polibio | Ivy | Rosettes | | 2nd | | | Terracotta figurines, strigil, shell, 3 plates, 2 nails, alabastra. | MArTA 117362 | *Catalogo* 3.2, 96. |
| **SI 27** | 3 local variation / 5 | Taras | Strada Messina, grave 5 | Ivy | Lead circlet, rosettes, copper stems | F | Beg. 2nd | | Pit | Alabastron, gold and glass finger ring, mirror, pyxis, gold earrings, cup and oinochoe. | MArTA 119341-349 | *Gli Ori*, cat 21, 91-92; *Catalogo* 3.2, 62. |
| **SI 28** | none | Taras | Contrada Cappuccini, grave 5 (1986 excvations) | Ivy and perhaps laurel | Lead circlet, flowers, bell-shaped flowers, rosette, spherical berries | F? | First qu. 3rd | | | Gold earrings with Eros, guttus, trilobate oinochoe. | MArTA 214732 | |
| **SI29** | 3 | Taras | Corso Piemonte grave 1 | Ivy | Rosettes, spherical berries, copper leaves | F Sub-adult | Mid 3rd | C | | Gold ring, bronze ring, mirror, gold bead, bone plaque, glass button, pelike, cup, glass, ochre, cosmetics box, skyphos. | MArTA 28255 | *Catalogo* 3.1, pl. VI, 154. |
| **T5X34** | | Taras | Via Alto Adige | | | | End 3rd-2nd | | | 4 unguentaria, olletta, cup, guttus, fragment plate, 2 pebbles, oinochoe. | | Schojer 1999; De Juliis 1983, 503-531. |
| **T5X35** | | Taras | Via Giovine Tomb 8 | | Gilded copper or bronze leaves | Young male? | 475-470 | I | Sarco-phagus | Attic RF pelike, Attic WG lekythos, miniature BG lekythos miniature brocca, alabaster, Attic kylix, Ionian kylix, Attic skyphoi, fictile pomegranate, small knife, knucklebones, 6 nails. | No longer exists 52353 | *Catalogo* 1.3, 304-6. |
| **T5X36** | | Taras | Piazza Sardegna grave 156 | | Copper or bronze leaves | | After 370 | | Pit | RF lekythos, RF trilobate oinochoe, cups, iron finger ring, nail head. | No longer exists | *Catalogo* 1.3, 393-396. |
| **T5X37 and 38** | | Taras | Via Magnaghi grave 6 excavated 30.9.1983 | | | | | | | | | Masiello *Gli Ori*, 79 and 86, note 76. |

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# CHAPTER 6: MATERIALS

## 6.1 Introduction

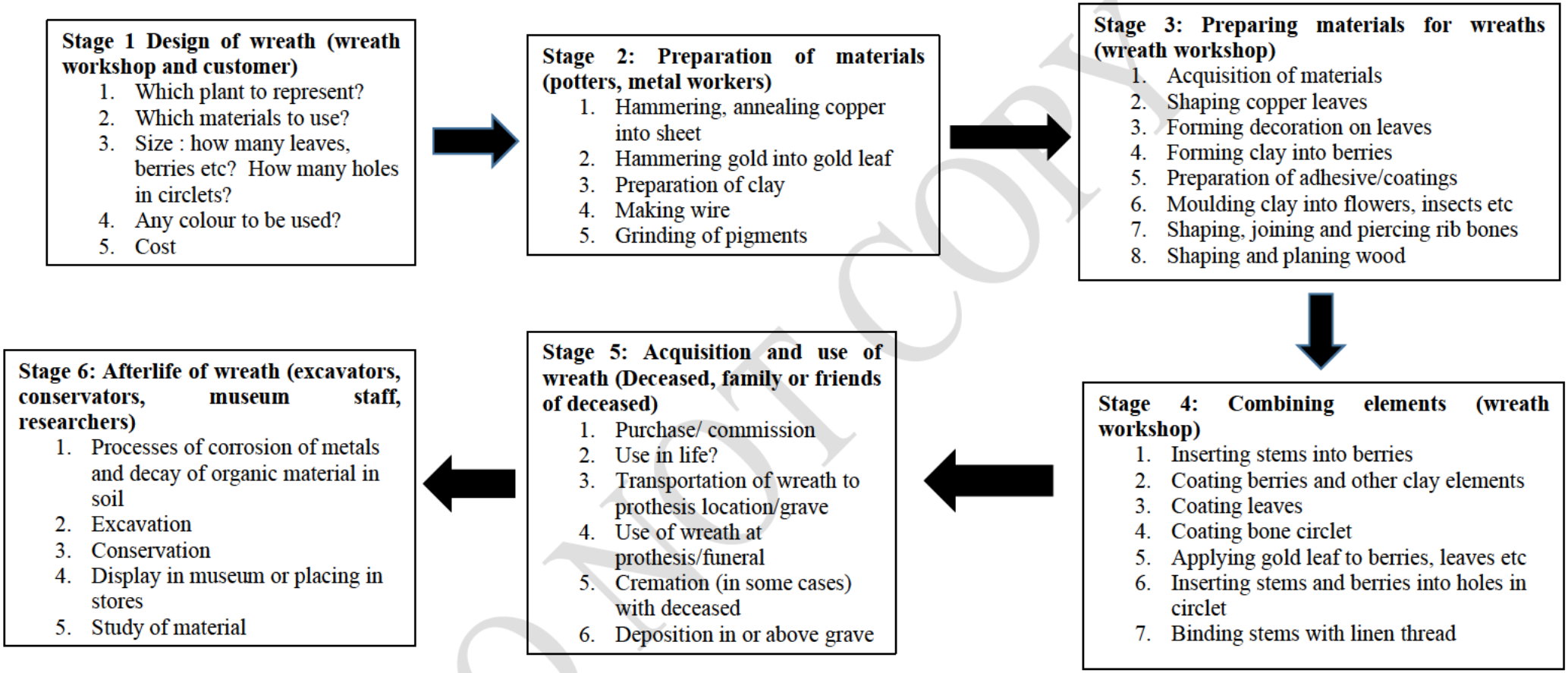
### *6.1.1 Outline of chapter*

This chapter investigates the materials used to make the wreaths, encompassing questions such as whether the leaves were bronze or copper, whether the gold was refined or alloyed with another metal such as copper and what pigments were used to colour the coatings and to decorate the flowers. These questions can be answered using appropriate analytical techniques. It will also look at how the gilding was done and why a coating was used beneath the gold. Knowing what materials were used may show differences between the various regions, and can also help us to understand the choices made by the craftsmen and those who commissioned the wreaths. It can also sometimes assist with their chronology. A more difficult question, relevant to, but not determinative of, origins is whether the materials were local or imported. This requires comparison with reference materials analysed by others, but is not necessarily something that can be fully answered.

Making a wreath was a complex process and in section 6.1.2 a *chaîne opératoire* shows the stages envisaged, with the key players at each stage. This is followed by a discussion of the state of preservation of the material (6.1.3), essential for any intelligent study. An outline of the methodology used in the analytical work to determine the materials present is set out in 6.1.4, expanded in the Appendix, which also has an explanation of the experimental work. The raw materials and how they were prepared for use on the wreaths are then considered with a brief discussion of possible reference materials (section 6.2) followed by an examination of the methods of gilding in use at the time on various surfaces (6.3). The main part of the chapter presents and discusses the results of the analytical work done for the purposes of this dissertation, divided into the various materials (6.4). Gilded wreaths have been subject to very little previous analytical work, and the results of these investigations are almost entirely new.

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*Fig. 6.1 Chaîne opératoire.*




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### *6.1.2* Chaîne opératoire

The chaîne opératoire at **fig. 6.1** illustrates the processes envisaged during the life of a typical wreath. The second and last stages will be discussed in this chapter, and stages 1, 3 and 4 in the following chapter.

### *6.1.3 Preservation of materials (stage 6)*

The last stage of the chaîne opératoire is closest to us in time, and the preservation of the material is discussed at this early stage in the chapter in order to understand the changes that have happened to it in the intervenining centuries. The best-preserved material comes from a sealed environment, such as well-fitted stone cist graves, where the degradation of all the elements is slowed down. One particular example, cist grave 5 at Phoinikas (Thessaloniki), formed a virtually oxygen-free environment[461], and contained wreaths with fabrics still preserved, as well as wood, bone and copper (**fig. 6.2**).

*Fig. 6.2 Part of M30 (Phoinikas 5,1) showing the various elements on the wreath: wooden circlet, fabric, bone circlet, gilded copper leaves and gilded berries. © Archaeological Museum of Thessaloniki, Ministry of Culture*




[461] Tsimbidou-Avloniti 2007, 678.

Although soil conditions vary considerably, the preservation of metals is generally poor in Macedonia, fair in Southern Italy, and somewhere between the two in the other regions, whereas the preservation of organics is normally poor in all regions studied[462]. Some of the material comes from a martime environment (for example on Thasos), which led to the formation of salts even though the site is not waterlogged.

Water, oxygen and acidity in the soil cause corrosion of metals other than gold, and lead in particular will normally corrode very quickly if organic acids are present, although chlorides tend to preserve it[463]. Copper corrodes more slowly, since a layer of copper carbonate forms a crust protecting the core of metal beneath[464]. Many types of copper corrosion were found on the gilded wreaths in addition to copper carbonate, including copper chloride (which forms in maritime environments) and acicular calcium oxalate (formed by a reaction between copper, silicon and calcium carbonate). These corrosion products cause the gold leaf to lift and eventually to detach, as can be seen on virtually all the wreaths studied.

The original metal was not quite the same metal we see today: in the first place, soil constituents, such as iron, have combined with the corroded metal[465]. A further process, known as surface enrichment, whereby certain elements migrate from the body of a metal artefact to its surface, can also lead to false assumptions about the composition of the original metal. As will be discussed below (6.4.2), the wreath leaves were almost invariably found to be made of copper rather than bronze. Could the material originally have been bronze, but now appear to be copper following a process of surface enrichment, whereby tin migrated to the surface of the leaves and leached into the surrounding environment[466]? Bronze corrosion can lead to the formation of a tin enrichment on the surface of the alloy, but most of the tin will remain on the surface of

[462] Kibblewhite *et al.* 2005, figs. 3 and 4.
[463] Cronyn 1990, 204.
[464] Cronyn 1990, 217.
[465] Craddock 1976, 96.
[466] In the period studied, bronze was alloyed from copper, tin and a little lead (Craddock 1977, 107-111).



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the object because tin oxide is very insoluble[467]. However, with two exceptions (P1 and P2), no tin was detected in the wreath leaves. Even if corrosion did cause the outer layers of the metal leaves to disintegrate and dissipate into the surrounding soil, some tin would still have been present, had it been there originally, beneath the gold leaf which has been preserved on many of the leaves, and would have shown in the analysis, particularly that done by XRF which penetrates beneath the gold. The two exceptions, which help to make the case for the conclusion on the other leaves, are P1 and P2, very late wreaths (late Hellenistic or Roman); some of the *ungilded* leaves (L3 and L4), not thought to be from a wreath, were also found to be bronze.

A similar question theoretically arises about the gold: if copper was present in the original gold alloy, it may diffuse in a process of surface enrichment and form soluble corrosion products which leach out into the soil[468]. This cannot be completely ruled out, but the gold on very well-preserved wreaths, such as M32, which were not buried in soil, gave similar analytical results to those which were, such as M7, so it is highly unlikely.

Organic substances, such as bone and wood, deteriorate in the ground due to the action of bacteria but the salts from copper, which form a green stain, are toxic to many micro-organisms and help to preserve the organic substances[469], which are best preserved in an oxygen-free environment.

By no means all elements of all gilded wreaths have survived. This is partly due to many of them being placed on the pyre, particularly in Macedonia where cremation was common. Some of the wreaths still bear evidence of being burnt, as for example the whitened bone circlet fragments from the pyre of Tomb II at Vergina, T2X88, and another effect of the heat may have been to transform the yellow pigment used in the coating to red (**fig. 6.28**). Surprisingly, however, several wreaths bear little sign of burning, including some of those from M16, where

[467] Meeks 1993, 265. For this reason, it is preferable to take samples from the core if possible.
[468] Blakelock 2016, 913
[469] Cronyn 1990, 24-28.



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no less than five were found in the pyre area, and even the wood and bone circlets of some of these have been preserved. The most likely explanation is that part of the material was so close to the flames of the pyre that it melted, whereas other items were further away[470]. Some of the wreaths would have been placed in the grave as offerings rather on the pyre, although it is not always possible to tell which they were.

The amount of conservation work performed on the objects varies. For the most part, the objects have been cleaned and are now kept in storage and have not received further treatment, except occasionally an adhesive to reattach the gold to the leaves. A few have been left uncleaned, but at the other extreme a few have received restoration treatment for display; in particular, some wreaths from Southern Italy were conserved for an exhibition in the early 1980s on which fragments of gilded copper were reassembled on a lead base to show how the curator believed the original leaves would have looked (**see fig. 5.6**). A photograph taken during excavation of a Macedonian wreath compared with one of the same wreath on display (**figs. M5.8 and 7.2**) reminds us that what we see today is to a greater or lesser extent the interpretation of conservators and archaeologists.

### *6.1.4 Methodology*

Material from all four regions was examined with an optical microscope and analysed using a hand-held X-Ray Fluorescence Spectrometer (Bruker Tracer IV) (HHXRF). As explained in the Appendix, it was judged best to proceed using non-destructive methods throughout. A selection was then made of material to analyse with further, non-destructive, methods. Some of the Macedonian items from a range of sites and dates were analysed with a laboratory-based XRF with a microscope (μXRF) and further items with a Scanning Electron Microscope with Energy Dispersive Spectroscopy (SEM/EDS), putting the entire object (berry, leaf etc) into the chamber of the instrument. A Raman spectrometer with microscope attachment was also used

[470] Even on pyres thought to have been built to reach a high temperature, some of the human bones have been preserved (Musgrave 1990a).



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to identify some of the pigments. The advantages and disadvantages of each method are summarised in Table 6.1; details of the instruments and procedures are in Appendix 2.

***Table 6.1 Summary of advantages and disadvantages of each method used***

| | HHXRF | µXRF | SEM/EDS | Raman |
|---|---|---|---|---|
| **Damage to object?** | None. Non-interventive | None. Non-interventive | Non-destructive, but can cause very small (invisible) burning | None. Non-interventive |
| **Portability** | Can be taken to object | Museum-based in some cases but object needs to be taken to instrument | Object needs to be taken to laboratory; if small can be placed in chamber of instrument | Object needs to be taken to laboratory; if small can fit on carrier of microscope |
| **Spot analysis?** | Wide beam size – up to 7mm diam. | Beam can be focussed to 1-2mm diam. | Spot size of 1-2µm or greater | Beam can be focussed down to 1.5µm with microscope x50 |
| **Ability to analyse light elements?** | Can be used with vacuum for elements below Ca, but unreliable below P | Unreliable below P | Down to C. | Molecular |
| **Detection limits** | Above c.0.1% weight[471] | Above c.0.1% weight | Above 0.1% weight | Can resolve spectral features narrower than 0.5 $cm^{-1}$ |
| **Surface technique? Beam penetration?** | Beam penetrates up to 0.3mm depending on surface and KeV | Surface technique but beam penetrates through gold leaf (c.1 µm) | Beam has less depth of penetration than HHXRF, but precise depth depends on KeV and material (0.85µm-1.23µm)[472] | Each pigment has unique spectrum; analysis at molecular level |
| **Inorganic or organic materials?** | Inorganic only | Inorganic only | EDS Inorganic only SEM imaging both | Some organic and some inorganic |
| **Quantitative?** | Some indication as to proportion from peak size | When calibrated with reference spectra, semi-quantitative with this material | Semi-quantitative on this material (uneven surface) | N/a |

The HHXRF generates energy dispersive spectra which identify the elements present with an atomic number of 20 (calcium) or higher. When used with a vacuum attachment some lighter elements can be identified, theoretically down to aluminium (atomic number 13) although when used in experimental work on material other than purchased samples it was found to be unreliable for aluminium and silicon. A further limitation of using HHXRF with this kind of material is that the beam covers a large area (up to 7mm in diameter, the size of a berry), so

[471] Smith 2012, 55.

[472] Using the formula in Kanaya and Okayama 1972.



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analysis cannot be limited to a specific area smaller than this because the beam will cover more than the spot sought to analyse. In addition, the beam of the HHXRF was found to penetrate about 0.2-0.3 mm in clay i.e. through the coating to the material beneath[473]. The beam can be focussed much more narrowly on the μXRF, so a smaller area of clay fabric of the berries can be analysed. SEM/EDS allows an even smaller, selected area of the material to be analysed and examined at high magnification, and has less depth of penetration: calculated to be 0.85μm when used at 20KeV with gold, and 1.23μm when used at 15 KeV with calcite, which is of a slightly heavier atomic weight than the coatings analysed[474]. This means that the beam of the SEM could penetrate through the gold on the leaves to the copper beneath, but not through the coatings to the berry fabric.

Although SEM/EDS and μXRF show reliably the proportions of the various elements (semi-quantitative analysis), the nature of the material, and in particular its uneven surface and porosity, means that no reliable quantitative analysis could have been done even if permission necessary to prepare polished samples could have been obtained. Fully quantitative analysis is not necessary to identify mineral components which can be deduced from a combination of qualitative data and appearance. The HHXRF results give some indication of the proportions of elements present, from the peak size, but they cannot be relied upon to show the actual quantities. The proportions of the elements present found with SEM/EDS and μXRF are given in weight percent and normalised in the tables of results, but the totals were in many cases low or very low because of the nature of the material, so even though several iterations were performed and the results averaged, they are at best semi-quantitative.

The Venn diagrams compare the results obtained using HHXRF, μXRF and SEM/EDS: yellow at the top for HHXRF, green on the right for μXRF and blue on the left for SEM/EDS; the overlapping areas indicate the element or elements found in the samples using two or three

[473] This was determined empirically, by subjecting the experimentally made berries and leaves, covered with coating, to HHXRF analysis.

[474] Using the formula in Kanaya and Okayama 1972.



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techniques. As was expected, the HHXRF correctly identified the presence of most elements, but also picked up further elements from adjacent material.

*Diagram 6.1: Comparison of results obtained on copper substrate of leaves using HHXRF (yellow), μXRF (green), SEM/EDS (blue) on M7, M32, M34, and M35*

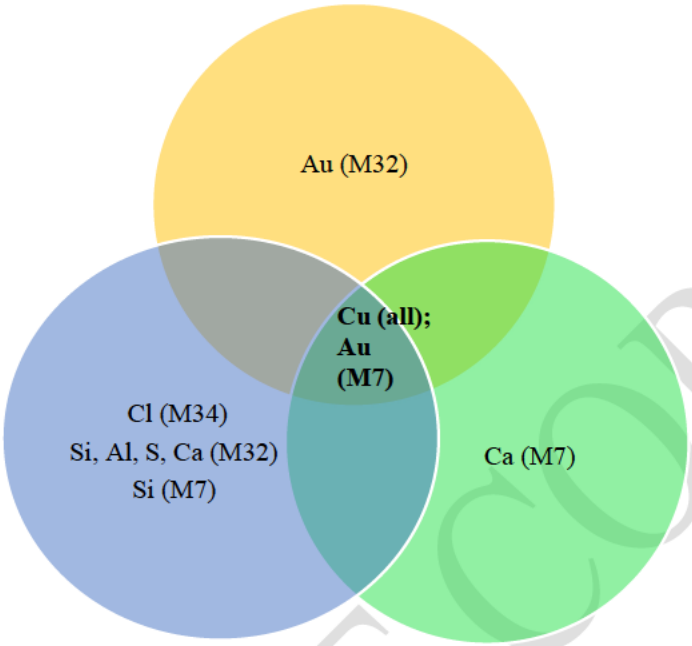
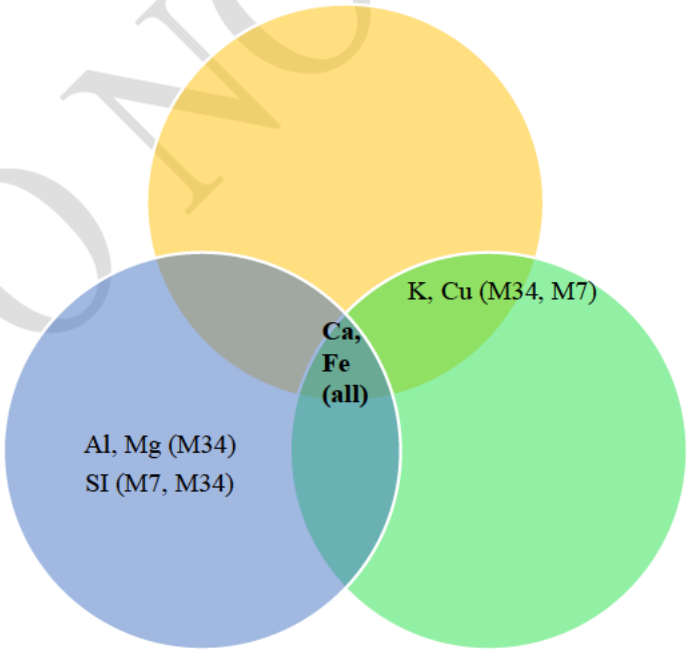



*Diagram 6.2: comparison of results obtained by the three methods for the berry fabrics on M7 and M34*




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*Diagram 6.3 comparison of results obtained by the three methods for the gold on the berries from M32, M34 and M36*

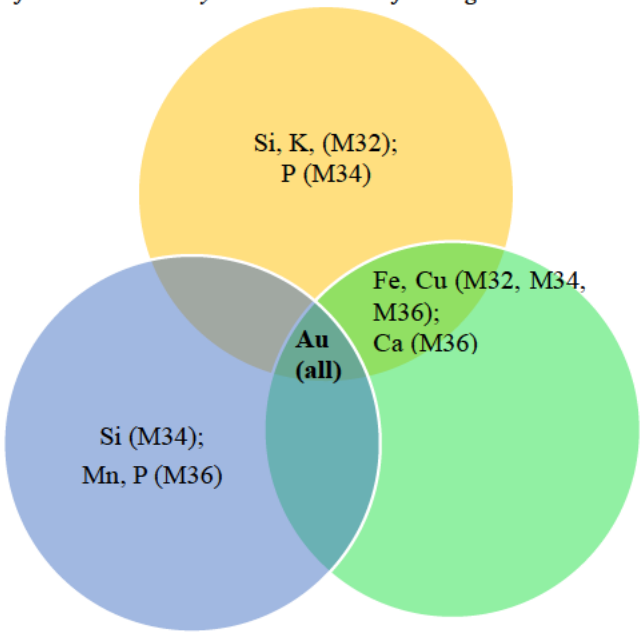
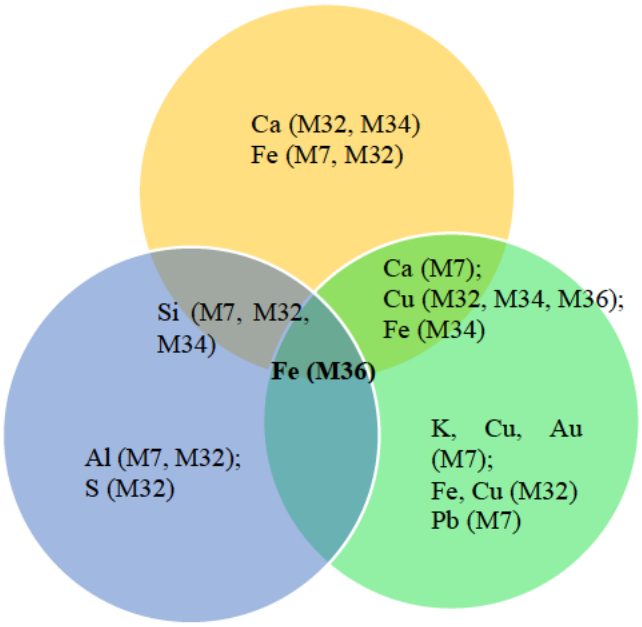



*Diagram 6.4 comparison of results obtained by the three methods for the coating on the berries (M7, M32, M34 and M36*




With these various limitations in mind, the elements found were compared with those listed in **Table 6.2** to determine what materials were present. Yellow indicates the elements that can be detected with HHXRF without vacuum attachment, and green those with the attachment or μXRF. SEM/EDS can find them all. The table is not intended to give a complete list of all the elements present in an ideal form of the clay or pigment but to show those that are diagnostic, although for ease of reference one column gives the ideal composition (not found in all cases).

Other elements may also be present or absent but are not used as diagnostic indicators (for example, yellow ochre will always have iron, but often also contains calcite[475] and marls will often contain magnesium in dolomitic ground). *Absence* of calcium is a diagnostic indicator for kaolinite.

***Table 6.2 Diagnostic elements of clays and pigments referred to in the text***

| Clay/mineral | Ideal comp. | Na | Mg | Al | Si | S | K | Ca | Fe | Hg | Pb |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Calcite (calcium carbonate), including chalk[476] | $CaCO_3$ | | | | | | | ✓ | | | |
| Marl[477] | | | | ✓ | ✓ | | | ✓ | | | |
| Kaolinite[478] | $Al_4[SI_4O_{10}](OH)_8$ | | | ✓ | ✓ | | | x | | | |
| Smectite (montmorillonite)[479] | $½Ca,Na_{0.7}(Al,Mg,Fe)_4[Si,Al)_8O_{20}](OH)_4.nH_2$ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | | |
| Illite[480] | $K_{1.5\text{-}1.0}Al_4[Si_{6.5\text{-}7.0}Al_{1.5\text{-}1}O_{20}](OH)_4$ | | x | ✓ | ✓ | | ✓ | | | | |
| Talc[481] | $Mg_6[Si_8O_{20}](OH)_4$ | | ✓ | | ✓ | | | | | | |
| Alunite[482] | | | | ✓ | | ✓ | ✓ | | | | |
| Gypsum[483] | $CaSO_4.2H_2O$ | | | | | ✓ | | ✓ | | | |
| Dolomite[484] | $CaMg(CO_3)_2$ | | ✓ | | | | | ✓ | | | |
| Serpentine[485] | $Mg_3[Si_2O_5](OH)_4$ | | ✓ | | ✓ | | | | | | |
| Huntite[486] | $Mg_3Ca(CO_3)_4$ | | ✓ | | | | | ✓ | | | |
| Yellow ochre (=goethite or limonite) iron hydroxide[487] | $FeO(OH)$ | | | | | | | | ✓ | | |
| Hematite, iron oxide[488] | $Fe_2O_3$ | | | | | | | | ✓ | | |
| Cinnabar[489] | $HgS$ | | | | | ✓ | | | | ✓ | |
| Lead white[490] | $2PbCO_3$ | | | | | | | | | | ✓ |

[475] See Photos-Jones *et al.* 1997, 364.
[476] Deer *et al.* 1992, 623.
[477] *Oxford English Dictionary*.
[478] Deer *et al.* 2013, 357.
[479] Ibid. 369.
[480] Ibid. 363.
[481] ibid 327.
[482] Photos-Jones and Hall 2014, 159-60.
[483] Deer *et al.* 2013, 612.
[484] ibid 641.
[485] ibid 344.
[486] ibid 652.
[487] ibid, 578.
[488] ibid 530.
[489] Eastaugh *et al.* 2008,111; Nöller 2013 drew attention to red pigments which are mercury-based but do not have sulphur.
[490] Eastaugh *et al.* 2008, 239-240.

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## 6.2 Raw materials and their preparation (stage 2)

### *6.2.1 Gold*

Evidence of gold mining in the period has been found on the Chalkidiki Peninsula[491] and alluvial gold in several rivers including the Gallikos (Echedoros in antiquity), Strymon and Nestos[492]. Gold became much more readily available after the capture by Philip II of territory around Krinides /Mount Pangaion in Western Thrace, although the precise location of the gold mines has still not been established[493].

Native (non-alloyed) gold can range in purity from less than 76% to more than 90%[494] and its composition varies a great deal even in gold from a single source[495]. Using SEM/EDS, Vavelidis and colleagues found that native gold from the river Chavria in Macedonia was almost pure with 1.15% silver and 0.05% copper, but from other parts of central Macedonia it contained up to 15% silver, though very little copper[496] (**fig. 6.3**). In a further study using a microprobe, Vavelidis and colleagues found that 17 out of 19 items of solid gold jewellery from Pieria contained 1.38% to 20.54% silver and from 0.48% to 3.57% copper, and platinum group

*Fig. 6.3 Analysis of native gold in Central Macedonia, Vavelidis et al. 1996, 44 (table translated by present author).*

| Area | Au (%) | Ag(%) | Cu(%) | Σ | Reference |
|---|---|---|---|---|---|
| Chavria | 98.3595 | 1.15 | 0.05 | 99.55 | Vavelidis (1994) |
| Asp. Lakkos | 45 | 2.35 | 2.30 | 100.10 | Vavelidis (1994) |
| Gerakario | 84.40 | 15.40 | 0.10 | 99.90 | Vovoti *et al.* (1991) |
| Eukarpia | 88.10 | 11.30 | 0.20 | 99.60 | Vovoti *et al.* (1991) |
| Argyroupoli | 91.30 | 8.90 | 0.10 | 100.30 | Vovoti *et al.* (1991) |
| Xiropopotamos | 95.20 | 4.50 | 0.03 | 99.70 | Vovoti *et al.* (1991) |
| Akropotamia | 84.20 | 14.40 | 0.30 | 98.90 | Vavelidis & Vovoti (1991) |
| Axios | 90.70 | 8.80 | 0.05 | 99.55 | Vavelidis (1995) |
| Nigrita | 78.10 | 22.00 | 0.01 | 100.11 | Vavelidis (1995) |

[491] See for example Wagner *et al.* 1986.

[492] Dagi 2011, 6-8.

[493] Nerantzis 2015, 133 suggests that the precious metals such as those in grave deposits at Nikisiani may have been in the hands of a Thracian tribe and traded by middlemen.

[494] Hatchfield and Newman, 1991, 30.

[495] Craddock 2009, 370.

[496] Vavelidis *et al.* 1996, 44.

inclusions (mainly osmium and iridium) in three, copper being added in some cases to harden the gold[497].

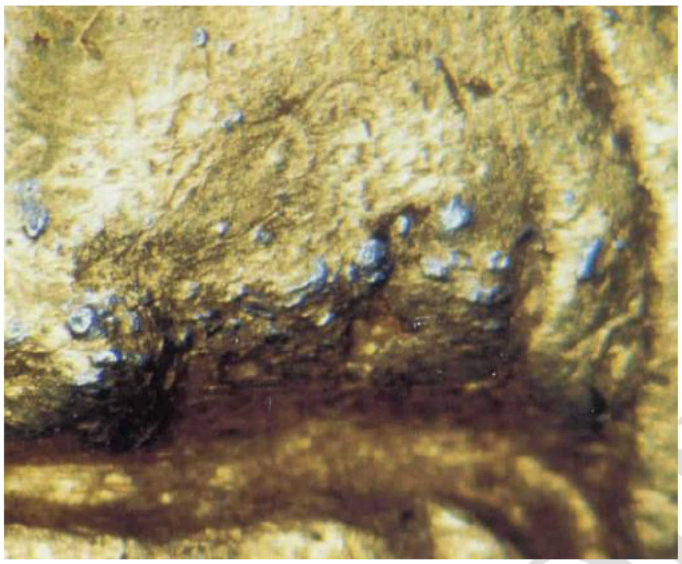
Gold leaf is thinner than gold foil ranging from 10μm to 1 μm thick and cannot support its own weight. Leaf, not foil, was used on the wreaths. The colour is affected by the presence of other metals: it is whiter if alloyed with silver, and redder with copper. It is not clear whether refinement was essential to make gold leaf (see page 217), but it was refined at Sardis in the mid-sixth century and in around 500 BC it became common in Egypt[498]. Base metals such as copper could be removed by cupellation, and silver by a process of separation using salt, known as cementation: when heated slightly, silver forms a chloride with the salt and parts from the gold[499]. After refinement, the gold would have been beaten in a process which continues to be used in some parts of the world, using a sledge-hammer on gold placed between pieces of leather.

Platinum group inclusions are sometimes present in alluvial gold; they were described by Vavelidis and colleagues as small, hard and silver- coloured, from 5 to 50μ in size, on three items of sold gold jewellery from Pieria[500]. Dagi also saw such inclusions on gold jewellery from Macedonia[501] and they are visible on gold coins from Lydia (**fig. 6.4**). The inclusions are so hard they would have been a cause of difficulty in making fine gold jewellery or leaf, so either gold was selected for the leaf on the wreaths which did not have many inclusions or they were removed[502]. Nothing like them was observed on any of the wreath material.

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[497] Vavelidis *et al.* 1997, 88. The references in the final column of fig. 6.3 are in Vavelidis *et al.* 1996.
[498] Ramage and Craddock 1999, 95; Hatchfield and Newman 1991, 30.
[499] Remains of parting vessels were found at Sardis (Ramage and Craddock 1999, 100, 120, 124)
[500] Vavelidis *et al.* 1997, 88.
[501] Dagi 2011, 11.
[502] Meeks *et al.* 1996, 480 suggest gravity separation was used. Rammage and Craddock observed that there were no inclusions on the gold foil found in Sardis (1999, 242).

*Fig. 6.4 Platinum group inclusions in a Lydian gold coin, from Ramage and Craddock 1999, 138. No magnification. is given in original.*



SEM/EDS and XRF analysis will show the proportions of silver and copper in the gold. Trace element analysis, using other methods such as laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS), might indicate (by the presence of platinum and other rare elements in the platinum group) whether the gold used on the wreaths was alluvial, but is unlikely to determine whether it came from Macedonia or elsewhere, because, like any other metal, it could well have been recycled.

### *6.2.2 Copper*

Copper and its alloys were important materials for jewellery throughout antiquity[503]. Pure copper is more malleable than bronze and better suited to fine work. Bronze was made of an alloy of copper, tin and lead in the period studied[504] and, as will be discussed in section 6.4.2, was detected only on a few ungilded leaves from Nemea (L4) and Isthmia (L3), and two wreaths from Pergamon, P1 and P2, from the end of the period. Some of these items were likely to have been cast, the lead being added to assist pouring.

Copper is found in Cyprus and Greece, including Thessaly[505] and Macedonia; it is mainly

[503] Ogden 1982, 27.

[504] See for example Craddock 1977, 106-111.

[505] Asderaki-Tzoumerkioti *et al.* 2017.



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extracted from two kinds of ore[506]: a carbonate such as malachite, and a sulfide ore such as chalcocite. The impurities need to be removed by smelting and a reduction process, which itself can introduce further small impurities such as arsenic and iron. There is no prospect of provenancing the wreaths from the copper used in the leaves, partly because the copper used was so pure, but also because it may well have been recycled.

### *6.2.3 Clays*

Various clays were used to make the fabric of the berries and the coatings beneath the gold on berries, flowers and some leaves as well as pigments. Indicative components of the various clays and pigments mentioned in the text are shown in Table 6.2. The coatings could well have been formed from dried material mixed with water to form a slurry, which performed well in the experimental work.

Kaolin is a non-expanding clay, and is composed principally of the clay mineral kaolinite which when pure is white (it also fires white). It was used to make the white ground on Hellenistic Rhodian hydriai and fifth century Attic lekythoi[507], and probably also on the hydriai found at Vergina, Stenomakri Toumba, grave B[508]. Illitic clays are generally off-white and are also non-expanding[509]. It is often said that an 'illitic' clay was used to make black- and red-figure Attic pottery but the clay from Amaroussion has other components, including kaolinite and montmorillonite[510]. Montmorillonite is a form of smectite; it is calcium rich and comes in a range of colours including white and red. It absorbs water easily, so is used when plasticity is required[511], and would have been a natural choice for the fabric of the berries. Marl is a highly calcareous clay in which the clay minerals are typically montmorillonite.

[506] Thomson 1958; Kelso 1951.

[507] Rhodian hydriai: Giannikouri *et al.* 2008, 571-3. Oakley found in a preliminary study that the white slip used in the latter part of the fifth century on lekythoi was a kaolin clay apparently imported from Melos (2004, 8 and note 65).

[508] Pavlidou *et al.* in Kyriakou 2008, 311.

[509] Rice 2015, 50 and 55-56.

[510] Jones 1986, 151, who comments that a lighter clay from Cape Kolias may have been used.

[511] Rice 2015, 55.



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Natural clay deposits are not usually pure but a mixture of clays and other fine-ground minerals. Kaolinite and a pale montmorillonite, in the form known as Kimolian earth, are found on Melos; the former is almost certainly the material described by Pliny as *melinum* - 'Melian earth' (NH35,19). Although kaolin was the main constituent, Photos-Jones and Hall suggest that it also included some silica and alunite[512], which contains potassium and sulphur; they found that this combination produced the best results in terms of covering power and whiteness[513]. Central Macedonia has both red and white clays. The graves at Vergina were excavated out of red alluvial clays with boulders of serpentine and immediately to the south of the modern town are grey, green and bluish clays with sands, fossil-bearing clay marls and small intercalations of marly limestone, as well as patches of red clay and clayey sands[514] (**fig. 6.5**). To the north of Pella, the river Axios has sandy clays transported from formations[515] found in many parts of Central Macedonia, from Neogene sediments coloured red by ferric oxide[516] and also illite, smectite and chlorite[517]. Rock at Griva to the north containing kaolins is still quarried and is a product of intense weathering alteration of the greenish rocks in the nearby ophiolitic complex; it has high proportions of silicon to aluminium (approximately 48 and 28% respectively) and also magnesium and of calcium (4.7-14%) (**fig. 6.6**)[518]. Montmorillonite is a common clay still quarried today in Macedonia at Serres and in the Chalkidiki Peninsula[519]. Illite is frequently interleaved with it and continues to be quarried in Thrace[520].

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[512] Photos-Jones *et al.* 1999, 398; Photos-Jones and Hall 2011, 83
[513] Photos-Jones and Hall 2014, 188.
[514] Higgins and Higgins 1996, 111; IGME 2002 Kolindros sheet.
[515] IGME 1993, Evzoni sheet.
[516] Higgins and Higgins 1996, 110.
[517] Pehlivanoglou *et al.* 2004.
[518] True kaolinite does not allow calcium or magnesium substitution, but rock containing weathering materials such as these is sometimes loosely referred to as 'kaolinite'.
[519] https://www mindat.org/locentry-617989 html, accessed 01.06.2018.
[520] https://www mindat.org/locentries.php?p=14188&m=2011, accessed 01.06.2018.

*Fig. 6.5 Geological map of area around Vergina (top), showing ophiolotic rocks (dark green), clayey-marley fluvio-lacustrine sediments (yellow M 1m), lower conglomerates including sandstone and arenaceous marl intercalations (yellow Mc) (IGME 2002 Kolindros sheet). The kaolinite-rich rocks are just off the map to the north. Omitted*

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*Fig. 6.6 Table showing composition of the Griva raw kaolins and parent rocks, with composition of comparative material from Zettlitz and Cornwall on the right. Table 4, Michailidis et al. 1993.*

Chemical analyses (wt%) of raw kaolins and parent rock analyzed

| | $G_1$ | $G_2$ | $G_{2.5}$ | $G_3$ | $G_4$ | $G_{4.5}$ | $G_5$ | $G_6$ | Z | C |
|---|---|---|---|---|---|---|---|---|---|---|
| $SiO_2$ | 48.50 | 48.94 | 48.57 | 49.33 | 48.67 | 48.02 | 49.02 | 49.20 | 46.25 | 48.28 |
| $Al_2O_3$ | 28.33 | 25.74 | 27.63 | 26.15 | 25.13 | 26.98 | 20.82 | 16.61 | 39.28 | 37.64 |
| $TiO_2$ | 0.19 | 0.20 | 0.18 | 0.17 | 0.16 | 0.17 | 0.15 | 0.17 | 0.14 | – |
| $Fe_2O_3$ | 0.57 | 0.72 | 0.73 | 0.78 | 0.91 | 0.86 | 1.01 | 1.08 | 0.64 | 0.46 |
| FeO | 0.81 | 0.82 | 0.67 | 0.88 | 1.04 | 0.81 | 1.98 | 2.93 | – | – |
| MnO | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.04 | 0.05 | 0.09 | – | – |
| MgO | 2.85 | 3.10 | 2.37 | 3.40 | 4.49 | 4.45 | 7.61 | 10.89 | – | – |
| CaO | 4.69 | 7.10 | 9.92 | 10.05 | 8.84 | 10.18 | 11.96 | 13.99 | 0.14 | 0.06 |
| $Na_2O$ | 0.77 | 0.46 | 1.11 | 0.82 | 0.77 | 1.02 | 0.68 | 1.90 | 0.15 | 1.56 |
| $K_2O$ | 0.06 | 0.06 | 0.02 | 0.04 | 0.06 | 0.04 | 0.04 | 0.08 | | |
| $H_2O^-$ | 1.87 | 2.15 | 1.56 | 1.07 | 1.26 | 0.62 | 0.93 | 0.41 | 13.40 | 12.02 |
| $H_2O^+$ | 10.49 | 10.06 | 6.70 | 7.21 | 7.44 | 6.44 | 5.55 | 2.62 | | |
| Total | 99.16 | 99.39 | 99.49 | 99.93 | 99.80 | 99.63 | 99.87 | 99.97 | 100.00 | 100.02 |

(–) = no data; $G_6$ = altered parent rock; Z = Zettlitz and C = Cornwall kaolins. Other symbols as in Table 1.

Kaolinite and most of the other clays discussed above are found in all the regions studied including Macedonia and in Italy[521] but the fine white Melian clays would also have been exported and available to potters and artists. Differences in the colour of the clay and its composition may indicate that a different material was used at one place from another or at one time from another, although other methods, such as X-ray diffraction (XRD), are needed to identify them definitively.

### *6.2.4 Pigments*

Pigments sometimes coloured the coating beneath the gold, when it is known as 'bole', and the large flowers were generally painted red, blue and pink on a white base. Gilders have for centuries used bole beneath gold and several ancient Egyptian gilded objects were found to have a red bole[522]. Pliny refers to coloured ochres being mixed with Melian earth to make a coating for gilding (*leucophorum*)[523]. The hydroxide yellow ochre (goethite) and the oxide red ochre (hematite) can be mixed with calcite or kaolinite as a carrier[524] and were used as a paint

[521] Mirti compared the slip on vases found in Locri, in Southern Italy with that on Attic vases, and concluded that an Attic clay was used on the early Locri vases, but a local clay was used later, with more magnesium in the Attic clay and more calcium oxide in the local (Mirti *et al.* 2004).

[522] Hatchfield and Newman 1991, Table 1.

[523] See below page 218. Pliny calls the red used in the bole 'sinopis' (NHXXV 17), so named from the city of Sinope on the Black Sea (Eastaugh *et al.* 2008, 327), and the yellow clay 'sil'.

[524] Lambakis *et al.* 2017, 136 (referring to kaolinite), and Photos-Jones *et al.* 1997, 369 referring to calcite.



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when mixed with a solvent such as water. The island of Thasos has quarries which until recently produced different coloured ochres and a white clay[525]. Vavelidis and colleagues analysed their composition using Atomic Absorption Spectroscopy and found that the white clay (which they term a 'white ochre rich in kaolinite or gibbsite') contained a high proportion of aluminium to silicon (samples E14/1 and 1A on right of table in **fig. 6.7)**, that the yellow contained a high proportion of iron, and the red even more. Kea, just off the coast of Attica, is another possible source for these pigments for which it was famed in antiquity[526]. Photos-Jones and colleagues commented that the Kean ochres have a very fine crystalline habit and found that the pigment from the site of Orkos, which was unexpectedly composed of goethite and hematite, produced a red with particularly good staining abilities[527]. Their analysis (with XRD and SEM/EDS) also showed that the oxides and hydroxides from the island contained calcium and other elements including aluminium and silica.

*Fig. 6.7 Composition of earths from Thasos. From Vavelidis et al. 2001, Table 4. The red ochre results are shown in red, the yellow ochre in yellow, and the white earth on the far right (E14/1 and E14/1A).*

| | Elz/3 (red ochre) | Elz/3A (red ochre) | El/1 (yellow ochre) | EL3/1A (yellow ochre) | El4/1 (white earth) | El4/1A (white earth) |
|---|---|---|---|---|---|---|
| $SIO_2$ | 8.85 | 12.85 | 19.25 | 16.58 | 25.70 | 6.42 |
| $Al_2O_3$ | 1.85 | 1.90 | 1.52 | 0.75 | 42.95 | 57.00 |
| CaO | 1.65 | 4.20 | 0.35 | 0.42 | 0.80 | 0.84 |
| MgO | 0.25 | 0.33 | 0.177 | 0.12 | 0.33 | 0.28 |
| $Na_2O$ | 0.1 | 0.03 | 0.75 | 0.32 | 0.02 | 0.12 |
| $K_2O$ | 0.35 | 0.50 | 2.80 | 1.57 | 0.03 | 0.06 |
| $Fe_2O_3$ | 70.55 | 65.00 | 28.30 | 33.35 | 0.29 | 0.71 |
| FeO | Not found | Not found | 0.14 | 0.15 | Not found | Not found |
| MnO | 0.05 | 0.04 | 0.05 | 0.05 | 0.05 | 0.03 |
| BaO | 0.10 | 4.70 | 13.05 | 8.60 | 0.22 | 0.35 |
| Loss in process | 6.86 | 3.60 | 12.60 | 14.30 | 13.00 | 30.89 |
| Cu | 0.05 | 0.06 | 0.05 | 0.05 | 0.06 | 0.03 |
| Pb | 0.45 | 0.48 | 1.12 | 1.25 | 0.05 | 0.02 |
| Zn | 0.05 | 0.25 | 0.05 | 0.05 | 0.07 | 0.06 |

Cinnabar ore is found in Macedonia in the valley of the river Axios and slightly further north, in what is now Serbia, and the cinnabar used as a pigment at Vergina may have been from

[525] IGME 1982, sheet Thasos.

[526] See for example Theophrastus *De Lapidibus* 52.

[527] Photos-Jones *et al.* 1997.

here[528], or imported. The ore from which it is extracted often contains other elements including lead[529]. Williams suggested that the ban in 363 on the export of hematite from Kea to anywhere other than to Athens may have led to the use of cinnabar in Macedonia[530], but it seems more likely that cinnabar was a deliberate choice because of its strong colour. An Attic pyxis provides an interesting example: cinnabar is thought to have been used on the object to give extra emphasis and to ensure that it was not confused with the red clay[531].

An intense white coating is sometimes found on the wreaths in Southern Italy, often used without gold (e.g.SI 20). There are several potential pigments for this including lead white (lead carbonate hydroxide), an artificial pigment which was in use in the period and gives an intense white, but needs to be mixed with a dried clay as a carrier. It was also used with kaolin as a ground on some of the Hadra hydriai from Rhodes and kaolin was used with talc on Macedonian hydriai at Vergina Stenomakri Toumba [532] Calcite was used as a pigment and is found as limestone, marble or chalkand fired lime, calcium oxide, in wall-paintings[533]. The rare white pigment huntite was sometimes used in antiquity, and is found at Neraida near Kozani in Macedonia[534] as well as Egypt. It was also detected on a figurine in Crete (see page 139), and is thought to have been found in Tomb II in the Great Tumulus at Vergina/Aigai[535].

The blue pigment azurite is natural and found in the Chalkidiki Peninsula, but Egyptian blue, which is artificial, was also used in Macedonia in the period studied and some organic colours were used in Hellenistic times such as madder, found on figurines in Greece from about 330[536].

[528] Brecoulaki 2000, 193 and note 18; Sikalidis *et al.* 1996, 317.

[529] Noller 2015.

[530] Williams 2003, 231.

[531] Karatsios in Zeba 2009, 42.

[532] For use of lead white at this time see Brecoulaki 2000, 199 et seq. The pigment has been found in cosmetic containers. For lead white on Rhodian vases: Giannikouri *et al.* 2008. The analysis of the material used for the white background on the vases and wall-paintings at Stenomakri Toumba showed an alumino-silicate, 'probably kaolinite', and a magnesium silicate such as talc (Pavlidou *et al.* in Kyriakou 2008, 311).

[533] Eastaugh *et al.* 2008, 80.

[534] https://www mindat.org/loc-308081.html.

[535] Maniatis *et al.* 2014.

[536] Brecoulaki 2000, 211 (Egyptian blue); Higgins in Burn and Higgins 2001, 314 (madder).



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All these pigments would have been available to artists working in the tombs at Vergina and Aineia[537], as well as houses at Pella and elsewhere so would have been readily available in wreath workshops. Determining which was used is informative of the artistic decision-making and can occasionally help with dating, and may be indicative of provenance.

### *6.2.5 Adhesives and binders*

An adhesive was needed to stick the gold to the coating and the coating to the metal or clay fabric and could have doubled as a binder. An adhesive made from protein such as fish or animal glue or from egg white (glair), which is still used in gilding today, though the techniques are slightly different[538], or egg yolk[539] is the most likely although casein from curds (cheese) made a strong adhesive[540] and carbohydrate adhesives such as gum or honey are a further possibility[541]. All of these, including egg white and animal glue, could have survived in the ground; animal glue is soluble in hot but not cold water, so is more likely than gum arabic, which is soluble in cold water. There has been very little consideration of adhesives and binders used during the period covered because of the difficulties of analysis with fugitive elements and for which a sample is required to obtain meaningful results, although Hatchfield and Newman and Scott and Taniguchi made a useful start[542].

## 6.3 Gilding

Gilding was used on many different surfaces in antiquity; several different methods were adopted, but the earliest was to fold gold foil around an object; the folds were sometimes

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[537] Brecoulaki 2000.

[538] Perrault 1992, 34-39.

[539] Kotitsa found that egg yolk worked well in her experimental work with tinning on a clay base (Kotitsa 2012, 119).

[540] Rinuy and Schweizer 1978 considered the possibility that casein was used as an adhesive to glue pottery items but were unable to come to any definite conclusions p.167.

[541] Hatchfield and Newman 1991 ruled out honey for the material they studied -Table 2, sample 17, but Scott and Taniguchi did find it some evidence of either that or starch (p.243).

[542] Bourgeois and colleagues will be pursuing the study of binders used on figurines (Bourgeois *et al.* 2012/3,486, n.8).

burnished together, or heat was applied to encourage the gold to adhere to the substrate[543] (**fig. 6.8**). An example of wrapping a copper or copper alloy leaf with gold foil was found in Corfu, which will be discussed in the next chapter (section 7.3.1). A different method involved placing the edges of gold foil into slits cut into the bronze; it was secured in position by hammering it into the groove using a soft material to keep it in position or by punching the edges of the gilded area into the underlying metal which is the method that appears to have been used on a fibula from Corfu since tiny incision marks can be seen on a companion piece on which the gilding has been lost (**fig. 6.9**)[544].

*Fig. 6.8 Gilded button from Temple of Apollo Korkyraios in Corfu AM, with gold folded over the top. © Hellenic Ministry of Culture and Sports.*



*Fig. 6.9 Fibulae from a grave in Corfu, on display in the museum. Tiny incision marks can be seen most easily on the rear item. © Hellenic Ministry of Culture and Sports*



For gilding silver, a technique was used known as diffusion bonding, which involves laying gold leaf on the silver surface and applying gentle heat; Oddy infers that this method was used on material from Ephesus and other parts of Asia Minor[545], and it was almost certainly applied on gilded silver wreath-diadems and the silver wreaths SI 15 and SI 23. Gold forms a strong bond with silver with heat but the method was not suitable for gilding copper or copper alloys because they do not form a strong bond with gold even when heated owing to surface oxidation

[543] Oddy 1981, 75-6.

[544] Oddy 1993, 173. This method was used in Athens on a statue of Demetrios Poliorketes (ibid). The gilded brooch was found in tile-covered cist grave 6 at 7 Kyprou St, Corfu (Preka-Alexandri 1993, 338 and pl. 193γ).

[545] Oddy 1993, 176.

of the copper if it is heated above about 300ºC, whereas silver does not oxidise to the same extent as copper at the surface[546].

Gold leaf is thinner than foil and so more economical. Oddy stated that leaf can only be made from almost pure gold, leading him to say that gilding with this thin layer only became possible once methods of refining gold had become available[547]. This may not be quite correct: Hatchfield and Newman pointed out that leaf can be made from less pure gold, referring to Berthélot, whose Egyptian material was on average 2µm thick[548]. However, leaf on objects from Ancient Greece has been consistently found to be of very high purity[549], and was used either because it was easier to work or because of the bright colour.

There are three main ways in which gold leaf could be adhered to a copper or copper alloy substrate: 1) directly, using an adhesive and without heat 2) applying the gold above a coating or ground and 3) fire-gilding, with mercury. Thin gold leaf could be stuck to a substrate by using an adhesive, and it is conceivable that this method may have been used on some of the wreath leaves, on which it is not always possible to see a coating. The third possibility can be ruled out as having been used on wreaths: as will be discussed below, no mercury was found in the analysis, and some trace would have remained had it been used[550]. Assimenos reported finding mercury gilding on two items (not wreaths) from Tomb II at Vergina but his findings have been doubted by Anheuser[551]. Other than this, the earliest confirmed evidence in the Mediterranean of mercury gilding is from the early 1st century AD on a ladle from Northern Italy[552]. Craddock believed that some examples of gilded material from the fourth to first centuries BC were mercury gilded but the material was subsequently re-dated to the Roman

[546] Anheuser 1997, 58-9 and Anheuser 1996, 8.

[547] Oddy 1993, 176.

[548] Hatchfield and Newman 1991, 30; Berthélot 1906, 20.

[549] See most recently Bourgeois *et al.* 2012/3, 494, studying figurines. Hatchfield and Newman found that the gold leafs they analysed had a higher gold content than other gold artefacts (1991, 30).

[550] Zimi 1999, 119 says that at least 5% mercury is retained in the gold.

[551] Assimenos 1988; Anheuser 1997, 21.

[552] BM 1900,0730.3 which was found on analysis by emission spectroscopy to have traces of mercury (Lins and Oddy 1975, Table 1, item 18).



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period at the earliest[553]. Çelikbaş assumed that three gilded wreaths found at Parion in the Troad were mercury gilded (T1X92A and T1X92B), apparently on the basis that the elements had been heated, but does not cite any analytical evidence in support[554].

Pliny describes how gold was applied to materials such as wood which could not be heated (*NH* XXXIII, 20): 'On marble and other materials incapable of being raised to a white heat gold is laid with white of egg; on wood it is laid with glue according to a formula; it is called *leucophorum*'. He also tells us (*NH* XXXV 17) that *leucophorum* is made of *sinopis* from Pontus (red ochre), yellow *sil* (yellow ochre) and *melinum* (Melian earth). It would seem that for copper leaves, which would not bond well with gold, the appropriate method of gilding would involve use of a ground or coating. This had been used in Egypt to apply a thin layer of gold on various materials including copper as far back as the 13th century (**fig. 6.10**)[555] The ground used beneath the gold is called 'gesso' in some of the publications, although it is not a true gesso (calcium sulfate), so the more neutral term 'coating' will be used here. Oddy and colleagues commented that its use on metal was most unusual, though common on other materials[556].

*Fig. 6.10 Lily pendant of Nefertari, MFA Boston 04.1956, 13th c. BC. Linen can be seenlower left. The off white coating can be seen beneath the gold, but the red colour is from something other than bole since Hatchfield and Newman did not find any beneath the gold (1991, 32).*



[553]Craddock 1977, 109. Redating: Oddy 1993, 179

[554] Çelikbaş 2019, 244. That no analysis was performed was confirmed by Çelikbaş pers. comm. 5.11.2018.

[555] Hatchfield and Newman 1991, referring to the lily pendant of Nefertari in the MFA, Table 1, sample 12 and p.39. An adhesive-soaked linen was also applied between the copper and the gold leaf.

[556] Oddy *et al.* 1979, 237.



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The method of gilding with a coating was used on most of the elements of the wreaths: copper leaves, terracotta berries and bone circlets. The purpose of a coating seems to be threefold: to help adhere the gold to the substrate, to provide a smooth surface for the gold, and in some cases to enhance the colour of the gold or to fill in gaps in the gilding. Looking beyond wreaths, it was used on many different surfaces, including wood, bronze, clay and marble. The coatings have been found to be made of kaolinite, calcite or gypsum and were sometimes coloured with yellow ochre[557]. Using bole (coloured clay) allowed the gold to be burnished with an agate tool, still used in gilding[558]. Kaolin is recommended as a base for gilding because of its lamellar crystalline structure, and it can be mixed with chalk to ease application[559].

A recent study of gilding on figurines by Bourgeois and colleagues found that about 20% of the items had a yellow ochre layer, only, beneath the gold, whereas most had a white layer lying beneath a coloured ferruginous layer[560]. The white layer was sometimes used on its own beneath paint. The technique used on figurines which were partially gilded is useful for comparison with the wreaths, although the white layer also used on the former as a ground for coloured pigments was by no means an essential feature for the latter. The composition of the yellow layer on the material studied by Bourgois and colleages was found to be an alumino-silicate with a ferruginous pigment which in one case (from Taras) also contained lead[561]. Quarta and Melica studied a coating on another partly gilded figurine from Taras where the white substrate was kaolin and lead, and above this a yellow bole with aluminium, silicon, calcium and iron[562]. As Bourgeois, Jeammet and their colleagues in the Louvre have shown, gilders took the skill to

[557] Some examples: kaolinite and calcium carbonate, with a separate layer of yellow ochre and kaolin, on wood in Tomb II in Vergina (Assimenos 1988); calcite and red bole on various Egyptian objects (Hatchfield and Newman 1991, 34); gypsum and calcium magnesium carbonate or calcite on further Egyptian materials (Oddy *et al.* 1988, Oddy 1993, 175); coating with lead and coloured bole on marble (Bourgeois *et al.* 2007, 184; Bourgeois *et al.* 2011, 648).

[558] Perrault 1992, 168; a dog or wolf tooth could be used for the same purpose.

[559] Perrault 1992, 153.

[560] Bourgeois *et al.* 2012/3, 499.

[561] Bourgeois *et al.* 2012/3, 491.

[562] Quarta and Melica 2014, figs. 171 and 172.



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new heights in the Hellenistic period when burnishing became an important element of finishing, with items such as folds highlighted to give depth and brilliance for which the bole was essential [563] (**figs. 6.11-22**). Some of the wreaths also appear to have had burnished elements on a bole base, as will be discussed in the next chapter.

*Figs. 6.11- 6.12 Figurine known as the Lady in Blue, Louvre MNB 907 (last quarter of the fourth century). From Bourgeois et al. 2012/3, 500, showing detail of the gilded band with burnished highlight on the fold. ©C2RMF/A.Chauvet*





It is not clear where or when the technique of using a coating between gold leaf and the substrates on the wreaths originates, but for its use on metal, the most obvious possibility is Egypt, which has several early examples of gilding on copper. Alternatively, the technique may have been transposed to metal by craftsmen accustomed to gilding different surfaces, who in Attica had applied gold leaf to details on vases from at least as early as the second quarter of

[563] Bourgeois *et al.* 2012/3; Jeammet 2014, 291-220.

the fifth century[564]. On balance, this seems more likely, particularly since the technique of tinning ceramic vessels, which is very similar, was used in Athens, from where tinned vessels are thought to have been exported to Macedonia as early as the mid-fourth century[565].

In Italy, a technique was used involving the application of a yellow pigment, applied dry, known as *ceramica dorata*, a confusing term which does not mean gilded, but a yellow coating used to look like gold [566]. It is found on appliques used to decorate klinai in Taras and elsewhere and there are a few possible examples of a dry yellow ochre being used on the wreaths such as SCG3, although in this case on material which was also gilded.

## 6.4 Materials used on wreaths: results of analysis

### *6.4.1 Gold*

The circlets and berries were the best items for analysis of the gold as there was no interference from a metal substrate, which as explained above (page 202) affected even the results obtained by SEM/EDS. The results are set out in Table 6.3, including those from the semi-quantitative analysis, for which the proportions were calculated by averaging several iterations. The proportions of the elements present found with SEM/EDS and μXRF are given in weight percent and have been normalised to 100%, calculated to one decimal point to avoid giving the impression that these figures are more accurate than they in fact are. The most important results are highlighted in umber. The μXRF and HHXRF results are omitted where SEM/EDS analysis was also done.

***Table 6.3 Results of analysis of gold on wreaths***

| Method | Cat. no. | Date | Al | Si | K | Ca Wt % | Fe Wt % | Cu Wt % | Sn | Au Wt % | Pb | Ag | Hg | Obs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Circlets | | | | | | | | | | | | | | |
| μXRF◊ | M7 circlet gold | 3rd qu.4th | | | | 2 | 1 | 1 | | 96 | | | x | |
| μXRF* | P1 gold on circlet | 1st c BC-1st c.AD | | | | | 0.1 | 0.5 | | 99.4 | | | x | Bronze substrate |

[564] Cohen 2006, 126, who refers to a kylix (c.480) which has added gold on Hera's stephane (BM 1873,0820.376).
[565] Kotitsa 2016, 696, discussed below, Chapter 8, section 8.3.6.
[566] De Palma 1989.



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| Method | Cat. no. | Date | Al | Si | K | Ca Wt % | Fe Wt % | Cu Wt % | Sn | Au Wt % | Pb | Ag | Hg | Obs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| µXRF* | P2 gold on circlet | 1st c BC | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | | x | Detached gold but originally bronze substrate |
| **Leaves** | | | | | | | | | | | | | | |
| HHXRF | SI1 | 1st half 3rd | | | | | tr | ✓ | | ✓ | | | x | |
| HHXRF | SI15 | 2nd qu.3rd | | | | | | | | ✓ | ✓ | ✓ | x | Gilded silver wreath; lead used in restoration |
| HHXRF | SEA6 | 2nd half 4th | | | | | | ✓ | | ✓ | | x | x | |
| HHXRF | SEA4 | End 4th? | | | | | Tr | ✓ | | ✓ | | x | x | |
| HHXRF | SEA8 | Mid 4th? | | | | X | Tr | ✓ | | ✓ | | x | x | |
| HHXRF | SEA10 | 2nd half 4th?d | | | | | | ✓ | | ✓ | | x | x | |
| HHXRF | SEA1 | Mid 3rd | | | | | tr | ✓ | | ✓ | | x | x | |
| SEM/EDs | M7 leaf | 3rd qu.4th | | | | tr | tr | 3.5 | | 96.5 | | | x | Average of 6 iterations |
| SEM/EDS | M32 leaf | 2nd qu.4th | | | | | | 3.8 | | 96.2 | | | x | One fold of gold |
| SEM/EDS | M32 | | | | | | | 2. 0 | | 98.0 | | | | Two folds of gold |
| SEM/EDS | M32 | 2nd qu.4th | 0.3 | | | | | 2.2 | | 97.5 | | | x | Three folds of gold |
| SEM/EDS | M32 | 2nd qu.4th | | | | 0.8 | | 3.3 | | 95.9 | | | x | Cl. Average of 3 iterations |
| SEM/EDS | M34 | | | | tr | | | 4.9 | | 94.5 | | x | x | Tr. Cl. Average of 3 iterations |
| SEM/EDS | M36 | | | | | | | 2.1 | | 96.0 | | 1.9 | x | |
| **Berries** | | | | | | | | | | | | | | |
| HHXRF ** | M25 berry gold no colour | 3rd qu.4th or later | | ✓ | | ✓ | ✓ | ✓ | | ✓ | x | x | x | S |
| HHXRF ** | M26 berry no colour gold | Early 3rd | | | | | ✓ | ✓ | | ✓ | x | x | x | |
| HHXRF | M37 grapes, berry | | | | | ✓ | ✓ | ✓ | | ✓ | x | x | x | |
| HHXRF | SEA1 berry (white coated) | Mid-3rd | | | | ✓ | ✓ | | ✓ | ✓ | ✓ | x | | |
| HHXRF | SEA11 | Helle nistic | | | | tr | ✓ | tr | | ✓ | x | x | x | |
| HHXRF | SEA14 | 3rd | | | | tr | ✓ | ✓ | x | ✓ | ✓ | x | x | Lead perhaps from strigil or non-preserved circlet |
| HHXRF | SEA15 | 3rd | | | | ✓ | ✓ | ✓ | | ✓ | tr | x | x | |
| HHXRF | SI 1 berry | | | | | tr | ✓ | ✓ | | ✓ | tr | x | x | |
| HHXRF | SI 1 insect | 2nd qu.3rd | | | | tr | ✓ | ✓ | | tr | | x | | |
| HHXRF | SI 1 grapes | 2nd qu. 3rd | | | | ✓ | ✓ | ✓ | | ✓ | tr | x | | |
| HHXRF | SI 2 | 2nd c. | | | | ✓ | ✓ | tr | | ✓ | tr | x | | |

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| Method | Cat. no. | Date | Al | Si | K | Ca Wt % | Fe Wt % | Cu Wt % | Sn | Au Wt % | Pb | Ag | Hg | Obs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HHXRF | SI16 rosette gold | 2nd half 3rd | | | | ✓ | ✓ | ✓ | | ✓ | tr | | | |
| HHXRF | SCG20 3152 | 2nd half 4th | | | | | ✓ | x | | ✓ | x | x | x | |
| µXRF◊ | M10 | 3rd qu.4th | | | | | | 0.5 | | 99.5 | x | x | x | |
| µXRF◊ | M16 | End 4th | | | ✓ | | | 0.2 | | 99.8 | tr | x | | Ti |
| µXRF◊ | M34 | 2nd qu. 4th | | | | | tr | 1.5 | | 98.5 | | x | | |
| µXRF◊ | M36 | End 4th | | | | tr | | 2.5 | | 97.5 | | x | | |
| SEM/ EDS | M7 | 3rd qu.3rd | 1.8 | 1 | | 4.9 | | 0.7 | | 92.3 | | 0.6 | | Trace of Cu |
| SEM/ EDS | M18 | After 320 | 1.2 | 1.0 | | | | 0.5 | | 97.1 | | 0.2 | | Average of 2 iterations |
| SEM/ EDS | M32 | 2nd qu. 4th | 4.2 | 4.2 | | | | 1.3 | | 91.6 | x | x | | Average of 2 iterations |
| SEM/ EDS | M34 | Mid 4th | **0.5** | **0.6** | | **Tr** | | 0.2 | | 98.6 | x | 0.1 | | Average of 4 iterations (3 found only gold) |

*Analysed by the Rathgen Laboratory, Rathgen 2017.
** Analysed by the Higher Ecclesiastical Academy, Thessaloniki.
◊ Analysed by AMTh.

The gold on the circlets and berries was found to be almost pure in all the regions. There was no mercury, ruling out fire gilding[567]. Only a trace (under 1%) of silver was detected on three of the berries (M7, M18 and M34) and on the leaves, leaving aside the gilded silver wreath SI 15, the gold was found to contain silver in only one case (M36) and in this only about 1-2%. These results are consistent with those obtained by other researchers for similar material, including most recently gold wreaths from Derveni and Sedes on which Katsifas and Ignatiadou (AMTh), using µXRF[568], Meeks (British Museum), using SEM/EDS, and Bourgeois and colleagues (Louvre), with XRF, also found gold of very high purity[569]. They contrast with those obtained by Vavelidis' analysis of solid gold jewellery from Pydna (Macedonia), of a similar date, where more silver was found[570]. From this and his earlier study of native gold (see page

[567] Although some of the peaks for mercury and gold overlap, mercury would have a strong peak at 9.9KeV when analysed with SEM/EDS. Some traces of mercury should remain whichever method of fire gilding was used: either the amalgam method, which involved mixing mercury and gold into a paste, spreading it on the object and then applying heat, or the method described by Vittori which involved spreading a thin layer of mercury on the object (Vittori 1979). Zimi suggests that at least 5% mercury would remain.

[568] Katsifas and Ignatiadou 2017.

[569] Meeks 2001 in Burn and Higgins 2001, 316-7 and Bourgeois *et al.* 2012/3, 494.

[570] See page 206.



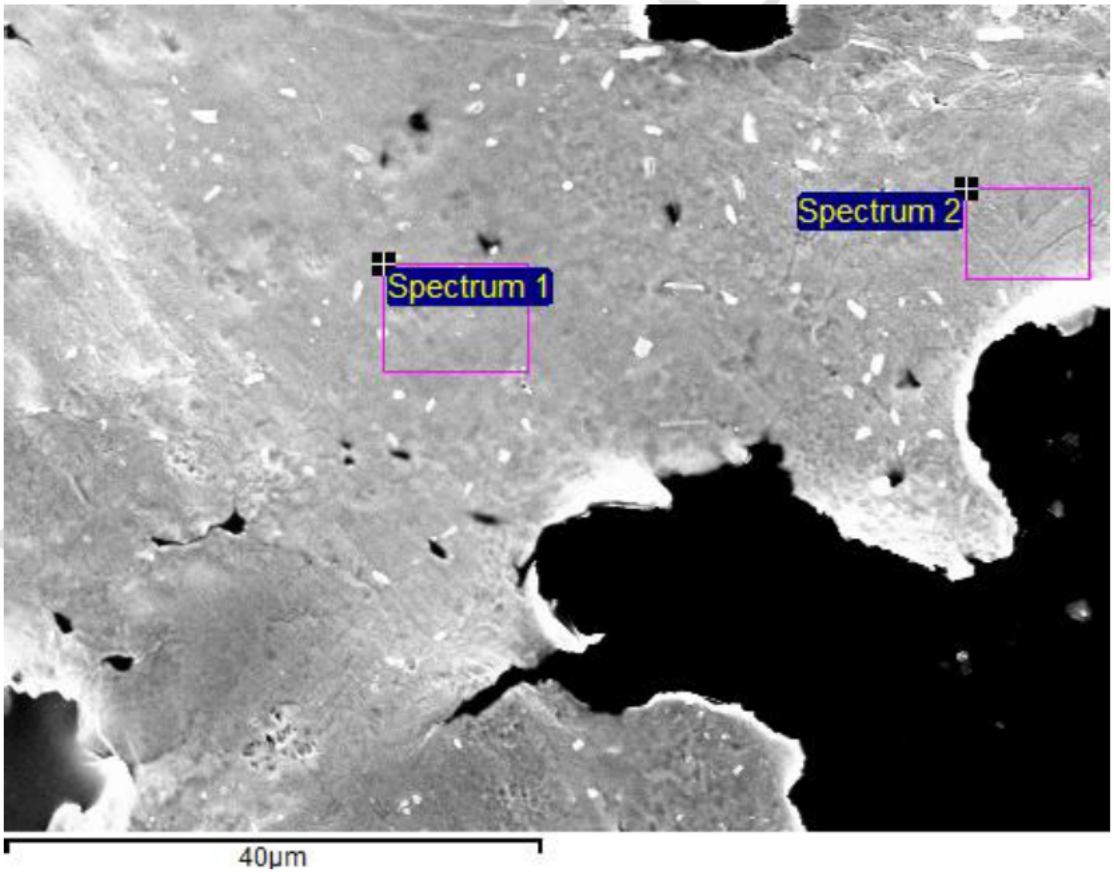
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206 and **fig. 6.3**) it would seem that unrefined gold was used for solid gold jewellery. Refined gold was however required for the finest work[571].

There was only a very small amount of copper in any of the gold on the berries, around 1%, showing that the copper found in the gold in the analysis of the leaves, which in any event was under 5%, is due to the substrate. These results indicate that any copper was either removed from native gold or was never present[572]. Copper would have hardened the gold, which obviously would have been undesirable for the purposes of making gold leaf, and the only reason to add it might have been to give a redder colour.

The gold on the leaves looks smooth under the electron microscope, probably from the hammering of the leaf; the white inclusions shown in the image are likely to be small fragments of copper from the substrate (**fig. 6.13**). The gold was measured to be about 1μm thick.

*Fig. 6.13 Aineia 7572 M7, image of gold on leaf (x6000).*




[571] Katsifas and Ignatiadou 2017, 351.

[572] Vavelidis and colleagues found under 1% copper in most cases in native Macedonian gold (1996, 57).

No platinum group inclusions were observed on any of the material examined with a binocular optical microscope, although Dagi saw them on solid gold jewellery with similar equipment, and indeed with the naked eye[573], indicating either that gold was used for the wreaths which did not have such inclusions or that they were removed to make the gold easier to hammer into leaf [574]. As discussed above (page 208), there is no real prospect of provenancing the gold on the wreaths, but there is no reason why the gold should not have come from Macedonia or Western Thrace, and the results indicate that it was almost certainly refined to remove the silver.

### *6.4.2 Copper not bronze*

Leaves from all regions were analysed with HHXRF, and μXRF for some further items at AMTh and the Rathgen Laboratory (Rathgen 2017). Five leaves were selected for further analysis by SEM/EDS. A microscope image of a fragment of a copper leaf showing the type of material analysed is at **fig. 6.14**, and an image taken in the SEM is at **fig. 6.15**, with the copper and gold layers indicated. A good deal of corrosion can be seen on the leaves and in particular copper chloride was found on many from Phoinikas (e.g. M34), almost certainly owing to the marine environment. On items such as M34 and M7 the overlying surface of gold was fractured by copper corrosion expanding.

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[573] See note 501.
[574] See page 206.

*Fig. 6.14 Copper leaf with gilding and coating M34 Phoinikas 3 (optical microscope image, x6.4). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*

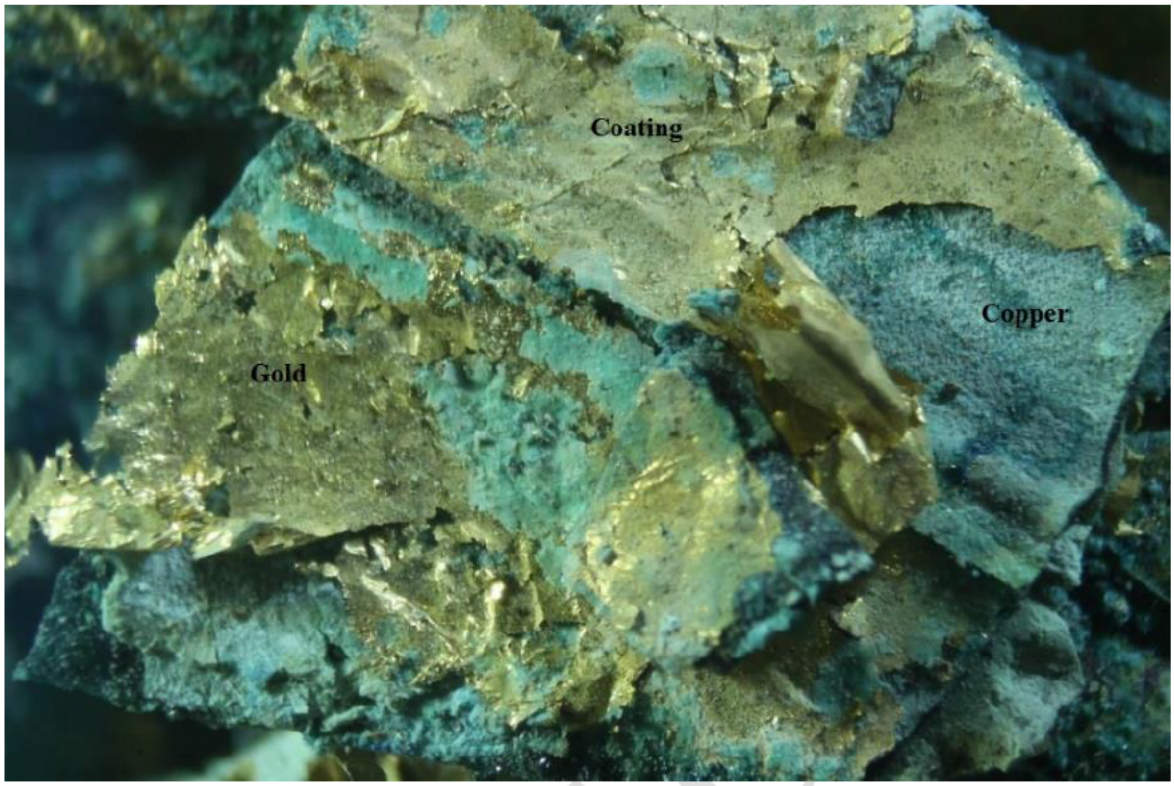
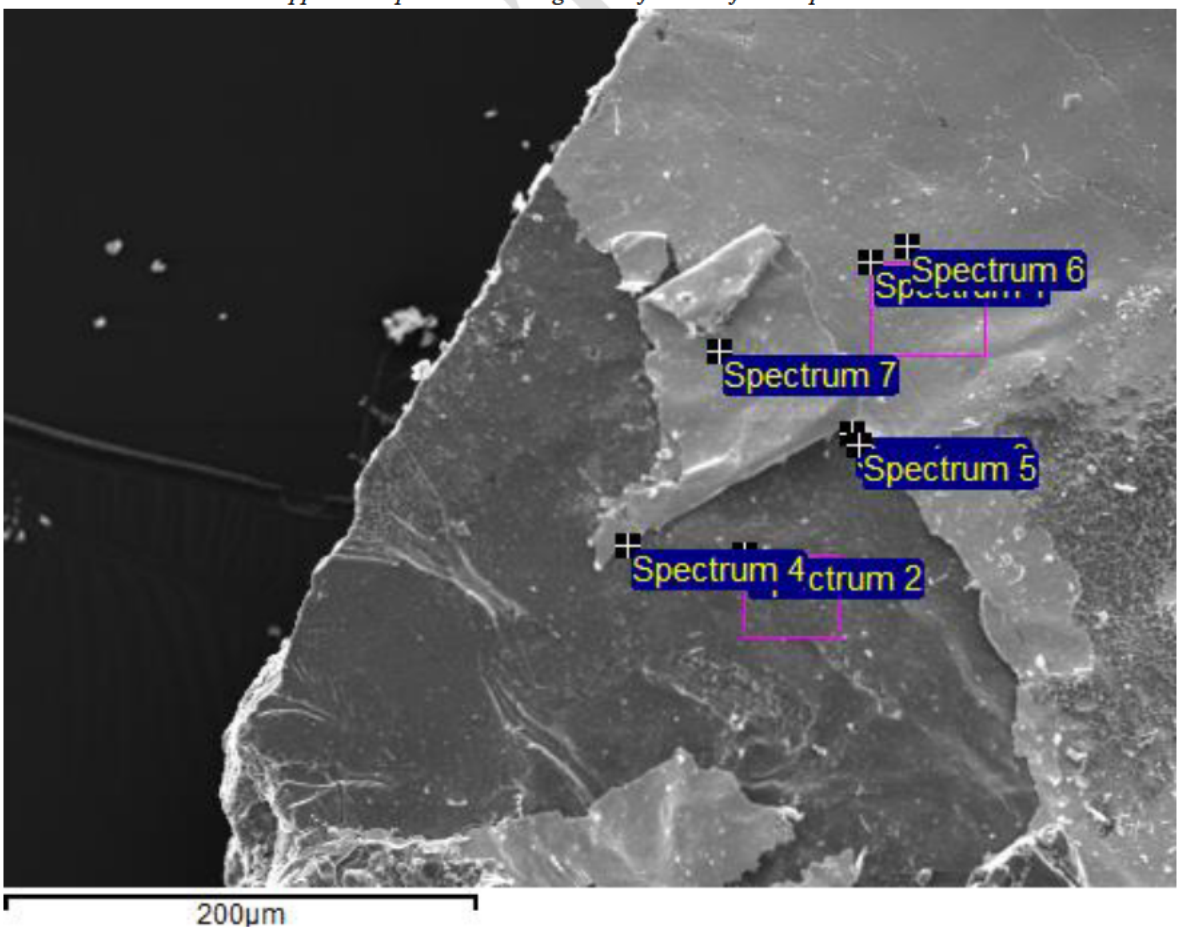



*Fig. 6.15 M34 Phoinikas 3 fragment of leaf showing detaching gold and copper. The gold is at spectra 6 and 7, and the copper is at spectrum 2. The gold has formed a fold in spectrum 7.*



The results of the analyses of leaves and stems made in one with the leaves are set out in **Table 6.4**, which is divided into three parts; the third shows the results for single leaves which were in the main not part of wreaths. The proportions of the elements present found with SEM/EDS and μXRF are given in weight percent and have been normalised to 100% and to one decimal point. The most important results are highlighted in umber; those for which semi-analytical results were obtained are given in weight percent, after averaging. Elements such as silicon which were introduced with the corrosion as well as the proximity of gold have affected the HHXRF results, so those obtained with SEM/EDS and at the Rathgen laboratory, where micro-samples were taken, provide the best results.

***Table 6.4 Results of HHXRF, μXRF and SEM/EDS analysis of leaves.***

Ns = not sought; Tr=trace

| Method | Cat. no. | Date | Al | Si | Ca | Fe | Cu wt % | Sn | Au wt % | Pb | Ag | Hg | 0bs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Leaves from gilded wreaths (substrate)** | | | | | | | | | | | | | |
| HHXRF | SI 1 | 1st half 3rd | ns | ns | tr | tr | ✓ | x | ✓ | x | x | x | |
| HHXRF | SI 15 | Mid-4th restored | | | | | tr | x | ✓ | ✓ | ✓ | | Silver substrate restored with lead |
| HHXRF | SI 21 | 2nd q.3rd | ns | ns | tr | tr | ✓ | x | ✓ | tr | x | x | |
| HHXRF | SEA6 | 2nd half 4th | ns | ns | x | tr | ✓ | x | ✓ | x | x | x | |
| HHXRF | SEA4 | End 4th? | x | x | tr | tr | ✓ | x | ✓ | tr | x | x | |
| HHXRF | SEA8 | 2nd half 4th | trace | ✓ | tr | ✓ | ✓ | x | ✓ | x | | | |
| HHXRF | SEA10 | 2nd half 4th early 3rd | ns | ns | x | tr | ✓ | x | ✓ | x | x | x | |
| HHXRF | SEA15 | 3rd | ns | ns | | | ✓ | x | ✓ | | x | x | |
| HHXRF | SEA21 | 3rd qu.3rd | ns | ns | tr | ✓ | ✓ | x | ✓ | | x | x | |
| HHXRF | SEA1 | mid 3rd | ns | ns | tr | tr | ✓ | x | ✓ | ✓ | Tr | x | |
| HHXRF | SEA3 | Late 5th/ early 4th | ns | ns | tr | tr | ✓ | x | x | x | | x | |
| HHXRF | M27 | First half of 4th | | | tr | tr | ✓ | x | ✓ | x | | | |
| HHXRF | M37 | Late 4th | ✓ | ✓ | ✓ | tr | ✓ | x | ✓ | | | | |
| μXRF◊ | M34 | 2nd qu. 4th | | | | | 99 | x | 1 | | | | |
| μXRF◊ | M36 | After 320 | | | Tr | | 98 | x | 2 | | | | |
| SEM/ EDS | M7 | 3rd qu.4th | | | 0.7 | | 97.4 | x | | | | | Av. of 2 |
| SEM/ EDS | M18 | | 2 | | | | 98 | x | | | | | |
| SEM/ | M32 | | 0.5 | 0.9 | 1.4 | 2.6 | 94.1 | x | | | | | |

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| Method | Cat. no. | Date | Al | Si | Ca | Fe | Cu wt % | Sn | Au wt % | Pb | Ag | Hg | 0bs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EDS | | | | | | | | | | | | | |
| SEM/ EDS | M32 | 2nd qu.4th | | 0.5 | | | 82.7 | x | 3.3 | | | | Cl (8.4) Mg (0.4) S (3.2). |
| µXRF* | P1 leaf | 1st c. BC | | | | 0.1 | 95.8 | 3.8 | | 0.1 | | | Tr. As and Ni. Bronze. |
| µXRF* | P2 leaf b5 | | | | | 0.1 | 99.6 | Tr | | tr | | | Tr. As and Ni. |
| SEM* | P2 leaf g5 cross-section | | | | | 1.1-1.9 | 80.2 - 83.1 | 15-18.7 | | | | | Bronze. |
| **Stems** | | | | | | | | | | | | | |
| HHXRF | SCG35 | 2nd q.3rd | Ns | ns | x | tr | ✓ | x | ✓ | x | x | x | |
| HHXRF | SI 12 | 2nd half 3rd | | | | ✓ | ✓ | x | x | tr | | | |
| HHXRF | SI 21 | 2nd q.3rd | | | | | ✓ | x | | tr | x | x | |
| **Single leaves** | | | | | | | | | | | | | |
| **Method** | **L no.** | **Date** | **Al** | **Si** | **Ca** | **Fe** | **Cu** | **Sn** | **Au** | **Pb** | **Ag** | **Hg** | **Obs** |
| HHXRF | L5 | 5th | x | tr | tr | x | ✓ | x | x | x | | | |
| HHXRF | L3 1227 2 | 5th | x | x | x | ✓ | ✓ | x | x | x | | | |
| HHXRF | L3 1337 | 5th | x | x | x | tr | ✓ | x | x | x | | | |
| HHXRF | L3 2166 | 5th | x | x | x | ✓ | ✓ | x | x | x | | | |
| HHXRF | L3 2217 | 5th | x | x | x | tr | ✓ | ✓ | x | ✓ | | | |
| HHXRF | L3 2233 | 5th | x | x | x | x | ✓ | ✓ | x | x | | | |
| HHXRF | L3 5009 | 5th | x | x | x | ✓ | ✓ | x | x | x | | | |
| HHXRF | L4 BR66 | 5th early 4th | ns | ns | x | tr | ✓ | ✓ | x | tr | | | |
| HHXRF | L4 BR74 | 5th or early 4th | ns | ns | x | tr | ✓ | ✓ | x | x | | | |
| HHXRF | L4 BR109 | 5th early 4th | ns | ns | x | x | ✓ | ✓ | x | tr | | | |
| HHXRF | L4 BR139 | 5th or early 4th | ns | ns | x | tr | ✓ | x | x | x | | | |
| HHXRF | L4 BR157 | 5th or early 4th | ns | ns | x | x | ✓ | ✓ | x | x | | | |
| HHXRF | L4 BR184 | 5th or early 4th | ns | ns | x | x | ✓ | ✓ | x | x | | | |
| HHXRF | L4 BR265 | 5th or early 4th | ns | ns | x | x | ✓ | x | x | x | | | |
| HHXRF | L4 BR383 | 5th or early 4th | ns | ns | x | x | ✓ | x | x | x | | | |
| HHXRF | L4 BR816 | 5th early 4th | ns | ns | x | x | ✓ | ✓ | x | ✓ | | | |
| HHXRF | L4 BR1043 | 5th or early 4th | ns | ns | | | ✓ | x | x | x | | | |
| HHXRF | L4 BR1134 | 5th or early 4th | ns | ns | x | x | ✓ | tr | x | ✓ | | | |
| HHXRF | L4 BR1521 | 5th or early 4th | ns | ns | x | x | ✓ | x | x | x | | | |

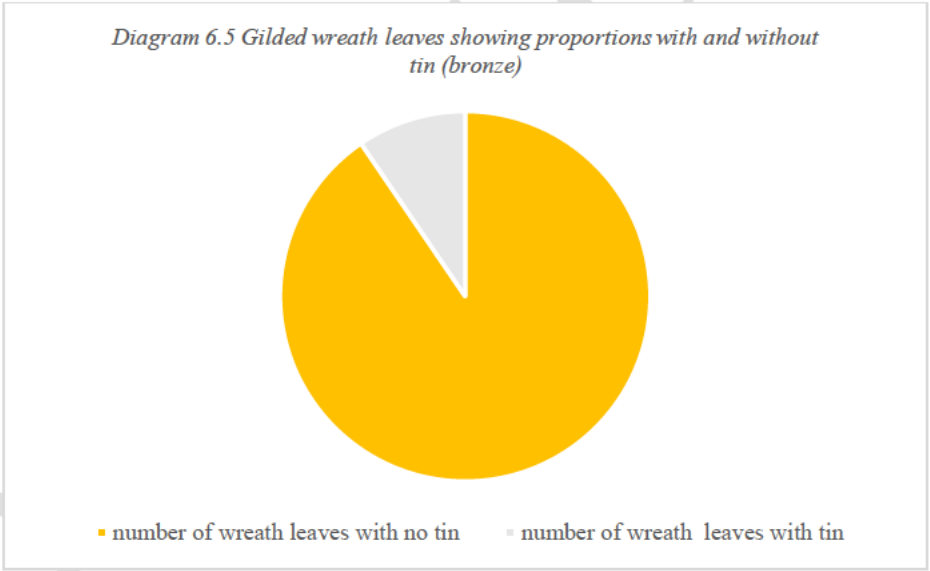
* Analysed by the Rathgen Laboratory, Rathgen 2017.

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◊Analysed by AMTh.

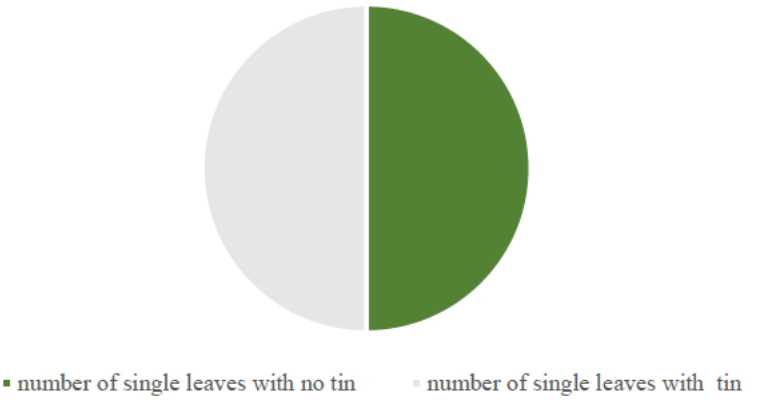
All the fourth and third century leaves from gilded wreaths were found to have a substrate of copper and no tin, leaving aside the gilded silver wreath SI 15, so it is clear that all these leaves were made from copper, not bronze, whereas the leaves from P1, thought to be late Hellenstic and probably cast, contained tin as well as copper **(diagram 6.5)** as did elements from P2 (similar date). The small amount of lead in the bronze on P1 would have eased the casting process[575]. Tin was detected on a far higher proportion of the ungilded single leaves from Nemea and Isthmia (L3 and L4) (**diagram 6.6**), and a small amount of lead was detected on most of these leaves indicating that a leaded bronze was also used on this material. The absence of tin in SEA3 and L5 was unexpected, as they were made of thicker sheet which was expected to be bronze. The lack of tin on the vast majority of wreath leaves means that the many references to "bronze" wreaths in the literature are incorrect: the material is copper.

*Diagram 6.5 Gilded wreath leaves showing proportions with and without tin (bronze)*




[575] Craddock 1977, 107.

*Diagram 6.6: ungilded single leaves showing proportions with and without tin*




These results are consistent with the findings by other researchers: Asderaki and Rehren, using SEM/EDS, found that the leaves and stems from SCG22, SCG25 and SCG27 were made of copper with copper sulphide inclusions, but no tin, and that in most of the samples the metal had corroded to form copper chloride, copper phosphate, copper oxide and malachite[576]. They observed that the metal had been hammered and annealed from studying an etched sample by optical microscopy. The British Museum scientists found that a leaf from Rhodes, SEA8, was made of copper without any significant amounts of alloying elements although it too contained secondary corrosion products[577]. Maier and colleagues studied a second century ivy wreath from Taras, SI 10, using SEM/EDS and found that the leaves were 'probably' made of copper not bronze[578]. As discussed above (page 198) there does not seem to be any possibility of tin having been present originally and leached out, since some tin would have remained on the surface of the copper.

Some of the iron found with the copper may be a product of the smelting process, although iron from the soil will also have combined with the corrosion products. Lead was detected on a few wreath leaves including SEA1 (leaving aside that used in the conservation of SI 15), for which

[576] Asderaki and Rehren 2008, 508.

[577] Oddy *et al.* 1979, 235.

[578] Maier *et al.* 1998, 197. They do not give figures, and were perhaps cautious because of the possibility of surface enrichment.



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the most likely explanation is contact with the lead circlet. No gold was found on the single leaves from Nemea (L4), Isthmia (L3) or Praisos (L5), or on SEA3, and it seems that these items were never gilded.

### *6.4.3 Clay fabric*

Most of the wreaths have clay berries, made of a reddish clay beneath the coating. The results of the analysis are set out in Table 6.5. The fabric was difficult to analyse with SEM/EDS because its porosity produced a very low X-ray count[579], and although the μXRF results allowed a slightly larger area to be covered by the spot analysed, semi-quantitative results are not given because the area covered included copper.

***Table 6.5 Results of analysis of clay fabrics***

| Method | Wreath and cat. No. | Date | Al | SI | K | Ca | Fe | Cu | Au | Pb | Obs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HHXRF | SEA16 | 330-320 | Ns | Ns | x | ✓ | ✓ | | | tr | |
| HHXRF | SI 1 grapes | 2nd qu. 3rd | ✓ | ✓ | x | ✓ | tr | tr | | | |
| HHXRF | SI 5 | Last qu. 4th | ✓ | ✓ | tr | ✓ | ✓ | ✓ | x | x | Cl, |
| HHXRF | SI 11 | Late 3rd | | ✓ | ✓ | ✓ | ✓ | | x | ✓ | Cl, ti |
| HHXRF | SI 12 | 2nd half 3rd | | ✓ | tr | ✓ | ✓ | ✓ | | | Cl, tr ti |
| HHXRF | SI 21 | 2nd qu.3rd | ✓ | ✓ | tr | ✓ | ✓ | ✓ | | ✓ | |
| μXRF | M7 | 3rd qu.4th | ns | ✓ | ✓ | ✓ | ✓ | ✓ | | | Ti. |
| μXRF | M10 | 3rd qu.4th | ns | ✓ | ✓ | ✓ | ✓ | ✓ | | | Very high peak iron |
| μXRF | M16 | Last qu.4th | ns | ✓ | ✓ | ✓ | ✓ | ✓ | | | Ti, Mn very high peak iron |
| μXRF | M18 | Last qu. 4th | ns | ✓ | ✓ | ✓ | ✓ | ✓ | | | Mn, Ti, very high peak iron |
| μXRF | M32 | 2nd qu. 4th | ns | ✓ | ✓ | ✓ | ✓ | ✓ | | | Mn |
| SEM/ EDS | M7 | 3rd qu. 4th | ✓ | ✓ | ✓ | ✓ | ✓ | | | | Mg (3.3) low count |
| SEM/ EDS | M34 | 2nd qu. 4th | ✓ | ✓ | ✓ | ✓ | ✓ | | | | Tr Ti, Mg (1 iteration only: Na, P, S, Cl). Low count. |

The fabric of all the berries studied showed a clay rich in iron. Comparing the μXRF results with the indicative components of clays and minerals shown in **Table 6.2** (page 205), the

[579] No bulk analysis could be done of this material.



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presence of potassium in some of the berries might indicate a red illitic clay, such as that found deposited by rivers in Central Macedonia, which is frequently interleaved with montmorillonite and other clay (see above page 210). However, more sophisticated methods of analysis such as XRD, and possibly study of the inclusions using petrology are needed for identification.

### *6.4.4 Clay coatings: white and yellow*

The coatings used on various elements of the wreaths beneath the gold leaf are approximately 0.1-0.3mm thick, and are mostly cream-coloured, white or pale yellow. Sometimes differently coloured coatings appear to have been used on different elements of the same wreath: that on the berries from M32 is white, but on the leaves and circlet yellowish (**fig. 6.17**). An intense white coating is found on some of the berries and rosettes from Southern Italy such as SI 11, and on SI 19 both yellow (beneath gold) and white (no gold) are found (**figs. 6.18 and 5.13**). Gold was not always found above the white on the Italian wreath elements and it would appear that the white was in some instances intended to be seen, or it was originally covered with another substance.

*Fig. 6.17 Berries, leaves and circlet from M32, Phoinikas 5,3, showing different coloured coatings on berry (white) from circlet and leaves (yellowish). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



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*Fig. 6.18 Rosettes and flowers from SI 11 Taranto 50710 with a white coating and no gilding. ©National Archaeological Museum of Taranto.*



Two leaves (M32 and M36) and four berries (M7, M32, M34 and M36) were selected for analysis with SEM/EDS reflecting a range of dates and locations in Macedonia. The berries selected had broken open, allowing the fabric, gold and coating to be analysed **(fig. 6.20)**. A coating on the leaves can sometimes be seen, but is often difficult to distinguish since debris of soil have become incorporated into the corrosion, making the analysis difficult (**fig. 6.21** shows a relatively well preserved coating, and **fig. 6.14** a coating with considerable corrosion). As there was no permission to sample, cross-sections could not be prepared, so in most cases it is not clear whether there was more than one layer of coating but on the berry shown in **fig. 6.20**, it would appear that the yellow was imperfectly mixed with the white rather than applied as a separate layer. Maier and colleagues interpret the coatings on SI 10 as separate layers, with an off-white layer of alumino-silicate mixed with an organic adhesive between 50 and 100 μm thick, and a thin layer of yellow bole mixed with an adhesive binder about 10 μm thick just under the gold (**fig. 6.22**)[580]. From visual examination it appeared that in some cases there was a layer of white beneath the coloured coating on the berries (e.g. SCG20, **fig. 6.26**).

[580] Maier et al. 1998, 200-201.

*Figs. 6.20a-6.20b Berry from M34, Phoinikas 3, showing fabric, coating and thin layer of gold (detail showing the coating on the right with image rotated). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*

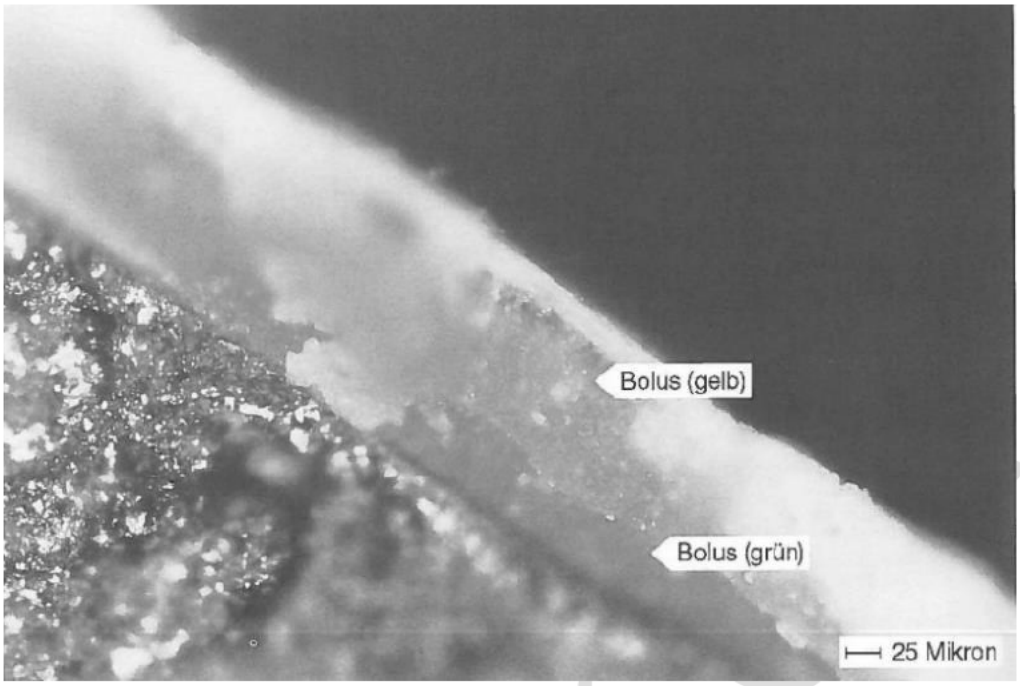



*Fig. 6.21 Leaf from Phoinikas 5,3 M32, showing the yellow coloured coating beneath the gold. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



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*Fig. 6.22 Layers above copper on SI 10, Taranto 50625. The material labelled Bolus (gelb) is the yellower layer and that labelled Bolus (grün) is the alumino-silicate. From Maier et al. 1998, 202. Image by C.J. Raub, fem Forschungsinstitut Edelmetalle +Metallchimie, Schwäbisch Gmünd.*




The elements detected in the white and yellowish coatings beneath the gold are shown in **Table 6.6,** with proportions where these could be determined; results with HHXRF are omitted where μXRF and/or SEM/EDS was used. Following convention, the results obtained with SEM/EDS for minerals (silicates, carbonates etc) have been combined with oxygen (stoichiometric), and are shown in bold, allowing comparison with published data; all are given in weight percent (to one decimal point) and have been normalised to 100%.

***Table 6.6 Results of HHXRF and XRF analysis of white and yellowish coatings with proportions (in % terms) if available***

| **Method** | **Cat. no.** | **Date** | Al/ **$Al_2O_3$** | Si/ **$SiO_2$** | **K** | Ca/ **CaO** | Fe/ **FeO** | **Cu** | **Au** | **Pb** | **obs** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Circlets** | | | | | | | | | | | |
| HHXRF | M18 circlet off white | Late 4th, early 3rd | ns | ✓ | | ✓ | ✓ | ✓ | ✓ | **x** | |
| μXRF◊ | M7 circlet off white | 3rd qu. 4th | ns | ns | | ✓ | ✓ big | ✓ | | | |
| SEM/ EDS | M18 coating circlet | Late 4th/ 3rd | **38.5** | **50.5** | | **1.7** | **4.2** | ✓ | | | P, S, Ti tr. |
| **Leaves** | | | | | | | | | | | |
| HHXRF off white | SEA1 | Late 5th-/4th | ✓ | ✓ | | ✓ | ✓ | ✓ | x | tr | |

| **Method** | **Cat. no.** | **Date** | Al/ **$Al_2O_3$** | Si/ **$SiO_2$** | **K** | Ca/ **CaO** | Fe/ **FeO** | **Cu** | **Au** | **Pb** | **obs** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HHXRF Pale yellow | SEA8 | 2nd half 4th | ns | ✓ | x | tr | ✓ | ✓ | ✓ | ✓ | Bone circlet |
| SEM/ EDS off white | M32 | 2nd qu. 4th | **35.6** | **56.15** | ✓ | **0.6** | **2.0** | tr | | | Tr Mg, S, **$TiO_2$ (1.0)** |
| SEM/ EDS off white | M36 | | **10.3** | **37.1** | | **0.7** | **1.1** | ✓ | ✓ | | |
| **Berries, rosettes and flowers** | | | | | | | | | | | |
| HHXRF | SI 1 berry off white | 2nd qu. 3rd | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | x | |
| HHXRF | SI 1 grapes off white | 2nd qu. 3rd | ✓ | ✓ | | ✓ | ✓ | | | x | |
| HHXRF | SI 2 yellow-ish | 2nd c. | ✓ | ✓ | | ✓ | ✓ | | ✓ | x | Cl. S. Gilded and yellowish coating |
| HHXRF | SI 5 strong white berry | Last qu. 4th | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Cl, tr. K. Lead circlet. Some gilding |
| HHXRF | SI 11 white rosette | Late 3rd | | ✓ | | ✓ | tr | | x | ✓ big | S, Ti. No circlet preserved. No gilding. |
| HHXRF | SI12 off white | 2nd half 3rd | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ tr | Yellow coloured coating. Lead circlet |
| HHXRF | SI 16 Off white | 2nd half 3rd | ✓ | ✓ | | tr | ✓ big | ✓ | ✓ | tr | |
| HHXRF | SI18 Off white | Late 3rd | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ med | S no gilding but yellowish. Lead circlet. |
| HHXRF | SI 20 strong white rosette | Late 3rd | ✓ | ✓ | | ✓ | ✓ | | x | ✓ big | No circlet remains. No gilding |
| HHXRF white | SCG35 | 2nd qu. 3rd | Ns | Ns | | ✓ | ✓ | ✓ | | ✓ | Berries in box. Lead could be from contact with lead in box. |
| HHXRF off white | SCG35 | 2nd qu. 3rd | Ns | Ns | | ✓ | ✓ | ✓ | | x | Berry on double wire in box |
| HHXRF | SEA7 white/ Off white | 2nd half 4th | Ns | Ns | | ✓ | ✓ | ✓ | ✓ | x | uncleaned |

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| **Method** | **Cat. no.** | **Date** | Al/ **$Al_2O_3$** | Si/ **$SiO_2$** | **K** | Ca/ **CaO** | Fe/ **FeO** | **Cu** | **Au** | **Pb** | **obs** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HHXRF | SEA8 white/ off white | Mid-4th | ✓ | ✓ | | ✓ | ✓ | | | x | Ti, Cl, S. Berries may not be part of original wreath |
| HHXRF | SEA11 off white | Hellenistic | Ns | Ns | | ✓ | ✓ | ✓ | ✓ | x | P |
| HHXRF | SEA13 white/ off white | Beg. 3rd | Ns | ns | | ✓ | ✓ | ✓ | | ✓ | No traces of circlet remain. |
| HHXRF | SEA15 white | 3rd | Ns | ns | | ✓ | ✓ | ✓ | ✓ | x | |
| HHXRF | SEA1 off white | Mid 3rd | | | | ✓ | ✓ | ✓ | ✓ | ✓ | Berries kept in separate box with no lead, though lead circlet |
| HHXRF | SEA2 off white | Late 4th | ✓ | ✓ | ✓ | ✓ | ✓ | | | x | S could be from plaster in grave. Uncleaned. |
| SEM/ EDS | M7 off white | 3rd qu.4th | **27.4** | **38.02** | | **7.6** | tr | ✓ | | | Average of 4 iterations. Tr $TiO_2$ (0.7), S. |
| HHXRF | M14 flower strong white | Late 4th | | | | ✓ | ✓ | | | tr | Painted with red and pink. Hg |
| Raman§ | M14 | Late 4th | Peaks at 143, 299, 305. | | | | | | | | Not lead white |
| HHXRF ** | M23 Flower white | Late 4th | | | | ✓ | ✓ | ✓ | | ✓ | Ti, Hg. Lead circlet |
| Raman§ | M23 Flower white | Late 4th | Spectra at 103, 253, 285, 343. | | | | | | | | Painted with red and blue. No spectrum for lead white |
| HHXRF ** | M24 berry off white | Late 4th | | ✓ | | ✓ | ✓ | ✓ | ✓ | | S |
| HHXRF ** | M25 berry white and blue | Late 4th | | | | ✓ | | ✓ | ✓ | x | |
| Raman§ | M25 berry white, blue | Late 4th | Spectra 297 and 384. | | | | | | | | Not lead white |
| SEM/ EDS | M32 white berry coating | 2nd qu. 4th | **41.0** | **52.07** | tr | **0.4** | **0.4** | tr | | | Tr S. Average of two. |

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| **Method** | **Cat. no.** | **Date** | Al/ **$Al_2O_3$** | Si/ **$SiO_2$** | **K** | Ca/ **CaO** | Fe/ **FeO** | **Cu** | **Au** | **Pb** | **obs** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM/ EDS | M34 off white berry coating | Late 4th | **26.1** | **59.3** | tr | 0.9 | **1.6** | ✓ | ✓ | x | Tr. Mg,Ti O2 (1.0), S (average of two) |
| HHXRF | M36 flower yellow | End 4th/beg. 3rd | | | | tr | ✓ | | tr | x | |
| Raman§ | M36 flower yellow | End 4th/beg. 3rd | peaks at 141, 298 and 386 | | | | | | | | Yellow ochre |
| HHXRF | M36 flower white | End 4th, beg. 3rd | ✓ | ✓ | | ✓ | ✓ | | x | x | S, Hg cinnabar |

** Analysis done by Prof. Ioannis Karapanagiotis and Vasilis Tsinaridis, Higher Ecclesiastical Academy, Thessaloniki, Unpublished report September 2016.
§ Analysis by Dr Dimitrios Lambakis.
◊ Analysis by AMTh.

The SEM/EDS analysis of the coating on the Macedonian berries M7, M32 and M34 shows that this was kaolinite, with high and nearly equal proportions of aluminium and silicon, though more of the latter (**diagrams 6.8-6.9**). There was also a little potassium and sulphur, which might indicate a Melian kaolinite. A sample spectrum of the analysis on a berry from M32 is at **fig. 6.23**[581]. The interpretation as kaolinite is confirmed by the SEM images of the coating where the particles, although degraded, are roughly hexagonal (**fig. 6.24**), and by preliminary FTIR analysis of the white flower from M14, which had doublet peaks at around 930 $cm^{-1}$, characteristic of an alumino-silicate[582]; the coating from M18 had similar peaks (**fig. 6.30**). **Diagram 6.8** shows the proportions of silicon, aluminium, calcium and iron revealed by the analyses of these berries, and the ternary **diagram 6.9** shows that the Macedonian kaolinites have more silicon dioxide and less aluminium oxide than a Cornish kaolinite. Asderaki-

[581] Although the XRF detected some calcite, it was found to be a small amount when the same items were examined in the SEM/EDS.
[582] There were further peaks at around 3696, 3667, 3653, 3620, 1111, 1029, 820 and 800 $cm^{-1}$.



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Tzoumerkioti using SEM/EDS also found kaolinite in the coatings on berries SCG23 and SCG22[583].

*Fig. 6.23 Coating on leaf M32, consisting of kaolinite, with approximately equal, high, peaks of silicon and aluminium and very little calcium.*

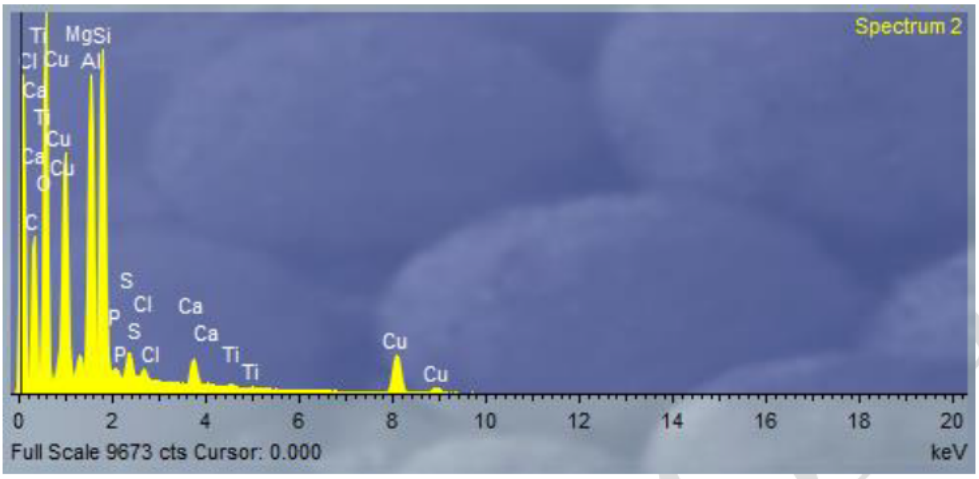



*Fig. 6.24 SEM image of coating on berry from M7 Aineia 7572.*

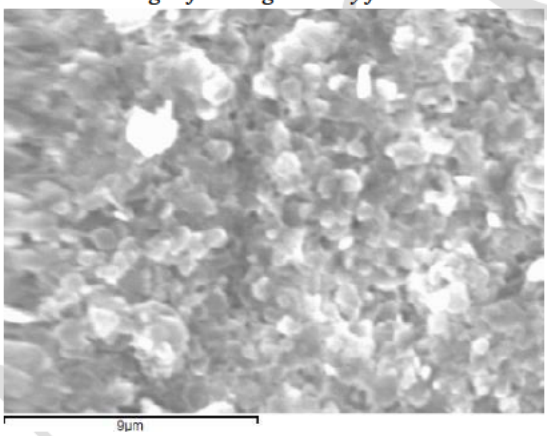
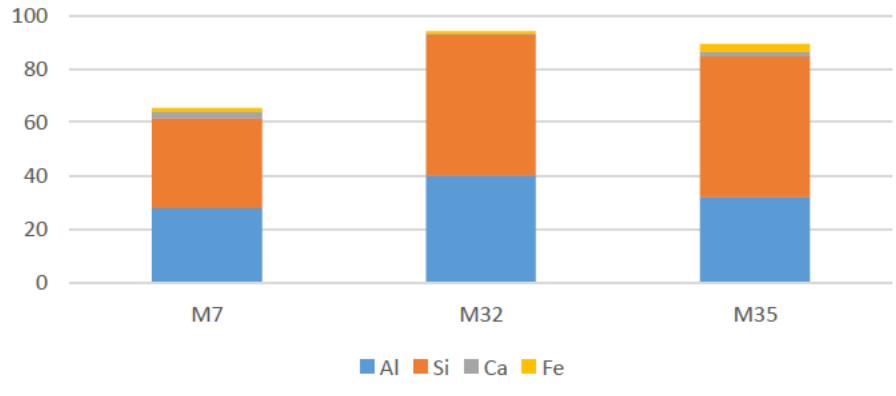
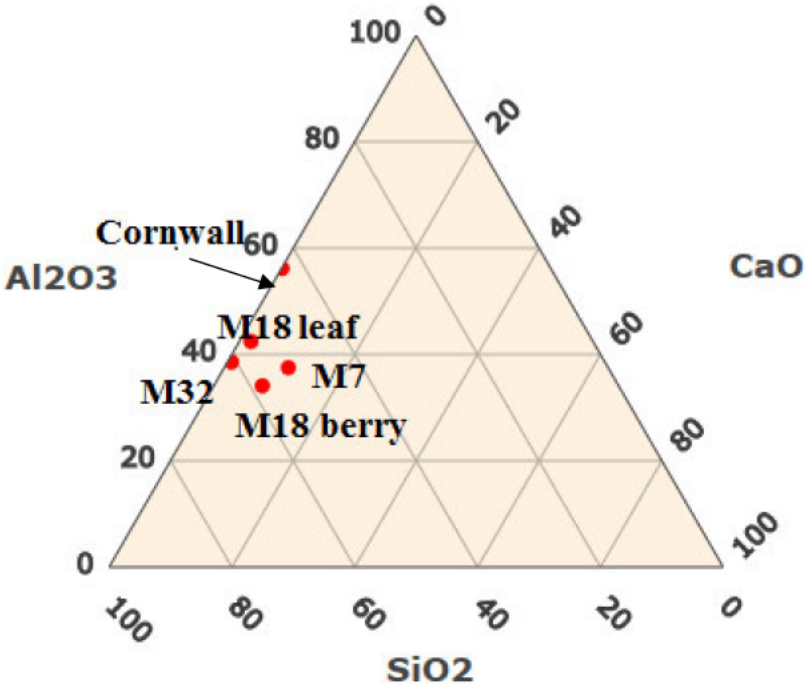



*Diagram 6.8 Kaolinites in M7, M32, M34*




[583] Asderaki-Tzoumerkioti 2001, 43.

*Diagram 6.9 Comparison between coatings and Cornwall kaolinite[584].*




The coating on the leaf from M32 appears to be kaolinite from the SEM/EDS analysis, whereas the μXRF results for the M7 circlet appear to indicate a calcareous clay. The coating on the M18 circlet is however kaolinite. Asderaki found different coatings on gilded leaves from Demetrias: on SCG25 a calcareous clay, and on two further leaves (SCG22 and SCG27), kaolinite[585]. These Thessalian wreaths are believed to be of a similar date and yet different materials were used for the coating, suggesting that the material used was the choice of the individual workshop rather than any development in technique.

The presence of lead in the intense white coating observed on berries and rosettes from SI 5, SI 11 and SI 20 raises the question of whether lead white was used (with a carrier such as kaolin or calcite). The marked correlation between the strong white and the presence of lead, and the analysis of a coating on a figurine (also from Southern Italy) by Quarta and Melica, who found a white coating composed of kaolin and lead white[586], make it very likely that lead white was

[584] The figures for Cornwall are taken from Table 4, Michailidis et al. 1993 (**fig. 6.7**). All data have been normalised, and retain only $Al_2O_3$, CaO and $SiO_2$. The data for the M18 berry are in table 6.6.

[585] Asderaki-Tzoumerkioti 2001, 28-29.

[586] See page 219. Bourgeois and colleagues (2012/3) also found lead white in the yellow coating on an item from Taras.

used on these wreaths. The yellowish coating on a leaf from Rhodes (SEA8) also showed a little lead, as did the coatings of berries on SEA1, SEA13 and SCG35. Contamination from the circlet does not explain its presence on SEA8, since this was made of bone, but contamination from ground water might: the wreath has no proper context, having been excavated in 1860. SEA1 and SCG35 have lead circlets. Lead white is however an alternative possibility for the coatings on all these berries, since it was found in some of the white coatings on the contemporary Hadria hydriai from Rhodes by Giannikouri and colleages[587]. There was no clear evidence of lead white on the Macedonian material. The white used as a background on the flowers is less strong than on the Italian material and is likely to be kaolinite; FTIR analysis of the M14 flowers showed the presence of an alumino-silicate such as kaolinite and Raman analysis of those flowers and of M23 did not show any peaks for white lead [588]. The lead found by the HHXRF analysis on those items would appear to be due to contact with the lead circlets. There does appear therefore to be a regional trend in Southern Italy to use lead white in the coating.

The yellow in many of the coatings, such as the M7 circlet, the M34 berry and the M32 leaves, is ochre, on the basis of the iron found in the analyses of the yellow material, and confirmed by the Raman analysis of yellow paint on a flower from M36 with peaks at 141, 298 and 386, which are a good match for yellow ochre[589]. Other possible yellow pigments based on vanadium or arsenic can be ruled out, since they were not found in the material. This is consistent with the findings of Bourgeois and colleagues and Quarta and Melica who identified the yellow in the coating beneath the gold on figurines (from Mainland Greece and Southern Italy respectively) as ochre[590]. The ochre on the clay leaves SCG5, which has a powdery appearance and is less smooth than pigments mixed with a binder, appears to have been applied dry (on top

[587] See above note 507.
[588] Bell *et al.* 1997 give a strong peak at 1050 for lead white.
[589] Bell *et al.* 1997, 2177.
[590] See page 219.



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of a white coating) to give a more intense colour, which in Italy was used for material that was not subsequently gilded (*ceramica dorata*)[591], but here was beneath gold.

### *6.4.5 Red and blue coatings and pigments*

Many of the flowers were painted red, pink or blue. On material such as berries and circlets it is often difficult to say whether the blue has been applied intentionally or is the result of copper corrosion of other elements, but in a few cases, the wooden circlet has some red which appears to have been deliberately coloured red (**fig. 6.25**), in a manner intended to be seen, since these circlets were not gilded. It appears occasionally to have been intended to show the red or blue colour on the berries, as on M4 and M25, where the gold has been carefully applied in a line (**figs. M4.2 and 2.32**). In other cases, a coloured coating appears to have been used as a bole beneath the gold in order to give a richer tone and, in some cases, so that it could be burnished. The berries from Isthmia, SCG20, have two layers of coating, one yellowish, the other red beneath the gold (**fig. 6.26**). Many of the Macedonian berries, including M10, M13, M16, M18, M42, M43 and M44 (**figs. 2.13, M13.4, 2.14, 2.19, 6.27, 6.28, 7.52, M43.6, M42.4 and M44.1**) have a bole and M42 and M43, in particular, are a brilliant gold and appear to have been burnished (**fig. 7.52**). These berries were found on the pyre, and the red seems to have been originally goethite, which becomes red when heat removes the water from the hydroxide to form an oxide[592], as can be seen on a berry which is both yellow and red (**fig. 6.28**). The red on the circlet from M26 cannot have been formed in this way, however, as the wood would have been charred at 400°C and no coating or bole was necessary on the wooden circlets as they were not gilded.

[591] De Palma 1989.

[592] Béarat and Pradell 1997, 242; Photos-Jones et al. 1997, 368 found that 400° was sufficient to convert goethite to hematite.



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*Fig. 6.25 Fragments of circlet from M25 Nikisiani Δ, Δ 366 showing red colour.*
*© Kavala AM, Hellenic Ministry of Culture and Sports.*



*Fig. 6.26 Berries from Isthmia, SCG20 (IM5046) with yellowish and red layers beneath the gold, and reddish fabric beneath the coatings (USB microscope x20).*
*© Hellenic Ministry of Culture and Sports.*



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*Fig. 6.27 Berry from M10, Aineia III pyre. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*




*Fig. 6.28 Berry with pink and yellow coating from M18, Derveni Δ, Δ20*
*© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



The coloured material was analysed with HHXRF, μXRF and whenever possible Raman or SEM/EDS. The results are set out in **Table 6.7**, with the most important highlighted in umber. The proportions of the elements present found with SEM/EDS and μXRF are given in weight percent and have been normalised to 100% to one decimal point. The stoichiometric results for $Al_2O_3$, CaO and $SiO_2$ are shown in bold as in Table 6.6.

***Table 6.7 Results of analysis of red and blue.***

| Method | Cat. no. | Date | A/ $Al_2O_3$ | Si/ $O_2$ | Ca/ CaO | Fe | Cu | Sn | Au | Pb | Hg | Other obs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Red** | | | | | | | | | | | | |
| HHXRF | SEA1 pink berry | Mid-3rd | | ✓ | ✓ | ✓ | ✓ | | x | ✓ | ✓ | cinnabar but no S |

| Method | Cat. no. | Date | A/ $Al_2O_3$ | Si/ $O_2$ | Ca/ CaO | Fe | Cu | Sn | Au | Pb | Hg | Other obs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HHXRF | SEA4 red acorn cup | Mid 3rd | | ✓ | ✓ | ✓ | ✓ | | tr | ✓ | x | Hematite? |
| HHXRF | M10 pink berry | 3rd qu.3rd | | ✓ | ✓ | ✓ | ✓ | | ✓ | x | | K, mg, ti. No Hg or Br |
| µXRF◊ | M10 red on berry | 3rd qu.3rd | | 11.3 | 22.2 | 48.6 | 7.8 | | | | | K (10.1), No Br |
| Raman§ | M10 pink berry | 3rd qu.3rd | | | | | | | | | | No clear spectra |
| HHXRF | M14 flower red and white | End 4th | | | ✓ | ✓ | | | | ✓ | ✓ | S, Cl |
| Raman§ | M14 flower red and white | End 4th | 253, 345, 285. | | | | | | | | | cinnabar |
| HHXRF | M16 102d red berry | after 320 | Ns | Ns | | ✓ | | | | x | | No Hg or Br. |
| µXRF◊ | M16 berry red 117c | After 320 | | 5.7 | 9.8 | 73.7 | 0.8 | | | 0.5 | | K (9.4), tr. Zr,Nb no Br |
| HHXRF | M16 acorn | After 320 | ✓ | ✓ | ✓ | ✓ | ✓ | | | tr | x | No Br |
| HHXRF | M18 | after 320 | ✓ | ✓ | tr | ✓ | | | | x | x | Cl. |
| SEM/EDS | M18 | After 320 | **29.8** | **50.7** | | **6.9** | ✓ | | | | | 9 iterations. Tr Na, Mg, Ti O2, |
| HHXRF** | M23 flower red | | | | ✓ | ✓ | ✓ | | | ✓ | ✓ | S |
| Raman§ | M23 flower red | Peaks at 254, 286, 344 | | | | | | | | | | cinnabar |
| HHXRF** | M24 green berries | | | ✓ | ✓ | ✓ | ✓ | | ✓ | | | |
| HHXRF** | M25 red berry | End 4th | | ✓ | ✓ | ✓ | ✓ | | | x | ✓ | S |
| HHXRF** | M25 red berry (2) | End 4th | | | ✓ | ✓ | ✓ | | | ✓ | ✓ | |
| Raman§ | M25 red berry | End 4th | Peaks at 103, 253, 285, 343 | | | | | | | | | cinnabar |
| HHXRF ** | M25 circlet red | End 4th | | | ✓ | ✓ | ✓ | x | ✓ | x | x | |
| Raman§ | M25 circlet red | End 4th | 225, 293 (s), 410 (s), 612. | | | | | | | | | hematite |

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| Method | Cat. no. | Date | A/ $Al_2O_3$ | Si/ $O_2$ | Ca/ CaO | Fe | Cu | Sn | Au | Pb | Hg | Other obs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HHXRF | M36 flower red/white | End 4th, beg. 3rd | | ✓ | ✓ | ✓ | ✓ | | x | x | ✓ | S cinnabar |
| Raman§ | M36 flower red/white | End 4th, beg. 3rd | Peaks at 253, 344 and 104. | | | | | | | | | cinnabar |
| HHXRF | SCG 20 | 2nd half 4th | | | | ✓ | | | ✓ | x | x | |
| HHXRF | SI 11 red flower | End 3rd | | | ✓ | ✓ | ✓ | x | x | ✓ | ✓ | No S detected, but no analysis done with vacuum |
| **Blue** | | | | | | | | | | | | |
| HHXRF** | M24 green berry | End 4th | | | ✓ | ✓ | ✓ | | | | | S |
| HHXRF ** | M25 blue berry | 4nd 4th | | x | ✓ | ✓ | ✓ | | | | | S |
| Raman§ | M25 blue berry | End 4th | 253,405, 690, 1012 | | | | | | | | | azurite |
| Raman§ | M25 blue berry 2 | End 4th | 248, 401, 1099 | | | | | | | | | azurite |
| HHXRF** | M25 blue circlet | End 4th | | | ✓ | ✓ | ✓ | | ✓ | | | S |
| Raman§ | M25 blue circlet | End 4th | Peaks at 246, 400, 1098 | | | | | | | | | azurite |
| HHXRF | SI 18 red flowers | | | | | | | | | | | |

** Analysis done by Prof. Ioannis Karapanagiotis and Vasilis Tsinaridis, Higher Ecclesiastical Academy, Thessaloniki, Unpublished report September 2016.
§ Analysis by Dr Dimitrios Lambakis.
◊ Analysis by AMTh.

***Red***

Raman analysis showed that cinnabar was used for the red on the Macedonian flowers M14, M23 and M36 and on the M25 red berry, with band wavenumbers (in $cm^{-1}$) ('peaks') at around 254, 286 and 344 comparing well with those given by Bell and colleagues[593]. The strong red on all of these would have been intended to be seen so this pigment was a natural choice (**fig.**

[593] Bell *et al.* 1997, 2174 (the band wavenumbers in $cm^{-1}$ which they give for cinnabar are: 252, 382, 343).



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**2.28, right**). HHXRF analysis of M14, M23 and SEA1 and one of the two berries from M25 showed peaks for lead as well as mercury, probably because lead is sometimes found in cinnabar ore[594], although contamination from the lead circlet on SEA1 and M23 is another possibility. No Raman peaks for red lead were found on M14 or M23[595]. The red on the flower of an Italian wreath, SI 11, had mercury, and so is probably also cinnabar, although no sulfur was found; its apparent absence is likely to be due to there being only a small amount, below the detection limit of 0.1%. Sikalidis and colleagues found variable amounts of sulphur and mercury in the cinnabar at Vergina, which they had identified by XRD, sometimes in very small amounts due to the non-homogeneity of the sample[596]. Cinnabar was not found in the coatings covered by gold on any of the wreaths, so was clearly reserved for decoration. It seems to have been mixed with white to give pink on M14 and SEA1 since preliminary FTIR analysis of the pink on M14 gave the same results as for the red and white and mercury was found on these items.

The red coating on the circlet from M25 was found to include iron but no mercury, indicating hematite, confirmed by Raman analysis[597]. Chemical analysis of berries from M10, M16, M18 and SCG20 indicates that the pigment is likely to be hematite, in the light of the peaks for iron and the absence of lead, mercury and bromine, which would have been present if red lead, cinnabar or Tyrian purple had been used. It is likely that the hematite was formed from heating in the pyre, in which case the pigment would originally have been yellow.

***Blue***

The blue in the coating on a circlet from M25 was found by Raman analysis to consist of azurite and that on SCG19 is also referred to as azurite in the publication[598]. It is not clear whether it

[594] Nöller 2013, 3.

[595] Bell *et al.* 1997 give red peaks at 122, 139 and 548.

[596] Sikalidis *et al.* 1996, 317-8. They found between 0.12% and 1.43% sulphur as against 2.15 to 6.49% mercury.

[597] The peak counts were 225, 293, 410 and 612, which compare well with those given for hematite by Bell *et al.* 2174.

[598] The main peak counts were at 246, 400 and 1098, a reasonable match for the peaks given by Bell *et al.* 1997, 2171 at 403 (vs), 767, 838, 1098, 1932 and 1580. Egyptian blue has peaks at 430 (vs), 475 and 1086. For technical



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was applied as a pigment: azurite can be a product of copper corrosion, but was also used as a pigment[599]. The blue on some of the berries from M13 (**fig. M13.1**) is probably discolouration from copper corrosion. Raman analysis confirmed that blue on the berries from M25 was azurite and the green berries from M24 are also likely to have been azurite, which dehydrates to malachite.

### *6.4.6 Adhesives*

What appeared to be an ancient adhesive was visible under the optical microscope between the gold and the coating on some of the leaves (**fig. 6.29**) but preliminary FTIR analysis using the reflectance technique in point mode was indeterminative[600]. Strong and broad bands at around 1620 and 1455 $cm^{-1}$ observed on the berry from M18 (**fig. 6.30**) seem to have some structure, and the presence of an amide cannot be excluded, which would indicate an adhesive such as glair (egg white) or animal glue, but destructive analysis using gas chromatography mass-spectrometry (GCMS) is needed to confirm and identify the adhesive more precisely.

*Fig. 6.29 Leaf from M34, Phoinikas 3, showing what may be an adhesive beneath the gold.*
*© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



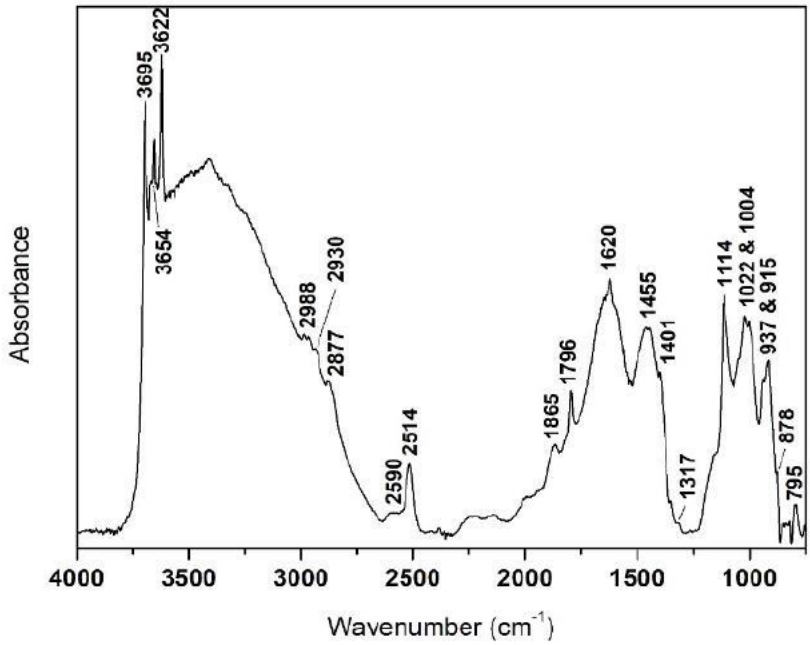
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reasons, it was only possible to use a red laser, not green, which would have been better for identifying blue pigments. For SCG19, see Hasselin Rous and Huguenot 2017, 26.

[599] Scott 2002, 108.

[600] The analysis was carried out by Professor Lambakis using FTIR. I am particularly grateful for his help on the interpretation of these results.

*Fig. 6.30 FTIR spectrum from M 18 berry.*




### *6.4.7 Textiles*

Remnants of textiles are still attached to wooden circlets from a female grave in Phoinikas, M30-33 (**fig. 6.31**). Sampling is necessary for their identification, for which permission is currently being sought. All were delicate and fine luxury items, with traces of Tyrian purple on M30, M32 and M33[601].

*Fig. 6. 31 Fabrics from M33, Phoinikas 5,4. The scale on the left is in millimetres.*
*© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



[601] HHXRF analysis showed bromine.

*Fig. 6.32 Detail of berry SEA1 with fabric impressions. Chania M426. © Ephorate of Chania, Ministry of Culture and Sports.*



One large spherical berry from SEA1 has distinct red textile impressions (**fig. 6.32**) for which the most likely explanation is that a red textile pressed against the berry which was covered with a white coating while one or both were still tacky, so that the colour from the fabric leached out, creating the pattern on the berry coating[602]. If the kaolin used for the coating was from Melos, the alunite often present in this clay would have acted as a mordaunt to fix the colour. The thread used to bind the stems on many wreaths when examined under high magnification was found to be linen when examined by Asderaki and colleagues[603].

### *6.4.8 Lead*

Many wreaths in the Dodecanese, Central Greece and Southern Italy had a lead circlet. The circlets were found to be made of pure lead (**Table 6.8**). Provenancing might be possible using lead isotope analysis; Asderaki and Rehren found that the lead isotope rations determined by

[602] A similar result was achieved in this way in experimental work.
[603] Asderaki and Rehren 2008, 512.



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MC-ICP-MS on the circlets they studied from Thessaly fell within the range of rations for ores from Laurion[604].

**Table 6.8 Lead circlets**

| Method | Wreath and cata-logue no. | Date | Al | Si | Ca | Fe | Cu | Sn | Au | Pb | Other obs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HHXRF | SI 21 | 2nd qu 3rd | | | | tr | x | x | x | ✓ | Lead circlet |
| HHXRF | SEA16 | Mid-3rd | | | | tr | tr | x | x | ✓ | Lead circlet |
| HHXRF | SEA17 | 3rd qu.3rd | | | | tr | tr | x | x | ✓ | Lead circlet |

### *6.4.9 Bone*

The bones used on most of the circlets are thought to have been from a sheep or goat from their size and shape, but no analysis has been possible without sampling.

### *6.4.10 Wood*

The same wood appears to have been used on all circlets studied, which has a long straight grain planed thin (**fig. 6.33**). Scientists studied one of the circlets from Aineia, grave III, and concluded that a soft wood was used, possibly cypress, but not pine[605].

*Fig. 6.33 Wooden circlet of wreath from Derveni A, M16, showing long straight grain.*
*© Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*




[604] Asderaki and Rehren 2008, 511.

[605] Kesisoglou and Mirtsou in Vokotopoulou 1990,122.

There are two instances of wreaths on which the circlet appears to be made of ivory, which has a denser grain than bone (M39 and M43).

### *6.4.11 White substances on back of circlets*

A substance was visible on the copper alloy circlet from Pergamon, found on analysis to be solder used to hold the stems in position on the back of a circlet. A whitish substance was applied on the back of the circlets at Derveni and Aineia (**fig. 6.34**), presumably to hold the stems in place, as yet unidentified but which is likely to be organic.

*Fig. 6.34 Back of circlet from Derveni B, B110*
*© Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*



## 6.5 Conclusions

The gold on the wreaths was found to be almost pure with consistently little silver, which is likely to have been removed by cementation. No trace of mercury gilding on any of the elements of the wreaths was found, ruling out fire gilding. The substrate of the gilded leaves was made of copper, not bronze, in all the regions studied, with the exception of one Late Hellenistic wreath from Pergamon (P1). Some ungilded leaves (L3 and L4) were also made of a copper tin alloy. Copper would have been favoured because it is a softer material and easier to cut and shape. The fabric of the berries was mainly made of a red clay with a high iron content, and may be an illitic clay in view of the potassium found, or montmorillonite, which would be suitable because of its plasticity. The berries and at least some of the leaves and circlets on wreaths from all regions have a coating beneath the gold to provide a smooth surface

and allow better adhesion, which is generally white, off-white or yellow. In Macedonia the coatings on all the wreaths analysed were made of kaolin, coloured with yellow ochre. A bright white coating used in Southern Italy, which is also found on figurines, contains lead white and is a distinguishing feature for the region. Cinnabar was used to decorate Macedonian flowers and berries and many further berries had a coloured coating used as a bole beneath the gold, made of ochre or hematite.

Expensive materials such as ivory and cinnabar were used in the fourth century on some Macedonian wreaths, as well as gold, but as will be discussed in the next chapter, the materials used became cheaper in the following century with the introduction of lead for the circlets and the use of gilding on stems and circlets disappeared.

The gold and copper were too pure on all the wreaths for any attempt to have been made to provenance them, and even if they could be sourced using more sophisticated techniques, the information would not necessarily be very informative, since these metals would in all probability have been recycled. All the materials used on the wreaths *could* have been sourced from Macedonia, but the pure kaolin found on several wreaths is more likely to have been imported from Melos in view of the potassium and sulphur present. All materials, however, were freely traded in this and the other regions in the period studied.

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# CHAPTER 7: DESIGN TYPES AND TECHNOLOGY

## 7.1 Introduction

This chapter investigates how the wreaths were designed, worked and assembled. Study of their design allows them to be grouped into seven main types, which predominate in one or more regions or at particular periods. Suggestions will be made about the tools which would or may have been used to create the wreaths and whether any special skills were required; no workshops survive, but inferences can be drawn about the tools from surviving fragments. Study of the technology contributes to an understanding of the people for whom the wreaths were made: for example, whether they are likely to have been made individually or in bulk. It may also allow the identification of similarities within regions or areas, as well as differences. This chapter looks at three stages (1, 3 and 4) of the *chaîne opératoire* (page 196). A timeline shows the main developments in design in each of the four regions (stage 1). The seven types are then described and proposals made for which plants are represented. The chapter continues with an investigation of the various elements of the wreaths (circlets, leaves, berries and flowers), suggesting how the materials identified in the last chapter were worked (stages 3 and 4). In the concluding remarks, the calculations made on the basis of experimental work on how long it might have taken to make a wreath are set out, as well as observations on whether any of them might have been used in life as well as in the grave.

## 7.2 Design, typology and timeline (stage 1 of chaîne opératoire)

### *7.2.1 Design and timeline*

A timeline which summarises developments in the design of gilded wreaths is at **fig. 7.1**, showing the wreaths current in each region, grouped in quarter centuries over the period studied. The earliest wreaths had one bone circlet (type 1) to which a second circlet made of wood was added a little later (type 2). A new style then emerged, with ivy leaves and flowers/berries and grapes (type 3), which required a different kind of circlet because the elements were heavier.

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Perhaps as early as the mid-fourth century wreaths appeared in Boeotia and the Peloponnese with small moulded flowers and spherical berries, not necessarily representing any specific plant (type 4). This type, which would have been much cheaper to produce, spread throughout the Hellenistic *koine*. A further type of wreath (5) was also used, which may have been contemporaneous, although the earliest for which there is clear evidence is from the late third century. This type, made with a large padded roll, must have been common in antiquity, from the evidence of figurines made in many places including Asia Minor and Thasos. A yet further type (6) had large coloured flowers, and is found primarily in Macedonia, dating to the end of the fourth or early third century. A few wreaths spanning the late fourth to the second century do not seem to have been used on the head and these are grouped separately as type 7. Around the middle of the second century, gilded wreaths appear to have gone out of use altogether, replaced by wreaths made of thin gold foil, not shown on the timeline as they are outside the period.

Most wreaths were designed to fit on the head and some surviving skeletons still have wreaths in position on or near the skull. The best-preserved circlets were of an appropriate size to be worn: an adult wreath is likely to have measured 14-17cm in diameter (e.g. M 16 and M5) whereas smaller items were for children - the diameter of SCG19, for example, was about 10.7cm. Larger wreaths must have been used on a statue (e.g. SEA3, diameter 24.4 cm), or a helmet. It is clear that a grave would have held more than one wreath or a wreath not for the human head if surviving fragments of circlet joined together would measure more than 60 cm in circumference or 19 cm in diameter.

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*Fig. 7.1 Timeline: Developments in design.*

| Date | Macedonia | Southern and Central Greece | SE Aegean | Southern Italy | Type |
|---|---|---|---|---|---|
| 425-400 | | *L2 (may not be from a wreath)*  | *SEA3 last quarter 5th? (not gilded)*  | | None |
| 400-375 | *M2*  | | | | 1 |
| 375-350 | *M30-33 Phoinikas 5*  | *SCG1(just before 350) (not necessarily gilded)*  | *SEA8 (just before 350?)*  | *SI 15(gilded silver)*  | 2, 4? (prototype), 1, wreath-diadem |

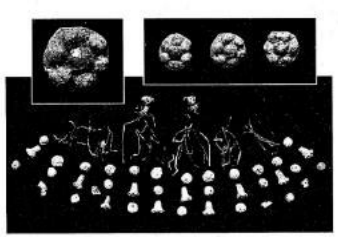
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| Date | Macedonia | Southern and Central Greece | SE Aegean | Southern Italy | Type |
|---|---|---|---|---|---|
| 350-325 | *M5 (beginning 3rd qu.)*<br>  <br>*M13 (end 3rd qu.)*<br>  | *SCG13*<br>  <br>*SCG11A (3rd qu. 4th)*<br>  | *SEA20 (just after 350?)*<br>  | *SI 25 (may be later)*<br>  | 2,7,1 |

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| Date | Macedonia | Southern and Central Greece | SE Aegean | Southern Italy | Type |
|---|---|---|---|---|---|
| 325-300 | *M16 (c.320)*<br>  <br>*M14 (late 4th c.)*<br>  | *SCG7 (late 4th or early 3rd c.)*<br>  <br>*SCG9 2nd half of the 4th c.*<br>  | *SEA7 (late 4th or early 3rd c.)*<br>  | *SI 14 (late 4th c.)*<br>  <br>*SI 19 (last quarter of the 4th c.?)*<br>  | 2,3,6 |
| 300-275 | *M21 (first qu.of the 3rd c.)*<br>  | *T3X21 (early 3rd c. )*<br>  | *SEA13 (beg. of the 3rd c)*<br>  | *SI 8 (first qu. of the 3rd c.)*<br>  | 3,6 |

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| Date | Macedonia | Southern and Central Greece | SE Aegean | Southern Italy | Type |
|---|---|---|---|---|---|
| 275-250 | *M3 (2nd quarter of the 3rd c?)*  | *SCG23 (2nd quarter of the 3rd c.?)*  *SCG27(first half of the 3rd c.)*  | *SEA1 (mid-3rd c.?)*  | *SI 1 (2nd quarter of the 3rd c?)*  | 3,4 |
| 250-200 | | *SCG3 Late 3rd century*  | *SEA17 (3rd quarter of the 3rd c.)*  | *SI 12 (2nd half of the 3rd c.)*  | 5,4,3 |
| 200-150 | | | | *SI 10 (first half of the 2nd c.)*  | 3, 7 (P1 is not shown on the left as it is outside the regions but is type 7) |

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### *7.2.2 Types and development*

The wreaths fall into seven main types, but there are also local variations. Table 1.2, on page 17, summarises the types and their main features and also lists the wreaths which fall into each type as far as it is possible to do so: sometimes not enough material survives to be certain, and not all were studied. The design depended on the material: bone could be used for the circlets on early wreaths which had light leaves and berries (types 1 and 2), whereas lead was required for heavier grapes and rosettes (types 3 and 4). The wreaths would originally have been composed of more materials than have survived, and in particular textiles may have played a far greater role than at first sight might appear.

*Type 1*

Three wreaths from the early fourth century in Macedonia (M2, M27, M40) and four from mid-fourth century Rhodes (SEA6, SEA8, SEA10 and SEA20) had a single circlet which was round in cross section, and which in Rhodes had the stems wrapped around the circlet before the ends were buried in it. All represented myrtle. These wreaths are otherwise the same as those of the following type.

*Type 2*

This type, which is by far the most numerous (at least 54), includes 36 wreaths from Macedonia, eight from Southern and Central Greece, three from Rhodes and six from Southern Italy, dating mainly to the second half of the fourth century. These wreaths had a double circlet (bone and wood), gilded copper leaves, and in all but a few cases, no flowers. Most represented myrtle, but a few are oak or ivy. M5 is a good example: the original bone and wood circlets can be seen, the leaves, which are gilded on both sides, were made in one piece with stems that were inserted through the bone circlet, and there were also oval berries with a white coating and gilding (**fig. 7.2**). The wreath is oval rather than round, about 15cm in diameter (maximum) and has a gap of 5-6 cm at the back with a hole at each end to take a string. The leaves face the front, with a small gap in the centre that would have been covered by the leaves. Some of the

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wreaths of this type may have had a fabric wrapped around the wooden circlet, since traces of fabric can be seen on M30-34, still attached to the wooden circlet. There was little space between the two circlets, so if the fabric was used in this way, it would have been very fine. Many of these wreaths were luxury items with gilded stems and circlets as well as gilded leaves, some which were intricately cut with veins (e.g.M16), and berries coated with bole.

*Fig. 7.2 Wreath from Aineia, 7570, M5. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



*Type 3*

The third type, of which there are at least 29 examples, had heavier items such as grapes and rosettes, representing ivy berries, which required a lead circlet to give better stability and support for the stems. There are at least 12 examples from Italy, three from the Dodecanese, 10 from Thessaly but only four from Macedonia. This type emerged towards the end of the fourth

century and continued in the third. In Italy, the rosettes became very large, and had a white coating that was not always gilded. It is not clear whether the decreased use of gold in third century Italy was due to a change in fashion or a desire to save money, but these wreaths and those of the next type were not expensive luxury items. It is possible that the lead circlets on some of the wreaths of this type were once hidden inside roll wreaths since the circlets were never gilded. This suggestion is reinforced by the observation that the lead circlets do not appear to have had a gap at the back with holes to take a string. The large rosettes on some South Italian wreaths, such as those from Herakleia, would have made them large and heavy for wear unless supported by padding (**fig. 5.14**).

What appears to be a transitional style between types 3 and 4 is composed of many berries and few leaves and known in antiquity as *polykarpos*[606]. Although in many cases the circlet has not survived, on T3X23 (**fig. 3.18**), it appears to be lead, which would have been required to support the numerous berries.

*Type 4*

Many wreaths from the Peloponnese (T3X26-7), Boeotia (SCG1, T3X5, T3X11), Thessaly (SCG22-3), the Dodecanese (SEA1, SEA4-5, SEA16) and the wider Greek world including Thrace had small moulded bell-shaped flowers and berries and in some cases rudimentary leaves; it is not clear what plant these wreaths were intended to represent, but it may be more than one – or indeed none in particular. The type appears to have emerged in Boeotia and the Peloponnese in the mid-fourth century. The circlet was in many cases made of lead as for example on SCG23 (**fig. SCG23.1**). The increased use of moulded elements suggests that with standardisation the wreaths became cheaper, but saving money may not have been the only reason for the change, since uniformly shaped elements would have improved their overall look. This design of wreath made greater use of clay than those in the previous types. A figurine from

[606] Aristophanes *Frogs*, 328: πολύκαρπον μὲν τινάσσωνπερὶ κρατὶ σῷ βρύοντα στέφανον μύρτων, θρασεῖ δ' ἐγκατακρούων.



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Thebes shows a female figure wearing a headdress which could have been made up of small flowers or berries (**fig. 3.4**), giving an idea of how one of these wreaths might have looked when worn.

As with type 3, it is possible that these wreaths originally were roll-wreaths with fabric wrapped around the lead circlet, sometimes wound round with fillets. Impressions of fabric remain on the coating of a berry from SEA1 (**fig. 6.32**) which provide some support for this hypothesis, since they adjoin a stem hole in the berry– too close to have been formed by contact with an item of clothing in the same grave. These large berries could once have been attached to the roll and pressed against a fillet, as shown on a figurine from Amisos (**fig. 7.3**). SEA1 also had buds with no holes, which could have been attached to the roll by covering them with a fine fabric and traces of fabric have been preserved on bell-flowers from the same wreath (**fig. SEA1.7**), providing further support for the proposal.

*Fig. 7.3 Figurine from Amisos wearing a roll wreath wrapped with fillets. Istanbul AM PT 4163*
*From Summerer 1999, cat. PIV19, pl.10, with kind permission.*



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*Type 5*

It is evident from figurines that large wreaths known as ring or roll wreaths were commonly

worn[607]. Views differ as to whether the padding, now perished, was made of textile or flowers[608]. A fifth century wall painting from Karaburun showing a headdress made of fabric with yellow (gold?) leaves was surely a roll wreath[609] (**fig. 7.4**). Roll wreaths had large leaves and berries, of which SCG3 from Tanagra is almost certainly an example (**fig. 3.6** shows the leaves; examples of figurines are at **figs. 3.7 and 7.5)**. If the lead circlet was used *inside* the padding with the stems passing through the textile it would have given support to the whole structure (**fig. 7.6**). The Tanagra leaves have no visible means of attachment to a circlet, such as a hole to take a stem, and on this hypothesis would have been wrapped in a textile fastened to the padded roll by thread or fine copper stems. The leaves are made of gilded clay, but further wreaths which had metal leaves and long stems, such as SCG33, may also once have been of type 5.

*Fig. 7.4 Depiction of roll wreath from Karaburun: the leaves can be seen pointing up from the fabric. From Özgen and Öztürk 1996, 47.*



[607] See for example Muller 1996, 469-470 and Markoulaki and Niniou-Kindeli 1990,

[608] Blech (1982, 45) and Burr Thompson (1963, 45) suggest they were made of flowers supplemented with fabric; Krug (1968, 16) saw the rolls as entirely fabric. There is no reason why both should not have been used.

[609] I am most grateful to Latife Summerer for pointing out that this headdress is not a tiara but a wreath, and for drawing my attention to the colour of the leaves.

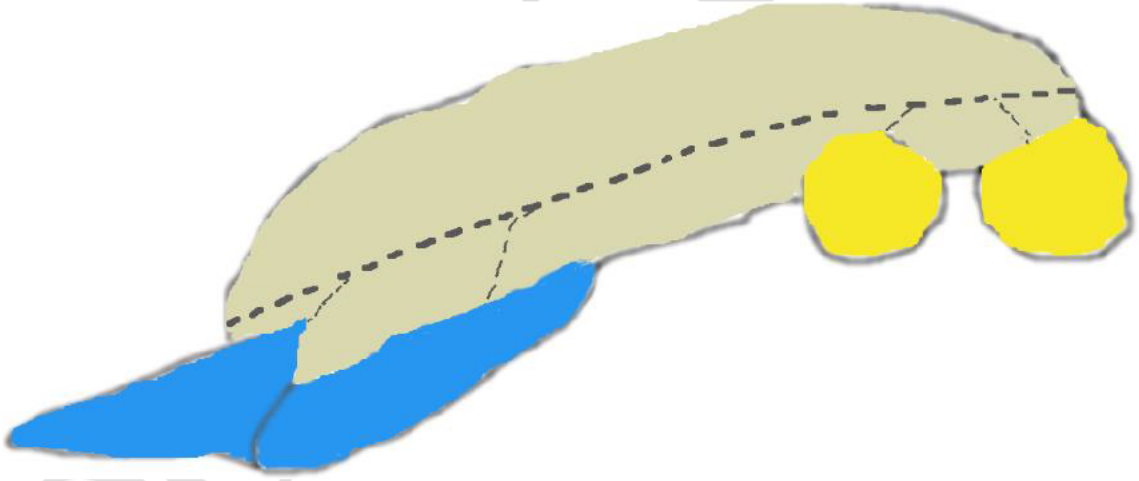


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*Fig. 7.5 Figurine known as the Alexandrian Lady (Π 6071) wearing a roll wreath with large ivy leaves and berries. From Andreadaki-Vlazaki 2009, 135. © Ephorate of Antiquities of Chania, Hellenic Ministry of Culture and Sport.*



*Fig. 7.6 Drawing showing how the roll wreath may have been made, the large dotted line indicating the putative position of the lead circlet and the smaller dotted lines thread or fine copper stems.*



*Type 6: wreaths or diadems with large flowers*

At least ten wreaths with large flowers have been found in Macedonia including M23, **fig. 7.7,** and one in the Peloponnese (T3X21, **fig. 3.17**), but were no doubt also used elsewhere, judging by the large number of figurines representing women wearing a wreath or diadem with flowers (**fig. 7.8** shows an example from Macedonia). They appear to have first been produced in the early third century. The flowers are sometimes accompanied by myrtle leaves and berries (M21, M25, M36, M38) and are sometimes used on their own (T3X21).

*Fig. 7.7 Flowers from Nikisiani, M23 (Δ 368 Kavala AM) © Hellenic Ministry of Culture and Sports/Ephorate of Kavala and Thasos*



*Fig. 7.8 Figurine from Pella, grave 92/10, inv.92/138, Archaeological Museum of Pella. ©Hellenic Ministry of Culture and Sports/ Ephorate of Antiquities of Pella. From Lilimbaki-Akamati and Akamatis 2014, 469.*



*Type 7: Wreaths not for the head*

Helmets with wreaths are depicted on vase-paintings and stelae and a large gold oak wreath, 24.2x28.2cm in diameter, was found in the cenotaph of Seuthes III at Golyama Kosmatka Tumulus in Thrace which is believed to have been used on a ceremonial helmet[610]. A wreath

[610] The conservator Mavrov put forward this hypothesis following the discovery of solder in the area of the temples on a bronze helmet found in the same tumulus (Dimitrova 2015, 160).

from Epirus, SCG13, may originally have been worn on a helmet, since it has no bone circlet, but wire once twisted around an organic core with the gilded fragments and what looks like part of a wooden circlet still attached to an iron helmet found in the same grave (**fig. 3.26**). Alternatively, this wreath may have been designed to go on the neck of the vessel in which it was found and would still therefore be type 7. Some of the Sciatbi wreaths are further examples of wreaths apparently designed to go around the neck of a funerary vessel (**fig. 4.11**), and the same may also be the case for SEA16 and SI 25. Wreaths made for a larnax are also of this type such as T2X80 (**fig. 2.15**).

A few wreaths which are too large ever to have been used on a human head and have a rigid circlet are suggested to have been designed to be placed on statues. P1 falls into this category, as does SEA3, which was not gilded.

### *7.2.3 Plants represented*

Despini believed that a single plant was generally represented on each wreath[611], which is borne out by wreaths of types 1 and 2, but not 4 or 5. Myrtle leaves can be difficult to distinguish from olive and laurel, but myrtle has leaves which are broader at the end towards the petiole, whereas olive are broader at the further end[612]. In nature *Myrtus communis* has lanceolate-shaped leaves 30-50mm long, as well as white flowers with five petals and long stamens, oval seed pods with a small cross, and round flower buds (**figs. 7.9 and 7.10**). The berries are normally dark purple and have a distinctive cross[613]. The sub-species *Myrtus communis tarentina* is found in southern Italy and has smaller leaves (max.20mm long), buds about 12mm in diameter and flowers with a large number of petals (**fig. 7.11**). The identification of the plant represented on the wreaths of types 1 and 2 as myrtle is supported by the find of a bronze basin with impressions of natural leaves found in a grave in Northern Italy dated to the late fifth or

[611] Despini 1996, 26.
[612] Ibid.
[613] Sub-species *leucarpa* is greenish white (Lim 2012; Amigues 2010, 43). For the cross, see Despini 1996, 26.



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early fourth century[614]. Olive has narrow leaves, white flowers with four petals and large oval fruits, and laurel has fuller leaves, white flowers with four petals and oval seed pods. Compared with laurel, both olive and myrtle have narrow leaves[615].

*Fig. 7.9 Oval berries and leaves of Myrtus communis.*



*Fig. 7.10 White flowers of Myrtus communis and pink buds.*



[614] Melli 2005, 549.

[615] Theophrastus calls them στενοφύλλα (*On Plants*, I,X,4).

*Fig. 7.11 Flowers and leaves of Myrtus communis tarentina.*



Oak is easily recognisable with its indented leaves and acorns, but it is more difficult to identify the species since several grow in the Southern Mediterranean. The small leaves on the wreaths suggest the evergreen *Quercus ilex* (holm or holly oak, πουρνάρι or πρίνος) which has leaves 4-8cm long, or the cork oak, *Quercus x crenata*, which is semi-evergreen and has leaves with sharp points 6-13cm long, but the sculpted edges on most of the wreath leaves make *Quercus robur* more likely for most wreaths (**figs. 7.12 and 7.13**).

*Fig. 7.12 Leaves and acorns of Quercus ilex.*



*Fig. 7.13 Leaves and acorns of Quercus robur.*



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Type 3 wreaths represent ivy, which has heart-shaped leaves with a pointed tip and round berries in clusters with an indentation giving the effect of a dimple (**fig. 7.14a**). The flowers are tiny and yellowish green and as they mature form into rosettes (**fig. 7.14b**); the berries are normally black[616].

*Fig. 7.14a Ivy leaves and berries*



*Fig. 7.14b Ivy flowers developing into berries*



It is not clear whether the spherical clay 'berries' on the type 4 wreaths are intended to represent any particular plant. The main possibilities are: 1) myrtle buds (which are spherical), 2) ivy berries, 3) a loose representation of myrtle berries (oval in nature) or 4) a generic representation of berries rather than a specific plant. Sabetai thought the spherical objects on SCG1 represented myrtle buds[617], and SCG22 and SCG23 were also seen as myrtle by Asderaki[618]. The moulded bell-shaped flowers on the type 4 wreaths are similarly ambiguous. Sabetai identified a bell-shaped flower shown in profile on a vase as myrtle and suggested this was also depicted on SCG1[619] (**figs. SCG1.1 and SCG1.5**). The moulded bell-shaped flowers on the wreaths generally have six petals and seem in the main intended to represent myrtle (*communis*); those with more petals (rosettes) could depict either ivy or myrtle (*tarentina*). It is likely that both the spherical objects and the flowers with many petals represent different plants according to the context.

[616] They can also be yellow on *hedera helix poetarum* (Amigues 2010, 118).
[617] Sabetai 2012, 310.
[618] Asderaki and Rehren 2008, 508.
[619] Sabetai 2012, 307.

It is more difficult to determine what the large flowers are intended to represent, or indeed whether they are meant to represent any real plant. A passage in Athenaeus quoting Theophrastus refers to a wide variety of flowers being used on (natural) wreaths: ίον (violet), Διὸς ἄνθος (marguerite), ἴφυον (lavender), φλόγα (wall-flower), ἑλίχρυσος (helichrysum), ἀνεμώνη (anemone), ὑάκινθος (hyacinth), ρόδος (rose), λύχνις (rose campion), κρίνος (lily), ἀμάρακος ο Φρύγιος (Phrygian marjoram) [620] and mentions blue and pink lotus as being used on Alexandrian wreaths[621]. T3X21 is the best preserved of the flower wreaths, on which it is possible to identify some flowers (**fig. 3.17**). One of these looks like *Dios orphyra* or marguerite, which was thought to have an apotrapaic function[622], with dozens of petals. The large coloured flowers with six petals and a central vein could be lilies, which have a marked vein and can be white or red[623]; bell-shaped flowers with eight petals, depicted on figurines and terracottas dedicated to Hera at Terra del Foce, were so identified by Dewailly and others, although lilies in the wild normally have six petals[624](**figs. 7.15 and 7.16**). Flowers with six rounded petals ending in a point are sometimes shown on gold wreaths and can identified as myrtle by the stamens (**fig. 7.17**), so the white flowers of this shape on gilded wreaths may well be myrtle (unless veined?). The pink and white flowers with rounded petals shown on some wreaths including M36 (**figs. M36.5 and 7.54,** lower row) are in my view likely to be rose, which was used on natural wreaths and has a gold centre, occasionally depicted in wall-paintings in red and white, as on a Greek cist grave in Cyprus[625] (**fig. 7.18**); pomegranate, which

[620] Athenaeus, *Learned Banqueters* xv 680 e-f.
[621] Athenaeus, *Learned Banqueters* xv 677d.
[622] Baumann 1993, 85.
[623] Baumann 1993, 177 and 189 where he points out the double vein on a Minoan soapstone vase.
[624] Dewailly 1997, 203; Baumbach 2004, 140. Tsimbidou-Avloniti suggested that the six-petalled pointed flowers on M36 were lilies (Tsimbidou-Avloniti 2005, 73).
[625] Georgiou 2012.



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is also red, is another possibility, though less likely since it is does not appear to be mentioned in literary sources [626] and myrtle is yet another, although its flowers are white.

*Fig. 7.15 Lilium candidum. From Baumann 1993, pl.342.*



*Fig. 7.16 Terracotta flowers (lilies?) dedicated to Hera. From Baumbach 2004, 141.*



*Fig. 7.17 Flowers of myrtle on wreath from Stavroupolis (MΘ 7417). ©Archaeological Museum of Thessaloniki, Ministry of Culture and Sports. From Ignatiadou and Tsigarida 2001, cat.4.*



[626] For the pomegranate suggestion, see Tsimbidou-Avloniti 2005, 73.

*Fig. 7.18 Rose on walls of cist grave from Kition, Cyprus. From Georgiou 2012, fig. 10.8.*



Many attempts have been made to identify the *asterion*, which was also used for wreaths and was found growing by the river of the same name, near Argos and sacred to Hera (Pausanias 2.17.2). Frickenhaus proposed *Lychnis coronea*[627], a small pink flower known in English as rose campion (**fig. 7.19**), which is a possible match for the round flowers with no distinct petals on some of the wreaths, including M36 (**fig. 2.33**), although convolvulus is an alternative. Some scholars see further flowers depicted on Apulian vases, like large convolvulus, as imaginary, intended to indicate flowers in the next world[628] and it is possible that they are depicted on wreaths, but convolvulus is another possibility.

*Fig. 7.19 Rose campion or Lychnis coronea.*



[627] Frickenhaus 1912, 122-125.

[628] Imaginary: Isler-Kerenyi 2008, 239; convolvulus: Baumann 1993, 185.

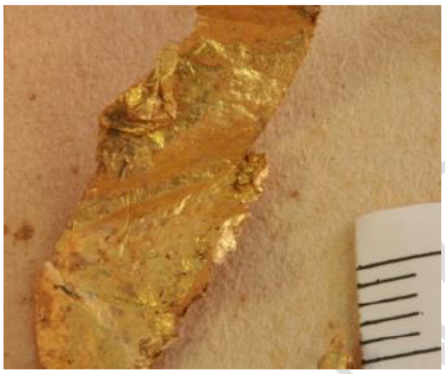
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## 7.3 Preparing materials and combining elements (stages 3 and 4)

### *7.3.1 Gilding*

The early method of gilding which involved wrapping the object in gold foil (see page 216) appears to have been used on late fifth century leaves from the Temple of Apollo Korkyraios in Corfu (L2) (**figs. 7.20-21**). The gold foil does not appear to have been adhered to the substrate. The silver leaves found on a few wreaths from Southern Italy (SI 15 and SI 23) were almost certainly gilded by diffusion bonding, as described in Chapter 6 (page 216), since no evidence of a coating can be seen, and the gold would bond easily with the substrate (**fig. SI 15.2**).

*Figs. 7.20-21 Gold thought to have been wrapped around a leaf such as the one on the right (L2) (both from Temple of Apollo Korkyraios, Corfu). Note that the gold is supporting its own weight.*
*© Ministry of Culture and Sports*






Gilding using a coating beneath gold leaf had been done on clay in Attica since the fifth century[629] but the use of this method on metal seems to have been a fourth century innovation in Greece. The earliest clear examples on wreath leaves are from the second quarter of the fourth century (M30-33) and there are many further examples from all regions, including SI 22 and SI 12 (Taras), SEA8 (Rhodes) and SCG10 (Epirus). No evidence of a coating was detected on metal objects thought to be predecessors of the wreaths such as the silver gilt wreath diadems from Southern Italy (T8X3-9) or on the fifth century leaves from Corfu (L2). Archaic gilded metal items such as the bronze bowls from Aigai and Archontiko have not been studied by the

[629] See Chapter 6, note 564.

author, but are not described as having a coating beneath the gold leaf[630], so it is possible and perhaps even likely that the technique of using a coating on metal in Greece was developed in the early fourth century, and was a factor contributing to the widespread use of gilded copper wreaths in Macedonia at that time.

As discussed in the last chapter, application of a bole was a pre-requisite for burnishing, which would have been sanded down to be as smooth as possible before the gold leaf was applied. Application of the leaf was a delicate task which involved handling the fine gold with a tool, avoiding any contact with the skin, and away from the slightest breath of air[631]. Some of the Macedonian berries appear to show evidence of burnishing, as the gold is particularly brilliant (**fig. 7.22**).

*Fig. 7.22 Berries from M16, A117γ. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*




### *7.3.2 Circlets*

The earliest gilded wreaths had circlets which were round in cross section (type 1) (M2, M27, M40, SEA6, SEA8, SEA10 and SEA20). They appear to be made of bone, and the material would have been cut and smoothed to be round in cross-section. The Rhodian wreaths were

[630] Stampolidis 2012, 45.
[631] Perrault 1992, 34-36.

made by wrapping the stem around the bone and burying the sharp end in it, raising the possibility that these particular wreaths may have been intended for the living (**fig. 7.23**).

*Fig. 7.23 Stems wrapped around circlet on wreath from Rhodes, SEA20. Rhodes AM M1382 © Ministry of Culture and Sports*



Using rib bones with a flat back allowed a second circlet, made of wood, to be placed behind the first, with the stems inserted into holes through both (type 2) (**fig. 7.24**). Most of these circlets had a single row of holes, but a few had several, such as M43, indicating a more elaborate wreath.

*Fig. 7.24 Bone and wood circlets from M16 (A60 3γ) © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports*




Bone and wood needed preparation for use as circlets. The curved shape and flat back of the bone is found naturally on ribs but they were probably soaked in a mild acid such as vinegar or

sour milk to help them bend more easily. Żurowski concluded that the Romans shaped thin bones into bracelets in this way[632] and experimental work for the purposes of this dissertation confirmed that lamb bones soften if soaked in vinegar for at least two months. Two rib bones seem to have been enough to create a circlet, generally meeting at the front, the join being covered by the leaves which were positioned to face the centre. The ends of each piece of the bone were cut into a taper and joined by a nail or a piece of linen thread (**fig. 7.25**). The wood would also have been planed into a thin strip. It could have been shaped further using a method adopted in Egypt which involved holding unseasoned wood above a bowl of hot water to soften it, then burying it in the ground to maintain the curvature[633]. The holes in the bone and wood would have been made with an awl.

*Fig. 7.25 Two pieces of bone circlet held together by original linen thread from M26 (Nikisiani grave Γ). Kavala AM Δ383 © Ministry of Culture and Sports/Ephorate of Kavala and Thasos.*




A combination of wood and lead circlets is found in the early third century, coinciding with the introduction of grapes and other heavy items; there are examples from all over Greece including SCG35 from Thessaly and M37 from Macedonia (type 3). The wood is positioned behind the lead, and it is likely that neither was intended to be seen since they are never gilded. Some wreaths from types 3 and 4 appear to have had a lead circlet, only, of which a few fragments sometimes remain, including wreaths from Southern Italy such as SI 8, where a lead circlet would have been necessary to support the large ivy rosettes that became common in the third

[632] McGregor 1985, 64 and 112-3.
[633] Gale *et al.* 2000, 356.

century. Lead is more difficult to pierce than bone, and a tool such as a punch would have been used to make the holes, as on the bronze circlet from Pergamon (**fig. P1.2**). A whitish substance was applied on the back of the circlets at Derveni and Aineia (**figs. 6.34 and M7.2**), but it is not clear whether this was done to conceal the stems, to hold them in place or to avoid the sharp stems hurting the head – it may have been all three. A greyish substance can also be seen on the copper alloy circlet from Pergamon, found on analysis to be solder, which may have been used to keep the stems in position and also to attach the wreath to a statue (**fig. P1.2**).

The bone circlet was gilded on the early wreaths (types 1 and 2), but only on the front, the gold leaf being applied in small squares and turned over on the back. On a very few wreaths, the circlet was coloured, as discussed in chapter 6.

### *7.3.3 Leaves*

The leaves on the earliest of the fourth century wreaths from type 2 are carefully shaped with curved rather than straight edges, such as those from M30-34 and SEA8. The same shape on the leaves of M41 confirms the mid-fourth century date given by the excavator (**fig. M41.3**). Later in the fourth century, the leaves came to be less carefully made, with mainly straight edges, as for example on the Aineia wreaths such as M5 - surprisingly for expensive wreaths with a gilded circlet (**fig. M5.4**). Myrtle leaves became triangular in shape and schematic (e.g. SCG28).

The myrtle leaves are the same shape as natural leaves, with variation in the widths and lengths of the leaves on the same wreath: for example, the leaves on M32, many of which are preserved whole, are between 26 and 39mm in length, showing that they were made individually, probably using real leaves of *Myrtus communis* as templates (**fig. 7.27**)[634]. Ivy leaves (type 3) were heart shaped and differ in size on the same wreath, such as SEA13 (**fig. SEA13.4**) to give a naturalistic effect. The best- preserved oak leaves on M16 (**fig. M16.7**) and M43 (**fig. M43.3**)

[634] See page 267.



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have rounded lobes and deep indentations indicating that they are *Quercus robur* (**fig. 7.13**), as are those on P1. The clay leaves from Tanagra represent the same tree (**fig. SCG5.5**), as do the Epirot oak leaves from SCG13 (**fig. SCG13.2**).

*Fig. 7.27 Leaves of M32; second quarter of the fourth century.*
*© Archaeological Museum of Thessaloniki, Ministry of Culture and Sports*



The leaves were cut out of hammered copper sheet about 0.5 mm thick, sometimes in intricate shapes (**fig. M16.7**). The question of what tools were used is relevant to how quickly the wreaths could have been made: a small chisel, a knife and snips or scissors are the main possibilities. Snips and scissors are made differently from shears: shears do not have a hinge to hold the two blades in contact, whereas scissors and snips do, requiring the two blades to cut against each other. Tin snips or scissors were found to be by far the quickest way to cut thin copper sheet in the experimental work and the best to cut intricate shapes (**fig. 7.28**), but it is not clear whether they were used for metal work before Roman times [635]. There are examples

[635] Craddock believes that most cutting of sheet or wire up to then was done with a knife or chisel, but he and Ogden appear to accept that metalworking shears were used from the Hellenistic period, and that scissors were probably used in metalworking from Roman times onwards (Craddock 2009, 375; Ogden 1982,43). Craddock states that snips and *fine* shears only became available from the medieval period, but does not explain why snips were not available although scissors were.

of iron scissors or shears referred to in the archaeological reports (both are called ψαλίδι in Greek) found in graves dated to the Hellenistic period in Epirus and Northern Greece, for example at Pydna (with T2X72), and what appear to be shears from Gitana and Riziani grave ζ. At least some of these were in female graves, and may have had a ritual use, such as for cutting hair for mourning, or in medicine[636]. An example of scissors, thought to be Roman, is at **fig. 7.29**. Dagi, who is a jeweller, believes, on the basis of the tool-marks on Hellenistic gold jewellery from Stavroupolis that scissors were used on this material[637], but the corrosion on the copper from the wreaths makes it hard to see the edge, and it is difficult to tell what tool was used when examining sheet-worked materials, particularly when only the object remains, and not the sheet from which it was cut[638]. However, one possible example of an edge cut with scissors or nips can be seen on oak leaf from M16, made in one piece with the stem (**fig. 7.30**). On the curved edge where the stem joins the leaf, a small ridge can be seen, which is most likely to have been made by using blunt snips or scissors.

*Fig. 7.28 Tin snips with thin copper sheet.*



[636] Gitana: Preka-Alexandri and Sgouroudis 2019, 215, with an illustration of what appear to be shears found in the agora. Stampolidis and Tassoulas 2014, 300-301, give an example of scissors which appear to be a medical tool (fig. 7.29), which are probably Roman.

[637] Dagi 2011, 10.

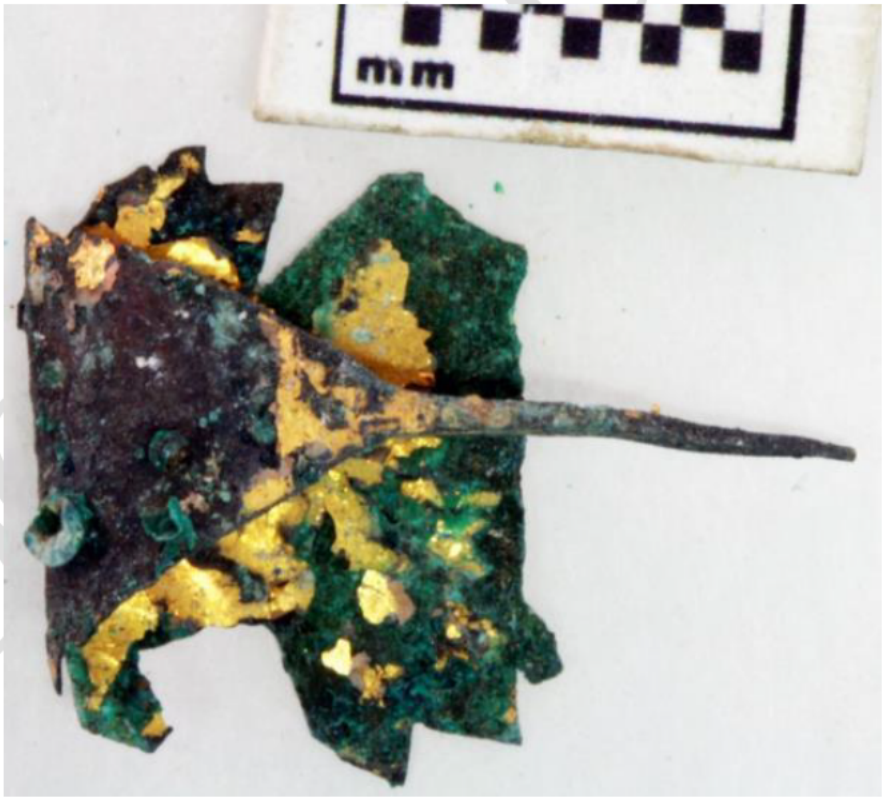
[638] Bronze items were found at Bassae with a large number of fragments of bronze sheet from which some of the objects were cut (Kourouniotis 1910, 323), and if these items included the leaves L1, they were made of thicker sheet. At this period, the material would have been cut with a knife or chisel.

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*Fig. 7.29 Half of a pair of scissors, probably Roman, National Archaeological Museum, Athens Lambras Collection, A806. Photo by Lambrou © Hellenic Ministry of Culture and Sports/Archaeological Receipts Fund.*



*Fig. 7.30 Stem and oak leaf from M16. © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports*



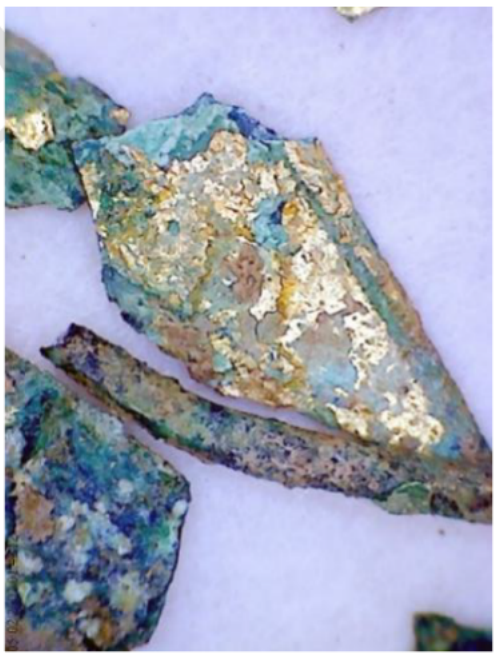
If snips or scissors were not available to cut the sheet, a sharp knife or small chisel is the most likely alternative. Chisel marks can be seen on one of the fifth century bronze leaves from Isthmia (**fig. 7.31**), but nothing like this is evident on the copper leaves from the wreaths, which are made of much thinner sheet, so a knife is more likely than a chisel.

*Fig. 7.31 edge of non-gilded leaf bronze from Isthmia IM2233a (USB microscope x20). © Ministry of Culture and Sports.*




Dagi found evidence that elements of the gold Macedonian wreaths were cut following the outline of a preliminary sketch incised into the metal[639] and the same technique appears to have been used on some of the copper leaves (**fig. 7.32**).

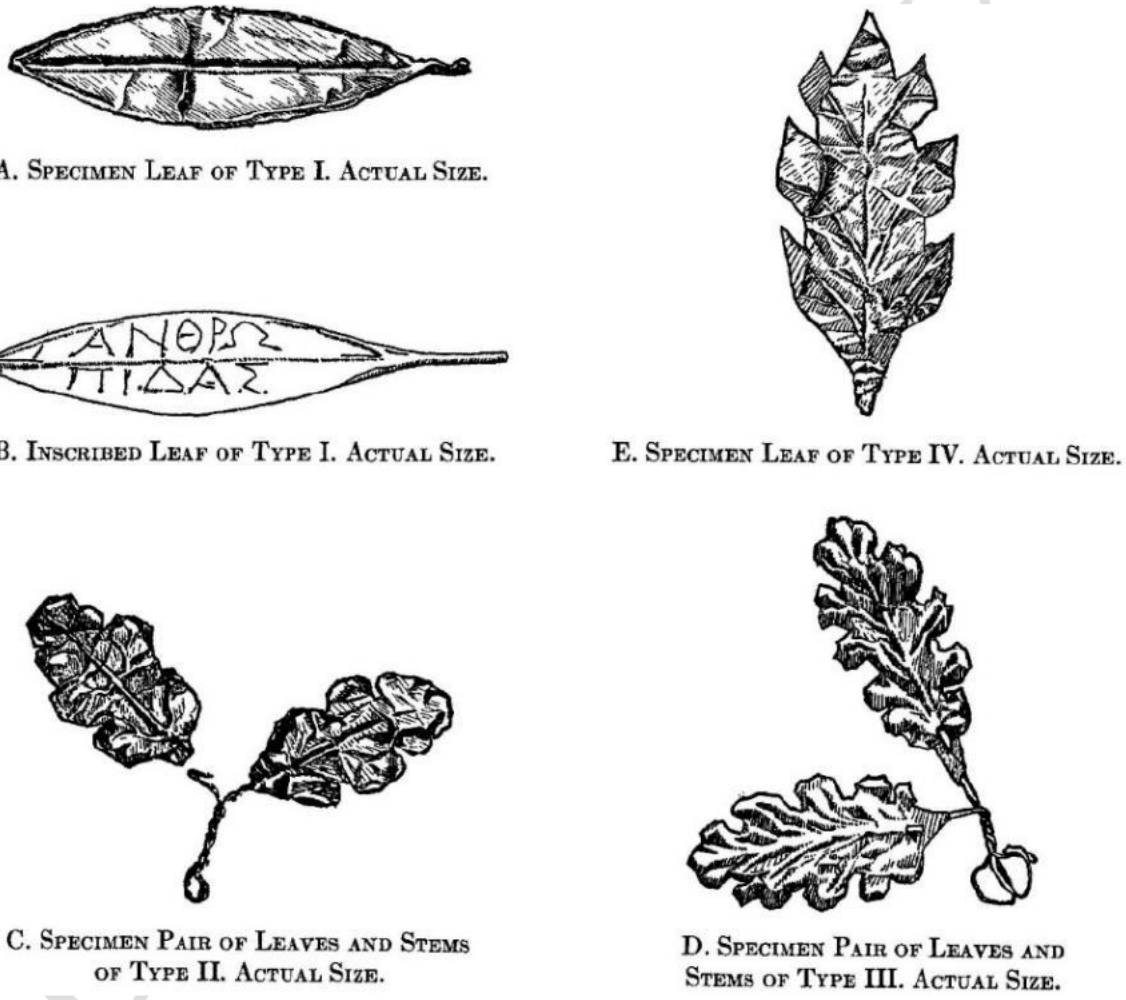
*Fig. 7.32 Leaf from SCG27, BE18065 (USB microscope, x20). © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*



[639] Dagi 2011,10.

Comfort suggests that some of the gold leaves were made by impressing gold foil on a wire framework to define the edges and central vein, then cutting round the edges, leaving a tab at one end which was folded over itself to make the stem[640] (**fig. 7.33**). It is unlikely that any of the copper leaves were made in this way since the copper sheet used for the leaves on the gilded wreaths was thicker than the gold foil used on the gold wreaths.

*Fig. 7.33 Gold leaves thought to have been cut after impressing on framework. From Comfort 1950, fig.1.*




The method or methods which involved cutting leaves from copper sheet can be contrasted with that used for the bronze leaves P1 on a late Hellenistic oak wreath from Pergamon. These are thicker than other leaves (about 1mm), have rounded corners and in my view were probably

[640] Comfort 1950, 121-2.

cast, with up to six identically shaped leaves and veins chased into the underlying bronze[641] (**figs. 7.34 and P1.1**). Some of the ungilded leaves and flowers from Olympia were also cast[642].

*Fig. 7.34 Leaf from Pergamon oak wreath, thought to have been cast, with chased veins. Omitted.*

Some of the wreath leaves have veins, which seem to have been a matter of choice for the craftsman or workshop rather than an indication of intention to represent a particular plant. Leaves from M32 for example have veins, whereas those on the other wreaths from the same grave do not, but all have the same berries, so must represent the same plant (in this case, myrtle). Oak leaves generally have veins; those on M16, M26 and SCG11 were chased in the copper (**figs. 7.35** and **7.36)**.

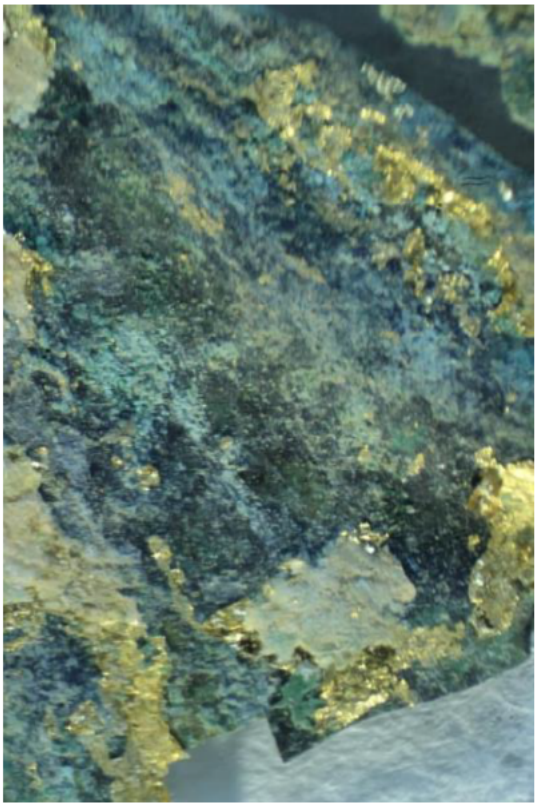
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[641] Bronze with a low tin content, as was the case here (3.1%), can be chased.
[642] Bol 1978, 66-67.

*Fig. 7.35 Detail of leaf from Derveni A, M16, showing chased design (x6.4). © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports*



*Fig. 7.36 Detail of leaf from SCG11, 3996a, from Michalitsi (x6.4), Preveza AM © Ministry of Culture and Sports*



A different method of producing oak leaves can be seen on SCG33 on which the leaves, with no veins, have regular semi-circles along the edges that appear to have been formed using a punch and in this case were not made in one piece with the stems, which were soldered on (**fig. SCG33.3**).

Yet another technique was used on the leaves of an early Italian wreath, SI 15 (**fig. SI 15.2**). This has a delicate stamped design which was also used in Italy at an earlier period on wreath-diadems and acorns, and is thought to have been produced with a matrix by stamping a metal sheet laid on a bed of pitch from the back[643].

The leaves were gilded with gold leaf, in most cases above a coating, although the coating can be very difficult to see (**fig. 6.14**). In the experimental work it was found that an adhesive was needed in order for the coating and gold to stick to the copper (see Chapter 6, page 216).

[643] The technique is described by Despini 1996, 20.

### *7.3.4 Stems*

Many of the stems used for the leaves were strips of copper all made in one piece (e.g. M6 and M16). On several wreaths and single leaves it can be seen that the lower part of the leaf has been shaped by hammering the base on each side to form the beginning of the stem, which often follows the groove of a vein, such as SEA6 (**fig. SEA6.7**). The technique of forming the stem by hammering the sheet can also be seen on a bronze leaf from Nemea (**fig. L4.5**) and on a leaf from Praisos (**fig. L5.2**). On the early wreaths such as SEA3 the stems were attached to the circlet close to the base (**fig. 7.37**). On a few wreaths, such as SCG33, the leaves and stems were formed separately and held together by solder.

*Fig. 7.37 Detail of leaf and folded stem on ungilded wreath from Kommos, SEA3 (probably late fifth century). The folded metal is indicated in the yellow oval. © Hellenic Ministry of Culture and Sports/ Heraklion Archaeological Museum*



For the berries, more complicated methods of making the stems were sometimes adopted. All were formed of wire inserted into holes in the berries. From as early as the second quarter of the fourth century some were made of wire which is square in cross-section, such as on M32, and which often has a crease or fold (**fig. 7.38**). Wires with a square section are produced by striking a metal rod between grooved metal blocks or a grooved punch and a grooved anvil

(swaging)[644]. This would have been the method used to produce the many square wires used on the wreaths, from the smallest on M32 (width approximately 1 mm) to the largest on M39 (width approximately 2mm) (**fig. 7.39**). Square wires could be made more rounded: the metal strip was first creased with a cold chisel, then hammered into a C-shape and rounded on an anvil: Oddy calls this technique 'folding' (**fig. 7.40**)[645]. Wire made in this way was used on many wreaths including M39, SCG15, SCG18 (**figs. 7.39, SCG15.4, SCG18.4 and SCG18.6**) and SCG27 (**fig. 7.41**).

*Fig. 7.38 Stems from M32 (Phoinikas 5,3) showing crease. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*

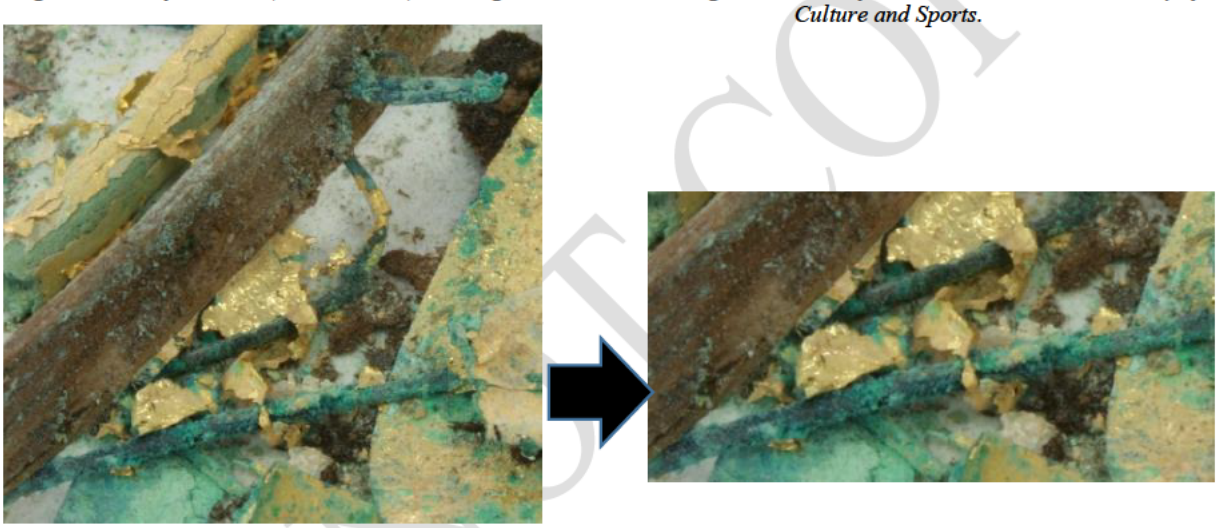


*Fig. 7.39 The square wire in the centre has been folded (M39 Sedes MΘ15370) and the two wires on the top right have been twisted together (microscope image). © Archaeological Museum of Thessaloniki, Ministry of Culture and Sports.*




[644] Ogden 1982, 52. This and the few other academic studies of wires mostly look at gold, where the working methods are easier to see because it is not subject to corrosion like copper.
[645] Oddy 1987, 177.

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*Fig. 7.40 Technique for making square wires more rounded. From Oddy 1987, fig. 1.*

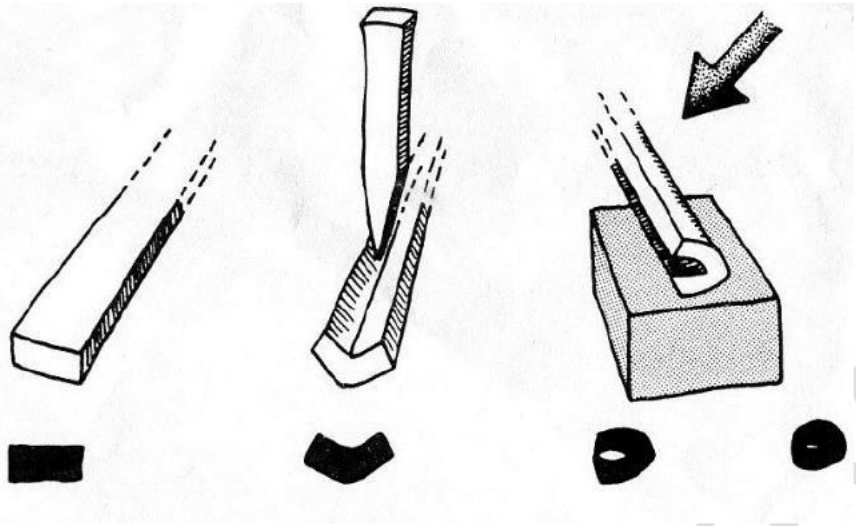
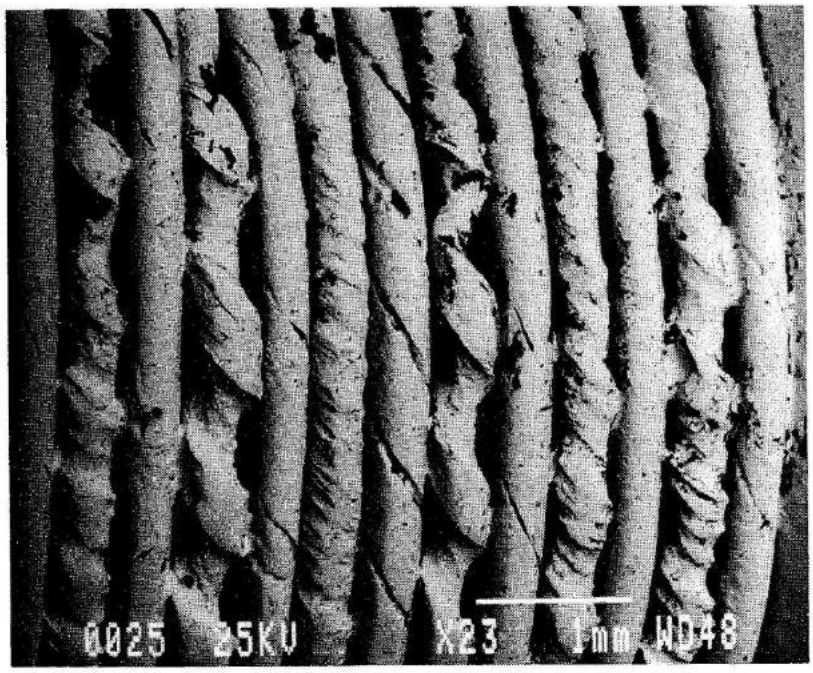


*Fig. 7.41 Cross-section through folded wire, SCG27, Volos AM BE18065. From Asderaki and Rehren 2008, 510, with kind permission.*



Twisted wire is often found on wreaths from Macedonia including M28, M25 and 26, M37 and M39, and also from Southern Italy including SI6, as well as SCG35 (Thessaly). Several methods were used in antiquity to make twisted wire, the earliest of which is known as strip twisting. Strips were cut from plate metal which were twisted into a spiral around another wire that was then removed and the coil tightened by twisting as much as possible; with this method only a single seam is visible and the wire is hollow in cross-section; a second method involved making a rod which was square in cross-section by swaging, then twisting the rod and finally rolling it to flatten the edges; this method (block-twisting) produces two spiral grooves and the core is left[646]. Both are shown in **fig. 7.42**.

*Fig. 7.42 Examples of strip and block twisted wire. SEM image by Nigel Meeks. ©The Trustees of the British Museum. From Swaddling et al. 1991, 11.*




On some of the wreaths, such as M28, the block-twisted method appears to have been used (**fig. 7.43)**, and on others such as M25 the strip twisted (**fig. 7.44**), but it is often difficult to tell owing to the corrosion on much of the material. However, a third method seems also to have been used from the end of the fourth century in Macedonia, which was possibly transitional between the two, that involved wrapping a strip of metal around a core as can be seen on some

[646] Swaddling *et al.* 1991, 9-11.

further stems from M39, **fig. 7.45**. Another example of the same technique may be what was used on M29 and M37. The skill required to make the wires for the stems indicates that these craftsmen were metalworkers. On several of the fourth century Macedonian wreaths the craftsmen appear to be experimenting with a combination of techniques, sometimes on the same wreath. One example is a leaf made with a stem, which appears to have been twisted with another stem (**fig. 7.46**). Two stems have also been twisted together, probably for strength, on a wreath from Sedes, M39, producing a wire which looks like an early example of block twisting (**fig. 7.39** top right). There are other examples where stems have been joined in another way, probably using solder, where one slender stem supports a berry and another a leaf (**fig. 7.47**).

*Fig. 7.43 Wire stems on M28 (Pella) which appear to be block-twisted (no hollow core). © Ephorate of Antiquities of Pella, Hellenic Ministry of Culture and Sports.*



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*Fig. 7.44 Strip-twisted stem from M25, Nikisiani Δ, Δ365(note the hollow core). © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



*Fig. 7.45 M39 Sedes MΘ 28253 stem made by twisting a strip around a second wire. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*

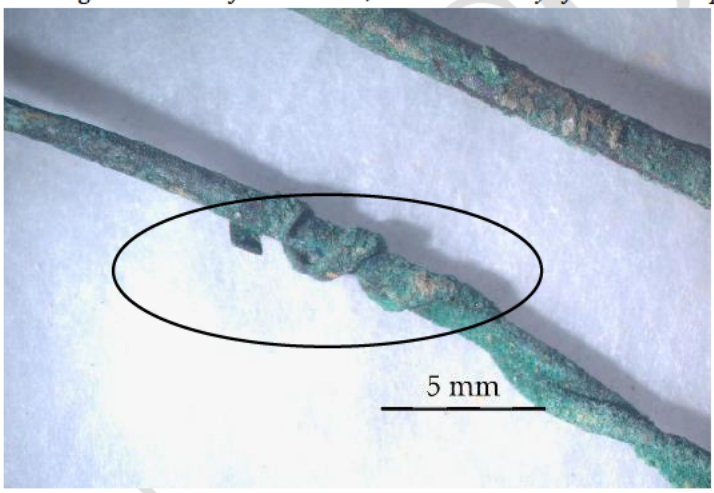



*Fig. 7.46 Leaf and stem split in two and twisted, or two stems twisted, on M18, Derveni Δ, Δ20 © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports*



*Fig. 7.47 M32, Phoinikas 5,3, two joined stems supporting a leaf and a berry. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports*



Spirals are sometimes found on Macedonian wreaths including M19, M25, M39, M30 and M32, originally supporting berries, and made from wire which is square in cross-section (**fig. 7.48**).

*Fig. 7.48 Spirals made from square wire M30, Phoinikas 5,1. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



Some of the stems are elaborate, consisting of 'branches' with small stems emerging from the sides, as on M16; the smaller stems have been inserted through holes in the larger 'branches' (**fig. 7.49**). In this case, both 'branches' and stems have been gilded. The skill of the craftsmen, and their patience and ingenuity, can only be wondered at. The stems were also gilded on early wreaths such as M30-M33.

*Fig. 7.49 Elaborate stems on M16, Derveni A, with stems emerging from thicker branches, inserted into small holes. There is also an example of two small stems emerging from a tubular piece of copper. © Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*



The stems were often found bound with thread or another organic material; in many cases, this was done to give extra support to the stems carrying heavy items, such as rosettes - for example on SCG35 (**fig. 7.50**), SEA17 (**fig. SEA17.4**), and M19. In other cases, the thread seems to have been wound round a single stem to keep the twisted stem taught (**fig. 7.51**).

*Fig. 7.50 Stems bound with linen thread, SCG35. Pilaf Tepe 12081 © National Archaeological Museum, Hellenic Ministry of Culture and Sports.*



*Fig. 7.51 Stem bound with linen thread from M39, Sedes MΘ28254*
*© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports.*




The stems of both leaves and berries which pass through holes in the circlets (type 2) were originally bent at an angle on the back of the circlet, as can be seen in **fig. 7.26**, but are generally broken at this point. On SEA7, the stems are twisted together on the back of the circlet; the purpose of this is unclear, but it was perhaps done to avoid sharp ends hurting the head. On this wreath, one stem was made in one piece with a leaf and the other end could have supported either a leaf or a berry which has now become detached (**fig. SEA7.4**). On a few of the wreaths with heavy items, such as M37, the stems are wrapped around the circlet, in the same way as on gold wreaths, for extra strength (**fig. M37.5**).

### *7.3.5 Berries and acorns*

The berries on the fourth century wreaths (types 1 and 2) are mostly oval, and were formed by hand from clay, as is evident from the variation in sizes on the same wreath; occasionally the fingerprints of the craftsman can still be seen in the clay. The myrtle berries became cylindrical in shape, and smaller, during the latter part of the fourth century and the third (type 4). These berries appear to have been moulded, since they are of a regular shape and consistent size (**fig. SCG23.3**). Many have a small cross at the end opposite to the stem.

Gilded spherical objects are found on many wreaths (types 3 and 4) and represent myrtle or ivy as discussed above (page 271). Pink spherical or oval items are occasionally found (e.g. SEA1, **fig. SEA1.5** and M4, **fig. M4.2**) and probably represent myrtle buds, which are slightly pink

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and spherical. Berries which are spherical and have a flattened end with a small ridge (e.g. SI 1) are ivy (**figs. 7.14 and M37.1**) and the stems are bound together in a bunch, as on ivy plants (**fig. SI 1.6**).

Some of the berries have a coloured coating; in many cases it was used as a bole but in a few the colour appears to have been intended to be seen, as on M25, since the gold was applied in a distinct line leaving the colour visible (**fig. 2.32**). The myrtle berries on this wreath were coloured red (cinnabar) and further berries in the same shape were blue (azurite): although either could have been used to represent the natural colour of myrtle berries, by using both it seems that the craftsman was not attempting any naturalistic representation and that the colours had a decorative purpose.

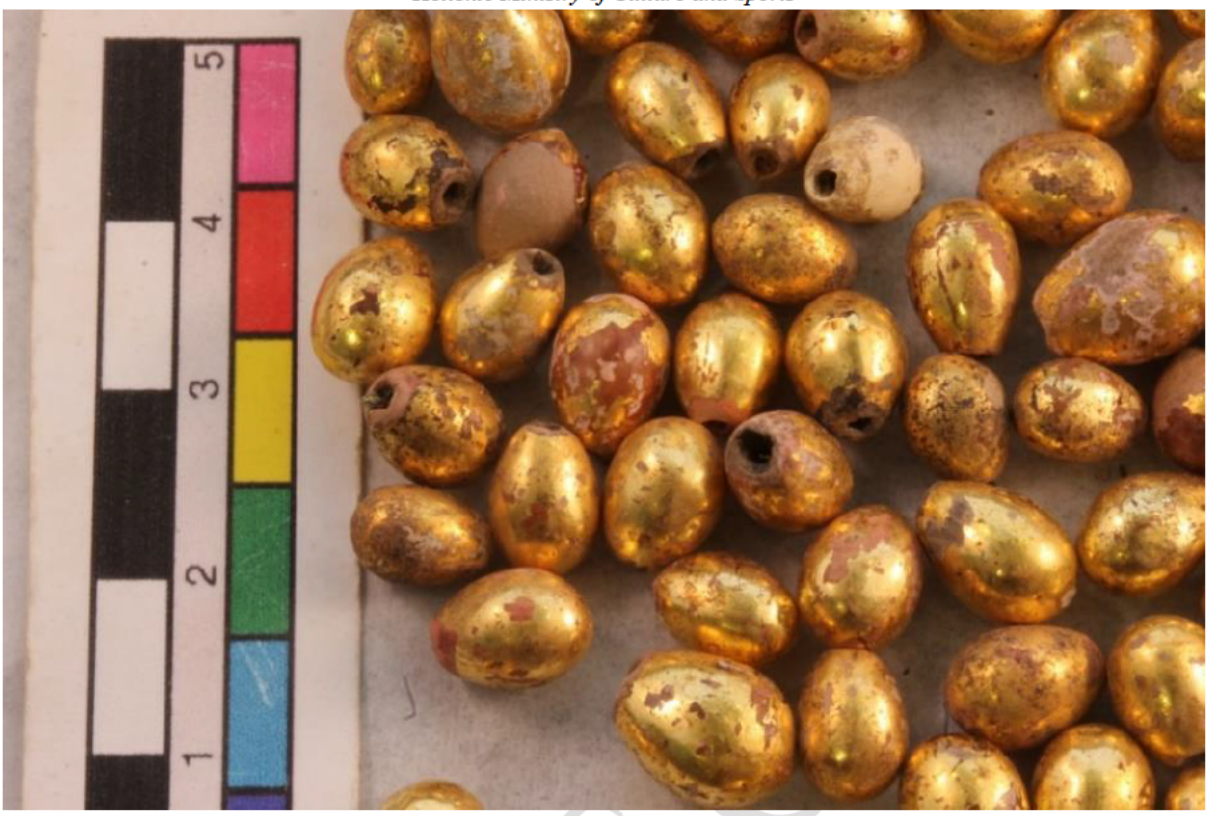
The copper stems would have been inserted into the berries while the clay was still soft, with the wire being used as a tool to make the hole. The clay fabric was either fired at a low temperature or left to dry in the sun, but the coating was not fired, except sometimes by accident in the pyre. In most cases the stems still fit tightly inside the berries and there are no traces of glue being used to fix them in antiquity. The stems are of varying lengths, and the craftsman would probably have cut them from prepared wire as the wreath took shape.

Acorns were generally made by moulding. On one wreath from Epirus, SCG9, however, the marks on the cups were incised by hand, since all are different and there are no mould marks (**fig. 3.21 and 3.22**). They were made in several different ways: within Macedonia, the acorns on M43 and M16 are not the same (**figs. M43.8** and **2.21**), and are different again from acorns in the Dodecanese, Thessaly and Italy (**figs. SEA4.5, SCG33.4** and **SI 4.4**). Some of the acorns from Epirus have flat backs, indicating that they may have been used on boxes.

The berries and acorns were in most cases gilded, using gold leaf applied over a coating or bole. The coloured bole added depth to the gold and provided a smooth surface and in some cases, the berries seem to have been burnished: the gold has been exceptionally well adhered, and has a lustre which is otherwise difficult to explain (**fig. 7.52**).

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*Fig. 7.52 Berries from M42, Stenomakri Toumba B, B76, with bole and lustrous gold. © Archeaological Museum of Vergina, Hellenic Ministry of Culture and Sports*



### *7.3.6 Grapes, rosettes and insects*

Bunches of grapes were sometimes used on wreaths of type 3. The grapes were shaped in a mould, the marks of which can clearly be seen on M37 (**fig. 7.53**) and were made in the same way throughout the Aegean and in Southern Italy. They were gilded above a coating, using the same technique as on the berries.

*Fig. 7.53 Mould marks on grapes from M37, Potidaia (USB microscope).*
*© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports*



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Rosettes are common on the South Italian wreaths, representing ivy flowers (**fig. 7.14b**). It seems from the varying number of petals that until late Hellenistic times they were formed by hand, by pressing flattened balls, like half berries, onto a flat base. They had a white coating, which was not always gilded.

Insects appear on a very few wreaths, from Potidaia (M37), Ithaca (T3X16) and Italy (SI 1 and T5X4). The underbodies of the grasshoppers on SI I are different from each other and no mould marks are detectable on so appear to have been made by hand (**fig. 5.9**). The two cicadas on the same wreath however appear to have been moulded, since they are identical and bear what look like flashing marks from a mould. Incisions were made in the clay of the grasshoppers by hand for greater realism, and all the insects were gilded by applying a coating and gold leaf.

### *7.3.7 Flowers*

Very few of the wreaths from types 1 and 2 have flowers: those on M27 are made of gilded copper, and there were similar flowers on M39 (**fig. M39.8**) and SEA20 (**fig. 4.5**).

Towards the end of the fourth century, large flowers appear, made of clay and generally painted white with red, pink or blue details (type 6 wreaths, including M14, M23, M21 and M36). Kaolin made a smooth, even, white coating and the expensive pigment cinnabar was used for the red and pink. There is variation in the shape of the petals and colours and although probably moulded they were certainly painted individually (**fig. 7.54**). They sometimes have gold highlights, and there are a few examples of flowers which are gilded all over (e.g. M14 and M25). The flowers on M25 could be lilies and/or myrtle (**fig. M25.10**). M36 has red and white flowers with six petals, in three main shapes, large pointed, small pointed and rounded (the most likely suggestions are lily for the large flowers with a vein, rose for the rounded and myrtle for the pointed [647]) (**figs. 2.33 and 7.54**).

[647] Tsimbidou-Avloniti 2005, 73 suggests lily and pomegranate.



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*Fig. 7.54 Painted flowers from M36, Phoinikas Macedonian Tomb 17442 (lily top right, myrtle? top left, rose? in lower row).*
*© Archaeological Museum of Thessaloniki, Hellenic Ministry of Culture and Sports*




Small bell-shaped flowers were used on wreaths in the fourth and third centuries, made by moulding, and examples are found throughout the four regions studied, including SCG22 and SCG 23, M3, SEA1 and SI 9, SI 8, SI 4, SI 19 and SI 27 (**fig. 7.55**). The plant depicted varies according to the number of petals and the context: on some wreaths it may be myrtle, but elsewhere (e.g. SI 8) ivy and sometimes both (e.g. SI 4). The bell-flowers from Greece were gilded but those from Italy sometimes left ungilded. There are a few instances of added blue as on SI 27.

*Fig. 7.55 Bell flower from SCG22, BE18043/18060, Volos AM*
*© Ministry of Culture and Sports/Ephorate of Magnesia*




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### *7.3.8 Medallions*

Some late Hellenistic gold wreaths from Dardanos have a medallion in the centre, which is flat and contains an impression of a coin or of Aphrodite and/or the Erotes[648] but nothing similar has been found on gilded wreaths. One of the wreaths from Derveni B, M17, has a wire threaded through the wood like a staple, which could have held an object other than a stem, since this is not the way that stems are normally attached (**fig. M17.3**). It lies above ordinary pierced holes, so would not have been a fastening at the back of the wreath and it is possible that this wire once held a central decoration.

## 7.4 Concluding points

### *7.4.1 Time taken to make a wreath*

Although it is difficult to tell how long it would have taken to make a wreath, the best guess, based on the author's experimental work (described in the Appendix), is that a standard wreath could have been made by one person in about a week, assuming the metals had been hammered into sheet or leaf and the wire for the berry stems had been made in advance. The most time-consuming part would have been to apply the gold leaf to the various elements. Although it would have been difficult to make a wreath after death in time for the prothesis (the day after death) it would have been feasible in the longer interval before the funeral, if desired. However, there is no reason why the wreaths with standard features (myrtle leaves etc) should not have been available ready made. Those of a non-standard size and with more expensive or unusual elements such as insects or painting are likely to have been made to order and thus during the life-time of the deceased.

### *7.4.2. Workshops*

Some of the wire stems are very carefully made and appear to have been made by metal workers. The skills required to make the gilded 'branches' on M16, with gilded stems inserted

[648] Sevinç and Treister 2003, 236-237.



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into them, and to gild the berries on this and similar wreaths above bole were of a high order. These wreaths, and those with textiles, were clearly luxury items that would have taken a great deal of time to produce. There are distinct similarities between some myrtle wreaths, such as those from Aineia (M5-M13), and Derveni (M16-18 and M20), even though there is about 25 years separating the earliest to the last: they are all of high quality, the berries are the same shape and have the same coloured bole, as well as gilded circlets and stems, suggesting that they may all have been made in the same workshop. There is however a great deal of variation between other wreaths, indicating that the vast majority were made locally. The wreaths throughout the four regions required various skills to produce them, including metalworking, clay working, painting and gilding and it is difficult to say whether those who made them would have been metal-workers, jewellers or potters. In my view they were almost certainly made in wreath workshops which had several specialists. The clay would not have needed firing, so a kiln would not have been required, and the metal-work for the items other than the elaborate stems would have required fairly simple tools, such as scissors or snips (if available at the time) or a sharp knife as well as gilding equipment such as an agate tool for burnishing and a leather cushion on which to cut the gold leaf.

### *7.4.3 Use in life?*

The Rhodian circlets such as SEA8 of type 1 allowed the stems to be wrapped around the circlet and the sharp end of the stems buried in the bone (**fig. 7.23**), suggesting that these particular wreaths may have been designed to be worn by the living since the sharp ends would have hurt the head. The stems twisted together on the back of the circlet, shown in **fig. SEA7.4,** may have the same explanation, as may the textiles which once formed part of some of the Phoinikas wreaths (see Chapter 2, pages 24-5). The length of time taken to produce the more elaborate wreaths, and those which are found as identical multiples in the same grave, suggest that they were made while the owner was still alive, and were perhaps used for special occasions or hung on the wall before burial. Dagi found evidence that gold wreaths were used in life from the

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repairs which she could see[649], but the state of preservation of the gilded wreaths is far less good. One wreath, SEA1, has elements which appear to have been put together before fully dry (see chapter 6, page 250) suggesting hurried preparation. Most importantly, the fragility of all the wreaths suggests that they could not have been used very much in life, and that therefore their main use was funerary.

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[649] Dagi 2011,14.

# CHAPTER 8: ORIGINS AND WIDER CONTEXT

## 8.1 Introduction

In this chapter the origins and wider context of the wreaths will be considered, including their possible derivation from similar objects and the artistic and cultural influences that led to their presence in graves. Several possibilities were considered for the geographical origin of the wreaths on embarking on this research. The most likely was Macedonia, where the majority have been found and where there was a long tradition of metal working; the second most likely was Southern Italy, which has yielded gilded silver material with elements similar to those on gilded wreaths.

The locations of the earliest surviving gilded wreaths of each type will be discussed first, followed by consideration of similar items, in order to see whether the origins of the gilded wreaths lie in any of this material. This will also serve to set the gilded wreaths in a wider context. A cautious approach is adopted to material which no longer survives, as without study it is not possible to know whether it was in fact gilded and whether items such as leaves were originally part of a wreath.

## (though possibly not gilded) 8.2 Earliest gilded wreaths

On the basis of the surviving material, it seems that the earliest gilded copper wreaths were from Macedonia, having been excavated at Aiani (M2), Olynthos (M27) and Thasos (M39): all are thought to date to the first quarter of the fourth century. Four similar wreaths which like them have a circlet that is round in cross-section (type 1) were found in Rhodes (SEA6, SEA8, SEA10 and SEA20) but are later, since their most likely date is the middle of the fourth century[650]. In Italy, two copper or bronze wreaths, T5X35 and T5X36, which are said to have been gilded and are dated to around 470 and 370, were excavated in Taras, but neither appears

[650] See Chapter 4, page 130.



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to survive[651] so there is no way of telling what their design would have been or how the gold was applied. The earliest surviving wreaths from Italy (SI 15 and SI 23), possibly to be dated as early as the mid-fourth century, are silver-gilt, which almost certainly developed from silver-gilt wreath-diadems[652]. These wreaths have a stamped design, and are of a type that seems to have been confined to Southern Italy and then died out.

The earliest of the type 2 wreaths, dated to the second quarter of the fourth century, were found in Macedonia at Phoinikas (M30-M34), Vergina Stenomakri Toumba (M42 and 43) and Mieza (M22). A few wreaths of this type have also been found in Southern and Central Greece, but all are later and it is noticeable that many of the scholars who have written about the burials (Sikyon (T3X29), Isthmia (SCG20) and Michalitsi (SCG10-11)) view them as either Macedonian or the result of contact with Macedonia[653]. The earliest type 2 wreaths from Southern Italy for which there is reasonably secure dating are from the third quarter of the fourth century at the earliest (SI 6 and SI 14), so later than the earliest Macedonian.

Wreaths with lead circlets, ivy leaves and grapes (type 3) may have originated in Macedonia[654], but developed in Italy and Rhodes, and the wreaths with white-coated ivy berries and large rosettes appear only to be found in Italy, so either of these may be regarded as their origin. Type 4, with moulded clay flowers and berries, is likely to have originated in Mainland Greece: an example was found in the Peloponnese with pottery dated to the mid-fourth century (T3X27), and a similar wreath (though possibly not gilded) was found at Akraiphia (SCG1) with pottery dated to just before 350 - both well before any similar items elsewhere[655]. The only provenanced examples of gilded clay leaves, suggested in this dissertation to have been used on roll wreaths (type 5), were found in Boeotia[656] , but roll-wreaths were used all over the Greek world, judging

[651] T5X35: *Catalogo* 1.3, 304-6; T5X36: *Catalogo* 1.3, 393-6.

[652] Discussed below (section 8.3.1).

[653] Dakaris 1963, 192 (Michalitsi); Krystalli-Votsi 2013 (Sikyon); Jackson 2015, speaking of the swords found near the wreath fragments (Isthmia).

[654] M37 is earlier than SI 1, but both are unusual wreaths; the clearest examples of type 3 are SI 24 and SEA13.

[655] See Chapter 3, pages 83 and 88.

[656] See Chapter 3, pages 84-85.



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by the many figurines with representations of such wreaths, and wreaths such as SEA1 (Crete) may be further examples (mid-third century). It is also difficult to say where type 6 wreaths originated; several examples have been found in Macedonia dating to the late fourth century (e.g. M36), and only one from the Peloponnese (T4X21), so Macedonia is the most likely region; they became common at Sciatbi (Alexandria) in the beginning of the third century[657] and are also found in Thrace (e.g. T1X29).

As discussed in Chapter 6, none of the materials used on the wreaths is sufficiently unusual to say where the metal or clay originated and all would have been obtainable in the regions studied. The most that can be said is that the gold and some of the clays used on wreaths in Macedonia *may* have been from Macedonia or Western Thrace and the kaolin used on wreaths from all regions *may* have been from Melos. What is obvious, however, is that gilded wreaths were exceptionally fragile objects, which would not have travelled easily, so it is likely that they were made close to where they were found, no doubt using local materials where these were appropriate. Local manufacture is confirmed by the many differences in design in the wreaths, discussed in the last chapter.

The technique of using a coating to gild metal does not seem to have been used in Greece before the fourth century, and it is this technique which stands out as the distinguishing feature of the gilded copper wreaths. The methods of gilding on earlier wreath-diadems, wreaths and leaves were different, including folding gold foil on the leaves from Corfu (L2), and diffusion gilding on silver. As discussed in Chapter 6, it is possible that this technique was transferred from use on clay, maybe brought to Macedonia from Athens.

The working assumption of this thesis that the geographical origin of gilded wreaths was in Macedonia is therefore largely borne out by this research, although those with largely gilded clay elements (type 4) almost certainly originated further south.

[657] Tsigarida 1988, 128.



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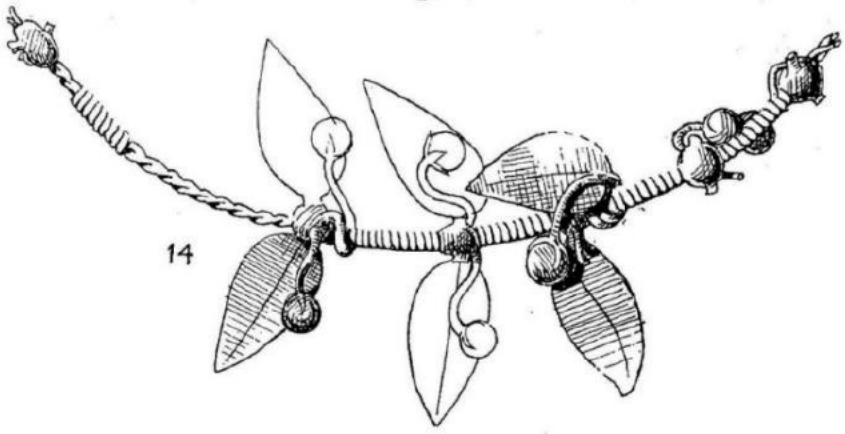
## 8.3 Possible influences from similar items

Items similar to the gilded wreaths from before the period studied will now be considered to see whether their origins can be traced back to such items. Published information about these items is summarised in Table 8.

### *8.3.1 Gilded silver items (Table 8 Part 1)*

A wreath of particular interest, because it was found in a level dating to the seventh century, was excavated at the Temple of Artemis Orthia at Sparta (T8X15) and published with a drawing (**fig. 8.1**)[658] but it may no longer survive. Dawkins describes the circlet as being made of twisted silver and tubular gold beads, the berries as silver and the leaves silver-gilt (**fig. 8.1**). It seems to have been quite small: the fragment as drawn would have been about 11.5cm long according to the scale. The design resembles that of SEA3, which is thought to date to the late fifth or early fourth century and which also has leaves attached to a rigid circlet, although the berries are spherical rather than oval.

*Fig. 8.1 Wreath from sanctuary of Artemis Orthia (T8X15). From Dawkins 1929, pl.203.*




Gold and silver jewellery.
Scale 1 : 1.
(*see p. 383*).

[658] Dawkins 1929 refers to it being found in Laconian I levels, which Boardman (1963,3) puts at 650-620. The wreath does not appear to have been seen since it was drawn for Dawkins' book on Artemis Orthia, published in 1929. Curators at the museum in Sparta and the National Archaeological Museum in Athens made a search but were unable to locate it. It was excavated on 18.3.1906 before Dawkins arrived; Diary 1, p.24 records: "At sanctuary large finds of bronze, lead figures etc (silver gilt ornament) under sanctuary walls". A search of the Dawkins archive in the Bodleian Library and of the archive in the BSA was made by the author but did not reveal any photograph of the wreath or any further information.

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Several gilded silver items dated to the late sixth or fifth century have been found in Italy which resemble elements of wreaths, including myrtle leaves, berries and acorns that are thought to have been part of polos headdresses[659]. One group includes items found at the Thesmophoric sanctuary at Oria, Monte Papalucio, just east of Taras, dated to 490-470 (T8X2) **(figs. 8.3a and 8.3b).** A second group is the wreath-diadems from Archaic graves in Taras, which have myrtle berries and leaves (an example is at **fig. 8.4**) mounted on a broad band and without stems[660]. The band became narrower and developed into something like a wreath: one silver gilt wreath-diadem (T8X5), dated to the beginning of the fifth century, is composed of myrtle berries mounted on a gilded silver strip which has a loop at each end to hold a string (**fig. 5.19**). Many of these South Italian items have a stamped design, which also features on two gilded silver wreaths from Taras (SI 15 and SI 23, **fig. 5.2**), and the elements include acorns (**fig. 8.5**), sometimes found on later wreaths in Taras. The similarity between the leaves, berries and acorns found on many of these items and on the gilded silver wreaths, as well as the technique of using a matrix for stamping the leaves, show that the gilded silver wreaths SI 15 and SI 23 were influenced by earlier Italian material and may also indicate an influence on gilded copper wreaths.

*Fig. 8.3a Silver gilt leaves from Oria (T8X2) From Guzzo 1990, 276..*

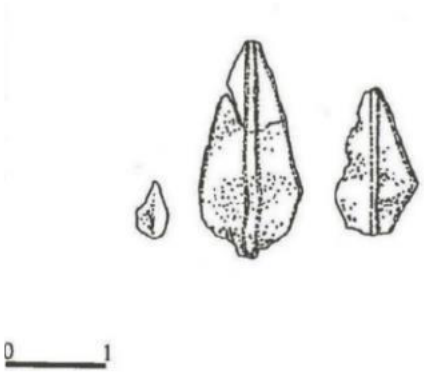
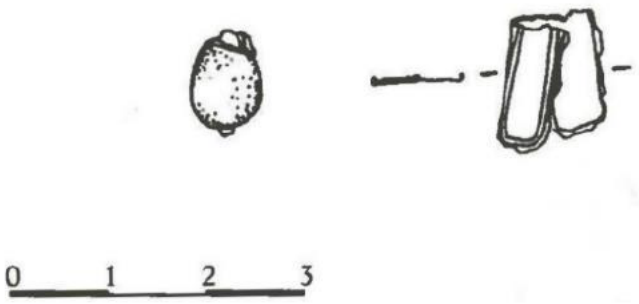



*Fig. 8.3b Silver gilt berries from Oria (T8X2). From Guzzo 1990, 276.*




[659] See pages 162-163.

[660]There was some doubt when the silver gilt items were first excavated as to whether they were belts or wreaths, but some were found close to the skull, making it clear that they were head decorations - *Arte* 144.

*Fig. 8.4 Detail of silver gilt wreath-diadem T8X3. ©National Archaeological Museum of Taranto.*



*Fig. 8.5 Elements of polos headdresses found in sanctuary wall fills at Oria T8X2. From D'Andria 1988, fig. 655-657.*



A wreath of gilded silver was found in a grave in Cyrenaica (Libya) (T8X1) which should possibly be dated to as early as the last quarter of the fifth century[661]. It represents olive and looks very similar in design to some of the gold and gilded wreaths (**fig. 8.6**). Its present location is unknown, but it is likely that the gilding was done using heat rather than with a coating (see section 6.3).

[661] Vickers and Bazama 1971, 79-80. Although the main burial is dated as stated in the text, there may have been a second, later, burial which contained a glass bowl in the same tumulus (Ignatiadou 2013, 77, note 153).

*Fig. 8.6 Gilded silver wreath from Aslaia, Cyrenaica. From Vickers and Bazama 1971, fig.8.*



### *8.3.2 Leaves and branches*

Many single metal leaves have been found in sanctuaries, and excavators have tended to assume that they once formed part of wreaths, referring to epigraphic sources which mention metal wreaths being hung on the walls, altars or statues[662]. There are three difficulties with translating this hypothesis to gilded wreaths, however: the first is that in the main, only single leaves are found; the second is that few bear any evidence of attachment to a circlet and the third is that very few of the epigraphic records refer to gilded, as opposed to gold or silver, leaves.

A few leaves including some from Isthmia and Nemea (L3 and L4) do seem to have been part of wreaths, probably from a statue of an athlete. The material from Olympia also seems to have included some wreaths (discussed in Chapter 3, page 93). None of this however appears to have been gilded. Leaves found in the Temple of Apollo Korkyraios in Corfu are of particular interest because the dating is secure, to the late fifth century, and they were described as gilded

[662] As to the wreaths being hung on the walls (κρεμάμενοι or ἠρτημένοι πρὸς τῷι τοίχωι) see Homolle 1882, 107.

by the excavator[663] (L2). They are all different, and some were carefully made, with pie-crust edges and deeply incised veins, but no sign of attachment to a circlet could be seen when they were examined. It is just possible, nevertheless, that they were part of a wreath, though of a different type from any of those from Macedonia, since the shape of the leaves resembles those on a gold wreath from Vulci (T8X16) dated to the first half of the fourth century[664] and a similar method of attachment using a small strip of metal might have been used (**figs. 8.7a and 8.7b**). Some gold foil has been preserved with the Corfu leaves which seems to have been used to gild the leaves, but there were no traces of an adhesive or coating so the gilding was almost certainly done by the older method of folding it over the object (**fig. 7.21**). When examined under the microscope, tiny traces of copper as well as impressions which look as if they are from the tip of a leaf could be seen on the gold, which is self-supporting (and thus the thicker foil).

*Fig. 8.7a Gold laurel wreath from Vulci with impressed design, T8X16 From Scarpignato 1981, fig. 1.*



[663] Kalligas 1968, 311.
[664] Coen 2007, 157.

*Fig. 8.7b Detail of gold laurel wreath from Vulci. The fixing of the leaves with a small strip is shown in the circle. From Scarpignato 1981, fig. 1 and 2.*



Many further bronze or copper leaves were found in sanctuaries in Greece including the Temple of Zeus at Olympia, the Temple of Apollo Epikourios at Bassae (L1), as well as at Dodona, the Athens Acropolis, Delos, Delphi, Lindos on Rhodes and on the Altar Hill at Praisos on Crete (L5)[665] (**figs. 8.8-8.11**). The leaves from Praisos and Bassae were examined but no trace of gold was found.

*Fig. 8.8 Laurel leaf from Bassae, L1.*
*© National Archaeological Museum, Hellenic Ministry of Culture and Sports.*



[665] Olympia: Bol 1978, 66-68; Bassae: Kourouniotes 1910, 274; Dodona: Palaiokrassa 2016, 64-65; Athens Acropolis: de Ridder 1896, 136-138; Delos: Homolle refers to some bronze leaves, which he believed to be from a wreath, and which he assumed were once gilded and a few more are mentioned by Déonna (Homolle 1887, 403; Déonna 1938, 312; Plassart 1928, 154); Delphi: Perdrizet 1908, 122; Lindos: Blinkenberg 1931, cat. 1560 and 1561; Praisos: Bosanquet 1902, 258-9.

*Fig. 8.9 Leaves and branch from Dodona. National Archaeological Museum, Athens, Kar. 303, 312/4, 315-14. Photo by Irini Miari © Hellenic Ministry of Culture and Sports/Archaeological Receipts Fund.,*

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*Fig. 8.10 Material from the Acropolis of Athens item 412 described as an olive branch, although the leaf on the upper right look like myrtle (item 420 (6980); the other leaf is oak (Quercus ilex?), item 424 (6979). From de Ridder 1896, 136-9.*

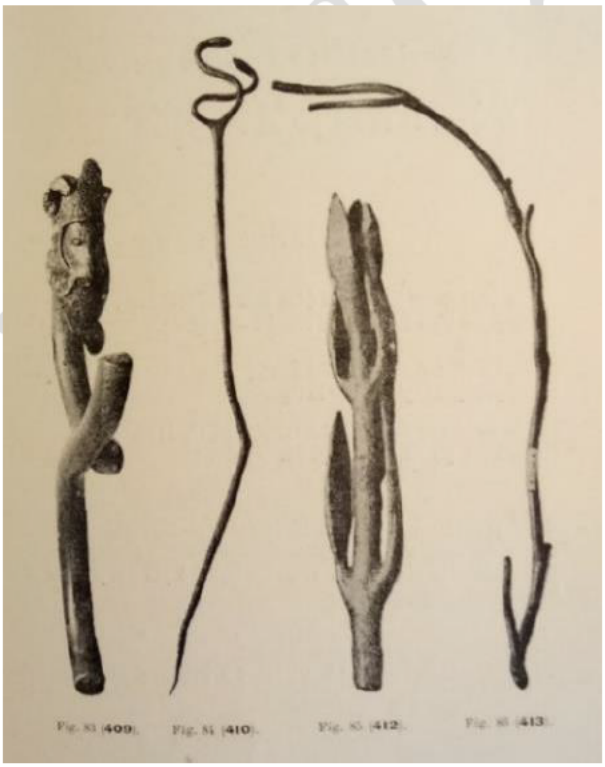






*Fig. 8.11 Two leave from Praisos (L5). © Hellenic Ministry of Culture and Sports/ Herakleion AM.*



Leaves found in Italy cast further light on their use including some found in the *temenos* of the Temple of Apollo and Aristeas in Metapontion, which are dated to the beginning of the fifth century (**fig. 8.12**)[666]. A coin from Metapontion from c.450 shows a statue of Apollo with a branch, probably issued to commemorate its consecration in the *temenos*[667] (**fig. 8.13**). There is archaeological evidence for a statue of Apollo/Aristeas in this location[668], but the leaves are more likely to have been part of a bronze branch beside the statue, since the god does not appear to be wearing a wreath on the coin[669]. Bronze or copper leaves were also found in a votive context of unknown dedication at Monasterace Marina, ancient Caulonia (Calabria)[670]. They were almost certainly attached to branches, which were in the same location. As discussed in Chapter 5 (pages 154-155), excavations at the Temple of Apollo Alea at Cirò in Calabria produced many leaves, excavated in the lower part of the cella, thought to be the treasury[671]. Some were attached to what appeared to be a circlet, but branches were also found, very like some of those from the Athens Acropolis and Olympia [672], so it would seem that there were both wreaths and branches here (**figs. 8.14, 8.10 and 3.20**). Further leaves were found at Locri

[666] De Juliis 2001, 171.
[667] Stazio 1973, 83-84; the texts and coin are also discussed by Bottini 1992, 96-96.
[668] De Juliis 2001, 171.
[669] Cf Bottini 1992, 96 and Bottini 1986, 109, who suggests the leaves once decorated the statue of the god.
[670] Orsi 1914, 902-903; Parra 2010, 47.
[671] Orsi 1932, 96.
[672] Orsi 1932,113.

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Epizefiri[673] and some interesting material, consisting of a myrtle leaf, fruit, rosettes and flower sprays at Timpone della Motta[674]. It is not clear whether these items ever formed part of wreaths or were single offerings, or when they were deposited. The only leaves which appear to have retained evidence of gilding on the copper were found at the oracular site of Klaros, in Asia Minor[675]. They are dated to the fifth or fourth century and were probably offerings to Apollo, as part of branches: some have remains of a stem, and others have a small nick in the side, perhaps to attach them (**fig. 8.15**). Some complete branches have also been found (**fig. 8.16**). One leaf, in very poor condition, was made of thin copper, found in the foundations of the altar[676].

*Fig. 8.12 Leaves from the Temple of Apollo and Aristeas, Metapontion. From Castoldi 2014, 39.*



*Fig. 8.13 Coin from Metapontion showing Apollo with a branch. From Stazio 1974, p.II,4.*



[673] Settis and Para 2005 II,34, II.40-.62, II.67.

[674] Papadopoulos 2003, 117-124.

[675] Akar Tanriver 2009; 186-7 (translated for the author by Gulsah Günata); Şahin *et al*. 2014, 327.

[676] Akar Tanriver 2009, 186.

*Fig. 8.14 Branches from Temple of Apollo Alea. From Orsi 1932, 70.*



*Fig. 8.15 Leaves from Klaros. From Şahin et al.,2014,326.*




*Fig. 8.16 Branch from Klaros. From Castoldi 2014, 34. Photo by Stéphane Verger.*




Castoldi helpfully summarises the many views expressed about the function of these leaves[677]. Some have pointed to the link with oracles, since leaves were found at Klaros and Dodona, and suggested that the holes in the leaves were to suspend them from trees when the latter were used as oracles[678]; others suggest the holes indicate they were used in chains or necklaces. Sabbione sees them as a type of dagger, with some role of cutting in sacrifice[679]. Most believe the leaves were offerings like items of jewellery or armour, possibly cast before the cult statue in a sort of

[677] Castoldi 2014, 16-17.
[678] Mastronuzzi 2013, 211.
[679] *Caulonia* 2010, II, 488.

phyllobolia, as suggested by Milanesio Macri[680]. Castoldi herself thinks the leaves probably had a role in preparing the cult but whatever they were made into was dismantled after use[681]. Whatever the precise answer, it seems clear that the leaves had a distinct use, in sanctuaries, and should not be regarded as the predecessors to gilded wreaths.

### *8.3.3 Terracotta flowers and fruits*

Terracotta flowers are found in many sanctuaries, often dedicated to to Hera, including those interpreted as lilies at Foce del Sele[682] (Locri) and in Sicily[683]. Terracotta fruits and nuts were also common offerings, particularly in sanctuaries dedicated to Demeter including the Thesmophorion at Oria, and both flowers and fruits were sometimes copied in metal (gold, silver and gilded), to increase the value of the offering. They are generally seen as images of fertility and fecundity[684].

### *8.3.4 Gold and silver wreaths (Table 8, part 2)*

Few Archaic or Classical gold or silver wreaths appear to have survived, but a gold diadem (*stephanos*) found at Croton (T8X11) has berries and myrtle leaves on a band added in the fifth century which looks like a wreath **(fig. 8.17)**. It was in the sanctuary of Hera Licinia, Building B, where it is thought once to have crowned a statue of the goddess[685]. A gold ring was found nearby, perhaps to hold a string to keep it in place on the head[686]. This is the closest surviving parallel from the fifth century in design to the wreaths. A silver wreath from further north, at Roscigno, near Poseidonia/Paestum (Salerno) (T8X14) dated to the end of the fifth or first years of the fourth century probably represents ivy[687] and has a tubular pierced circlet

[680] Milanesio Macri 2010, 340.
[681] Castoldi 2014, 17.
[682] Dewailly 1997; Baumbach 2004.
[683] Castoldi 2014, 17.
[684] Castoldi 2014, 11-15.
[685] Spadea, 1998, 31-32.
[686] Spadea 1997, 246.
[687] Scheich 1994.



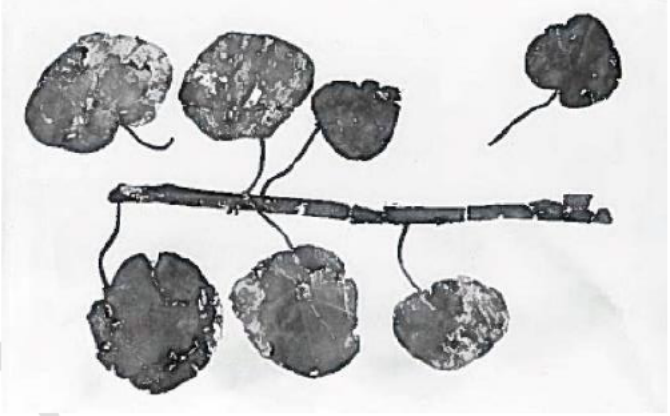
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and veined leaves secured in the holes. It is similar in design to some of the Macedonian gold wreaths with a tubular circlet (**fig. 8.18**), but less like the gilded wreaths.

*Fig. 8.17 Gold diadem from Croton, T8X11. The lower leaves and berries are on a separate band. From Spadea 1994 pl. VIII.*



*Fig. 8.18 Silver ivy wreath from Roscigno. From Holloway-Nabers 1982,101.*



Gold wreaths from Etruria were made of gold foil and composed of rosettes mounted on a band without stems[688]. As discussed above, the leaves on a gold wreath representing laurel found in Vulci and dated to the first half of the fourth century, T8X16, bear some similarities to the leaves from Corfu, with what appear to be pie crust edges and incised veins[689]. Several Etruscan gold wreaths were mounted on helmets, and one gold wreath from Canosa appears similar to the gilded wreaths, although it is now considered lost (**fig. 8.19**). Although none of this material is well provenanced and it cannot be dated precisely, Coen, who has made an

[688] Coen does not see any relationship between the Etruscan and Macedonian wreaths (1999, 176).
[689] Scarpignato 1981.

extensive study of helmet wreaths, puts it in the fourth century[690]. They do not therefore appear to pre-date the gilded wreaths, but they do show that the practice of wearing a wreath on a helmet was observed on both sides of the Adriatic, and probably moved across. It is more likely that direction was from Mainland Greece to Italy, rather than vice versa, since there is ample evidence of wreaths, though not necessarily metal, being worn in this way in Greece in the fifth century (see Chapter 3, section 4.3).

*Fig. 8.19 Wreath on helmet from Canosa. From Gli Ori, 77.*



A few gold wreaths have been found elsewhere in Italy, including at Armento, and in southern Greece, including a sprig found near Piraeus now in the British Museum which was probably once part of a wreath[691] as well on Kastellorizo[692], but all of these are from the second half of the fourth century or later, so were almost certainly Macedonian-influenced.

Female burials of the elite in Macedonia in the Archaic period seem to have been accompanied by gold diadems rather than wreaths, at Aigai and Archondiko[693]; Kottaridi suggests that the plain gold band which accompanied the woman known as the Lady of Aigai was stitched onto a textile to make a diadem[694]. These gold or, rarely, gilded silver diadems were of two types, one with relief decoration and the other with gold rosettes[695]. It is difficult to see either type as a direct predecessor to the gilded wreaths since the decoration on the gold strips has animal and human figures rather than plants, and the rosette roundels are a schematic representation of flowers with no berries or leaves. The latter could however be a predecessor to the type of

[690] Coen 1999, 89.
[691] BM 1960, 1101.48, discussed in Williams 2014.
[692] Kaninia 2011, 64-65.
[693] Kottaridi 2004, 145; Chrysostomou 2016, 75-76
[694] Kottaridi 2004, 145.
[695] Chrysostomou A. and Chrysostomou P. 2012, 505.

diadem with appliques sewn onto cloth bands found in some Macedonian graves[696].

Many gold wreaths from the period studied have been found in Macedonia but the earliest for which there is secure dating are from the third quarter of the fourth century, consisting of the ivy wreaths from Apollonia and Pydna[697] (**fig. 8.20**). The gold Macedonian wreaths are constructed differently from the gilded wreaths and have a metal circlet, which is often tubular, and the stems are sometimes wrapped around the circlet rather than being placed in pierced holes. The gold wreaths represent the same plants and were buried with the same people, as for example at Derveni and Tomb II at Vergina/Aigai, but we cannot say that the gilded were derived from the gold wreaths for at least two reasons. The first is that the gilded wreaths are contemporary with, or if anything earlier than, the gold wreaths. The second is that gold and gilded wreaths are frequently found in the same grave, indicating that each was seen as having a function in its own right.

*Fig. 8.20 Gold wreath from Apollonia, APO 662, in AMTh. ©Archaeological Museum of Thessaloniki, Ministry of Culture and Sports. From Grammenos 2004, 142*



### *8.3.5 Terracotta vase-shaped wreaths (Table 8 part 3)*

In the second half of the fifth century, wreaths began to appear in Taras which were composed of about 100 burnished terracotta beads, often coloured red and arranged to give a three-dimensional effect by being pointed in at least two directions. They replaced gilded silver for

[696] For example at Pydna, see Tsigarida 2006, 149.

[697] Apollonia: Adam-Veleni 2002, 277-8; Pydna Sevasti: Besios 1988, 212. A gold wreath found at Golymata Moguila in Bulgaria is dated by Agre to no later than the second quarter of the fourth century partly on stylistic grounds (the representation of Nike), and also because it seems to have been repaired suggesting it was worn during the lifetime of the individual and thus before burial (Agre 2011, 36), but such an early date seems doubtful, since other items in the grave such as a bronze oinoche should be dated to the second half of the fourth century at the earliest.

funerary headwear in Taras for about 100 years. Some of these were studied (**T8X23-31),** and an example is shown in **figs. 8.21-2**. The beads are shaped like a vase, but it is not clear what they represent: their shape is reminiscent of acorns, which were often used in necklaces and polos headdresses in the Archaic period, but they do not have the characteristic cup. They would have been mounted on a thread, which has now perished. Although much less ostentatious than their predecessors (the wreath-diadems), these wreaths were nevertheless carefully made, with a yellowish coating on a terracotta base; some have a red colour which on analysis was found to consist of cinnabar (mercury sulphide), possibly mixed with hematite (iron hydroxide). No trace of gold was found on the surface, when examined with the HHXRF[698]. The majority are from Taras, but a few similar wreaths were found at Egnazia and Pantanello, near Metapontion[699]. This type of wreath appears to have been confined to Southern Italy and cannot be claimed as any kind of influence on the gilded wreaths that replaced them in the fourth century in Taras and elsewhere, but are interesting as a historical interlude when sumptuary laws are thought to have prohibited use of precious metals in graves in Taras[700].

*Fig. 8.21 Terracotta wreath T8X25, Taranto 12612. ©National Archaeological Museum of Taranto.*




[698] Carter suggested that the surface may have been gilded (1998, 837), but we can rule this out, given the large number of beads found without a trace of gilding, and the use of cinnabar.

[699] For the Egnazia wreath: Cocchiaro 2005, 86-87. For the Metapontion wreaths: Grave 95, Carter 1998, 275 and grave 354, Carter 1998, 389-90. The beads are often described as amphora-shaped, but as Ignatiadou pointed out, the generic term 'vase-shaped' is better unless it is obvious that there were two handles (Ignatiadou 2012c, 624).

[700] *Arte*, 147.

*Fig. 8.22 Detail of terracotta wreath T8X25, Taranto 12612. ©National Archaeological Museum of Taranto.*



### *8.3.6 Gilded terracotta jewellery, gilded and tinned vessels*

A particular form of jewellery, made of gilded terracotta, became common in the third quarter of the fourth century[701]. Items including gilded terracotta discs, necklaces and earrings have been found in many parts of the Greek world, such as Cyrenaica, Taras, the Black Sea, Macedonia, Crete, Corinth and Thebes[702]. Blanck gives as the reason for this material the cheapness of clay, which could be transformed by a skilful craftsman into the appearance desired[703]. She, and also Manetta and Pisani, include gilded wreaths within what they consider to be terracotta jewellery, and indeed many of the wreath elements, such as berries and flowers, were made from gilded clay. It appears that some of the terracotta jewellery was made from casts of gold items such as earrings, but other items seem to have been made freehand, and Manetta and Pisani comment that the craftsmen were not slavishly imitating a gold original, but creating an object which had value in its own right[704]. The main use of terracotta jewellery is thought to have been funerary, although a few items, such as terracotta discs, but not wreath

[701] Marshall 1911, p.xxxix; Blanck 1976.
[702] Manetta and Pisani 2012.
[703] Blanck 1976, 19-20.
[704] Casts: Besques 1988, 55; Manetta and Pisani 2012, 957.



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elements, have been found in sanctuaries[705]. The idea that wreaths and items of gilded jewellery, such as earrings, were cheaper imitations of the real thing has only been partially dislodged by Manetta and Pisani's article, in which they pointed out that that this material is found in the graves of the elite, as at Derveni. Terracotta jewellery using gold leaf was made by the same technique as the wreaths but seems to have been in use for a relatively limited period, from the second half of the fourth century to the beginning of the third, whereas the period of use of gilded wreaths was longer, starting earlier and finishing later[706]. It cannot be claimed, therefore, that gilded wreaths were derived from terracotta jewellery.

This jewellery should be set in the wider context of gilded and tinned vessels. The latter have been studied by Kotitsa, and seem to have been approximately contemporary with the gilded wreaths; they were found in many of the same graves as the wreaths (including one at Stenomakri Toumba, Vergina with M43, dated to the mid-fourth century). Kotitsa takes the view that tinned vessels were probably made in Athens and exported to Macedonia[707], but it is unlikely that the same was the case for the gilded wreaths. There are several distinguishing facts: first, wreaths are more fragile than vessels; secondly, tinned vessels, but not wreaths, have been found in Athens, and thirdly, there are many variations in the design and technology of the wreaths, suggesting local manufacture dispersed throughout Macedonia rather than a common point of origin, as shown in Chapter 7 (in particular section 7.4.2).

### *8.3.7 Natural wreaths*

Natural wreaths were very widely used in the Greek world and it is surely here that we must look for the real predecessors of the metal wreaths. There are several examples of vase paintings from as early as the eighth century showing the deceased wearing a wreath which was

[705] Including the Thesmophorion in Pella where discs and bucrania were found, Lilimbaki-Akamati 1996b, 74, but no wreaths are listed.

[706] A necklace described as 'terracotta gilt' and said to date to Mycenaean times is in the Metropolitan Museum of Arts (Alexander 1939, 216-217) but gilding at this period on surfaces including faience appears to have been done with the thicker, self-supporting, gold foil (Marshall 1911, xx and Konstantinidi-Syvridi *et al.* 2014, 6-7).

[707] Kotitsa 2016, 696.



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almost certainly natural (**fig. 8.23**). Funerary laws in Athens which regulated the conduct at funerals and limited their cost would have encouraged the use of natural as opposed to metal wreaths[708]. Liddell and Scott cite several instances of a word for wreath makers[709]; their sources are almost certainly referring to wreaths made of plants, as can be seen by an example of a woman making a wreath beside the grave on a white ground lekythos (**fig. 8.24**). One example of a natural wreath from a fifth century grave has survived, found on the human bone remains in a ceramic urn placed inside a marble kalpis, covered by a fine textile, at Kalyvia in Attica; the urn contained the ashes of a man, a young woman and a small child[710]. The wreath crumbled into dust as soon as the urn was opened, but a late Roman wreath with small flowers from Egypt has survived and gives an idea of what some wreaths depicted on wall-paintings in Macedonia from the fourth century, probably made of small flowers, may have looked like (**figs. 8.25 and 2.36**) [711].

*Fig. 8.23 Wreaths shown on an Attic amphora from c. 720-700, attributed to the Benaki Painter (two are hovering above the deceased and one appears to be presented by a female mourner) (Benaki Museum 7675). From Stampolidis and Oikonomou 2014, 69 ©Benaki Museum Athens.*



[708] Stears dates the law mentioned by Cicero to the early 470s (Stears 2000a, 43). Further laws were enacted by Demetrius of Phaleron in 317/6 (Blok 2013, Stears 2000b, 207 and 223-224).

[709] 1996, 9th edition, entry for στεφανοπλόκιον, πλόκος; στεφανοποιός, *chaplet-maker*, Arist. *MM* 1206ª 27, A.D. *Adv.*1899; στεφανοποϊκή, *art of making crowns*, Phld *Mus.*p.88K.

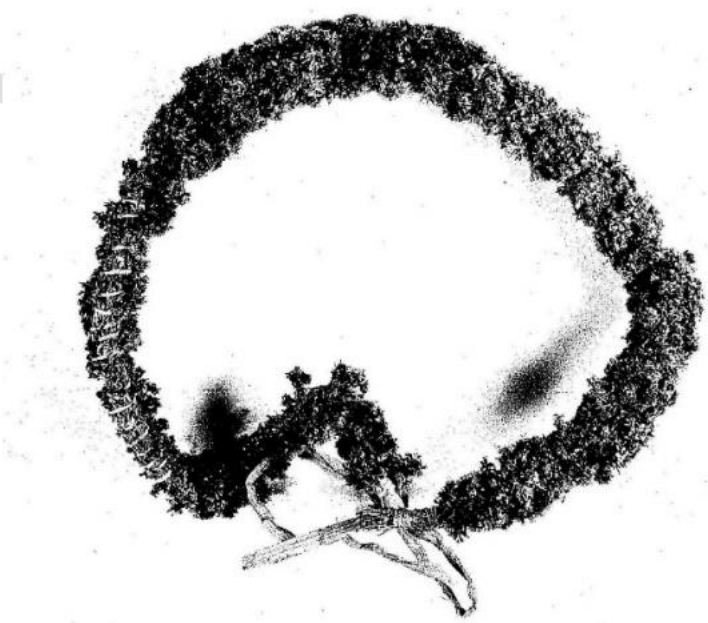
[710] Spantidaki and Moulhérat 2003, 2; Moulhérat and Spantidaki 2007, 16; Andrianou 2012, 47.

[711] Burr Thompson 1963, 45. See also Blech 1982, 45-46.

*Fig. 8.24 Woman making a wreath at a grave by the Tymbos Painter, c.450 (Antikensammlung, Munich, V.I.3324). From Oakley 2004, 151.*



*Fig. 8.25 Natural wreath with small flowers from Egypt. ©Royal Ontario Museum of Archaeology. From Burr Thompson 1963, pl. XL.*



## 8.4 Artistic and cultural influences

There was a tradition of lavish burials in Macedonia using gold in the Archaic period at centres such as Aigai, Archontiko, and Sindos, where jewellery including diadems, masks and weapons were buried with members of the elite. These gold items are thought by some scholars to have been placed in 'heroic' burials of both men and women, echoing the Homeric past[712]. The grave of the woman known as the 'Lady of Aigai', dating to c. 500, may be the most extreme example of ostentation, but the material from Archontiko and Sindos is also spectacular. Gold ceased to be used in graves in Macedonia during the fifth century for a time until its use resumed in the fourth century[713], but metalwork on smaller objects continued to be produced. Themelis proposes that some of the metalwork in the graves at Derveni is the product of local workshops whereas other objects are the products of an Athenian workshop in a colony in Macedonia[714]. There were of course many sources of artistic influences in Macedonia, from Archaic times onwards, through ports such as Potidaia, a Corinthian colony, and Pydna[715]. During the fourth century, there were influences from Asia Minor; Sgourou for example points to stylistic affinities between a diadem found in an early fourth century burial in Thasos, which also yielded M40, and material from parts of Asia Minor, as well as Athens[716] and Ignatiadou notes the influences in Macedonia from the Achaemenid east in relation to glass[717]. Artistic influences do not necessarily mirror the political situation, but it is worth mentioning that at the time to which M40 is dated (early fourth century), Thasos was an ally of Athens, although another early wreath (M27) was found at Olynthus, which fell in and out of alliances with Athens around this time[718].

[712] Archontiko: Chrysostomou P. and Chrysostomou A., 2012, 374; Aigai: Kottaridi 2004, 140.
[713] Sideris 2000, 16-17.
[714] Themelis 2000, 516; Themelis and Touratsoglou 1997, 215.
[715] Hatzopoulos 2016, 18-19.
[716] Sgourou 2001, 332-333.
[717] Ignatiadou 2013, 335-336.
[718] Position of Thasos at this time: Papaeuthemiou-Papanthimiou 2014, 43. For the dating of M40, see note 32.

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There was contact between Macedonia and Athens during the rule of Archelaos (413-399), and after the end of the Peloponnesian War in 404 some Attic craftsmen moved west and north[719]. Williams regards the tradition of Macedonian jewellery in the late fourth century as owing its origins to the East Greek world; Athenian craftsmen had in his words become 'essentially invisible' by the beginning of the second quarter of the fourth century, having moved elsewhere – he mentions the Black Sea, Southern Italy and Asia Minor - but surely Macedonia should be included in this list[720]. Touloumtzidou sees the hand of Athenian influence on silverware in Macedonia throughout the fourth century[721]. Rich artistic resources clustered around the courts of Archelaos and Philip II, in particular, and even though Macedonia suffered a series of political crises in the first half of the fourth century, it was by no means a cultural desert, with symposia, education and athletic training as in the rest of Greece[722]. Some of the Macedonian gilded wreaths date to this period, and in particular the fine wreaths from Phoinikas and Vergina/Aigai (Stenomakri Toumba), and the grave goods would have been the product of influences coming from many parts of the Greek world, including Athens, directly or indirectly[723]. In particular, the painted clay *hydriai* with polychrome decoration found in the pyre at Vergina Stenomakri Toumba graves B and Γ are examples of fine artwork from the period of Philip II, with parallels in the Chalkidiki Peninsula and Aiani[724].

Most of the type 2 wreaths date to the time when 'Macedonian court art' was established, shortly after the middle of the fourth century, which Themelis and Touratsoglou consider to have been on the back of Ionian-Attic influences probably coming up through the Chalkidiki Peninsula[725]. Themelis suggests that the metal-workers who moved to Macedonia from Attica shared their skills with local people, all of whom were working for Macedonian clients and he offers the

[719] Kyriakou 2008, 189.
[720] Williams 2003, 234.
[721] Touloumtzidou 2011, 691.
[722] Hatzopoulos 2016, 21.
[723] Kyriakou 2008, 276, 188.
[724] Kyriakou 2008, 185.
[725] Themelis and Touratsoglou 1997, 215.



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further suggestion that Athenian craftsmen may have moved to the north during the decade 330-320 because of a drought in Attica[726]. Williams argues that gilded pottery was made in *both* Athens and Macedonia during the latter part of the fourth century, suggesting that the vases were made in Athens, and exported to Macedonia where they received a metallic coating[727]. Kotitsa, on the other hand, writing more recently, argues for an Athenian origin for tinned vessels, which have also been found in Athens[728].

Ideas would have spread easily throughout the regions studied. Prestianni Giallombardo describes a cultural *koine* spreading from the Black Sea to Southern Italy, with its focal point in Macedonia, and in particular Pella, at this time[729]. There were sea routes between Macedonia and Southern Italy via Pydna and Corinth, and also probably overland routes across the Pindus mountains which involved a shorter maritime passage across the Straits of Otranto[730]. Ambrakia would have been an important staging post on this route, since it was the sole port in Epirus[731], and Corfu was another important trading centre. Pouzadoux believes that the influences went in both directions between Macedonia and Southern Italy as early as the time of Philip II, pointing to influences on vase-painting from Macedonia in Apulia, and to the possible influence on wall-paintings in Macedonia of Tarantine scroll-work[732], but proposes that in the latter part of the fourth century the influence was from Macedonia to Taras[733]. Touloumtzidou suggests that metalworkers from Apulia and Athens may have settled in Macedonia in around 334, at the same time as others worked in Delphi[734]. The painter Pausias from Sikyon also worked in

[726] Themelis 2000, 503, note 42.
[727] Williams 2003, 234.
[728] Kotitsa 2016, 696.
[729] Prestianni Giallombardo 1993, 127-129 in particular.
[730] Lamboley 1987.
[731] Prestianni Giallombardo 1993, 1278-9.
[732] Pouzadoux 2016, 188-9.
[733] Pouzadoux 2005, 59 et seq.
[734] Touloumtzidou 2011, 166.

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Macedonia, and at least one metal worker from the same city, Theomnestos, may also have done so[735].

Craftsmen from Athens, Asia Minor and Taras would have been attracted to work in Macedonia, and good communications would have allowed the custom of using metal wreaths in graves to spread rapidly from Macedonia. There were close links between it and Epirus, in part owing to the marriage between Philip II and the Epirot daughter of Neoptolemus, king of Molossia, known after her marriage as Olympias and the mother of Alexander the Great, but there were also links with Thessaly and Thrace. Soldiers from Epirus served in the armies of Philip II and Alexander the Great, and they and their families will have been amongst those who wanted to show an affiliation with Macedonian practices, including I suggest in some cases burial with an ostentatious item such as a gilded wreath. Cultural values and practices were also shared to a greater or lesser extent. In the third century craftsmen may have moved to Taras from Macedonia, attracted by the relative prosperity there as wealth in Macedonia declined[736].

Further south, wreaths with mainly clay items were more common, and in particular in Boeotia where there was a tradition of avoiding ostentatious display in burials[737]. This type of wreath (type 4) spread widely in the Greek world, no doubt because of the ease of transporting moulds with which to make them. Terracotta figures wearing wreaths with large flowers or roll wreaths (types 6 and 5) are found in many parts of the Greek world and the wreaths depicted on these figurines are almost certainly the product of diverse artistic and cultural traditions throughout Asia Minor and Egypt as well as Mainland Greece.

[735] Touloumtzidou 2011, 156.

[736] Williams 1988, 94. For the economic decline of Macedonia after the first reign of Antigonos Gonatas (277-274) see Touratsoglou 2010, 232.

[737] Sabetai 2012, 311-312.



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## 8.5 Conclusions

There are two surviving items which appear to predate the gilded wreaths and have a similar design: part of a gold diadem found at Croton (T8X11) and a gilded silver wreath found in Cyrenaica in Libya (T8X1), although the latter may be from a later burial. A gold and silver wreath found in the sanctuary of Artemis Orthia in Sparta (T8X15) cannot now be traced but is thought to be even earlier. There were almost certainly further similar items which have not survived, which could well have influenced the design of the gilded wreaths. The early gilded wreaths were the products of rising prosperity in Macedonia, increased availability of gold and perhaps evolving technology using a coating on a metal substrate with thin gold leaf. They were the products of skilled craftsmen, who could have been either local, or from further south (Attica, Corinth and Sikyon) or east (Ionia), attracted in particular to the cities in the Chalkidiki Peninsula in the early fourth century, and by the riches clustering around the courts to the west. These craftsmen were working for clients who wished to honour their dead with a lavish burial as in Archaic times and now had the means to do so.

While informative as to the context in which the gilded wreaths should be viewed, it does not seem that gilded wreaths developed from the single leaves, gilded silver wreath-diadems or, at least in the case of wreaths of types 1 and 2, terracotta jewellery The leaves found in many sanctuaries were part of a different tradition and the wreath-diadems developed into a different kind of wreath, found only in Taras. The gold diadems used at Archontiko and Aigai cannot be regarded as predecessors of the gilded wreaths with their figural decoration and shape. Terracotta jewellery is unlikely to to be an antecedent of any wreaths except perhaps type 4. The technique of applying gold leaf with a coating may well have transferred from Athens to Macedonia in the early fourth century, as seems to have been the case with the tinned vessels. Gold and silver wreaths of the sort found at Croton and Cyrenaica (T8X11 and T8X1) are a possible source of inspiration for the gilded wreaths, but the real predecessors for both were almost certainly natural wreaths.

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## *Table 8 Gilded silver wreaths and wreath-diadems, gold and silver wreaths and terracotta wreaths*

| Ref | Site | Region/locaton | Type | Plant | Date | Sanctuary or other | Museum and ref.no | Publication |
|---|---|---|---|---|---|---|---|---|
| **Part 1: Gilded silver wreaths and gilded silver wreath-diadems** | | | | | | | | |
| **T8X1** | Aslaia, Cyrenaica, Libya | North Africa | Gilded silver | olive | Late 5th | Grave | | Vickers and Bazama 1971. |
| **T8X2** | Oria, Monte Papalucio | Southern Italy | Gilded silver acorns, berries, leaves | Myrtle? | 6th? | | MArTA OR 670, IG 143465 | Guzzo 1990, 276, D'Andria 1988. |
| **T8X3** | Taras Arsenale Militare grave 178 | Southern Italy | Gilded silver wreath diadem | | Late 6th or 5th | Grave | MArTA 12221 | *Gli Ori*, 74; *Catalogo* 3.1, 315 and pl. 248. |
| **T8X4** | Taras Contrada Vaccarralla grave 346 | Southern Italy | Gilded silver wreath diadem | | Late 6th or 5th | Grave | 12298 | *Gli Ori*, 74. |
| **T8X5** | Taras Via Duca degli Abruzzi, prop. D. Acclavio | Southern Italy | Narrow gilded silver wreath diadem | Myrtle | 2nd half 6th | Grave | MArTA 22863 | *Arte*, 158. |
| **T8X6** | Taras Via Giovine, prop. Suma, grave 35. | Southern Italy | | Gilded silver | Beg. 5th | Sarcophagus | MArTA 105329 | *Arte* pp.160 and 161. |
| **T8X7** | Taras Via Nitti Excavations 1960 | Southern Italy | Gilded silver wreath diadem | Myrtle and olive? | 6th ? | Grave | MArTA 117259 | |
| **T8X8** | Taras Via F. Cavallotti prop. Frascella/ via T. N. di Aquinio, exc. 3.7.1912 | Southern Italy | Gilded silver wreath diadem | | Beg. 5th | | MArTA 198315 and 198361 | *Arte* pp159, 160-161; *Catalogo* 1.3, 306. |
| **T8X9** | Taras Ospedale Civile SSAnnunziata grave 16 | Southern Italy | Gilded silver wreath diadem | | | | MArTA 212447 | Dell'Aglio 1991 in D'Amicis 1991, 21. |
| **T8X15** | Sparta Temple of Artemis Orthia | Mainland Greece | Silver, gold and gilded silver | | | | | Dawkins 1929. |
| **Part 2: Gold and silver wreaths** | | | | | | | | |
| **T8X10** | Armento, Lucania | Italy | Gold | | 3rd c. (*Gli Ori*, cat.32) | | | Guarducci M. 1973, 7; Deppert-Lippitz 1985, 196. |
| **T8X11** | Croton Calabria Temple of Hera Building B | Southern Italy | Gold | Myrtle berries and ? vine leaves | Mid 6th | Sanctuary | Croton | Spadea 1998, 31-32. |
| **T8X12** | Halicarnassos | Asia Minor | Gold | Myrtle | 3rd qu.4th | | | Ozet 1994. |
| **T8X13** | Megisti (Kastellorizo) | SE Aegean | Gold | | | | | Kaninia 2011 64-65. |
| **T8X14** | Roscigno (Salerno) | Italy | Silver | Ivy | End 5th beg. 4th | | Mainz | Holloway-Nabers 1982,100-101 ; Greco 1996. |
| **T8X16** | Vulci Necropolis of Camposcala , grave of the Museo Etrusco Gregoriano | Italy | Gold | Laurel | First half of 4th | | Museo Etrusco Gregoriano | Coen 1999; Coen 2007, 157; Scarpignato 1981, 7-10. |

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| Ref | Site | Region/locaton | Type | Plant | Date | Sanctuary or other | Museum and ref.no | Publication |
|---|---|---|---|---|---|---|---|---|
| T8X17 | Vulci | Italy | Gold possibly on helmet | | | | | Coen 1997, fig.3. |
| T8X18 | Not known | | Gold on helmet | Laurel | End 4th/early 3rd | | Louvre | Daremberg and Saglio *Corona* fig. 2004, Coen 1997, fig.9. |
| T8X19 | Canosa | Italy | Gold on helmet | | End 4th/early 3rd | | Sold | *Gli Ori* 77. |
| T8X20 | | | Gold on helmet | | | | BM1919,10943 1 | BM191,10930.1; Lipperheide 1896. |
| **Part 3: Terracotta beads** | | | | | | | | |
| T8X21 | Egnazia | Southern Italy | Terracotta | | | Grave | Egnazia. On view in museum | |
| T8X23 | Taras Arsenale Militare Grave 356 | Southern Italy | Terracotta beads | | 2nd half 4th Degrassi gives III-II | Grave | MArTA 12037 | *Gli Ori* 418-9 and note 51, p.85; Degrassi 1961, 123. |
| T8X24 | Taras | Southern Italy | Terracotta beads | | 5th? | Grave | MArTA 12497 | |
| T8X25 | Taras Pl. Arsenale, grave 399 | Southern Italy | Terracotta beads | | 5th? | Grave | MArTA 12612 | *Gli Ori* 74. |
| T8X26 | Taras Grave 6, Contrada Lupoli, Lo Jucco | Southern Italy | Terracotta beads | | First quarter 4th | Pit | MArTA 15757 | *Cento Anni,* 384. |
| T8X27 | Taras | Southern Italy | Terracotta beads | | | | 22864 | |
| T8X28 | Taras Contrada Vaccarella, Sassanella | Southern Italy | Terracotta beads | | 5th or 4th | | MArTA 24397 | *Gli Ori* 74 and n. 49, p.85. |
| T8X29 | Taras Via Alto Adige, grave 24, exc. 1.4.1986 | Southern Italy | Terracotta beads | | Late 6th/ early 5th | | MArTA 51612 | Andreassi 1987, 635; *Arte*, 160. |
| T8X30 | Taras Corso Italia Caserma d'Orta | Southern Italy | Terracotta beads | | | | MArTA 100737 | *Arte*, 143. |
| T8X31 | Taras Vaccarella | Southern Italy | Terracotta beads | | | | MArTA 13547 | |

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# CHAPTER 9: FUNCTIONS AND SIGNIFICANCE

This chapter will examine first the functions of gilded wreaths and in particular whether they had any use outside the grave, proceeding from study of the wreaths themselves, representations on wall paintings and vases, and references in literature. This discussion of functions and use will lead into the last of the three important questions to be examined in this dissertation, the significance of the wreaths to the people who were buried with them, and whether this changed over time. Why were gilded wreaths used in graves and apparently so little in sanctuaries? Can we tell anything about the significance of wreaths from the plants represented? I will then consider some of the ways in which wreaths, and in particular metal wreaths, were used, to see if it can be determined why they were placed in some graves. Why are there sometimes several wreaths in a grave?

## 9.1 Wreaths in various contexts

### *9.1 Were the wreaths worn in life?*

Dagi found evidence of repairs on about a third of the gold wreaths she studied indicating that they were worn by the living[738], but the majority of gilded wreaths are too poorly preserved to draw any inferences. The position of wreaths on the head in inhumations where the bones and wreaths have been sufficiently well preserved to locate their respective positions, and the size of the circlets, indicate that gilded wreaths were worn on the head, at least at burial. There is some slight indication, as discussed in section 7.4.3, that type 1 wreaths from Rhodes may have been designed so that they could be worn by the living, and it is possible that the same is the case with some of the type 2 wreaths, particularly those that have the remains of fabrics (SCG30-34). Roll wreaths were certainly worn by the living, as we can see from their use on figurines, and though it is not possible to determine whether any of them originally had metal

[738] Dagi 2011,14.



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parts, it was proposed above[739] that there may have been a lead circlet inside the padding to support the leaves and berries (type 5). Some type 7 wreaths may also have been worn by the living, on helmets. The wall-paintings depicting wreaths at Aineia II and Amphipolis, tend to suggest that some metal wreaths were displayed in the home (**figs. 2.35 and 2.36**). I have not found any evidence of wreaths buried in contexts other than graves, even at sites such as Dymokastro in Epirus or Olynthos in Macedonia, where residential buildings have been excavated and metal wreaths have been found in graves but not in homes[740]. One should of course be wary of drawing conclusions from absence of objects, for which there may be many other explanations.

None of this however should be taken to suggest that gilded wreaths were habitually used by the living: the majority were almost certainly primarily for funerary use because their fragility would not lend itself to frequent use.

### *9.2 Transition from sanctuary to grave*

Some of the gilded material discussed in the last chapter and Chapter 5 was found in sanctuaries, mostly objects thought not to have been wreaths, including the elements of polos headdresses found at Oria (T8X2), as well as leaves and branches found in sanctuaries in Corfu, Southern Italy, the Dodecanese, Asia Minor and Southern and Central Greece. Although it is difficult to be precise about the dates, the gilded silver polos head-dresses and wreath-diadems seem to have been used roughly contemporaneously in the second half of the sixth century and the beginning of the fifth, and the leaves mainly date from the fifth and fourth centuries.

It is possible that funerary use of these items began when specific types of people – priests/priestesses – were buried, as suggested by Bottini in relation to the Metaponto Crucinia

[739] Page 264.
[740] See note 187.



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material[741] but elements of polos headdresses, terracotta flowers and fruits were offered in at least one sanctuary of a goddess who had a chthonic aspect (the Thesmophorion at Oria)[742], so it is possible that the transfer to funerary use is connected with this. De Juliis suggests that figurines bearing fruits and birds or animals in the area of Metapontion, dating to the second half of the fifth century, were linked with the cult of a major female deity, later assimilated (unusually) with that of Dionysus[743], although opinions are divided on whether she was Demeter, Kore or Artemis. At Oria, there were fertility cults in honour of Demeter and Kore[744] and Persephone was venerated at the Thesmophorion in Locri as goddess of the Underworld protecting fertility[745].

Remains of a few precious metal items have been found in sanctuaries, including the band of myrtle leaves from the gold diadem at Croton (T8X11), the gilded silver wreath from Sparta (T8X15) and the gilded silver leaves and circlets at the Temple of Apollo Alea in Calabria (T5X5A). The first is believed to have adorned the cult statue[746]; the precise use of the others is unclear, but they too may have adorned statues[747]. The major sanctuaries in Greece would have had precious metal offerings which have not survived, because they were melted down for the sanctuary's own purposes, plundered in war or transported to Rome[748]. There is a fair amount of epigraphic evidence of gold and silver wreaths in sanctuaries but very little such record of gilded wreaths being offered in this way. Some were described as hung on the walls, others are thought to have been placed on altars or statutes[749]. How many of these were made of gilded copper or bronze is unclear. The inventories of the Treasuries of the Acropolis in

[741] Bottini 1993, 767-8.
[742] See pages 183 and 306.
[743] De Juliis 2001, 108; Lo Porto 1981, 332.
[744] D'Andria 1988, 240.
[745] See pages 183-184.
[746] See page 315.
[747] The material from the Temple of Apollo Alea also included branches, perhaps used in processions.
[748] Lachares for example plundered the Acropolis of Athens to pay his mercenaries in 295 (Pausanias 1.25.7). As for the booty taken to Rome, see Gahtan and Pegazzano 2015, 44.
[749] See page 308.



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Athens list many gold wreaths and one silver wreath, as well as some just described as 'wreaths', which may be bronze, but none is described as 'gilded'[750]. The priests' accounts of the treasures in the sanctuaries in Delos, from 279, list gold wreaths with items of jewellery, and specify the number and weight of those dedicated in the three sanctuaries but only one is described as gilded[751].

Copper or bronze branches with leaves seem to have been used in temples[752], and may also have been used in processions or as individual offerings. They were probably thrown before the cult statue in a sort of *phyllobolia* (see page 315).

Terracotta jewellery is mainly found in funerary contexts, but has also been found in sanctuaries in the form of 'buttons' with a head of Athena or a Gorgon[753]. However, no gilded wreath elements were found with these gilded terracotta items in sanctuaries - at the Thesmophorion in Pella, for example, no wreath elements are listed amongst the finds in the publication, although many wreaths have been found in graves in this city[754], and again no wreaths are listed amongst the finds at the sanctuary of Gypsadi at Knossos, where gilded terracotta 'buttons' were found[755]. Gilded wreaths were excavated in graves in Samothrace, but not as far as can be seen in the sanctuary[756].

What conclusions can be drawn, however tentatively, from the original, well attested, presence of gold and silver wreaths in sanctuaries, and the absence of any evidence of gilded wreaths there? It would seem that gold and gilded silver wreaths were seen as an appropriate offering for the gods, particularly in Archaic times, but that gilded copper wreaths, which are found in graves from the beginning of the fourth century, were not. The explanation cannot be that

[750] Harris, 1995 104 (Parthenon), 179-201 (Hekatomedon), 215 (Erechtheion).
[751] Homolle 1882, 120-121.
[752] See page 312 in relation to a branch thought to have been beside a statue of Apollo in Metapontion.
[753] A helpful summary of such finds is given in Manetta and Pisani 2009 at p. 958.
[754] Lilimbaki-Akamati 1996b.
[755] Coldstream 1973, 171-3.
[756] The relevant volumes for the publications on Samothrace (*The Hall of Votive Gifts* 1962, *The Temenos*, 1982, *The Hieron*, 1969) do not record any wreath fragments being found there

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gilded material, per se, was unsuitable for the gods, since there is occasional archaeological evidence of offerings in sanctuaries of such material, including gilded leaves at the Temple of Apollo Korkyraios and gilded terracotta buttons. However, the lack of mention of gilded wreaths in sanctuaries in epigraphic dedications is striking. It would seem that gilded wreaths were seen as more appropriate offerings for humans than the gods, and part of the explanation is, I suggest, that the association of gilded copper wreaths with death and burial by the beginning of the fourth century rendered them inappropriate at that stage for offering to the heavenly gods. The original use of gilded elements such as myrtle berries first on polos headdresses (at sanctuaries such as the Thesmophorion at Oria), next on wreath-diadems (graves in Taras) and finally on gilded wreaths is not inconsistent with this suggestion. Gold wreaths were offered to exceptional individuals while still alive (athletes and heroes); examples include Brasidas and Pericles, and in some cases were buried in the grave, such as the thin leaves in the Athletes' Tomb in Taras[757], and the wreath found in a grave in Amphipolis which was possibly the same as that awarded to the living Brasidas by the Scionians[758]. Gold wreaths continued to be offered to living individuals, as is evident from the many inscriptions referring to honorific gold wreaths (see below section 9.3.i), and also continued to be dedicated in sanctuaries. Natural wreaths also continued to be offered in both graves and sanctuaries. Quite why natural wreaths and gold wreaths should have continued in use in all these contexts, in contrast to gilded wreaths, is unclear, but the most likely explanation is that gilded wreaths were not preferred because of their association with death.

## 9.2 Significance of plants and insects represented

As discussed in Chapter 7 (sections 7.2.2 and 7.2.3), myrtle is generally found on wreaths of types 1 and 2, and ivy and grapes on type 3. Oak is occasionally found on type 2 in Macedonia, and frequently in Epirus. It is not clear whether any specific plants are represented on wreaths

[757] See pages 164-165.
[758] Koukouli-Chrysanthaki 2002, 69.



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of type 4 and several different flowers were depicted on type 6.

Myrtle appears to have been used to sanctify people who were about to sing or speak on certain occasions: a myrtle branch was passed to each man who sang at a banquet, and an orator would place a wreath on his head as he was about to address the assembly[759]. The plant also seems to have an association with death since it was used for wreaths at some funerary games: Pindar says that the victors of the Theban games were crowned with white myrtle, and the scholiast adds that this was because the feast was in honour of the dead[760]. Myrtle has a white flower, and, in some cases, a white berry[761]. Euripides refers to myrtle branches being placed inside the tomb[762], and branches were carried there by women in baskets to honour the dead, after the funeral[763]. As was discussed in Chapter 7, the impressions of myrtle branches have been preserved on an item in a tomb in Northern Italy (page 267).

Myrtle is most commonly linked with Aphrodite, mainly because of her association with marriage and erotic love, but some scholars also see her as having a chthonic aspect[764]. Myrtle, rose and *Lychnis coronea* were regarded as the flowers preferred by Aphrodite and myrtle branches were used in Attica to make wreaths in her honour for the bridal couple[765]. Rose and myrtle were regarded as attributes of individual Graces (Charites), her companions[766]. Myrtle is also associated with Demeter and Kore: the wreaths of the six junior archons (*thesmothetai*) were made of myrtle because of its association with 'the goddesses'[767].

Kunze-Götte suggests that myrtle was used to depict hope in pre-marriage scenes, and also

[759] Azoulay 2017, 72 and 76-77.

[760] Bury 1892 *Isthmian Odes*, 77 referring to I. 4.70. The games were celebrated outside the Electran Gate, where sacrifices were made to Herakles and his eight murdered sons.

[761] See chapter 7, page 267.

[762] *Electra*, 324, 512.

[763] Reeder 1995, 220, discussing a hydria with a funerary scene; she suggests that the branches are myrtle; Oakley 2004, 205.

[764] Pirenne-Delforge 1994, 412-3; Despini 1996, 27; on her possible chthonic aspect, see Lilimbaki-Akamati 1994, 251-252 and note 147 above; on the erotic aspect, see Maxwell-Stuart 1972.

[765] Pirenne-Delforge 1994, 412-3 and 139 (citing Aristophanes *Birds*, 159-161)

[766] Pausanias, referring to the Temple of the Graces at Elis (6. 24, 6-7). The third Grace was holding a dice.

[767] Parker 2005, 97, note 28, quoting Apollodorus *FGrH* 244F140.



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reminiscence, since it is often used on grave goods[768], and more speculatively, she suggests that the myrtle branches which she sees as sometimes broken and shown on Attic vases symbolise not only infidelity and abandonment, but also the fragility of feminine hopes of achieving old age[769]. This sounds as if it is stretching the interpretation as it is difficult to see how branches would be shown as broken when the representation (on a vase-painting) is schematic. The scent of myrtle was important, as can be seen from the image of a young woman, named as Μυρρηνίσκη καλέ, standing beside an incense burner and bearing a wreath on a lekanis by the Meidias Painter[770], and this may explain in part its use in graves as well as the *boudoir*. Both the leaves and the berries were used to make perfume[771].

Myrtle had an association with Dionysus, who exchanged the plant, which he said was one of his most treasured items, in order to retrieve his mother Semele from the Underworld[772], and the symbolism of Semele being brought back from Hades by her son would have been particularly apt in a grave, to mark the hope of relatives that the deceased live again in the next world. As an evergreen plant it can be linked with life after death, and Karouzou pointed out its dual nature, associated with life and death[773].

Bernabé and San Cristóbal regard myrtle as the 'paradigmatic crown' of initiates in mysteries, closely associated with its place in the cult of the dead[774]. Graf rightly says that it is impossible to argue for a specific mystery cult from a specific plant, but comments that a Bacchic wreath would be made of myrtle rather than laurel or olive[775]. There are countless images on Attic and Apulian vase paintings of ivy wreaths being worn by Dionysiac characters (maenads, satyrs etc) as well as sometimes by the god himself[776], and ivy and myrtle were therefore appropriate

[768] Kunze-Götte 2006, 54.
[769] Kunze-Götte 2006, 84.
[770] Kei 2008, 201, referring to a red-figure lekanis, Naples STG 311.
[771] Touzé 2008, 47.
[772] Melli 2005, 551; Casadio 1991.
[773] Karouzou 1980, 15.
[774] Bernabé and San Cristóbal 2008, 126.
[775] Graf 2013, 163.
[776] Carpenter 2011, 256.



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plants to mark initiation into the Dionysiac Mysteries.

Ivy is also an evergreen plant, and, particularly when used with grapes, has an obvious association with Dionysus, who was said to have been wreathed in ivy as a baby by the forest nymphs[777]. Oak can be evergreen (*Quercus ilex*), though Q*uercus robur*, which is thought to be depicted on most of the wreaths, is deciduous. It is generally associated with Zeus, most obviously at Dodona. Oak wreaths are mainly found in Epirus and Macedonia, but occasionally in Boeotia (SCG3, SCG5), Thessaly (SCG33) and the Dodecanese (SEA4), and acorns are frequently shown on wreaths from Southern Italy. Olive is occasionally found on gilded wreaths and was traditionally used to honour victors in the games at Olympia and elsewhere; a gold olive wreath was carried in the funeral carriage of Alexander the Great (Diodorus Siculus, 18.27.2).

Several gilded wreaths have large flowers (type 6), and wreaths of type 4 have many small ones. Flower wreaths are found with both males and females (M24 for example was found with a male and M25 with a young girl). Flowers were valued on wreaths for use in religious practices, as is clear from a fragment of Sappho quoted by Athenaeus, who says, in connection with a young girl being invited to sacrifice wearing a flower wreath in her hair, that the Charites look with favour on those decorated with flowers but turn away from those who are without a wreath[778]. Flower wreaths were also worn in sacred practices for Demeter, Kore and the Nymphs[779]. A passage in Athenaeus refers to many different flowers being used for wreaths[780], but myrtle and rose seem to have been common combination[781]. Figurines in the Thesmophorion in Thasos show women wearing flower wreaths[782] and Persephone was collecting flowers with her mother when snatched by Hades, but Muller cautions against

[777] Baumann 1993, 88.
[778] Athenaeus, *Learned Banqueters* xv 674e.
[779] Aravantinos *et al*. 2014, 60.
[780] Athenaeus, *Learned Banqueters*, at xv 680e-f, discussed in Chapter 7, page 271.
[781] Athenaeus, *Learned Banqueters* xv 676c.
[782] Muller 1996, 478.



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associating the figurines which have flower decorations exclusively with the cult of Demeter and suggests we should regard the wreaths more generally as a sign of participation in a religious festival and confirmation of belonging to a city and its cults[783]. Women are also shown wearing flower wreaths or diadems beneath a veil on *protomai* in Pella, which Lilimbaki-Akamati suggests are representations of Aphrodite, buried in the hope that she would protect the deceased in the next world[784].

Flowers appear to be associated with the living in the quotation from Sappho but some, including myrtle and asphodel, have a funerary association and the perfume of several plants may well have been used in graves. Although rose does not necessarily have a funerary association, its perfume seems to have been thought to have a protective power, an example of which is when Aphrodite used an oil perfumed with rose to protect the flesh of Hector after his death[785].

Drawing this together, the common thread running through the use of myrtle and ivy on wreaths seems to be that they are evergreen and may mark initiation, and have a link with fertility and possibly the chthonic aspect of some deities. The use of berries and fruit in sanctuaries is associated with Demeter, goddess of fertility and vegetation, who can have a chthonic character[786], as can Dionysus. Several scholars have however expressed scepticism about possible 'chthonic' interpretations, and it is not correct to see an automatic link between fertility and 'chthonic' cults; as Schlesier points out, each divinity, in each city, was worshipped with different epithets in special forms[787].

M37 (Potidaia) and SI 1 have insects, thought to be both grasshoppers and cicadas. Cicadas

[783] Muller 1996, 478-9.

[784] Lilimbaki-Akamati and Akamatis 2014, 242 and 292. Others see the protomai as representations of living women rather than goddesses (discussion summarised in Muller 2017-8, 161).

[785] *Iliad*, XXIII, 185.

[786] Despini 1996, 26.

[787] Schlesier 1991/2. See also Parker 2011, 80, and references in his note 40. Stamatopoulou 2014 challenges Papachatzis for saying that the goddess honoured at the Pasikrata Sanctuary at Demetrias was Aphrodite, and points out that recent scholarship has questioned the association of protomai with specific deities, let alone 'chthonic'-funerary ones (p.5 and n. 56).



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are sometimes thought to represent nymphs, or young girls before marriage, but this does not appear to be the case for either of these graves, since a young boy was buried with SI 1 and an adult with M37; more likely explanations are that the cicada was thought to be autochthonous, as its eggs are incubated in the earth, and that death is associated with the chrysalis of the cicada, because it hibernates for a long time, promising renewal of life[788].

## 9.3 Possible reasons for burial in the grave: occasions when they were used

The question of why gilded wreaths were placed in graves is difficult to answer, and the reasons for their use in this way are likely to have varied from person to person and changed over time. There is a risk in over-analysing and looking for a significance which has been lost, maybe even within the period of use of gilded wreaths. Wreaths made of flowers are sometimes presented at funerals in Britain and elsewhere nowadays, for reasons which the donors might find difficult to explain, other than 'it is what we do at funerals' or 'it is expected'. The earliest gilded wreaths were carefully made, prestige objects, which we might expect to have meant something important to those who buried them, but we should not rule out the possibilities that these elaborate wreaths were used to show off the wealth of the donors, who could afford to bury them in the ground, and that wreaths continued to be buried with the dead because that had become customary in their particular society rather than because of specific religious or philosophical beliefs. Similarly, Drougou and Touratsoglou suggest that by about the mid-second century, vessels deposited in large numbers in graves in Veroia may have expressed no more than the wish to impress on the part of the surviving relatives[789]. With these caveats in mind, let us consider the many contexts in which natural and other wreaths were used both in ritual contexts including graves and non-ritual (civic honours), starting with the latter.

[788] Kallintzi and Papaikonomou 2006, quoting Arist. *Hist. an*. V30.556a16-V556b10 and V.19.551a 13-27.
[789] Drougou and Touratsoglou 1980, 181.

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### *(i) Wreathed statues and metal wreaths awarded as a civic honour*

The honorific statue seems to have emerged in the late fifth and early fourth centuries[790] and although relatively few survive, many inscriptions on statue bases do. The individuals represented, who included kings, citizens, generals, doctors[791] and, occasionally, athletes and poets, could be publicly honoured by a community with a statue as an exceptional honour. There is evidence for some wreaths on statues being gilded.

Roman copies of the fifth century statue of the Tyrannicides, Harmodios and Aristogeiton, do not show them wearing wreaths, whereas red-figure vase paintings depicting them in the same stance do (**figs. 9.1a and b**), possibly because the marble copies were adorned with real (plant) wreaths whereas the original bronze statue had a bronze wreath, and it was this latter which was copied in red-figure vase paintings[792]. The bronze statue group was erected in a public place in Athens, probably the Agora and an epigram cited by Aeschines (*Against Ctesiphon*, 190) records that the ancient people of Athens bestowed olive wreaths on the two men[793].

*Fig. 9.1a Red-figure oinoochoe in Boston MFA (98.926) showing Harmodios and Aristogeiton wearing wreaths. © Classical Art Research Centre 1997-2018.*



*Fig. 9.1b Statues of Harmodios and Aristogeiton not wearing wreaths. Roman copy of original c. 484. © 2019 University of Cambridge.*



[790] Ma 2013, 4.

[791] Samama 2003 gives some 20 examples of gold (χρυσοῦ), natural (θαλλοῦ) and wreaths of an unspecified material awarded to doctors, including one gold wreath worth 50 pieces of gold (Samama no. 132, p.243 – inscription dated to 220-210).

[792] Brunnsäker S. 1971, 150. They are not shown wearing wreaths on black figure vases and an alternative explanation is that they were only depicted wearing wreaths after the fall of the tyrants (Karouzou 1980, 20; see also Azoulay 2017, Chapter 6, where he discusses the reverence for the pair after the revival of democracy in 403 and in particular the suggestion that the statues may have been crowned at the Panathenaea, pp. 79-80).

[793] Pausanias (1,8,5) refers to the statues as being near the Temple of Ares. See also Azoulay 2017, 84. The epigram is cited in Azoulay 2017, 75.

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The statue base of Ioallas in Sardis, dated to 209-193, refers to Ioallas being honoured with two wreaths with the epithet *χρυσοῖς*, which Waldbaum takes as meaning 'gilded' in this context, since two statues were also awarded in the same material (*χρυσῆ*), one of which was described as *κολοσσικῆ*, and it seems inconceivable that the statues were made of solid gold, but quite likely that both they and the wreaths were gilded[794]. The statues in the Philippeion at Olympia of Philip II and his family, though described by Pausanias as made of 'gold' and ivory[795] are more likely to have been gilded marble, since the beddings in the bases (which still exist) would not have been appropriate for metal statues[796]. Although the statues have not survived, that of Philip may well have shown him wearing a gilded wreath or diadem. There is also evidence of gilded marble statues in houses on Delos, some of which depicted individuals wearing wreaths or fillets[797], such as the Diadoumenos in the House of the same name, which were presumbably made of gilded marble or gilded copper/bronze. Gilded bronze wreaths found on the Acropolis in Pergamon (P1) depicting oak and laurel are likely to have decorated statues, since they are too large for the human head.

The verb στεφανοῦν was used to mean 'to honour'[798], and texts refer to benefactors being honoured (lit. 'wreathed') with a wreath[799]. A myrtle wreath was awarded as a particular mark of honour to magistrates, according to decrees, mostly from Eleusis[800]. The nine archons and members of the Boule in Athens also held "wreath-wearing' offices[801]; Parker suggests that the reason was because the crown assimilated the magistrates with priests[802]. There are many references to gold wreaths being bestowed as civic honours, but this does not necessarily mean

[794] Waldbaum J.C. 1983, 22. Buckler and Robinson suggest that where a wreath was paid for by the person honoured, or where it was part of a statue, it was gilded rather than made literally of gold (1913, 35).
[795] 5.20.17.
[796] Schultz 2007, 220.
[797] Bourgeois *et al.* 2007, 184; Bourgeois *et al.* 2011, 648.
[798] Ma 2013, 32-3.
[799] E.g. *ὁ δῆμος ὁ Καυνίων ἐπαινεῖ καὶ στεφανοῖ...χρυσῶι στεφάνωι*, from *Insc. Kaunos* 103, quoted in Ma 2013, 33.
[800] Maxwell-Stuart 1972, 149. Schol. Aristophanes *Wasps*, 861.
[801] Connelly 2009, 204.
[802] Parker 2011, 54.



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that physical items were bestowed on the recipient. It was only in very few cases that the polis itself met the cost[803], and if an individual wanted to have a physical metal wreath, he or his friends normally had to pay for it, as in the case of the gold item from Armento[804]. Regular 'gifts' of gold wreaths awarded by the Athenians to Spartocus and Paerisades (kings of the Cimmerian Bosporus) were immediately dedicated by them to Athena Polias (in Athens), possibly for eventual melting-down by the demos as part of the temple treasures[805]. Scafuro points out the reciprocal nature of this award[806].

Most of the inscriptions relating to awards by the *koina* in Rhodes date to the end of our period or Roman times[807]. An example of a civic award of a wreath is preserved in an inscription on a funerary monument for Chrysippos, in Rhodes, which records the decision to erect a statue to him and to crown him with a gold wreath from funds provided by the treasurer of the *koinon*[808]. This is clearly a gold wreath which was paid for by the community. As mentioned in Chapter 4 the monument of Dionysodorus in Rhodes has four sunken panels containing an engraved wreath, of olive, myrtle or laurel, and poplar and an inscription records the honours bestowed on him by various *koina*[809]: he received the largest gold wreath permissible by law, and his monument was also to be wreathed. Gabrielsen discusses the possibility that there was only one wreath, and that the annual wreaths were to be cheaper, but he may have had natural wreaths in mind and does not refer specifically to a gilded wreath. None of the burial sites where gilded wreaths have been found has so far been identified with a *koinon*.

[803] Buckler and Robinson 1913, 32.
[804] Guarducci 1973, 19. See below, page 348.
[805] Rhodes and Osborne 2003, 323. See also Harris 1995, 104.
[806] Scafuro 2009, 69.
[807] Gabrielsen 1997, 123.
[808] Fraser 1977, 66.
[809] Fraser 1977 and Gabrielsen 1994.

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### *(ii) Athletes and victors*

Athletes were awarded natural wreaths at the games at Olympia, Isthmia and Nemea, but statues were occasionally erected commemorating the victors which were decorated with bronze or copper wreaths that appear to have been ungilded. The wreaths from the sanctuaries at Olympia, Nemea (L4) and Isthmia (L3), fragments of which have been preserved, almost certainly adorned bronze statues of athletes who were given special honours. A further example is an ungilded wreath from the acropolis at Akrai in Sicily that is presumed to have been awarded to an athlete (T1X76)[810] (**fig. 9.2**).

*Fig. 9.2 Fragment of a wreath from acropolis at Akrai, Sicily (T1X76). Syracuse, P. Orsi Regi. Arch. Museum, inv. 36516. From Stampolidis et al. 2004, 177.*



Awarding a wreath was one of four recognised ways of honouring the victor: the others were throwing of leaves (*phyllobolia*), winning of prizes (*periagermos*) and award of fillets (*tainies*)[811]. The *phyllobolia* seems to have dropped out of use and on vase-paintings the wreath is one of the marks used to distinguish the victor[812]. A seated bearded figure is sometimes shown conferring the wreath on fifth century vases, often replaced in Hellenistic times by a Nike. The award was not limited to athletes, although it may have started with them: Maxwell-

[810] Stampolidis *et al.* 2004, 177.
[811] Kephalidou 1996, chapter 3.
[812] Kephalidou 1996, 40.

Stuart quotes an example of the victor in a male beauty contest crowning himself with a myrtle wreath[813]. Plutarch describes women fastening wreaths and fillets on Pericles, 'as though he were a victorious athlete'[814], and Euripides refers to the dead Polyxena as having leaves and flowers thrown at her (*phyllobolia*) as if she had won an athletic contest[815]. Athletes and others were sometimes honoured in their home or other city with a metal wreath. Pausanias refers to the practice adopted by the Achaeans who were successful at Olympia of placing a wreath on a statue of the athlete Oebotas (having initially failed to honour him properly) (7.17.13-14) and Thucydides records that the Spartan general Brasidas was honoured by the Scionians (in the south of the Chalkidiki Peninsula) with a gold wreath 'as if he were an athlete' (iv.121).

The practice of honouring exceptional people with a precious metal wreath while they were alive may well have been taken one step further by burying it in the grave with them, although there were periodic prohibitions on excessive expense at funerals in Athens and other cities[816]. There are a few examples of gold wreaths found in graves of individuals who may have been honoured in this way, all outside Athens: the wreath in a grave in Amphipolis may be that awarded to Brasidas[817], and a gold wreath found in the Athletes Tomb in Taras, although this is thought to have been made as a funerary wreath because of the thin gold foil rather than conferred as a prize (page 165). There is also a possibility that an athlete was commemorated by a gilded silver wreath in Libya, with which a Panathenaic amphora was found (T8X1 discussed on page 308)[818].

[813] Maxwell-Stuart 1972, 148, note 23.
[814] Plutarch, *Pericles* 28.
[815] Schwartz 1887, 573
[816] See note 708.
[817] See note 758.
[818] Vickers rightly cautions against assuming that the gilded silver olive wreath was that awarded to the pentathlon victor at Olympia, Amesinas, who came from the same town, Barce, where the wreath was found (Vickers and Bazama 1971, 82).

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Several scholars have put forward the idea that honouring the victorious athlete developed into the practice of honouring the victor, more generally, with a wreath[819]. An example of a victor being so rewarded is depicted on the central motif of a gold wreath from Golyamata Moguila, Thrace which shows Nike offering a gold olive wreath[820]. It was found on the skull of a young man aged about 20 and has marks of wear, but there is no reason to associate him with an athletic victory[821] (**fig. 9.3**).

*Fig. 9.3 Central motif of a wreath showing Nike holding a wreath (Sofia, National History Museum, inv. 50454). From Martinez et al. (eds) 2015, cat. 51.*



Honouring exceptional people, such as athletes, with a metal wreath is therefore an idea that should be kept in mind when considering their use in a funerary context.

***(iii) Helmet wreaths and military honour?***

Metal wreaths were mounted on helmets, although only one gilded wreath appears from the surviving fragments to have been used in this way (SCG13). A large gold oak wreath in the cenotaph of Seuthes III at Golyama Kosmatka Tumulus in Thrace is believed to have been used

[819] Despini 1996, 27; Kyriakou similarly suggests that the individual became a victor at death, for whom a wreath was appropriate wear.

[820] Agre in Martinez *et al.* (eds) 2015, 90, cat. 51.

[821] Agre 2011, 31-37; for the age and gender, Jordanov and Dimitrova in Agre 2011, 230. Agre suggests that the young man may have been a son of King Kersebleptes and a brother of Teres, who was taken hostage by Philip II in Pella (Agre 2011, 214).

on a ceremonial helmet[822]. Silver and gilded silver wreaths appear to have been used on helmets in Thrace[823]. As discussed in chapter 3, there are many representations of wreaths worn on helmets, including a black-figure vase from Phaleron (**fig. 3.36**) and on Boeotian grave stelae; the vertical branch on that of Rhynchon (**fig. 3.37)** is similar to that on a pilos helmet on a coin from Lampsacus (**fig. 9.4**). King Pyrrhus's wreath, removed for battle, was probably gold as in the case of Seuthes III. There are further royal examples: the son of Philip V dedicated two gold wreaths placed on helmets (επί κώνου) in the sanctuary in Delos[824], but metal wreaths on helmets were not the exclusive prerogative of monarchs: a pilos helmet excavated in Epirus which has an engraved wreath indicates that wreaths were also worn by soldiers other than kings and generals (**fig. 3.40** and page 112). A sculpted representation of a pilos helmet with a wreath was found with a marble altar in Kos[825] (**fig. 9.5**).

*Fig. 9.4 Coin from Lampsacus with pilos helmet and wreath. From Daumas 1998, pl. 10.4.*



*Fig. 9.5 Stone pilos helmet with carved wreath. From Jacopi 1932-1939, fig. 11.*



[822] See chapter 7, pages 266-267.
[823] Tonkova 2015, 217.
[824] Homolle 1882 referring to Inventory of Demares, l. 56, 75-76.
[825] 1932-9, 21.



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Some of the gilded wreaths may have been made to commemorate an honour awarded to military commanders, particularly in Macedonia where many gilded wreaths are found in male graves which also contain weapons. There is a possible precedent in a gold wreath found at Armento in Italy which has a Nike as a central emblem and an inscription naming Kreithonios, which signifies, in Guarducci's view, that he had paid for the wreath. She proposes that the wreath was made while the deceased was still alive, to mark an honour awarded to him and was not for wear but for display and that it went to the grave with him as a treasured object[826]. If this interpretation is correct – and it is persuasive –the same *could* have happened with some of the gilded wreaths. Alexander gave metal wreaths to some of his soldiers to recognise their valour[827] and as suggested in Chapter 2, some gilded wreaths may have been made to commemorate this honour, either while the individual was alive or on his death, and it would have been natural progression to bury them in the grave, in much the same way as Kreithonios' wreath was buried with him.

More generally, however, the obvious explanation of why some Macedonian men were buried with gilded wreaths is that it was to mark their status and success as military officers. It fits well with the idea that that they were given 'heroic' burials, in a continuation of the Homeric tradition, whereby dead heroes were cremated and buried with gold and other trappings of wealth, as depicted in the Bella tumulus (**fig. 9.6**) and the Sveshtari tomb[828] or as a continuation of the tradition in respect of athletes as discussed in the last section. Both warriors and athletes would be appropriately honoured with a wreath. Some scholars, including Kottaridi[829], suggest that men honoured in this way would have worn wreaths while participating in the eternal banquet in the Isles of the Blessed.

[826] Guarducci 1973, 18.

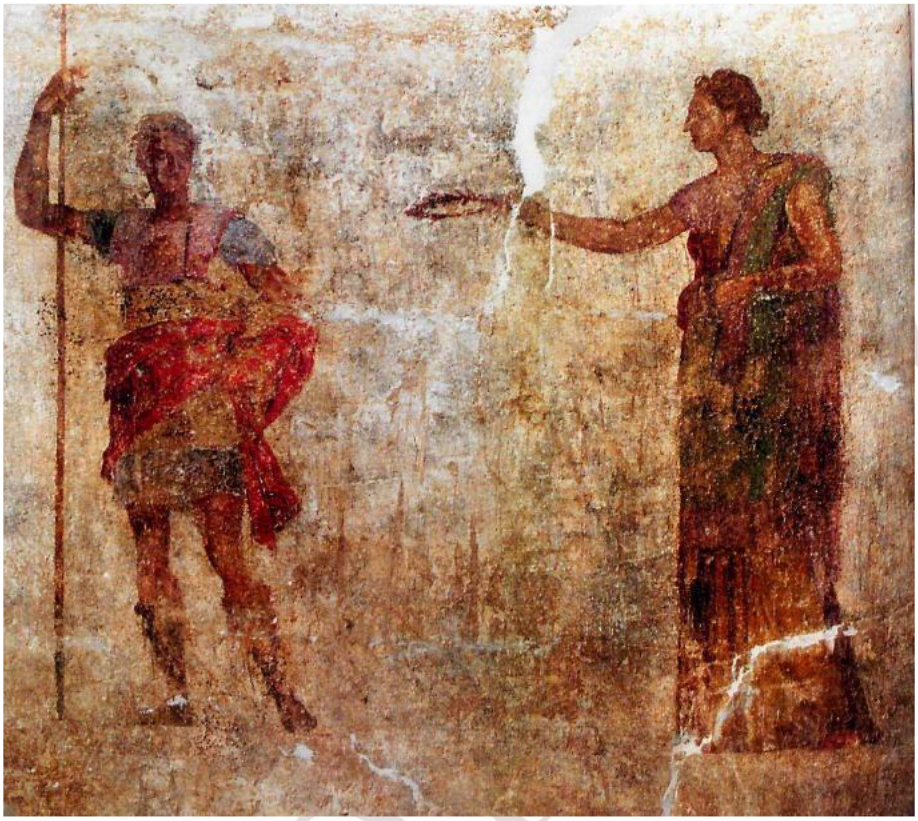
[827] Arrian VII, 5, 4-5.

[828] Bella: Brecoulaki 2006, 164; Sveshtari: Marazov and Chakalova 2005, 174.

[829] See for example Kottaridi 2011b on the association with Homer, and Kottaridi 2011a, 80 for the specific suggestion that the gold wreath would have been worn by the 'hero-king' at banquets in the Blessed Isles.

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*Fig. 9.6 Wall painting in the Bella Tumulus, Vergina. Warrior being awarded a wreath by a female figure. From Plantzos 2018, 230.*



### *(iv) Women and girls*

Adult women and young girls, as well as men, were buried with gilded wreaths. In some red-figure vase paintings, the bride is shown wearing a *stephane* or a wreath with upright leaves, and is often shown being presented with at least one wreath[830]. A wreath could signify erotic desire[831] and Aristophanes refers to husbands seeing their wives making a wreath immediately suspecting that the wife had a lover (*Women at the Thesmophoria*, 399-400). Two particular couples, Dionysus and Ariadne, and Peleus and Thetis, were seen as models of human marriage[832] and a red-figure krater shows Ariadne making a wreath for Dionysus[833] (**fig. 9.7**). A pelike found in Pella, dated to c. 330-320, 76/770, depicts what is thought to be an *epaulia*

[830] Daremberg and Saglio regard a myrtle wreath as an alternative to a diadem for the bride (*Matrimonium*, III, 2, 1649).
[831] Maxwell Stuart 1972.
[832] Schmitt Pantel 2011, 126.
[833] Sabetai 2011, 139.

scene with the presentation of gifts to the bride, suggested persuasively by Akamatis to be Ariadne, which included several wreaths[834] (**fig. 9.8**) and she is also shown wearing what appears to be a myrtle wreath. The wreath found within this pelike (M28) seems to have accompanied an *aore*[835]. A fourth century Attic oinochoe depicts Pompe, wearing a wreath, with a seated Dionysus, depicted as a wedding god[836] - he was the father of Hymenaios, the god of marriage ceremonies (**fig. 9.9**). The wreath worn by women on these vases suggests a particular association between the marriage ceremony and brides, given the rarity of representations of women wearing wreaths. Several scholars have pointed out the similarities in the rituals surrounding weddings and death[837]. The association with marriage could explain the wreaths found with young girls in Southern and Central Greece, noted in Table 3.2, and Macedonia (M28 and M25). The wish of a family to mark their sadness that a young girl never had a wedding is readily understandable.

*Fig. 9.7 Red-figure krater by the Dinos Painter (c. 420-405), showing Ariadne making a wreath for Dionysus. Benaki Museum 4387. From Sabetai 2011, pl. XXIII ©Benaki Museum, Athens.*



[834] Akamatis 2016, 109-110.

[835] Akamatis 2016, 113. Only the ashes, and no bones, have been preserved.

[836] Bieber 1949, 38

[837] Seaford 1987, 107 and Ferrari 2003, 33-35.

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*Fig. 9.8 Detail of pelike 76/770 from Pella showing Aphrodite (left) and Ariadne (right) (interpretation of Akamatis 2016). Second half of the fourth century. The pelike contained M28. Archaeological Museum of Pella. ©Hellenic Ministry of Culture and Sports/Archaeological Resources Fund/Ephorate of Antiquities of Pella. From Ministry of Culture 1989, 108.*



*Fig. 9.9 MMA 25.190 showing Pompe wearing a wreath. © Metropolitan Museum of Art, https://www.metmuseum.org/art/collection/search/251935.*



As was suggested in Chapter 2, the multiple wreaths found with female burials in Macedonia may have been either wedding gifts, or used for someone with several statuses – priestess, married woman or *aore*, initiate, deceased – so as to mark each of these. At Phoinikas cist grave 5 and Aineia III, the wedding gifts hyphothesis is more attractive since the wreaths are

similar and there are no specific indicators that they had several roles such as that of priestess.

***(v) Death and funerary use***

The dead wore wreaths and the use of wreaths made of plants at funerals in ancient Athens is well attested in literary evidence and iconography. After death women anointed the body with oil and decorated it with flowers, wreaths and jewellery[838]; it was only after this ritual was completed that the body was thought ready for the *prothesis,* which took place on the day after death in the home of the deceased when a wreath was sometimes placed on his or her head[839]. A pinax by Exekias dated to around 540 shows the deceased woman wearing a wreath but this was apparently not an invariable practice as another pinax shows the deceased without a wreath[840]. It is not clear whether the deceased wore one at the *ekphora*, which took place a few days later, of which there are very few representations[841].

Parker suggests that the reason why the deceased wore a wreath was for purification after the contamination of death[842], in keeping with his and Rohde's view that it was a symbol of sacredness[843].

The ancient source most frequently cited in this connection is a fragment of Alcmaeon in Athenaeus, which reads 'He laid out the dead bodies… and set before them a feast and placed crowns (*stephanous*) on their heads'[844]. Another quote in Athenaeus, this time from Aristotle, says that when we are in mourning, in our sympathy for the dead we disfigure ourselves, not only by cutting the hair but also by doing away with wreaths[845]: thus by not wearing something beautiful and joyful (like a wreath) we are showing sympathy for the dead. Even if wreaths

[838] Kurtz and Boardman 1971, 144.

[839] Garland 1985, 26.

[840] Pinax with wreath: Mommsen 1997, pl.1 (F1811A); pinax without wreath: MMA 54.11.5. https://www.metmuseum.org/toah/works-of-art/54.11.5/. Boardman 1955, pl.4.

[841] Shapiro 1991, 633.

[842] Parker 1983, 35, citing Rohde *Pysche* 189, note 40, who on p.164 refers to the 'higher sanctity' of the deceased (using the translation by Hillis 1925).

[843] Parker 2011, 54.

[844] Athenaeus, *Learned Banqueters* xi 460b.

[845] Athenaeus, *Learned Banqueters* xv 675a.



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were not thought appropriate wear for the living attending the funeral, they were a common object brought after the funeral in a basket on visits to the tomb by female mourners and were used with fillets to adorn the grave[846]. Myrtle was used both to crown the deceased and to decorate the grave (Sophocles, *Electra* 325). The wreaths used on these occasions seem to have been made of real plants, as can be seen from the depiction of a woman making a wreath on a lekythos from around 450 (**fig. 8.24)** and they and other offerings are shown on many white ground vases deposited on a grave monument, often on its steps[847]. Apulian vases from around the middle of the fourth century frequently depict a young man or woman (interpreted by many scholars as the deceased[848]) in a *naiskos* with mourners bringing wreaths and garlands. Stelai were also erected to preserve the memory of dead, and were oiled, perfumed, decorated, wreathed and fed[849]. In Boeotia and West Greece stelai were often engraved with carved wreaths[850].

There is no evidence of metal wreaths being used to adorn the grave, but they have been found in the funerary vessel (e.g. M16, M17 and M14) or around its neck (e.g. SCG 30 and SI 25). Many of the gilded wreaths accompanying inhumations were found close to or on the head including SCG20 and SCG31, and may have been worn on the head during cremation since some gilded wreaths were burnt on the pyre above the grave, as for example at Derveni and Aineia, and subsequently placed in the grave with the human remains, and further wreaths have been found on the pyre itself (e.g. Stenomakri Toumba). Manetta and Pisani observe that terracotta jewellery was worn by the deceased in the grave and suggest that in some areas of the Greek world it should be seen as part of a funerary ceremony connected with burial or display[851]. A ceremony seems to have taken place in connection with the inhumations of young

[846] Oakley 2004, 205.
[847] Oakley 2008, 338.
[848] Castoldi 2008, 250-251.
[849] Garland 1985, 119.
[850] Fraser and Rönne 1957, 183-5.
[851] Manetta and Pisani 2012, 964.

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females at Akraiphia and at Salamis which suggests that we should regard SCG1 and the mirror found with T3X4 as ceremonial offerings burnt to honour the dead, as proposed by Andronikos in relation to pyxides without lids found at Veroia[852].

Views about what happened after death in Greece were complex, and changed over time[853]. Although they were often bleak[854], there was a hope that the virtuous, as well as initiates, would be rewarded with a happy life in the Isles of the Blessed. Excellent moral conduct was required as was acknowledged by Plutarch who referred to the person being rewarded as in an athletic context[855]. This reward was not limited to men, but could also be given to women for appropriate conduct[856]. Despini refers to the same passage in Plutarch and suggests the use of wreaths with the dead as being to certify that he (or she) was worthy of being rewarded with what was fitting, in a moral sense[857], the implicit reason for the deceased being provided with a wreath being so that they can lay claim among the virtuous to eternal life after death. Although attractive, this idea does not completely explain why gilded wreaths are only found in some graves: logically although only a few people are truly exceptionally deserving, surely all mourners will see the deceased as 'virtuous', in the same way that all grave memorials in English churches praise the deceased for their outstanding qualities, and will no doubt want to see him or her able to make this claim to eternal life.

***(v) Religious use: gods, priest(ess), worshipper***

Wreaths were normal apparel for religious ceremonies, and were worn by men and women, although most were natural rather than metal. The laws attributed to Solon in the early sixth century exempted religious and public ceremonies from the general prohibition on those who

[852] Andronikos 1961, 42.

[853] Sourvinou-Inwood 1995, pages 298-9 in particular.

[854] See for example the famous passage in the Odyssey where Achilles speaks to Odysseus (Book XI, 488 et seq.)

[855] Plutarch (Moral.561A): 'ἀγωνίζεται γαρ ὥσπερ ἀθλητὴς τον βίον, ὅταν δε διαγωνίζεται, τότε τυγχάνες τῶν προσηκόντων' - 'for life is like an athlete's contest, and only when it has fought that contest to the end does it receive its befitting deserts'.

[856] Kravaritou and Stamatopoulou 2018,141.

[857] Despini 1996, 28.



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had committed certain crimes from attending, but were forbidden to wear a wreath when other citizens did so[858]. As mentioned above, Rohde and Parker see wreaths as a symbol of sacredness[859].

It seems that gold wreaths were particularly appropriate for deities, but could be worn by some humans such as priests and priestesses. They were also used on statues of the gods in sanctuaries. Aphrodite is described as 'gold-wreathed' (χρυσοστέφανον) in Homeric Hymn VI and a statue of Apollo in Delos is recorded as being decorated with a gold wreath; those of the Charites were also crowned with gold[860]. An insight is provided by Athenaeus, quoting Theopompus, who refers to a voice believed to be that of Apollo, coming out of bronze laurel tree set up by the Metapontines; the god's anger had been provoked by Pharsalia because she had danced wearing a gold laurel wreath which had been dedicated to him at Lampsacus[861]. A gold wreath was thus appropriate for dedication to a god, but could not be worn, at least after such dedication, by an ordinary human such as a dancing girl.

Gold crowns or wreaths were one of three standard public honours awarded to priestesses[862] and there are records in Athens of wreaths of olive, myrtle, ivy and other plants being granted to priests, amongst others[863]. A second century inscription from Priene about the sale of a priesthood shows that the priest of Dionysus Phleos was entitled to wear a gold wreath, suggesting that this was a special privilege and that ordinary people were not normally so entitled[864], and at least one priestess on Delos is recorded as wearing a gold wreath[865]. A fourth century Attic relief shows a woman being honoured with a wreath; she is holding a key, indicating that she is a priestess[866]. Some of those buried with gold wreaths are thought to have

[858] Aeschines, *Against Timarchus*, 21.
[859] See above page 352.
[860] Homolle 1882, 119.
[861] Athenaeus, *Learned Banqueters*, Book XIII, 605.
[862] Connelly 2009, 203-4.
[863] Connelly 2009, 204.
[864] Sokolowski, 1955, 37, 15.
[865] Homolle 1882,119.
[866] Connelly 2008, 189.

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been priests or priestesses[867]. Youth does not seem to have been a barrier: a little girl, who was a priestess of Demeter and Kore, was honoured in Athens with a small column decorated with a key and two myrtle wreaths[868]. There is no specific evidence in the literary or pictorial record of *gilded* wreaths being worn by priests or priestesses, and it is difficult to work out from contextual evidence alone whether particular individuals buried with gilded wreaths were holders of these offices. Indicators for women may be keys or phialai, and for men, knives and in some cases it can be inferred that wreaths were buried with priests or priestesses, as for example the priestess of Aphrodite buried with T2X82, and the young priestess with M39, and sometimes it is known that the individual buried with such wreaths was a priest (such as the kings of Macedonia[869]), but there is nothing to suggest that all wreaths were buried with priests/priestesses.

Worshippers also wore wreaths, and there are many figurines of women wearing them, as for example in the Thesmophorion in Thasos which many scholars including Muller regard as representing worshippers rather than divinities[870]. Some of these are natural wreaths, but roll wreaths are also depicted.

On balance it seems more likely that although some of those buried with wreaths were priests/priestesses, many wreaths were placed in the grave as a mark of respect for the deceased, and perhaps as a mark of respect to be shown by the deceased on his or her arrival on the other side of the River Styx.

***(vi) Initiates***

There were several Mysteries into which individuals could be initiated: those of Dionysus, Demeter and the Kabeiroi have attested links with wreaths. At least three gilded wreaths were

[867] Including the gold ivy wreath at Apollonia, which is thought to have belonged to a Companion of Alexander who was also a priest: Adam-Veleni 2002, 278.

[868] Connelly 2008, 193, referring to the second century column of Habryllis, illustrated on p. 202 (2008).

[869] Kottaridi 2002, 80.

[870] See Muller 1996, 472-3.



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buried with people who were clearly initiates: SCG31 (Pelinna), M29 (Pella) and T2X63 (Pella), the first of which represents ivy, and the other two myrtle. The leaves from Pella seem to have come from a cemetery in which a group of initiates were buried together, which appears to have been the recommended practice, judging by an inscription from Cumae, that read 'it is illicit to be buried in this place unless one has become a *bakchos*'[871]. Pella is however the only example of gilded wreaths being found in what appears to be a section of a cemetery reserved for initiates.

There is no reason to associate any of the gilded wreaths with Eleusis, with the possible exception of that reputedly found in the late 18th century by Fauvel (T3X2), but items found there, including the famous Ninnion pinax, provide some helpful representations of initiates portrayed wearing wreaths, as described by Aristophanes, who refers to them as wearing myrtle wreaths with many berries (πολύκαρπον στέφανον μύρτων)[872]. The pinax shows several figures believed to be initiates as well as Demeter and Persephone (**fig. 9.15**); the initiates on the left are arriving at the Sanctuary with wreaths or branches. Papangeli sees the women as wearing a *kernos* or *plemochoe* on their heads and one, who is on tip toe, perhaps about to dance, is wearing a myrtle wreath as well, whereas the other is also wearing a *stephane*, like Demeter herself[873]. A second representation is on a black figure *escharis* (a vessel used for chthonic libations), which shows Demeter seated wearing a polos and holding a wreath and Persephone a myrtle branch[874]. Thirdly, on the Pourtalès crater, which shows the initiation of Heracles into the Eleusinian Mysteries, all the figures of both sexes are wearing wreaths with berries[875] (**fig. 9.16**). Tzanavari also suggests that the painted representations of myrtle foliage and wreaths in cist grave 1 at Derveni/Lete indicate that the deceased had taken part in rites of passage or

[871] Bremmer 2014, 72.
[872] *Frogs*, 328-330.
[873] Kaltsas and Shapiro (eds) 2008, 150.
[874] Tiverios 2008, 132 and Kaltsas and Shapiro 2008, 146.
[875] https://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=461573&partId=1.



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initiation and had been placed under the protection of Demeter and Kore [876], whose cult was much practised in Macedonia.

*Fig. 9.15 Pinax of Ninnion. National Archaeological Museum, Athens No. 11036. From Kaltsas and Shapiro (eds) 2008, 151, showing cast in Eleusis AM. ©Ephorate of Western Attica/ Archaeological Resources Fund.*



[876] Tzanavari 2017, 196-7.

*Fig. 9.16 Side A of the Pourtales Krater, BM 1865,0103.14. The figure on the lower left is believed to be Herakles, holding his club in the left hand and a torch in the right. The Dioscouri are also shown as initiates, carrying torches.*
*©The Trustees of the British Museum.*



Male initiates of the Kabeiroi are depicted on vases wearing myrtle wreaths or carrying myrtle fronds: dancing wearing a wreath and a mask is suggested by Daumas to have been a particular stage of initiation into the mysteries of the Kabeiroi[877] (**fig. 3.42**). Purple or red fillets were bestowed on initiates of the Kabeiroi in Samothrace, as well as iron rings[878]. Several graves in Samothrace contain gilded wreaths[879], but there is nothing to indicate there or elsewhere that those buried with wreaths were initiates of the Kabeiroi, except perhaps an iron ring in the case of some wreaths (M14, M21, T2X26, SCG15, SEA10 and T5X36), but for which there could be other explanations.

The most likely Mysteries into which people buried with wreaths could have been initiated in the regions studied are those of Dionysus, who exchanged one of his most treasured

[877] Daumas 1998, 30-31 and 33-34.
[878] Bremmer 2014, 28-29.
[879] Dusenbery 1998, 988-992.

possessions, myrtle, to retrieve his mother Semele from Hades[880]. SCG31 was found with objects which have a likely association with Dionysiac initiation, including skyphoi with hollowed-out eggs as well as the two inscribed ivy leaves discussed on page 107. The two leaves from Pella found with M29 and T2X63 refer to Persephone, believed to be the first mother of Dionysus in the Orphic tradition[881]. Such leaves are part of a group of much-studied material seen variously as Orphic, Phythagorean and Bacchic/Dionysiac[882]. Graf regards the text of the Pelinna leaves as referring specifically to Dionysiac initiation whereas Parker and Stamatopoulou are more cautious, although they accept that the text refers to a Bacchic ritual[883]. It is by no means certain that all those buried with the gold tablets shared the same beliefs, or followed the same burial customs. The Mysteries of Dionysus offered initiates (*mystai* and *bacchoi*[884]) a path to eternal bliss, and initiation was open to to women as well as men. These Mysteries made the initiate conscious of the divine origin of his or her soul and prepared them for the journey to the Underworld where the soul would join the blessed. The precise relationship between Orphism and Pythagoreanism is obscure, although they appear to be closely related, but the former is not, in Parker's words, reducible to the latter[885]. Pythagoras lived and taught in Southern Italy but some of his followers were forced to flee in the mid-fifth century after persecutions and settled in Thebes[886].

The bright gold of the tablets and of the wreaths and the white coating found on many South Italian wreaths could have been important in allowing the initiate to be recognised in the dark world of Hades in the same way as the white clothing worn by initiates[887]. A possible

[880] See note 772.

[881] Bernabé and San Cristóbal 2011, 92.

[882] Eisenfeld 2016,1; Tzifopoulos 2010, 115; Bremmer 2014, 72. Edmonds has argued against the Orphism link (e.g. Edmonds 2004).

[883] Graf 2013, 140; Parker and Stamatopoulou 2007, 23.

[884] The distinction between the two is not clear, though it seems that one only became a *bacchos* after personal initiation – Graf 1993, 243.

[885] Parker 1995, 501.

[886] Demand 1982, 70.

[887] The latter was noted by Johnston in Graf and Johnston 2013, 109.



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association between wreaths and the Orphic-Bacchic mysteries may be disclosed by an inscribed gold tablet from Thurii (A1, OF488), which refers to the deceased coming with swift feet to the 'desired crown' (στεφάνο) [888], although this suggests that the crown was awaiting the initiate in the Blessed Isles, rather than that the initiate was already wearing it as would presumably be the case if he or she had been buried wearing one. Bernabé and San Cristobal interpret this line and the award of a wreath after death as the triumph of the initiated over the cycle of reincarnations[889]. This line also evokes for some scholars the reward of the athlete and more generally the victor[890], picking up the idea put forward by Karouzou and discussed in 9.3(ii) above, and also the idea of the initiate rushing to partake of the eternal banquet described by Plato[891] (see below section (vii)). Another tablet, from Petelia in Southern Italy, refers to the initiate as a hero[892], for whom a wreath would be entirely appropriate. Graf and Johnston, and the other scholars who link the wreaths with the eternal banquet do not however explain how women, such as the female initiate buried at Pelinna with the gold ivy leaves and SCG31, could participate.

There is no consistent pattern of gilded wreaths being found with inscribed gold tablets: apart from those found in Pelinna, none of the other inscribed gold tablets from Southern and Central Greece appears to have been found with a gilded wreath; in Macedonia, inscribed leaves appear to have been found with the wreaths from Pella M29 and T2X63, and an inscribed gold strip and coins with T2X72 and T2X77A. As far as Crete is concerned, there is no archaeological context for the tablets referred to as the Eleutherna epistomia, but one tablet from Sfakaki may have been accompanied by a wreath[893]. Although several inscribed

[888] Edmonds 2011, 16.

[889] Bernabé and San Cristóbal 2011, 81-82.

[890] Bernabé and San Cristobal 2008, 124.

[891] Bernabé and San Cristobal 2011, 81-82.

[892] Graf and Johnston 2013, 6-7.

[893] Tzifopoulos 2010 discusses the archaeological context for many the tablets in chapter 1. The tablet from Sfakaki (Crete), B12, may have been accompanied by a wreath, as the context is described as including 'small bronze and gilt fragments' and is dated to the second to first centuries (Tzifopoulos 2010, 26). Parker and



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tablets have been found in Southern Italy, only one was found in a grave with a wreath, and which is so small it is probably indecipherable[894]. It may not have been necessary for an initiate to be buried with both. Tzifopoulos raises the question of why the graves at Pelinna and in Macedonia contained both a wreath and an engraved tablet, and asks whether the lamellae might refer to an actual event during initiation[895]. This is an attractive idea. Although Clinton's idea that the Ninnion stele portrays two stages of initiation has been doubted[896], we cannot dismiss it completely. Parker observes that two sources say that it was only after initiation that the *mystes* was crowned, and although this too has been doubted, he does not rule it out[897].

Although there is in some cases a link between initiation and the use of gilded wreaths, there were also initiates who were not buried with a wreath, and many wreaths were buried with people who bear no obvious signs of initiation, so the case for all of them being buried with initiates is far from made out.

***(vii) Symposium and banquets***

Wreathed symposiasts are described in the excerpt from Alcmaeon of Croton quoted on page 352 and in a famous satirical passage, Plato describes the gods as leading the just to the House of Hades where they are crowned with wreaths (ἐστεφανωμένους), recline on couches and drink at the symposium of the blessed (συμπόσιον των ὁσίων) (Plato, *Republic*, 363cd). It would appear therefore that wreaths were worn at this banquet in the next world as well as at symposia in this world. There is a reference to wine as the deceased's 'fortunate honour' on one of the Pelinna tablets, which Graf sees as referring to the symposium of the blessed[898]. This tablet was

Stamatopoulou 2007 list the tablets from all regions and wherever possible the accompanying finds in their Table II.

[894] Wreath T5X5 was found with an inscribed fragment which is not listed in any of the standard works such as Edmonds 2011. The illustration in Orsi 1914 shows that it is tiny.

[895] Tzifopoulos 2011, 171-2.

[896] Clinton 1992, Papangeli 2008, 150.

[897] Parker 2005, 361.

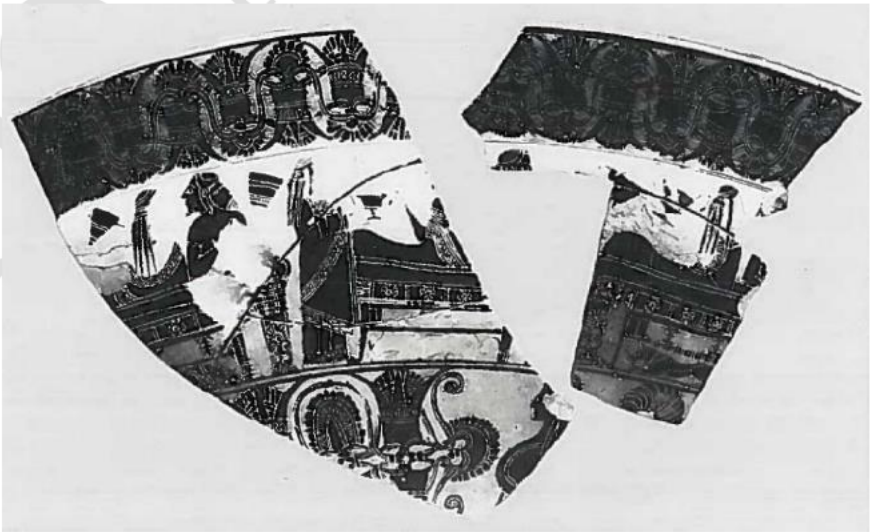
[898] Graf 1993, 246.



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found on the breast of the deceased woman and if we take this literally, the woman herself was intended to be given wine at this particular banquet – which is surprising. There are many Attic vase-paintings showing men wearing wreaths at symposia, and the frieze at Agios Athanasios also depicts wreathed banqueters. Although vase-paintings from Attica and Apulia show female deities, maenads, flute players and dancers wearing wreaths, there do not appear to be any depictions of ordinary women wearing them at banquets[899]. There is however one type of vase painting showing women wearing wreaths at what appears to be a banquet. Pipili suggests that depictions of women on vases found in Samos but originating in Sparta show them participating in a ritual meal; on the example she quotes, one of the women is wearing a mitra, so it is perhaps an Eastern custom[900]. A bowl from Samos published a little later also appears to show women participating in a banquet and wearing wreaths[901] (**fig. 9.17**). Redfield suggests that a woman wearing a wreath on one of the pinakes from Locri may be participating in a banquet, but on examination of the photograph and drawings of the pinax, which is in small fragments, the portrayal looks more like that of a flute-girl who is seated (see note 454).

*Fig. 9.17 Scene on black figure bowl from Samos, by the KX Painter, Vathy Museum K1280 showing women at banquet, wearing wreaths. From Kreuzer 1998, no. 200, pl. 37. ©Hellenic Ministry of Culture and Sports/Ephorate of Antiquities of Samos and Ikaria*



[899] Sabetai 2011, 155 points out that wedding banquets, which women did attend, and at which they might have worn wreaths, are never represented on vases. Oakley and Sinos also note the absence of representations of such scenes (1993, 22).

[900] Pipili 1998, 90.

[901] Kreuzer 1998, pl.37.

The idea that members of both sexes wearing metal wreaths would participate in a 'symposium' or eternal banquet in the Blessed Isles has been suggested by Chrysostomou[902]. He relies on an article by Despini, who was offering an explanation for the presence of items seen by several scholars as sympotic in female graves at Sindos. She accepts that women did not participate in earthly symposia, but suggests that they may do so in banquets in the other world and goes on to suggest that the hope of a happier life after death may spring from earlier eschatological beliefs, more deeply rooted in places where the early mystic cults were accepted[903]. Nevertheless it seems unlikely that the women buried with the gilded wreaths would have been envisaged as participating in a banquet in the Blessed Isles, for which there is very little supporting evidence, since they did not participate in them in this world[904], with the possible exception of the ritual meals depicted in Samos.

## 9.4 Conclusions

It is clear that wreaths, including metal wreaths, were used on many types of occasions, although the main use of gilded wreaths seems to have been in the grave. Natural wreaths were used in many circumstances, including funerary, probably to indicate sanctity or purification, and it is likely that the use of wreaths made with gilded material developed from this. Gilded material had a high status in Macedonia, where solid gold was rarely used, outside royal contexts, for drinking and other vessels[905].

It is impossible to suggest any one theory that explains the use of gilded wreaths in all graves, although many attempts have been made. One of the main theories is that a wreath certified that the deceased was worthy of being rewarded with life in the next world (Despini) [906], developing a general argument from their award in athletic games that wreaths were buried to

[902] Chryostomou P. and Chrysostomou A. 2012, 374 and Chrysostomou 2011, 324. He appears to see the gilded wreath in male grave 724 at Pella as one of the symposium accoutrements (Chrysostomou 2011, 316).
[903] Despini 2011, 340-342. Ignatiadou (2012b, 397) does not see the items as sympotic.
[904] Sabetai 2011, 145.
[905] Manetta and Pisani 2012, 964. See also Williams 2003, 231-2.
[906] Despini 1996, 28.



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indicate that the deceased was a victor, and from this others have argued that they honoured those of particular virtue (*arete*)[907]. A second and related theory is that wreaths in certain specific tombs marked the deceased as 'heroes' honoured in the Homeric tradition (Kottaridi, Chrysostomou)[908]. Some have explained them as bestowed on *aorai*, who died before they could be married, or other individuals who were given 'special' burials, such as women who died in childbirth[909]. Further scholars look for a religious explanation, and in particular that the deceased was an initiate – of Dionysus, Demetra and Persephone, or the Kabeiroi. Some combine these theories, and argue that those buried with wreaths were 'heroes' or initiates who wore them at the eternal banquet or symposium in the Blessed Isles (Chrysostomou). Women, with whom a large proportion of the wreaths were buried, present some difficulty with the 'Homeric hero' idea and even more with the idea that wreaths were worn at an eternal banquet. All these explanations are in my view appropriate to explain some of the gilded wreaths at certain times and places, and in particular the idea of a reward for *arete*, which provides a satisfactory explanation for many wreaths of type 2 found in Macedonian graves. Wreaths of this type may well have denoted those who were worthy through their conduct such as warriors, married women and mothers as well as initiates and priests or priestesses. Some of the wreaths marked initiates of Dionysus or another god, and others marked *aorai* but many may have been buried as a mark of respect or in a general hope that the deceased would enjoy another life, rather than to denote any specific religious belief.

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[907] In particular, Kephalidou 1996.
[908] Kottaridi 2011a, 80; Chrysostomou and Chrysostomou 2012, 324.
[909] In particular, Sabetai 2012.

# CHAPTER 10: CONCLUSIONS

Some 170 gilded wreaths have been studied for this dissertation, which form about a third of those known to the author (c.440). I approached the task drawing on my training as a conservator, looking at how precisely they were made, and doing scientific analysis wherever possible to determine what materials were used. I then proceeded to set these wreaths in their archaeological context, by looking at the type of grave, mode of burial and other goods found with them, in order to try and understand what kind of people were buried with this material. The results of the detailed study of the wreaths, and of the consideration of their archaeological contexts, are set out in the regional chapters (2-5).

From this study of the wreaths it has been possible to attribute them to six main types, based on their design, and to draw up a timeline to show their development in each of the four regions studied[910]. The design was driven by the choice to represent certain plants – ivy rosettes, for example, required a stronger circlet made of lead (type 3) than the lighter berries and leaves which could be supported on a slender bone circlet (types 1 and 2). All the wreaths were made of the same materials, and all imitate natural plants, but there are nevertheless differences in the way they were worked on both a regional and individual basis.

The earliest gilded wreaths emerged in Macedonia before the middle of the fourth century, including those found at Aiani, Thasos and Olynthos (type 1). Type 2 also emerged there, with bone and wooden circlets and gilded copper leaves and berries, dating mainly to the fourth and early third centuries. Most represent myrtle, but oak and ivy are also found. Several gilded wreaths pre-date the period of great luxury found in Macedonian graves towards the end of the fourth century, although all were clearly used by the wealthiest members of society, as can be seen from the gilded bone circlets and stems found on many wreaths. In some cases they were

[910] The main features of each type and the wreaths within each type are summarised in Table 1.2, and described in more detail in section 7.2.2. The timeline is in fig. 7.1.

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found in royal graves (M2 and T2X88). This impression of high quality is supported by the other grave goods and type of grave, which were in many cases monumental, and it is difficult to find an important grave in Macedonia which did not contain at least one gilded wreath. Multiple gilded wreaths in the same grave, buried with a single person, are a feature of Macedonia, not found elsewhere. The type 2 wreaths found in Southern and Central Greece and Southern Italy seem to be the result of Macedonian influence, since they are often found in graves which followed Macedonian customs, such as for example wreaths found near Isthmia and Sikyon (SCG20 and T3X29), and a wreath found around the neck of a bronze amphora in Taras (SI 25).

It was more surprising to find a significant number of gilded wreaths in Southern and Central Greece, which have a different design from the Macedonian wreaths, with moulded bell-shaped flowers, spherical berries and fewer leaves. These type 4 wreaths mainly date to the third and second centuries and seem to have developed independently of the Macedonian wreaths. They were much less lavish: the reason for this difference was at least partly cultural, since luxurious grave goods were avoided for use in graves in Boeotia, as discussed by Sabetai[911]. These wreaths are less concerned to imitate real plants, and seem to represent a mixture of plants which are difficult to identify. They were also cheaper to produce than the Macedonian wreaths, with moulds being used for the flowers and some other elements, and lead for the circlets.

Many wreaths have survived in Southern Italy and the Dodecanese, mainly dating to the third and second centuries, which are generally of type 3. In both Rhodes and Taras there was a flourishing society served by skilled jewellers, but in the former the gilded wreaths appear to have been buried with individuals who were not quite as wealthy as those buried with gold wreaths. The large number of ivy wreaths in both regions is probably due to reverence for

[911] Sabetai 2012, 311-312.



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Dionysus, which in the case of Taras is also supported by the many grave goods that have the same association.

It has been possible to identify some fragments as having come from roll wreaths (type 5), although the padding for the roll has not survived. Some gilded clay leaves found in Boeotia, and gilded berries from Crete, match closely those shown on figurines from both places showing women wearing roll wreaths. The heavy clay leaves and berries would have required a lead circlet, which I suggest was hidden inside the padding. Some of the wreaths identified as being of types 3 and 4 could also have been roll wreaths, although this is cannot be definitively established from the surviving evidence.

Most wreaths were designed to be worn on the head, and many have been found in position on the skull. A few wreaths however were clearly not designed for wear by humans since they were too large for this purpose, and appear to have been designed for use on a statue or perhaps a helmet (e.g. SEA3, T2X88) (type 7). Some of the wreaths from Rhodes (e.g. SEA16) may have been designed for use on a funerary vase rather than the head.

The materials used on the gilded wreaths were found to be the same throughout all the regions, as discussed in Chapter 6. Pure gold and pure copper, not bronze, were found consistently. Analysis showed that kaolinite was the preferred material for the coating applied beneath the gold on several Macedonian items, probably because its lamellar crystalline structure provides a suitable base. The metals, pigments and clays could have been sourced in Macedonia, but also elsewhere, such as in particular kaolin from Melos which may have been used for the coating; all would have been traded throughout the regions studied. One significant regional difference emerged on the South Italian wreaths: several of these have features which appear never to have been gilded, since there is no trace of gold detectable on them, the rosettes and berries being covered with a white coating only. Lead white seems to have been used in these bright white coatings. The expensive cinnabar was used on several wreaths in Macedonia to decorate berries and flowers. The purpose of using coloured paint to decorate berries and

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circlets is unclear, but it does seem to have been intended to be seen, so was decorative. A bole containing hematite or yellow ochre beneath the gold was also found on several Macedonian wreaths, on which the gold may well have been burnished as it appears to be particularly brilliant and is still well adhered.

The many slight differences in design of wreaths within a region, as well as the inherent fragility of the material, indicate that they were generally made locally in the regions where they were found. It is however possible that a single workshop may have produced the wreaths found at Aineia and Derveni in Macedonia, since the wreaths are so similar. Such a single workshop could possibly have been influenced by practices in Vergina/Aigai, since coloured bole is also found there on earlier wreaths from Stenomakri Toumba. All these wreaths are of exceptionally high quality. Designs could easily have been transferred within Macedonia and beyond by travelling craftsmen or word of mouth.

As to the first question addressed in this dissertation, discussed in chapter 8 and in each of the regional chapters, the earliest gilded copper wreaths almost certainly originated in Macedonia in the early part of the fourth century, since three wreaths of type 1 have been found there (M2, M27 and M40); the other four wreaths of this type, from Rhodes, are slightly later, from around the middle of the fourth century. It may be however that the practice of using metal other than gilded copper to make headdresses imitating plants has its origins elsewhere, most likely in the Peloponnese or Southern Italy. A surviving example from Croton, consisting of a band added to a gold diadem and dating to the fifth century (T8X11) has elements that closely resemble gilded wreaths of types 1 and 2. A wreath with gilded silver elements excavated in Sparta may be even earlier but no longer appears to survive (T8X15). The earliest type 2 wreaths were excavated in Macedonia, which has yielded by far the greatest number. The first type 3 wreath was found in Macedonia (M37), but the majority were found in Italy and Rhodes, and the design was clearly developed in these latter two places at about the same time. Wreaths with large rosettes imitating ivy flowers are a particular feature of these regions, and are found in great

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numbers at Herakleia in Southern Italy, as well as in Taras and Rhodes. Type 4, however, is likely to have originated in Boeotia or the Peloponnese, since the earliest known examples were found there. Type 5, roll-wreaths, could have originated anywhere in the Greek world, although the earliest provenanced archaeological evidence for them is in Boeotia. Type 6, with large painted clay flowers, was probably first produced in Macedonia, where at least ten examples survive. Neither single leaves (found mainly in the Peloponnese and Southern Italy) nor gilded silver wreath-diadems (in Southern Italy) appear to have been direct forerunners of the gilded wreaths; leaves and branches had a different use, probably mainly a form of *phyllobolia*, and were rarely gilded. The wreath-diadems did develop into a form of wreath, of which there are two surviving examples (SI 15 and SI 23), but this appears to have been confined to Southern Italy and died out. The real predecessors of the gilded wreaths are almost certainly those made of real plants, but it is possible that solid gold or gilded silver wreaths such as the Croton diadem or a silver wreath found in Libya (T8X1) could have been models, although very few survive, and appear to have been mainly used in sanctuaries rather than graves as in the case of gilded wreaths.

The method of gilding, involving use of a coating beneath the gold, is an important feature of the gilded wreaths. It may have originated in Egypt, where the use of a coating on copper goes back at least to the time of Nefertari (13$^{th}$ c.) but could have been transferred to metal from use on other surfaces such as clay, of which there are examples on Attic vases from the fifth century. The technique seems to have developed at about the same time as tin was applied to clay vases and may have been taken from Athens to Macedonia in the early fourth century in order to meet the increasing demand for appropriate goods to place in graves there. It is unlikely that gilded wreaths were exported from Athens to Macedonia, as Kotitsa suggests was the case with tinned vessels[912], since gilded wreaths are not found in Athens and they would have been far more fragile than the tinned vessels.

[912] Kotitsa 2016, 696.



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I found in experimental work that a gilded wreath could be produced in a few days, by cutting thin copper sheet with snips or scissors, making the berries by hand from clay, and applying a white coating made from dried kaolin or calcite mixed into a slurry with water. The application of fine gold leaf above an adhesive made of egg white was the most time-consuming part of the process. No particular skill, only manual dexterity and care, were required to produce a satisfactory-looking wreath, and it is conceivable that one could have made in the short time between death and the funeral particularly if several people were working on it. There is no reason however why simple wreaths of this kind should not have been made in advance, and been available ready-made. More complicated wreaths, such as those with painted flowers or gilded stems, are more likely to have been made to commission. The skill required to produce the gilded branches and stems on some of the wreaths, such as the oak wreath from Derveni A (M16) in particular, can only be wondered at.

The wreaths from the regions studied were all found in graves. The epigraphical evidence suggests that gilded wreaths were rarely used in sanctuaries, in contrast to the ample evidence that gold and silver wreaths were used in this way. The latter could well have been melted down by the sanctuary for its own purposes, and would also have been looted, but it would have been harder to extract the gold from gilded material, which would thus have been less attractive to looters. Some gilded material does survive in sanctuaries, suggesting that it was not per se considered inappropriate for use there. Putting these factors together, it seems logical to draw the conclusion that gilded wreaths were generally avoided for use in sanctuaries because of their association with the grave.

Gilded wreaths are found in the graves of males and females, young and old, in all regions, although there is a higher proportion with males in Macedonia than elsewhere. In other regions, their use with females is more common. A high proportion in Southern and Central Greece, about 10%, were in the graves of young girls, thought to have been *aorai*.

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It is unclear whether gilded wreaths were worn during the lifetime of any individuals. It is not possible to determine this from examination, because of the poor state of their preservation, unlike that of the gold wreaths, some of which bear evidence of having been repaired and thus almost certainly worn. A few of the wreaths from Rhodes of type 1 have sharp ends buried in the circlet, and some of the Macedonian wreaths had fabrics as an inherent part of the design, wrapped around the wooden circlet, which provide some evidence that these particular wreaths may have been worn by the living. The use of metal (but not necessarily gilded), as well as natural wreaths, in the home is supported by images of painted wreaths depicted hanging on painted nails at Pella and Amphipolis, suggesting that the originals decorated the home. Possible further support is provided by the fact that very similar gilded wreaths were placed in graves at Phoinikas and Aineia, suggesting that they were made at the same time during the lifetime of the individuals. If used in life, however, this could only have been on an occasional basis, for ceremonial or other important occasions, because of the fragility of such wreaths.

As to why people were buried with a wreath, it is impossible to give a single answer: the various possibilities are discussed in chapter 9. In Macedonia a desire to impress by lavish display of wealth was surely a significant factor, since individuals were often buried with other lusxury grave goods, made of tinned clay, clear glass and gold jewellery. Although gilded wreaths are often referred to as 'imitations', they should not be seen as imitating gold wreaths since they appear to have come into use in a funerary context a little earlier and several were buried in the same grave as gold wreaths, suggesting that each had a separate function. It is clear that the people buried with gilded wreaths in Derveni A and B for example, and their families, could easily have afforded gold rather than gilded wreaths had they wished, and yet both are found in the same grave. There do therefore seem to be other factors present than solely a wish to impress. In Macedonia wreaths are found in the graves of several men who can be seen, from the other burial goods present, such as weapons, to have been military officers. Use in their graves would fit with regarding these men as victors rewarded by a wreath to mark their *arete*.

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It is possible that some gilded wreaths were copies of gold wreaths awarded by the king himself, since Alexander the Great is known to have conferred gold wreaths on his commanders[913]. The wreaths found in Macedonia in multiples with both men and women could have several explanations. One is that these wreaths mark various statuses of an individual – as military commander, spouse, mother, priest or priestess, possibly as souvenirs of various important stages in an individual's life, such as passing from childhood to adolescence, and then to marriage, childbirth and finally death. An alternative for the very similar wreaths found in the cist graves of mature women as at Phoinikas and Aineia is that they were wedding gifts, as depicted in several vase-paintings. The young girls (*aorai*) buried with a wreath may have had the prematurity of their death, before marriage and children, marked in the same way.

Wreaths had a religious meaning, since they were worn by worshippers, priests and deities; they seem to have been a mark of sanctity, and were used for purification after death. They were also worn by some initiates, in particular those of Dionysus, Demeter and Persephone, all of whom wore myrtle wreaths, and there are several cases of initiates having been buried with both an inscribed gold tablet and a gilded wreath in Pella (Macedonia) and Pelinna (Thessaly). Although therefore it cannot be claimed that all wreaths were buried with initiates, it seems that some may have been placed with the deceased in the grave to mark them as an initiate on arrival in the next world. It is possible that Pythagoreanism had an influence on the use of wreaths in graves, since several of its tenets fit well with this, including the belief in reincarnation and the view that several plants were sacred which were represented on wreaths, including myrtle, oak, and occasionally laurel. It is likely that a fourth plant, cypress, was used on the wooden circlets, but so far, no connection with the fifth plant, poplar, has emerged. The choice of these plants, which are mostly evergreen, could however also be linked more generally with ideas of fertility and rebirth, as indicated by material resembling the berries and leaves on wreaths which were deposited in the Thesmophorion in Oria (Southern Italy) in the fifth century. The reason for

[913] Arrian VII, 5, 4-5.



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decorative colours on some wreaths remains unclear, but may conceivably have been a mark of membership of a particular type of religious belief.

Some scholars including Kephalidou and Despini suggest that the use of wreaths as a prize for athletes developed into a way for the community to honour an exceptional individual - including leaders such as Pericles and Brasidas. There is surviving archaeological evidence that athletes were honoured with bronze statues, of which a bronze wreath would have been part, at Isthmia and Nemea, and literary evidence that the Tyrannicides were honoured with olive wreaths in Athens (Aeschines, *Against Ctesiphon*, 190)[914], which were perhaps placed on their statues. Placing gilded wreaths in graves may well be a development of this means of honouring victorious individuals.

Wreaths were an essential part of the symposium, and some scholars have suggested that metal wreaths were placed in graves for the deceased to wear at the banquet in the Blessed Isles. This may be the case for some individuals, but it is difficult to reconcile with the widespread presence of gilded wreaths in female graves, since women are unlikely to have been envisaged as wearing them in this way and there is very little evidence that women participated in ritual banquets of any kind. It is nevertheless likely in my view that wreaths were buried with some individuals, both men and women, in order to certify that they were of exceptional merit, allowing them to lay claim among the virtuous to eternal life after death.

It has been a privilege and a pleasure to study this lovely material, which continues to offer fresh insights into those who made and were buried with gilded wreaths, even if questions remain as to their precise significance.

[914] See also Azoulay 2017, 79-80.



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# Appendix: Methodology of scientific investigations

## Chemical analysis

In order to obtain permission to study the material, the first requirement of the scientific investigation was that the analysis should be non-destructive, since any sampling would have required a further permit, which even if granted would not have been within the time-scale of this thesis. An incremental approach was therefore deemed the most appropriate. Permission was sought and obtained for material to be studied with a hand-held X-Ray Fluorescence Spectrometer (HHXRF), and selected material to be examined with a micro-XRF (μXRF) and, in a few cases, a Scanning Electron Microscope with Energy Dispersive Spectrometer (SEM/EDS). In a few further cases involving pigments, a Raman and/or Fourier Transform Infrared Spectrometer (FTIR) was used.

A Bruker Tracer III-V handheld HHXRF (rhodium tube) belonging to the University of Oxford was taken to the museums in Athens (Pilaf Tepe material), Rhodes and Crete (South East Aegean), Metapontonto and Taranto (Southern Italy), Thessaloniki (Macedonia) and the British Museum (Kamiros) on visits between 2014 and 2018. The analyses were carried out using an acquisition time of 90-120 seconds, with at least two iterations for each type of material analysed from each object. In the first instance, the instrument was used with an X-ray filter for copper alloys at 40KeV with preset calibration, which was tested against materials of known composition (modern coins). The lightest element which can be detected with a flat surface without vacuum is calcium[915]. Use of a vacuum pump at 15KeV (with a card preset for aluminium) improves sensitivity towards the lighter elements, making it possible theoretically to detect aluminium and even magnesium providing the sample is in contact with or very close to the aperture[916], but it was found that the instrument could only detect these very light elements on modern purchased samples, not archaeological material owing to degradation. The vacuum attachment was used with most of the material, but was not taken to Rhodes. Levels of accuracy for this type of instrument in relation to gold objects have been reported as being as good as 10% relative (±10%), and precision as good as 5% relative[917], but this depends of course on the topography of the material. An HHXRF *can* be used for quantitative analysis providing it is properly calibrated and the data obtained are evaluated in terms of accuracy, precision and sensitivity, but only on flat material. The surfaces of all the items studied were uneven, and in some cases curved, and although the material was placed whenever possible at the optimum distance of 1-2mm from the instrument, there was some variation in the distance. Any assessment of the proportions of elements present requires averaging of several analyses performed on the same object (semi-quantitative analysis). The size of the peaks gives a rough indication of the relative proportions of elements present.

All the individual items, such as the berries and leaves, are small, and although the analysis is essentially a surface analysis, the beam penetrated through the coating into the body of the berry and sometimes even beyond that[918]. The depth of penetration of the beam through clay was found to be about 0.2mm - about the depth of the coating. The width of the beam is 7mm$^2$ - about the size of a berry, so it was not possible to analyze a precise area, such as a piece of coating or copper, without interference from adjacent material.

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[915] Stulik and Kaplan 2012, 85.

[916] Bezur and Casadio 2012, 254.

[917] Guerra and Rehren 2009.

[918] The depth of penetration depends on the density of the sample as well as the energy used – Bezur and Casadio 2012, 277.

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A Bruker HHXRF belonging to the Higher Ecclesiastical Academy was used on some material from Nikisiani in the museum in Kavala. This instrument was operated by Prof. Ioannis Karapanagiotis and Vasilis Tsinaridis and the results summarized in an unpublished report in 2016. Some HHXRF analysis was also done by an Italian team in Taranto from the University of Lecce and the results exchanged with the author.

*Higher Ecclesiastical Academy HHXRF in operation in Kavala AM study room (identical to the Oxford HHXRF)*



Permission was obtained to study selected material from Macedonia using the micro-XRF at AMTh, a Bruker Artax 400, which was operated by the museum chemists Ioannis Nazlis and Christos Katsifas. This has a more highly focused beam, with a spatial resolution down to 70µm though the results obtained still showed some interference from adjacent material. By analyzing some of the same material with this instrument and the HHXRF it acted as a check on those results.

The results from the HHXRF and the µXRF at AMTh were interpreted by comparing the line spectra obtained with the energies of the K and L X-ray lines characteristic for the relevant elements. Bruker software was used for both. The quantification of the analyses using the AMTH µXRF was done by the author, using calibration and standards provided the Museum, but as explained above, because of the topography of the material this could only be semi-quantitative.

Selected items of material from Pergamon in the Antikensammlung in Berlin were analyzed by the Rathgen Laboratory with a micro-XRF and SEM/EDS. The results are summarized in an unpublished report by the Rathgen Laboratory (Rathgen 2017, Report no. 96_081517).

Permission was obtained to study a small selection of material with SEM/EDS, at the Higher Ecclesiastical Academy in Thessaloniki. The SEM used was a JEOL 5910 with Oxford Instruments Inca 300 software and was operated mainly at 20KeV but reduced to lower energy for clays. The SEM/EDS can detect elements down to carbon. Typical detection limits are about 0.08wt%, though only on flat samples[919]. The author had been trained to use a similar

[919] Kuisma-Kursula 2000, citing Reed 1996.

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instrument in Oxford by her supervisor, Dr Chris Doherty. The material, consisting of individual berries, fragments of leaf etc, was placed whole in the chamber of the SEM.

Raman analysis on some coloured items such as berries and flowers from Nikisiani and sites in Macedonia was done with a Renishaw InVia Spectrometer at the Higher Ecclesiastical Academy (HEA) in Thessaloniki. A small amount of FTIR analysis was undertaken on a few items from Macedonia using a Perkin Elmer Spotlight 400 Microscopy System at the HEA. The analysis was done on both instruments by Dr Dimitrios Lambakis. The Raman instrument was used in June 2017 with a red 785nm laser only, used at very low power (below 1mW/$\mu m^2$) to avoid overheating the sample and focussed to a spot of 1-2 μm in diameter. The green Argon laser was not operational at the time. Permission was obtained to use Raman on selected items from Macedonia (not Nikisiani) in March 2018, but was not available in March 2018, so FTIR was used instead in reflectance technique in point mode. The wavelength range when used in this way was 4000 to 750 $cm^{-1}$. As with the SEM, the material was placed whole in the chamber of the respective instruments and returned completely unharmed to the museum. Dr Lambakis assisted the author with the interpretation of the results from both instruments.

**Photography**

Photographs were taken using a Canon camera 400 with Canon macro lens (1 to 1) mounted on a tripod and generally using a lightbox and two lamps with daylight bulbs. In some museums, photographs were taken of material on display (Taranto, Vergina, Arta and Igoumenitsa) because it could not be moved to a study room, using in most cases a tripod and lighting but not the lightbox. They were processed with Canon, Microsoft and Adobe Photoshop software.

*Lightbox and lighting as used in Taranto Museum conservators' laboratory*



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*Study room in Thessaloniki Archaeological Museum with one of the Museum's microscopes*



**Optical microscopy**

Optical microscopes belonging to the museums were used in in Thessaloniki and Chania. In several further museums, a Meija binocular optical microscope belonging to the University of Oxford was used with the Canon camera described above, an adaptor, laptop and appropriate software. Helicon Focus software was used to stack the images, thus obtaining sharp photographs with depth of field. A USB digital microscope (x20) was used to examine material for which the more sophisticated microscopes were not available.

*Meija microscope, HHXRF and lighting set up in Taranto AM study room (the vacuum attachment is not visible)*



**Experimental work**

Some elements of a wreath were made by the author using modern materials, to get a feel for the materials and an idea of how long it might have taken to make a wreath.

- Copper sheet 0.5mm thick supplied by Sheet Metal Products

- Montmorillonite for the fabric of the berries supplied by Bath Potters (1137 Smooth Terracotta)
- Calcite, kaolinite, titanium dioxide, talc and goethite for the coatings supplied by Naissance (www.naitr.com), and Minerals-Water
- Rabbit skin glue supplied in pellets by Liberon Limited
- Glair was made by beating egg whites, left to stand for 24 hours
- Gold leaf was purchased from Burma and UK bookbinding suppliers.
- Pigments were purchased from a supplier in the US.

The leaves were cut from copper sheet using tin snips and scissors, although chisels and a sharp knife were also tested. A natural leaf of *Myrtus communis* was used as a template. No attempt was made to make wire for the stems, but stems about 0.5mm wide were cut in one piece with the leaves from the sheet. The berries were formed by hand from montmorillonite.

*Tin snips and metal sheet*



Ribs from lamb meat were steeped in vinegar for 2 months (kept in the refrigerator) until they became flexible and were then shaped into circlets and holes pierced in them to take stems. Wooden circlets (intended for sheep) were purchased in Epirus.

*Piercing wooden circlet*



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The dry pigments such as calcite and kaolinite were mixed into a slurry with water and painted on the leaves and berries without an adhesive, and the exercise was then repeated using glair and finally animal glue mixed with the dry pigments as it was found that the calcite slurry did not adhere to the copper unless an adhesive was applied. A layer of glair or animal glue was painted on the coating once it was dry. The gold leaf was cut into squares approximately 0.5cm$^2$ and laid on the berries and leaves after the glair had been in position for about 20 minutes. The laying of the gold leaf was the most time-consuming part of the exercise, but it was a matter of 1-2 minutes to cut each leaf and form each berry, and approximately 10 minutes' work to apply the gold leaf once the glair was partly dry.

In order to see how the white berries in Southern Italy may have been made, lead white was mixed with gum arabic and a few drops of distilled water, then painted on the clay berries. It was found that the lead white did not coat the berries unless mixed with calcite or kaolin. As it had been used on flowers and some of the berries, cinnabar was mixed with gum arabic and painted on a white background (kaolin). It produced an attractive red colour. When applied slightly tacky to the kaolin coating the surface to which it had been applied left a trace of red colour on the kaolin.

*Experimental berries, leaves and gold leaf with wooden circlet*



The author does not have any experience of making jewellery, but has used gold leaf on leather in bookbinding with glair and a hot tool. She estimated that it would take one person with moderate skills about a week to make a wreath, assuming the copper sheet and gold leaf had been purchased ready-made, as well as the wires for the stems, and that the bone ribs had been shaped and cut to size. This was the same as estimated by a jeweller to whom the procedures for making a wreath in antiquity were explained. Features such as colour or gilded stems would of course add to the time needed.

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***Abbreviations***

*AAA: Αρχαιολογικά Ανάλεκτα εξ Αθηνών*

*ABSA: The Annual of the British School at Athens*

*AD: Αρχαιολογικόν Δελτίον*

*AE: Αρχαιολογική Εφημερίς*

*AEMTh: Το Αρχαιολογικό Έργο στη Μακεδονία και Θράκ03B7*

*AION: Annali dell'Istituto Universitario Orientale di Napoli*

*AJA: American Journal of Archaeology*

AM: Archaeological Museum

AMTh: Archaeological Museum of Thessaloniki

*Archeologija: Archeologija Organ na Archeologiceskija Institut y Muzei pry B'Igaraskata Akademija na Naukite.*

*Arte*: Lippolis E. (ed.) 1996. *Arte e artigianato in Magna Grecia*, Naples.

*BCH: Bulletin de Correspondance Hellénique*

*BdA: Bollettino d'Arte*

BM: British Museum

*Catalogo: Catalogo del Museo Nazionale Archeologico di Taranto*

FTIR: Fourier-transform infrared spectroscopy

*Gli Ori*: De Juliis E.M. (ed.) 1984. *Gli ori di Taranto in età ellenistica: materiali et suggerimenti per la didattica di una ricerca archeologica,* Milan.

HHXRF: Hand-held XRF

IGME: Institute of Geological and Mineral Exploration Athens

*JHS: Journal of Hellenic Studies*

*Les Ors*: De Juliis E. (ed.) 1986. *Les ors hellénistiques de Tarente*, Milan

MaRTA: Museo Nazionale Archeologico di Taranto

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*MEFRA Melanges de l'école française de Rome Antiquité*

MFA: Museum of Fine Arts, Boston

*NS:Notizie degli Scavi*

*RA: Revue Archéologique*

SEM: Scanning Electron Microscope

XRD: X-ray diffraction

XRF: X-ray Fluorescence Spectrometer

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