

# GREEK AND ROMAN JEWELLERY



R. A. HIGGINS

METHUEN

# Greek and Roman Jewellery

R. A. HIGGINS

The subject of this book is jewellery from Classical lands from the Early Bronze Age (about 2500 B.C.) to the Late Roman period (about A.D. 400). It thus covers some 3,000 years of almost continuous development.

A full account of the technical methods of making jewellery is followed by a description, period by period, of the jewellery itself. Some periods, such as the Etruscan, have been the subject of detailed studies, but others, such as the Minoan and Mycenaean, have been almost completely neglected by students of ancient jewellery. The author, who is an Assistant Keeper at the British Museum, is particularly fortunate to have at his disposal what is perhaps the finest general collection of ancient jewellery in the world. He has experience of excavation, and has worked on material at Mycenae and Knossos.

The narrative is supplemented by very full site-lists and bibliographical references, which serve as a foundation for the arguments brought forward in the text, and as a guide to further reading. There are 68 plates, four in colour, and a number of line drawings.

It is hoped that this book will serve not only as an introduction to a fascinating subject, but also as a work of reference for museums, dealers, archaeologists and collectors.

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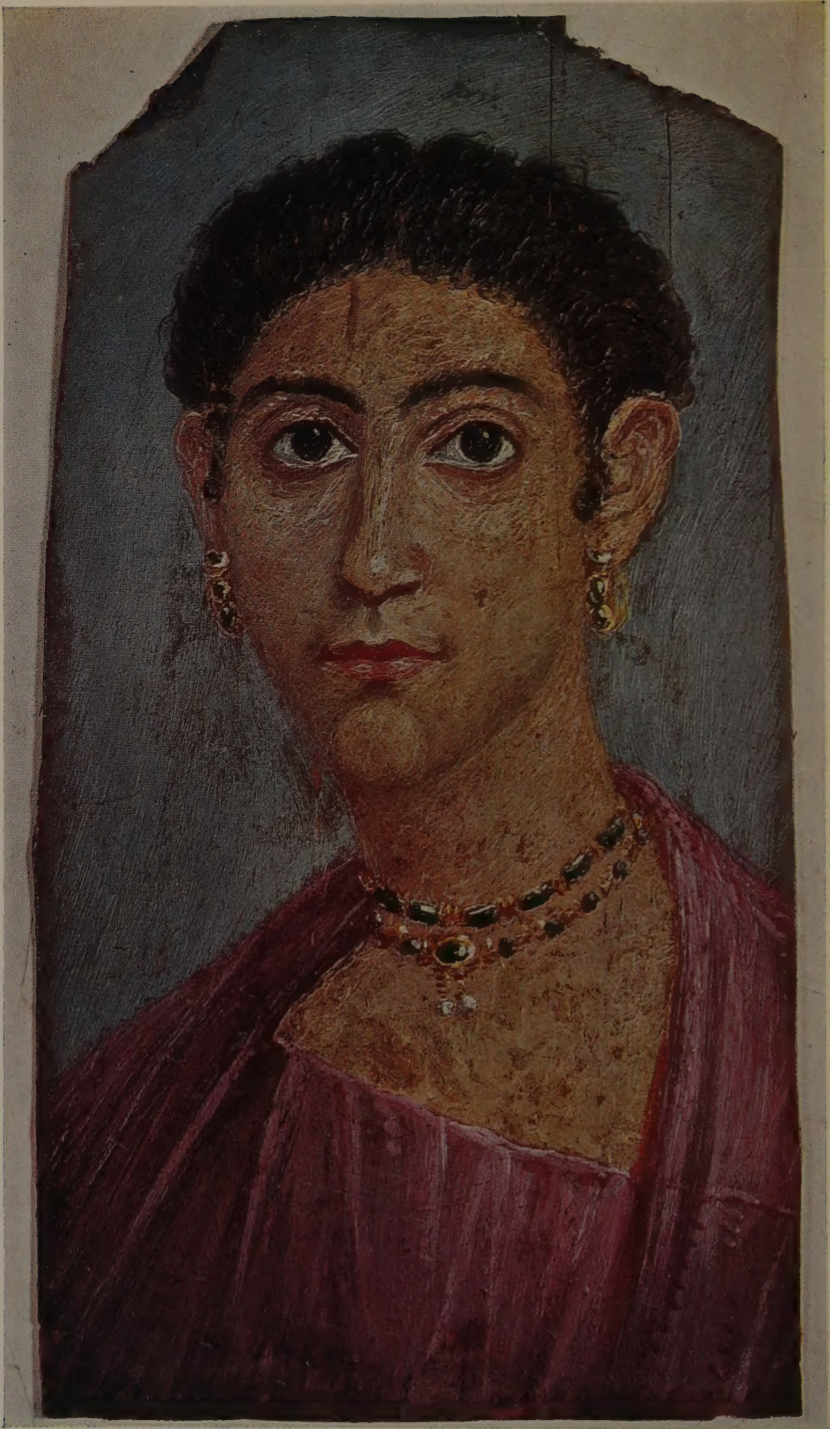
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GREEK  
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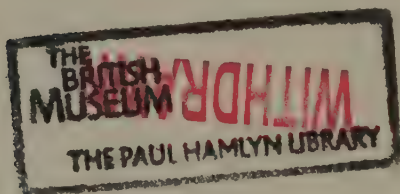
R. A. HIGGINS

*Assistant Keeper of Greek and Roman Antiquities  
in the British Museum*

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TO MY WIFE

*[Faint, illegible text, possibly bleed-through from the reverse side of the page]*



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- D] EARRING (?), FROM MYNDUS. Eighth century B.C. British Museum. *BMCJ* no. 1245. Ht. 3·2 cm.  
*Photo:* British Museum. p. 115
- E] BROOCH IN SHAPE OF A HAWK, FROM EPHEBUS. Seventh century B.C. British Museum. *BMCJ* no. 1037. Ht. 3·1 cm.  
*Photo:* British Museum. p. 117
23. SILVER WREATH. Provenance unknown. Greek, fifth or fourth century B.C. British Museum. 1959. 7-20. 1. L. of sections, 18 cm. and 16·5 cm.  
*Photo:* British Museum. p. 121
24. A] EARRING WITH FILIGREE, GRANULATION AND ENAMEL. From Eretria. Later fifth century B.C. British Museum. *BMCJ* no. 1653. Ht. 6 cm.  
*Photo:* British Museum. p. 122
- B] SILVER PENDANT; CICADA. Provenance unknown. About 400 B.C. Louvre Museum. Bj. 740. Coche de la Ferté, pl. 15: 5. Ht. 1·4 cm.  
*Photo:* Archives Photographiques p. 127
- C] FINGER-RING WITH ENGRAVED BEZEL. Provenance unknown. Fourth century B.C. British Museum. 1914. 10-17. 2. Ht. of bezel, 2 cm.  
*Photo:* British Museum. p. 130
- D] FINGER-RING WITH ENGRAVED BEZEL. From Magna Graecia. About 400 B.C. British Museum. *BMCR* no. 42. Diam. 2·5 cm.  
*Photo:* British Museum. p. 130
- E] FINGER-RING WITH DECORATIVE BEZEL. Provenance unknown. Fourth century B.C. British Museum. 1934. 11-15. 1. Ht. of bezel, 2·1 cm.  
*Photo:* British Museum. p. 130
- F] EARRING (SPIRAL TYPE), FROM NYMPHAEUM. Early fourth century B.C. Oxford, Ashmolean Museum. 1885. 483. Ht. 3·4 cm.  
*Photo:* Ashmolean Museum. p. 123

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- c] EARRING WITH GRANULATION. From Nymphaeum. Fifth century B.C. Oxford, Ashmolean Museum. 1885. 468. Ht. 5.9 cm.  
*Photo:* Ashmolean Museum. p. 122
25. A-F] EARRINGS. Fifth and fourth centuries B.C. British Museum.  
*Photo:* British Museum. pp. 122-7
- A] BOAT TYPE WITH PENDANTS. From Calymnos. Fourth century B.C. *BMCJ* no. 1660. Ht. 4.4 cm.
- B] HUMAN HEAD. (South Russian type; sometimes an earring, sometimes part of a necklace.) Provenance unknown. Fourth century B.C. 1934. 11-15. 2. Ht. 3.2 cm.
- C] SPIRAL TYPE WITH PYRAMIDS OF GRANULATION. Provenance unknown. 450-400 B.C. *BMCJ* no. 1585. Ht. 2.1 cm.
- D] PENDANT TYPE. Provenance unknown. Fifth or fourth century B.C. 1920. 12-21. 5. Ht. 3-6 cm.
- E] SPIRAL TYPE OF GOLD-PLATED BRONZE WITH GRIFFIN-HEAD FINIAL. Enamelled. From Amathus. Fifth century B.C. *BMCJ* no. 1646. Ht. 2.9 cm.
- F] SPIRAL TYPE, MAINLAND AND CRETAN VARIETY. Provenance unknown. Fifth-fourth century B.C. *BMCJ* no. 1648. Ht. 2.4 cm.
- g] EARRING. Disc and boat type. From Madytus. About 330 B.C. (type starts about 360). New York, Metropolitan Museum. Ht. 7.5 cm.  
*Photo:* Metropolitan Museum. p. 123
26. NECKLACES. From Eretria. Fifth century B.C. Athens, National Museum. About 4/5 scale.  
*Photo:* German Archaeological Institute, Athens. p. 127
27. A] NECKLACE. From Nymphaeum. Fifth century B.C. Oxford, Ashmolean Museum. 1885. 502. L. c. 23 cm.
- B] NECKLACE. From Nymphaeum. Fourth century B.C. Oxford, Ashmolean Museum. 1885. 482. L. c. 31 cm.  
*Photo:* Ashmolean Museum. p. 127
28. NECKLACE. From Tarentum. Early fourth century B.C. British Museum. *BMCJ* no. 1952. L. 30.6 cm.  
*Photo:* British Museum. p. 127
29. PENDANT. From Kul Oba. Fourth century B.C. Leningrad, Hermitage Museum. Diam. of disc, 7.2 cm.  
*Photo:* Hermitage Museum. p. 128

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From Curium, Cyprus. Fifth century B.C. British Museum. *BMCJ* no. 1985.  
Diam. 8.4 cm.  
*Photo*: British Museum. p. 129
- B] BRACELET WITH SPHINX-HEAD FINIALS. From Kul Oba. Fourth century B.C. Leningrad, Hermitage Museum. Diam. 11.5 cm.  
*Photo*: Hermitage Museum. p. 129
31. A] PAIR OF EAR-STUDS (FRONT AND BACK VIEW). From Rhodes. About 400 B.C. British Museum. *BMCJ* nos. 2068-9. Diam. 1.6 cm. p. 125
- B] BUTTON. Bronze, with gilt terracotta filling. Provenance unknown. About 500 B.C. British Museum. 1959. 7-20. 1. Diam. 2 cm.  
*Photo*: British Museum. p. 132
- C] SILVER FIBULA. North Greek type. From Budva, Yugoslavia. About fourth century B.C. British Museum. 1939. 3-24. 1. L. 6.5 cm.  
*Photo*: British Museum. p. 131
- D] FIBULA. Provenance unknown. Mid-fourth century B.C. Louvre Museum. Bj. 833. Coche de la Ferté, pl. 22: 3. L. 8 cm.  
*Photo*: Archives Photographiques. p. 132
32. ETRUSCAN JEWELLERY. Seventh and sixth centuries B.C. British Museum.  
*Photo*: British Museum.
- A, B] PAIR OF EARRINGS. *A baule* type. From Chiusi. Sixth century B.C. *BMCJ* nos. 1303-4. L. 1.9 cm. p. 138
- C] SPIRAL, PROBABLY HAIR-ORNAMENT. Provenance unknown. Seventh century B.C. *BMCJ* no. 1314. Diam. 2.7 cm. p. 136
- D] PLAQUE, ENAMELLED. From Caere. Sixth century B.C. *BMCJ* no. 1267. Ht. 3.8 cm. p. 143
- E] EARRING. Boat-type. Provenance unknown. *BMCJ* no. 1308. L. 1.8 cm. p. 136
- F] EARRING. Notched disc. From Vulci. Seventh century B.C. *BMCJ* no. 1310. Diam. 3.8 cm. p. 137
- G] CLOTHING-ORNAMENT. From Caere. Seventh century B.C. *BMCJ* no. 1265. Diam. 4.1 cm. p. 144
33. NECKLACE, FROM THE MAREMMA. About 500 B.C. British Museum. *BCMJ* no. 1461. L. 27.6 cm.  
*Photo*: British Museum. p. 142
34. A] FINGER-RING. Provenance unknown. Late seventh or sixth century B.C. British Museum. *BMCR* no. 210. External diam. 2.3 cm.  
*Photo*: British Museum. p. 144

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- B] NECKLACE. From Atri (Abruzzi). Late sixth century B.C. British Museum.  
*BMCJ* no. 1460. Diam. of bullae, 2 cm.  
*Photo*: British Museum. p. 141
35. PAIR OF BRACELETS. Front and back view. From Tarquinii. Seventh century B.C. British Museum. *BMCJ* nos. 1358-9. L. 16.5 cm.  
*Photo*: British Museum. p. 143
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*Photo*: British Museum. p. 143
- B] BRACELET. Provenance unknown. Seventh century B.C. Louvre Museum. Bj. 985. Coche de la Ferté, pl. 29: 1 and 2. L. 25 cm.  
*Photo*: Archives Photographiques. p. 143
37. A] FIBULA. Serpentine type. Provenance unknown. Seventh century B.C. British Museum. *BMCJ* no. 1375. L. 8.1 cm.  
*Photo*: British Museum. p. 145
- B] FIBULA. Leech type. Provenance unknown. Seventh century B.C. British Museum. *BMCJ* no. 1378. L. 7.6 cm.  
*Photo*: British Museum. p. 145
- C] FIBULA. Serpentine type. From Vulci. Seventh century B.C. British Museum. *BMCJ* no. 1376. L. 18.6 cm.  
*Photo*: British Museum. p. 145
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- B] COMB-FIBULA. Provenance unknown. Seventh century B.C. British Museum. *BMCJ* no. 1372. L. of tube, 12.4 cm.  
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- B] FIBULA. From Ruvo. Sixth century B.C. British Museum. *BMCJ* no. 1408. L. 7 cm.  
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- C] PENDANT FROM A NECKLACE; SATYR'S HEAD. From Caere. About 500 B.C. British Museum. *BMCJ* no. 1463. Ht. 3.6 cm.  
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- D] NECKLACE. Provenance unknown. Seventh century B.C. British Museum. *BMCJ* no. 1453. L. 17.7 cm.  
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40. FIBULA. From Caere, Regolini-Galassi Tomb. Seventh century B.C. Rome, Vatican Museum. L. 31.5 cm.  
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- B] WREATH. From Tarquinii. Fourth-third century B.C. British Museum. *BMCJ* no. 2296. L. 31.7 cm.  
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- B] BULLA. Provenance unknown. Fourth-third century B.C. British Museum. *BMCJ* no. 2307. Ht. 6.3 cm.  
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*Photo:* British Museum. p. 151
43. ETRUSCAN JEWELLERY. British Museum.  
*Photo:* British Museum.
- A] EARRING. Provenance unknown. Fifth century B.C. *BMCJ* no. 2244. Ht. 2.2 cm. p. 151
- B] EARRING. Provenance unknown. Sixth or fifth century B.C. *BMCJ* no. 2200. Diam. 2.4 cm. p. 137
- C] EARRING. Provenance unknown. Fifth century B.C. *BMCJ* no. 2206. Diam. 1.8 cm. p. 139
- D] EARRING. From Populonia. Fourth-third century B.C. *BMCJ* no. 2230. Diam. 4.6 cm. p. 151
- E] FINGER-RING. From Bologna. Fourth-third century B.C. 1956. 7-18. I. Ext. diam. 2.5 cm. p. 152
- F] FINGER-RING. From Populonia. Fourth-third century B.C. *BMCR* no. 705. L. 3.2 cm. p. 153
- G] FINGER-RING. From Tarquinii. Fourth-third century B.C. *BMCR* no. 355. External diam. 3.6 cm. p. 153
44. PART OF A NECKLACE. From Tarquinii. Fourth century B.C. British Museum. *BMCJ* no. 2271. Diam. of circular bullae, 3.5 cm.  
*Photo:* British Museum. p. 152

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- B] DIADEM. From S. Eufemia (Calabria). Early third century B.C. British Museum. *BMCJ* no. 2113. Greatest ht. 4·2 cm.  
*Photo:* British Museum. p. 159
46. DIADEM. From Thessaly. About second century B.C. Athens, Benaki Museum. Segall, no. 28. Total l. 51 cm. Ht. of knot, 4·5 cm.  
*Photo:* Benaki Museum. p. 159
47. HELLENISTIC EARRINGS. British Museum.  
*Photo:* British Museum. pp. 160-68
- A] HOOP INLAID WITH GARNETS. Goat's head. Provenance unknown. About third century B.C. *BMCJ* no. 1803. Diam. c. 2·7 cm.
- B] HOOP THREADED WITH ONYX. Dolphin's head. Provenance unknown. First century B.C.-A.D. *BMCJ* no. 2426. L. 3·1 cm.
- C] HOOP. Lion's head. Provenance unknown. 330-200 B.C. *BMCJ* no. 1762. Diam. 2 cm.
- D] PENDANT; SIREN. From Leucas. About 300 B.C. 1920. 5-29. 4. Total ht. 4·5 cm.
- E] HOOP. Female head. Provenance unknown. About third century B.C. *BMCJ* no. 1706. Diam. 2·2 cm.
- F] HOOP INLAID WITH GARNET. Eros. From Damascus. About second century B.C. *BMCJ* no. 2327. Diam. 2·7 cm.
- G] HOOP, NEGRESS-HEAD IN GARNET. From Kyme in Aeolis. Late fourth century B.C., or later. *BMCJ* no. 1709. Ht. 1·8 cm.
- H] HOOP. Bull's head. Provenance unknown. About third century B.C. *BMCJ* no. 2435. Diam. 2·3 cm.
48. HELLENISTIC EARRINGS. British Museum.  
*Photo:* British Museum. pp. 160-68
- A] HOOP AND PENDANT; WITH GARNETS. Lynx-head and amphora. Provenance unknown. Second or first century B.C. *BMCJ* no. 2442. Ht. 5·1 cm.
- B] DISC AND PENDANT. From Kyme in Aeolis. Late fourth century B.C. *BMCJ* no. 1670. Ht. 6·1 cm.
- C] DISC AND PENDANT. Female head. Enamelled. Provenance unknown. About third century B.C. *BMCJ* no. 1855. Ht. 5·3 cm.
- D] PENDANT, COCK (ENAMELLED); WITH GARNET AND PEARLS, AND ENAMEL. From Vulci. Second or first century B.C. *BMCJ* no. 1678. Ht. c. 3·8 cm.



- E] DISC AND PENDANT. Victory. From Cephallenia. About third century B.C. *BMCJ* no. 1848. Ht. 4·1 cm.
- F] DISC AND PENDANT. Eros. From Kyme in Aeolis. Late fourth century B.C. *BMCJ* no. 1890. Ht. 4·2 cm.
- G] DISC AND PENDANT; WITH GARNETS. Amphora. From Calymnos. Second or first century B.C. *BMCJ* no. 2328. Ht. 6·2 cm.
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*Photo:* British Museum. p. 168
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B] NECKLACE WITH LION'S HEAD FINIALS. Set with garnet. From Capua. Third–first century B.C. *BMCJ* no. 1966. L. 41·1 cm.  
*Photo:* British Museum. p. 169
52. MEDALLION WITH NET-NETWORK SURROUND. Hair ornament? From Thes-saly. About second century B.C. Athens, National Museum (Stathatou Coll.). Amandry, no. 233. Diam. of medallion, 11·5 cm.  
*Photo:* German Archaeological Institute, Athens. p. 170
53. HELLENISTIC JEWELLERY. British Museum.  
*Photos:* British Museum.
- A] FINGER-RING. From Athribis, Lower Egypt. About third century B.C. *BMCR* no. 958. Ext. diam. 2·4 cm. p. 175
- B] FINGER-RING. Snake type. Provenance unknown. Fourth–first century B.C. *BMCR* no. 936. Ext. diam. 2 cm. p. 175
- C] EARRING. From Kyme in Aeolis. Late fourth century B.C. *BMCJ* no. 1844. Diam. 2 cm. p. 164
- D] FINGER-RING WITH GARNET BEZEL. From Crete. About third century B.C. *BMCR* no. 714. Greatest w. of bezel, 3 cm. p. 174
- E] FINGER-RING, SET WITH GARNET AND AMETHYST. Provenance unknown. First century B.C. *BMCR* no. 843. Greatest w. 3·5 cm. p. 175
- F] FINGER-RING WITH GLASS BEZEL IMITATING AMETHYST. Provenance unknown. About third century B.C. *BMCR* no. 725. Ext. diam. 2·3 cm. p. 175
- G] BRACELET. From Kyme in Aeolis. Late fourth century B.C. British Museum. *BMCJ* no. 1989. Ext. diam. 8 cm. p. 172

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- H] PIN. From Syria. About second century B.C. British Museum. *BMCJ* no. 3034. Max. w. 1·1 cm. Total ht. 13·6 cm. p. 176
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- A] HOOP AND PENDANT TYPE. From Tortosa in Syria. About second century B.C. *BMCJ* no. 2422. Ht. 3·5 cm.
- B] HOOP AND PENDANT TYPE. From Tortosa in Syria. About second century B.C. *BMCJ* no. 2532. Ht. 3·3 cm.
- C] PENDANT TYPE, SET WITH GARNET, PLASMA AND PEARL. Provenance unknown. About third century A.D. *BMCJ* no. 2670. Ht. 3 cm.
- D] COMPOSED OF MASED PLASMAS. Provenance unknown. First-second century A.D. *BMCJ* no. 2622. Diam. 2·2 cm.
- E] BALL TYPE. From Pozzuoli. First-second century A.D. *BMCJ* no. 2619. Ht. 3·1 cm.
- F] HOOP TYPE. Threaded with glass and plasma. Provenance unknown. First-second century A.D. *BMCJ* no. 2680. Ht. 2-8 cm.
- G] PENDANT TYPE. Set with garnet and glass (?). Provenance unknown. About third century A.D. *BMCJ* no. 2668. Ht. 5·6 cm.
- H] HOOP TYPE. Threaded with pearls. Provenance unknown. First-second century A.D. *BMCJ* no. 2679. Ht. 2·5 cm.
55. A] NECKLACE. From Beaurains. About 300 A.D. British Museum. 1924. 5-14. 12. L. 40 cm.
- B] NECKLACE WITH CRESCENT-SHAPED PENDANT. Provenance unknown. First-second century A.D. British Museum. *BMCJ* no. 2719. L. 43·9 cm.  
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- B] NECKLACE WITH LARGE MEDALLION. Provenance unknown. Second-third century A.D. British Museum. *BMCJ* no. 2737. L. 30·5 cm.  
*Photo:* British Museum. p. 187
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*Photo:* British Museum. p. 186

59. A] BRACELET INLAID WITH PLASMA. Provenance unknown. First century A.D. British Museum. *BMCJ* no. 2823. L. 15.4 cm.  
*Photo:* British Museum. p. 188
- B] BRACELET INLAID WITH PLASMA. Provenance unknown. About first century A.D. British Museum. *BMCJ* no. 2831. L. 17.7 cm.  
*Photo:* British Museum. p. 189
60. A] BRACELET. From Pompeii. First century A.D. British Museum. 1946.  
 7-2. 1. L. 24 cm.  
*Photo:* British Museum. p. 187
- B] BRACELET INLAID WITH SAPPHIRE, PLASMA AND PEARLS. From Tunis. Third century A.D. British Museum. *BMCJ* no. 2824. L. 16.5 cm.  
*Photo:* British Museum. p. 188
61. ROMAN JEWELLERY. British Museum.  
*Photos:* British Museum.
- A] BROOCH. Coin of Postumus. Provenance unknown. Third century A.D. *BMCJ* no. 2871. Diam. 2.8 cm. p. 192
- B] PART OF A NECKLACE OF GOLD, AMETHYST AND PLASMA. Provenance unknown. Third century A.D. *BMCJ* no. 2749. Total l. 40 cm. p. 186
- C] PENDANT. Coin of Gallienus. Provenance unknown. Third century A.D. *BMCJ* no. 2939. Diam. 2.9 cm. p. 186
- D] BRACELET INLAID WITH SARDONYX. From Egypt. About third century A.D. *BMCJ* no. 2815. Ext. diam. 6.7 cm. p. 188
- E] BRACELET IN FORM OF A SNAKE. Provenance unknown. First century A.D. 1946. 7-2. 2. Ext. diam. 8.2 cm. p. 187
62. ROMAN JEWELLERY. British Museum.  
*Photos:* British Museum.
- A] FINGER-RING WITH ENGRAVED SARDONYX. From Pamphylia. About second century A.D. *BMCR* no. 495. Ext. diam. 3.1 cm. p. 190
- B] FINGER-RING INLAID WITH NICOLO. From Tarsus. Third century A.D. *BMCR* no. 801. Ext. diam. 4.5 cm. p. 190
- C] HAIR-ORNAMENT INLAID WITH SAPPHIRE, PLASMA AND PEARLS. From Tunis. Third century A.D. *BMCJ* no. 2866. Ht. 10.7 cm. p. 183
- D] SILVER FINGER-RING. Snake-head type. Provenance unknown. First century A.D. *BMCR* no. 1135. Ext. diam. 2.8 cm. p. 190
- E] FINGER-RING WITH ENGRAVED NICOLO. Provenance unknown. Third century A.D. *BMCR* no. 534. Ext. diam. 2.9 cm. p. 190

63. ROMAN FINGER-RINGS AND PENDANTS. British Museum.

*Photos:* British Museum.

- A] FINGER-RING SET WITH GARNETS. From Tarsus. About third century A.D. *BMCR* no. 853. Ext. diam. 1.9 cm. p. 191
- B] FINGER-RING; PIERCED HOOP. Provenance unknown. Fourth century A.D. *BMCR* no. 987. Ext. diam. 2 cm. p. 191
- C] FINGER-RING SET WITH GARNETS, SAPPHIRES AND PLASMAS. From Athens. Third-fourth century A.D. *BMCR* no. 858. Ext. diam. 2.4 cm. p. 191
- D] FINGER-RING WITH NICOLO INTAGLIO AND DECORATION IN NIELLO. From Beaurains. About 300 A.D. 1924. 5-14. 4. Ext. diam. 2.2 cm. p. 190
- E] FINGER-RING INLAID WITH PLASMA. Provenance unknown. Third-fourth century A.D. *BMCR* no. 792. Ext. diam. 2 cm. p. 191
- F] FINGER-RING SET WITH AN AQUAMARINE AND INSCRIBED IN NIELLO ON THE HOOP: PATERNA AND VALERIANUS. From Beaurains. About 300 A.D. 1924. 5-14. 3. Ext. diam. 2.4 cm. p. 191
- G] PENDANT. Green glass. From Beaurains. About 300 A.D. 1924. 5-14. 9. Ht. 2.8 cm. p. 187
- H] FINGER-RING WITH A COIN OF FAUSTINA (WIFE OF ANTONINUS PIUS) IN THE BEZEL. From near Lyons. Second century A.D. 1927. 10-12. 1. Diam. of bezel, 2.1 cm. p. 190
- I] PENDANT. Topaz. From Beaurains. About 300 A.D. 1924. 5-14. 7. Ht. 3.3 cm. p. 187

64. A] BRACELET. Provenance unknown. Fourth century A.D. British Museum.

*BMCJ* no. 2817. W. 1.8 cm.

*Photo:* British Museum.

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- B] FIBULA. From Ravenna. First century A.D. British Museum. *BMCJ* no. 2836. L. 10.1 cm.

*Photo:* British Museum.

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- C] FIBULA. Crossbow type. Provenance unknown. Fourth century A.D. British Museum. 1922. 4-12. 1. L. 7.9 cm.

*Photo:* British Museum.

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# Plates

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## B. COLOURED PLATES

- A. ROMAN MUMMY-PORTRAIT, FROM HAWARA. Second century A.D. National Gallery; on loan to British Museum. NG 1263. Petrie, W. M. F. *Hawara*, etc. (London, 1889), Frontispiece, fig. 9. Id.: *Hawara Portfolio* (London, 1913), pl. 16. 38 × 20 cm.  
*Photo*: Fine Art Engravers. *frontispiece*
- B. 1. 'MASTER OF ANIMALS'. cf. pl. 3B  
2. ETRUSCAN EAR-STUD, INLAID WITH GLASS. Provenance unknown. Sixth century B.C. British Museum. *BMCJ* no. 1419. Diam. 6·8 cm.  
*Photos*: Fine Art Engravers. *facing page 64*
- C. *Top* CENTRAL PORTION OF HELLENISTIC DIADEM, INLAID WITH GARNETS AND ENAMELLED, like that on pl. 46. Provenance unknown. About second century B.C. British Museum. *BMCJ* no. 1608. Length 8·6 cm.  
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*Bottom* HELLENISTIC NECKLACE. cf. pl. 49.  
*Photo*: Fine Art Engravers. *facing page 168*
- D. *Centre* ROMAN HAIR-ORNAMENT. cf. pl. 62C.  
*Outside* ROMAN NECKLACE. cf. pl. 61B.  
*Photo*: Fine Art Engravers. *facing page 184*



# Acknowledgements

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# Abbreviations

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- AA*: *Archäologischer Anzeiger*. Supplement to *JdI*.
- ABC*: *Antiquités du Bosphore Cimmerien* (Imperial Archaeological Commission, St Petersburg, 1854). The plates reprinted in S. Reinach's French edition of 1892. Plate refs. apply to either edition; text refs. only to the 1892 edition.
- Aberg, *Chronologie*: Aberg, N. *Bronzezeitliche und fruheisenzeitliche Chronologie*, iii and iv (Stockholm, 1932, 1933).
- AD*: *Antike Denkmäler*.
- ADelt*: Ἀρχαιολογικὸν Δελτίον.
- AE*: Ἀρχαιολογικὴ Ἐφημερίς.
- Aegean and Near East*: Weinberg, S. S. (ed.). *The Aegean and the Near East. Studies Presented to Hetty Goldman* (New York, 1956).
- AJA*: *American Journal of Archaeology*.
- Alexander, *Jewellery*: Alexander, C. *Jewellery. The Art of the Goldsmith in Classical Times* (New York, 1928).
- AM*: *Mitteilungen des deutschen archäologischen Instituts, Athenische Abteilung*.
- Amandry: Amandry, P. *Collection H. Stathatos, Bijoux Antiques* (Strasbourg, 1953).
- Ann.*: *Annuario d. R. Scuola Archeologica di Atene*.
- Arch. Rep.*: *Archaeological Reports*. Supplement to *JHS*. From 1955.
- AZ*: *Archäologische Zeitung*.
- Barnett, *Nimrud Ivories*: Barnett, R. D. *Catalogue of the Nimrud Ivories . . . in the British Museum* (London, 1957).
- BCH*: *Bulletin de Correspondance Hellénique*.
- Becatti: Becatti, G. *Oreficerie Antiche dalle Minoiche alle Barbariche* (Rome, 1955).
- Beck, *Beads and Pendants*: Beck, H. C. *Classification and Nomenclature of Beads and Pendants* (Oxford, 1928).

- Blegen, *Prosymna*: Blegen, C. W. *Prosymna*, i (text) and ii (plates) (Cambridge, 1937).
- Blegen, *Zygouries*: Blegen, C. W. *Zygouries* (Cambridge, Mass., 1928).
- BMC*: *British Museum Catalogue*.
- BMCJ*: Marshall, F. H. *Catalogue of the Jewellery, Greek, Etruscan and Roman, in the Depts. of Antiquities, British Museum* (London, 1911).
- BMCR*: Marshall, F. H. *Catalogue of the Finger Rings, Greek, Etruscan and Roman, in the Depts. of Antiquities, British Museum* (London, 1907).
- B. Met. Mus.*: *Bulletin of the Metropolitan Museum of Art, New York*.
- Boston Bull.*: *Bulletin of the Museum of Fine Arts, Boston*.
- Brailsford, *Antiqs. of Roman Britain*: Brailsford, J. W. *Guide to the Antiquities of Roman Britain* (London, 1951).
- Breglia: Breglia, L. *Le Oreficerie del Museo Nazionale di Napoli* (Rome, 1941).
- BSA*: *Annual of the British School at Athens*.
- Cesnola, *Salaminia*: Cesnola, A. P. di, *Salaminia, Cyprus* (London, 1882).
- Cl. Rh.*: *Clara Rhodos, Studi e Materiali pubblicati a cura dell' Istituto Storico-Archeologico di Rodi*.
- Coche de la Ferté: Coche de la Ferté, E. *Les bijoux antiques* (Paris, 1956).
- Corinth*, xii: Davidson, G. R. *Corinth*, xii, *The Minor Objects* (Princeton, 1952).
- CR*: *Comptes Rendus de la Commission Impériale Archéologique*.
- DA*: Daremberg and Saglio, *Dictionnaire des Antiquités*.
- DAI*, *Neue Ausgrabungen*: Deutsches archaologisches Institut, *Neue deutsche Ausgrabungen im Mittelmeergebiet und im vorderen Orient* (Berlin, 1959).
- Desborough: Desborough, V. R. d'A. *Protogeometric Pottery* (Oxford, 1952).
- Dawkins, *Artemis Orthia*: Dawkins, R. M. (ed.). *The Sanctuary of Artemis Orthia at Sparta* (London, 1929).
- Délos*, xviii: Déonna, W. *Exploration Archéologique de Délos*, xviii, *Le Mobilier Délien*.
- Dohan, *Italic Tomb Groups*: Dohan, E. H. *Italic Tomb Groups* (Philadelphia and Oxford, 1942).
- Ebert, *Reallexikon*: Ebert, M. *Reallexikon der Vorgeschichte* (Berlin).

- Edgar, *Gr. Eg. Coffins*: Edgar, C. C. *Graeco-Egyptian Coffins, Masks and Portraits* (Cairo, 1905).
- EG: Early Geometric.
- EH: Early Helladic.
- EM: Early Minoan.
- Ergon*: Τὸ ἔργον τῆς Ἀρχαιολογικῆς Ἐταιρείας.
- Evans, *Palace*: Evans, A. *The Palace of Minos at Knossos*, i-iv (London, 1921-35).
- Evans, *PTK*: Evans, A. J. 'Prehistoric Tombs of Knossos.' *Archaeologia*, lix (1906).
- Evans, *TDA*: Evans, A. J. 'The Tomb of the Double Axes, etc.' *Archaeologia*, lxxv (1914).
- Excav. in Cyprus*: Murray, A. S. etc. *Excavations in Cyprus* (London, 1900).
- Fasti*: *Fasti Archaeologici*.
- Fontenay: Fontenay, E. *Les bijoux anciens et modernes* (Paris, 1887).
- Forbes, *Metallurgy*: Forbes, A. J. *Metallurgy in Antiquity* (Leyden, 1950).
- Frankfort: Frankfort, H. *The Art and Architecture of the Ancient Orient* (Harmondsworth, 1954).
- Frödin, Persson, *Asine*: Frödin, O., Persson, A. W. *Asine, Results of the Swedish Excavations, 1922-1930* (Stockholm, 1938).
- Furumark: Furumark, A. *Mycenaean Pottery, Analysis and Classification* (Stockholm, 1941).
- Greifenhagen, *Antike Kunstwerke*: Greifenhagen, A. *Antike Kunstwerke. Ehemals staatliche Museen, Berlin, Antikenabteilung* (Berlin, 1960).
- Hadaczek: Hadaczek, K. *Der Ohrschmuck der Griechen und Etrusker* (Vienna, 1903).
- Hall, *Sphoungaras*: Hall E. H., *Excavations in Eastern Crete. Sphoungaras* (Philadelphia, 1912).
- Hall, *Vrokastro*: Hall, E. H. *Excavations in Eastern Crete. Vrokastro* (Philadelphia, 1914).
- History of Technology*: Singer, C. etc. *History of Technology*, i and ii (Oxford, 1954, 1958).
- ILLN*: *Illustrated London News*.
- Ippel, *Galjub*: Ippel, A. *Der Bronzefund von Galjub* (Berlin, 1922).
- Jacobsthal, *Pins*: Jacobsthal, P. *Greek Pins* (Oxford, 1956).
- JdI*: *Jahrbuch des deutschen archäologischen Instituts*.

*JHS: Journal of Hellenic Studies.*

*JRS: Journal of Roman Studies.*

Karo: Karo, G. *Die Schachtgräber von Mykenai* (Berlin, 1930).

*Kerameikos*: Kübler K., etc. *Kerameikos, Ergebnisse der Ausgrabungen*, i, iv, v (1) (Berlin, 1939, 1943, 1954).

LG: Late Geometric.

LH: Late Helladic.

*Lindos*: Blinkenberg, C. *Lindos, Fouilles de l'Acropole, 1902-14: les petits objets*, i (text) and ii (plates) (Berlin, 1931).

LM: Late Minoan.

LPG: Late Protogeometric.

Lucas, *Materials and Industries*: Lucas, A. *Egyptian Materials and Industries*<sup>3</sup> (London, 1948).

Von Luschan, *Sendschirli*, v: Von Luschan, F., and Andrae, N. *Ausgrabungen in Sendschirli*, v (Berlin, 1943).

*MA: Monumenti Antichi pubblicati per cura della Reale Accademia dei Lincei.*

*MAAR: Memoirs of the American Academy in Rome.*

McIver, *Villanovans*: Randall-McIver, D. *Villanovans and Early Etruscans* (Oxford, 1924).

MG: Middle Geometric.

MH: Middle Helladic.

Michel, *Recueil*: Michel, C. *Recueil d'inscriptions grecques* (Paris, 1900).

Minns: Minns, E. H. *Scythians and Greeks* (Cambridge, 1913).

Minto, *Populonia*: Minto, A. *Populonia* (Florence, 1943).

MM: Middle Minoan.

*MMS: Metropolitan Museum Studies.*

*Mon. Piot: Fondation Piot, Monuments et mémoires.*

Montelius, *Civ. Prim. It.*: Montelius, O. *La civilisation primitive en Italie*, i and ii (Stockholm, 1895, 1904).

*Naukratis*, i and ii: Petrie, W. M. F. *Naukratis*, Part I (London, 1886). Gardner, E. A. *Naukratis*, Part II (London, 1888).

*NS: Notizie degli scavi di antichità comunicate alla Reale Accademia dei Lincei.*

Ohly: Ohly, D. *Griechische Goldbleche des 8 Jahrhunderts v. Chr.* (Berlin, 1953).

Ohnefalsch-Richter, *Kypros*: Ohnefalsch-Richter, M. *Kypros, the Bible and Homer* (London, 1893).

ÖJH: *Österreichische Jahreshfte.*

PAE: Πρακτικά τῆς Ἀρχαιολογικῆς Ἑταιρείας.

Papavasileiou: Papavasileiou, G. A. *Περὶ τῶν ἐν Εὐβοίᾳ ἀρχαίων τάφων* (Athens, 1910).

Pendlebury: Pendlebury, J. *The Archaeology of Crete* (London, 1939).

Perachora, i: Payne, H. G. G. *Perachora, The Sanctuaries of Hera Akraia and Limenia* (Oxford, 1940).

Persson, *New Tombs*: Persson, A. *New Tombs at Dendra near Midea* (Lund, 1943).

Persson, *Royal Tombs*: Persson, A. *Royal Tombs at Dendra near Midea* (Lund, 1931).

PG: Protogeometric.

Pollak, *Samml. Nelidow*: Pollak, L. *Klassisch-Antike Goldschmiedarbeiten im Besitze des Herren von Nelidow in Rom* (Leipzig, 1903).

RA: *Revue Archéologique.*

R.D. *Ant. Cyp.*: *Report of the Department of Antiquities, Cyprus.*

Reichel: Reichel, W. *Griechisches Goldrelief* (Berlin, 1942).

Richter, *Etruscan Coll.*: Richter, G. M. A. *The Metropolitan Museum of Art. Handbook of the Etruscan Collection* (New York, 1940).

Richter, *Met. Mus. Gk. Coll.*: Richter, G. M. A. *A Handbook of the Greek Collection. Metropolitan Museum of Art* (Harvard, 1953).

Rosenberg, *Granulation*: Rosenberg, M. *Geschichte der Goldschmiedekunst auf technischer Grundlage, Granulation* (Frankfurt, 1915).

Rosenberg, *Zellenschmelz*: Rosenberg, M. *Geschichte, etc., Zellenschmelz* (Frankfurt, 1921-2).

Rostovtzeff, *Iranians*: Rostovtzeff, M. I. *Iranians and Greeks in South Russia* (Oxford, 1922).

Rostovtzeff, *SEHWW*: Rostovtzeff, M. I. *Social and Economic History of the Hellenistic World* (Oxford, 1941).

Rostovtzeff, *Sk. u. B.*: Rostovtzeff, M. I. *Skythien und der Bosphorus* (Berlin, 1931).

SCE: Gjerstad, E. etc. *The Swedish Cyprus Expedition* (Stockholm, 1934 etc.).

Schäfer: Schäfer, H. *Königliche Museen zu Berlin. Mitteilungen aus der Aegyptischen Sammlung*, i (Berlin, 1910).

Schefold: Schefold, K. *Kertscher Vasen* (Berlin, 1930).

- Schefold, *Meisterwerke*: Schefold, K. *Meisterwerke griechischer Kunst* (Basel and Stuttgart, 1960).
- Schliemann, *Mycenae*: Schliemann, H. *Mycenae. A Narrative of Researches and Discoveries at Mycenae and Tiryns* (London, 1878).
- Schmidt: Schmidt, H. *Schliemanns Sammlung Trojanischer Altertümer* (Berlin, 1902).
- Schreiber: Schreiber, T. *Alexandrinische Toreutik* (Leipzig, 1894).
- Seager, *Mochlos*: Seager, R. B. *Explorations in the Island of Mochlos* (Boston and New York, 1912).
- Segall: Segall, B. *Museum Benaki, Katalog der Goldschmiede-Arbeiten* (Athens, 1938).
- Seltman, *Greek Coins* (1952): Seltman, C. T. *A Book of Greek Coins* (London, 1952).
- Siviero: Siviero, R. *Gli Ori e le Ambre nel Mus. Naz. di Napoli* (Florence, 1954).
- SM: Subminoan, Submycenaean.
- Stais: Stais, V. *Collection Mycénienne du Musée National* (Athens, 1909).
- St. e Mat.*: Milani, L. A. (ed.). *Studi e Materiali di Archeologia e Numismatica* (Florence, 1899 etc.).
- St. Etr.*: *Studi Etruschi*.
- Survey*: Hood, M. S. F. *Archaeological Survey of the Knossos Area* (London, 1959).
- Troy*: Blegen, C. W. etc. *Troy*, i-iv (Princeton, 1950-8).
- Tsountas-Manatt: Tsountas, C., and Manatt, J. I. *The Mycenaean Age* (London, 1897).
- Wace, *Chamber Tombs*: Wace, A. J. B. 'Chamber Tombs of Mycenae.' *Archaeologia*, lxxxii (1932).
- Williams, *Gold & Silver Jewelry*: Williams, C. R. *New York Historical Society. Catalogue of Egyptian Antiquities. Gold and Silver Jewelry and Related Objects* (New York, 1924).
- Woolley, *Ur Excavations*, ii: Woolley, C. L. *Ur Excavations*, ii (London and Philadelphia, 1939).
- Xanthoudides: Xanthoudides, S. A. *Vaulted Tombs of Mesara* (London, 1924).
- Zahn, *Ausstellung*: Zahn, R. *Führer durch die Ausstellung von Schmuckarbeiten aus der Staatlichen Museen* (Berlin, 1932).
- Züchner, *Klappspiegel*: Züchner, W. *Griechische Klappspiegel* (Berlin, 1942).

# Introduction

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## 1. SCOPE AND PLAN

THE SCOPE OF this survey is rather wider than its title, chosen for the sake of brevity, might suggest. It is in fact proposed to consider the jewellery of the Bronze Age in Greece, the Cyclades and Crete, of Iron Age Greece, of Etruria, and of the Roman Empire.

The first five chapters are concerned with descriptions of technical processes and their historical development. The next eleven chapters consist of an account of the jewellery itself, chiefly in chronological sequence. Although the successive chapters purport to represent different 'periods', this division is principally a matter of convenience. In practically no instance does the jewellery of a particular epoch cease abruptly, to be succeeded by a different kind. In ancient jewellery, as in most crafts, new ideas, however suddenly they might be introduced, tended at first to be grafted cautiously on to the existing stock, and only after a certain interval to be used to their fullest extent. Consequently, with a few exceptions, the story of ancient jewellery is one of gradual development rather than of a series of revolutions.

The final section of the book comprises a combined bibliography and site-list. The primary object of this arrangement is to reduce the number of footnotes, which can be both distracting to the reader and wasteful of space. All important tomb-groups and other deposits are included, with bibliographical references, in the site-lists, which the reader may consult when any of these deposits are mentioned in the text. Footnotes are reserved for all other references, and have been kept to a minimum.

Where possible, the objects illustrated in the plates have been reproduced life-size.

## 2. MATERIALS

Ancient jewellery was made chiefly of gold, silver and electrum (a

natural alloy of gold and silver). This survey will therefore be concerned for the most part with the work of the goldsmith and the silversmith; but not with all their work, for such categories as statuettes, plate, and ornamental weapons are excluded by virtue of their functions. In another sense this study goes beyond the work of these craftsmen, since base metals, stones and other materials are also considered in so far as they were used in conjunction with precious metals or as substitutes for them.

### 3. TYPES OF JEWELLERY

Jewellery in antiquity was worn chiefly by women, but certain articles were also worn by men. It consisted of diadems and wreaths (also worn by men); hair-ornaments; earrings; beads and pendants; finger-rings (also worn by men); bracelets (worn both above and below the elbow); and attachments to clothing. Pins, fibulae, brooches and buttons are in general regarded as jewellery only when made of precious metals. Seal-stones are considered chiefly in their capacity as beads, pendants or ring-stones, the character of the engraving being outside the scope of a survey of this nature.

### 4. SURVIVING JEWELLERY

In spite of its easily convertible nature, a surprisingly large amount of ancient jewellery of gold and electrum has survived. A certain amount of silver jewellery also exists, but silver is a perishable metal, and (contrary to appearances) may originally have been as popular as gold.

The chief reason for the quantity of the surviving material is the custom of burying with the dead some of their favourite possessions. Jewellery is, however, also found on habitation-sites, especially if, like Troy II, Pompeii or Herculaneum, they have been involved in some sudden disaster. Votive deposits provide another source. In these several ways much ancient jewellery has escaped the melting-pot which would, otherwise, have been its fate.

The quantity of available material varies enormously for different periods. In some it is so plentiful that the account has had to be compressed. In others there is so little that every scrap of evidence has been



used to the limit. The reasons for this unevenness are several. It reflects partly the actual amount of jewellery in use at a given period; partly the different burial customs at different times; partly the accidents of survival and discovery. In periods where surviving jewellery is scarce it is also possible that silver (which will largely have perished) was more popular than gold.

## 5. COLLECTIONS

One of the best collections for the study of ancient jewellery is in the British Museum. It is also one of the best catalogued. For these two reasons, and because this book is intended principally for English readers, illustrations and references are drawn more frequently from this source than from elsewhere.

The Louvre possesses another good all-round collection, its chief riches coming from the Campana Collection. It is catalogued, but not worthily. The Staatliche Museen in Berlin also had a good collection, but little of it has been seen since the war. Another good general collection is that of the Metropolitan Museum in New York. A great part of it comes from the Cesnola Collection of objects from Cyprus. The Cesnola Collection is catalogued; the rest is not.

Apart from general collections, there are museums of regional or national antiquities in Greece, Italy and elsewhere. The National Museum in Athens is extremely rich in Mycenaean jewellery, most of which has never been adequately published, but which is admirably displayed. The Stathatou Collection, now belonging to the National Museum, contains some superb pieces, and is excellently catalogued. The same may be said of the Benaki Museum in Athens.

The Museum at Heraclion in Crete contains the majority of the surviving Minoan jewellery. It is admirably displayed and most of the jewellery has been published in excavation reports.

In Italy, the Vatican Museum and Villa Giulia Museum in Rome and the Archaeological Museum in Florence contain much Etruscan and later jewellery. The National Museum at Naples contains Etruscan, Western Greek and Roman jewellery, admirably catalogued. The National Museum at Taranto is particularly strong in Western Greek jewellery. Countless provincial Italian museums contain material, Etruscan, Greek or Roman, from local sources.

The Museum in Cairo has much Egyptian jewellery of Ptolemaic and Roman date. This collection is catalogued. Finally, the Hermitage Museum in Leningrad contains some of the finest of all Greek jewellery, and some Roman, from South Russian sites.

## 6. FORGERIES

This is not the place to go into detail about forged jewellery, but it is worth remarking that in many ways forgeries are harder to recognize in goldwork than in any other class of antiquities, owing to the imperishable nature of gold, which shows virtually no signs of wear.

In general, however, it is only worth the forger's while to work on the grand scale, so that his profits may be commensurate with his efforts. Certain notorious forgeries of this class are the so-called Thisbe Gems in the Mycenaean style,<sup>1</sup> and the works of Rouchomovsky in the Classical style, of which the so-called Tiara of Saitaphernes in Paris is the best known.<sup>2</sup> Forged Hellenistic medallions, based on those in the Benaki and Stathatou Collections (see pl. 52), are also worthy to be considered in this class.<sup>3</sup> Other less ambitious forgeries in the Classical Greek and Etruscan styles are also known.<sup>4</sup>

By way of warning, it should be stated that we may expect more and better forgeries in the future. Until 1933, ancient filigree and granulation could not be imitated at all convincingly, and the efforts in this direction, of which Castellani's are typical, are easily identified.<sup>5</sup> Now, however, Littledale's process of colloid hard-soldering is taught in the Art Schools, and what Littledale did in all honesty, others may well do with intent to deceive.<sup>6</sup>

<sup>1</sup> *JHS* xlv (1925), 1-75 (published in good faith). (2) Biesantz, H. *Kretisch-Mykenische Siegelbilder* (Marburg, 1954), 84-122. (3) Nilsson, M. P. *The Minoan-Mycenaean Religion*<sup>2</sup> (Lund, 1950), 40-50, 267.

<sup>2</sup> Kurz, O. *Fakes* (London, 1948), 210-12. Furtwängler, A. *Intermezzi* (Leipzig and Berlin, 1896), 81-92.

<sup>3</sup> *AJA* lvii (1953), 5-16 (published in good faith). Amandry, *Stathatos Coll.*, 104-5. *JHS* lxxv (1955), 174-5. *AJA* lix (1955), 221.

<sup>4</sup> Furtwängler, op. cit., 81. Coche de la Ferté, pl. 28.

<sup>5</sup> *BMCJ*, p. liv, n. 4. Rosenberg, *Granulation*, 5, figs. 9 and 10.

<sup>6</sup> See Emerson, A. R. *Hand-made Jewellery* (Leicester, 1953), pl. 9, for examples of Littledale's reproductions of Greek and Etruscan granulated jewellery.

## 7. NOTES ON THE TEXT

A. In the absence of any statement to the contrary, it may be assumed that any jewellery discussed is of gold or electrum.

B. The rendering of Greek proper names is based on the system recommended in *JHS* lxvii (1947), pp. xix f., and *BSA* xliv (1949), 330 f., but consistency is not seldom sacrificed to familiarity or euphony.

C. When a piece is said to be in London, the British Museum is meant. Similarly, for Paris, the Louvre is meant; and for New York, the Metropolitan Museum.

D. The term *Classical* is used, for lack of a better, in two different senses. In some contexts it denotes the entire civilization of Greece and Rome at all periods; in others it is restricted to the Classical period in Greece *par excellence*, between c. 475 and 330 B.C. There should, however, be no ambiguity in any individual instance.

# Chronological Table I

## THE BRONZE AGE

DATE	GREECE/ CYCLADES	CRETE	CYPRUS	TROY	EGYPT DYNs.	BABYLON	DATE				
2800							2800				
2500	EH EC	EM I	Early Cypriot	I	3-4	Early Dyn.	2500				
2300					II		5-6	Akkad	2300		
2200				III		7-10	Ur III		2200		
2100						IV			11	2100	
2000				EM III   MM IA	Middle Cypriot	V	12	Old	2000		
1900		MM IB		VI		13			Babylonian	1900	
1800		MH								MM II	1800
1700		MC								MM IIIA	14-17
1600		Trans + LH I		MM IIIB + LM IA		18			Kassite		1600
1500		LH II		LM IB	Late Cypriot I		1500				
1400	LH IIIA	LM II	Late Cypriot II	VIIA	1400						
1300	LH IIIB	LM IIIB1			1300						
1200	LH IIIC	LM IIIB2	Late Cypriot III	VIIB	19	1200					
1100					20	1100					

All dates are approximate

# Chronological Table II

1100-600 B.C.

DATE	ATTICA	CRETE	CYPRUS	EGYPT	DATE
1100			↓		1100
	Submyc.		Late Cypriot III		
1050					1050
1000	PG	Subminoan	Cypro-Geometric I	21	1000
950					950
900		PG	Cypro-Geometric II		900
	EG <sup>I</sup> EG <sup>II</sup>			22	
850					850
800	MG I				800
750	MG II	Geometric	Cypro-Geometric III	23 + 24	750
700	LG <sup>I</sup> LG <sup>II</sup>				700
650	Protoattic	Orientalizing	Cypro-Archaic I	25	650
600				26 ↓	600

NOTE: The chronology for Greece and Crete between 1100 and 750 B.C. cannot be regarded as anything but inspired guesswork. For the Geometric period in Attica, the system of J. N. Coldstream (as yet unpublished) is used, with slight modifications. His dating for the later periods, for which he has good reason, is: MG II, 800-760; LG I, 760-735; LG II, 735-710. My slightly different dates are given only for the sake of simplicity.



# Part I Technical

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## CHAPTER I

# Ancient Metallurgy

### I. GOLD

**G**OLD IS THE only metal of which appreciable quantities occur native, that is to say in usable metallic form. It is found as reef-gold in veins or lodes of quartz, and as alluvial (or *placer*) gold in certain rivers; the latter being merely reef-gold which has been washed and concentrated by the action of water. Both kinds were exploited in antiquity from an early period.

The extraction of the metal consists of separating it from the associated impurities, whether rock or alluvium. Reef-gold was extracted in antiquity by hammering the rock and grinding it to powder. The powder was washed with a current of water, which carried off the lighter particles, leaving the gold to be collected on sponges. Alluvial gold was washed in much the same way. In the Caucasus gold-bearing water was run over a layer of fleeces; the gold, being the heaviest element, sank to the bottom and was held by the grease in the wool. To this process the legend of the Golden Fleece owes its origin.

In its natural state, gold is seldom if ever pure, but is found alloyed with silver, copper, and occasionally traces of iron.<sup>1</sup> In earliest times it was used unrefined. When silver was present in appreciable quantities (Pliny says one part in five)<sup>2</sup> the alloy was regarded in antiquity as a different metal, known as *white gold* or *electrum*.

The precise date of the introduction of gold-refining is not known, but it was apparently employed in the treasures of Troy II. We may therefore date the process at least to the late third millennium B.C. It was not however generally practised before Classical times.

Gold-refining is a secondary process, whereas silver-refining is

<sup>1</sup> For an analysis of Minoan gold, see *Boston Bull.* lvii (1959), 19.

<sup>2</sup> XXXIII, 80.

essential for the production of the metal; and we may therefore conclude that the former process was adapted from the latter. For both metals, it is known as *cupellation*. The Greek word, *obryza*, is derived from the Hittite; archaeology and etymology thus agree in suggesting that refining was first practised in Asia Minor.<sup>1</sup> To separate the gold, and silver if it is present, from the associated base metals, lead is added to the ore and the whole is melted together in a porous clay crucible (or *cupel*) over a charcoal fire. The lead and the other base metals are then oxidized by a current of air, which blows them off or drives them into the walls of the crucible, leaving a residue of fine gold or, if silver was also originally present, a mixture of gold and silver.

The removal of the silver was effected in two principal ways:

(1) *The salt process*. Salt and some organic material, to act as a reducing agent, are heated in a crucible with the silver-gold alloy. The salt attacks the silver, which is absorbed by the crucible as silver chloride. By a combination of this method and cupellation, i.e. by heating the ore with lead, salt and barley-husks, Egyptian metallurgists removed base metals and silver at the same time.

(2) *The sulphur process*. The alloy is heated with a sulphur compound such as stibnite (antimony sulphate) and charcoal. The silver is converted to silver sulphide, which floats on the surface as a scum, and is easily removed.

The Romans introduced two further processes. The first is *liquation*, which was employed as a preliminary to cupellation, and which consists of the separation of metals by fusion. In the second process, *amalgamation*, gold-dust is dissolved in mercury, which is then evaporated, leaving a solid mass of gold.

The Amarna Letters of the fourteenth century B.C. refer to the purity of gold and to its refining and assaying.<sup>2</sup> One of the most popular tests of purity was to rub the gold on a touchstone, and to compare the streak with that made by gold of a known purity.<sup>3</sup>

The final stage in the preparation of gold is to melt it down and cast it in moulds of stone or clay into blocks, or *ingots*.

#### SOURCES

There is much uncertainty about the precise sources of gold at any

<sup>1</sup> Coche de la Ferté, 47.

<sup>2</sup> Forbes, *Metallurgy*, 155.

<sup>3</sup> See Pliny, XXXIII, 126.

particular period, but the following list includes areas which supplied the Classical world at one time or another.

*Greece.* There were many mines in Thrace and Macedonia from the Bronze Age onwards. Production was considerably intensified under Philip II of Macedon in the mid-fourth century B.C. Rich mines on Thasos were opened about the eighth century B.C. (by the Phoenicians, according to Herodotus)<sup>1</sup> and were worked until they were exhausted soon after the fifth century B.C. There were also gold deposits in several islands of the Cyclades, which were probably not worked before the Iron Age. The most important mines were on Siphnos; they were flooded out in the fifth century B.C.

*The Balkan Peninsula and Dacia* were among the principal sources of Roman gold in the second century A.D.

*Asia Minor* had limited amounts of gold. The deposits south of the Caucasus supplied Greece in Mycenaean times, if we can believe the legend of the Argonauts, and may well have supplied her later. A second gold-bearing area is the river Pactolus and Mt Tmolus, the source of Lydian and later of Persian gold. This area was probably not exploited before the Iron Age and was exhausted by the end of the first century B.C. A third source, in the Troad near Astyra, may have satisfied local needs from early times. It was virtually exhausted by the beginning of the Christian era.

*Nubia* was the principal source of gold for the ancient world in the Bronze Age, and an important source thereafter. When Egypt was in control of these mines, Nubian gold found its way to the countries of the Middle East.

*Arabia and Bactria* supplied the Hellenistic world and Rome under the late Republic and early Empire.

*Siberia and the Altai* were very rich in gold. It reached the Greek world from this quarter in Hellenistic times, and the Greek communities of South Russia at all times.

*Italy.* The Pennine Alps supplied Etruria and Republican Rome.

*Noricum* was one of the principal sources of Roman gold in the second century A.D.

*Spain.* Spanish gold probably reached Etruria in the seventh and sixth centuries B.C. (and possibly later) and the Western Greeks from the sixth century B.C. onwards, by way of the Phoenicians, who

<sup>1</sup> VI, 47.

controlled the mines. Later, after the Second Punic War, which ended in 201 B.C., Spanish gold began to flow into Rome, and continued to do so in Imperial times.

*Gaul and Britain* helped to supply the needs of Rome under the late Republic and early Empire.

## 2. SILVER

Silver may well have been used for jewellery to the same extent as gold, but owing to its perishable nature, little has survived. Unlike gold, it seldom occurs native. The principal source of silver (and of lead) was galena-ore. The method of extraction was apparently developed in Asia Minor in the third millennium B.C. and was gradually disseminated. The ore is crushed, washed and sieved. It is then partially desulphurized by roasting, and the product, *litharge*, is converted by reduction to a lead-silver alloy with many impurities, such as antimony, copper, tin and arsenic. Silver is obtained from this alloy by cupellation, a process already described in connection with gold. In Roman times, as with gold, cupellation was preceded by liquation.

Small amounts of silver were also obtained as a by-product of the refining of gold.

The final stage, as with gold, is to cast the metal into ingots.

### SOURCES

The following list includes sources of silver for the Classical world.

*Greece.* There were many mines in Macedonia, Thrace and the Cyclades from about the eighth century B.C. onwards. The Siphnian mines, which were some of the most productive, were flooded out, together with the gold mines, in the fifth century B.C. The mines at Laurium in Attica were probably not worked before the Iron Age. In the early fifth century B.C. an extremely rich vein was discovered, which was worked intensively until near the end of the century. Thereafter the mines were worked intermittently until about 100 B.C. No attempt was made to reopen them until about the fifth century A.D.

*Asia Minor,* where twenty-six separate ancient deposits have been identified, was the principal source of silver for the ancient world at all times.

## SILVER

*Sardinia* was probably the principal source of Etruscan, and one of the sources of Roman silver.

*Spain*. From the second century B.C. onwards, Spain was an important source of Roman silver.

## CHAPTER 2

# Basic Processes

### I. THE WORKSHOP

**F**ROM THE SECOND millennium B.C. the technical processes of the goldsmith and the silversmith remained basically unchanged throughout the long period with which we are concerned, and indeed far beyond it, and it may be assumed that the tools employed also changed but little, except that after the end of the Bronze Age iron to some extent supplanted stone and bronze.

The source of heat was an open charcoal fire with some means of making a forced draught to raise the temperature, such as a blowpipe or bellows. The work to be heated was placed over the fire in a clay crucible.

The principal tools were an anvil of metal or stone; hammers for beating sheet metal and for driving punches of different shapes and sizes; stamps and cores; moulds for beating and for casting; chisels; engraving-tools of stone or iron; tongs; files; abrasives; burnishing-stones; scales; crucibles of clay; and a bowl of pitch. At some point in our period a drawplate for wire-making may have been introduced.

The basic elements from which ancient jewellery is composed are sheet metal, wire, and (to a lesser extent) cast metal. Most pieces consist of a number of separately made parts, joined together by soldering or by some other means and frequently embellished by secondary decorative processes.

### 2. SHEET METAL

Sheet metal is made by setting an ingot on an anvil and hammering it. Whenever the metal becomes hard and brittle, the craftsman anneals it by raising it to a red heat and quenching it in water. In this way the

crystals, distorted by the hammering, rearrange themselves so that it is again soft and workable.

The metal worked in antiquity in repoussé and related methods is referred to in these pages as *sheet metal*. It is thin enough to be worked easily but stout enough to withstand ordinary wear and tear without denting. Measured samples of sheet-gold from Egypt varied in thickness between 0.17 mm. and 0.54 mm.<sup>1</sup>

But gold can be hammered thinner still. Sheets about the thickness of paper (here referred to as *gold foil*) were used as plating on a base of other metals or glass (see p. 31). And infinitesimally thin gold, say 0.005 mm.,<sup>2</sup> here referred to as *gold leaf*, was used for gilding (see p. 32). To attain this thinness it is hammered between sheets of copper or parchment.

#### REPOUSSÉ

Repoussé is a general term for ornamental work produced on sheet metal with a hammer and punches. Strictly, it applies only to work embossed from the back, while work done from the front is known as *chasing*, but the term is now generally used to cover both processes, and will be so used here.

To make a pattern, or a complete ornament, in relief, the goldsmith drives punches into a piece of metal which rests on a bed of yielding material. For very shallow relief, wood or lead is used; this is the simplest and cleanest method. For most purposes, however, a softer substance is required. A bowl of warm pitch is generally used; it is firm enough to support the work, but soft enough to give way under the blows of the hammer (see fig. 1). Work may be done on either side of the material; the simplest decorative processes consist of patterns of dots or lines produced either from the front or from the back (see pl. 2). In a job of any complexity it will be necessary to work from both sides. In general, the outline of a figure is done from the front with a tracer (a punch shaped like a blunt chisel) and the embossing within the outline is done from the back with round-faced punches; finally subsidiary detail is punched in from the front. Punches of both kinds have survived, dating from about the second century B.C.<sup>3</sup>

<sup>1</sup> Lucas, *Materials and Industries*, 264.

<sup>2</sup> loc. cit.

<sup>3</sup> Ippel, *Galjub*, pl. 10.

## BASIC PROCESSES

In very high relief, to keep the metal to an even thickness, work must be done alternately from front and back.

Repoussé is, as has been said, a process suitable for complete pieces



FIG. 1. *Working gold in repoussé*

of jewellery and also for subsidiary decoration. In fact it was seldom used in antiquity for either purpose. Instead, several rather more mechanical processes were employed: stamping, beating over a core, or beating into a mould.

### STAMPING

Stamping is a variant of repoussé much used in antiquity for making basic shapes and decorative detail. It has the advantage that patterns may be exactly repeated with a minimum of effort. In its simplest form



FIG. 2. *Bronze stamp. Second-first century B.C.*

it is closely related to repoussé, but the ends of the punches are shaped to the pattern which it is desired to reproduce. Fig. 2 shows a bronze punch for making amphora-pendants of Hellenistic earrings. Usually the pattern on the punch is in cameo and is driven in from the back,



but occasionally, as in pl. 19D, it was in intaglio like a coin-die, and was driven in from the front. A kind of imitation filigree was occasionally produced by soldering ornamental wires to a punch and driving it in from the back (see pl. 19D).

#### BEATING OVER A CORE

A Greek gold pendant of the sixth century B.C. from Olbia was found to contain a wooden core, a phenomenon also observed in contemporary Scythian gold ornaments.<sup>1</sup> These objects were evidently hammered, with punches of wood or horn, over a wooden core, and, if the object was in the round, the core could not subsequently be removed. The popularity of this process cannot now be assessed, since wood seldom survives in the lands where Greek jewellery is found. Similarly, a pendant from Shaft Grave IV at Mycenae was hammered over a core of lead.<sup>2</sup>

By an extension of this process the metal was hammered over a core



FIG. 3. *Bronze core from Galjub.*  
*Second-first century B.C.*

of bronze, which was subsequently removed (fig. 3).<sup>3</sup> If an object of any depth was being made, the metal was probably roughly hammered to the required shape before being set on the core. For reliefs and similar objects the process presented no difficulties, but objects in the round had to be made in two sections and subsequently soldered together. A number of such bronze cores have survived in a hoard from Galjub in Egypt, dating from about the second century B.C.<sup>4</sup> Some are for reliefs, and some for parts of figures in the round. Some, for very high reliefs, were made in two sections, one for the main feature and one for the background. The two sections were subsequently soldered

<sup>1</sup> *AA* xxix (1914), 257, fig. 81 (Greek). *AA* xxviii (1913), 220 f. (Scythian).

<sup>2</sup> Karo, no. 275.

<sup>3</sup> See *AM* I (1925), 182-7. Experiments (not necessarily correct in all details) in beating sheet-gold over a replica of a Hellenistic bronze core.

<sup>4</sup> Ippel, *Galjub*, pls. 5-9.

together. A bronze relief, probably a core for gold ornaments, comes from Lindus.<sup>1</sup>

#### BEATING INTO A MOULD

Another method of making repetitive shapes was by hammering a sheet of metal into a mould.<sup>2</sup>

The simplest kind of mould consists of a plain concavity, such as was used for making globular beads. A hemisphere is made by driving a piece of sheet metal into the hollow with a round-faced hammer or punch. It is pierced through the centre and is soldered to a similar hemisphere, similarly pierced. Melon-beads are made in the same way, from ribbed hollows. But moulds were as a general rule more elaborate than this, and were capable of reproducing patterns and shapes of considerable complexity.

Where the gold was thin, it was perhaps possible to rub it into the mould with a burnishing-stone or a spatula; but sheet-gold of the usual thickness must have been hammered or punched, the hammers or punches being made of some fairly soft material such as copper, wood or horn. It is also possible that a *force* was used. In this method, common today, the gold is placed over the mould, and over the gold is set a strip of lead, the *force*. The lead is then hammered into the mould, carrying the gold with it. The details are thus faithfully reproduced and the mould is protected from the direct blows of the hammer or the punch.

The surviving moulds for this process are chiefly of bronze. One of the finest is a four-sided mould from Corfu, illustrated on pl. 15. Another bronze mould comes from Olympia.<sup>3</sup> A stone mould, believed to be for this purpose, was found at Corinth,<sup>4</sup> and moulds of reinforced terracotta, together with a copper hammer, were found at Olympia in 'Pheidias' Workshop', and were evidently used for making the gold drapery of the chryselephantine cult-statue.<sup>5</sup> Wooden moulds are another possibility. But if they existed, they would almost certainly have perished, and there can in consequence be no certainty on this point.

It is seldom possible to decide the exact process by which embossed

<sup>1</sup> *Lindos*, ii, pl. 17, no. 472.

<sup>2</sup> See *AJA* xlv (1941), 375-83.

<sup>3</sup> Furtwängler, A. *Olympia*, iv (Berlin, 1890), 27, pl. 7, no. 88.

<sup>4</sup> *Corinth*, xii, pl. 126, no. 2661.

<sup>5</sup> *DAI*, *Neue Ausgrabungen*, 277-95.

gold ornaments were made, but it is reasonable to suppose that a fair number were made in moulds. It is certain that the funerary bands of the eighth and seventh centuries were so made (see p. 97).

The gold Mycenaean relief-beads were once thought to have been made in dual-purpose moulds of steatite, intended both for the beating of sheet-gold and the casting of glass. Mycenaean moulds for the making of relief-beads certainly exist (see p. 42), but there are two good reasons for believing that they were used only for the casting of glass beads, and that the gold ornaments were stamped. First, as Wace has observed, there is a degree of undercutting in the moulds which demonstrates that they could only have been used for casting, and only for casting a material, such as glass, which contracts on cooling.<sup>1</sup> Secondly, a number of Cypro-Mycenaean diadems are decorated by means of stamps clearly intended in the first instance for making relief-beads of the type under consideration (see pl. IID).<sup>2</sup>

It has been suggested that the bezels of Mycenaean seal-rings were decorated in repoussé, after being attached, over a foundation of lead.<sup>3</sup> This view may be correct in certain instances, but a steatite mould recently discovered at Eleusis indicates that some at least were beaten into moulds before being attached.<sup>4</sup>

#### SUBSEQUENT OPERATIONS

After the stamping or hammering of sheet-gold, blemishes were removed and further detail frequently added in repoussé. It was found advantageous to outline figures in relief with a tracer, a process clearly discernible in Rhodian plaques of the seventh century (pls. 18, 19). Occasionally, in the best of the Rhodian plaques, embossed figures were cut out and soldered to a separate background, a technique which gave an even clearer outline (pl. 20).

Where unusually stout sheet-gold was used for embossed work, as in certain Mycenaean ring-bezels, it was customary to add further details with engraving-tools (see pl. 7A).

### 3. WIRE

Wire was used for a variety of purposes. Throughout most of antiquity

<sup>1</sup> *BSA* xxv (1921-3), 398.

<sup>3</sup> Karo, 74, no. 241.

<sup>2</sup> See also *BMCJ*, pls. 2 and 3.

<sup>4</sup> *PAE* 1953, 80, figs. 5-7.

it was made from thin strips of sheet metal, which were hammered and rolled between plates of stone or bronze until they were round in section. Wire thus made could be greatly reduced in thickness by stretching.

At some time in or after the Roman period – the exact date is disputed – the drawplate was introduced. By this means a strip of metal is drawn successively through holes of ever-decreasing diameter in a metal plate until the required thickness is reached. Whenever it may have been invented, wire-drawing was not generally practised until the Middle Ages. The use of the drawplate is revealed by longitudinal striations and by the uniform thickness of the wire.

A third method, employed for making really thick wire, is to cast it.

Another kind of wire is made by twisting a strip of metal in a continuous spiral. Hollow wire, or tube, is made by hammering strips of sheet metal into grooves in a block of wood or metal; or the strip may be wrapped round a *mandrel* (a length of wire) and driven into a groove. When the tube is complete, the mandrel is withdrawn.

For ornamental work, wire was frequently given a more interesting form by twisting a single strand or by twisting two or more wires together, or by winding thin wires in a tight spiral to form a thicker wire. Beaded wire, another attractive variation, is made by striking or pressing wire between dies on which the required pattern has been engraved.

Wire was used at various times for finger-rings, hair-rings, earrings, bracelets, pins and fibulae; to attach the various elements of composite ornaments; for filigree (see p. 18); and for chains and straps.

*Chains* played a very important part in ancient jewellery. They were used primarily as necklaces, and for carrying pendants.

The *simple* chain was used at all periods, and needs no description. It is composed of a series of links, made by inserting a section of wire in the previous link, bending it round, and soldering the ends together.

Such a chain is perfectly satisfactory from a structural point of view, but more decorative effects can be obtained from another kind, the so-called *loop-in-loop* or *square* chain,<sup>1</sup> a variety used in the Classical world from about 2200 B.C. onwards. Its first attested use is in the Early Minoan jewellery of Mochlos. Further east, it is found in jewellery at

<sup>1</sup> Petrie, W. M. F. *Arts and Crafts of Ancient Egypt* (London, 1910), 86. *DA s.v.* 'catena'. Williams, *Gold & Silver Jewelry*, 133.

WIRE

Ur of about 2500 and its origins should probably be sought in that quarter.<sup>1</sup>

In contrast with the simple chain, in which each link is made separately as the work progresses, the loop-in-loop variety is made from previously prepared links. It is found in varying degrees of complexity.

(1) In the single form (fig. 4a), the first link is compressed to an

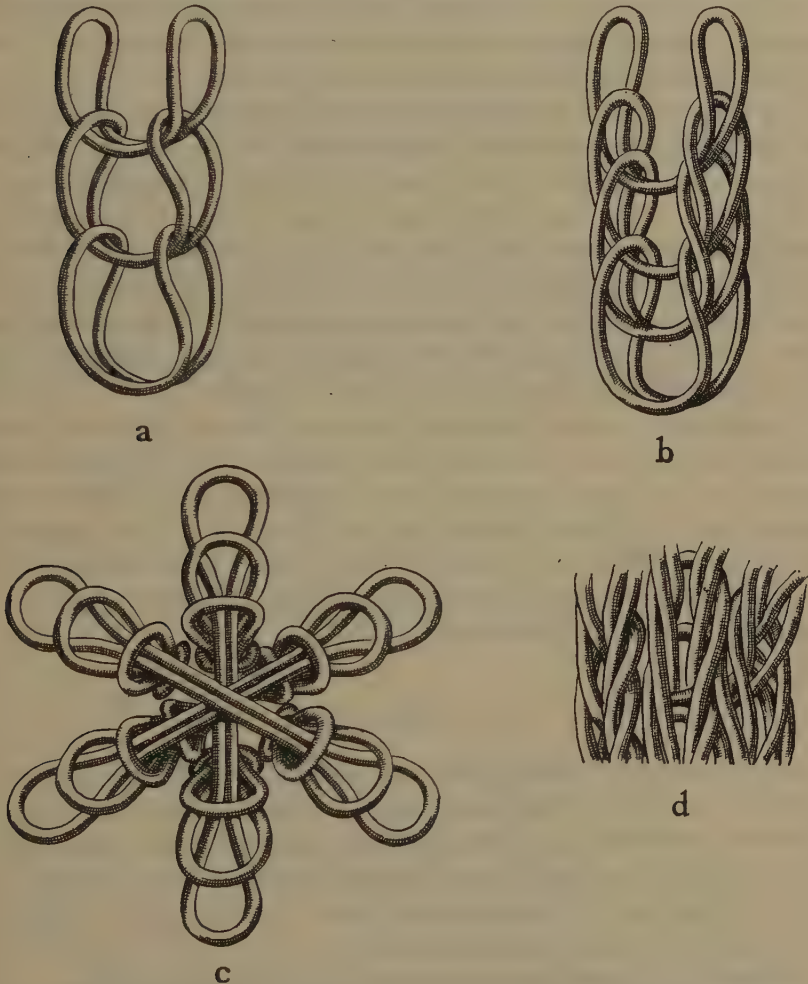


FIG. 4. The development of the loop-in-loop chain. Enlarged drawings. a, single. b, doubled. c, doubled, sextuple, end view, in process of manufacture. d, ditto, completed, side view

<sup>1</sup> Woolley, *Ur Excavations*, ii, pls. 146 and 159.

elliptical shape and folded in half. The next link is similarly compressed, threaded through the looped ends of the first, and in its turn folded in half. This process is continued until the chain is complete. Chains of this nature have a remarkably square section, which accounts for one of the names by which they are known. From a structural point of view they may be said to have two principal faces, and two sides.

(2) A similar but more compact chain is made by threading each successive link through the looped ends of the two preceding. This may be called a double loop-in-loop chain (fig. 4*b*).

(3) What is frequently miscalled a cord is made by cross-linking a double loop-in-loop chain so that instead of two, it has four, six, or even eight principal faces (figs. 4*c* and *d*). Such chains are always made from double rather than single loop-in-loop, to conceal the tangle of crossing wires in the interior. The characteristic herringbone pattern has led to the often expressed belief that such chains are plaited. Apart from the fact that close inspection leaves no doubt of the method of manufacture, plaited chains (if such existed) would completely lack the flexibility which is a characteristic of these examples.

*Straps*, also frequently miscalled plaited or braided, are made from several lengths of loop-in-loop chain, interlinked side by side. Such straps could no doubt have been made as early as the corresponding chains, but in fact are first seen in the Classical world in Rhodian jewellery of the seventh century B.C. (see p. 108). They were popular for necklaces in Etruscan, Hellenistic and Roman jewellery, and were occasionally used for Hellenistic diadems.

#### 4. CASTING

From motives of economy, jewellery was seldom cast from precious metals, for sheet metal gave adequate results at less cost. There were, however, exceptions and some articles of gold and silver were sometimes cast, such as pins, fibulae, earrings, finger-rings and bracelets. The melting-points of gold and silver, 1063° C. and 961° C., would be well within the range of a charcoal fire.

A number of steatite moulds, apparently for casting jewellery, have survived.<sup>1</sup> Some are in one piece, some in two and some in three. In multiple moulds the separate elements were connected by pegs. Some

<sup>1</sup> Schreiber, 277-92.

were possibly used for the direct casting of metal objects, for steatite is particularly resistant to heat; but equally possibly some, or all, were used not for direct casting but for making wax models as the first stage of the *lost wax (cire perdue)* process.<sup>1</sup> In this process a wax model is made and round it is placed a covering of clay, pierced in at least one place. Heat is applied so that the wax melts and runs out, and in place of the wax molten metal is poured in.

Although cast jewellery of gold or silver is rare, a surprisingly large number of these moulds have survived. The explanation must be that they were intended not for precious metals, but for other substances, such as glass, lead or bronze, examples of which have survived in appreciable quantities (see p. 45).

<sup>1</sup> See *ÖJH* vii (1904), 154-97. Experiments (by Pernice) in casting metal in stone moulds, which led him to believe that most stone moulds were used not for the direct casting of metal, but for wax models, to be used for *cire perdue*. Other authorities, however, to whom the author has spoken, believe that (with care) gold or silver could be cast direct in moulds of steatite, but not of other material. Most, if not all, surviving moulds of this type are, in fact, of steatite.

## Decorative Processes

**T**HE DECORATIVE PROCESSES at the goldsmith's disposal fall under three general headings: they may involve the addition of the same metal, the addition of other substances, or the removal of metal.

In the first category are filigree, granulation, and the soldering on of minor ornaments. In the second, enamel, inlay and related processes. In the third, engraving, carving and piercing. For convenience a fourth process, by which objects of other materials are overlaid with gold or silver, is included in this chapter.

### I. FILIGREE AND GRANULATION

Filigree and granulation are two closely related processes for decorating goldwork by the application respectively of wires and grains of gold. Silver can be treated in the same way, but in fact these techniques seem to have been restricted in antiquity to gold and electrum.

#### FILIGREE

The commonest form of filigree consists of wires soldered in patterns on a background. The wires may be arranged singly, in twists or in plaits, and they may be plain or beaded. From the nature of the material the most popular patterns are circles, spirals and straight lines. Such patterns as could not easily be made freehand were probably made with jigs, i.e. blocks of wood studded with pins round which the wire is bent. In this way any pattern can be exactly repeated.

Usually the wires themselves created a satisfactory pattern, but sometimes the effect was heightened by the addition of enamel.

A rarer, and technically more difficult, variety of filigree consists of



## FILIGREE AND GRANULATION

openwork patterns without a background. This variety was especially popular in Etruria in the seventh and sixth centuries B.C. (see pl. 36B).

### GRANULATION

Although both processes arrived in Greece at the same time, granulation is probably later than filigree, from which it is apparently derived. Both depend on the same basic principles, but granulation demands a far higher standard of technical skill. It may be described as the making of patterns with minute grains of gold soldered to a background. In the Late Bronze Age the grains measured as little as  $\frac{1}{80}$  in. (0.4 mm.) in diameter. In the finest Etruscan work even smaller grains were used; many measure  $\frac{1}{100}$  in. (0.25 mm.) and some as little as  $\frac{1}{120}$  (0.14 mm.).<sup>1</sup> A vast quantity of such grains would be needed to decorate a piece of jewellery. That illustrated on pl. 19E has been calculated to contain over 2,600.

It is not known for certain how the grains were prepared in antiquity. Various methods, all perfectly possible, have been suggested, but most are far too laborious for the mass-production required. The most likely method is as follows.

Small pieces of gold of roughly equal size (filings or pieces cut from a wire or a sheet) are laid separately in a clay crucible on a bed of powdered charcoal, and alternate layers of gold and charcoal are built up until the crucible is full. It is then brought to a bright red heat, which melts the gold into minute spheres, separated from each other by the charcoal. When the crucible has cooled the charcoal is washed away and the grains remain. They are graded for size by being sifted through meshes of varying gauges and are then ready for use.

Simple patterns can be made by attaching the grains directly to the surface of the metal, but for most granulated work a transfer method, such as is used today, must have been necessary. The pattern is first engraved on a plate of stone or metal, and the grains are set in the engraved areas. A drum is made by sticking a sheet of paper over the end of a tube; in antiquity papyrus or leather would have served. The paper is covered with an adhesive and is lowered on to the engraved plate to pick up the grains, which are treated with the soldering mixture described below and placed on the surface to be decorated. The paper is now soaked off and the work is ready for soldering. An additional

<sup>1</sup> *History of Technology*, i, 658.

advantage of the transfer method is that the same pattern can be repeated as often as required.

Grains can be used with much greater freedom than filigree. They can be *massed* to cover an entire ornament or part of one. They can also be used to make simple linear patterns or geometrical shapes; such treatment may be called *decorative granulation*. Finally, granulation may be employed in three rather more elaborate ways: the *outline* style, in which lines of grains are used as an adjunct to embossed forms; the *silhouette* style, in which figures are rendered with solid masses of grains; and the *reserved silhouette* style, a very rare technique in which the background is filled in with grains, while the main features are embossed but are otherwise left undecorated. The best example of this last technique is found not in a piece of jewellery but in a stand for a glass flask, in Paris.<sup>1</sup> The two latter processes invite comparison respectively with the black-figure and red-figure vase-painting styles. The resemblance may in fact be the result of conscious imitation by the goldsmith of the vase-painter's methods.

#### COLLOID HARD-SOLDERING

The art of granulation finally died out about A.D. 1000.<sup>2</sup> In the nineteenth century attempts were made to revive it, but the difficulty always lay in the method of attaching the grains. Filigree could be, and was, attached by normal hard-soldering methods, but the result was not so clean as ancient work. It became increasingly clear that for granulation the ancient craftsmen must have used an entirely different method. The nineteenth-century jeweller Castellani tried, without success, to achieve the desired result by normal methods of soldering; but the solder always flooded and the flux boiled up and displaced the grains. In this century various fairly satisfactory methods of soldering and sweating have been employed, but it is most unlikely that the ancient craftsmen could have successfully employed either of these operations with the facilities at their disposal. Their hard-soldering of joints was in fact not particularly fine, and the difficulty of sweating a joint is considerable (see p. 35).

In 1933 Littledale patented a new process of hard-soldering which he entitled *Colloid hard-soldering*.<sup>3</sup> Using this process (one well within the

<sup>1</sup> Coche de la Ferté, pl. 36.

<sup>2</sup> See p. 23 n. 4, below.

<sup>3</sup> British Patent no. 415181 (1933).

powers of an ancient craftsman) he succeeded in reproducing exactly some of the most complicated of the surviving pieces of ancient filigree and granulation. There can, in fact, be no doubt that this process, or something very like it, was employed in antiquity. Indeed both Pliny and Theophilus show echoes of it, but Pliny's version is (as often) so garbled as to be unworkable, and Theophilus is not entirely comprehensible.<sup>1</sup>

Instead of using a prepared solder, Litledale succeeded in making the solder in the joint. The process which he evolved is based on the fact that when copper is heated in contact with gold (or for that matter, silver) the melting-point of the two metals is lower than that of either of the metals separately.

A copper salt – preferably copper carbonate – is ground up and mixed with an equal quantity of vegetable or fish glue. The mixture is diluted with water to the consistency of a thin paste; this forms a strong adhesive, which is used to attach the grains or wires. The work is then heated in a crucible on a bed of hot charcoal. At 100° C. the copper salt changes to copper oxide; at 600° the glue turns to carbon; at 850° the carbon absorbs the oxygen from the copper oxide and goes off as carbon dioxide, leaving a layer of pure copper between the parts to be joined; at 890° the copper and the gold melt and the joint is made. The proportion of gold to copper in the joint varies according to the temperature to which the work is raised. Since the melting-point of fine gold is 1,063° C., there is a generous range up to which it may be safely heated. The higher the temperature, the more the surrounding gold alloys itself with the copper and the less visible the joint. Since, moreover, ancient goldwork nearly always contains a certain amount of copper as a natural impurity, it is easy to understand how the nature of this form of soldering remained for so long undetected.

The process can be used equally well for silver, but the scarcity of surviving silver jewellery precludes any estimate of the popularity of filigree and granulation in that medium.

#### HISTORICAL

Filigree and granulation are first found in the Aegean world shortly after 2000 B.C., when they occur on jewellery from Minoan tombs in the Messara (see p. 60).

<sup>1</sup> Pliny, XXXIII, 93. Theophilus, III, 51.

These techniques had a long tradition in Mesopotamia, Syria and Asia Minor. The Royal Tombs at Ur, of about 2500 B.C., produced filigree-work of an advanced kind and the crude beginnings of granulation.<sup>1</sup> In the Treasures of Troy II of about 2200 B.C. and in jewellery from Byblos of about 2000 is similar filigree and fully developed granulation.<sup>2</sup> We may therefore conclude that filigree existed in Western Asia by 2500, and that granulation reached its full development not long after. For geographical reasons, the direct source from which these processes reached Crete must have been either Asia Minor or Syria. That the ultimate source was Mesopotamia is suggested by the discovery at Knossos of a Babylonian cylinder-seal with granulation, of a class dated 'before Hammurabi', who lived in the eighteenth or seventeenth century B.C.<sup>3</sup> Surprisingly, these processes do not have an early history in Egypt, where granulation is not recorded before about 1900 B.C.<sup>4</sup>

In the Bronze Age, granulation is found in Crete from about 1800 to 1100 B.C., and in Greece from about 1550 to 1100. It was never really common, but becomes comparatively plentiful in Greece in the fifteenth century.

Filigree, after its first appearance about 1800 B.C., is found again in Crete in the seventeenth century, and perhaps lasts into the sixteenth; but after that it appears scarcely to have been used in Minoan or Mycenaean goldwork.

The most complicated forms of granulation have not as yet been found in jewellery of this date from Crete and Greece, where the goldsmiths appear to have restricted themselves to the *massed*, *decorative* and *outline* varieties. But, since the *silhouette* style was known in Egypt in the fourteenth century (where it occurs in jewellery from Tut-ankh-amen's Tomb)<sup>5</sup> it may yet prove to have been practised in the Aegean at an early date.

The Dark Ages lasted from 1100 to 800 B.C. Shortly after 800, granulation and filigree were again practised in Greece, and from about

<sup>1</sup> Woolley, *Ur Excavations*, ii, pl. 138.

<sup>2</sup> Troy: Schmidt, Beil. 1 and 2. Byblos: (1) Montet, P. *Byblos et l'Égypte* (Paris, 1929), pl. 63. (2) Dunand, M. *Fouilles de Byblos*, ii (Paris, 1950), pls. 131-7.

<sup>3</sup> Evans, *Palace*, iv. 423, fig. 349. *AJA* xlix (1945), 16.

<sup>4</sup> First recorded at Dahshur and Lahun. See Smith, W. S. *The Art and Architecture of Ancient Egypt* (Harmondsworth, 1958), pl. 80A; and refs.

<sup>5</sup> Coche de la Ferté, pl. 9: 1 and 2.

700 B.C. in Etruria. The source from which these processes came is not absolutely clear, but Syria is a strong candidate, as it was the source of most of the Oriental influences in Greece and Etruria at this date. Apart from a certain amount of jewellery from Sinjerli of about 700 B.C.,<sup>1</sup> evidence from these regions at the relevant period is almost non-existent. However, Phoenician jewellery of the sixth century (from Aliseda<sup>2</sup> and Tharros)<sup>3</sup> shows granulation and filigree of all the varieties found in Greece and Etruria slightly earlier, and may well be continuing a well-established Phoenician technique.

In Greece, granulation and, to a lesser extent, filigree were practised between 800 and 600 B.C. Granulation was used in the *massed*, *decorative* and *outline* styles. Filigree was probably used principally as a surround for enamel and seldom as a decorative process on its own.

From 600 to the end of the first century B.C. filigree gradually (but never completely) replaced granulation. Filigree was used both as a decorative process on its own, and as a surround for enamel, while granulation was used to make only the simplest patterns.

In Etruria these processes reached a very high stage of development in the seventh and sixth century B.C. after which they gradually died out. Granulation was practised in the *massed*, *decorative*, *outline*, *silhouette* and *reserved silhouette* styles. Filigree is found in its usual form and also in *openwork* technique.

In Roman jewellery filigree and granulation are found, but neither process was popular, and granulation especially became extremely coarse. Filigree of a kind never completely died out. Granulation lingered on on the fringes of the Western world, in Scandinavia and Eastern Europe,<sup>4</sup> and finally died out about A.D. 1000, to be revived in our own era.

## 2. ENAMEL

### TECHNICAL

Enamel is a coloured glass fused to a metallic base. Gold and electrum

<sup>1</sup> Von Luschan, *Sendschirli*, v.

<sup>2</sup> Melida, J. R. *Tesoro de Aliseda* (Madrid, 1921). Becatti, nos. 228-31.

<sup>3</sup> *BMCJ*, pls. 23-5. Becatti, nos. 221, 223-4, 226-7.

<sup>4</sup> (1) Segall, nos. 286 ff.: Byzantine, tenth century. (2) *Antiquity*, xxxii (1958), pl. 19: Czecho-Slovakian, ninth-tenth century. (3) Kirk, J. R. *The Alfred and Minster Lovell Jewels* (Oxford, 1948): Anglo-Saxon, ninth century. (4) Stenberger, M. *Die Schatzfunde Gotlands der Wikingerzeit* (Lund, 1947), figs. 140, 141: Scandinavian, tenth century.

were the metals generally enamelled; silver occasionally; bronze in Romano-Celtic jewellery.

Four varieties of ancient enamelling may be recognized:

(1) *Champlevé*. The enamel is set in depressions carved out of the background or (in early examples) punched into it.

(2) *Filigree*. The enamel is set in areas on the surface bounded by filigree.

(3) *Cloisonné*. A variation of filigree-enamel, in which the filigree is replaced by strips of metal arranged in cells, or *cloisons*. This method should be distinguished from *cloisonné inlay* where the filling is cut to shape and cemented in similar cells. True cloisonné enamel was, however, seldom practised in the period covered by this survey.

In these three varieties broken or powdered glass (in antiquity a soda-lime glass) is placed in the areas to be decorated and the work is fired. When the glass reaches melting-point it fuses and penetrates the surface of the metal, which has been rendered soft and porous by the heat. The work is then slowly cooled. In Romano-Celtic *champlevé*, use was sometimes made of glass cut to fit, as for inlay, and melted only just sufficiently to ensure adhesion. This fact is clearly demonstrated by the employment for this purpose of previously prepared mosaic glass.

(4) *Dipped*. A metal armature is made and, when heated, is dipped in molten glass. Some of the glass adheres to the metal and is then shaped by normal glassworking methods while in a viscous state.

#### HISTORICAL

Certain Mycenaean gold ornaments have blue enamel in hollows punched in the gold of their upper surface, forming a primitive kind of *champlevé*. The hollows were regularly surrounded by granulation, partly no doubt to set off the colour, partly to give additional protection to the enamel.

The process, which was never common, seems to have been first used about 1425, and to have died out about 1300.<sup>1</sup> The source from which Mycenaean goldsmiths learnt this technique is unknown, for

<sup>1</sup> It is recorded at Mycenae, in Tombs 88 and 103 (unpublished, but see Rosenberg, *Zellenschmelz*, 22, figs. 1-10, and 24, fig. 25), and in 'Tsountas's House' on the Acropolis (*AE* 1887, pl. 13: 27); at Dendra, in Tomb 10 (Persson, *New Tombs*, 79, no. 23); and at Volo in a tholos tomb (*AE* 1906, 228 f., pls. 14, centre, and 15: 3).

their use of it is the earliest yet recorded. It is quite possible that it was a Minoan or Mycenaean invention. It is also probable, although not certain, that the raw material was the ordinary blue glass used for relief-beads and plaques, for the colours are similar and it has been established by experiment that this glass could have been used as an enamel.<sup>1</sup>

At its next appearance, enamel took a rather different form. Six gold rings decorated with roundels in enamel were found in a tomb of the twelfth century B.C. at Kouklia (Old Paphos) in Cyprus. Maryon, who examined the rings, writes as follows:<sup>2</sup>

Each roundel is surrounded by a gold *cloison* and fitted in place within a band-setting. The area within the *cloison* was first covered with broken fragments of glass, of which the largest were about  $\frac{1}{8}$  in. across. The disk was then fired. Upon its glazed surface a floral pattern of *cloisons* was arranged and stuck, probably with gum. Similar fragments of glass were inserted into the cavities between them. That the glass was not powdered is clear, for areas of different colour meet in a true line without penetration of one colour into the other. The whole disk was next fired and its surface ground and polished. It was then set within its band-setting in the finger ring.

The technique is new to Cyprus, but the form of the rings is familiar. We may therefore deduce that the rings were made in Cyprus, either by an immigrant craftsman, or by a native who had learnt the technique abroad.

In a tomb at Curium, also of the twelfth century B.C., was found a gold sceptre surmounted by a sphere on which are two figures of hawks.<sup>3</sup> The sphere and the birds are decorated with mauve, green and white enamel in cloisons. As with the rings, a new system of decoration is used on a familiar article, for an earlier gold sceptre has been found in Cyprus, without enamel and without hawks.<sup>4</sup>

These are the earliest known forerunners of cloisonné enamel. Where did the technique originate? It is unlikely to have been invented in a cultural backwater such as Cyprus, or to have evolved from Mycenaean enamel, for there are no intervening stages, and the whole concept is

<sup>1</sup> By Sir Harry Garner. His results are as yet unpublished.

<sup>2</sup> *History of Technology*, ii, 459. See also *ILN* 2,5,1953.

<sup>3</sup> *AJA* lviii (1954), 140.

<sup>4</sup> Schaeffer, C. F. A. *Enkomi-Alasia*, i (Paris, 1952), 131.

different. The Mycenaean goldsmith was producing an entirely new system of decoration, while the Cypriot was merely reproducing the appearance of cloisonné inlay in a new form. Rosenberg has demonstrated that Egyptian goldsmiths had gone a long way towards creating a true cloisonné enamel.<sup>1</sup> Possibly in fact they had gone the whole way and had passed on their skill to their Cypriot colleagues. But again there can be no certainty.

This process is found again in gold ornaments from Tell Halaf in North Syria of the tenth–ninth century B.C.<sup>2</sup> There is no trace of it thereafter, but it may possibly have evolved into the next type of enamel to be encountered.

In the Dark Ages, between 1100 and 800 B.C., no enamel is known in Greek lands, nor is it to be expected. Surprisingly, it has not as yet been found in Greek jewellery of the eighth and seventh centuries B.C., but makes its appearance in the early sixth century in Greek, and shortly after in Etruscan work. This time it takes a third form, that of *filigree-enamel*. The process can be traced back into the seventh century in a piece of jewellery from Ziwiye in Azerbaijan, a diadem with rosettes whose petals are decorated with filigree-enamel.<sup>3</sup> The art of Ziwiye at this date is incredibly mixed, but was composed basically of Assyrian and Scythian elements. The diadem is certainly Assyrian rather than Scythian, and we may, with all due caution, suggest Assyria as the home of filigree-enamelling in the seventh century B.C.

From this rather disjointed account it would appear that enamel was 'invented' on at least three separate occasions. This conclusion may merely be the result of working from inadequate evidence, but it is a perfectly reasonable conclusion. Any craftsman acquainted on the one hand with glazing or glassworking, on the other with metal-working, could have seen the potentialities of combining the two processes. And it is undeniable that the enamel has taken a different form on each of its three appearances described above.

Definite evidence of enamel is found in Greek goldwork of the first half of the sixth century; a chryselephantine statue from Delphi, and a

<sup>1</sup> Rosenberg, *Zellenschmelz*, 9–11. The ornaments from Cyprus, *ibid.*, 12–13 (*BMCJ* no. 581), are decorated with similar material and not, as Rosenberg believed, with enamel.

<sup>2</sup> Bossert, H. T. *Altsyrien* (Tübingen, 1951), no. 785.

<sup>3</sup> Coche de la Ferté, 32, pl. 4: 2. Godard, A. *Le Trésor de Ziwiyé* (Haarlem, 1950), fig. 90.



diadem from Kelermes in South Russia. As at Ziwiye, rosettes with filigree-enamelled petals are found. Enamel of the same kind is also found at this time in goldwork probably made by Greeks in Etruscan factories and in South Russian goldwork almost certainly made by Greeks for Scythian customers.

From the sixth century onwards, filigree-enamel was regularly used in Greek jewellery; in the third, the second and probably the first centuries dipped enamel was used for specialized purposes, such as earring-pendants and decorations on diadems.

The colours used in Greek enamel are white, deep blue, deep green, and pale greenish-blue.

Another process, akin to cloisonné enamelling, but in reality closer to glassworking technique, was practised in Hellenistic and Roman times.<sup>1</sup> Strips of metal were bent to form decorative patterns or letters of the alphabet, and were pressed in a background of heated glass. A dated example of this technique, a ring with a sandal-shaped bezel, comes from Artjukhov's Barrow, of the second century B.C. (fig. 29). In an extension of this process, the metal was bent to the outline of a figure, which was filled with powdered glass and placed on a background of glass. Both were now heated. When the background was sufficiently soft, the metal was pushed into it, carrying the powdered glass, which was now partially fused. This process recalls that by which the rings from Curium were decorated in the twelfth century B.C.

In Etruria, apart from the Graeco-Etruscan work already mentioned, enamel is found in genuine Etruscan work in the sixth and perhaps the fifth century, but it had a limited vogue and was not popular for long. It apparently owed its introduction to Greece, and never became truly naturalized. It is, however, again found in the second century B.C., when Etruscan art became, for all practical purposes, Hellenistic.

Enamel was scarcely used in Roman goldwork, being superseded by the inlaying of stones and glass. It does, however, occasionally occur in the West, where Celtic influence may be assumed. Champlévé enamel was, however, used to a great extent in Romano-Celtic bronze ornaments, principally brooches. The brooches are attractively set with brightly coloured enamels, many of them patterned in mosaics, like contemporary glass vessels.

Byzantine enamels do not derive from anything which went before

<sup>1</sup> Rosenberg, *Zellenschmelz*, 38 ff., figs. 54-8.

in Classical lands, but are yet another example of the independent introduction of this technique into the Western world.

### 3. NIELLO

Niello is a matt black substance, composed of one or more metallic sulphides, used for the decoration of gold and, more commonly, silver. It is set in recesses cut in the surface of the metal. A black substance, which may or may not be niello, is found in Syrian metalwork as early as the twentieth century B.C. and in Egyptian and Mycenaean in the fifteenth and fourteenth centuries.<sup>1</sup> It was used to decorate weapons and plate, but not apparently jewellery, and is therefore outside the scope of this survey.

After a gap of many centuries, a substance identified with certainty as niello was used in Classical lands; it is a silver sulphide, and is found in Hellenistic and Roman silver plate and in late Roman and Byzantine jewellery. Two gold rings from the Beaurains Treasure, of about A.D. 300, and silver fibulae of the fourth century A.D. are amongst the earliest examples of its use in jewellery. According to the most likely theory, it was placed in powder form in the recesses in the metal. The work was then gently heated and the powder, becoming plastic well below its melting-point, was rubbed to the correct shape.

It was not until the eleventh century A.D., well beyond our period, that a niello suitable for fusion to metal was employed.

### 4. INLAY

#### TECHNICAL

Another method of polychrome decoration, more frequently employed in antiquity than enamel, is the inlaying of jewellery with coloured stones, glass and other substances. The inlays are cut to shape and cemented in cells formed by strips of metal soldered to a background. In certain examples inlay is very close in appearance to enamel, but the difference is one of technique; inlay is cut to shape and fixed, enamel is fused *in situ*.

The cells with inlay may be adjacent, to form a continuous pattern,

<sup>1</sup> *BSA* xxxvii (1936-7), 112 f. Karo, 312-13.

## INLAY

they may form a pattern without being adjacent, or they may exist in isolation. In the last category there are examples where the stone or other substance has little immediate background and is clearly of more importance than the surrounding metal; inlay in such cases is perhaps not the correct term, but, for convenience, it will be so used here.

The surface of the inlay is generally cut flush with the top edge of the cell; sometimes, however, when the cells are not contiguous, the inlay is cut *en cabochon*, to rise above the cell, and the cell is turned inwards at the top, to hold the inlay more securely. This system is frequently found in ring-bezels.

### HISTORICAL

The inlaying of jewellery has a long history in Mesopotamia, where it is found in the Royal Graves at Ur of about 2500 B.C.,<sup>1</sup> and in Egypt.<sup>2</sup> In Syria it is first found in jewellery from Byblos of about 2000 B.C., and may well have been practised there earlier.<sup>3</sup> In the Aegean it is first attested about the seventeenth century, but here too it may have an earlier history. The earliest examples, in Minoan rings from the so-called Aegina Treasure, are very close to the jewellery from Ur both in the method of inlay and in the choice of lapis lazuli as the material. We may therefore place the ultimate origins of this technique in Mesopotamia.

In the Late Bronze Age inlaid jewellery is common, particularly so in the fifteenth century B.C.<sup>4</sup> The material used is now glass, dark blue to imitate lapis lazuli, and pale greenish-blue to imitate turquoise; the same two varieties were used for the moulded glass ornaments of the fourteenth and thirteenth centuries. Complicated patterns were made with contiguous cells, and single inlays were used as ring-stones.

In the Dark Ages, the art of inlaying fell out of use. It was reintroduced into Greece, almost certainly by Phoenician craftsmen, about 800 B.C. Shortly after, about 700 B.C., it was introduced into Etruria, doubtless from the same source. In Greece it is particularly common in jewellery from Attica and Crete of the eighth century. The inlays are

<sup>1</sup> Woolley, *Ur Excavations*, ii, pl. 138.

<sup>2</sup> e.g. Smith, W. S. *The Art and Architecture of Ancient Egypt* (Harmondsworth, 1958), pl. 80A, and refs. in text.

<sup>3</sup> See n. 2, p. 22, above (Byblos).

<sup>4</sup> Rosenberg, *Zellenschmelz*, 23, figs. 11-16, and 25, fig. 27.

frequently in cloisons bounded by granulation, set a little apart from each other and arranged in patterns. In the seventh century inlay was still used, but to a decreasing extent, and before the end of the century it had almost died out in Greece. In Etruria its use is less frequent, but it lingered into the sixth century, and then died out. The materials for inlay in Greek and Etruscan jewellery of this period are principally rock-crystal, amber and glass.

Inlay is not regularly found again in Greek jewellery until the later fourth century B.C., when Alexander's conquests again brought to Greece the fashions and luxuries of the East. Seal-stones were henceforth set in rings, and from this date provide virtually the only form of seal. In other forms of jewellery garnets and cornelians were at first used almost exclusively. In the second century B.C. they were supplemented by other stones, and glass. For a short time in the second century glass inlay was employed in a manner very like later cloisonné enamel; but in general the preference was for a broader treatment, with single stones, or small groups.

In Etruria, inlay did not become popular until Etruscan jewellery proper had given place to Hellenistic, in the second century B.C. In Roman jewellery, however, the position was different. Stones and glass were extremely popular, and were frequently set in small clusters comprising different materials and different shapes. Towards the end of the period, in the third century A.D., the stones had become definitely more important than the settings.

## 5. OTHER ATTACHMENTS

### BEADS

Beads were occasionally attached by wires to jewellery, especially in Hellenistic and Roman times. Cornelian was most commonly used in this way; in Late Hellenistic times pearls were also used.

### SCULPTURAL

In the Hellenistic period stones were occasionally carved as human or animal heads and attached to the ends of hoop-earrings or necklaces (see pl. 47G).

## 6. CUTTING PROCESSES

## ENGRAVING

Engraving on gold was practised sporadically from Late Minoan times onwards. Catchplates of fibulae were treated in this way (see pl. 14B). Bezels of gold and silver rings were also frequently engraved. Late Minoan and Mycenaean rings were sometimes engraved in solid gold; more often the bezel was of embossed sheet-gold, with details subsequently engraved.

In the Bronze Age, engraving was probably done with a flake of obsidian or a copper tool, for bronze is too brittle for such work. In the Iron Age, iron tools were used; a graver (or burin) such as is used today, and a *scorper* for the so-called *tremolo-line*.<sup>1</sup>

## CARVING

Gold was occasionally worked with a chisel in stone-carving technique. Certain Greek ring-bezels of the fifth century B.C. provide examples of this rarely used process.<sup>2</sup>

## PIERCING

Towards the end of the Roman period the custom became popular of making patterns in sheet-gold by cutting out portions of the metal with a chisel. The process, known to the Romans as *opus interrasile*, is occasionally found much earlier in Early Etruscan work (see pl. 32F), but was not in general use before the second century A.D.

The result, which can be most pleasing, gives a lace-like effect. It was particularly popular for necklaces and ornamental borders (see pl. 64A). Byzantine jewellery shows a further development of this process.

## 7. PLATING AND GILDING

## GOLD-PLATING

Gold foil is pressed over a prepared core of some other material, from which it takes its shape. Where the base is metallic, such as silver or bronze, the gold can be hammered over it; where the base is of other

<sup>1</sup> Jacobsthal, *Pins*, 209.

<sup>2</sup> Coche de la Ferté, 60; pl. 17: 2 and 3.

## DECORATIVE PROCESSES

material, such as glass, the metal is merely bent over. This technique is early, and soon died out. It is found on Mycenaean bronze rings and on Geometric pins.

### GILDING

Two processes were used in antiquity.

(1) Gold leaf was attached to a base with an adhesive. This process was used over metal and terracotta.

(2) From Roman times onwards another process, amalgamation, was used for gilding bronze and silver. Powdered gold is kneaded with an equal weight of mercury in a mortar. The amalgam is spread over the metal and the mercury is vaporized.

### SILVER-PLATING

The process is similar to gold-plating.

## CHAPTER 4

# Joining and Finishing

### I. JOINING

**A**FTER THE BASIC and decorative work is finished, there is still much to be done. The various components must be joined together, for few articles of jewellery are made in one piece, and tool-marks and other blemishes obliterated.

#### MECHANICAL

Although soldering was the principal means of attaching the various components of a piece of jewellery, mechanical methods were occasionally used, especially at times and in places where the more difficult processes of soldering were not regularly employed.

#### FOLDING

In Middle Minoan times the back and front of a piece of jewellery were occasionally attached by folding the one with the other (see pl. 4B). It is possible that on occasions the joint was strengthened by burnishing.

#### RIVETING

This clumsy process was seldom used for jewellery, but is occasionally found in Early Etruscan pieces.

#### ATTACHMENT BY WIRES OR RIBBONS

A primitive process used in the Middle Minoan period (see pl. 4B) and occasionally later.

#### SOLDERING

Soldering is a method of joining two pieces of metal by running between them a molten metal or alloy (the solder) whose melting-point is lower than that of the metal to be joined.

Solders are classified as *hard* or *soft*. Hard solders require more heat than soft, but make a stronger joint. So far as ancient jewellery is concerned, soft solder (a mixture of lead and tin) may be ignored. It is used today for none but the cheapest jewellery, and there is no evidence that it was used at all in antiquity for jewellery, although the Romans are known to have used it on silver vessels.

The ancient goldsmith had at his disposal two entirely different methods of hard-soldering. *Colloid hard-soldering*, which has already been considered, was not regularly used for major joints, because it does not make a strong enough bond for the attachment of anything but decorative elements.

For major joints the craftsman of Classical antiquity used *normal hard-soldering*. At first he probably used a piece of naturally alloyed gold whose melting-point was found by experience to be lower than that of the gold to be joined. Later, a piece taken from the gold to be joined was alloyed with silver, copper, or a mixture of silver and copper, to lower its melting-point. Pliny recommends six parts of gold to one of silver, which gives a melting-point of  $970^{\circ}$  C. as against  $1,063^{\circ}$  for pure gold.<sup>1</sup> Alternatively, pure silver, whose melting-point is  $961^{\circ}$  C., could be used for soldering gold; but its use, though occasionally found, was not common because of the very noticeable joint. For soldering silver, an alloy of silver and copper was used; Theophilus recommends two parts of silver to one of copper.<sup>2</sup>

But all metals except absolutely pure gold oxidize when they are heated, and oxide prevents the solder from flowing over the joint. It is therefore essential to prevent oxidization during heating and to dissolve any existing oxides. The material used for this purpose is known as a *flux* because it enables the solder to flow where it is required. Today borax is used in hard-soldering. There is some disagreement whether it was used in antiquity, but the general view is that it was not. Theophilus recommends the burnt lees of wine, which would produce an effective flux composed of bi-tartrate of potash, or cream of tartar.<sup>3</sup> Natron, which is known to have been used for many purposes, could also have been used.

To effect a join, the surfaces are coated with flux, and chips of solder are placed between them. The work is then secured with wire and placed in a crucible over a charcoal fire. The heat of the fire is

<sup>1</sup> XXXIII, 29 and 30.

<sup>2</sup> III, 31.

<sup>3</sup> III, 73.



## JOINING

intensified by a blowpipe or bellows, and when the correct temperature is reached the solder melts and runs into the joint. The work is immediately removed from the fire and allowed to cool; or it is over-fired (i.e. heated still further for a short time) and is then removed. The higher the temperature to which the work is raised, short of melting it, the stronger will be the joint, for the solder will penetrate further into the adjacent surfaces.

When the work has cooled the solder will have set and the joint is made. Nothing remains but to remove the binding-wire, to clean off any remaining flux and to remove blemishes. The removal of flux is today effected by 'pickling' in an acid solution; in antiquity it was done mechanically by scraping.

Hard-soldering of gold and silver was known in Mesopotamia from the third millennium B.C.<sup>1</sup> In Classical antiquity it is first found in Minoan jewellery of about 2000 B.C. and, apart from the hiatus of the Dark Ages, was regularly practised in Classical lands thereafter.

## WELDING

Under this term are comprised three distinct processes.

(1) *Pressure-welding*. A method of joining metal by pressure alone. Gold is the only metal which reacts in this way when cold. Although pressure-welding has been but rarely identified, it may have been practised to some extent in the early periods. Its presence is always hard to detect without damage to the jewellery.

(2) *Sweating-together* or *surface-welding*. The two elements are heated to a point somewhat below melting-point, when they become tacky at the surface, and are brought together. The opposing surfaces interpenetrate one another to a slight degree and adhere on cooling. This process is unlikely to have been employed in antiquity because of the difficulty of reaching the exact temperature with the primitive apparatus in use. If the temperature is a little too low, the joint will not adhere; a little too high, and the work melts.

(3) *Fusion-welding* or *autogenous welding*. The surfaces to be joined are actually melted and run together with the possible addition of more molten metal of the same kind to reinforce the joint. This method was used in antiquity with bronze and iron, but is quite unsuitable for fine work in gold or silver, and cannot have been used in ancient jewellery.

<sup>1</sup> *History of Technology*, i, 652.

## JOINING AND FINISHING

Sweating and fusion-welding have both been claimed in ancient jewellery because of the apparent absence, in certain joints, of solder, which would be expected to differ in colour. Since, however, there are good grounds for holding that neither process could have been used, this phenomenon must be explained in some other way. There are four possibilities:

(1) Over-firing, or soldering at a very high temperature, a treatment which causes the solder to penetrate deeply into the adjacent gold and to alloy with it, thus producing an overall homogeneity of colour.

(2) The use of a solder close in composition to the work to be joined, so that the difference in colour would be negligible.

(3) Surface enrichment. When an object of gold-alloy has been buried for some time, the action of the soil tends to dissolve out the alloying metals from the surface, leaving only the gold. In a soldered gold object the solder would eventually be changed into pure, or nearly pure, gold, and its presence would thus be undetectable.

(4) The use of colloid hard-soldering.

## 2. FINISHING

### STRENGTHENING

Closed shapes made from two pieces of sheet metal soldered together were frequently filled with some other substance to give them solidity and weight. Magnetite sand was used in Mycenaean times as a filling for gold pendant ornaments;<sup>1</sup> pitch was used in Hellenistic hoop-earrings.<sup>2</sup> Wax, earth and (apparently) resin are mentioned as fillings in Hellenistic temple-inventories.<sup>3</sup>

### POLISHING

The worst irregularities in the metal are removed by filing. The marks of the file are then removed by abrasives such as sand or emery working on soft wheels. The abrasives used are increasingly fine until an almost completely smooth surface is attained. The final polish is given by rubbing with burnishing-stones. Agate is much used today for this purpose, and could well have been so used in antiquity.

<sup>1</sup> Persson, *New Tombs*, 198. Wace, *Chamber Tombs*, 27.

<sup>2</sup> Observed by the writer. <sup>3</sup> *BMCJ*, p. xxxvii. *BCH* vi (1882), 120.

## Materials other than Gold and Silver

SOME MENTION HAS already been made of the use of materials other than gold or silver. In this chapter the use of such other materials, whether independently or in association with precious metals, will be considered in greater detail.

### I. STONES AND RELATED MATERIALS

Stones and similar natural objects served two principal purposes in ancient jewellery. (1) They were used in direct association with gold or silver as inlay, as ring-stones, or as beads or pendants attached to metal jewellery. (2) They formed independent articles of adornment, such as beads and pendants, finger-rings or bracelets. In the Bronze Age, and occasionally later, bead-seals and signets are specialized examples of the latter category, while in Hellenistic and Roman times, engraved ring-stones served the same purpose.

In Greek and Roman times, and probably also in the Bronze Age, stones were used as much for their magical as for their decorative qualities. It appears that each stone had its own peculiar powers.<sup>1</sup>

In the Bronze Age, stones were used principally for beads and pendants, bead-seals, signets and pin-heads, and for inlay. Finger-rings were occasionally made completely of stone, and one example of an engraved ring-bezel is known. Favourite stones are rock-crystal, amethyst, cornelian, chalcedony, agate (for seals), jasper (chiefly for seals) and lapis lazuli. Inferior beads and seals were made of steatite.

In the Orientalizing period, 800–600 B.C., hard stones were again used for beads and as inlay. Amber and rock-crystal were popular. In the

<sup>1</sup> Kenna, V. E. G. *Cretan Seals* (Oxford, 1960), 46, n. 8. Richter, G. M. A. *Catalogue of Engraved Gems in the Metropolitan Museum* (New York, 1956), pp. xix f.

## MATERIALS OTHER THAN GOLD AND SILVER

Archaic and Classical periods, 600–330 B.C., stones were scarcely ever inlaid in jewellery and are altogether rare, except as seals, for which cornelian, agate, and chalcedony were principally used. In Etruria, between 800 and 330 B.C., the same is roughly true.

In the Hellenistic period, garnets and cornelians were especially popular for decorating jewellery. From about 200 B.C. pearls and plasma became popular and emerald was occasionally used. An Early Hellenistic bracelet of rock-crystal is known.

In the Roman period the same stones were used as in the Late Hellenistic, and in addition the hardest stones, diamonds, sapphires, aquamarines and topazes, are found. Nicolo was especially popular for ring-bezels. Turquoises were occasionally used. Complete finger-rings of cornelian and chalcedony are also found.

There follows a list of the stones principally used in ancient jewellery. The hardness indicated is that of the Mohs scale.<sup>1</sup>

### AGATE

The ancient *achates*. A variegated chalcedony, found in layers, frequently with inclusions. The layers vary in opacity and in colour. They are opaque or translucent, white, grey, blue, brown, yellow or red. When the layers have irregular outlines, the simple item *agate* is used. Where there are moss-like inclusions the term is *moss-agate*. Where the layers are regular, and the stone is cut transversely, it is called *banded agate*. When the same stone is cut horizontally, as in the cutting of cameos, it is known as *onyx* or (if one layer is sard) *sardonyx*. *Nicolo* is a variety of onyx where one layer is black or dark brown and the other bluish-white. Most periods, chiefly seal-stones.

### AMBER

The ancient *electrum*. A reddish-yellow translucent fossilized resin. Hardness 2–2½. From the Baltic. Most periods.

### AMETHYST

The ancient *amethystus*. A violet-coloured transparent *quartz*. Most periods.

<sup>1</sup> McLintock, W. F. P., and Sabine, P. A. *Guide to the Collection of Gemstones in the Geological Museum*<sup>3</sup> (London, 1951), 1–3.

## STONES AND RELATED MATERIALS

### AQUAMARINE

The ancient *beryllus*. A greenish or bluish variety of *beryl*. Roman (rare).

### BERYL

A double silicate of beryllium and aluminium. Transparent. Two forms: *emerald* and *aquamarine*. Hardness 8.

### CHALCEDONIC SILICA (OR CHALCEDONY: see below)

A microcrystalline or cryptocrystalline silica (dioxide of silicon). Translucent. Hardness  $6\frac{1}{2}$ . The term includes *chalcedony* proper, *agate*, *cornelian* and *sard*, *plasma* and *heliotrope*.

### CHALCEDONY

A term used generally for all chalcedonic silicas, and specifically for one variety, the ancient *jaspis*; smoky, milky-white, yellowish or bluish in colour. Popular in most periods for seals, rare in jewellery.

### CHRYSOLITE (OR PERIDOT)

The ancient *topazon* or *chrysolithus*. A silicate of magnesium and iron. Yellowish-green, transparent to translucent. Hardness  $6\frac{1}{2}$ –7. Roman (rare).

### CORNELIAN (OR SARD)

The ancient *sardius*. A reddish or yellowish *chalcedony*. Most periods. Some authorities use the term *cornelian* for the yellow varieties, *sard* for the red, but the distinction is frequently hard to draw, and here the term *cornelian* is used for both varieties.

### DIAMOND

The ancient *adamas*. A form of carbon. Colourless and transparent. Hardness 10. Roman (rare).

### EMERALD

The ancient *smaragdus*. A green variety of *beryl*. Late Hellenistic and Roman (rare). The term *smaragdus* almost certainly included *plasma*.

## MATERIALS OTHER THAN GOLD AND SILVER

### GARNET

The ancient *anthrax*, *carbunculus*. A group of closely related transparent stones, silicates of various minerals. The varieties used in Classical antiquity are either reddish-brown or purplish-red. The exact composition of a stone can only be determined by analysis. Hardness  $6\frac{1}{2}$ – $7\frac{1}{2}$ . Probably from Asia Minor. Hellenistic and Roman.

### JASPER

A *quartz*, impregnated with much impurity, chiefly clay and oxide of iron. Opaque, with vivid colours, especially black, red, green and yellow. Rare in jewellery, but used for seal-stones, especially Minoan and Roman.

### LAPIS LAZULI

The ancient *cyanus*, *sapphirus* (?). A silicate of sodium, lime and aluminium with some sodium sulphide. Deep blue, with spots of pyrites and white inclusions. Opaque. Hardness 6. From Afghanistan. Chiefly Minoan and Mycenaean, but also used for inferior Roman seals.

### PEARL

The ancient *margarita*. Hardness  $2\frac{1}{2}$ – $3\frac{1}{2}$ . Late Hellenistic and Roman.

### PLASMA

The ancient *prasius* and also probably *smaragdus*. A green *chalcedony* with white or yellowish spots. Chiefly Hellenistic and Roman.

### QUARTZ

A crystalline silica (dioxide of silicon). Hardness 7. Many varieties. (1) Transparent: *rock-crystal*, *amethyst*. (2) Opaque: *jasper*.

### ROCK-CRYSTAL

The ancient *crystallus*. A transparent colourless *quartz*. Most periods.

### SAPPHIRE

The ancient name is not known. A transparent blue corundum, sesquioxide of aluminium. Hardness 9. Roman.

## GLASS

### SARD

See *Cornelian*.

### SARDONYX

A variety of *agate*. Chiefly used for seals. Greek, Etruscan and Roman.

### STEATITE (OR AGALMATOLITE, OR SOAPSTONE)

The ancient *steatitis*. A massive variety of talc, hydrated silicate of magnesium. Opaque; greasy to the touch. White and pale colours: grey, blue, yellow, brown, green. Hardness 1. Chiefly used for seal-stones.

### TOPAZ

The ancient *topazon*, or *chrysolithus* (?). Silicate of aluminium containing fluorine and hydroxyl. Yellow; transparent. Hardness 8. Rare. Hellenistic and Roman.

### TURQUOISE

The ancient *callais* (?). Phosphate of aluminium containing copper. Pale blue; opaque. Hardness 6. From Persia and Sinai. Roman (rare).

## 2. IVORY AND BONE

Ivory and bone were used for pins at all periods, for seals in the Middle Minoan, and for seals, beads and brooches in the Orientalizing period.<sup>1</sup>

## 3. GLASS

Ancient glass is a compound of silica, lime and soda in the proportions: silica 57-72 per cent.; lime 3-10 per cent.; soda 9-21 per cent. It is best considered in two parts; first for the Mycenaean period, secondly for all subsequent periods.

### MYCENAEAN

The glass used in Mycenaean jewellery falls into three categories:

<sup>1</sup> Xanthoudides, *passim*. Dawkins, *Artemis Orthia*, 203-48.

(1) beads (including occasional seals), (2) plaques and pendants and (3) inlay. Enamel, which might be considered a fourth category, has already been discussed on pp. 23 ff.

(1) *Beads*. Glass beads first appear in the sixteenth century B.C., in Crete, and continue until the end of the Bronze Age. They were mostly spherical or elongated in shape, but tubular, multitubular, disc-shaped, club-shaped, lentoid and other forms are also known. The colours are frequently unidentifiable, owing to the extent to which glass decays in damp ground, but blue, greyish-black, white and yellow were popular, either alone or in combination. A number of glass beads from the beginning of this period are so like contemporary Egyptian beads – in particular certain multitubular and eyed varieties – that they must be either Egyptian imports or local imitations. It is therefore highly probable that the art of making glass beads was learnt from Egypt. A factory for making, *inter alia*, beads of this nature was discovered in the Palace at Thebes, which was destroyed about 1400 B.C.<sup>1</sup> Some beads were no doubt moulded; others were cut from canes.<sup>2</sup>

(2) *Plaques and pendants*. Moulded plaques and pendants are first found in Mycenaean tombs of the second half of the fifteenth century B.C., and they continued in use until about 1100. They take the form either of square plaques with figures and patterns in low relief or of relief-beads. All are perforated for suspension or for attachment. The plaques have floral and marine motives, sphinxes, genii and the like, and were apparently sewn to clothing. The beads are the exact doubles of the gold ornaments described on pp. 75 ff. and like them were worn, strung together, round the neck or the wrist.

The colours are dark blue and, less commonly, pale greenish-blue, in imitation of lapis lazuli and turquoise respectively. The colouring agent for the dark blue was cobalt; for the greenish-blue, copper.<sup>3</sup> The pendant ornaments, especially in the later periods, were sometimes covered with gold foil, to imitate closely the more precious pendants of sheet-gold. The effect aimed at so frequently in the Bronze Age was a polychromy of gold and other colours.

Ornaments of this class were cast in steatite moulds, of which a fair

<sup>1</sup> *AE* 1930, 29.

<sup>2</sup> Blegen, *Prosymna*, 301, n. 1.

<sup>3</sup> Persson, *Royal Tombs*, 135. Tests in the British Museum Laboratory revealed the presence of copper and cobalt in the dark blue glass and of copper only in the pale greenish-blue.



number have been discovered, at Mycenae, Knossos, and elsewhere.<sup>1</sup> The suspension-holes for the pendants were frequently made by inserting a pin into a specially cut channel in the mould; when the glass had cooled, the pin was removed, leaving a hole. The presence of these channels is sufficient evidence that the moulds were used for glass. Their absence is no evidence to the contrary, since the finished product could always be drilled.

The ornaments were usually made in open moulds, and have flat backs. Certain types of pendant, however, have modelled backs, and were made in double moulds, of which one example (from Palaecastro) survives. These moulds were equipped with a pour-hole, and were keyed together with pins.

Ornaments of this nature are not found in Greek lands until about a century after the first appearance of glass beads; unlike the beads, they do not seem to have Egyptian prototypes. Their origins are, in fact, probably to be found in Syria, where moulded plaques of the same general type may go back to the beginning of the second millennium B.C.<sup>2</sup>

(3) *Inlay*. Glass was used for inlay from the fifteenth century B.C. The colours were those of the plaques and pendants, dark blue and pale greenish-blue.

#### POST-MYCENAEAN

After the Bronze Age, glass was used less for plaques and pendants, more for other purposes, in particular for beads and seal-stones. All conceivable colours are now found, and, in Roman times, all possible degrees of density, ranging from complete transparency to complete opacity.

<sup>1</sup> Knossos. (1) Evans, *Palace*, i, fig. 349. (2) *Arch. Rep.* 1956, 22 (Heraclion Mus. 2540). (3) *BSA* li (1956), pl. 12e. (4) Unpub. Oxford, 1910. 522.

Palaecastro. *BSA Suppl.* i, 150 (two-piece).

Mycenae. (1) Schliemann, H. *Mycenae* (London, 1878), fig. 163 = *AE* 1897, pl. 7: 2. (2) Schliemann, *op. cit.*, fig. 162. (3) *AE* 1897, pl. 7:1. (4) *ibid.*, 98.

Chios. *Archaeology*, viii (1955), 246, fig. 3 = *JHS* lxxv (1955), *Suppl.*, pl. 2b. Asia Minor. Furtwängler, A., and Loeschke, G. *Mykenische Vasen* (Berlin, 1886), fig. 20.

No prov. (1) Richter, *Met. Mus. Gk. Coll.*, pl. 9 (top right). (2) *ibid.*, pl. 8i.

<sup>2</sup> (1) Corning Museum of Glass, *Glass from the Ancient World*. R. W. Smith Collection (New York, 1957), 16 and 31, no. 25. (2) Forbes, R. J. *Studies in Ancient Technology*, v (Leiden, 1957), 144. (3) *History of Technology*, ii, 319, fig. 296.

(1) *Beads*. Glass beads are found in Geometric times and continued in use beyond the limits of this survey.

(2) *Seals*. From the sixth century onwards casts were taken in glass of engraved gems and used as cheap substitutes for precious stones. Clay moulds for the manufacture of such casts are known.<sup>1</sup> In Roman times glass seals are particularly common, a variety imitating banded agate being especially popular.

(3) *Amulets*. In Ptolemaic and Roman Egypt amulets and other ornaments of glass were popular. A factory of Ptolemaic date contained moulds of clay for such fine work, and of limestone for larger work, not jewellery.<sup>2</sup>

(4) *Fibulae*. A number of Early Etruscan fibulae have attachments of sand-core glass.<sup>3</sup>

(5) *Inlay and bezel-setting*. This use of glass is found in Greek and Etruscan Orientalizing, in Hellenistic and in Roman jewellery, and is described above (see p. 28).

#### 4. FAIENCE AND FRIT

Faience (also known as *glazed composition*, or *glazed frit-ware*) consists of a body of powdered quartz covered with a layer of glaze. Glazes were of many colours but commonly green or greenish-blue. The body is composed of 94–99 per cent quartz sand, 0–1 per cent soda (natron) and 2 per cent lime. The glaze is a soda-lime glass. Frit is a double silicate of lime and copper lightly fired and powdery blue in colour. Unlike faience, it is homogeneous throughout, and is composed of 10–14 per cent lime, 2–7 per cent soda (natron), 60–70 per cent quartz sand and 20 per cent copper.

Apart from these differences in composition, faience and frit are very similar in appearance and in function, and are best considered together. Objects of these materials, chiefly beads and amulets, were made for the most part in clay moulds, but beads were apparently sometimes modelled freehand.

Coloured and white faience beads are found in Crete as early as

<sup>1</sup> *BMC Terracottas* (1903), E 100 ff.

<sup>2</sup> Petrie, W. M. F. *Nebesheh and Defenneh* (London, 1888), 42.

<sup>3</sup> Richter, *Etruscan Coll.*, fig. 15. *Jahrb. d. römisch-germanischen Zentralmuseums, Mainz*, vi (1959), 57 ff.

## BASE METALS

1800 B.C. and are almost certainly of local manufacture.<sup>1</sup> From about 1500 B.C. the industry appears to have been established on the Greek Mainland.

These materials reappear for a short time on Greek and Etruscan sites in the seventh century B.C., in the form of beads, scarabs and amulets. One centre of manufacture would appear to be Naucratis, where clay moulds for scarabs of this type have been found.<sup>2</sup> The Phoenician homeland and Phoenician settlements on Greek sites, in particular Rhodes, have also been plausibly suggested.<sup>3</sup> The fashion for ornaments of this material in Greece and Etruria did not outlast the sixth century B.C.

## 5. TERRACOTTA

Gilt terracotta was occasionally used for imitation jewellery, especially in the fourth and third centuries B.C.<sup>4</sup>

## 6. BASE METALS

### IRON

Iron was used (probably for magical purposes) in Minoan and Mycenaean rings;<sup>5</sup> for pins and finger-rings in the Dark Ages, and occasionally for Roman rings. It also served as a basis for gold-plating.

### BRONZE

Apart from its regular use for pins and fibulae, bronze was used for finger-rings, earrings and occasionally beads, and served as a basis for gold-plating, gilding and silver-plating.

### LEAD

Cheap imitations of jewellery were cast from lead, probably in large quantities, but owing to their perishable nature, few survive.

<sup>1</sup> Evans, *Palace*, i, 486 ff.

<sup>2</sup> *Naucratis*, i, 36.

<sup>3</sup> Dunbabin, T. J. *The Greeks and their Eastern Neighbours* (London, 1957), 49.

<sup>4</sup> *AE* 1937, pt. 3 (published 1956), 892. *BMCJ*, pl. 42.

<sup>5</sup> Persson, *Royal Tombs*, 56 f.



## Part II Historical

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## CHAPTER 6

# Greece and the Islands

2500—1600 B.C.

### 1. EARLY HELLADIC AND EARLY CYCLADIC, 2500—1900

#### *Introduction*

**I**N THEIR EARLY phases, the principal Bronze Age cultures of the Aegean were closely related. Those of the Cyclades and Mainland Greece (the Early Cycladic and Early Helladic) were, however, closer to each other than to that of Crete (the Early Minoan), and it will be best to consider first the jewellery of the Cyclades and the Mainland, and to reserve that of Crete for separate treatment.

Little is known of the origins of the two cultures under review, but it seems probable that about 2800 B.C. the Cyclades were settled (many of them for the first time) by immigrants from Anatolia, who brought with them a Bronze Age civilization of a high order. Some of these people soon moved on to settle on the Greek Mainland, where they mingled with the Neolithic inhabitants to found the Early Helladic culture.

These cultures were in close contact with Anatolia and in intermittent contact with Crete. About 1900 B.C., when both cultures had reached a remarkably high level, they ended; the Early Helladic as a result of invasion and wholesale destruction, the Early Cycladic apparently as a result of annexation from Crete.

The inspiration for Early Helladic and Early Cycladic jewellery came chiefly from Western Anatolia. To the so-called Troadic culture of this region belong the rich hoards of jewellery from the destruction-layers of Troy II (about 2200 B.C.) and the contemporary destruction-layers of Poliochni on Lesbos. This jewellery, which appears to be

partly of native Anatolian and partly of Mesopotamian origin, reached the Greek world in a somewhat watered-down form. The familiar shapes were perpetuated, but the techniques were more primitive. Nothing is found more advanced than wire-work, elementary repoussé and casting; filigree and granulation, although used at Troy, were unknown in Greece and the Islands.

The surviving Early Helladic material is restricted to three sources; poor tombs at Zygouries, between Corinth and Mycenae; fairly prosperous tombs on Leucas; and a rich collection (formerly in Berlin), alleged to come from the Thyreatis, on the borders of Argolis and Laconia. The Thyreatis jewellery gives some idea of the possessions of the aristocrats who inhabited the palaces at Tiryns and Lerna.

The Early Cycladic material, so far as precious metal is concerned, is restricted to Amorgos, where it was fairly plentiful; and to Chalandriani (on Syros) and Naxos, where it was rare. Pendants of stone and pins of bronze were, however, very common in the Cyclades.

### *The Jewellery*

#### DIADEMS

Silver diadems decorated with figures in dot-repoussé come from Chalandriani and Zygouries; they seem to be local imitations of a common Minoan type (see fig. 6). Another type, also of silver, with the top cut in a zigzag pattern, comes from a tomb on Amorgos.

#### HAIR SPIRALS

Spirals of wire were common as hair-ornaments in Western Asia,<sup>1</sup> and are found in tombs on Leucas.

#### EARRINGS

Tapered hoops come from tombs on Leucas; they are presumably derived from Anatolia, since similar earrings occur in Troy II.<sup>2</sup>

At Zygouries one earring was found in Tomb 7 (2000-1900 B.C.) and one in Tomb 20. The former is a wedge-shaped sheet of gold hanging from a silver hoop, which was evidently inserted in the lobe;

<sup>1</sup> e.g. Woolley, *Ur Excavations*, ii, pls. 144 and 154. Schmidt, *Beil. I*, nos. 6014-15.

<sup>2</sup> Schmidt, 245, no. 6126.



## EARLY HELLADIC AND EARLY CYCLADIC

the latter is a gold disc with a loop at the top and a square hole in the centre. The presence of two singleton earrings suggests that they may have been worn singly by the Early Helladic people.

### BEADS

Spherical and biconical beads come from Leucas; the latter have analogies in Troy II, Ur and Brak.<sup>1</sup> Silver barrel-beads, fluted diagonally, come from a tomb at Amorgos; a type which is echoed in a pin-head from Alaja Hüyük, of about 2200 B.C.<sup>2</sup>

From Thyreatis come a number of beads and pendants (pl. 1).

1. Barrel or biconical beads (at the ends of the necklace).
2. Beads composed of concentric hoops of wire with eyes at two opposing points on the circumference, to allow for a cord. From some of these hang a chain, at the bottom of which is a wedge-shaped pendant, possibly representing an axe-head. The hoops are represented in Troy II,<sup>3</sup> and evidently reached Greece from that quarter. If we date Troy II about 2200 B.C., that will be the approximate date of these beads. The wedge-shaped pendant also occurs in Crete (see p. 62).
3. A cylinder surrounded by a wire cage. This type is unique, but has some affinity with the cage on the Mallia jewel (pl. 3A).
4. An elaborate ornament made by crossing two spectacle-spiral tubes of the kind discussed on p. 62. This composite type has not been recorded elsewhere but is surely, like the single variety, of Anatolian origin. A similar pattern is found on a vase-cover from Troy, which cannot be dated closer than Troy II-V.<sup>4</sup>
5. A pendant in the shape of an axe-head.
6. A somewhat similar pendant, but instead of an axe-blade a pair of testicles or perhaps the body of an insect is represented. Similar pendants in stone come from Early Cycladic tombs on Paros.

### BRACELETS

A spiral of silver wire, round in section and thickened at the ends, comes from Leucas. Similar ones come from Troy II (about 2200) and

<sup>1</sup> Schmidt, 236, no. 5955; 238, nos. 6000 and 6001. *Iraq*, ix (1947), pl. 35. Woolley, *Ur Excavations*, ii, pls. 131-5.

<sup>2</sup> *Aegean and Near East*, pl. 2, no. 146.

<sup>3</sup> Schmidt, 236, no. 5952.

<sup>4</sup> Schmidt, 117, no. 2360.

Brak (about 2100).<sup>1</sup> Also from Leucas, and also paralleled in Troy II,<sup>2</sup> is a spiral of silver wire, square in section, and twisted.

## PINS

Pins have been found in large quantities in Early Cycladic burials, and a few come from the Mainland. From the discovery of a pin on the shoulder of a skeleton at Chalandriani, it has been established that some at least were used to secure the dress on the shoulders. In five tombs in the same cemetery pins were found in pairs, a fact which strongly suggests that they served the same purpose.<sup>3</sup>

The pins were usually of bronze or bone, and only occasionally of precious metals, but all kinds may with advantage be considered here. The affinities of all of them are with Anatolia; the typical Syrian pins, incorporating an eye about half-way down the shank,<sup>4</sup> are not represented.

1. With a spherical head. In silver, from Chalandriani. In bronze, from Chalandriani; Zygouries, House D; Asine. The type is found in Troy II and III.<sup>5</sup> A variety in silver with projections from the sphere comes from Naxos (unpublished, in Athens).

2. With a conical or pyramidal head. In bronze, from Chalandriani (fig. 5e); Zygouries, House A; and Asine. The type is found in Troy II-V.<sup>6</sup>

3. With a hemispherical head. In bronze, from Zygouries, Tomb 20.

4. With a double-spiral head. In silver, from Zygouries, Tomb 20. In bronze, from Naxos (unpublished) and Chalandriani (fig. 5b). This is a widespread Middle Eastern type, represented at Troy II (about 2200); Alaja Hüyük (about 2200); Tarsus (1900-1650); and Tepe Hissar.<sup>7</sup>

5. With a cage-like head. In bronze, from Chalandriani (fig. 5d). The type is found in Troy III.<sup>8</sup>

<sup>1</sup> Schmidt, Beil. II, nos. 5941, 6044. *Iraq*, ix (1947), pls. 33 and 36.

<sup>2</sup> Schmidt, Beil. II, nos. 5942, 6131.

<sup>3</sup> Jacobsthal, *Pins*, 93.

<sup>4</sup> Schaeffer, C. F. A. *Stratigraphie Comparée* (Oxford, 1948), passim.

<sup>5</sup> *Troy*, i, fig. 357, no. 37-522. *Troy*, ii, fig. 47.

<sup>6</sup> Schmidt, 252 f. *Troy*, i, fig. 358. *Troy*, ii, figs. 47 and 234.

<sup>7</sup> Schmidt, 254, nos. 6399-6402, *Aegean and Near East*, pl. 2, no. 14a. Goldman, H. *Tarsus*, ii (Princeton, 1956), fig. 431, no. 207. Ehrlich, R. W. (ed.), *Relative Chronologies* (Chicago, 1954), 91 f. *Liverpool Annals*, xxiii (1936), 118. Jacobsthal, *Pins*, 126.

<sup>8</sup> *Troy*, ii, 91, fig. 47, no. 37-739.

EARLY HELLADIC AND EARLY CYCLADIC

6. With a head in the form of a jug. In silver, from Chalandriani (fig. 5c). A gold miniature jug in the Thyreatis Treasure (pl. 1) looks as if it once formed the head of a similar pin. Jug-headed pins come from Troy II.<sup>1</sup>



FIG. 5. *Early Cycladic pins from Chal-andriani, Syros. a, bone. b, d, e, bronze. c, silver*

7. With a head in the form of a goat on a platform. In silver, from Amorgos. Compare the later gold pin from Mycenae (p. 86). Pins of this type are probably Western Asiatic in inspiration if not in manufacture.<sup>2</sup>

8. With a head in the form of a bull's head. In gold, from Thyreatis (pl. 1). The closest parallel to this charming pin comes, surprisingly enough, from Chagar Bazar, and is dated about 2900 B.C.<sup>3</sup>

9. With a head in the form of a bird. In bone, from Chalandriani (fig. 5a). The type is found in bronze at Thermi I, and at Alishar (1900-1600 B.C.).<sup>4</sup>

<sup>1</sup> Schmidt, *Beil.* II, no. 6133.

<sup>2</sup> Evans, A. J. *Shaft Graves and Beehive Tombs of Mycenae* (London, 1929), 43 ff.

<sup>3</sup> *Iraq*, ix (1947), pl. 42: 8.

<sup>4</sup> See Jacobsthal, *Pins*, 63.

## 2. MIDDLE HELLADIC, 1900-1600

*Introduction*

Since Cycladic jewellery of this period is yet to be discovered, this section will be concerned only with the Middle Helladic culture.

On the extinction of the Early Helladic culture about 1900 B.C., Greece was plunged into some three centuries of poverty, which lasted until contacts with Crete and the civilized East were renewed, about 1600 B.C. Although, in terms of pottery, the Middle Helladic period still had some fifty years to run, in terms of culture it may be said to have ended with the renewal of Cretan contacts.

As might be expected, Middle Helladic jewellery is extremely rare, and what has survived is seldom of precious metals.

*The Jewellery*

## RINGS AND SPIRALS

Rings and spirals for the adornment of the hair, and hoop-earrings, are found in gold, silver, gold-plated bronze, and bronze. It is not always possible to decide the function of a particular piece, but it is probable that both articles are represented amongst surviving jewellery. The tombs in which they have been found are Sesklo, Tombs 25 and 28; Zygouries, Tomb 1; Prosymna, Graves 17 and 18; Asine, Tomb MH 98; Drachmani in Phocis; and unpublished tombs at Eleusis.

## BEADS

Simple shapes are found in bronze, crystal, cornelian, steatite and faience.

## PINS

Bronze pins with biconical heads occur at Corinth, Tomb 374, and Sesklo, Tomb 25; and a bronze bird-headed pin comes from a Middle Helladic level at Lerna.

Three bone pins from Gonia (Grave 7) were definitely hair-pins, since they were found behind the skull of what was probably a female skeleton. Similar pins from Lerna doubtless served the same purpose.

## CHAPTER 7

# Early Minoan 2500–2000 B.C.

### INTRODUCTION

**T**HE EARLY MINOAN culture is believed to have been introduced into Crete about 2800 B.C. by immigrants from Anatolia, or perhaps Syria. The main centres of civilization were in Eastern Crete; our chief source is the island of Mochlos, which has produced evidence of fruitful contacts with Egypt and Western Asia.

The period ended peacefully about 2000, with the shift of power and wealth to the new cities of the centre and south, and the consequent decline of East Crete.

Gold jewellery is plentiful at Mochlos, and is also found, but less frequently, in the tombs of the Messara. The contrast between the richness of Mochlos and the poverty of the Messara at this date may be explained to a certain extent by the difference in funeral customs: at Mochlos, previous interments were not robbed of their valuables; in the Messara they were. But there are other reasons for believing that East Crete was rich than the Messara.

The jewellery consists principally of diadems, hair-ornaments, beads and pendants, bracelets and clothing-ornaments. Dress-pins, so common in the Cyclades and on the Mainland, are notably absent. The techniques are elementary, but they are used skilfully and with great success. The basic materials are sheet metal, cut into shapes and occasionally decorated with patterns of dot-repoussé; wire and chains. The chains are both simple and loop-in-loop (see p. 14). Gold foil was also used as a covering for objects of other material; it was decorated more elaborately than the sheet-gold, being considerably easier to work.

The antecedents of the Early Minoan style go back ultimately to Mesopotamia, for the best parallels are to be found in the jewellery from Ur, of about 2500 B.C., and will be mentioned in detail below. The

same types recur at Tell Asmar in a deposit of about 2300–2200.<sup>1</sup> Syria must have been the route by which Mesopotamian influences reached Crete; and jewellery from Brak of about 2200–2100 is in fact very like that from Tel Asmar.<sup>2</sup> Syria was from earliest times influenced by Mesopotamian art, but we may imagine this influence to have been intensified by Sargon's conquests of about 2300 B.C.

In view of the strong Egyptian influence in other fields of Early Minoan art, it might be expected in jewellery also, but no trace of it is to be seen. It is, however, perfectly possible that the gold itself reached Crete from Egypt, which controlled the rich Nubian mines. The rarity of contacts with Anatolia would appear to exclude Anatolian gold.

## THE JEWELLERY

Unless otherwise stated, the pieces described below come from Mochlos. Objects from the tombs of the Messara, which came into use in this period and continued into the next, are in general included only when their early date is guaranteed by resemblances to the jewellery from Mochlos. Most extant EM jewellery is in Heraclion.

### DIADEMS

Diadems are found in Tombs 2 and 19, cut from sheet-gold, and decorated in dot-repoussé with simple patterns or figured scenes (fig. 6). Although found in tombs, they were evidently made in the first place



FIG. 6. *EM diadem from Mochlos. 2200–2000 B.C.*

to be worn by the living, for a number showed distinct signs of use. They measure between 20 and 30 cm. in length, by about 3 cm. in height. The original home of these diadems is in Mesopotamia, for a comparable piece comes from Ur and is dated about 2500.<sup>3</sup> Similar diadems in silver come from the Cyclades and the Greek Mainland (see p. 50). A rather more complicated diadem with attached leaves comes from Lebena and probably dates from 2000–1900 B.C.

<sup>1</sup> See *Iraq*, xxii (1960), 105 ff. for a recent study of the jewellery from Ur; *Oriental Institute Communications*, xvii (Chicago, 1934), fig. 29, for that from Tell Asmar.

<sup>2</sup> *Iraq*, ix (1947), pls. 32 ff.

<sup>3</sup> Woolley, *Ur Excavations*, ii, pl. 139.

## HAIR-SPIRALS

Hair-spirals are not certainly attested, but possible examples in silver and bronze are known from Kavousi. The silver ones could, however, equally well have been earrings.

## HAIR-PINS

Exquisite hair-pins in the form of a crocus, a daisy or a spray of leaves were found in Tombs 2, 3 and 19 (see pl. 2A and B). They are made very simply from sheet-gold and wire, but are most attractive.

## EARRINGS

There are no known Early Minoan earrings, unless we accept the silver spirals from Kavousi mentioned above.

## BEADS

In this period we find globular beads (Tomb 2); collared globular in gold foil, for covering other materials, and chalcedony (Tombs 4 and 19, and see pl. 2C); disc-shaped, in gold and faience (Tombs 21 and 6); and thin cylinders like Egyptian mummy-beads.

Another shape is the drum, decorated in repoussé with simple floral patterns, in Tombs 2 and 19 (fig. 7). The shape is derived from fish-



FIG. 7. *EM drum-bead from Mochlos.*  
2200-2000 B.C.

vertebrae, which were strung together and worn as necklaces. This type of bead, which includes some of the most advanced examples of Early Minoan jewellery, had a long subsequent history (see pp. 62 and 74).

Biconical beads, like those from Leucas (see p. 51), are found in gold in Tomb 21, and in silver at Krasi; and what looks like an ancestor of the later amygdaloid bead comes from the lower deposit of Platanos, Tomb A.

In addition, an attractive dash of colour is provided by beads of

simple shapes in steatite, cornelian, amethyst, crystal, faience and shell, notably from Tombs 6 and 19 and from Kavousi.

#### PENDANTS

Pendants are popular, especially on chains, which are sometimes simple, sometimes loop-in-loop. The pendants frequently take the form of leaves, of which three kinds may be recognized: small leaves, large leaves decorated with dot-repoussé, and sprays. Examples come from Tombs 2, 4, 6, 19 and 21 and from the Tholos at Hagia Triada. Another distinctive pendant is a crinkled cone, from Tomb 2 and from the lower deposit of Platanos, Tomb A. A third example, from Mochlos(?), is illustrated on pl. 2D. Triangular ornaments, possibly representing axes, come from Tomb 2.

Mention should also be made of a club (or phallus) in silver from Tomb 6; possibly a Cycladic import, for pendants of this shape in stone are common in Cycladic tombs. Finally, a chalcedony bird comes from Tomb 4, a bronze lion from Tomb 6, and an ivory pig from Kavousi.

#### BRACELETS

Bracelets of gold or silver wire come from Pyrgos and Krasi. Another variety comes from Tombs 2, 16 and 19; all that survives is a gold foil covering for some other material (possibly leather), now vanished. They are decorated with embossed patterns, a simple enough process where the metal is as thin as it is here.

#### CLOTHING-ORNAMENTS

Ornaments of sheet metal were used for sewing to the dress. Examples, from Tombs 2 and 19, take the form of stars, discs and strips.

#### FINGER-RINGS

Only one example is known, of silver wire, from Krasi.



## Middle Minoan 2000—1600 B.C.

## INTRODUCTION

**A**BOUT 2000 B.C., for reasons as yet unknown, the centres of power and wealth in Crete shifted from the east of the island to the centre and south. Elaborate civilizations, based on royal palaces, developed at Knossos, Phaestos and Mallia. The palaces were destroyed by an earthquake about 1700 B.C., to be replaced by yet finer buildings, representing an even more magnificent way of life. Intensified contacts with Egypt and Western Asia stimulated the natural inventiveness of the Minoan people and produced a culture at once derivative and original. The Middle Minoan period, as defined by Evans in terms of pottery, ends about 1550 B.C., but a more suitable date for our purpose is the partial destruction of Knossos, by another earthquake, about 1600 B.C.

In view of the extraordinarily high level of Middle Minoan culture, one would expect corresponding masterpieces of jewellery; and such there undoubtedly were, but by ill luck very little material earlier than the last century of this period has been discovered. In consequence, the history of Middle Minoan jewellery between 2000 and 1700 B.C. cannot as yet be traced with any clarity.

Our sources for this period are as follows. Most of the goldwork from the tombs of the Messara belongs stylistically and technically to this rather than to the Early Minoan period, for it shows some advance in both respects on the jewellery from Mochlos. It is hard to give a date for the abandonment of these communal tombs, but all had certainly fallen out of use by 1700 B.C., some probably rather earlier. The Palace and certain commoners' tombs at Knossos have yielded a little jewellery, some susceptible of dating by association. Most belongs to the seventeenth century, but a few pieces are probably slightly earlier.

The communal tomb known as Chrysolakkos at Mallia has yielded a certain amount of Middle Minoan jewellery, the best of it probably belonging to the seventeenth century, but some of the minor pieces may be older. Finally, the most important pieces from the so-called Aegina Treasure in London are stylistically related to jewellery from Chrysolakkos, and may also be dated in the seventeenth century.

This period sees technical innovations of the highest importance. Filigree and granulation make their first appearance, perhaps about 1800 B.C. These closely related processes, long popular in Western Asia, probably reached Crete from Mesopotamia, by way of Syria (see p. 22). At some time in this period two further processes were introduced: the art of inlaying with coloured stones, and that of mass-produced embossing. They are first attested in the seventeenth century, but may have been employed earlier.

Diadems were still used, but were less popular as grave furniture than before. Hair-pins continued; and hoop-earrings were probably made throughout this period. Finger-rings with round and oval bezels came in during the eighteenth century, and about the same time we first meet pins which may reasonably be regarded as dress-pins. Beads and pendants in the early stages of this period were little more than continuations of Early Minoan varieties; but in the seventeenth century the repertoire was greatly enlarged by many new and elaborate types with strong Egyptian and Western Asiatic features. We are, unfortunately, denied knowledge of the intervening stages between the earlier and the later varieties.

## THE JEWELLERY

### DIADEMS

Compared with Early Minoan usage, Middle Minoan diadems are less common and less ornate. Examples (mostly fragmentary) come from Platanos, Kalathiana, Koumasa and Mallia (Chrysolakkos). They are mostly plain, except for a little decoration in dot-repoussé. One of the few complete examples, from Koumasa, is somewhat like the diadem from Lebena (p. 56) and should probably be regarded as transitional between the Early and Middle Minoan periods. It rises to a high peak in the centre, and is decorated with two rows of dots, increased to three over the peak. A fragmentary object from Kalathiana, probably a

diadem, is decorated with dot-rosettes and cut-out patterns, an unusual technique at this period.

## HAIR-SPIRALS

These articles are rare, but a bronze specimen comes from an eighteenth-century deposit in Tomb 17 at Mavro Spelio, and thus establishes their continued existence.

## HAIR-PINS

Two examples of hair-pins in the form of a shepherd's crook are known. One, of silver, comes from Tomb 9 at Mavro Spelio. It cannot be directly dated, but is decorated with crocus-patterns in the MM III style, and should thus fall in the seventeenth century. Another, in bronze, comes from Platanos. In view of the chronology of the tomb, it should be earlier, but need not be much earlier.

Another type, in the form of a flower, is a lineal descendant of Early Minoan pins. It comes from Mallia (Chrysolakkos) and was made at some time in the Middle Minoan period.

## EARRINGS

Earrings of hoop-shape, generally tapering at the ends (cf. pl. 12E), are found in this period. An example from Vorou Messaras in silver-plated bronze could be either Early or Middle Minoan. One in gold comes from a tomb at Mallia of 2000-1700 B.C. The type is represented in two tombs of the seventeenth century at Knossos; in bronze in Tomb 7 at Ailias and in silver in Tomb 18 at Gypsades. It probably originated in Syria.

A bead in the shape of a human head in the Jewel Fresco from Knossos is equipped with three linked hoops in each ear (fig. 11). The fresco belongs to the seventeenth century. If this bead represents current practice, such earrings may be recognized in a set of wire hoops in the Aegina Treasure, of approximately the same date.

## BEADS AND PENDANTS

In the seventeenth century, and possibly before, strings of beads were worn not only as necklaces, but also in the hair and round the wrists, as can be seen in certain frescoes.<sup>1</sup>

<sup>1</sup> Evans, *Palace*, i, 545; ii, 681.

Globular beads are found at Mavro Spelio in gold, and also (in Tomb 17) in amethyst, crystal and faience. Other common forms are collared-globular (Platanos, Tomb A), melon (Hagia Triada) and grain-of-wheat (Hagia Triada and Mallia, Chrysolakkos).

Cylinders decorated with filigree spirals come from Kalathiana (fig. 8) and Platanos. Too advanced technically for Early Minoan, they must fall somewhere in this period, between 2000 and 1700 B.C.

The drum-bead (see p. 57) almost certainly continued into this period, for it reappears in Crete in the sixteenth century (see p. 74). No Middle Minoan examples are known from Crete, but a silver drum-bead from the Tôd Treasure in Egypt, of about 1900 B.C., may well be Minoan, to judge from associated finds.<sup>1</sup>

Two gold axe-pendants like those from Thyreatis (p. 51) come from Hagia Triada and Trapeza respectively. Neither deposit is closely datable, but the axes can be dated approximately by a similar bronze ornament from Drakones (2000-1700 B.C.) and by the fact that the Thyreatis Treasure is unlikely to come down later than 1900. We thus get an approximate dating in the twentieth century for these pendants.

Pendants (frequently on chains) in the form of leaves continue from the previous period. As befits this more advanced epoch, they are more substantial and more elaborate in conception and execution. Examples come from Sphoungaras, Mallia (Chrysolakkos), Platanos and Hagia Triada.

A bead in the form of a central tube with a spectacle-spiral drawn out from either end was common in Anatolia, where it originated about 2400 B.C., and was also found in Mesopotamia and Syria (fig. 15a).<sup>2</sup> Although it has not been found *in corpore* in Crete, a terracotta representation from Petsofa of MM I date (2000-1700 B.C.) is evidence that the bead itself was known.<sup>3</sup> It occurs again in the Shaft Graves at Mycenae in a slightly different form (see p. 82, fig. 15b-c).

A few other Middle Minoan beads of elaborate form are known. A lotus from Mallia, Chrysolakkos; a double lily from Ailias, Tomb 7 at

<sup>1</sup> Bisson de la Roque, F. etc., *Le Trésor de Tôd* (Cairo, 1953), pls. 45 and 46.

<sup>2</sup> *ILN* 28.11.1959 (Dorak). Schmidt, 236, fig. d8 (Troy). *Aegean and Near East*, pl. 2: 8 (Alaja Hüyük). *Iraq*, ix (1947), 171, pls. 32: 8 and 133: 2 (Brak). Haller, A. *Die Gräber u. Gräfte von Assur* (Berlin, 1954), pl. 10a (Assur). *Iraq*, ix (1947), 173 f. (Mari).

<sup>3</sup> *BSA* ix (1902-3), pl. 13, no. 74.

Knossos, of the seventeenth century; and a double 'waz-lily' in faience from the Temple Repositories of the Palace at Knossos (fig. 9). The waz-lily, a hybrid of the Egyptian papyrus ('waz') and the lily, was so named by Evans.<sup>1</sup> These three varieties are the earliest known ancestors of the common Late Minoan and Mycenaean relief-beads of the fifteenth century and later (see p. 75).



FIG. 8.



FIG. 9.



FIG. 10.

FIG. 8. *Bead from Kalathiana. MM I.* FIG. 9. *Faience bead from Knossos. MM III.* FIG. 10. *Lion bead from Koumasa. MM I*

A pendant in the form of a woman's breast from Hagios Onouphrios probably belongs to this period. Beads of gold, lapis lazuli and cornelian from the Aegina Treasure, in the shape of a hand holding a woman's breast, also have good claims to be considered Middle Minoan.

A gold heart-shaped pendant comes from the Ivory Deposit of the Palace at Knossos, of the seventeenth century. Similar hearts in cornelian, amethyst and rock-crystal are also reported from Knossos and elsewhere in Crete.

Two miniature pendants in the form of lions are known. Both are cast solid, and are decorated with granulation to indicate the mane. One, a standing lion, was found associated with the Hieroglyphic Deposit of the Palace at Knossos, and dates shortly after 1700 B.C. The other (fig. 10) represents a reclining lion (or, according to some, a toad), and comes from Tomb B at Koumasa. The terminal date of the Messara tombs suggests that this lion is earlier than that from Knossos, but it cannot be much earlier, and should be dated among the latest objects in the tomb, perhaps about 1750 B.C. These lions represent the earliest recorded use of granulation in Crete.

A fish of embossed sheet-gold comes from the Ivory Deposit of the Palace at Knossos, of the seventeenth century. Its open mouth probably held a loop for suspension.

<sup>1</sup> Evans, *Palace*, ii, 775 ff.

Finally, a bead in the shape of a human head is represented in the Jewel Fresco from Knossos, of the seventeenth century (fig. 11); it has been mentioned on p. 61 for its earrings. No actual beads of this form are known, but there can be little doubt that the one in the fresco is a faithful representation of reality. Strangely enough, a diadem from



FIG. 11. *Bead from the Jewel Fresco, Knossos. MM III*

Cyprus some three to four centuries later bears the impression of a stamp apparently intended for the manufacture of similar beads (pl. 11).

But the most striking pieces of jewellery of this period are large repoussé pendants of great elaboration. Some probably hung from pins; others could have been suspended from cords, and some were perhaps earrings.

(1) An exquisite pendant comes from Mallia (Chrysolakkos) (pl. 3A). For two reasons it should probably be dated amongst the latest objects in the tomb, that is to say in the seventeenth century. First, the advanced technique; second, the fact that if it belonged amongst any but the latest interments, it would probably have been stolen, as was the custom, on the occasion of a later burial.

Two hornets are posed heraldically over a honeycomb; above their heads is a cage containing a gold bead. From the jewel hang three discs. Filigree and granulation are used with great effect; filigree on the bodies of the hornets, the honeycomb and the discs; granulation on the discs. Wire of much the same kind as the filigree is used for the hornets' legs and for the cage above their heads. The main body of the ornament is embossed from a sheet of gold; the exact method cannot be determined, but it was probably one of the mechanical processes mentioned on p. 10. The piece is hollow, with a flat back.

(2) A pendant similar in technique and in certain details, but without



B. 1 MINOAN PENDANT. SEVENTEENTH CENTURY B.C.



B. 2 ETRUSCAN EARRING. SIXTH CENTURY B.C.





filigree or granulation, comes from the Aegina Treasure (pl. 3B, col. pl. B1). A man stands holding a bird in either hand. Behind him are two curved objects resting on three lotus-flowers. He wears a tall headdress, earrings, bracelets, a tunic, drawers, an apron and a tight belt. From the ornament hang five gold discs, simpler versions of those attached to the hornet-jewel. The influence of Egyptian art has long been observed, but the subject and the details are purely Minoan. He represents a Minoan nature-god, lord of birds, beasts and vegetation, the less common male counterpart of the Minoan Mistress of Beasts.

This pendant was worn suspended by a cord or a wire which ran through a horizontal hole along the top of the headdress. Perhaps, like the Mycenaean piece on pl. 6A, it was attached to the head of a pin.

(3) A recumbent figure of a goat in London, from Crete, has discs as on the foregoing piece, and is clearly related to it (pl. 5E).

(4) Another piece from the Aegina Treasure comprises a curved plate of gold terminating in human heads in profile (pl. 4A). Below it hang ten discs, as on nos. 2 and 3; above the heads are loops for suspension. This piece was evidently worn on the breast, suspended from a cord running round the neck. The heads are in the MM III style (seventeenth century).<sup>1</sup> The eyes and eyebrows were formerly inlaid, probably with lapis lazuli.

(5) Two pairs of gold ornaments of uncertain function also come from the Aegina Treasure (pl. 4B); they may possibly be earrings. They are identical front and back and are made from two embossed sheets of gold (probably moulded or hammered over a core) cut out and folded together. Within a hoop in the form of a double-headed snake are a pair of greyhounds, and below them a pair of monkeys. From the circumference hang fourteen pendants on gold chains; seven represent owls and seven are discs of a kind already familiar. Cornelian beads are threaded in various places, adding a touch of colour.

The style is unusual, but on technical grounds these pieces must belong to the same class as the foregoing.

(6) In yet another pendant from the Aegina Treasure the principal element is a lion's head rising from a collar decorated with filigree. Below the collar a hollow receptacle hangs by a pin; some object of a perishable nature (faience or ivory?) was threaded on the pin and is lost. Two pendants representing birds and two representing eggs hang on

<sup>1</sup> Cf. Chapouthier, F. *Études Crétoises*, v, pl. 18.

loop-in-loop chains from the collar; three more birds hang on similar chains from the receptacle. Stylistically, the birds put this ornament in the same class as no. 5. The lion's head is pierced horizontally to take a cord.

## BRACELETS

Bracelets are rare in Middle Minoan jewellery, but examples made of bronze wire are not unknown. They are represented at Platanos (before 1700 B.C.) and at Knossos, in Ailias Tomb 7, of the seventeenth century.

## CLOTHING-ORNAMENTS

Strips of thin gold, probably sewn to clothing, are found at Platanos and Mallia (Chrysolakkos). Discs with rosette patterns, evidently intended for the same purpose, also come from Chrysolakkos.

## FINGER-RINGS

What was later to be the standard Minoan ring, with an oval bezel at right-angles to the hoop, makes its first appearance at Knossos. Two bronze examples come from Ailias Tomb 5 (eighteenth century) and a gold example from Tomb 7 (Larnax VI) of the same cemetery (seventeenth century).

Rings with round bezels are also found. A bronze example comes from Vorou Mesaras (eighteenth century or earlier) and one with a silver hoop and an iron bezel from Knossos, Ailias Tomb 5 (eighteenth century). A gold ring (diam. 1.3 cm.) with a circular bezel engraved with characters in the Linear A script comes from Knossos, Mavro Spelio, Tomb 9, and has been dated stylistically to the seventeenth century. It has been doubted whether it is a finger-ring, but it could have been worn by a small woman on the little finger.

A gold seal-ring in London from Crete is almost certainly not a finger-ring but a signet, for the hoop is D-shaped, and is even smaller than the other. The style of the engraving is MM III, and the object is clearly influenced by contemporary finger-rings.<sup>1</sup>

This is a suitable point to mention four finger-rings in London from the Aegina Treasure.<sup>2</sup> All the datable elements in the Treasure seem to fall between 1700 and 1500 B.C.; consequently these rings, otherwise

<sup>1</sup> *BMCR* no. 14.

<sup>2</sup> *BMCR* nos. 690-3.

hard to date, should belong either to the end of this period or the beginning of the next. All are inlaid with lapis lazuli. One has a bezel in the form of a shield (pl. 8A), one in the form of a reef-knot. One is inlaid throughout with fluted lapis lazuli; the fourth with a meander pattern.

## PINS

Small bronze pins, 4-7 cm. in length, with spherical heads, have been found in the Ailias cemetery at Knossos, in Tombs 5 and 7, of the eighteenth and seventeenth centuries; it is not clear whether they are hair-pins or dress-pins, but their general appearance, like miniature versions of the Shaft Grave pins of the next period (see p. 86), would suggest the latter function.

## CHAPTER 9

# Late Minoan and Mycenaean

1600—1100 B.C.

### INTRODUCTION

THE SIXTEENTH CENTURY inaugurated for Crete an era of even greater prosperity than before. Greece too, from about 1600, came within the Minoan orbit. In spite of fundamental differences between the Minoan and Mycenaean cultures, many elements were remarkably similar in both, and we would probably be right in regarding the minor arts of the Mycenaean world as predominantly Minoan.

In the sixteenth century, it seems that Crete and Mycenaean Greece were sovereign and independent powers, each maintaining frequent contacts with Anatolia, Syria and Egypt. The wealth of Crete must be assumed; that of Greece is demonstrated by the contents of the Shaft Graves at Mycenae, which belong to this century.

The fifteenth century sees the rise of a new and even more powerful dynasty at Mycenae, who buried their dead in tholos tombs. It was probably this dynasty which conquered Knossos about 1475 B.C., and gradually extended Mycenaean sway over the rest of the island. This century is notable for rich burials in Greece and Crete, and it would appear that the general level of prosperity was even higher than before.

About 1400 B.C., while at the climax of its prosperity, the Palace at Knossos was destroyed. Those at Phaestos and Mallia also perished about the same time. The cause of these disasters may not be known, but the results are clear. Mycenaean culture immediately spread eastwards and westwards, and Crete became part of the ensuing Mycenaean *koine*.

The next two centuries saw in the Eastern Mediterranean a unified

culture of great wealth and safe communications, in constant and fruitful relations with the Great Powers of Anatolia, Syria and Egypt. Apart from the magnificent architecture at Mycenae and elsewhere, it does however seem that the brilliance of Minoan-Mycenaean art was slowly fading.

About 1200 B.C. this world, together with most of the Middle East, started to crumble. Many of the Mainland palaces were sacked – it is not known by whom – and the standard of living in most areas declined. After about a century (or less) of precarious peace, the final blow fell, the Mycenaean world was destroyed, and the Dark Ages ensued. This disaster should probably be associated with the arrival of the Dorians, but there is no certainty on this point.

To return to the beginning of this period. So far as jewellery is concerned, the sixteenth century is ill represented in Crete, but extremely well on the Mainland, where the Shaft Graves at Mycenae have produced evidence of unbelievable richness. If, however, we are right in regarding the minor arts of Mycenae at this date as essentially Minoan, this deficiency is not very serious for our understanding of contemporary Minoan goldwork.

The jewellery of the Shaft Graves comprises diadems; beads and pendants; ornaments for clothing; earrings; bracelets; and signet-rings and pins of great elaboration. Strangely enough, filigree and granulation are extremely rare and rather coarse, although both processes had been for some time familiar in Crete. It may indeed be that much of the jewellery was not imported from Crete, but was made in Mainland workshops supervised by Cretans but operated largely by Mainlanders.

An interesting class of wire-jewellery, from Graves III and Omicron (and also, surprisingly enough, from a later tomb in Cephallenia), has strong Mesopotamian and Syrian affinities, and may, in its entirety, have been imported from the East. It comprises earrings, beads, pendants and bracelets, all made of wire, mostly in spirals.<sup>1</sup>

The jewellery of the fifteenth century is rather different, and is remarkably homogeneous throughout the Minoan-Mycenaean world. Diadems and pins dropped out completely, and earrings survived only in Crete. The principal articles are beads and pendants of many kinds, including the typical relief-beads; clothing-ornaments, many of

<sup>1</sup> See Evans, A. J. *Shaft Graves and Beehive Tombs of Mycenae* (London, 1929), 47, fig. 37. His proposed northern connections are improbable.

them replicas of the relief-beads; and finger-rings, some for use as seals, others for adornment only. Granulation was much used with ever-increasing fineness; a kind of champlévé enamel was introduced about 1450 B.C.; and cloisonné inlay with stones and glass was popular, especially for rings. In addition to gold, other materials were used; lapis lazuli, rock-crystal and faience were popular throughout the period; glass, cast in moulds to resemble closely the relief-beads, came in about 1450 B.C.

In the next three centuries, from 1400 to 1100, we can find practically nothing new in Mycenaean jewellery. The beads, particularly the relief-beads, continue in almost exactly the same forms as before. The chief difference is that glass gained in popularity as gold became scarcer. Subsidiary decoration is less elaborate. In the thirteenth century nearly all the gold is reduced to gold leaf, fitted over glass beads.

In the twelfth century, jewellery is almost confined to glass relief-beads. A few areas, however, such as Crete and Rhodes, seem to have retained a certain degree of prosperity, and to have continued to enjoy the use of gold jewellery.

Remains of a Mycenaean goldsmith's shop have been discovered in the ruins of the Palace at Thebes, of about 1400 B.C. Little can be learnt from this discovery, except the interesting fact that the same craftsmen apparently worked in gold and in glass at this date.<sup>1</sup>

The number of surviving steatite moulds for the casting of glass jewellery gives some indication of the popularity of this class of ornament. Apart from the main centres of Mycenae and Knossos, moulds have been found at Palaecastro in Crete, on Chios, and at some unspecified site in Asia Minor (see p. 43).

The jewellery from Cyprus of 1400-1100 B.C. calls for special mention; it is discussed in detail below, on p. 87, and is illustrated in pls. 11, 12. Although only in part Mycenaean, it is extremely abundant, and many of the surviving pieces come from dated tombs. Cyprus is also important as being one of the centres, perhaps the principal one, in which Mycenaean (and other) forms were kept alive through the Dark Ages and whence they were re-introduced into Greece from the ninth century onwards.

This jewellery is a mixture of Minoan-Mycenaean, Syrian and Egyptian elements. Not only are many of the forms strange to the

<sup>1</sup> *AE* 1930, 29 ff.

Minoan-Mycenaean repertoire, but one unfamiliar process, a primitive form of cloisonné enamelling, is found in the twelfth century.

Although in general Cyprus was the recipient rather than the giver where the Aegean world was concerned, there are instances, all possibly as late as the twelfth century, when the reverse process may be observed. A Cypriot earring was found in a tomb at Perati of the twelfth century, and another comes from the Tiryns Treasure. In addition, a Cypriot funerary mouthpiece comes from a tomb at Knossos (see p. 87). Certain bronze pins from twelfth-century tombs at Knossos and Argos, if not Cypriot imports, were made under strong Cypriot influence.

## THE JEWELLERY

### DIADEMS

Diadems are found in the Shaft Graves at Mycenae of the sixteenth century, and in contemporary tombs at Corinth and Pylos (Englianos), but are not found after the sixteenth century. The commonest variety is represented in Graves I, II and IV of Circle A and in Graves Xi and Lambda of Circle B at Mycenae. It is oval or pointed-oval in shape; in the more elaborate versions the ends terminate in loops formed by drawing out the metal into a thin wire and turning it back on itself. Decoration takes the form of embossed circles and other simple patterns. The edges of these diadems are frequently strengthened with bronze wire. Their ultimate origins must lie in Assyria, for a remarkably similar diadem occurs in a tomb at Assur of 1900–1500 B.C.<sup>1</sup>

The diadems are sometimes enriched by leaves or rosettes attached to their upper edge. The general effect is like that of the crown worn by the Minoan Priest-King on the celebrated fresco, and Minoan influence may be assumed.<sup>2</sup>

Another type of diadem comes from Shaft Grave IV at Mycenae. It is considerably narrower, and is decorated in dot-repoussé with floral motives and simple geometric patterns. From it hang, on chains, three plaques decorated in a similar way. Two undecorated diadems from the so-called Aegina Treasure represent the basic form of this type.

A third type comes from Grave Upsilon of Grave Circle B at

<sup>1</sup> Haller, A. *Die Gräber und Gräfte von Assur* (Berlin, 1954), pl. 10a.

<sup>2</sup> Evans, *Palace*, ii, pt. 2, Frontispiece (pl. 14).

Mycenae. It is composed of a bronze band on which were set three leaves of gold, kept in place by three bronze pins.

## HAIR-SPIRALS

In Shaft Grave Xi at Mycenae a small girl was buried, who had worn coils of narrow gold bands in her hair. Spirals of gold wire from the Kalyvia cemetery at Phaestos and Tomb 25 at Mycenae probably served the same purpose.

## HAIR-PINS

Shepherd's crook pins continued in use in Crete, but were not adopted elsewhere. Examples are recorded, in gold from the Isopata Royal Tomb at Knossos, in silver from a tomb (*Survey*, No. 149) at Knossos, and in bronze from Gournia and Palaecastro.<sup>1</sup>

## EARRINGS

Simple hoops of gold or silver wire come from Shaft Graves Xi and Upsilon at Mycenae, and from a tomb at Corinth (all of 1600-1500 B.C.). They are as much in the Helladic as in the Minoan tradition.

Hoops of wire of angular section with subsidiary spirals, either complete or rudimentary, occur in Shaft Graves III and Omicron at Mycenae (fig. 12).<sup>2</sup> They probably go with the exotic spiral jewellery represented only in these two graves, and should thus be of Syrian or Mesopotamian origin (see p. 69).

Scalloped hoops decorated with coarse granulation occur in Shaft Grave III at Mycenae (pl. 5D). They were worn suspended from rings of thin gold wire inserted in the lobe of the ear.

A tapered hoop with a conical pendant, richly granulated, is common in Crete in gold and occasionally occurs in silver. Examples have been found at Knossos, in Mavro Spelio Tomb 7 (pl. 11C) and on the Kephala Ridge (1550-1500?); at Palaecastro, in the destruction layers (about 1300?); and at Olous Tombs 22 (1350-1200 B.C.) and 16; and there are other, unpublished, examples in Heraclion from Cretan sites. The type was imitated in Cyprus, where dated examples occur at Enkomi in Old Tombs 19 and 58, of the thirteenth and twelfth centuries respectively (pl. 12C). It evidently developed from the Middle Minoan tapered hoop. To judge from the number of extant specimens, it probably had a

<sup>1</sup> Evans, *PTK*, 151.

<sup>2</sup> Hadaczek, 7, fig. 8. Another, in Paris (Bj. 135), also comes from Mycenae.



long life. If the context on the Kephala Ridge may be trusted, it started in the sixteenth century, and it certainly seems to go down almost to the end of the Bronze Age. No examples are yet recorded outside Crete or Cyprus.



FIG. 12. Earring from Shaft Grave III, Mycenae

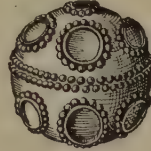


FIG. 13. Spherical bead from the Vapheio Tomb. LH II

An inferior version, possibly cast in one piece, is represented in two unpublished examples in Heraclion, where there is also an unpublished steatite mould, from Mochlos, for casting this type. There are many examples too from Cypriot tombs (pl. 12F).

After the sixteenth century, earrings are unknown in Greece itself in this period, except for a Cypriot import (of the stylized bull's head type) from Perati, of the twelfth century, and a similar piece, which could be contemporary, in the Tiryns Treasure.

#### BEADS

Beads are particularly common on Mycenaean sites, and come in many varieties. They were made in gold, stone and glass. A necklace from Asine, Tomb 5, shows how the colours were arranged. Frescoes and other representations also illustrate the arrangement of beads.<sup>1</sup> For convenience they may be divided into four categories: normal beads; animal pendants; relief-beads; and wire beads. The commoner varieties occur in so many tombs that it would be tedious in the extreme to enumerate them all, and the reader is advised to work from the site-lists on pp. 201-5 if a complete record is required.

(1) *Normal beads.* Globular beads, in gold and many other materials, are numerous. A collared globular bead, impoverished descendant of the Middle Minoan ones, occurs at Mochlos, in Tomb 22; the type did not survive. A popular ornament in the richer tombs is a large globular

<sup>1</sup> e.g. Reusch, H. *Die zeichnerische Rekonstruktion des Frauenfrieses im Böotischen Theben* (Berlin, 1956), *passim*. Evans, *Palace*, ii, 427, fig. 248; iv, 286, fig. 220.

bead richly decorated with circles and lines in fine granulation (fig. 13). The type, which is restricted to the fifteenth and perhaps the early fourteenth century, is typical of Mycenaean jewellery at its best. It is found in Mycenae, Tomb 515; the Vapheio Tomb; Dendra, Tomb 10, and elsewhere.

Melon beads are found in the sixteenth and fifteenth centuries; in Tomb 22 at Mochlos, the Temple Tomb Deposit at Knossos, and Tomb 10 at Dendra. Similar beads occur in lapis lazuli in Tholos B at Kakovatos.

Gold beads in the shape of a grain of wheat are found in the Temple Tomb Deposit at Knossos, in Tomb 10 at Dendra and elsewhere. Beads of the same form were also made of glass and faience.

The cylinder with filigree spirals continues from the Middle Minoan period; an example is found at Mochlos, in Tomb 22. A cylinder with spiral flutings comes from the Temple Tomb Deposit at Knossos. From the fifteenth century onwards a granulated cylinder was more popular. It is found in the Acropolis Treasure at Mycenae; at Ialysus, in New Tomb 61, and elsewhere. Closely related in appearance to this type is a cluster of large grains soldered together, a variety represented in Tomb 103 at Mycenae (pl. 10E), the Vapheio Tomb, Tholos A at Kakovatos, and the Tholos at Dendra.

The drum shape continues. It is found in Tomb 22 at Mochlos, and in the Tholos at Dendra. The flattened cylinder was popular, especially for engraved gems. It occurs in gold, sometimes inlaid, in the sixteenth and fifteenth centuries, notably in Shaft Grave III and Tomb 515 at Mycenae and in tholoi at Pylos. A somewhat similar type, but rectangular in section, comes from Mycenae and is shown on pl. 8D.

The amygdaloid is another seal-shape also used for pure jewellery. It occurs with a median rib in the Temple Tomb Deposit. It is found with fluted edges in several materials: at Hagia Triada in gold; at Spata in gold foil; in Tholos B at Kakovatos and the Isopata Royal Tomb at Knossos in lapis lazuli.

The wheel-bead, sometimes also called a lantern-bead, was a popular Syrian and Egyptian type in faience. It is found on many Greek sites in faience and in Tomb 2 at Mycenae in gold.<sup>1</sup>

<sup>1</sup> Wace, *Chamber Tombs*, 205. *BSA* lii (1958), 199 f. Beck, *Beads and Pendants*, 19, fig. 18, no. A 2. 8. *Syria*, xiii (1932), pl. 9: 2 (Ras Shamra). *Antiquaries' Journal*, xix (1939), 28 (Atchana).

The club was a frequent form for pendants from the fifteenth century onwards. It was made not only in gold, but in lapis lazuli (Kakovatos, Tholos B), in rock-crystal (Knossos, Zapher Papoura, Tomb 97) and in glass.

The crocus is related to the club. It is found from the sixteenth century onwards in gold, lapis lazuli (Knossos, Isopata Royal Tomb and Kakovatos, Tholos B) and glass.

An object resembling a chrysalis, suspended from a chain, occurs in many examples in Shaft Grave III at Mycenae.

A pendant pomegranate occurs at Mycenae in Tomb 518, and in the Prinaria Deposit. A finer example comes from Old Tomb 67 at Enkomi.

Finally, we mention an orthodox pendant with extremely unorthodox details, from Hagia Triada, of the fifteenth century. It consists of a minute amulet in the shape of a heart with magical objects in relief on it: a scorpion, a snake, a spider, a star-fish, a snail and a hand.

(2) *Animal pendants.* A recumbent calf from the Temple Tomb Deposit at Knossos (1550-1500) recalls the rather earlier goat from Crete (pl. 5E) in its naturalism.

Lions couchant occur in several varieties. Two kinds are found in Shaft Graves III and IV at Mycenae, and at Hagia Triada (fifteenth century).

Bull's heads were very popular. Gold ones come from Hagia Triada, Mallia (unpublished) and other sites. An amethyst example was found at Mochlos, in Tomb 22, and others are found in steatite, glass and faience.

A gold figure of a duck, with granulation, was found in the destruction-levels of the Palace at Knossos, and should date from the later fifteenth century. Finally, a remarkably naturalistic toad, with granulation, comes from Tholos A at Kakovatos.

(3) *Relief-beads.* These, the most characteristic ornaments of Minoan-Mycenaean jewellery, consist of stylized representations of marine and vegetable life and of objects of a religious nature, stamped in shallow relief out of sheet-gold. The ornament was completed by the addition of a flat back of sheet-gold, soldered on, and the space between the two sheets was filled with magnetite sand. The ornaments were pierced in one, two, or even three places for stringing.

The finest examples were decorated with details in granulation and

occasionally with touches of blue enamel in hollows surrounded by granulation.

Counterparts of many of these ornaments were made from glass, either dark blue, to imitate lapis lazuli, or (less commonly) pale greenish-blue, to imitate turquoise. The beads were cast in steatite moulds, of which a number have survived (see p. 43). Beads of this class were also occasionally made in lapis lazuli and frit, and glass beads were covered with gold foil to imitate sheet-gold.

The development of the relief-bead proceeded somewhat as follows. Between 1700 and 1450 B.C. they were made in gold and occasionally also in faience and lapis lazuli. Examples, of which few survive, show many different types in comparison with their numbers. At this stage, the upper part of the ornament is nearly always in the form of a segmented bead, from which the main element appears to hang.

Between 1450 and 1400 B.C. something like mass-production seems to have been introduced. Virtually all the best-known types evolved during this half-century. This is a rich period for jewellery, and to it should be ascribed the finest examples, those decorated with granulation and enamel. The tombs most productive of such pieces are the Tholos at Volo, Tomb 10 at Dendra, and above all, Tombs 88 and 103 at Mycenae. The last two are unfortunately unpublished, but some of their contents are illustrated on pls. 10 and 11.

During this half-century we find examples of gold beads reproduced exactly in glass, but they are not as yet very numerous.

In the fourteenth century, gold beads of good quality were still being made, but were being supplemented to an increasing extent with glass. In the thirteenth century, sheet-gold was seldom used; the beads tended to be all of glass, but some were covered with gold foil. The Tholos at Menidi and the tombs at Spata provide a classic example of this development. Finally, in the twelfth century, even gold foil seems to have fallen out of use, and few but glass beads were used.

It should be emphasized that from 1400 B.C. onwards very few new motives are found. It is an astonishing phenomenon that, for some three centuries or more, objects stylistically identical continued to be made. Can it be that the inventive spirit responsible for their production was extinguished in the destruction of Knossos?

There follows a list of the types of relief-bead. It is divided into two parts: (*a*) the early stages; and (*b*) the standard Minoan-Mycenaean

repertoire. The earliest examples of the first group have already been considered, for they belong to the Middle Minoan period. In the second group, only a few select find-spots are given. Where the existence of a mould is mentioned, see p. 43 above.

#### A. *The Early Stages*

1. Volute and bar. From Mochlos, Tomb 22.
2. 'Waz-lily' and bar. A motive inherited from the seventeenth century (see p. 63). From Mycenae, Shaft Grave III. The object is in fact not a bead but a clothing-ornament, but is a copy of a type of bead which undoubtedly existed.
3. Ivy and bar. From Mochlos, Tomb 22.
4. Flower or shell. In lapis lazuli. From Tholos B at Kakovatos.
5. Pomegranate and bar. From Mycenae, Shaft Grave III (pl. 6B).
6. Heraldic eagles and bar. From Mycenae, Shaft Grave V.
7. Palm-leaves. They come from Shaft Grave Omicron at Mycenae; also from the Aegina Treasure (pl. 8E). This type is an early example of the interlocking variety of relief-bead.

#### B. *Standard Relief-beads*

1. Rosette (fig. 14a); the commonest variety. Particularly fine examples come from Mycenae, Tomb 515 (gold); Prosymna, Tomb 41 (gold and glass); and the Tholos at Dendra (gold). In the last-named tomb an entire necklace of 36 rosette-beads was discovered; the beads were of two sizes, 18 large and 18 small.

2. Bracket, or curled-leaf (fig. 14b).<sup>1</sup> A common variety; it is not certain what is represented. The brackets frequently have gold or glass discs attached to them by fine wires. A variant in glass was found in 'Tsountas's House' at Mycenae, in which the upper part is replaced by the head and breast of a goddess of Asiatic type. Examples come from Tomb 515 at Mycenae (gold and glass); the Tomb of the Genii at Mycenae (glass); Tomb 6 at Argos; and from many other tombs in the Argolid and elsewhere. Moulds for the casting of this design in glass come from Mycenae (three examples) and Knossos.

3. Volute with bar, 1 (pl. 101). A particularly fine example, of gold with touches of enamel, comes from Tomb 88 at Mycenae. Other examples come from Tomb 37 at Prosymna (glass) and Phaestos, Kalyvia (glass).

<sup>1</sup> *BSA* vxx (1921-3), 399. Wace, *Chamber Tombs*, 192.

4. Volute with bar, doubled (fig. 14c). A second volute is added to the underside of Type 3. A rare type, represented in the Tholos at Volo (gold and glass) and in Tomb 524 at Mycenae (glass).

5. Volute with rosette (pl. 106). The bar of Type 3 is replaced by a



FIG. 14. *Mycenaean relief-beads*

rosette. A rare type, represented in Tombs 102 (gold) and 103 (gold, enamelled) at Mycenae.

6. Volute with bar, 2 (pl. 8D). A common type. Select examples come from Mycenae (gold); the Tholos and Tomb 11 at Dendra (gold); Tomb 2 at Dendra (glass); Spata (glass and gold foil). A mould for casting this type in glass comes from Mycenae.

7. Bud. A rare motive, also found in vase-painting (Furumark, Motive 62). Examples come from tombs at Mycenae; the Tomb of Clytaemnestra (gold); the Treasury of Atreus and the Tomb of the Genii (glass).

8. Argonaut (pl. 10K). A common type, also represented in vase-painting (Furumark, Motive 22). Examples come from Mycenae Tombs 102 (gold), 103 (gold) and the Prinaria Deposit; from Tomb 6 at Argos (gold); and from Tomb 2 at Dendra (gold). A mould for casting this type in glass comes from Knossos.

9. Double argonaut, 1 (pl. 11B). A common type, represented in Tomb 88 at Mycenae (gold, enamelled); the Tholos at Volo (gold, enamelled); at Knossos, Isopata Tomb 2 and Zapher Papoura Tombs 7 and 36 (gold); and in the Tholos at Menidi (glass).

10. Double argonaut, 2 (pl. 10J). Type 9, with an extra tentacle. A very rare variety, represented in Tomb 88 at Mycenae (gold, with spaces for enamel).

11. Cockle (fig. 14d). The type is represented in Tholos B at Kakovatos (gold); Tomb 8 at Mycenae (gold and blue frit); Tomb 2 at Dendra (glass); and the Tholos at Menidi (gold foil and glass). A mould for casting glass ornaments of this type comes from Knossos.

12. Lily, 1 (fig. 14e). A rare type, first found in Minoan vase-painting of the seventeenth century. The method of wearing such beads is shown on an ivory engraving from Kakovatos. Examples come from Tholos B at Kakovatos (lapis lazuli) and the Tholos at Dendra (gold).

13. Lily, 2 (pl. 10D). A simplified version of Type 12. Represented in Tomb 88 at Mycenae (gold); Dendra, Tombs 10 (gold) and 2 (glass); Prosymna, Tombs 41 (gold) and 33 (glass). A mould for casting beads of this type in glass comes from Knossos.

14. Lily, 3 (pl. 8D and fig. 14f). This type is composed of the upper part of Type 13, elaborated and made interlocking. It is represented in Tombs 78 and 520 at Mycenae (gold); and in Tombs 8 and 10 at Dendra (gold).

15. Lily 4. Like Type 14, but with a small projection on each volute. The motive also occurs in vase-painting (Furumark, Motive 47: 2). It is represented in the Tholos at Volo (gold) and at Phaestos, Kalyvia (glass).

16. 'Waz-lily' (pls. 9 and 10H). A common motive, ultimately of Egyptian origin, which goes back to the seventeenth century (see pp. 63 and 77). It is represented in Tomb 88 at Mycenae; in Tomb 2 at Prosymna (gold); in Tomb 10 at Dendra (gold); and in the Tholos at Menidi (glass). A mould for casting this type of bead in glass comes from Mycenae.

17. Double 'waz-lily' (pl. 8D). A rare type, represented at Mycenae in Tomb 68 (gold), and in the Treasury of Atreus (glass).

18. Papyrus, 1 (fig. 14g). A motive of Egyptian origin, also found in vase-painting (Furumark, Motive 11). It is represented in the Temple Tomb Deposit at Knossos (gold); in Tomb 44 at Prosymna (gold); and at Spata (gold foil and glass).

19. Papyrus, 2; or shell (pl. 10F). This motive could be a degenerate version either of a papyrus, such as Type 18, or of a shell, such as Type 11. The former interpretation is, however, slightly more probable since a version from Tomb 523 at Mycenae is marked like Type 18. A common type, also represented in vase-painting (Furumark, Motive 25). Select examples come from Tombs 88 and the Prinaria Deposit at Mycenae (gold); Tombs 520 and 523 at Mycenae (glass); and Tomb 2 at Dendra. A mould for the casting of this type in glass comes from Mycenae.

20. Papyrus, 3 (fig. 14h). A rare, and probably late type, found in the Tholos at Menidi (gold foil and glass) and at Spata (glass). A mould for the casting of this type in glass comes from Mycenae.

21. Ivy, 1 (fig. 14i). A rare type, also represented in wall-painting and vase-painting (Furumark, Motive 12). It occurs in a tomb in the Agora in Athens (gold); in Tomb 10 at Dendra (gold); and at Spata (glass). A mould for the casting of such beads in glass was found at Palaikastro; it is one of the very rare instances of a double mould.

22. Ivy, 2 (pl. 11A). A simplified version of Type 21, also found in vase-painting (Furumark, Motive 12: 8). It is represented at Mycenae in Tombs 88 and 103 (gold, enamelled); in the Tholos at Volo (gold); and at Gournes (glass).

23. Double ivy (pl. 10B). A stalked and duplicated version of Type



22. A rare type; it occurs in Tomb 88 at Mycenae (gold, enamelled).

24. Ivy, 3 (pl. 10A and fig. 147). An interlocking version of Type 22. A common type. Select examples come from Mycenae, Tombs 88 (gold) and 520 (glass); and from the Tholos at Dendra (gold and glass).

25. Wallet (pls. 9 and 10c). Originally an Egyptian type, it occurs with a flat or a scalloped top.<sup>1</sup> It was found in Tomb 103 at Mycenae (gold); in Tomb 2 at Prosymna (gold); in Tomb 10 at Dendra (gold); and at Spata (gold foil). A mould for the casting of this type in glass comes from Mycenae.

26. Beetle. A rare and probably late type. It occurs at Spata (gold foil).

27. Jug (pls. 8D and 10E). A common type, representing a sacred Minoan motive, which was used as early as Middle Minoan times; a stone amulet in this form comes from Hagios Onouphrios. Examples come from the Palace at Thebes (gold); the Tholos at Menidi (gold foil and glass); and Old Tomb 4 at Ialysus (gold foil and glass).

28. Figure-of-eight shield (fig. 14k). A sacred Minoan motive. Examples come from Tomb 518 at Mycenae (gold); Tomb 3 at Prosymna (gold) and Tholos I at Pylos, Englianos. A mould for the casting of this type in glass comes from Knossos.

29. Altar or basin (fig. 14l). A sacred Minoan motive. A steatite version comes from the Tholos at Hagia Triada (Early or Middle Minoan). Examples come from the Tholos at Dendra (gold); the Tholos at Menidi (gold); and Spata (glass).

(4) *Wire beads*. A class of beads made almost entirely of wire is represented at Mycenae, in Shaft Graves III and Omicron. They form part of a larger group, for which a Syrian or Mesopotamian origin has been suggested (see p. 69).

1. A variety (fig. 15b) of the tubular spectacle-spiral bead (fig. 15a) mentioned on p. 62. It differs from the earlier variety in that the spirals, instead of being drawn out of the tube, are bound round the ends of it. This type is evidently of Mesopotamian origin, for replicas have been found in a tomb (not closely datable) at Babylon, and in another, of the thirteenth century, at Mari.<sup>2</sup>

2. A variation, in which two or three spirals are soldered to either side of a central rod (fig. 15c). This type is also represented in a tholos

<sup>1</sup> Beck, *Beads and Pendants*, 33, fig. 27, no. A 7.

<sup>2</sup> Reuther, O. *Die Innensstadt von Babylon* (Leipzig, 1926), 19, fig. 14a, and 181, pl. 55. *Iraq*, ix (1947), 174, fig. 16.

tomb at Englianos (unpublished) and, surprisingly, in a tomb at Cephallenia of the twelfth or eleventh century.

3. A spectacle-spiral pendant. This type only occurs in Shaft Grave Omicron. It has a long history in the Middle East and the Balkans, but is rare in Greece.

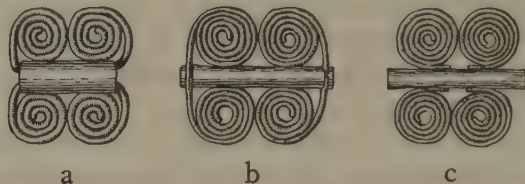


FIG. 15. *Spectacle-spiral beads. a, the original type. b and c, types found in the Shaft Graves at Mycenae*

#### NECKLACES

Necklaces are occasionally found composed of loop-in-loop chains so tightly linked as to be frequently mistaken for plaited cords (see fig. 4). One such example comes from Tomb D at Cephallenia (twelfth century or later) and one from Tomb 55 at Mycenae.

#### BRACELETS

Bracelets composed of strips of sheet-gold decorated with rosettes come from Shaft Graves IV and Alpha at Mycenae. A simpler version from the Aegina Treasure may well be contemporary.

Bracelets of spiral wire, closely analogous to the beads, fig. 15c, also come from Shaft Graves III and Omega at Mycenae.

#### CLOTHING-ORNAMENTS

These are known in a variety of forms. They are very common in the Shaft Graves at Mycenae, but are rare after the sixteenth century. They come in three main forms: (a) discs; (b) cut-out reliefs, often very like contemporary relief-beads; and (c) belt-ornaments.

A. *Discs*. They occur in Shaft Grave III at Mycenae; popular motives are a butterfly, an octopus, and geometric patterns.

A number of discs from the Aegina Treasure with decoration very like that on a diadem from Shaft Grave IV should be included in this category (pl. 5A).

B. *Cut-out reliefs*. The following subjects are represented in Shaft Graves III and IV at Mycenae. A shrine; a goddess in Minoan dress (also found at Gournia<sup>1</sup>); a naked Oriental goddess with doves; a butterfly; an octopus; a sphinx; a griffin; a heraldic arrangement of cats and deer (pl. 5B, c); and a copy of a 'waz-lily' bead. There is a strong stylistic homogeneity about these ornaments, but influences from several directions can be seen; Syria is suggested by the naked goddess and (at this early date) by the griffin, Anatolia by the deer, Crete by the Minoan goddess, octopus and waz-lily. The work is rather crude, and it would possibly be correct to regard these pieces as genuine Mycenaean creations of an eclectic nature.

Cut-out clothing-ornaments are also found in later Mycenaean deposits. Rosettes in particular are very common throughout this period. An unusual kind of double-argonaut comes from the Tomb of Clytaemnestra at Mycenae; a butterfly from the Tomb of Clytaemnestra and Tomb 102 at Mycenae and from the Tholos at Volo; a sacral ivy from a chamber tomb in the Agora at Athens. And attractive figures of owls were found in Tholos B at Kakovatos and Tholos I at Pylos (Englianos).

C. *Belt-ornaments*. 1. A cone with spiral decoration, possibly representing a snail, is very common. It is pierced through the base. A set from a tholos tomb at Pylos (Rutsi) had evidently been sewn to a belt, and such was probably always the purpose of these cones. Like the relief-beads, they were also made in glass. With these we may class the button-like objects from Shaft Graves IV, V and Omicron at Mycenae, which apparently decorated shield-straps.

2. An unusually fine kind of rosette probably also served as decoration for a belt or girdle. One such example comes from Tomb 31 at Mycenae and a set of eight come from Tomb 10 at Dendra.

#### FINGER-RINGS

Finger-rings were used to hold signets, and purely for adornment. It has, indeed, been argued that Minoan and Mycenaean signet-rings themselves were used more for adornment than for use. A strong argument in favour of this view is the fact that the image is regularly the correct way round on the ring and not in the impression.

They may be divided into two main classes: (a) those with the typical

<sup>1</sup> Hawes, H. B. *Gournia*, pl. 11, no. E14.

oblong bezel at right-angles to the hoop; and (*b*) those with bezels of other shapes.

A. *With oblong bezels.* 1. With plain bezel (pl. 8B). Rings of this kind, first found in Crete in the eighteenth century B.C., continue in Crete and in Greece down to the end of this period and (in Crete) beyond it.

2. With decorated bezel. Occasionally the bezel is inlaid with stones or glass. One such comes from the Tholos at Volo, and three from the Kalyvia cemetery at Phaestos; these are all probably of the fourteenth century. Others, as late as the twelfth century, come from Tomb 61 at Ialysus.

3. Signet rings (pl. 7). In some of the finest examples the bezel is of solid gold, engraved in gem-cutting technique. A large ring from the Acropolis at Mycenae is believed to have been so made. But in the vast majority of rings the bezel was made of two layers of sheet metal, with some solid substance, perhaps magnetite sand, between them. The lower sheet was made in one piece with the lining of the hoop; the upper sheet received the intaglio decoration before being attached. The main design was either driven in with punches or was beaten over a mould; details were then engraved. The hoops are often beaded or otherwise decorated. In a number of so-called finger-rings the hoops are too small to have been worn on the finger, and they should rather be regarded as signets made for suspension, in the form of finger-rings.

Signet-rings of this kind were popular in the second half of the sixteenth century, being especially well represented in the Shaft Graves at Mycenae, which have produced specimens of very high quality. In the fifteenth century even finer rings were made. The study of the designs is beyond the scope of this survey, but a few superlative examples of the fifteenth century may be mentioned. The finest is perhaps the large ring from the Tiryns Treasure. Other superb examples come from the Tholos at Dendra, and Isopata Tomb I at Knossos.

The ring illustrated on pl. 7A comes from Tomb 44 at Prosymna and was probably made in the fourteenth century. It represents an heraldic composition of griffins on either side of a Minoan column. As can be seen from the softness of the outlines, the impression was made in sheet-gold.

The ring on pl. 7B comes from an unidentified tomb at Mycenae. It

represents a man tending a plant on an altar, while behind him stands a Cretan wild-goat, the *agrimi*; behind the goat is a tree. The clean lines of this design show clearly that it is engraved in solid gold. The high quality of the work suggests a date in the fifteenth century.

Occasionally signet rings were carved entirely out of a block of stone. Two examples are known from Mycenae. One, of rock-crystal, comes from the Citadel; the other, of red jasper, from an unidentified tomb.<sup>1</sup>

A ring from Sphoungaras, of about 1600–1550 B.C., has a double hoop of bronze and a bezel of engraved rock-crystal. This use of an engraved ring-stone is unique in the Bronze Age, and anticipates by many centuries the custom of Classical Greece.

B. *With other sorts of bezel.* Rings with circular bezels survive from the previous period into the sixteenth century. One in gold comes from Tomb 22 at Mochlos; and one in bronze and one in lead from tombs at Sphoungaras.

From the Vapheio Tomb comes a ring with an inlaid circular bezel (fifteenth century). Similar rings are extremely common in tombs at Enkomi, mostly of the fourteenth century (pl. 8c).

A ring with an inlaid rosette as a bezel and an inlaid hoop also comes from the Vapheio Tomb. The inlay is blue and green, and is described as being of glass. Finally, two rings with unusual bezels. One from Mavro Spelio Tomb 7 at Knossos has a gold bezel in the form of five chrysalids. The ring cannot be directly dated, but the chrysalids look to be contemporary with a solitary one from Tomb 518 at Mycenae (fifteenth century). The second ring has a heart-shaped bezel (probably representing an ivy-leaf) formerly inlaid, but the inlay is now missing. It comes from a tholos tomb at Pylos.

#### PINS

Pins of great elaboration are found in the Shaft Graves at Mycenae. Most, if not all, were used for fastening drapery or diadems.

A silver pin of shepherd's crook type comes from Grave III (pl. 6A). From the head is suspended a gold embossed ornament of a woman wearing Minoan dress and holding in her hands a double chain or garland. On her head are two superimposed pairs of volutes; above these

<sup>1</sup> (1) Schliemann, *Mycenae*, 131–2; fig. 175 (p. 112). Stais, no. 1376. (2) Tsountas-Manatt, 160, fig. 54. Stais, no. 2852.

are three pairs of branches curving outwards and downwards and ending in papyrus flowers and fruits; above these are three erect papyrus flowers. The type of the pin and the representation of the goddess (for such she must be) are purely Minoan, but a certain coarseness of the workmanship may indicate Mainland work. The papyrus ornament is Egyptian in origin, but reached Mycenae by way of Minoan art, where it was common.

Bronze pins with heads of rock-crystal are found in Graves III and Omicron. They were used as dress-pins.

A gold pin with a head in the form of a sheep of the *argali* variety on a platform comes from Grave IV. It is remarkably like the silver pin from Amorgos, some three to four centuries older (see p. 53). Both are probably imports from Anatolia, of which area the *argali* is native.

Another pin from the same grave has a head in the form of a deer's horn. It could have the same origin as the *argali* pin.

A third pin, from Grave III, with an heraldic arrangement of deer, comes from the same mould (or stamp) as a number of clothing-ornaments from the same tomb. Like them, it could well be a local product.

After 1500 B.C. pins, although in use, were no longer treated as articles of luxury. We may take the tombs of Mycenae (Wace's excavations) and Prosymna as typical. Here we find pins of very simple form from 1500 to 1200 B.C.; a few of silver, most of bronze or bone. The twelfth century is represented by rather more elaborate pins in bronze, examples of which come from Gypsades Tomb 7 at Knossos and from an unpublished tomb at Argos. The head is composed of a globular swelling, with ribbing above and below. A Cypriot origin is probable (see p. 89).

#### FIBULAE

Fibulae of the *arched* and *fiddlebow* varieties are first found in Greek lands in the fourteenth or thirteenth century. A number of bronze examples come from tombs at Mycenae.<sup>1</sup> As yet no fibulae in precious metals have been recorded from Greece or Crete in this period, but they occur in Cyprus (see p. 89).

<sup>1</sup> Furumark, A. *The Chronology of Mycenaean Pottery* (Stockholm, 1941), 91.

## APPENDIX

*Cypro-Mycenaean Jewellery, 1400-1100 B.C.*

## DIADEMS

Diadems are common (pl. 11D). They are composed of strips of thin sheet-gold stamped with rosettes, palmettes and spirals, or with impressions from stamps intended primarily for making relief-beads; occasionally they are decorated freehand in repoussé. Although the patterns are frequently of Mycenaean origin, the diadems themselves are not of Mycenaean but of Asiatic inspiration. They bear no resemblance to those from the Shaft Graves at Mycenae; moreover, by the time they first appeared in Cyprus, diadems had been obsolete in Greece and Crete for a century.

## FUNERARY MOUTHPIECES

We may claim a similar origin for oval ornaments of thin sheet-gold. They are frequently decorated in the same way as the diadems, but some, with embossed representations of lips, reveal their purpose, which was to cover the mouth of the corpse. A mouthpiece of this nature, evidently exported from Cyprus, was found in Tomb 9 of the Mavro Spelio cemetery at Knossos.

## HAIR-SPIRALS

Spirals of wire are common in Cypriot tombs of this date (pl. 12 I). They were probably used indiscriminately as hair-ornaments, earrings and possibly even nose-rings.<sup>1</sup> They have a long history in the Aegean and Western Asia (see p. 50).

## EARRINGS

Many types are known, some of Mycenaean, some of Syrian origin.

(1) Spiral. For these ornaments, see above.

(2) Tapered hoop (pl. 12B and E). A known Middle Minoan type, it may have survived in Crete into the Late Minoan period (although there is no evidence for this), and so have reached Cyprus about 1400; but it is more likely to have been introduced into Cyprus from Syria, where its presence is attested in the second millennium.<sup>2</sup> It survived in

<sup>1</sup> *SCE* iv, pt. 2, 162, 221, and refs.

<sup>2</sup> A North Syrian terracotta in Oxford (1914. 109) wears gold earrings of this type. It is dated about 1500 B.C.

Cyprus through the Dark Ages and was re-introduced from there into Greece about the seventh century.

(3) Tapered hoop made of twisted strips of gold (pl. 12D).<sup>1</sup> This type is not Minoan or Mycenaean, and must be either a local Cypriot or a Syrian creation.

(4) Leech (pl. 12H). An elongated version of the tapered hoop. A non-Mycenaean type, which reached Cyprus in the twelfth century.<sup>2</sup>

(5) Tapered hoop with a triangular pendant of large grains (pl. 12F). The type is also known in Crete, and may well have reached Cyprus from that quarter. Like the simple tapered hoop, it lasted through the Dark Ages in Cyprus and reappeared in the Greek repertoire in the seventh century.

(6) Tapered hoop with an elongated pendant of small grains (pl. 12C). This is definitely a Minoan type (see p. 72); but the Cypriot versions are smaller than their Minoan prototypes. Some examples are equipped with wire spirals at the top of the pendant on either side, to give the appearance of a rudimentary bull's head.<sup>3</sup>

(7) Hoop or spiral with a bull's head pendant (pl. 12G).<sup>4</sup> A stylized rendering of a bull's head, stamped from sheet-gold, is pierced at the top on either side to receive a thin wire, which is bent to form a hoop or a spiral. Although the subject is popular in Minoan-Mycenaean art, these are not Minoan or Mycenaean earrings, but are probably a local Cypriot creation. Two earrings of this type found their way to Greece. One occurs in a twelfth-century tomb at Perati in Attica, the other in the Tiryns Treasure.

#### BEADS AND PENDANTS

Many beads and pendants are of known Mycenaean types; others are of Egyptian origin.

#### FINGER-RINGS

Rings with circular bezels inlaid with coloured glass are particularly common (pl. 8c). The type is of Minoan-Mycenaean origin for it occurs in the Vapheio Tomb. Other rings, with no such antecedents, are found; they are probably of Syrian origin. Rings of non-Aegean

<sup>1</sup> Hadaczek, 8, fig. 9.

<sup>2</sup> Gjerstad, E. *Studies on Prehistoric Cyprus* (Uppsala, 1926), 284.

<sup>3</sup> *BMCJ* nos. 538-45.

<sup>4</sup> Hadaczek, 8, fig. 11.



type from Kouklia were decorated with a primitive form of cloisonné enamel (see p. 25).

## PINS

Most Cypro-Mycenaean pins are not of Mycenaean but of Syrian origin, with an ornate head, sometimes of coloured frit, and an eyelet-hole half-way down the shaft (pl. 12A).<sup>1</sup> A few bronze pins of this general type appear in the Aegean in the twelfth century (see p. 86); we may suspect Cypriot influence. The shepherd's crook pin, a Minoan type (see p. 85), is also occasionally found in Cyprus.

## FIBULAE

Two gold fibulae of the *arched* type in London come from Maroni; they are dated typologically in the twelfth century or slightly later.<sup>2</sup> This is a pure Greek type of fibula, but examples in precious metals are not as yet attested outside Cyprus.

<sup>1</sup> See *BMCJ*, pl. 4.

<sup>2</sup> *BMCJ* nos. 818-19.

## The Dark Ages 1100–800 B.C.

## INTRODUCTION

**A**BOUT 1100 B.C. the Mycenaean world finally collapsed, to be succeeded by the so-called Dark Ages, some three centuries of poverty and near-barbarism, whose only progressive feature was the gradual replacement of bronze, for certain purposes, by iron. The chronology of this period is uncertain in the extreme. In terms of Attic pottery, as worked out for the Cerameicus Cemetery, it covers the Submycenaean, Protogeometric and earlier Geometric periods, which we may tentatively date 1100–1050, 1050–900 and 900–800 B.C. respectively.

In the eleventh and tenth centuries there seems to have been little, if any, communication with the more civilized East. In the ninth, however, contacts with Cyprus and Syria were renewed to a slight extent, and the Dark Ages may be said to end about 800 B.C. with the intensification of these Eastern contacts.

Although occasional tombs elsewhere provide contributory evidence, the Cerameicus is the only site to cover the whole period. The picture here presented probably reflects the state of affairs throughout Attica. Whether it may be used as a guide to the rest of Greece is less certain, but there is at present no evidence to the contrary, except in Crete, where the Minoan tradition seems to have lingered on, and Oriental influences to have arrived early.

Jewellery in precious metals was rare throughout the Dark Ages. The raw materials were in all likelihood obtainable only by melting down objects rifled from tombs of the Late Bronze Age, and they cannot have provided a very plentiful source. The so-called Tiryns Treasure is probably a hoard amassed in the tenth century for just this purpose.

What little jewellery has survived is of the simplest kind. But the popularity of jewellery at different dates in this period is far from uniform. For the sake of convenience, we may divide the Dark Ages into three stages: (1) Submycenaean and transitional Submycenaean-Proto-geometric (about 1100-1025 B.C.); (2) the bulk of Proto-geometric (about 1025-925 B.C.); and (3) the end of Proto-geometric and earlier Geometric (about 925-800 B.C.). The jewellery of the first stage, composed of little but wire, comprises partly Mycenaean survivals, partly new influences from the north. A certain amount of gold was used, especially for hair-ornaments, but bronze was the commoner material, and iron was also used. The second stage is too ill-represented for any generalizations to be possible. The jewellery of the third stage, however, although poor stuff, may be regarded as reflecting the first renewals of contact with the East. Apart from pins and fibulae, which are only marginally relevant, there are few signs of the continuity of earlier Greek forms, but many indications of Cypriot or Syrian influence, which increased in intensity during the ninth century. To the wire-jewellery of the first stage is now added a primitive form of repoussé in sheet-gold.

## THE JEWELLERY

### *Stage 1. 1100-1025 B.C.*

Here we are particularly fortunate, since many of the graves with jewellery are undisturbed single inhumations, and the jewellery has frequently remained on the body, leaving no doubt as to the function of the particular pieces.

#### HAIR-SPIRALS

Spirals of gold or bronze were used for decorating the hair. Some (e.g. at Salamis) continued the established pattern, and are indistinguishable from Minoan and Mycenaean spirals. Others represent a new departure, whereby the wire was bent double and then spiralled (pl. 13B). These latter are particularly common in tombs of this period in the Cerameicus (SM no. 46; PG nos. 5, 22 and 25), and may have arisen towards the end of the Submycenaean period. Their origin is to be sought in Central Europe, in the so-called Lausitz culture.<sup>1</sup>

<sup>1</sup> *Theoria, Festschrift für W.-H. Schuchardt* (Baden-Baden, 1960), 156.

Examples also occur in the Tiryns Treasure and in the Elgin Collection in London.

#### FINGER-RINGS

Finger-rings were popular in bronze and were also made of iron, but are not so far recorded in precious metals. The Mycenaean finger-ring is common, but slightly modified in that the bezel is pointed at both ends. Other simple shapes are also found: spirals, plain hoops, and hoops with an s-spiral bezel. The last mentioned is a northern type with a long subsequent history, first found in the so-called Aunjetitz culture of Central Europe.<sup>1</sup> The rings with pointed-oval bezels belonged, with one exception, to women; the other varieties were worn by both sexes.

#### BRACELETS

In addition to those quoted above as hair-ornaments, similar spirals of double wire, but of considerably larger diameter, occur in the Tiryns Treasure. These larger spirals have been identified, with a high degree of probability, as bracelets.

#### PINS AND FIBULAE

These articles were popular in bronze. In this material they are articles of necessity rather than luxury, but are perhaps worthy of a passing mention. The fibulae (worn chiefly by women) are principally of the Mycenaean arched type, but the pins (worn only by women) are a new departure, and constitute the start of a long unbroken series. They were worn in pairs, one on each shoulder, and their presence is evidence for the introduction of the classical Doric chiton, or peplos. The ancestry of these pins can be traced northwards to the transitional Aunjetitz-Lausitz culture of Central Europe.<sup>2</sup>

#### *Stage 2. 1025-925 B.C.*

In this period no jewellery is recorded from the Cerameicus. Pins and fibulae, of bronze and iron, admittedly had a continuous history, but they were articles of necessity rather than luxury. A gold finger-ring of pure Minoan-Mycenaean type from Vrokastro in Crete belongs to

<sup>1</sup> *Kerameikos*, i, 85. *BSA* xxiii (1918-19), 17-24.

<sup>2</sup> *Kerameikos*, i, 82.

the tenth century, or even later. It may be an heirloom, or it may be an example of the survival of Minoan traditions in the Minoan homeland.

*Stage 3. 925–800 B.C.*

Jewellery reappears in the tombs, but as those with jewellery are now almost without exception cremations, the functions of the various pieces are frequently in doubt.

#### SPIRALS

Wire spirals are again found, at first in bronze, but soon also in gold. Bronze examples come from Athenian tombs of 925–900: PG Tomb 39 in the Cerameicus, and Tomb 14 in the Agora. Gold examples come from tombs of 900–875: Tomb 26 in the Athenian Agora and Tomb 2 at Tiryns. From a tomb at Clenia, of 850–800 B.C., come spirals of gold-plated bronze, expanding slightly at the ends. Their purpose is not certain. Finger-rings, hair-ornaments and earrings are all possibilities, and similar spirals could have been used for several purposes. Some are too small for finger-rings, but otherwise there can be no certainty.

#### FUNERARY BANDS

Diadems and other ornaments of gold foil, decorated with linear patterns, first appear in Geometric Tombs 13, 42, and 43 in the Cerameicus (875–825). The use of such ornaments was introduced either from Cyprus or Syria, where they had a high antiquity as tomb-furniture. They are too flimsy ever to have been worn by the living, even with a solid backing, and were presumably made exclusively for burial with the dead. They were doubtless intended primarily for inhumations, but their further use for cremations is not hard to understand. For their purpose, see p. 98.

#### FINGER-RINGS

Rings of sheet-gold, decorated with dot-repoussé, are represented in two Geometric tombs from the Cerameicus, nos. 7 (900–875) and 41 (875–825) (see pl. 13A). The home of this form of ring is Cyprus, where examples go back to about 1000 B.C.<sup>1</sup>

<sup>1</sup> SCE i, pl. 105: 16, 20.

## PINS AND FIBULAE

These continued, chiefly in bronze. A pair of gold-plated iron pins, however, from Geometric Tomb 41 of the Cerameicus has greater claim to be ranked as jewellery.

## The Period of Oriental Influences 800—600 B.C.

### GENERAL INTRODUCTION

SOON AFTER 800 B.C., contacts between Greece and the East were greatly intensified. This period of Oriental influence on Greek art lasted until about 600 B.C., by which time the new elements had been completely absorbed into an authentic Greek idiom.

Voyages of discovery and colonization created the desire, and the means, to share in the greater prosperity of the East. The areas in which the Greeks were principally interested were still Cyprus and Syria. The latter area should be taken, in the broadest sense, to include (a) Phoenicia and (b) the North Syrian or Neo-Hittite states. In this context we should perhaps also include the neighbouring territory of Cilicia. It has been plausibly suggested that Phoenician craftsmen established themselves in some of the principal Greek cities, where they founded schools and took local apprentices.<sup>1</sup> Thus Oriental techniques were harnessed to the service of Greek art. This explanation fits extremely well with what we know of the development of jewellery.

Influences from Phrygia and Lydia were also exerted on the Eastern Greek cities, and through them on the rest of Greece. Direct Egyptian and Assyrian contacts were lacking, but indirect influence from both cultures reached Greece by way of Syrian art. Finally, forms and motives previously found in Minoan-Mycenaean art now reappear. Most are best explained as re-introductions, ingredients of some Oriental art which had never lost them; the arts of North Syria and Asia Minor are the most likely sources. On the other hand, the

<sup>1</sup> Dunbabin, T. J. *The Greeks and their Eastern Neighbours* (London, 1957), 37-41.

occasional survival or re-discovery of Minoan-Mycenaean objects in Greek lands cannot be ruled out as a contributory factor.

So far as jewellery is concerned, we may divide this period into two stages: an earlier, about 800–675, and a later, about 675–600 B.C.

#### A. 800–675 B.C.

The extremely meagre repertoire of the Dark Ages was greatly enriched in a few advanced centres, such as Athens, Eretria, Corinth and Knossos. In these centres we suddenly find a wealth of jewellery in gold, electrum and silver, exhibiting new motives and new techniques.

The jewellery is considered in detail below, but the new techniques are best considered here. They include the making of chains (simple and loop-in-loop); the casting of gold; repoussé and some at least of its mechanical variants (see p. 10); filigree and granulation; inlaying with stone, amber and glass; engraving.

Some of the jewellery from Attica and Knossos has an exotic appearance, which we should probably be correct in regarding as Phoenician. Certain pieces may indeed have been imported, but most are better explained as coming from workshops founded in Greece by Phoenician craftsmen.

#### B. 675–600 B.C.

The somewhat exotic jewellery of Athens and Knossos now gave place to a more restrained, more Hellenic style. Athens, considerably less prosperous than before, dropped back from the lead. Corinth, on the other hand, continued much as before. There is not much evidence for Cretan jewellery of this period, but what there is suggests that it formed part of an island *koine*, comprising Crete, the Cyclades and the Dodecanese. Rhodes and Melos, the chief centres of Island jewellery, seem to have learnt the art from Crete, and to have advanced it considerably further.

There is evidence of a fourth centre, situated in Eastern Greece. So far, the evidence comes almost entirely from Ephesus, but future excavation will almost certainly produce further examples on the western coast of Asia Minor. This East Greek school borrowed much from Oriental sources, almost certainly Phrygian and Lydian, and produced jewellery of a distinctive kind, although related in many respects to that from the Islands.

The Greek communities in Sicily produced a little silver jewellery in



the seventh century, and are best considered as a fifth school, albeit one of little importance.

The techniques employed are much as before, but there are certain differences. Filigree is rather more common, but is still less used than granulation. Inlay is less popular. And repoussé and its mechanical variants are increasingly applied to really stout sheet metal.

In view of the pronounced regional differences in the jewellery (as indeed in many of the arts) of this period, it is best treated under the five main headings mentioned above: Attica and neighbourhood, the Peloponnese, the Islands, Eastern Greece, and the West.

## I. ATTICA AND NEIGHBOURHOOD

### *Introduction*

The principal sources for Attic and related jewellery comprise two tombs in the Cerameicus Cemetery, two tombs and an unstratified deposit at Eleusis, a tomb at Spata, and tombs at Eretria. Between them they cover the whole of the eighth century. There are no recorded sources for the seventh century.

Embossing of thin metal was practised with some skill, but the greatest achievements of this period were granulation and inlaying with glass and amber. Funerary bands continued to be made, and were now elaborately embossed by means of moulds; and necklaces, pectoral ornaments, earrings, pins and fibulae made their appearance in precious metals. The new techniques and the new forms of jewellery strongly suggest the actual settlement of Oriental craftsmen (probably from Phoenicia), such as was mentioned above.

### *The Jewellery*

#### FUNERARY BANDS

At some point in the first half of the eighth century, the early Geometric diadems gave place to a more elaborate type of band with figured decoration (fig. 16) and, in one example, with an inlay of glass. These bands, which are represented in the Cerameicus in Geometric Tombs nos. 50 and 72, have been fully published, and need little comment here.<sup>1</sup>

<sup>1</sup> Ohly, *passim*. Reichel, nos. 1-31. Cook, J. M. *BSA* xlvi (1951), 45 ff. *Gnomon*, xxi (1949), 1.

Of thin sheet gold, like the earlier varieties, and varying in length between 20 and 50 cm., they were made to be placed round the brow of the dead or, less commonly, under his chin or round his arm. They were made in moulds designed primarily for making gold coverings for caskets, fragments of which have been found at Eleusis.<sup>1</sup> The metal is so thin that the pattern could have been made without hammering, but simply by pressure with the fingers or with a burnishing-tool.



FIG. 16. *Attic funerary diadem, eighth century B.C.*

The most popular subjects are battles of men with animals, and animal-friezes. The style is in some cases related to that of contemporary Attic vase-painting; in others it is freer, with a stronger Oriental flavour. Some of the bands may have been made in imported moulds, but most are probably the products of local workshops founded by immigrant craftsmen.

Bands of the same school have also been found at Eretria and others of related types come from Corinth and Crete.

#### EARRINGS

(1) From the Isis Tomb and Tomb A at Eleusis, of about 800–750 B.C., come earrings formed of a gold crescent decorated with granulation and inlay and hung with gold chains. In one pair, tubes with crinkled ends hang from the chains. These tubes, as one surviving example shows, were formerly covered by beads of amber or glass to give the appearance of pomegranates. Another earring of this type is illustrated on pl. 13D.

(2) A pair of gold earrings of an entirely different type come from Thebes.<sup>2</sup> They consist of a curved wire terminating in a hollow cone at either end. One cone is detachable, being secured with a pin, to enable the earring to be inserted through a hole in the lobe. A date in the eighth century is suggested by the existence of a similar cone in the Akraia deposit at Perachora.

The similarity of the cones to cones from the Caucasus has given

<sup>1</sup> *AE* 1885, pl. 9: 2. Reichel, no. 4. Ohly, pl. 3.

<sup>2</sup> *Mon. Piot*, ix (1902–3), 148. Coche de la Ferté, pl. 10: 3 and 4.

rise to the suggestion of a Caucasian origin for these objects,<sup>1</sup> but cone finials are not rare, and there may well be a common origin in Western Asia for both varieties.<sup>2</sup>

(3) Certain gold ornaments are known consisting of a disc, decorated with granulation and having a central inlay. The back of the disc is lightly decorated with granulation; in the centre is set a curved 'stalk', on the end of which is a double-pyramidal terminal set with inlay. Two complete pairs are known, one in the Elgin Collection (pl. 13E) and one in a private collection in Switzerland.<sup>3</sup> In addition, the disc from a similar object was found at Delos, near the Artemision.<sup>4</sup>

The purpose of these ornaments is disputed. The pair in Switzerland have been described as decorations for the temples (possibly hanging from a ribbon), but this explanation is not satisfactory. It is difficult to explain them except as earrings. It would indeed be painful to thrust the swelling on the 'stalk' through the ear, but it would not be impossible, and more painful ordeals than this have been endured in the cause of beauty.

An Attic origin is suggested by the technical resemblance between these pieces and the Attic earrings (pl. 13E). A date in the first half of the eighth century is probable.

(4) A pair of gold ornaments in Los Angeles County Museum (unpublished)<sup>5</sup> combines elements of nos. 2 and 3 above. At one end of a curved wire is a detachable disc, like those of no. 3; at the other end is a fixed hollow cone, granulated on the outside and granulated and inlaid (the inlay now missing) on the inside. These must also be earrings of the same date and fabric as no. 3.

#### BEADS AND NECKLACES

Globular gold beads come from Tomb A at Eleusis.

A composite necklace comes from Tomb 3 at Spata of 725-700 B.C. (pl. 13F). It consists basically of five rectangular plaques decorated with cells in diamond and crescent patterns, which formerly contained inlay. Below hang, some direct and some on chains, pomegranate-pendants

<sup>1</sup> Coche de la Ferté, 26 ff.

<sup>2</sup> Jacobsthal, *Pins*, 163. *BSA* xlviii (1953), pl. 67, no. G 5 (from Ithaca).

<sup>3</sup> Schefold, *Meisterwerke*, no. 554.

<sup>4</sup> *Délos*, xviii, 291, fig. 342, pls. no. 740.

<sup>5</sup> I owe this information to Miss Diane Lee Aller, who identified the earrings.

like those on the earrings from Eleusis. Parts of similar necklaces are amongst the Elgin Jewellery in London.

## PECTORAL ORNAMENTS

Elements of a pectoral ornament were found (unstratified) at Eleusis (pl. 14C-F). They are decorated with geometric patterns in granulation and with glass inlay; one carries a representation of the so-called Dipylon or Boeotian shield. The complete ornament, as reconstructed by Segall, consisted of a number of square plaques flanked by similar plaques in the shape of a trapezium. The type of ornament has been shown by Segall to be of Syrian origin, since an earlier example comes from Palestine.<sup>1</sup> The date of these plaques cannot be far from the Eleusis earrings (800-750 B.C.), which they strongly resemble. The Rhodian plaques (pls. 18-20) show later developments of this class of ornament.

## FINGER-RINGS

A number of rings are mentioned, but not described, in connection with the Isis Tomb at Eleusis. The lady buried in the tomb is recorded as having worn two silver rings, four or five of bronze, and three of iron. Finally, the ring illustrated on pl. 13C, from the Elgin Collection (one of several similar), may be tentatively dated in the eighth century from its resemblance to rings from the Akraia Deposit at Perachora. It may also, as a working hypothesis, be regarded as Attic, since that is what most of the Elgin Jewellery seems to be.

## PINS

Pins continued to develop.

## FIBULAE

A new type of bronze fibula comes from Geometric Tomb 41 of the Cerameicus (875-825 B.C.). This, the Attico-Boeotian, has a square engraved catch-plate.<sup>2</sup> By the first half of the eighth century, on the evidence of the Isis Tomb at Eleusis, the catch-plate has increased in size. This type was common in bronze in Attica and Boeotia. Four splendid examples in gold belong to the Elgin Collection in London (pl. 14B). Their catch-plates are engraved with pictures of animals, birds and ships, and with swastikas.

<sup>1</sup> *Boston Bull.* lxxviii (1943), 44.

<sup>2</sup> Blinkenberg, *C. Fibules grecques et orientales* (Copenhagen, 1926), Type VIII.

## 2. THE PELOPONNESE

*Introduction*

The surviving Peloponnesian jewellery falls under three headings.

(1) For the Corinthia, we have a number of tombs from Corinth, and two votive deposits from Perachora. Between them, these sources cover the eighth and seventh centuries. The jewellery consists of funerary bands, spiral earrings of several different varieties, embossed clothing-ornaments and finger-rings. Oriental influence is present, but is better assimilated than in contemporary Attic jewellery.

(2) For the Argolid we have an alleged tomb-group from Argos in the Stathatou Collection, the basis of which is a pendant and a pair of earrings with figures in the style of the late seventh century. The antecedents of this style are obscure.

(3) For Laconia, there are a few articles of jewellery, notably a wreath and a few beads, from the sanctuary of Artemis Orthia and from the Menelaion at Sparta. Too little material survives for any profitable speculation about a Laconian school of jewellery, which, however, may well have existed.

*The Jewellery*

## FUNERARY BANDS

Funerary bands similar in function to those from Attica were also made in Corinth.<sup>1</sup> They are decorated with figured scenes and can be dated, from their relationship with Corinthian pottery, to run from the later eighth to the mid-seventh century. Some have continuous scenes, some isolated figures separated by ornaments, and some (the latest) are decorated with groups arranged as a series of metopes.

A bronze mould in Oxford, evidently for the manufacture of such bands, comes from Corfu, and is illustrated on pl. 15C-F. The decoration, in the metope-style, can be dated, by analogy with Protocorinthian pottery, to about 650 B.C.

## WREATHS

The earliest Greek wreath comes from a deposit of the earlier seventh

<sup>1</sup> Reichel, nos. 37-43.

century at the sanctuary of Artemis Orthia at Sparta. It is made of twisted silver wires threaded with tubular gold beads; between the beads are set gold leaves and berries. Wreaths have a long history from this point. For the various purposes for which they were used, see p. 120.

#### SPIRALS

Wire spirals, possibly earrings, possibly hair-ornaments, continue from the previous period into the eighth century. A pair from Tomb F at Corinth has thickened ends, decorated with engraving; round them is a herringbone pattern, and on the tips a cross. They are a development of the ninth-century type from Clenia (see p. 93).

#### EARRINGS

Two varieties, both based on the spiral, are known from the Corinthia.

(1) Like the spiral of uncertain purpose from Tomb F at Corinth, but there are fewer turns, and the ends are arranged symmetrically. Later representations, mainly on coins (see p. 122), show that these earrings were worn with the ends pointing upwards. They appear to have been thrust through a hole in the lobe. They occur in gilt bronze at Perachora (Limenia). Earrings of this type occur at Sinjerli (about 700 B.C.) and a Syrian origin may thus be presumed.<sup>1</sup> The type was very popular in Rhodes and is also found in Eastern Greece.

(2) Two discs, joined by a spiral (pl. 15B). The type occurs at Perachora, in both the Akraia and Limenia deposits; a date in the eighth century is therefore indicated. It is also found in two alleged tomb-groups from Corinth, in Oxford and Berlin. Earrings of this kind were sometimes straightened out, shorn of one disc, and used as pins, of which a number were found at Perachora. This type occurs in gold and bronze. A related type also occurs in bronze at Perachora (Akraia) in which the discs are replaced by solid cones.

(3) An entirely different type of earring comes from an alleged tomb-group from Argos in the Stathatou Collection. It takes the form of a conical pendant decorated with filigree and globules of gold and surmounted by a figure of a Mistress of Beasts, with lions. The cone-earring, from this beginning, had a long life, of about four centuries.

<sup>1</sup> Von Luschan, *Sendschirli*, v, pls. 44-5.

## THE PELOPONNESE

The Argive examples can be dated, by the style of the goddess's face, to the end of the seventh century.

### BEADS

Beads in the form of a bud, either by itself or suspended from a tube, are known in gold, silver and bronze. They enjoyed a wide currency in the Peloponnese, being found at Perachora (Limenia), Sparta (Orthia Sanctuary and Menelaion) and Argos (in the Stathatou Collection).

A biconical bead, decorated with filigree, comes from the Orthia Sanctuary at Sparta.

### PENDANTS

A pendant like the Stathatou earrings comes from the same ensemble, allegedly from Argos. It has a similar cone, surmounted by a platform on which stand two confronted sphinxes.

### CLOTHING-ORNAMENTS

Discs of gold foil, with crude geometric patterns impressed on them, come from the Akraia Deposit at Perachora.

### BUTTONS

Gold-plated buttons are said to have been found in three identical examples in a tomb at Megara. They have on the face an embossed head in the Dedalic style of about 650 B.C., and on the back a metal loop (pl. 15A).

### FINGER-RINGS

Rings not unlike the Attic variety on pl. 13C come from deposits in the Corinthia of the eighth century; Corinth, Tombs D & F, and the Akraia Deposit at Perachora.

Rings of wire come from a tomb at Argos of the late eighth century. Three kinds are represented: one of single wire, one of twisted wires, and one of twisted wires decorated with rather coarse granulation.

### PINS

Two silver pins joined by a loop-in-loop chain were found in the Orthia Sanctuary at Sparta, and date from the early seventh century.

## 3. THE ISLANDS

*Introduction*

For the early part of this period our main source consists of two closely related funerary deposits from Khaniale Tekké, near Knossos.<sup>1</sup> The jewellery can be dated, by internal evidence, to the early years of the seventh century. It consists of a funerary diadem somewhat like the Attic and Corinthian varieties, several pendants with a strong Oriental flavour but with certain undeniably Greek elements, two pairs of pins, and other objects of lesser importance. Two pieces from the Idaean Cave fall into the same group, in which we recognize the Oriental motives and techniques already at home in Attica in the early eighth century, but now to a certain extent hellenized. A few funerary diadems and Syrian-type pendants from Exochi and elsewhere in Rhodes are also dated by associated finds to the early seventh century.

The principal sources for the second part of this period are tombs at Camirus and Ialysus in Rhodes and, to a lesser extent, a deposit at Lindus, also in Rhodes. Jewellery has also been found in Crete and on Thera, Melos and Delos. There was certainly a flourishing Rhodian school, influenced in part by the Cretan school of the early seventh century, in part by independent borrowings from Syria and Asia Minor. Gold, electrum and silver were used. The principal types are funerary bands, diadems with rosettes, spiral earrings, embossed pectoral ornaments with Greek and Asiatic motives, and animal-head bracelets. There appears also to have been a school on Melos which specialized in rosettes for diadems, of great elaboration, and possibly also equally elaborate earrings.

The characteristic features of the Island jewellery of this period are the continued use of fine granulation; the occasional use of filigree; embossed figures in a style reminiscent of contemporary vase-paintings; and human heads, animal-heads and animal-figures in the round for attachment to articles of jewellery. Inlay was still practised, but was falling out of favour, and variety was now obtained principally by varying the surface-texture of the metal.

*The Jewellery*

## FUNERARY BANDS

A band from Knossos (Tekké) has a repeated stamped design of two

<sup>1</sup> Generally known simply as Tekké.



men (Gilgamish and Enkidu?) between two lions. The Oriental influence is very strong. A diadem from the same mould, but with no provenance, is published by Reichel.<sup>1</sup>

Bands of another kind with geometric patterns come almost without exception from Rhodes, and were presumably made there. Some were evidently diadems, while others were mouthpieces. They fall into two groups, dated (partly stratigraphically and partly stylistically) to the first and second halves of the seventh century respectively.

The first group is represented at Exochi and at Camirus, Tomb 82; the second at Camirus, Tomb 201, and by examples in London from Camirus and Aegina.<sup>2</sup>

#### DIADEMS

Rhodian and Cycladic tombs have also produced diadems, more substantial than the funerary bands, which could well have been worn by the living. These diadems, decorated principally with rosettes, belong to a type of ornament originally, it would seem, Assyrian, but copied in Syria, Cyprus and elsewhere.<sup>3</sup> They will have reached the Greek world from Syria. The Greek examples fall into three classes, depending upon how they were made.

(1) In the simplest variety the rosettes are embossed in repoussé on the diadem, as in a piece from Tomb 13 at Camirus, of the later seventh century.

(2) Rosettes were made separately and attached to a band of the same material, gold or electrum. One example comes from Tomb 11 at Camirus, of the later seventh century; another, also from Camirus, is shown on pl. 19A. An interesting variant from Cos in the Benaki Museum has sphinxes in addition to rosettes.<sup>4</sup>

(3) Rosettes were made separately and attached by runners or by some other means to bands which no longer exist, and which were presumably of leather or textile. These rosettes vary in complexity, but for convenience may be divided into two classes, the *simple* and the *ornate*. *Simple* rosettes have been found at Praisos and Arkades in

<sup>1</sup> His no. 23.

<sup>2</sup> *BMCJ* nos. 1157 and 1217.

<sup>3</sup> Frankfort, pls. 96-7 (Assyria). Lloyd, *S. Early Anatolia* (Harmondsworth, 1956), pl. 15 (Syria). Barnett, *Nimrud Ivories*, pls. 70-1 (Syrian work). *ibid.*, pl. 129 (Urartu). Godard, *A. Le Trésor de Ziwiyé* (Haarlem, 1950), 104, fig. 90, = Coche de la Ferté, pl. 4: 2 (North Persia). *SCE* iv, pt. 2, pl. 10: 1 (Cyprus).

<sup>4</sup> *BCH* lxxi (1947), 426, fig. 3.

Crete and on Thera, in Tomb 116. They were evidently made in Crete; possibly also in the Cyclades. The examples from Thera belong around the middle of the seventh century. It would probably be safe to date them all somewhere in that century.

Of the surviving *ornate* rosettes (pl. 17A), five in Athens come from illicit excavations on Melos; two in the Bibliothèque Nationale and one in London are also said to come from Melos;<sup>1</sup> one in Paris and one in New York are said to come from Rhodes;<sup>2</sup> and one in Bologna and three in London have no provenance.<sup>3</sup>

There can thus be little doubt that Melos is the home of this class. The rosettes are masterpieces of seventh-century jewellery. They are embossed and decorated with filigree and granulation and with attached figures of insects, human heads, bulls' heads, griffins' heads, birds and rosettes. One example in the Bibliothèque Nationale now has an inlaid garnet in the centre. The garnet is modern, but apparently replaces an ancient inlay, of glass or amber, which has disappeared.<sup>4</sup> The human heads, in the Dedalic style of about 650 B.C., give a rough date for this class.

The early-seventh-century Cretan rosette, pl. 16B, although serving a different purpose, may well represent an earlier stage in the development of these Island rosettes.

#### EARRINGS

Most Island earrings are variations of the spiral which has been discussed in connection with the Peloponnese (see p. 102). There are several varieties.

(1) Like the Corinthian variety (p. 102, no. 1), and made in gold, silver, gilt bronze and bronze (pl. 17C). It occurs in many Rhodian tombs throughout the seventh century; in the Votive Deposit at Camirus, in Ialysus Tombs 57, 58, 98 and 107. It also occurs at Lindus, and elsewhere. In some varieties the ends are decorated with a collar of granulation and a pyramid of larger grains on top.

(2) The spiral is splayed out so that the earring forms a letter W,

<sup>1</sup> Coche de la Ferté, pl. 14: 2 and 3, = Jacobsthal, *Pins*, 298A and 152A. *BMCJ* no. 1232.

<sup>2</sup> Coche de la Ferté, pl. 14: 1. Becatti, no. 200.

<sup>3</sup> Becatti, no. 201, = *ILN* 20.11.1958. *BMCJ* nos. 1229-31.

<sup>4</sup> I owe this information to M. Coche de la Ferté.

rising higher in the centre than at the sides. The type occurs in Rhodes in the seventh century (pl. 17B), but is rare. It also occurs in Eastern Greece.

(3) A slimmer variety of Type 2 is common in Rhodes throughout the seventh century in gold, silver and bronze (pl. 17D). It is found at Ialysus in Tombs 56 and 57, at Camirus in Tomb 11, at Lindus, and in a tomb at Praisos. In the early seventh century it occurs in its simplest form; the centre rises higher than in Type 2, and the ends are finished off with horizontal discs. Later in the century the apex is masked by an embossed rosette. It was worn suspended from a thin wire which went through the lobe.<sup>1</sup>



FIG. 17. *Earring from Melos.*  
*Seventh century B.C.*

This type lent itself to elaborate variations. Two such elaborations (formerly in Berlin) come from Melos, and may perhaps have been made there, for they have much in common with the Melian rosettes (see pl. 17A). One (fig. 17) has griffins' heads, elaborately granulated, on the discs, a type also found at Camirus. The other is decorated with twisted wires and pomegranate ornaments.<sup>2</sup> An even more elaborate variety comes from Tomb 45 at Ialysus, of the late seventh century.

<sup>1</sup> Hadaczek, fig. 18.

<sup>2</sup> *AZ* xlii (1884), pl. 9: 9 and 10. Becatti, nos. 178 and 179. *Boston Bull.* xli (1943), 44, pl. 1: 3.

The discs are turned outwards and decorated with rams' heads, from each of which hang pomegranate ornaments. A framework consisting of two rams' heads topped by snakes' heads is attached to one side. These rather unsuccessful creations also have a Melian look.

(4) Hoops. Tapered hoops of silver and of bronze were found at Lindus in the seventh- and sixth-century 'Couches Archaïques'. This Bronze Age type lingered on through the Dark Ages in Cyprus, and these examples may well be Cypriot imports (see p. 117).

A much more elaborate hoop, presumably an earring, comes from the Idaean Cave in Crete. It has been (as Levi saw) quite incorrectly attached in modern times to the plaque from the same source, on pl. 14A. The hoop is decorated in granulation with wave-patterns. One end is bound with fine wire, and tipped with a pyramid of large grains. To judge from the granulation, this piece cannot be far in date from the Eleusis earrings (see pl. 13E), and should be dated in the eighth century. The decoration of the end is repeated in earrings of the seventh century (see pl. 17C).

(5) A silver stud, with a rosette on one face, from the seventh- and sixth-century 'Couches Archaïques' at Lindus has been plausibly identified as an ear-stud.<sup>1</sup> It has been aptly compared with modern ear-studs from Sumatra. This object will then be an early manifestation of a form of jewellery particularly common in paintings and sculpture in the next period (see p. 124).

#### NECKLACES

A strap of gold with attached lions' heads is published as a sporadic find from Camirus, and there is another in London from the same source.<sup>2</sup> The style of the animals' heads gives a date in the seventh century.

#### BEADS

An attractive necklace from Camirus is composed of gold melon-beads and double Ujat-eyes of blue-green faience.<sup>3</sup> The faience beads are derived from a common Egyptian motive, and are almost certainly Phoenician. The necklace may be dated in the seventh century by the

<sup>1</sup> *Lindos*, no. 277. In the Danish National Museum.

<sup>2</sup> *BMCJ* no. 1176.

<sup>3</sup> *BMCJ* no. 1188.

faience, which was very popular in Rhodes at this period for amulets and other objects.

## PENDANTS

(1) Pendant discs with geometric patterns, and sometimes a central inlay, are found in Rhodian tombs of the first half of the seventh century, at Ialysus, Tomb 56, and at Exochi (fig. 18). Examples in silver



FIG. 18. *Rhodian pendant disc.*  
*Early seventh century B.C.*

and bronze come from the 'Couches Archaiques' at Lindus.<sup>1</sup> These discs, which are discussed by Reichel, show strong Cypriot or Syrian influence.<sup>2</sup> Similar discs were particularly common in Etruria (see p. 139).

(2) A number of pendants, some of great elaboration, were found at Tekké, near Knossos, and are datable to the early seventh century.

(a) A penannular pendant with a human head at each end (pl. 16c). Within the ring is a cross and in the four quadrants so made are figures of geese. The ring and the cross are decorated with a guilloche-pattern. The heads are in the pre-Dedalic style, and are to be dated in the early seventh century B.C.; the nearest parallel is in a Corinthian terracotta from Perachora.<sup>3</sup> The date of this piece serves to date the whole group.

(b) A quatrefoil rosette with a central boss, decorated with filigree and granulation (pl. 16b).

(c) A half-moon of rock-crystal set in gold (pl. 16a). Below it hang three subsidiary ornaments of gold with amber inlay. Above it is a framework of inlaid gold, to which two loop-in-loop chains are

<sup>1</sup> *Lindos*, nos. 242-3.

<sup>2</sup> Reichel, nos. 57-61. Frankfort, pl. 167. Von Luschan, *Sendschirli*, v, pl. 44. Becatti, no. 216. *SCE iv*, pt. 2, 394.

<sup>3</sup> *Perachora*, i, pl. 87, no. 4.

attached, ending in snakes' heads. The remains of other ornaments of this nature were found at Tekké and Arkades. The half-moon suggests Phoenician influence.

(d) A simpler half-moon of gold (pl. 16D).

(3) A pendant from the Idaean Cave in Crete is stylistically related to the penannular pendant from Tekké. It may be part of a composite ornament similar to the Rhodian plaques discussed below, or it may have hung alone on a chain, from the suspension-tube at the top. The pendant is in the form of a rectangular plaque, embossed and decorated with granulation and inlay (now missing). At either side and in the centre is the figure of a standing draped woman; her head is pre-Dedalic, like those of the penannular pendant from Tekké. Between the women are two identical panels decorated with an animal's (perhaps a bull's) head, surmounted by a horseshoe-shaped arch. Above and below are triangular and crescent-shaped cloisons for inlay.

(4) A pectoral ornament related to no. 2c above comes from Delos (Hieron). It is decorated with geometric patterns in granulation, and with inlay, which has now vanished. Round the circumference are loops to hold subsidiary pendants. The date is probably somewhere in the eighth century (cf. pl. 13D).

(5) Another ornament of the same general kind comes from Tralles.<sup>1</sup> It is certainly Greek and, to judge from its resemblance to the Melian rosettes (pl. 17A), almost certainly Island Greek. A semicircular gold plaque is decorated with a Dedalic figure of a woman, griffins' heads, a bull's head, rosettes and zigzag patterns in granulation. Above it is a tube for a suspension-cord, and above that are six discs, two with bulls' heads and two with rams' heads. Round the circumference are loops, as on the piece from Delos. A Boeotian terracotta of the eighth century seems to be wearing an ornament like the two mentioned above.<sup>2</sup>

(6) Pendants in the shape of a bull's head and a lion's head in seventh-century style come from Rhodes.<sup>3</sup> From Thera, Tomb 116, come pendants in the shape of a globe suspended from two tubes joined to make a T. To judge from the associated jewellery they should be dated about the middle of the seventh century. Human heads in the Dedalic style

<sup>1</sup> Becatti, no. 149. *BCH* iii (1879), pls. 4-5.

<sup>2</sup> Grace, F. R., *Archaic Sculpture in Boeotia* (Cambridge, Mass., 1939), fig. 6.

<sup>3</sup> *BMCJ* nos. 1198 and 1208.

of the seventh century have been found on Delos,<sup>1</sup> and at Fortetsa and in the Idaean Cave in Crete.

A repousseé pendant in the form of a siren with a Dedalic head, richly decorated with granulation, is said to come from Camirus.<sup>2</sup> From its resemblance to the Melissai (below) it is probably Cycladic work.

The Melissai take the form of bees with human heads in the Dedalic style. They have been found at Thera (Tomb 116), Melos and Rhodes and probably come from the same workshop as the Melian rosettes.<sup>3</sup> The heads date them somewhere about the middle of the seventh century. The human-headed bee, originally a Hittite goddess by the name of Kumbaba or Kybebe, has been discussed by Barnett.<sup>4</sup> It presumably reached Greece by way of Asia Minor. Small figures of bees are perhaps related to the Melissai. Three are known from Crete; one from Fortetsa, of the mid-seventh century, one from Arkades and one in London with no exact provenance.<sup>5</sup>

#### PECTORAL ORNAMENTS

A specialized class of ornament was very common in Rhodes in the seventh century, from about 660 B.C. onwards. It consists of sets of rectangular (or slightly trapezoid) plaques of gold, electrum or (rarely) silver, decorated with embossed figures and generally fitted with tubes along the upper edge to take a suspension-cord. Ornaments in the shape of fruit are frequently suspended from the lower edge. Numbers of identical plaques were worn by women, strung together along the top of their dress; the plaques at the ends were fitted with hooks, masked by rosettes, which fastened the ornament to the dress at the shoulders. The method of wearing them is indicated somewhat sketchily on a bronze from Athens.<sup>6</sup> Some plaques have no tube along the top, but are pierced at the corners; they were evidently sewn direct to the dress.

Very few of these ornaments come from properly recorded excavations, but virtually all are believed to come from Rhodes. Two were found at Camirus, Tomb 210, and six are part of a stray find from the same site. They can be firmly dated by the human heads, in the Dedalic style, which follows the classic sequence of Early, Middle and Late Dedalic, from about 660 to 620 B.C.

<sup>1</sup> *AZ* xlii (1884), pl. 9: 12.

<sup>3</sup> Reichel, nos. 80-2.

<sup>5</sup> *BMCJ* no. 1239.

<sup>2</sup> Reichel, no. 83.

<sup>4</sup> *Aegean and Near East*, 218.

<sup>6</sup> *Boston Bull.* lxviii (1943), 44.

These plaques may possibly be related to the Attic plaques from Eleusis (pl. 14C-F), and to the pendant from the Idaean Cave (pl. 14A). A Syrian or Cypriot origin is, however, strongly suggested by similar plaques from Cyprus of the tenth to eighth centuries;<sup>1</sup> plaques from Sinjerli of about 700 are somewhat similar in form, but not in content, and may be a parallel development.<sup>2</sup>

The plaques are formed basically by stamping or moulding. Examination of the objects themselves does not reveal which process was employed; but a bronze relief from Lindus is almost certainly a positive core over which such plaques could have been beaten.<sup>3</sup> Most of the plaques were embossed from a single sheet of metal. Subsidiary ornament was stamped from the back or (less commonly) from the front, or was soldered on in the form of rosettes, filigree or granulation. Borders were frequently made by soldering a strip of ornamental wire to a punch and stamping the impression of the wire from the back.

The finest plaques were made in rather a different way. The figures were embossed separately and soldered, frequently in several sections, to a flat base. In this way a greater depth and a sharper outline were obtained.

The plaques have frequently been studied, both for their form and their content. Segall's is the best and most recent study of their antecedents and their function, while Reichel and Coche de la Ferté have written on their subject matter.<sup>4</sup>

The subjects are as follows. The numbers in brackets are those of Reichel's publication.

1. 'Astarte at the window' (78-9). A Phoenician motive. It also occurs in a plaque from Delos<sup>5</sup> (pl. 18E).

2. Winged Artemis, with lions. The Mistress of Beasts (68, 71, 73, 75, 76). A Mycenaean motive which returned to Greece by way of Syrian art in this period, and which remained a popular subject down to the fifth century.<sup>6</sup> It was the most popular subject for Rhodian plaques, and occurs in a number of different forms, sometimes associated with hawks (pls. 19D and E, and 20).

<sup>1</sup> *SCE* i, pls. 44, 51, and 155. Becatti, nos. 213-15.

<sup>2</sup> Von Luschan, *Sendschirli*, v, pls. 46-7.

<sup>3</sup> *Lindos*, no. 472.

<sup>4</sup> *Boston Bull.* lxxviii (1943), 44. Reichel, 49 ff. Coche de la Ferté, 55 f.

<sup>5</sup> Barnett, *Nimrud Ivories*, 145. *AZ* xlii (1884), pl. 9: 11.

<sup>6</sup> Barnett, *Nimrud Ivories*, 82-3.



3. Winged Artemis, with birds, instead of lions (72).
4. Winged Artemis, with no attributes (69) (pl. 18D).
5. Similar goddess, without wings (70).
6. Astarte bust, and lions' heads (77). The motive of a woman holding her breasts as a gesture indicating fertility had a high antiquity in Western Asia and found its way to Greece in this period, from Syria or Cyprus (pl. 19B).
7. Melissa (67). The significance and origins of this type are discussed on p. 111 (pl. 18B).
8. Sphinx (63-5). A very common motive in Mycenaean art, which survived in Syria and returned thence to Greece in this period (pl. 18C).<sup>1</sup>
9. Griffin. The history of this motive is parallel to that of the sphinx. A plaque at Osborne House (pl. 18A), almost certainly from Camirus, provides the only example known to the author (pl. 18A).
10. Centaur with faun (66). The centaur was probably a genuine Greek creation, inspired by Oriental composite animals. It appears as early as the second half of the eighth century on Attic funerary bands (pl. 18C).

Two elaborate electrum pendants from Camirus in Paris have been identified as having rested on the temples, attached to diadems; but they are more likely to have served as end-pieces to a pectoral ornament, for the rosettes at the top, masking hooks, are very similar to the end-pieces of the ornaments just discussed.<sup>2</sup> They are richly decorated with granulation and applied ornament and include heads in the Late Dedalic style, which date them about 630-620 B.C.

One of them comprises a plaque with a repoussé figure of a naked standing goddess very like certain Rhodian terracottas with Syrian affinities.<sup>3</sup> Above the plaque is a lion's head, flanked by rosettes, from each of which hang complex pendants of pomegranates and chains. Above the lion's head is a plaque, as pl. 18E, and above that a rosette.

The second pendant is a plaque on which is a plastic figure of a lion leaping on a bird. Above the plaque is a rosette, flanked by smaller rosettes. The lower corners of the plaque are decorated with plastic griffins' heads, and from it hang three subsidiary pendants comprising pomegranates and Dedalic heads.

Another pair of pendants of uncertain use come from Tomb 45

<sup>1</sup> *ibid.*, 83 ff.

<sup>2</sup> Coche de la Ferté, pl. 13.

<sup>3</sup> *BMC Terracottas*, i (1954), nos. 16-18.

at Ialysus, of the late seventh century. They consist of a disc, to which is soldered a griffin's head; from rings at either side hang subsidiary pendants in the form of a lion's head and pomegranates. Behind the disc are two rings to take a horizontal cord or chain.

## BRACELETS

(1) From Camirus comes a type of bracelet which had a long subsequent history. It is circular in section and penannular in shape, and the ends are decorated with lions' heads. The bracelets are of bronze, the hoop is silver-plated and the lions' heads are gold-plated.<sup>1</sup>

(2) A chain from Tekké, of the early seventh century, has been interpreted, probably correctly, as a bracelet. It is a cord-like loop-in-loop chain of alternate gold and silver links. There is a snake's head terminal at one end. The other end is incomplete.

## FINGER-RINGS

A simple gold band with horizontal flutings, very like contemporary Corinthian examples, comes from Tekké (early seventh century).

Another type, which occurs at Praisos, Tomb A, and at Ialysus, Tomb 23 (700-650?), is like Minoan-Mycenaean rings, except that the bezel is diamond-shaped.

A third type is the cartouche-ring, an Egyptian type taken over by the Phoenicians and introduced by them into Greece and Etruria (see p. 144). An example in gold, in all probability a Phoenician import, comes from an alleged tomb-group at Camirus of the seventh century,<sup>2</sup> and one in silver comes from Lindus.<sup>3</sup>

## PINS

From Knossos (Tekké) come two pairs of gold pins with heads in the form of pelicans, each pair joined by a loop-in-loop chain.

## 4. EASTERN GREECE

*Introduction*

Existing jewellery from Eastern Greece is virtually confined to the foundation-deposit of the earlier Artemision at Ephesus, and to related pieces from other parts of the same site. The foundation-deposit has

<sup>1</sup> *BMCJ* no. 1205.

<sup>2</sup> *BMCR* no. 15.

<sup>3</sup> *Lindos*, no. 280.

recently been re-examined by Jacobsthal, who dates it squarely in the seventh century, with the possible exception of a few outliers which may belong to the late eighth and early sixth. This dating may be taken to apply also to the rest of the jewellery from Ephesus. These pieces, of gold, electrum and silver, have much in common technically with contemporary Island jewellery, but are less elaborate; composite ornaments such as the rosette on pl. 17A are completely lacking. And there are further differences. The types of ornament favoured in the two groups are dissimilar, and Oriental elements and apparent Mycenaean survivals are more in evidence at Ephesus. Both the last-named features should probably, for geographical reasons, be attributed to influence from Lydian or Phrygian art, about which all too little is unfortunately known.

The most popular forms of East Greek jewellery were spiral and boat-shaped earrings, finely decorated beads, clothing-ornaments with embossed designs, pins, fibulae and brooches.

### *The Jewellery*

Unless otherwise stated, the jewellery comes from the Artemisium at Ephesus, and belongs to the seventh century.

#### EARRINGS

(1) The boat-shaped type is represented in several examples (pl. 21E, F). First seen at Ur about 2500 B.C., it had a long history in Western Asia and doubtless reached Greece from Syria, where it occurs at Sinjerli about 700.<sup>1</sup> Earrings of this kind were to flourish in Greece for some four centuries.

(2) The simple spiral, an Island type (type 1 on p. 106), was also found at Ephesus (pl. 21D), and at Myndus (pl. 22D). The latter example is so like the Corinthian ones (see p. 102) that it should be dated in the eighth century.

(3) The variation, type 2 on p. 106, is also found at Ephesus.

#### BEADS

Globular, melon, grain-of-wheat, biconical, segmented and triple spacers are the commonest types.

<sup>1</sup> Woolley, *Ur Excavations*, ii, pl. 138. Schmidt, *Beil. I*, nos. 5929-32 and 5986-7. Coche de la Ferté, 36. Von Luschan, *Sendschirli*, v, pl. 45.

## PENDANTS

A variant of the Rhodian discs mentioned on p. 109 was found at Assarlik, Tomb C (probably eighth century), and is probably of Syrian inspiration. A number of drop-pendants from necklaces of various shapes, lozenge, circular, wedge, etc., are also found at Ephesus.

## CLOTHING-ORNAMENTS

Embossed discs and plaques occur with various designs. Some are paralleled in contemporary vase-painting; others have a rather un-Greek appearance, and probably owe much to Lydian or Phrygian models. The most popular subjects are heraldic lions attacking a man; a griffin; a sphinx; rosettes; and cup-spiral patterns (pl. 21A-C, G, H).

## PINS

Pins are common at Ephesus, although rare in the rest of Greece at this date. The heads take various forms, spheres, egg-shapes, pomegranates, drums (pl. 22c). The scarcity of pins in contemporary Greek jewellery and the general resemblance of these pins to certain Early Etruscan pins (see p. 144) may perhaps indicate a common Anatolian origin for both varieties.

## FIBULAE

(1) The *arched* type, already found in Athens in the Dark Ages (see p. 92), is represented at Ephesus.

(2) The *Asia Minor* type, an elaboration of the foregoing variety, is also found at Ephesus (pl. 22B).<sup>1</sup> It evidently developed in North Syria and Asia Minor, for examples of the late eighth century come from Sinjerli and from Gordion in Phrygia.<sup>2</sup> After the seventh century the type is rare in Greece proper, but it migrated from Asia Minor to Thrace, where it had a subsequent history of at least three centuries (see p. 131).

(3) An even more elaborate version of the arched type has a lion's head at either end, much ornament along the bow, and a large rosette in the centre.<sup>3</sup>

<sup>1</sup> Blinkenberg, *C. Fibules grecques et orientales* (Copenhagen, 1926), Type XII.

<sup>2</sup> Von Luschan, *Sendschirli*, v, pl. 43. *Archaeology*, xi (1958), 230.

<sup>3</sup> Hogarth, D. G. *Excavations at Ephesus* (London, 1908), pls. 3: 2 and 4: 35. *JHS* lxxi (1951), pl. 31c. Becatti, no. 166.

## BROOCHES

Brooches were also popular. One in the shape of a disc with attached rosettes comes from Ephesus (pl. 22A). Two in the shape of a hawk or an owl also come from Ephesus (pl. 22E), and another comes from Samos, from a deposit dated 670 B.C. or earlier.

## 5. THE WEST

Tapered hoop-earrings of silver, some plain, some with granulation at the bottom or round the sides (fig. 19), are found in Sicilian tombs of the seventh century, notably Tomb 404 at Syracuse and Tomb 240 at



FIG. 19. *Silver earring, Sicilian, seventh–sixth centuries B.C.*

Megara Hyblaea. That is the full extent of recorded Western Greek jewellery in this period.

These earrings may well have been made locally, but the idea is not a Western Greek creation. Earrings of this kind were popular in Late Minoan Crete and in Cyprus from about 1400 B.C. (see pp. 72 and 88), and continued in Cyprus through the Dark Ages.<sup>1</sup> It is therefore presumably from Cyprus that this variety reached Sicily. It is a matter for surprise that it has not been found in Greece proper in the eighth or seventh century, except for a few examples from Lindus (see p. 108). The type continued into the sixth century, to enjoy a wider currency.

<sup>1</sup> *SCE* i, pl. 155; Lapithos, Tombs 403, 409, 417, 420, 425, 426 (1050–750 B.C.). Becatti, nos. 289–91. Hadaczek, 16 ff.

## Archaic and Classical 600–330 B.C.

## INTRODUCTION

THE DEVELOPMENTS COVERED by this chapter may for convenience be divided into two stages, represented in the major arts by the Archaic and the Classical periods.

## A. THE ARCHAIC PERIOD. 600–475 B.C.

This was an age of artistic brilliance, particularly in the field of metal-work. Strangely enough, very little Archaic jewellery has survived: a deficiency all the more remarkable in view of the ample evidence for its existence in sculpture and vase-painting. This lack of material is best explained by a shortage of gold, especially since the only areas where Archaic jewellery was reasonably common, Cyprus and South Russia, could draw on sources not available to the rest of Greece. Jewellery would have been chiefly of bronze, and of silver, which cannot be expected to survive in large quantities. Silver earrings are in fact present in a number of Sicilian tombs, where circumstances were perhaps more than usually favourable to their survival. The cause of the sudden shortage of gold in the sixth as compared with the seventh century completely eludes us; until we know the source or sources of seventh-century Greek gold, we cannot speculate on their cessation.

Though the domestic demand for their work was less, Greek goldsmiths were undoubtedly busy in the sixth century, working for foreign masters (or customers), for we find Graeco-Scythian, Graeco-Thracian, Graeco-Etruscan, even Graeco-Celtic jewellery. Examples of the first are found in plenty in South Russian tombs; of the second at Trebenishte; of the third in Etruria (see p. 134); and of the last at Vix in Northern France.

The sources of the little surviving Archaic Greek jewellery are

virtually restricted to tombs in Rhodes and Sicily, at Olbia, and in Cyprus. Valuable, though indirect, evidence comes from fragments of chryselephantine statues from Delphi, from which a certain amount of sheet-gold representing the jewellery has survived.

From this scanty evidence we may draw certain deductions about the nature of Archaic jewellery. It was in the main a development from that of the seventh century, particularly of the varieties popular in the Islands and Eastern Greece. So far as it reflects the sculptural arts, it shows the same advances in realism. Technically, there were two significant changes. In the first place granulation, although still used, gave place to filigree as the principal means of embellishment. Secondly, enamel made its first appearance towards the beginning of the sixth century, in discrete patches of colour bounded by filigree, a form possibly of Assyrian origin, which seems to have reached Greece via Ionia (see p. 26). The use of stones is restricted to engraved scarabs and scaraboids in swivel-rings, and inlaying was practised rarely, if at all.

**B. THE CLASSICAL PERIOD. 475-330 B.C.**

After the Persian wars gold evidently became rather more plentiful, but seems to have been reserved chiefly for religious uses. In the fifth century, in Greece proper, tombs at Eretria of 475-400 B.C. have yielded quantities of jewellery, which we may reasonably assume to be of Attic origin; and a few pieces of very high quality have been found in the Peloponnese. Cyprus and South Russia and the rich Thracian tombs at Duvanlij are fruitful sources of jewellery, some entirely, some only partly Greek. In the fourth century the chief sources are again Cyprus and South Russia, and there is an additional source in South Italy, in tombs around Tarentum and in Campania. Material from the Greek mainland is now very scarce.

The character of Classical jewellery follows closely from what little we know of the Archaic period. The workmanship was finer, but less fine than in the seventh century. Filigree was used in decorative patterns related to the ornaments in architecture and painting. Filigree-enamel was becoming more popular. Granulation was rarely used; inlay of stone or glass even more rarely. Towards the end of the period, however, we first find engraved stones in the bezels of finger-rings. In general, the sculptural forms of the gold were left to speak for themselves, diversified only by the above-mentioned processes.

The forms of Classical jewellery were very varied. Naturalistic wreaths developed in the fifth century and flourished in the fourth, and diadems continued in many forms. Earrings proliferated; the basic forms are now the boat, the spiral, the disc and the cone or pyramid. Human figures, some of great elaboration, which were to be typical of Hellenistic earrings, made their first appearance in earrings about the middle of the fourth century. Beads and pendants of types already familiar are found in this period, altered to suit the taste of the new age. Elaborate necklaces are also found with interlocking beads; and acorns, birds and human heads were popular as pendants. Bracelets took the form of spirals or penannular hoops with elaborate finials. Finger-rings are found in several varieties, some containing seal-stones, some purely decorative in purpose. Pins are rare, but a few elaborate examples are known. Fibulae were not generally used in Greece at this period, but a Macedonian-Thracian variety was in use in North Greece throughout the period and a variety, with Etruscan affinities, is found in Campania in the fourth century.

Local schools undoubtedly existed, but can only partially be distinguished. We can, however, recognize certain regional peculiarities and preferences in North Greece, Magna Graecia, Campania, Cyprus and South Russia. The jewellery of Greece proper and the Islands seems to have been remarkably homogeneous.

#### OTHER SOURCES OF INFORMATION

Apart from finds of jewellery, we have a few other sources of information for the Archaic and Classical periods. Sculptures, terracottas, vase-paintings and coins all provide additional evidence, which at times supplements that of the material itself. Temple treasure-records, particularly those from the Parthenon for the fifth and fourth centuries, provide confirmation on certain points. There is also a little literary evidence, but none of any value.

## THE JEWELLERY

### WREATHS

Wreaths were given as prizes, worn in processions, dedicated in sanctuaries and buried with the dead. The reason for the last-mentioned



custom is given by a scholiast, who says that it was to signify their victories in the battle of life.<sup>1</sup> Although they are referred to in Treasure-records from the Parthenon of the fifth and fourth centuries, surviving examples are few.<sup>2</sup> They were made of gold, gold-plated bronze, silver, or wood covered with gold leaf, and closely resemble wreaths made of actual leaves (pl. 23). Sometimes sprays were worn in place of a wreath. A gold myrtle-spray was found in a tomb in Athens of about 450 B.C., the so-called Tomb of Aspasia; a gilt bronze myrtle-wreath with gilt terracotta berries was found in Tomb 72 at Olynthus, of about 400 B.C.; and an olive wreath comes from the Kekuvatski tomb at Kerch, of about 370 B.C.

Illustrations of the wearing of wreaths, and of single sprays, can be seen in gold plaques from the Priestess' Tomb of the Great Blisnitza, and on Cypriot sculptures.<sup>3</sup> And we learn that a goldsmith in the Agora in Athens made a wreath for Demosthenes to wear in a procession.<sup>4</sup>

#### DIADEMS

Diadems of various kinds are found throughout this period. Some surviving examples are clearly not the complete article, but were sewn or otherwise attached to backgrounds of some other material such as cloth or leather. Some, too, of the diadems were probably made, as in the previous period, solely for funerary use; others, however, could well have been worn by the living.

Thin strips of gold with embossed dot-rosettes from Ialysus (Tombs 35 and 42) were probably attached to diadems; they belong to the sixth century. Rather larger strips with more lifelike rosettes come from Eretria. One example comes from Tomb 4, of the fifth century; another, in Paris, is very similar, but, surprisingly for this period, is decorated with a large cabochon inlay of glass.<sup>5</sup>

Similar strips with palmettes are found at Amathus, New Tomb 10 (600-475 B.C.), and at Rhodes, Tomb 4 (400-350 B.C.). The method of wearing them can be seen in a Cypriot terracotta of the early fifth century and in a Cyrenaic terracotta of the fourth.<sup>6</sup>

Diadems of more elaborate nature with figured scenes also existed.

<sup>1</sup> *Olynthus*, x, 158, n. 318. *BMCJ*, p. xxxi f.

<sup>2</sup> Michel, *Recueil*, 644 ff.

<sup>3</sup> *BMC Sculpture*, i, pt. 2 (1931), 48-64.

<sup>4</sup> Demosthenes, *Contra Meidiam*, 522 ff.

<sup>5</sup> Coche de la Ferté, pl. 11: 3.

<sup>6</sup> *SCE* iv, pt. 2, pl. 15. Coche de la Ferté, pl. 3: 2.

A particularly fine example comes from a votive deposit at Thasos and is dated stylistically in the first half of the sixth century. Another comes from Ialysus, Marmaro Tomb 10 (about 550 B.C.), and a third variety with metope-like scenes like earlier Corinthian work (see p. 101), and pomegranate pendants, comes from Tomb 5 at Eretria, of the fifth century.

Finally, most elaborate of all, is a diadem from a tomb at Kelermes in South Russia, of the first half of the sixth century. It comprises a band with a griffin-head attachment in front and rosettes with filigree-enamel on either side. From it hang pendants in the shape of buds and rams' heads. This remarkable object may not be entirely Greek, but Jacobsthal is probably right in relating it to Island work of the seventh century. It was perhaps made by a Greek for a Scythian customer.

Two pairs of pendant discs with patterns in relief come from tombs at Olbia of the second half of the sixth century. One pair was found on the head of the corpse, and they have consequently been identified with some probability as ornaments for diadems.

#### EARRINGS

(1) The boat-shape, already in use in Ionia in the seventh century, is one of the principal basic types of this period.<sup>1</sup> It is most common in its simplest form. Dated examples of the fifth century come from Nymphaeum, Duvanlij and the Seven Brothers burial in the Kuban; of the fourth from Marion, New Tomb 46 and Olynthus. The type is represented in use on coins of the late fifth and fourth centuries.<sup>2</sup> It spread to Thrace (Duvanlij), Macedonia and Croatia.<sup>3</sup>

The simplest elaborations are bud-like pendants on chains (pl. 25A);<sup>4</sup> an earring from Athens has a pendant plaque decorated with human figures in sixth-century style;<sup>5</sup> and a pair said to be from Spata has a cock-horse, in late sixth-century style, on the 'boat'.<sup>6</sup> On pl. 24G the 'boat' has become a stylized cock.

Two pairs from tombs at Eretria carry the elaboration one stage further. One pair, in London, comes from a tomb of the late fifth

<sup>1</sup> Hadaczek, 22 ff.

<sup>2</sup> *BMCJ*, 178. Seltman, *Greek Coins* (1952), nos. 84 and 94.

<sup>3</sup> *Jahrbuch für Kleinasiatische Forschungen*, i (1950-1), pl. 8.

<sup>4</sup> Becatti, no. 382. Hadaczek, 25, fig. 47.

<sup>5</sup> Hadaczek, 24, fig. 45. *JHS* ii (1881), 324.

<sup>6</sup> Amandry, nos. 282-3.

century (pl. 24A). The basic boat-shape is decorated with filigree and with enamelled rosettes; from it hang cockle-shells on chains, and on it sits a siren. The whole complex hangs from a large enamelled rosette. The other set, published by Casson, is much the same, but the siren is replaced by a dancing-girl. These earrings are some of the finest examples of ancient jewellery.

This form of earring was standardized in the second quarter of the fourth century, in a version which lasted till about 330 B.C. (pl. 25G). It is larger than the Eretrian varieties, and the pendants are buds instead of cockle-shells, but it is basically the same. Examples come from many tombs in South Russia, including Kul Oba (375-350) and the tombs of the Third Lady and the Priestess from the Great Blisnitsa (350-325). A pair in London is said to come from Crete,<sup>1</sup> and another pair comes from Tomb 52 at Tarentum, of about 350 B.C.

An aberrant version from Tarentum, in London, is a good example of the Graeco-Etruscan style more usually found in Campania.<sup>2</sup> It is decorated generously with filigree and with a repoussé gorgoneion in fourth-century style. Below it is an exaggerated cluster of globules made from sheet-gold in obvious imitation of Late Etruscan models.

(2) Spirals continue. The earlier types, which had remained close to their Oriental models, now split up into a number of regional varieties.

(a) An earring from Ialysus, Tomb 189, of the early fifth century, develops the seventh-century Rhodian tradition as shown on pl. 17c. The ends are decorated with an ornamental collar and a pyramidal formation of large and small globules. A later development of this type is represented in a tomb at Duvanlij of 450-425 B.C. and in Tomb 60 at Marion, of the early fourth century. It is also represented at Xanthus and by a pair in London (pl. 25c), and is clearly shown on a coin of Lycia of 450-400.<sup>3</sup> The finials are now tightly packed pyramids of grains; the same pattern is echoed on the lower edge of each curve and diamond patterns of similar granulation decorate the body.

(b) A variety of this type is confined to Greek jewellery from South Russia of the fifth and fourth centuries (pl. 24F). The finials are similar pyramids, but they are separated from the main body by a long collar decorated with filigree; there are no pyramids underneath. Such earrings

<sup>1</sup> *BMCJ* nos. 1655-6.

<sup>2</sup> *BMCJ* nos. 1657-8.

<sup>3</sup> *BMC Coins of Lycia etc.* (1897), pl. 5: 8.

are found at Nymphaeum, in the Seven Brothers Kurgans and in many tombs at Kerch. They occur in gold, in gilt bronze and in silver.

(c) The type most favoured in Mainland Greece and Crete (pl. 25F) has a moulded collar and finials of a bud-like form. The top of the curve is frequently masked by a rosette, as in the seventh-century Rhodian example on pl. 17D. Examples come from tombs at Halae of the later fifth century, from a mid-fourth-century tomb at Tarrha in Crete, and from tombs and houses at Olynthus of 425-350.

(d) A Cypriot variety, which started in the fifth century and probably continued into the fourth, has finials in the form of lions' or griffins' heads (pl. 25E). Many examples are known, mostly in gilt bronze and silver; enamel is common on the gilt ones. Few are stratified. One, however, comes from Amathus, Old Tomb 256, of the fifth century.

(e) A variant of the foregoing variety is found at Tarentum, in tombs on the Via Cagliari and elsewhere, and at Metapontum and can be dated stylistically in the fourth century; it is apparently represented on Syracusan coins of the early fourth century. The hoop is greatly enlarged in width, is heavily decorated with filigree, and terminates in human and, occasionally, animal heads.<sup>1</sup>

(f) The *splayed spiral* of the seventh century is represented in tombs at Olbia and Duvanlij of the second half of the sixth and the fifth centuries. The spiral is so twisted out of shape as to form an omega, and the ends are pyramids. One would be tempted to regard this as a northern variety, were it not that an elaboration in the Stathatou Collection is said to come from Levidi in Attica.<sup>2</sup>

(3) Tapered hoops, plain or with granular decoration, continued from the seventh into the sixth century in Sicily. Dated examples, of silver, come from Tomb 60 at Gela and from Tombs 16 and 165 at Megara Hyblaea. Another silver pair comes from Tomb 45 at Samos, and gold examples (undated) come from Naukratis and Daphnae. The type is represented on vases and coins.<sup>3</sup> See fig. 19.

(4) Discs. Sculpture, terracottas and vase-painting leave no doubt that one of the most popular types of earring in the Archaic period was

<sup>1</sup> Coche de la Ferté, pl. 16: 1 (coin). Becatti, no. 380. *BMCJ* no. 1652 (no provenance).

<sup>2</sup> Amandry, no. 278.

<sup>3</sup> Seltman, *Greek Coins* (1952), no. 52b (coin). *Naukratis*, ii, pl. 19: 10. *BMCJ* no. 1593\* (Smyrna).

the disc, but very few actual disc-earrings of this, or indeed of any, date have survived.<sup>1</sup> To be precise, they were probably ear-studs rather than earrings.

(a) Such a stud, in silver, comes from the 'Couches Archaiques' at Lindus, and so should belong either to the seventh century or the sixth (see p. 108). Similar studs in gold, some of them enamelled, are found at Ialysus, in Tombs 153 and 155, of about 400 B.C., and are represented in London by examples from Rhodes (pl. 31A).<sup>2</sup> Related studs come from contemporary Cypriot tombs and are also represented in London.<sup>3</sup> The function of these studs has frequently been misunderstood, but there can be little doubt that the above explanation is correct.

(b) A type of ear-stud of a rather different kind is represented by a pair in gold from Tomb 1 at Eretria, of the fifth century (fig. 20), and



FIG. 20. *Ear-stud from Eretria. Fifth century B.C.*

by an undated example in silver from Amathus, in London.<sup>4</sup> The studs are in two sections: the frontal piece is a disc, with a hollow tube projecting from the back; the rear piece consists of a small disc with a slightly narrower tube, which fits into the tube of the frontal disc. The two parts were joined by a safety-chain (see fig. 26). The type lasts into the late fourth century (see p. 164). Studs made on the same principle were found in Troy II (about 2200 B.C.).<sup>5</sup> Similar articles, attached not by a smaller stud but by a ring, occur in Etruscan jewellery of this date (col. pl. B2).

Opinions differ whether these studs were used as earrings or dress-fasteners. While it is true that a large hole in the ear, of about 0.5 cm. in diameter, would be needed to take them, it is equally true that they are too flimsy and too insecurely attached to fasten a dress on the shoulders.

(c) Gold convex discs, decorated with embossed lions' heads and

<sup>1</sup> Hadaczek, 10 ff.

<sup>2</sup> *BMCJ* nos. 2067-9.

<sup>3</sup> Ohnefalsch-Richter, *Kypros*, pl. 33: 10 and 11. *BMCJ* nos. 2065-6.

<sup>4</sup> *BMCJ* nos. 1605-6.

<sup>5</sup> Schmidt, 235, no. 5933.

with patterns in granulation, and attached to a curved wire, have been found in many tombs at Olbia, always in pairs. One pair comes from Tomb 81, of about 550-500, and more come from other tombs of the same date. These discs have been called earrings, and it is hard to see what else they can be, but they are not the usual type of disc-earring. The end of the wire was perhaps thrust through the actual cartilage of the ear. They are probably a South Russian Greek speciality.

(5) Pendant-earrings are another popular variety.

(a) An inverted pyramid or cone, decorated with filigree and granulation, of a kind already found at Argos in the seventh century, occurs from the sixth to the fourth century. Bronze examples are found in tombs at Olynthus between 500 and 350; silver ones in tombs at Halae of the late fifth century. Indirect evidence for their use in the sixth century is afforded by the Berlin Standing Goddess and by the François Vase.<sup>1</sup> A gold example in London is shown on pl. 25D.

In the fourth century the type is also found hanging from a disc. It is represented in terracottas from about 400 B.C. and on coins of Syracuse of the same period.<sup>2</sup> It occurs in Tomb 157 at Ialysus, of 375-350 B.C. The type, suitably enriched, was popular in the later fourth century (see p. 165).

(b) Other motives are occasionally found in this period hanging from discs or rosettes. A Mistress of Beasts, in the style of about 450 B.C., from Corinth, recalls jewellery of the seventh century.<sup>3</sup> A Victory from the Pavloskoi tomb at Kerch should probably be dated to the end of this period (about 340) rather than, with her sisters, in the next period. And a pair of earrings with female heads from Tarentum should be mentioned, for they must come from the same workshop as the necklace shown on pl. 28.<sup>4</sup>

(c) Finally we come to a group of exceptionally fine earrings which date from the end of the Classical and the beginning of the Hellenistic period, and thus cover the second half of the fourth century.<sup>5</sup> For convenience, the group is considered here in its entirety. These earrings

<sup>1</sup> Lullies, R., and Hirmer, M. *Greek Sculpture* (London, 1957), pl. 20. Furtwängler, A., and Reichold, K. *Griechische Vasenmalerei*, i (Munich, 1904), pl. 13.

<sup>2</sup> Seltman, *Greek Coins* (1952), no. 96a. Hadaczek, 31, fig. 51.

<sup>3</sup> Jacobsthal, *Pins*, fig. 284. Greifenhagen, *Antike Kunstwerke*, pl. 92: 2.

<sup>4</sup> Becatti, no. 388.

<sup>5</sup> *Boston Bull.* xi (1913), 50. Jacobsthal, *Pins*, pls. 286-9. Becatti, pl. 105. Segall,

are characterized by a honeysuckle-palmette, from which hang pendants, frequently of great elaboration. The workmanship is superb; filigree and enamel are used in a masterly way. The finest examples are a figure of a Victory driving a chariot (in Boston) and a Ganymede carried off by the eagle (in New York). Other pendants take the form of a Victory, a siren and an Eros.

NECKLACES

The sixth century is poorly represented, but the few types of bead or pendant known are developments of seventh-century varieties. Examples are a lion's head and a bull's head from Olbia, a pomegranate hanging from a bar from Chalcidice,<sup>1</sup> and a bud from a tomb at Tarentum by the Via Mazzini. From Tomb 131 at Marion comes a gorgoneion; and a chryselephantine statue at Delphi wore lion-head beads in the East Greek style.

The fifth century is represented by complete necklaces. Good dated examples come from Eretria and Nymphaeum. The Eretrian necklaces include beads and pendants in the form of melons, pomegranates, acorns, eggs, bulls' heads and lions' heads (pl. 26).<sup>2</sup> A necklace from Tomb 3 at Nymphaeum (in Oxford) is composed of ribbed discs with rosettes, and bud-pendants (pl. 27A).

A necklace of rosettes with acorn-pendants and double-palmette dividers comes from Tomb 4 (in Oxford) at Nymphaeum, and belongs to the fourth century (pl. 27B). This century is also represented by a magnificent necklace in London from Tarentum, almost certainly of Tarentine workmanship. (pl. 28). Its relationship to that from Nymphaeum is apparent, but the work is richer and the details differ. The pendants comprise buds, and human heads of two kinds; the larger are in the style of coins of 400-360 B.C. and serve to date the necklace. Necklaces of gilt terracotta, probably also Tarentine, have beads in a slightly later style, and show how the type developed in the mid-fourth century.<sup>3</sup> They were undoubtedly made as cheap imitations of gold necklaces. Another necklace, with heads in a different style, comes from a tomb at Roccanova of about 400 B.C.

A cicada-pendant in silver comes from the Palace at Vouni and is

<sup>1</sup> Amandry, nos. 82 and 83.

<sup>2</sup> To refs. in bibliog. add: Greifenhagen, *Antike Kunstwerke*, pl. 94: 3.

<sup>3</sup> *NS* 1940, 488, fig. 54. No. 1953. 4-4. 1 in London (unpub.). *BMCJ*, pl. 42.

dated about 400 (see also pl. 24B). From Tomb 126 at Cumae, of the mid-fourth century, comes a necklace of relief-beads showing Etruscan influence, and comprising figures of sphinxes, heads of Heracles and Achelous and bulls' heads.

A certain type of pendant in the form of a female head was made, to judge from the style, throughout most of the fourth century. These pendants are found only in tombs at Kerch and Olbia, and are apparently a South Russian Greek speciality. They could be adapted to serve as earrings, but most were probably worn on necklaces (pl. 25B).<sup>1</sup>

Finally, a few other necklaces may be mentioned briefly. A cord-like chain with a raw nugget of gold as a pendant comes from Eleutherae and probably belongs to the fifth century.<sup>2</sup> Another chain with pendant pomegranates decorated with glass beads comes from Tomb 5 at Eretria, of the fifth century. And two necklaces of cylindrical beads with spherical attachments come from Tombs 153 and 155 at Ialysus, of about 400 B.C. One has a rock-crystal bead as a centrepiece.

Two pairs of elaborate pendants of uncertain purpose come from tombs in South Russia, one from Kul Oba, of about 360 B.C., the other from the Tomb of the High Priestess of the Great Blisniza at Taman, of about 330 B.C. The style in both cases is perfectly Greek, but as nothing in any way like them has been found elsewhere we should probably regard them as a local peculiarity, possibly even made by Greeks for barbarian customers. Both sets comprise an embossed medallion, about 8 cm. in diameter, from which hangs a network of chains supporting bud-like pendants and rosettes. The set from Kul Oba (pl. 29) has the head of Athena Parthenos in three-quarter view on each disc, one being the mirror-image of the other. Those from Taman have a figure of Thetis riding a sea-monster and carrying the arms of Achilles.

The first pair was found on the corpse's pillow beside her head, the second on the corpse's breast. Minns believes that they were worn over the temples, suspended from a diadem, but this explanation does not account for the pair which were found on the breast; and besides, the wearing of such ornaments over the temples would be uncomfortable and might even impede the wearer's vision. Possibly these medallions could serve several purposes, those from Kul Oba having been used as

<sup>1</sup> Hadaczek, 44, fig. 82. Minns, fig. 29, = *ABC*, pl. 7. *AA* xxviii (1913), 197.

<sup>2</sup> Amandry, no. 215.



earrings, those from the Great Blisnizta as breast-ornaments, suspended from pins like the Mycenaean ornament on pl. 6A.

BRACELETS

The penannular tube or rod with animal-head finials continued from the previous period. A pair from Tomb 73 at Curium with rams' heads cannot be dated closely by associated finds; to judge from their style they were probably made in the first half of the fifth century (pl. 30A). A somewhat similar pair from Tomb 4 at Nymphaeum (in Oxford) belongs to the fourth century. But the finest surviving bracelets of this period are a superb pair from Kul Oba, of about 375-350 B.C., in which the finials are formed of the foreparts of sphinxes (pl. 30B).

Other varieties of bracelet are known. Plain bands of silver come from Tomb 74 at Ialysus, of the early sixth century. Decorated bands are represented in the remains of a chryselephantine statue from Delphi of the early sixth century, and are found at Tomb 24 at Marion of about 400 and at Kul Oba. Bracelets ending in complete figures of lions come from the Tomb of the High Priestess of the Great Blisnizta; and spirals come from the same tomb and from Tomb 4 at Rhodes, of the fourth century.

FINGER-RINGS

Finger-rings in this period were used not only as seals but also for purely decorative purposes. They are mentioned in temple treasure-records, notably those of the Parthenon and the Hecatompedon.<sup>1</sup>

(1) Hoops in the form of swivels supporting engraved scarabs or scaraboids, generally of cornelian, are found in the sixth and fifth centuries, notably in Tombs 10 and 254 at Ialysus, of the sixth century, and at Nymphaeum, of the fifth. The type is originally Phoenician and the earliest examples in Greek lands may well be Phoenician imports. Temple treasure-records apparently refer to such rings. Occasionally the scarab or scaraboid is replaced by a gold drum, as in an example in London.<sup>2</sup>

(2) Hoops with fixed rectangular bezels engraved in intaglio also occur in the sixth century, more often in silver than in gold. Examples

<sup>1</sup> *BMCR*, pp. xxx f.

<sup>2</sup> *BMCR* no. 41.

come from an Archaic tomb at Isthmia and from Tomb C at Megara Hyblaea, of the later sixth century.

(3) Hoops with an oval or pointed-oval engraved bezel are first found in the sixth century, notably in Tombs 41 and 42 at Ialysus, and continue down to the end of this period (pl. 24c). In the fifth century examples come from tombs at Eretria and from Nymphaeum. The hoop is at first slender with a pointed bezel; later the hoop becomes stouter and the bezel a true oval. A ring of this type in London from Beirut has an engraved sard as a bezel. It is dated stylistically to about 400 B.C. and is thus one of the earliest examples in Classical times of an engraved stone ring-bezel.<sup>1</sup>

(4) A variation of the above variety is found in the fifth and fourth centuries, notably in tombs at Eretria, in Tomb 73 at Curium and Tomb 155 at Ialysus (see pl. 24E). The bezel is not engraved, but is purely decorative in function, with embossed ornament and filigree. The most frequent forms are a pointed-oval and a deep oval box-shaped bezel with decoration also along the sides. The hoop is generally also of an ornate character, being made of twisted or plaited wire.<sup>2</sup>

(5) A popular variant of the above type has a Boeotian shield as a bezel. Generally the hoop ends in animals' heads, which bite into the shield, and a gorgoneion is depicted in relief as a device on the shield. The bezels were occasionally carved from solid gold, a very rare technique.<sup>3</sup> The type started in the second half of the sixth century; an example comes from Tomb D at Megara Hyblaea. It flourished in the fifth. Several examples come from Eretria; others are from Thespieae, Perachora, Macedonia and Thessaly.<sup>4</sup>

(6) Rings with creatures in relief as bezels, lions or beetles, come in at the very end of this period. They are found in tombs of the Great Blisnitza.

(7) About 400 B.C. a new type of seal-ring evolved with a fairly slender hoop and a circular bezel of the same metal (pl. 24D). An example in silver comes from a mid-fourth-century tomb at Tarrha in Crete. The type continued into the Hellenistic period.

(8) Rings in the form of a spiralled snake come from tombs of the

<sup>1</sup> *BMCR* no. 350. *Op. cit.*, p. xli, Type C xii, for this general type.

<sup>2</sup> *Op. cit.*, p. xli, Type C xviii.

<sup>3</sup> Coche de la Ferté, pl. 17: 2 and 3, from Thespieae.

<sup>4</sup> Amandry, no. 214. For other refs. see Bibliog.

fourth century in South Russia and (in silver) from the same mid-fourth-century tomb at Tarrha as the seal-ring mentioned above. This type also continued into the Hellenistic period, and beyond (see pl. 53B).

PINS

Two very elaborate pins in Boston should be noted. They were found, joined together by a loop-in-loop chain, in a tomb of the late fifth century in the north-west Peloponnese, near Aigion or Patras.<sup>1</sup>

One pin-head comprises a ball, rampant lions, bees and sphinxes. It is three-faced. Stylistically it is dated about 460 B.C. The other comprises two balls, an Ionic capital, a pine-cone, rampant lions, plants and bees. It is four-faced. Stylistically it is dated about 410 B.C. Both pins are made in many sections and soldered together, with added decoration in filigree of beaded wire.

To explain the discrepancy in date between two joined pins, Jacobsthal has a pertinent suggestion: 'The sphinx pin was a family piece, perhaps the property of the buried woman's mother or grandmother, and then her father or husband gave her a modern companion piece, bespoken from the family jeweller in Corinth.'

Two pairs of silver pins come from tombs at Tarrha in Crete. One pair, with conical heads, was found in a tomb of the late fifth century; the other, with melon-shaped knobs, in a tomb of the mid-fourth century.

FIBULAE

Fibulae were not in general use in Greece proper during this period. Two varieties, however, are found in peripheral areas.

(1) An elaborate variety of the 'Asia Minor' type evidently reached Thrace from Asia Minor, whence it spread northwards into the Balkans, and occasionally came southwards into Greece. In this period it was generally of silver. Dated examples come from tombs at Trebenishte of the sixth century, and from tombs at Halae of about 400. Examples in London (undated) are said to come from the Vale of Tempe and Elis and from Budva in Yugoslavia (pl. 31c).<sup>2</sup> The type continued into the next period (see p. 176).

<sup>1</sup> *Boston Bull.* xxxix (1941), 54. Jacobsthal, *Pins*, 65 ff., figs. 274-9.

<sup>2</sup> *BMCJ* nos. 2841-8. See also Jacobsthal, *Pins*, 204 ff.

(2) The second variety (pl. 31D) comes from Campania, and, like most Campanian art, is a blend of Etruscan and Greek elements. In this case the form is in origin Etruscan, but the system of decoration is Greek. Examples from Tomb 126 at Cumae, of about 350 B.C., just bring the type into this period. It continued into the next.

This fibula, which is discussed in detail by Breglia, is basically Blinkenberg's 'Italic type' (no. XI) but beyond the catch is a spherical attachment. The whole surface is richly decorated with applied rosettes, filigree and a little granulation, and the general effect, although on the opulent side, is charming.

#### BUTTONS

Buttons have been discussed by Elderkin.<sup>1</sup> They are rare *in corpore*, but have been identified with a fair degree of certainty in sculptures and vase-paintings, where they fasten the peplos and himation on the shoulders, the chlamys at the throat, and the chiton down the arms.

Surviving objects of metal, bone and glass have been identified as buttons, and it has been suggested that wood was commonly used by the poor. A set of four in London is made of bronze cups with gilt terracotta fillings. The latter are decorated with gorgoneia in relief, apparently moulded from Thracian coins of about 500 B.C. (pl. 31B).

A pair of embossed gold rosettes was found on the shoulders of a corpse in a tomb at Olbia of 550-500, and similar objects have been found in pairs at Ialysus, in Marmaro Tombs 5 and 10. To judge from their position, they must represent the facings of brooches or buttons which had fastened the peplos. Brooches, which would have been made of metal, are unlikely to have vanished utterly in all three instances, and the only reasonable supposition is that the rosettes covered wooden buttons, which under normal circumstances could not be expected to survive.

<sup>1</sup> *AJA* xxxii (1928), 333-45. Jacobsthal, *Pins*, 111.

## Early Etruscan 700–400 B.C.

## INTRODUCTION

**T**HE FIRST TRACES of the Etruscan civilization of Central Italy are dated about 700 B.C., and it lasted in a recognizable form until about the first century B.C.

The origins of this culture are still in dispute, but the following view has the support of many scholars today, and is acceptable to the author. The so-called Villanovan culture, which had flourished in Northern and Central Italy in the eighth century, was transformed in Central Italy about 700 B.C. by the introduction of new artefacts and new customs, many of Western Asiatic origin. The ensuing hybrid culture may best be explained, in complete accordance with the views of Herodotus, by the arrival on the western coasts of Etruria and Latium of immigrants from Western Asia Minor, who took over the Villanovan world as a ruling minority and made certain substantial modifications. The Oriental influences in Etruria are not of the same order as the contemporary Orientalizing phase in Greece. Although there are obvious resemblances, the process in Etruria was much more sudden in its inception, and far deeper-rooted in its effects.

Apart from Villanovan and Western Asiatic elements, there is a third element which may have had some influence on the development of the Etruscan civilization. On the east coast of Italy the Picene culture had much in common with that of the Thraco-Illyrian continuum across the Adriatic and must inevitably have made some impact on the Etruscans to the west. This factor may account for certain features common to Etruria and Thrace, which seem to have reached Etruria via the Faliscans (see pp. 141 and 148).

Throughout the seventh, the sixth and the early part of the fifth centuries the Etruscans spread over Italy and grew in power on land and

sea. Their great riches, attributable largely to the mineral resources of the country, are reflected in the sumptuousness of their tombs, as rich in gold as those of Mycenaean Greece. The zenith was reached about 500 B.C., but the battle of Cumae in 474 began a rapid decline in political and economic power.

Although in its earliest manifestations Etruscan art was remarkably free of Greek influences, it did not long remain so. From about 650 B.C. Greek pottery was imported and imitated, and before the seventh century was out, Greek influence was becoming increasingly felt. Throughout the sixth century, and much of the fifth, many works of art and great quantities of pottery were imported from Greece, and all Etruscan art, although it never completely lost its identity, was heavily overlaid with Greek. So much so, that in certain centres, in particular at Caere, immigrant Greek craftsmen are believed to have worked for Etruscan masters.

The period from 475 to 400 B.C. is one of decreasing prosperity, and the surviving evidence for Etruscan art is extremely scanty, except in the Po Valley, far to the north, which at this time enjoyed a brief spell of affluence. For reasons which will become clearer in the next chapter, this chapter ends about the year 400.

Although Early Etruscan jewellery developed in a gradual sequence, for the sake of simplicity we may divide it into three phases.

#### A. 700-625 B.C.

The first phase is covered from beginning to end by tombs at Vetulonia and, around the middle of the century, by the great tombs at Praeneste and Caere and by numbers of others. One of the more important mid-seventh-century tombs for the study of Etruscan jewellery is the so-called Artiaco Tomb at Cumae.

Characteristic forms in this phase are hair-spirals; earrings; beads and pendants of various kinds, including several Phoenician varieties, and the earliest stages of the Etruscan *bullae*; bracelets of several kinds; clothing-ornaments; pins; and, above all, fibulae. These last are mostly translations into gold and silver, with embellishments suited to the new materials, of types already established in bronze amongst the Villanovans.

The most important decorative technique is granulation, which was carried to greater heights of technical excellence than by any other

people at any other period. Two schools have been postulated on the basis of the styles of granulation employed: a southern school, centred on Latium, which concentrated on the *outline* style; and a northern school, perhaps centred on Vetulonia, which preferred the *silhouette* style. There are indeed certain grounds for this view; but if it is accepted, it must be admitted that northern granulation found its way south and, conversely, southern granulation reached the north in fair quantities.

#### B. 625-475 B.C.

The second stage is covered for the first fifty years by certain tombs at Populonia, by the Polledrara Tomb at Vulci and by the Pania Tomb at Chiusi. After 575 there is plenty of material of doubtful provenance, which admits only of a stylistic dating, but very little from controlled excavations, which can be dated by association. A tomb-group from Vulci in New York, although its antecedents are not unimpeachable, appears to be homogeneous, and can be dated, on internal evidence, about 500 B.C.

The most important factor in this period is the tremendous amount of Greek influence, which transformed Etruscan art, including jewellery. Greek forms were seldom adopted, and Etruscan jewellery can seldom if ever be mistaken for Greek; but, in matters of detail and subsidiary ornament, Greek influence was paramount throughout this long period. So far as technique is concerned, granulation was gradually giving ground to the simpler process of filigree, a change which was occurring at the same time in Greece. Enamel and inlay were occasionally employed; inlay gradually became popular, but enamel was never more than a Greek innovation, which did not find lasting favour.

The characteristic forms of this period are rather different from those of the preceding period. Diadems are rare; hair-spirals continue. Earrings are now extremely popular; the *a baule* variety, which evolved towards the end of the previous period, was the most popular; another variety is the disc. Beads and pendants are found in many varieties, and there are also strap-necklaces with a network of pendants. Clothing-ornaments, pins and fibulae continue. Finger-rings are now found.

#### C. 475-400 B.C.

The third period is poorly represented, except at such northern sites as

Bologna and Spina. A tomb at Capannori (near Lucca) contained jewellery of 475–450. So far as our evidence permits, we may regard this period as transitional between Early and Late Etruscan. Characteristic forms are earrings of a new type, formed by a tubular hoop terminating in a human or an animal's head; a few *a baule* earrings; beads of various kinds; pins and fibulae of the Certosa type.

## THE JEWELLERY

### DIADEMS

Diadems are rare in Etruria. A gold-plated bronze example in London comes from the Polledrara Tomb at Vulci and so should date about 600. It is in the form of an oblong strip, 51 cm. long, with semicircular spaces cut out to fit over the ears, and is decorated in low relief with stamped figures of lions and lotus flowers.

Also from Vulci are four diadems in London, composed of strips of sheet-gold tapering towards each end and terminating in a hook at one end, and a loop at the other.<sup>1</sup> Such diadems bear a striking likeness to two from the Aegina Treasure (see p. 71). They do not seem to be in the Villanovan or Etruscan tradition, and may be Oriental.

### HAIR-SPIRALS

Spirals and rings of wire are common, especially in seventh-century tombs, and are generally believed to have been used in the hair (pl. 32c). They are found in Tre Fontanili Tomb 2 at Veii, at Marsigliana, Vetulonia and Populonia.<sup>2</sup> A sixth-century antefix from Capua (in London) illustrates the wearing of such ornaments.<sup>3</sup>

### EARRINGS

Earrings are not common in the first half of the seventh century, if indeed they occur at all, and it is not till about 625 that they were in general use. A few examples, however, may be placed slightly earlier.

(1) A *boat-shaped* earring in London (pl. 32E) has no known provenance, but the granulated decoration is so like Etruscan granulation of the mid-seventh century, and the shape of the 'boat' is so like

<sup>1</sup> *BMCJ* nos. 1258–61.

<sup>2</sup> See also *BMCJ* nos. 1311–44.

<sup>3</sup> *BMC Terracottas* (1903), D 591 = *BMCJ*, 118, fig. 28.



Etruscan fibulae that we should have no hesitation in calling it Etruscan of the mid-seventh century. For a discussion of this essentially Syrian type, see p. 115.

(2) A hoop-earring like a bugle but curled right round so that the mouthpiece runs near or actually into the flaring end is first found at Vetulonia and Narce, and should perhaps be dated from the third quarter of the seventh century.<sup>3</sup> The type had a long life in Etruria (pl. 43B).

(3) Another pair of earrings in London come from Vulci (pl. 32F). They consist of a chiselled openwork disc in the technique later to become popular with the Romans as *opus interrasile*, with a crescent-shaped nick cut out of the top, and central inlay of stone, amber or glass (now missing). They were evidently suspended by a short wire from a stud inserted through the lobe. Coche de la Ferté traces the type back to Lydia, thence to Syria and the Hyksos peoples of the Bronze Age.<sup>1</sup> These earrings probably constitute one of the few concrete links between Lydia and Etruria to support the views of Herodotus. The type did not find favour in its new home.

(4) Another early type of earring consists of a metal band bent round into a circle and attached to the ear by a wire, which also joins the ends. A pair of such earrings comes from Vetulonia (fig. 21). It is composed



FIG. 21. *The earliest stage of the baule earring. Later seventh century B.C.*

of three strips of openwork filigree side by side, each strip being topped at one end by a human head in low relief. The earrings themselves are very like the filigree bracelets so popular at Vetulonia, and the style of the heads shows them to be contemporary with the latest of these bracelets, which we may date about 640–620 B.C. (see p. 143). Earrings of this nature are represented on two terracotta statuettes in London of about the same date (fig. 22). In essence they are merely hoop-earrings made from a strip of metal instead of a wire or a tube.

<sup>1</sup> Coche de la Ferté, 45.

Later types are as follows:

(5) The characteristic earring of the later seventh, the sixth and the earlier fifth centuries is the *a baule* variety, so called by the Italians because of its resemblance to a small bag or valise (pl. 32A, B).<sup>1</sup> It is an original Etruscan creation, which evolved from the bent strips of metal discussed under no. 4 above. This earring is composed of a strip of metal bent round to form the greater part of a cylinder, the two ends being joined by a wire, which also passed through the lobe of the ear. The wire was often masked from a frontal view by a plate of decorative metalwork, and one end of the cylinder was sometimes closed by a similar plate. The chief means of decoration is very fine filigree, frequently of the openwork variety, and attached ornaments such as berries, rosettes, etc. Granulation was also used to a small extent, and enamel is sometimes found. Motives borrowed from Archaic Greek art abound and help to date individual examples.



FIG. 22. *Terracotta statuette, to illustrate earrings and a fibula. c. 650 B.C.*

Pieces from controlled excavations are not numerous, but the earliest examples, from tombs at Populonia of the late seventh and early sixth centuries, serve to date the evolution of the type; its latest appearance may be dated from a tomb at Capannori of 475–450 B.C. A slightly aberrant form comes from Tomb 86 of the Certosa Cemetery at Bologna, of about the same date.

(6) The disc-earring was also worn in Etruria over the same period as the *a baule* (col. pl. B2). The type is represented by a number in London and by a pair in New York from a tomb at Vulci of about 500 B.C.<sup>2</sup> They are richly decorated in front with granulation, filigree and, occasionally, inlay; a hollow tube, ending in a loop, is attached to the centre of the back. The discs vary in diameter from 2 to 6 cm., and the tubes project for about 1 cm. The evidence of the New York tomb-group, and the subsidiary decoration, which recalls the *a baule* earrings,

<sup>1</sup> Hadaczek, 56 ff. *BMCJ* nos. 1286–1306.

<sup>2</sup> Hadaczek, 68. *BMCJ* nos. 1414–26.

indicate a date in the sixth and the early fifth centuries. The counterparts of these discs in Greek jewellery have been identified as earrings (see p. 125), and there is no reason to doubt that these served the same purpose. Further confirmation of their use is given by the representation of similar objects worn in this way in paintings and terracottas of the sixth century. The disc was attached by thrusting the projection through the lobe and securing it by the insertion of a ring through the loop. A safety-chain ran from a loop in the side of the disc to this ring.

(7) A tubular hoop with a pattern of large globules hanging from the base originated in the later sixth or the fifth century.<sup>1</sup> It is evidently derived from the Cypriot-inspired hoop-earrings so common in Greece and Sicily in the seventh and sixth centuries (see pp. 117 and 124). This type of earring is interesting not so much for itself as for what became of it in the fourth and third centuries.

(8) In the fifth century the northern sites of Spina and Bologna (Certosa) can produce virtually only one type of earring: a tubular hoop equipped at one end with the head of a woman, a river-god, a ram or a lion (pl. 43c).<sup>2</sup> This type was also the basis of a popular variety of earring in the fourth and third centuries.

#### BEADS, PENDANTS AND NECKLACES

A circular pendant with a central boss has already been mentioned (on p. 109) as a Syrian or Cypriot type which found its way in the early seventh century to Greece and Etruria. Etruscan examples of the early and middle seventh century are numerous, some having the central boss composed of an amber inlay. They come from Tre Fontanili Tomb 2 at Veii, from Bisenzio and Narce, and from the Artiaco Tomb at Cumae. There are also some particularly fine examples in a necklace in New York, together with other, stylistically related, pendants with marked Phoenician affinities.<sup>3</sup>

A variant type has an inverted crescent over the boss, a Phoenician motive indicating the sun and the moon in association. An example from Vulci (in Munich) is covered with fine granulation (fig. 23); one from Bisenzio, Tomb 10, is inlaid with amber. A third example comes from Marsigliana.

Another Phoenician type of pendant, which achieved a certain

<sup>1</sup> Hadaczek, 59 ff.

<sup>2</sup> *BMCJ* nos. 2196-210.

<sup>3</sup> Alexander, *Jewelry*, fig. 3.

popularity in Etruria in the seventh century, is a large scarab or scaraboid of gold, amber, or faience pivoting on a swivel. It occurs in Tre Fontanili Tomb 2 at Veii, at Vulci (now in Munich), and at Vetulonia, and is represented in London by an amber scaraboid, with a silver

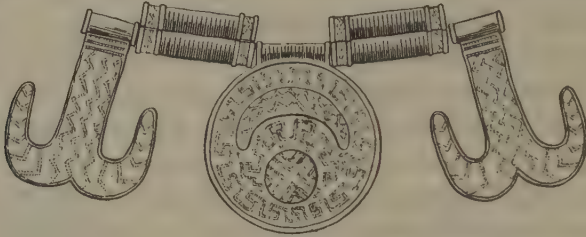


FIG. 23. Part of a necklace from Vulci. Seventh century B.C.

swivel (fig. 24). It was originally a seal-holder, but was appreciated in Etruria more for its decorative than for its utilitarian characteristics, and the scarab or scaraboid is seldom engraved. The type is, not surprisingly, also found in Cyprus.<sup>1</sup>

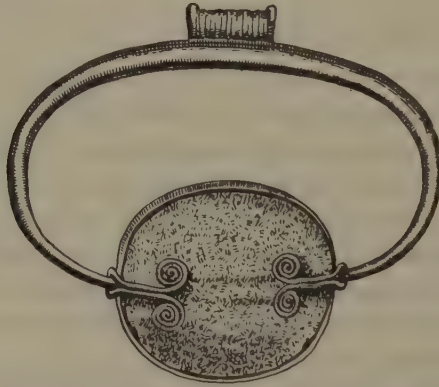


FIG. 24. Silver and amber pendant. Seventh century B.C.

The *bullā*, originally a lentoid pendant hanging from a broad loop, was to become the typical Etruscan ornament, the *Etruscum aurum* of the Romans. In later days it was worn as an amulet, especially by

<sup>1</sup> SCE iv, pt. 2, 165, fig. 35: 1.

generals at triumphs, by freeborn boys and by domestic animals, but it does not seem to have been in general use before the fifth century.

The earliest recorded examples are in bronze and come from Faliscan tombs at Narce of the mid-seventh century (Tombs 42M and 102F in Philadelphia). Pendants from Duvanlij in Thrace of some two centuries later are remarkably like the bulla, and it is possible that this ornament had an earlier history in Thraco-Illyria, and reached Etruria from the East, via the Faliscans. The same explanation is suggested for the 'needles' discussed below (see p. 148).

The necklace (in London) illustrated on pl. 34B exhibits an unusually fine form of the bulla. It is said to come from Atri in the Abruzzi and can be dated stylistically about 500 B.C. It is probably not complete. In its present state it is composed of eight bullae, two finials and six filling-beads (one of which is modern). The finials are decorated with lions' masks in relief. The bullae are identical, decorated in low relief on one side with a gorgoneion and on the other with a lion's mask with eyes of enamel. At the top are two rings for suspension and between them a hollow cylinder which serves as the lid of a stopper fitting into a hole in the top of the bulla. The suspension-cord passed through the rings and the cylinder and kept the stopper secure. The combined use of granulation (on the filling-beads) and filigree (on the stopper) is typical of the period. These bullae were evidently intended to contain some fluid, possibly scent.

We may now consider the most popular types of beads and pendants of the seventh century, a period in which they are particularly common.

Melon-beads come from Vetulonia and Marsigliana; flanged beads from Vetulonia, Bisenzio and Narce; lemon-shaped beads with granulation from Narce (see also pl. 39D). Double-cylindrical spacers come from Vetulonia and Vulci (in Munich, fig. 23).

Flask-shaped pendants come from Tre Fontanili Tomb 2 at Veii and from the Regolini Galassi Tomb at Caere. Acorn-beads are found at Populonia; such beads were long popular, for one not dissimilar comes from a tomb at Capannori of 475-450 B.C. The type is represented in London by an example from Tarquinii.<sup>1</sup> Anchor-shaped pendants come from Marsigliana and from Vulci (in Munich, fig. 23).

Relief-beads depicting a human bust are found at Vetulonia, in the Pietreria (640-620 B.C.), and are represented in London (pl. 39D). A

<sup>1</sup> *BMCJ* no. 1458.

human half-figure, the arms crossed on the breast, in a related style, is found at Narce and at Vulci (now in Munich).

Mention should also be made of grotesque beads of multi-coloured glass, which were used as pendants in the later seventh century (pl. 39D). They are found throughout the Mediterranean, and are generally believed to be of Phoenician origin.

The sixth century is poorly represented by beads, but there is more material in the fifth.

A silver necklace in Paris, which can be dated stylistically about 500 B.C., is composed of four-winged human-headed creatures decorated with filigree spirals and hung with amphora-pendants, and globular beads, some of which are also hung with amphora-pendants.<sup>1</sup> Relief-beads in a related style come from a tomb at Capannori of 475-450 B.C. It is composed of frontal figures of sirens, winged female busts, and acorns.

A cord-chain with a satyr-head pendant (in London) comes from Caere (pl. 39c). The head is evidently modelled on some Greek original of the later sixth century, and is decorated with unusually fine granulation for this late date. Heads very similar in style are found on Campanian terracotta plaques.<sup>2</sup> Another satyr-head pendant in Paris, to judge from its style, must have been made about the same time, but in its coarser execution is more typical of the period.<sup>3</sup>

Strap necklaces with a complicated system of pendants are represented in two fine examples, one in London (pl. 33) and one in Naples, from Ruvo.<sup>4</sup> The pendants include satyr-heads, sirens, rosettes, flowers, acorns and scarabs. The style of the heads dates these necklaces about 500 B.C.

#### CLASPS

Clasps, possibly for narrow belts, in the form of pairs of acorns are found in tombs at Populonia of about 600 B.C., and are represented in London.<sup>5</sup> Similar clasps composed of spectacle-spirals come from Marsigliana and Vetulonia and are also represented in London.<sup>6</sup>

<sup>1</sup> Coche de la Ferté, pl. 38.

<sup>3</sup> Coche de la Ferté, pl. 37.

<sup>5</sup> *BMCJ* nos. 2322-3.

<sup>2</sup> *BMC Terracottas* (1903), nos. B 522-43.

<sup>4</sup> Becatti, no. 273. Breglia, no. 22.

<sup>6</sup> *BMCJ* no. 1413.

## BRACELETS

Bracelets are particularly common in the seventh century. They fall into six main groups.

(1) Hoops decorated with animals' heads, the ends overlapping. They are particularly common at Vetulonia, where they are found in the Tomb of the Foreigner, the Circle of Oleasters, and the First Circle of Pellicie. A pair in London is said to come from Tarquinii.<sup>1</sup>

(2) Strips of openwork filigree running side-by-side and frequently topped by human heads in relief (pl. 36B). These bracelets are particularly common at Vetulonia, where they are found in the Circle of Bracelets, the Bes Circle, the Migliarini Tomb and the Pietreria. The type is also found at Marsigliana. A slightly different version in London is decorated in addition with figures of sphinxes in the round.<sup>2</sup>

(3) Bracelets similar in shape to the foregoing, but of solid sheet-gold, decorated with embossed figures and outline-granulation (pl. 35).

(4) Large rectangular strips, richly decorated in the same way as the foregoing. A pair comes from the Regolini-Galassi Tomb at Caere; another in London, said to be from Praeneste, is illustrated on pl. 36A.

(5) An articulated openwork bracelet, probably of the seventh century, comes from Vulci (in Munich). Another, in Paris, of uncertain provenance, is decorated very much in the style of the *a baule* earrings, and should probably be dated somewhat later, in the early sixth century.<sup>3</sup>

(6) A spiral of openwork filigree, somewhat like the individual strips of no. 2 above. Bracelets of this kind are recorded from Bisenzio, and a pair in London is said to come from Caere (pl. 39A).

## PLAQUES

A number of gold relief-plaques are found amongst Early Etruscan jewellery. Some served as clothing-ornaments, some as clasps, and the purpose of others is not clear. They may for convenience be considered together.

(1) Plaques depicting draped women in the East Greek style of the later sixth century, and decorated with touches of enamel. A pair in London is said to come from Caere (pl. 32D); there are two finer examples in Paris, of unknown provenance.<sup>4</sup>

<sup>1</sup> *BMCJ* nos. 1368-9.

<sup>2</sup> *BMCJ* nos. 1362-3.

<sup>3</sup> Coche de la Ferté, pl. 29: 3.

<sup>4</sup> Coche de la Ferté, pl. 32: 1 and 2.

(2) Plaques comprising a figure of a goddess of Oriental appearance, merged in an elaborate floral pattern. One such plaque comes from Tomb 10 at Caere (the Chamber of the Firedogs); and a pair in London is also said to come from Caere (pl. 32G).

(3) A clasp in London composed of two plaques is said to come from Chiusi. A siren is represented, in the style of about 500 B.C.<sup>1</sup>

(4) Another clasp in London with a reclining satyr in relief on one plaque, and a reclining Maenad on the other. To judge from the style, this piece should be dated about 500 B.C.<sup>2</sup>

#### FINGER-RINGS

Finger-rings are not common in Early Etruscan jewellery, but one class achieved a certain popularity in the late seventh and the sixth centuries (pl. 34A).<sup>3</sup> It is a type of ring which reached Greece from Phoenicia, and Etruria from Greece. The ring is ultimately of Egyptian type, with a slender hoop and a cartouche-shaped bezel of gold or gilt bronze. The bezel is decorated with designs in relief or in intaglio in a markedly East Greek style. Were it not for the Etruscan provenance of these rings, one would be inclined to call them Greek; possibly they were made in Etruria by Greek craftsmen.

In addition, a swivel-ring with an engraved scarab was adopted from Greece at some point in the fifth century, but is rare before the fourth.<sup>4</sup>

#### PINS

Pins are fairly common in Early Etruscan jewellery.<sup>5</sup> The heads are as a rule spherical, or in the shape of an inverted pear; in a few instances they are composed of a pyramidal arrangement of spheres. Pins of the seventh century from Vetulonia are often richly granulated; a particularly impressive example comes from the Lictor's Tomb. Pins are also found at Populonia, about 600 B.C.; at Vulci (in New York), about 500 B.C.; and at Capannori, 475-450 B.C.

#### FIBULAE

The fibula had a continuous history in Italy from the Late Bronze Age into Etruscan times, and the basic Etruscan varieties were taken over,

<sup>1</sup> *BMCJ* no. 1269.

<sup>3</sup> See Coche de la Ferté, 79. *BMCR*, p. xxxix, Types B vii and C ii.

<sup>4</sup> *BMCR*, p. xliii, Type D i.

<sup>2</sup> *BMCJ* no. 1270.

<sup>5</sup> *BMCJ* nos. 1347-53.



fully developed, from the Villanovans.<sup>1</sup> But the Etruscans, in addition to the everyday varieties of bronze, produced luxury versions in gold and, to a lesser extent, silver. Their goldsmiths and silversmiths not only reproduced forms already known in bronze, but also (the goldsmiths especially) employed all the resources of their craft to diversify these basic forms. Of these forms the two principal are the *serpentine* and the *leech*, and these will be considered first.

(1) *Serpentine*. This is a Villanovan type, in which the bow is twisted into a variety of shapes, and is sometimes also fitted with knobs and swellings. Even more ornate examples exist, decorated to a fantastic extent with applied figures and patterns in granulation. Many fibulae of this form were made in gold and silver from earliest Etruscan times until the end of the sixth century. Select dated examples of the seventh century come from the Artiaco Tomb at Cumae, the Barberini and Bernardini tombs at Praeneste, from Marsigliana and from Vetulonia. A silver-gilt one from Tomb 312 of the Certosa Cemetery at Bologna brings the type down to about 500 B.C. The type in a simple form is illustrated on pl. 37A.

Two of the ornate examples are worthy of special mention. The first is the famous gold fibula in Paris decorated in granulation with geometric patterns and with the name of the owner.<sup>2</sup> The second (in London) comes from Vulci and is illustrated on pl. 37C. The fibula itself is richly decorated with granulation; in addition, the entire upper surface is encrusted with figures in the round, also richly granulated: lions, lions' heads, horses' heads and sphinxes.

(2) A curious type, represented in London by three examples, appears to be related to the serpentine type. It has a broad flat bow, with the spring at one side. The bow in one example is quite flat, and of trapezoid form.<sup>3</sup>

(3) The leech (or boat) shape was also taken over from the Villanovans. It was made in a surprisingly large number of variant forms, especially in the seventh century. The shape is essentially that of the earlier arched form, but the bow is thickened in various ways to resemble a leech or a boat (pl. 37B). It may be solid, or hollow and closed, or hollow and open underneath. Sometimes it is drawn out in the middle

<sup>1</sup> Montelius, *Civ. Prim. It.* i, Series A, pls. 1-21. Richter, G. M. A. *Greek, Etruscan and Roman Bronzes* (New York, 1915), 314-30.

<sup>2</sup> Coche de la Ferté, pl. 28: 2.

<sup>3</sup> *BMCJ* nos. 1376a-c.

into points, occasionally knobbed. The particular varieties are sometimes given different names, leech, boat, or kite, but it is simpler, in view of their basic unity, to give them all the same name; the leech is suitable for the simplest form and will serve for all.

The foot, too, takes different forms; it may be short, with a bent-up catch-plate, or long, like an open sheath, with perhaps a knob on the end. Many examples are richly granulated.

In the sixth century the typical leech fibula had a long foot, with a small knob. Granulation is still found, but was not practised as lavishly. An attractive form of the sixth-century fibula, the surviving examples of which seem to come exclusively from Ruvo but which have an unmistakably Etruscan appearance, has a ram's head at the end of the foot, in place of the knob (pl. 39B). Another, less successful, variant has a doubled bow.<sup>1</sup>

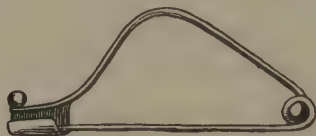


FIG. 25. *The Certosa type of fibula*

A different variety is found in tombs at Populonia of about 600 B.C. It has a slender bow and a small rectangular catch-plate. Towards the end of the sixth century an even simpler type evolved, the so-called Certosa type (fig. 25). As its name implies, it is found in abundance in the Certosa Cemetery at Bologna between 525 and 400 B.C., in silver and bronze. It is also represented in gold (in New York) by two examples from a tomb at Vulci of the late sixth century. These fibulae are small in size, with a sharply arched bow and an up-turned foot. This is about the last manifestation in Etruria of a form which had a long and exuberant life, and can only be regarded as something of an anticlimax.

A variety of the leech fibula, itself of Villanovan origin, is composed of segments of various materials threaded on the bow of an arched fibula. The segments were sometimes entirely of amber; sometimes of amber alternating with a substance which has disappeared and which may be presumed to have been wood; this vanished substance was

<sup>1</sup> *BMCJ* nos. 1397-1401.

frequently covered with gold foil, which has survived. The type occurs with a long foot and with a short foot. Examples are common; they come from Bisenzio, the Artiaco Tomb at Cumae, Tre Fontanili Tomb 2 at Veii, and elsewhere. All seem to be of the seventh century.

In another seventh-century variety, of Villanovan origin, the foot terminates in a large metal plate, approximately oval in shape and set at right-angles to the bow. Frequently one or more transverse members are interpolated between the bow and the plate. The type is represented in gold by a fairly simple variety, in London;<sup>1</sup> much more elaborate examples, with granulation and embossed ornament, come from Vulci (in Munich) and from the Regolini-Galassi tomb at Caere (pl. 40).

(4) In another type of fibula, the bow takes the form of an animal modelled in the round, a lion or a chimaera. The rendering of the animals dates these fibulae in the sixth century.<sup>2</sup>

Two other forms of clothes-fasteners, although they functioned on a different principle, are generally known as fibulae.

(5) The comb-fibula. A type found in the Bernardini and Barberini Tombs, at Marsigliana and Falerii, in the Artiaco Tomb at Cumae and represented in London by an example illustrated on pl. 38B. They are as a rule of silver, parcel-gilt. The central element is a richly decorated tube, with a wire running down either side. There are also two comb-like elements. The 'combs' were sewn to opposing corners of a garment, and were joined at the shoulder by means of the tube, being hooked over the side-wires. The wearing of such a fibula is illustrated on a terracotta figure (in London) from Caere (fig. 22). The origins of this fibula are unknown. It belongs to the seventh century B.C.

(6) The bolt-fibula, with much the same distribution and date as the comb-fibula, and serving the same purpose. It is represented by two examples in London, one said to be from the Campagna,<sup>3</sup> one from Caere (pl. 38A). Like the comb-fibula, its origins are unknown. It consists of two principal elements. The first comprises three or four horizontal tubes, curving downwards at one end; long pins protrude from the straight ends of the outer tubes. The tubes are joined to each other by a transverse plate, to which is hinged another, similar, plate. The second element is identical with the first, except that the pins are absent,

<sup>1</sup> *BMCJ* no. 1373.

<sup>2</sup> See *BMCJ* nos. 1390-2. Coche de la Ferté, pl. 38: 1.

<sup>3</sup> *BMCJ* no. 137*ff*.

and the tubes are bent up instead of down. The two pins of the first element are pushed through the garment and into the ends of the outer tubes of the other element. The clasp is then locked by fastening the two secondary plates, with hooks and eyes, or by some other means. All four plates are encrusted with figures of animals in the round, richly granulated.

#### 'NEEDLES'

It remains to consider a class of object whose purpose is completely unknown. It is a needle-like object, equipped with an eyelet hole at one end, and richly decorated at the other with openwork filigree. In Italy, the type occurs only at Narce, and is therefore in all probability not truly Etruscan. Similar objects in the Stathatou Collection in Athens are said to come from the neighbourhood of Salonica.<sup>1</sup> It is possible that we have here, as with the *bulla* (p. 140), an example of related objects coming from the Eastern and the Western ends of a Thraco-Illyrian cultural continuum. The absence of similar 'needles' in the intervening area is certainly surprising, but is perhaps attributable to the chances of survival and discovery.

These objects are unlikely to be bracelets, in spite of the superficial resemblance to certain Etruscan openwork bracelets; for the eyelet at one end was clearly never intended to join the other end, and the examples from Salonica were apparently found straightened out. The most likely explanation is that they served as decorations for clothing.

<sup>1</sup> Amandry, nos. 53-77.

## Late Etruscan 400–250 B.C.

## INTRODUCTION

**A**BOUT 400 B.C., for reasons which are not entirely clear, there occurred something like a renaissance in Etruscan art, which continued to exist in a recognizable form until the first century B.C. For the purposes, however, of a history of jewellery, the Late Etruscan period may be deemed to end about 250 B.C. By the middle of the third century, the Etruscan cities were finally defeated and absorbed in the Roman Confederation; and their minor arts were drawn into the Hellenistic orbit, of which Rome, in many respects, now formed a part. The jewellery of Etruria after 250 B.C. may be regarded as Hellenistic, and will be mentioned in the following chapter, to which it clearly belongs.

The date when jewellery of specifically Etruscan type ceased to be made cannot be fixed with any exactitude; it continued into the third century, but is hardly plentiful enough to have lasted till the end of the century.

Etruscan jewellery again becomes plentiful about 400 B.C. It now has a character entirely its own, in many ways very unlike Early Etruscan, and is remarkable in that, once developed, it remained without any significant changes for some one and a half centuries. It is clear that the forms of Late Etruscan jewellery developed from Early Etruscan, but the intervening stages cannot always be traced, for our evidence for the transitional period, 474–400 B.C., is slight, and is confined to the far North, which was probably apart from the main current. Moreover, although the forms of jewellery of the two periods are related, the feeling behind them is entirely different.

The new style consists of large convex surfaces of sheet metal, with embossed decoration. Filigree and granulation are seldom, and enamel

never, found. The articles of jewellery are almost confined to wreaths, earrings, bullae, bracelets and finger-rings. Although Greek influence is evident in details, such as the scenes embossed on wreath-ends and bullae and engraved on rings, the jewellery itself has practically no counterparts in Greece.

When this style was succeeded by Hellenistic, a little of the genuine Etruscan spirit remained. In particular, bullae continued in use in Etruria and lasted until early Roman Imperial times.

From the beginning of the Hellenistic period in Greece, about 330 B.C., jewellery of the Hellenistic pattern was imported from the South Italian Greek communities and similar pieces were made in Etruria itself, for Hellenistic and Late Etruscan pieces appear side by side in Etruscan tombs of that date, at Todi for example. This chapter, however, will deal only with genuine Etruscan creations, and will leave the purely Hellenistic jewellery (whether imported or indigenous) for later consideration.

Our sources are tombs at a number of sites, especially Praeneste, Vulci, Populonia, Todi and Perugia. Representations of jewellery in paintings and on terracottas also provide useful information.

## THE JEWELLERY

### WREATHS

The commonest variety of Late Etruscan wreath is a flat, stylized and extremely flimsy arrangement of leaves (pl. 41B). This wreath is probably the *corona subtilis* mentioned by Roman writers, in which the leaves were sewn to a background. The ends are decorated with embossed scenes frequently borrowed from Greek mythology. An example from the Sperandio Tomb at Perugia can be dated, by associated finds, to the fourth century. Other examples, of which there are a fair number in the Vatican from Vulci and in London from various sites, can be dated by the style of the embossed designs to the fourth or third century.<sup>1</sup>

Two other varieties of wreath, no less stylized but more robust, and capable of being worn without additional support, may be mentioned. One is composed of ivy or vine leaves gracefully arranged on a central stalk. An example comes from the Marini Cemetery at Praeneste, of the

<sup>1</sup> *BMCJ* nos. 2293, 2296-2303.

third century; one in London has no provenance.<sup>1</sup> The type is represented on a terracotta head in London which belongs to the late fourth or the third century.<sup>2</sup>

The second type is a myrtle-wreath, illustrated on pl. 41A, which should probably belong to the same period as the foregoing.

## EARRINGS

1. (a) A simple tubular hoop, a debased version of the bugle type (see p. 137), continued into this period, and is found in the Sperandio Tomb at Perugia, and in a tomb at Volterra (Monteriggioni).

(b) The basic type is enlarged and elaborated with the form of a bead or a lion's head at one end, and, occasionally, with superficial decoration.<sup>3</sup> An example comes from Peschiera Tomb 1 at Todi.

(c) The next elaboration is the addition of a ring, sometimes accompanied by a pendant representing a jar (pl. 43D).<sup>4</sup> An example comes from Peschiera Tomb 20 at Todi.

(d) The most extreme variety of this type of earring is represented by a pair from Peschiera Tomb 1 at Todi; a pair from Perugia, of which one member is in London (pl. 42c), the other in Perugia; and a pair in New York said to come from Rome.<sup>5</sup> The hoop is now completely masked in front by a decorated plate of gold in the shape of a long thin shield, from which hang pendants in the shape of a human head, and a number of jars. The heads are strongly influenced by Greek art; they particularly recall terracottas of the Tanagra style.

2. (a) The tubular hoop with a pattern of large globules at the base continued from the previous period.<sup>6</sup> Good examples come from Praeneste and Capena. An example in London is shown on pl. 43A.

(b) The hoop is decorated with a small plate of embossed gold shaped like an inverted horseshoe.<sup>7</sup> The type is found in Peschiera Tomb 16 *bis* at Todi, and at Praeneste.

(c) The hoop shrinks in size until in some cases it disappears. The horseshoe-shaped plate is greatly enlarged, and extended at its lower

<sup>1</sup> *BMCJ* no. 2294.

<sup>2</sup> *BMC Terracottas* (1903), D 196 = *BMCJ*, 265, fig. 78.

<sup>3</sup> Hadaczek, 65, figs. 126-8. *BMCJ* nos. 2211-27.

<sup>4</sup> Hadaczek, 65, figs. 129-32. *BMCJ* nos. 2228-36.

<sup>5</sup> Alexander, *Jewelry*, pl. 74.

<sup>6</sup> Hadaczek, 60, fig. 114. *BMCJ* nos. 2243-8.

<sup>7</sup> Hadaczek, 60, fig. 116. *BMCJ* nos. 2250-1.

end to include the pendant globules, which are now simply embossed decoration from the same sheet of metal (pl. 42D).<sup>1</sup> The type is found at Civitavecchia and Capena. Earrings of this type are frequently represented in Etruscan wall-paintings and terracottas.

3. A pair of earrings from Chiusi in London (pl. 42A) is a rare example of a Hellenistic earring of the disc-and-pendant class translated into the Late Etruscan idiom.<sup>2</sup>

#### BEADS, PENDANTS AND NECKLACES

The bulla is the typical Late Etruscan ornament. Bullae are now as a rule richly decorated with patterns, figures or scenes in low relief, frequently borrowed from Greek mythology (pl. 42B). The two principal types are shown on pl. 44: the globular (the original type) and the heart-shaped. The Achelous-head on the same plate is an unusual variation.

Examples come from tombs at Vulci, Todi, Filottrano and elsewhere. The type continues through the Hellenistic period and even beyond.

A few other types of necklace-ornament may be considered. An agate mounted in gold, and pendants representing buds or flasks accompany bullae in a necklace from Peschiera Tomb 1 at Todi. And there are other necklaces (in London) which probably belong to this period.<sup>3</sup>

#### BRACELETS

Bracelets are extremely rare in Late Etruscan jewellery, but a pair in London has embossed designs in the style of fourth- and third-century bullae, and can only be Late Etruscan.<sup>4</sup> The type is also represented in the semi-Etruscan cemetery at Montefortino.

#### FINGER-RINGS

Finger-rings were more popular in the Late Etruscan period than before. Several varieties were current.

(1) The swivel with an engraved scarab, first used in the fifth century, was very popular in the fourth and third. Examples are found at Volterra (Monteriggioni), in Peschiera Tombs 1, 9 and 20 at Todi, and elsewhere (pl. 43E). In some examples the ends of the swivel are decorated

<sup>1</sup> Hadaczek, 61 ff., figs. 118-21. *BMCJ* nos. 2252-9.

<sup>2</sup> *BMCJ* nos. 2263-4.

<sup>3</sup> *BMCJ* nos. 2271-86.

<sup>4</sup> *BMCJ* nos. 2287-8.



with large discs or cylinders somewhat in the style of the contemporary earrings.<sup>1</sup>

(2) A peculiarly Etruscan type was in use in this period; it can be dated, by the style of the engraving, to the fourth and third centuries.<sup>2</sup> It has a large fixed convex bezel, set sometimes at right-angles to the line of the hoop, sometimes along its axis. In the centre is a stone, sometimes engraved and sometimes plain, framed by embossed gold-work (pl. 43F, G).

(3) Purely Greek shapes with a round or a pointed-oval bezel were also in use in this period. Dated examples are found in Peschiera Tombs 1 and 20 at Todi, but should probably not be included here, as being more Greek than Etruscan (see p. 130).

<sup>1</sup> *BMCR*, p. xlv, Types D ii-vii.

<sup>2</sup> *ibid.*, Type D viii.

## CHAPTER 15

# Hellenistic 330—27 B.C.

### INTRODUCTION

THE CONQUESTS OF Alexander the Great between 333 and 322 B.C. transformed the Greek world. Vast new territories of the former Persian empire were hellenized by settlements of Greeks, and Greece in return was exposed to influences from the newly conquered territories of Egypt and Western Asia.

From about 300 B.C., when the chaos following Alexander's death was at last halted, the Greek-speaking world is seen to be made up politically of a number of self-contained groups. The most important were Old Greece, precariously independent; the Antigonid kingdom of Macedonia; the Ptolemaic kingdom of Egypt; the Seleucid kingdom of Syria; the Greek cities of South Italy and Sicily; and the Greek or semi-Greek communities of South Russia. From about 250 B.C. Roman Italy, which now included Etruria, may be reckoned for our purposes as yet another section of the Hellenistic world. By the end of the first century B.C. all of these communities, with the exception of the South Russian Greeks, had been swallowed up by the growing power of Rome. But the arts of this period, especially the minor arts, were not greatly affected by political considerations, and although local preferences and peculiarities undoubtedly existed, there was so much cross-fertilization that we may safely regard Hellenistic jewellery as basically homogeneous throughout this large area. This chapter ends, somewhat arbitrarily, with the end of the Roman Republic.

So far as jewellery is concerned, the most important fact is the far greater quantity of surviving material, attributable without doubt to the greater availability of gold. For the first time since the Bronze Age, gold was plentiful in Greece; thanks partly to the intensive mining operations in Thrace initiated by Philip II, but mostly to the dissemina-

tion of the captured Persian treasures. The general appearance of the jewellery was at first much as before, but by the early second century there were new forms beside the old, and the system of decoration had radically changed. Then, for about two centuries, there was little change.

Many forms of jewellery and systems of decoration in this period follow the traditions established in the fifth and fourth centuries. As examples we may cite many of the wreaths, diadems, earrings, finger-rings and bracelets. Similarly, filigree-enamel and plain filigree occupy about the same place in Hellenistic jewellery as they did in Classical. Granulation, too, was occasionally employed.

The principal changes which took place between 330 and 200 B.C. may be classed under three headings: new decorative motives, new forms of jewellery, and new systems of decoration.

(1) *New motives.* The so-called Heracles-knot (the reef-knot) was introduced at the beginning of this period and retained its popularity as an ornament for jewellery into Roman times. It may be presumed to have come from Egypt, where its history as an amulet goes back to the beginning of the second millennium.<sup>1</sup> To the Greeks also it had an amuletic as well as a decorative purpose; it was believed particularly efficacious in assisting the healing of wounds.<sup>2</sup>

Another Egyptian motive, whose use was more restricted, is the disc, feather and cow-horn crown of Isis-Hathor, which is found on earrings of the second and first centuries B.C.

The crescent is another foreign import. It was introduced from Western Asia, where it had a high antiquity, and whence it had already reached Greece in the eighth and seventh centuries. In its homeland it was sacred to the Moon-god. It is found in Hellenistic necklaces as a pendant; although its purpose was doubtless primarily decorative, it had a certain amuletic value.

Of purely Greek motives, figures of Eros are among the most popular, as in all Hellenistic art.

(2) *New forms.* The animal- or human-headed hoop-earring was introduced about 330 B.C. probably from the North, and retained its popularity in certain regions till the Roman period.

Elaborate diadems, frequently with a Heracles-knot as a centre-piece, are first found about 300 B.C. and lasted for about two centuries.

<sup>1</sup> See Beck, *Beads and Pendants*, 33, fig. 27, A 5.

<sup>2</sup> *DA s.v.* 'nodus'.

Bracelets in the same general style were also made, doubtless to accompany the diadems.

New types of necklaces are also found from about 330 B.C., of which chains with animal-head finials and straps with pendants of buds or spear-heads are the most important. Beads not threaded but linked together are typical of the second and first centuries. Medallions with heads in high relief are found in the second century and served various purposes. Finally, new types of finger-rings evolved.

(3) *New techniques.* The most important innovation, which transformed the appearance of Greek jewellery, is the polychromy provided by the inlay, or attachment by other means, of stones and coloured glass. Archaic and Classical jewellery relied for its effect primarily on the sculptural forms of the metal itself, and on such surface-decoration as granulation and filigree could provide. The decorative use of stones or glass was extremely rare, and the only other colours generally tolerated were those obtained by a very discreet use of filigree-enamel. But in Hellenistic jewellery inlaying was lavishly practised. Of the stones, chalcedonies, cornelians and above all garnets were in use from 330 B.C. onwards. In the second and first centuries we also find emeralds, amethysts, plasma and pearls.

Where did the polychrome style originate? Not surely in South Russia, an area which has been suggested on the basis of the numerous examples of this technique found there. It had in fact been practised throughout the old Persian Empire—in Egypt, in Asia Minor, in Syria, in Mesopotamia and in Persia—and it could have reached Greece from many different quarters after Alexander's conquests. For geographical reasons we should probably look to Asia Minor, Syria or Egypt; but we need not restrict the answer to any one region, for polychromy may well have found its way into Greek jewellery from more than one direction.

Another new technique, also designed to give a multi-coloured effect, is *dipped enamel*, which was used principally for earring-pendants in the shape of birds or other creatures.

Openwork filigree also makes a brief appearance in this period, in diadems and bracelets. It is chiefly found in the late fourth and early third centuries.

We can no longer speak of local styles, but certain regional preferences lingered on. For example, a certain type of fibula, and

medallions of a particular kind, apparently the tops of hairnets, are peculiar to North Greece; hoop-earrings after about 100 B.C. are found only in Egypt and the East; another type of fibula is restricted to Campania; and the bulla is peculiar to Etruria. Cyprus and South Russia exhibit other peculiarities; but this is not surprising, since both areas were only marginally Greek, and would naturally include other elements in their repertoire.

Most of the recorded material comes from tombs of the late fourth or early third century B.C., and it comes from every quarter of the Hellenistic world, as a direct result of the sudden abundance of gold in Greece. Frequently, whole sets were buried with the dead. There are such sets in New York, one from Madytus in the Troad and one from near Salonica. Jewellery (in London) said to come from Kyme in Aeolis probably represents several such ensembles from related tombs. It includes earrings and necklaces decorated with the same motives, and clearly intended to be worn together.

Our evidence for the later periods is much less plentiful and, incidentally, more difficult to date. After about 250 B.C., except in certain favoured quarters, gold was evidently scarcer than before. Tombs in South Russia, particularly at Kerch, cover the third century. The early second is represented by the rich tomb from Taman, Artjukhov's Barrow. We should probably also place in the second century the treasure, now divided between the Stathatou Collection and the Benaki Museum in Athens, which comes from Thessaly (probably Carpenisi), and a small, but very choice, collection now in Chicago, from an unidentified site in Syria. To the second-first century probably belong the so-called Family Tombs at Eretria. And a tomb-group from Palaeocastro in Thessaly can be dated firmly in the first century.

Jewellery was undoubtedly made in many places, frequently by itinerant craftsmen, but it would be safe to say that among the most important centres were Alexandria and Antioch. We cannot, however, in the present state of our knowledge, attribute any particular style to either centre.

Apart from the finds of actual jewellery, there are a few other sources of information for this period.

(1) *Archaeological*. A goldsmith's stock-in-trade, dating from about the second century B.C., was discovered at Galjub in Egypt. This hoard of bronze objects consists of punches of various kinds, very similar to

those in use today, cores for hammering sheet-gold, prototypes for the making of moulds, and various composite figures whose precise function is by no means clear.<sup>1</sup>

Sculptures, bronzes, terracottas, paintings and coins may also illuminate questions connected with jewellery.

(2) *Literary*. The few extant literary references to Hellenistic jewellery are mostly given under the articles to which they refer. We may, however, mention here Athenaeus, who describes the gorgeous displays of goldwork in Alexandria, and the goldsmiths and silver-smiths of Antioch.<sup>2</sup>

(3) *Epigraphic*. Temple treasure-records frequently list articles of jewellery deposited as votives. The most useful are those from Delos for 279 B.C. and subsequent years, in which reference is made to wreaths, diadems, necklaces with pendants, bracelets, finger-rings, pins and buttons.<sup>3</sup> Further mention will be found under the articles to which they refer.

## THE JEWELLERY

### WREATHS

(1) Temple inventories from Delos for 279 B.C. and subsequent years mention gold wreaths of laurel, myrtle, ivy, olive, oak and vine.<sup>4</sup> Numbers of such wreaths have been found, occasionally of silver or gilt bronze, generally of gold foil. They are mostly naturalistic, like the wreaths of the previous period (see p. 120). Surviving examples come for the most part from South Russian tombs from the late fourth to the early second century; the tombs on the Quarantine Road at Kerch, and Artjukhov's Barrow, are especially prolific. Like most of the Classical examples, the vast majority of these wreaths are too flimsy to have been worn by the living, and must have been made especially for funerary use, to secure the maximum effect for the minimum outlay of gold.

(2) An unusually elaborate wreath (in Munich) comes from Armento.<sup>5</sup> It is composed basically like those under discussion, but in

<sup>1</sup> Ippel, *Galjub, passim*.

<sup>2</sup> Athenaeus, V, 193 and 196 ff.

<sup>3</sup> *BCH* vi (1882), 1-167. Michel, *Recueil*, 681 ff.

<sup>4</sup> See preceding note.

<sup>5</sup> *AD* iv, 80, pl. 43. Becatti, no. 354.

addition to numerous leaves, flowers, acorns, etc., it has figures of Victories and Erotes in the round. The style of the figures suggests a date in the late fourth or early third century.

(3) Another type of wreath, stout enough to have been worn by the living and too elaborate to have been made solely for the dead, is found in the Tomb of the Gold Ornaments at Canosa. The type is represented by other examples in London and Paris.<sup>1</sup> It consists of a solid framework to which is attached a vast quantity of leaves and flowers, many of them decorated with filigree and filigree-enamel. Numbers of beads of coloured stones and glass to indicate berries are attached by means of wires. The total effect is one of brilliant, but somewhat overwhelming, magnificence.

#### DIADEMS

(1) Strips of gold with embossed designs of various kinds continued in use, and do not differ radically from those of the previous period; they lasted well into the first century B.C. Examples come from a third-century tomb at Eretria and from the 'Family Tombs' of about the second-first century, also at Eretria.

(2) An elaborate type of diadem, stout enough to have been worn on festive occasions by the living, was found in a tomb of the early third century at Santa Eufemia (pl. 45B). It is roughly triangular in shape and when worn would rise to a point over the brow. It is richly decorated in a pictorial style by means of low relief and filigree. A less elaborate version of this type, probably worn with a backing of some other material, is represented in a tomb-group from Madytus, of the late fourth century, and (in many examples) in the tomb-group (?) in London from Kyme in Aeolis, of the same date.

(3) An even more elaborate type is found in tombs of the third and second centuries B.C. (pl. 46, col. pl. C). The centre is a richly decorated Heracles-knot, frequently inlaid with garnets, set with gold figures, and enamelled at the edges. The diadems themselves vary in their composition. They may consist of one or more chains or straps, or of an unbroken framework of gold. From the diadems hang pendants of great complexity, usually inlaid with quantities of garnets and other materials. The diadems have been fully discussed by Segall and Amandry.<sup>2</sup> The

<sup>1</sup> *BMCJ* no. 1631. Coche de la Ferté, pl. 23: 2.

<sup>2</sup> Segall, 32 ff. Amandry, 118 ff.

earliest securely dated example is a fragment from the Gela Hoard, of the early third century. Pendants from such a diadem are included in the group from Kyme, and may put the start of this type slightly earlier. A complete and extremely elaborate example comes from Artjukhov's Barrow, of the early second century. Other examples, come from Thessaly (Carpenisi?), Ithaca, Kerch and elsewhere. As might be expected, they are particularly common in the rich tombs of South Russia and the Macedonian kingdom.

(4) A simpler, and perhaps all the more pleasing, version of this type of diadem (in London) is said to come from Melos (pl. 45A). The diadem itself is composed of three parallel strands of twisted gold bands, the central one decorated with applied rosettes. In the middle of the diadem is an ornate Heracles-knot of gold wire richly enamelled and finished off with a large cabochon garnet in the centre. A matching pair of bracelets evidently comes from the same or a similar set (see p. 172).

(5) An incomplete diadem from Abdera is closely related to the group described above, in particular to the example from Artjukhov's Barrow, by the very similar pendants attached to it, and should be dated round about the early second century. The main body, however, is quite different, and is composed of a number of linked rectangular plaques, divided vertically into two sections. One side is decorated either with a filigree rosette or an inlaid cabochon garnet; the other with a head in relief, a dramatic mask, a satyr, a nymph, or a maenad. A poorer version of this diadem, with similar designs on a single embossed strip, comes from one of the Family Tombs at Eretria, of the second-first century.

(6) Another variety comes from Sedes Tomb Gamma at Salonica, of the later fourth century. It has a central plaque with a figure of Eros, and on either side four lyre-shaped members, terminating in a lion's head. The curves and coils of wire, from which the diadem is made, give an effect of lightness which distinguishes it from the common run of Hellenistic diadems. A somewhat similar diadem comes from an alleged tomb-group from Demetrias in Thessaly in the Stathatou Collection in Athens.

#### EARRINGS

(1) The boat type is not a favourite Hellenistic earring, but it makes a



belated final appearance in Artjukhov's Barrow, of the early second century B.C.

(2) Tapering hoops, generally with animal-head finials, less frequently ending in a human head or some other motive, originated in Greece about 330 B.C. and continued in certain areas into the first century A.D. A much higher antiquity has been claimed for these earrings, and indeed somewhat similar hoops do go back in Etruria into the fifth century, and in North Greece and Thrace perhaps even earlier; but in Greek jewellery there is only one tomb (Kerch, Tomb E) which appears to offer any evidence earlier than 330 B.C.; and the evidence of that tomb cannot at the moment be accepted at its face-value in view of so much evidence to the contrary.

A North Greek type of earring is found in tombs at Olynthus of the fifth and the first half of the fourth centuries, but does not then seem to have penetrated further south.<sup>1</sup> It is composed of a tapered hoop with a knob-finial at the larger end. It would seem that the Macedonians brought with them the taste for such earrings when they came into Greece, and the Greeks improved them by substituting human or animal heads (already familiar on bracelets), or other motives. The markedly Achaemenid character of some of these animal-heads need not indicate a Persian origin for the entire earrings, for which there is no other evidence. It is merely evidence of the eclectic character of Hellenistic art.

Several varieties are known.

(a) The hoop is formed of coiled wires or, less commonly, a twisted metal band; it tapers to a point at one end and at the other is equipped with an ornamental collar, from which springs the head of an animal or a human being, generally in gold, but occasionally in stone.<sup>2</sup> The point of the tapering end is thrust through the lobe of the ear and into a loop in the other end. Some earrings are so made that the human or animal head is worn upside down; in others it is the right way up. Earrings of this nature are extremely common in Hellenistic tombs of the later fourth and third centuries and probably lasted into the second. They are represented in use in works of art; especially in Etruscan mirrors and terracottas. Many different forms of finial are known, and are listed below. Most varieties are so common that it is not reasonable

<sup>1</sup> *Olynthus*, x, nos. 290 ff. See also Filow, B. D., *Duvanlij* (Sofia, 1934), 41, 43, and 87.

<sup>2</sup> Hadaczek, 46 ff.

or necessary to note more than a selection of the sites on which they have been found.

(i) The head of a lion (pl. 47C).<sup>1</sup> The commonest, and probably the original type, which flourished in the later fourth and early third centuries. Select examples come from tombs at Salonica (Sedes, Tomb Gamma), Kozani, Amhipolis, Curium (Old Tomb 80), Syracuse and Todi (Tomb 9); an example from Rheneia has a bead in the collar. The type is also represented in Tomb E at Kerch, apparently with a vase of the early fourth century (but see above, p. 161).

(ii) The head of a horned lion.<sup>2</sup> This is in fact the head of the Persian lion-griffin. The type is not as widespread as the true lion-headed variety, and is almost restricted to Cyprus and South Russia; it may well be a Cypriot creation. Dated examples are rare, but the type probably ran parallel with the foregoing. It occurs at Curium (Old Tomb 69), frequently at Amathus, and at Olbia.

(iii) The head of a bull or a calf (pl. 47H).<sup>3</sup> Another popular type, found at Marion (New Tomb 60), Apendrika (Tomb 33) and Rheneia.

(iv) The head of a goat or a gazelle (pl. 47A).<sup>4</sup> Many have inlaid eyes. Examples come from tombs at Rheneia, Tresilico and Marion (New Tomb 58).

(v) The head of a lynx or a tiger.<sup>5</sup> A rare type. Examples come from Ithaca and Vulci.

(vi) The head of a dog.<sup>6</sup> Another rare type. Examples come from Pergamon, a third-century tomb at Eretria, and Aegina.

(vii) The head of a woman (pl. 47E).<sup>7</sup> A number in London are said to come from Crete. To judge from the style of the heads, these earrings were made in the third and second centuries.

(viii) Grotesque heads. An earring in London has a negress's head of garnet, set in gold (pl. 47G). It is said to come from a group from Kyme in Aeolis, which dates for the most part rather before 300 B.C., but the resemblance to finials from second-century necklaces suggests that this piece may be intrusive to the group (perhaps added by a dealer) and should really be put in the second century. A somewhat similar earring, with an amber head, comes from a tomb at Bettona of the second century; a third comes from a tomb at Tarentum.

<sup>1</sup> *BMCJ* nos. 1721-67.

<sup>2</sup> *BMCJ* nos. 1782-85.

<sup>3</sup> *BMCJ* nos. 1808-19.

<sup>4</sup> *BMCJ* nos. 1786-1804.

<sup>5</sup> *BMCJ* nos. 1805-7.

<sup>6</sup> *BMCJ* nos. 1830-7.

<sup>7</sup> *BMCJ* nos. 1684-1705.

(b) At some time in the second century the hoop-earrings described above fell out of use. In the West they were succeeded by other types of earring, in the East by a more elaborate version of the same type, which seems to have been restricted to Egypt, Syria and Cyprus, and which in these areas lasted well into the Roman period. The hoop is now threaded generously with beads of stone, glass or, less commonly, gold, which cover about half the circumference. Generally, two or three globular beads are employed; but in some examples a single barrel-shaped bead is found. Thin washer-shaped disc-beads of gold with granulated edges frequently separate the beads from each other and from the hoop. The finials are composed, as before, of animal and human heads, but are seldom identical with those of the earlier variety. Although this type is as much Roman as Hellenistic, it will be treated, for the sake of convenience, in its entirety in this chapter.

(i) The head of a dolphin is by far the commonest type of finial, but disappointingly few come from dated deposits (pl. 47B).<sup>1</sup> One example comes from a house at Tanis of the first century B.C., and one from a tomb at Vasa in Cyprus of the first century A.D., or later. Many others are reported from Egypt and Cyprus, and the type is represented on mummy-cases from Akhmin and on wooden Egyptian coffins of the first and second centuries A.D.<sup>2</sup>

(ii) The next commonest type of finial is the head of a tiger or a lynx.<sup>3</sup> Examples are said to come from Rheneia, Rhodes, Egyptian Thebes and Syria. A pair in London is also equipped with an amphora-pendant (pl. 48A).

(iii) Other animal-heads were also used for finials, but less commonly. We find the heads of a bull;<sup>4</sup> a ram;<sup>5</sup> a goat, from Samsun and Salamis in Cyprus;<sup>6</sup> and a cock.<sup>7</sup>

(iv) The head of a woman, probably a maenad, is found on earrings from Syria and Salamis in Cyprus, and there are many examples of the

<sup>1</sup> *BMCJ* nos. 2426-32.

<sup>2</sup> Schäfer, 78, fig. 79. Edgar, *Gr. Eg. Coffins*, pl. 44. Also unpublished sarcophagi in London: nos. 29586 (from Akhmin), 6705, 6950.

<sup>3</sup> *BMCJ* nos. 2436-43.

<sup>4</sup> *BMCJ* no. 2433.

<sup>5</sup> Amandry, nos. 304-5. Segall, nos. 117-18.

<sup>6</sup> Pollak, *Samml. Nelidow*, no. 160; Cesnola, *Salamina*, 34, fig. 26. There is an unpublished pair in London, 1960. 4-11.1.

<sup>7</sup> Cesnola, *Salamina*, 33, fig. 23.

type with no provenance.<sup>1</sup> Of two examples from Syria, one is combined with an Eros-pendant, one with an amphora-pendant.<sup>2</sup>

(c) There are a few examples of earrings ending in the complete forepart of an animal. We may take as typical a pair from Montefortino, of the third century, with the forepart of a horse.

(d) Hoop-earrings comprising complete figures are also known but are less common. One type has a figure of Eros bent backwards and forming part of the hoop (pl. 47F). Sometimes there is a garnet above his head.<sup>3</sup> Examples, of the later third and early second centuries, come from Tomb B at Kerch, Artjukhov's Barrow at Taman, and Morgantina. A pair in London, from near Damascus, has amphora-pendants in addition.<sup>4</sup> Another type has a dove, with a garnet above its head.<sup>5</sup> It is evidently contemporary with the Eros hoop-earrings.

(e) A by-form of the lion-headed hoop (pl. 47C) has an incomplete hoop and a smaller lion's head at the other end. The same type seems to be a Western speciality; it occurs in a tomb-group from Cumae, and is also found at Capua, Tarentum and Ithaca.<sup>6</sup> It cannot be closely dated, but probably belongs to the late fourth or early third century, to judge from the style of the lions' heads.

(f) The hoop has no finial, but tapers at both ends; a rare form, and not closely datable, found at Rheneia and Volterra (Monteriggioni) and in South Russia.<sup>7</sup>

(g) The hoop ends in a floral pattern, with filigree and granulation.<sup>8</sup> Another rare form, dated to the early second century by its occurrence in Artjukhov's Barrow at Taman.

(3) A hoop-earring of an entirely different kind is occasionally found (pl. 53C). It consists of a wire ring of uniform thickness threaded with a globular bead, very like those on pl. 28. It is represented in a group from Kyme in Aeolis, most of which is dated in the late fourth century.

(4) Two-piece ear-studs like those described on p. 125 continued into the beginning of the Hellenistic period (fig. 26). Examples are found at Kyme, in Marmaro Tomb 32 at Ialysus, and in Galata Tomb 6

<sup>1</sup> Hadaczek, 49, fig. 89. Segall, no. 123. Cesnola, *Salamina*, 35, fig. 28.

<sup>2</sup> Fontenay, 105 and 107.

<sup>3</sup> *BMCJ* nos. 1714-17.

<sup>4</sup> *BMCJ* nos. 2324-5.

<sup>5</sup> Hadaczek, 50, fig. 91. *BMCJ* nos. 1840-1.

<sup>6</sup> *BMCJ* nos. 1768-71. Breglia, 123.

<sup>7</sup> Hadaczek, 51, fig. 95.

<sup>8</sup> *BMCJ* nos. 1842-3.

near Varna in Bulgaria. These studs are, from the front, almost identical with the discs of contemporary disc-and-pendant earrings as illustrated on pl. 8.

(5) Pendant-earrings were extremely popular throughout this period.

(a) A cone or pyramid suspended from a disc continues from the previous period (see p. 126), now suitably enriched for Hellenistic taste. It is particularly common in the late fourth century. Between the disc

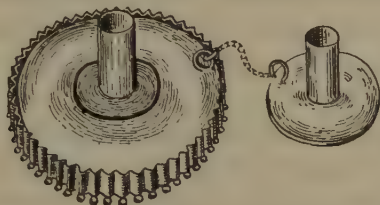


FIG. 26. *Back of an ear-stud.*  
*Late fourth century B.C.*

and the pendant we frequently find an intermediate member in the form of a minute figure of a Victory, or a similar motive, and subsidiary pendants in the form of Victories, spear-heads or buds hang from the sides of the disc. One such pair comes from the Dammusi Tomb at Syracuse, of the late fourth century, and another, identical, pair serves to date the Karagodeuashkh Tomb in the Kuban. A slightly different form is represented in several examples from Kyme in Aeolis (pl. 48B), and in a pair from Calymnos.<sup>1</sup> A disc from an earring of this type comes from Zagazig in Egypt, a provenance which does much to confirm the Hellenistic date of this variety.<sup>2</sup> Variants of the type also occur at Montefortino (third century) and Ancona (about 200 B.C.).

(b) In the second century, Type 5a was succeeded by a polychrome variety, in which the cone or pyramid is replaced by a pendant of stone or glass of roughly the same shape set in gold. This type is found in second-century tombs at Bettona and Morgantina and is worn by the figure on the sarcophagus of Seianti Hanunia, of the same date.<sup>3</sup> It probably continued into the first century B.C. and perhaps beyond, for one example comes from Herculaneum.<sup>4</sup>

There is an Etrusco-Hellenistic variety of this type from a late

<sup>1</sup> Greifenhagen, *Antike Kunstwerke*, fig. 93: 3.

<sup>3</sup> *BMC Terracottas* (1903), D 786.

<sup>2</sup> Schreiber, 310, fig. 50.

<sup>4</sup> Breglia, no. 121.

third-century cremation at Volterra (Monteriggioni, Urn 16) also found in the François Tomb at Vulci, and represented in London.<sup>1</sup> A pyramid or a cone hangs from a crescent-shaped shield of the kind known as a *pelta*, or Amazon-shield.

(c) Another popular form of pendant-earring is a figure of an amphora hanging from a disc or a semicircular plate (pl. 48G).<sup>2</sup> The type may have evolved by equipping a conical pendant with the few attachments necessary to convert it into an amphora, but an amphora is in itself a suitable motive for jewellery, because of its amuletic properties. Both the amphora and the support from which it hangs are frequently inlaid with stones (garnets or plasma) or enamelled, and subsidiary decoration in filigree and granulation is also found. Additional pendants frequently hang from either side of the support, sometimes threaded with garnets, plasma or pearls.

The type, which seems to belong to the second and first centuries B.C., is found in the François Tomb at Vulci, in tombs at Bettona and Perugia of the second century, in a tomb in Samothrace said to be of the Augustan period (in silver) and in a house at Delos of about 100 B.C. In a particularly fine pair (in London) a long chain, attached to the lower ends of the amphorae, runs from one earring to the other.<sup>3</sup> Similar amphorae also hang from hoop-earrings. The type is represented in London by a lynx-head hoop and an Eros-hoop.<sup>4</sup>

(d) One of the most popular types of pendant on Hellenistic earrings is a figure of Eros, frequently cast solid, with details soldered on.<sup>5</sup>

(i) The earliest variety is suspended from a gold rosette-like disc (pl. 48F). Representative examples come from Kyme, a tomb at Thebes, and Tomb A at Kerch (late fourth century); from Tombs C and D at Kerch (third century); and from the Family Graves at Eretria (second-first century).

(ii) A more ornate variety, with a garnet in the centre of the disc, was introduced in the second century. It is found in Artjukhov's Barrow, and in a second-century tomb at Salonica. In the Family Tombs at Eretria and in the tomb at Palaeocastro, of the first century B.C., the disc is inlaid with two stones, one set above the other.

<sup>1</sup> *BMCJ* nos. 2367-8. Hadaczek, 74, fig. 142.

<sup>2</sup> Hadaczek, 33 ff. *BMCJ* nos. 2326-71.

<sup>3</sup> *BMCJ* no. 2331.

<sup>4</sup> *BMCJ* nos. 2442-3 and 2324-5.

<sup>5</sup> Hadaczek, 42 ff. *BMCJ* nos. 1858-1916.

(iii) Another form, where the figure of Eros depends directly from a hook, comes from the Anticythera Wreck, of the first century B.C., and is also found at Herculaneum.<sup>1</sup>

(e) A companion to the Eros-earring is the Victory-earring, in which a figure of Victory replaces that of Eros (pl. 48E).<sup>2</sup> The type had its roots in the mid-fourth century, and existed in this period side by side with the Eros-earrings, but was never so popular. It is found in a tomb near Mt Pangaeus, of the third century, and in a group from Thessaly (Carpenisi?) of the second.

(f) The earring illustrated on pl. 47D, from Leucas, is composed of a figure of a siren hanging directly from a hook. Although it is frequently a late characteristic to dispense with the disc, the modelling of this figure is very much in the Early Hellenistic tradition, and the figure of the siren cannot be far in date from an earring of the group discussed on p. 126.

(g) Occasionally, as on pl. 48C, a female head hangs from a disc, but that form also is rare. The one illustrated probably dates from the third century, from the resemblance of the head to those on terracottas of the Tanagra style.

(h) Figures of birds form another type of pendant, either suspended from a disc or, less commonly, attached direct to the hook.<sup>3</sup> The former variety occurs in the François Tomb at Vulci, the latter in Thessaly (Carpenisi?). The dove is the most popular bird to be portrayed, doubtless thanks to its association with Aphrodite, but the eagle is also represented; it occurs in several examples in London, attached directly to the hook.

(i) A model of a shrine, suspended from a disc, occurs in a tomb of Hellenistic date at Ancona.

(6) A special variety of pendant-earring consists of a bird or other figure of dipped-enamel hanging, like the amphorae mentioned above, from a disc or a semicircular plate of metal and equipped, like them, with subsidiary pendants at the sides (pl. 48D).<sup>4</sup> Many examples are known, especially from South Russia and Italy, but only one recorded example can be dated with any degree of exactitude; it comes from Artjukhov's Barrow, and is of the early second century. We should probably date most of these earrings, with the amphora-earrings which

<sup>1</sup> Siviero, nos. 148-9.

<sup>2</sup> Hadaczek, 38.

<sup>3</sup> *BMCJ* nos. 1917-34.

<sup>4</sup> Hadaczek, 44 ff. and 72 f. *BMCJ* nos. 1675-82.

they so much resemble, in the second and first centuries B.C. (but see type *f*, below). The following varieties of pendant are known:

(a) Swan. From a Family Tomb at Eretria, Tomb 86 at Tarentum, the François Tomb at Vulci, and South Russian tombs.

(b) Cock. From various Etruscan sites, Vulci, Chiusi, Bolsena, and Tomb A at Volterra.

(c) Dove. From Artjukhov's Barrow.

(d) Peacock. From an unidentified site in Etruria.

(e) Centaur. From Vulci. Presumably the *kentauridion* earring mentioned by Pollux.<sup>1</sup>

(f) Bunch of grapes. From the François Tomb at Vulci, and from the Tomb of the Gold Ornaments at Canosa, of the third century. Presumably the *botrydia* earrings mentioned by Pollux.<sup>2</sup> This type would appear to be rather earlier than the preceding varieties.

#### NECKLACES

(1) Straps reappear about 330 B.C., after a gap of some three centuries since their use in Rhodian jewellery of the seventh century (pl. 49, col. pl. C). The gap is probably more apparent than real, since they are found in Etruscan jewellery in the intervening period (see pl. 33).

The Hellenistic strap-necklace rapidly became popular, and remained so for some two centuries. The straps are hung, either directly or from chains, with many small pendants, in the form of jars or spear-heads. Joins are masked by rosettes or other devices of great delicacy, decorated with filigree and enamel. The finials are similarly decorated. At a late stage, probably not before 200 B.C., inlaid garnets were also used.

The pattern of the spear-heads remained constant throughout. The jars, however, vary. At first the flower-bud, popular in earlier jewellery, is equipped with a neck and forms a bud-like jar not unlike the pottery amphoriscs of the late fifth century. Later, in the second half of the third century, the jar takes a more recognizable form. The necklace on pl. 49 exhibits both forms side by side. Temple-inscriptions from Delos of 279 B.C. and subsequent years mention necklaces with spears and amphorae; they are evidently referring to this type.<sup>3</sup>

The first recorded appearance of these necklaces is in the Priestess's Tomb of the Great Blisnitza (350-325 B.C.); at Corinth and at Kyme in Aeolis (late fourth century); and in a number of South Russian

<sup>1</sup> V, 97.

<sup>2</sup> *ibid.*

<sup>3</sup> Michel, *Recueil*, 682.





C. HELLENISTIC NECKLACES AND PART OF A DIADEM



tombs of the late fourth and third centuries. Their latest appearance *in corpore* is in the Carpenisi (?) group from Thessaly, of about the second century; their continued use in the second century is further attested by their representation on the sarcophagus of Seianti Hanunia.<sup>1</sup>

(2) Chain-necklaces were also popular.

(a) Simple chains, loose-linked or corded, are found as necklaces at Kyme, Santa Eufemia, Carpenisi (?), the François Tomb at Vulci, and

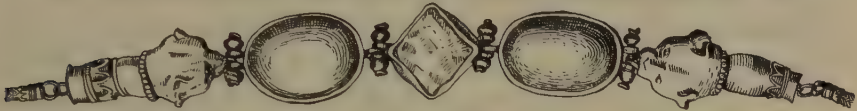


FIG. 27. *Necklace from Artjukhov's Barrow. Second century B.C.*

Tomb 9 at Todi. They were undoubtedly in use throughout the Hellenistic period. Two corded chains with tassel-pendants come from Kyme and are thus probably of the late fourth century. The pendants are composed of elaborate beads and figures of flowers or pomegranates threaded on the chain.

(b) A popular type of necklace throughout this period is the chain, loose-linked or corded, terminating in animal heads (pl. 51A). As with the hoop-earrings, the commonest finial is the lion's head. Necklaces of this kind are found in many South Russian tombs between 330 and 175 B.C., and elsewhere.

(c) A variant, with complete dolphins as finials, comes from a Family Tomb at Eretria, of the second–first century.

(3) Linked globular, or occasionally spool-shaped, beads of various materials ending, like the chain-necklaces, with animal heads were equally popular in Hellenistic jewellery (pl. 51B). Examples occur in Artjukhov's Barrow, at Carpenisi (?) and in the François Tomb at Vulci. A variant, also from the François Tomb, has complete dolphins as finials. Another variant has negro-heads of garnet as finials.

(4) Another popular type, first in Artjukhov's Barrow and later at Palaeocastro, and destined to last well into the Roman period, is a necklace composed of linked bezel-set stones, frequently terminating in animals' heads (fig. 27).

(5) A necklace of the first century B.C. from Palaeocastro anticipates

<sup>1</sup> *BMC Terracottas* (1903), D 786.

the developed Roman style. It is composed of linked long beads of jet, with pendants in the form of heads and dramatic masks.

(6) A typical cross-section of the individual beads popular in Hellenistic jewellery can be found in Artjukhov's Barrow, and in the Family Tombs at Eretria. They include a Heracles-knot; globular, segmented, heart-shaped, star-shaped and cage beads; crescents and mushroom-shaped pendants. See also pl. 50 and col. pl. C.

(7) The Etruscan bulla lived on in Etruscan-Hellenistic jewellery; it is found in the François Tomb at Vulci.

#### MEDALLIONS

(1) Four medallions, all very similar in appearance, constitute an important part of the Carpenisi (?) group of jewellery from Thessaly, and so probably date from the second century B.C. (pl. 52). They consist of a central roundel with a bust of a goddess in high relief, framed by a circle of ornamental goldwork, richly decorated with filigree, granulation, enamel and inlaid garnets. Round the circumference are loops, to which is attached a network of loop-in-loop chains, decorated in a similar manner. The outer ends of the chains are equipped with rings, apparently to take a cord or a draw-string. A fifth medallion, now in Providence, is similar, but somewhat earlier in style.<sup>1</sup>

The purpose of these articles has never been clearly demonstrated. Zahn's explanation as pyxis-lids has been generally adopted for lack of a better; but in view of the more obvious purpose of the other medallions to be considered next, one would prefer to see these also as personal adornments of some kind. Benton's suggestion of hair-nets with ornamental tops is attractive, and should be provisionally accepted, even though the evidence for such hair-nets is not plentiful.

(2) Two medallions in Princeton are decorated respectively with a bust of Athena and a bust of Artemis.<sup>2</sup> They are closely related, stylistically and technically, to the hair-nets (?) mentioned above, but differ in the absence of nets, and in the relative proportions, the central roundel being smaller and the surrounding framework correspondingly larger. A salient feature of the surround is a thick circle of garnets, reminiscent of the Heracles-knot of the diadem on pl. 46. Round the circumference are double loops in four places, arranged so as to suggest

<sup>1</sup> *AJA* lix (1955), 219 ff. Said to come from Pagasae.

<sup>2</sup> Segall, B. *Record of the Museum of Historic Art*, iv, pt. 2 (Princeton, 1945).

a *periamma*, a circular breast-ornament kept in place by crossed straps.<sup>1</sup>

These two ornaments are said to belong to the Carpenisi (?) group, but the evidence is slight, and the question of their origin must be left open. It is, however, tempting to see both varieties forming an ensemble: a *periamma* and hair-net to match.

(3) A third variety of medallion is in a private collection in Paris.<sup>2</sup> In the central roundel is a bust of Eros. The proportions are closer to the hair-nets than to the *periammas*, but there is no net; and the loops, placed in groups of three on either side, near the top, suggest a breast-ornament, held by a triple cord passing round the neck.

Bronze cores for the hammering of similar busts form part of the Galjub hoard from Egypt.<sup>3</sup> The relief is so high that the bust was hammered in two sections over different cores, one for the face and one for the rest, the two parts being subsequently soldered together. The Egyptian source of the Galjub pieces suggests an Alexandrian origin for some examples at least, but we cannot exclude the possibility of their being made in several places. It must indeed be admitted that the hair-nets, if such they be, present a rather non-Greek appearance, and there is at present no evidence for such articles outside the Macedonian kingdom. Possibly the pendant or *periamma* medallion was an Alexandrian creation, and was adapted to the hair-net form either by Alexandrian goldsmiths working for the Macedonian market, or by local goldsmiths in imitation of Alexandrian models.

There are other somewhat similar medallions whose authenticity is open to considerable doubt (see p. xlv). Certain of the medallions considered above have also been doubted, in whole or in part, but it is surely safe to follow Amandry and Segall in accepting them as ancient, while allowing for the possibility of a certain amount of repair and restoration.

Other examples of the *periamma* are known, circular in form, with openwork filigree and inlay. One comes from a Family Tomb at Eretria (second or first century) and there is one in London.<sup>4</sup>

#### BRACELETS

(1) Penannular bracelets, circular in section, with animal- or human-

<sup>1</sup> See *BMC Terracottas*, i (1954), no. 1172.

<sup>2</sup> Coche de la Ferté, pl. 25: 2.

<sup>3</sup> Ippel, *Galjub*, pls. 6-9.

<sup>4</sup> *BMCJ* no. 2946.

headed finials, continue from the previous period and last into the second century. A magnificent pair in New York, of crystal, with gold rams' heads, comes from a tomb near Salonica of the late fourth century. Sometimes the hoop is decorated with one or more wires twisted round a central core. Examples of the late fourth or early third century come from Kyme in Aeolis (pl. 53G), Cumae and Toukh-el-Quarmous. The second century is represented by pairs from Mt Pangaeus and Salonica.

(2) A pair of bracelets in London are composed of three twisted ribbons of gold, with animal-head finials. They match exactly the diadem on pl. 45A, and must surely come from the same or a related set.

(3) A rare variant of the penannular bracelet is represented in three examples from Carpenisi (?) and one, from Asia Minor, in a private collection in Paris.<sup>1</sup> The three Thessalian pieces are each composed of two tubular sections, covered with a network of filigree and hinged together; the other ends terminate in bulls' or lynxes' heads. The piece in Paris represents only half a bracelet. It differs from the others in having an animal's head at either end, a lynx's at one end and a goat's at the other, both like those on contemporary hoop-earrings. A date in the second century is suggested by the Carpenisi (?) group.

(4) Another rare type of bracelet is made of a circlet of gold (either a solid band or of openwork filigree) with a central ornament, as on the diadem on pl. 46, in the form of a Heracles-knot. One such pair comes from a tomb at Toukh-el-Quarmous of the early third century, and another from a tomb near Mt Pangaeus. A variant without the Heracles-knot occurs in a collection, now in Chicago, said to come from Syria (second century B.C.<sup>2</sup>). A tomb at Palaeocastro in Thessaly of the first century B.C. yielded a more elaborate version of this type. A wire circlet is decorated with cut-out leaves inlaid with garnets, turquoise and malachite. At the centre, where the two ends meet, is a cloisonné inlay of glass in a wave-pattern with emeralds at the sides. The actual join is masked by a large amethyst in a deep bezel-setting.

(5) Spiral bracelets, mostly in the form of snakes, continue from the Classical period and were apparently popular throughout this period. Examples come from an unidentified site in Syria (now in Chicago), from Demetrias (?), Toukh-el-Quarmous, Artjukhov's Barrow and Abdera, and the effigy of the Etruscan lady Seianti Hanunia, of the second century, wears one.<sup>2</sup> A magnificent pair of bracelets of the same

<sup>1</sup> Coche de la Ferté, pl. 25: 1.

<sup>2</sup> *BMC Terracottas* (1903), D 786.

general type is now in New York. In these, the finials are composed not of snakes' heads, but of the torsos of a triton and a tritonesse respectively.<sup>1</sup>

## BELTS

Belts are seldom sufficiently elaborate to be classed as jewellery, but two gold ornaments from Carpenisi (?), credibly identified as such, more than fulfil the necessary conditions. They are decorated with massed floral ornament, somewhat like the diadems mentioned on pp. 158-9 above, with plentiful use of filigree, granulation, and inlaid stones and glass. One has a central member formed by an elaborate Heracles-knot like those on contemporary diadems (see pl. 46); in the other, the central member is missing, but was probably similar.

## BUTTONS

Buttons, too, seldom merit inclusion in a survey of jewellery. In Greece proper, although represented in sculptures and terracottas as fastening the chiton on the shoulders, no actual examples have been recognized from this period. In the north, however, and in South Russian Greek settlements, gold buttons or button-tops have survived. In Tomb 2 at Odessus (the modern Varna), of about 300 B.C., two gold button-tops were found on the shoulders of a corpse, leaving no doubt of their purpose. Buttons of plain gold were found in a tomb at Kazanlak in Bulgaria about the same date;<sup>2</sup> as there were 140 of them, most will have been for ornament rather than for use. Gilt terracotta buttons were found in Sedes Tomb Gamma at Salonica, of the later fourth century. And gold buttons were found in Tomb D at Kerch, of 250-225 B.C.

## FINGER-RINGS

A number of classical types continued into the Hellenistic period virtually unchanged, and new types evolved. Stones were now extremely popular as bezels, both plain and engraved. A Delian treasure-record for 279 B.C. mentions a gold ring set with a garnet.<sup>3</sup> The Roman custom of engraving portraits of royalty on ring-bezels has its origins in the Ptolemaic kingdom, where rings engraved with the likeness of

<sup>1</sup> *B. Met. Mus.* liv (1959), 30.

<sup>2</sup> Micoff, V. *Le tombeau antique près de Kazanlak* (Sofia, 1954), 26.

<sup>3</sup> Michel, *Recueil*, 833.

the reigning sovereign were evidently not uncommon and were perhaps used for sealing official documents.

(1) Solid gold signet-rings with a circular bezel continue into this period and last, to judge from the style of the engravings, into the third century. A dated example comes from the Gela Hoard of the early third century.

(2) A decorative ring with a circular bezel is found in the second century, in Artjukhov's Barrow (fig. 28) and in the Family Tombs at

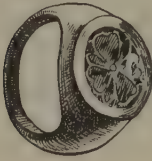


FIG. 28.



FIG. 29.

*Finger-rings from Artjukhov's Barrow. Second century B.C.*

Eretria. The example from Artjukhov's Barrow has a bezel decorated with a floral pattern in glass cloisonné inlay: a technique popular in Egypt and Western Asia at all periods, but not seen in Greek jewellery in this form since Mycenaean days (see p. 29). A pin from the same tomb has a pendant made to match this ring (see p. 175). The pattern occurs again in a pendant on a necklace from Samsun, in Paris.<sup>1</sup>

(3) Hoops of the Classical type with an oval bezel continued (see p. 130). An example comes from Sedes Tomb Gamma at Salonica of the later fourth century. An ornate ring with a box-shaped pointed-oval bezel comes from Tomb 157 at Cumae, of the same date, and a somewhat similar ring, with a large chalcedony bezel, comes from Artjukhov's Barrow, of the early second century.

(4) A typical ring of the period 330-150 B.C. has an oval bezel and a massive hoop, rounded outside and flat inside, and frequently meeting the bezel at a sharp angle (pl. 53D).<sup>2</sup> The bezel may be in high relief in metal; it may be a stone cut *en cabochon*; or it may be a stone engraved or cut as a cameo. The type, which has many varieties, was made in gold, bronze and (surprisingly) glass. Examples come from tombs at

<sup>1</sup> Rosenberg, *Zellenschmelz*, 37, fig. 53.

<sup>2</sup> *BMCR*, p. xliii, Type C xxvii.



Kerch of the late fourth and the third centuries; from Santa Eufemia, of the early third century; from an unidentified site in Syria (now in Chicago) and from Carpenisi (?) (second century?).

(5) Rings, generally of a slender type, with an oval bezel, and vertical or in-sloping shoulders (pl. 53F), are first found in the second century.<sup>1</sup> They occur in a Family Tomb at Eretria, in Artjukhov's Barrow, and in Tomb 3 at Ancona.

(6) Other rings, of the second century, have a very thin bezel, little wider than the hoop, with a small stone in the centre; a dated example comes from Artjukhov's Barrow. This type is also found in a doubled form, notably at Carpenisi (?) and in the Family Tombs at Eretria.

(7) A type of ring with a large projecting bezel, overlapping the setting (pl. 53E), occurs in a Family Tomb at Eretria of the second-first century and in Tomb 3 at Ancona, of the second century B.C. This type is very like the bracelet from Palaeocastro discussed above (see p. 172).

(8) A ring from Artjukhov's Barrow, of the early second century, has a bezel in the shape of a sandalled foot inscribed in Greek with the words 'Hestiaios to his mother' in gold letters by a process akin to enamel, which is discussed on p. 27. It also has a Heracles-knot at the back, inlaid with a garnet (fig. 29).

(9) A gold ring with a bezel of wire and large grains in the form of the magical Heracles-knot is first found in the third century, in Tomb B at Kerch. Another example is shown on pl. 53A. In some, the bezel is inlaid with garnets.

(10) Rings in the form of a spiralled snake, smaller versions of the bracelets discussed on p. 172, started in the preceding period and were extremely popular in Hellenistic times (pl. 53B).<sup>2</sup> Examples come from Madytus (late fourth century); the Gela Hoard (early third century); Carpenisi (?) (second century) and the Family Tombs at Eretria (second-first century).

## PINS

Pins are not normally considered part of Hellenistic jewellery, but two exceptional types are worthy of mention.

(1) An elegant pin from Artjukhov's Barrow, of the early second century, has hanging from it a gold disc with a floral pattern of cloisonné

<sup>1</sup> *ibid.*, Types C xxiii-xxv.

<sup>2</sup> *op. cit.*, p. xlvi, Type E ix.

glass inlay, hung with pendants. A ring from the same tomb has a bezel with similar inlay, and the two were evidently meant to be worn together.

(2) The other exception is a gold pin from Carpenisi (?), of roughly the same date. The head is composed of a figure of a draped woman standing on a capital. A similar pin (in London) comes from Syria (pl. 53H).

## FIBULAE

(1) The North Greek type discussed on p. 131 and illustrated on pl. 31C continued until about 300 B.C. Examples in gold occur in Sedes Tomb Gamma at Salonica, of the later fourth century, and in a collection in New York said to come from near Salonica, of about the same date.

(2) The Campanian type of leech-fibula discussed on p. 132 and illustrated on pl. 31D also continued until about the end of the fourth century. Examples occur at Cumae (Tomb 157) and Teano (Tomb 79).

(3) Another type of fibula was very popular in Campania in the Early Hellenistic period. It occurs in some thirteen tombs at Teano of the late fourth and early third centuries. It is of silver with a semicircular gold-plated bow, and a rectangular, almost square, catch-plate with a long projection, on one example threaded with coral. The bow is decorated with filigree spirals, and rosettes.<sup>1</sup>

## BROOCHES

(1) A circular brooch comes from a tomb at Taman of the late fourth century. It has a central garnet carved in the shape of a satyr's head with a gold wreath. Round it is a palmette-frieze of filigree inlaid with blue glass (enamel?) and red stones. Such polychromy is rare in Greek jewellery at this early date, but is a foretaste of what was to come in the course of a century or so. Possibly the brooch was made to the special requirements of a Scythian customer.

(2) Another circular brooch comes from Artjukhov's Barrow, of the early second century. It is inlaid in a floral pattern with five garnets.

## SCEPTRES

Sceptres were last encountered as articles of jewellery in the twelfth century in Cyprus (see p. 25). They are found again in two examples

<sup>1</sup> *MA* xx (1910), 39. *BMCJ* no. 1382.

#### HELLENISTIC

from Apulia of the third century. The first (in London) is said to come from Tarentum.<sup>1</sup> It consists of a hollow gold tube covered with a network of gold wire, partially enamelled. The tube ends in a Corinthian capital, on which is a large sphere of green glass, surrounded by acanthus-leaves. The early character of the Corinthian capital gives a date in or near the third century.

The second sceptre comes from the Tomb of the Gold Ornaments at Canosa, of the third century. It is topped by a bone knob, from which project two figures of Victory. Compared with the sceptre from Tarentum, it has a very provincial appearance.

<sup>1</sup> *BMCJ* no. 2070.

## Roman 27 B.C.-A.D. 400

## INTRODUCTION

FOR THE SAKE of convenience it is proposed in this survey to end the Hellenistic and to start the Roman period with the inauguration of the Empire in 27 B.C. So far as jewellery is concerned, this date has little significance, but it is as good a point as any for a convenient break in what is really a continuous development. For historical reasons a suitable date at which to end the Roman period is the foundation of Constantinople in A.D. 330, but in view of the scarcity of firmly dated jewellery, any pieces which seem to belong to the fourth century will be considered eligible for inclusion.

Before reviewing the jewellery of the Empire, it may perhaps be helpful to consider that of Republican and Pre-republican Rome. There is very little material in gold or silver at our disposal, but from what has survived, and from the rather more plentiful ornaments of bronze and other materials in Roman tombs, it appears that from 700 to 250 B.C. Roman jewellery was for all practical purposes Etruscan. Between 250 and 27 B.C. our material is even scarcer, but we may assume that Roman jewellery, together with Etruscan, was now basically Hellenistic, but was leavened with a few genuine Etruscan survivals, of which the bulla is the most important example.

The meagre archaeological evidence for Roman jewellery before the Empire may be supplemented to a certain extent from literary sources. We know, for example, that jewellery was for long under official disapproval. The Law of the Twelve Tables, in the fifth century B.C., limited the amount of gold which might be buried with the dead; and the Lex Oppia, of the third century B.C., fixed at half an ounce the amount of gold which a Roman lady might wear. An exception was the gold bulla, the *Etruscum aurum*, which was worn as an amulet, especi-

ally by children. Under the Republic, the wearing of rings of gold was reserved for certain classes of persons or for certain occasions. In the late third century senators and knights *equo publico* apparently had this privilege, which could also be bestowed on knights and others as a military distinction. Towards the end of the Republic, the gold ring was also bestowed on civilians.<sup>1</sup>

By the date at which this chapter begins, Rome had finally swallowed up the last remnants of the Hellenistic world with the annexation of Egypt in 30 B.C. But the changes consequent on the inauguration of the Empire had little effect on Roman minor arts, and the jewellery of the early Empire may be regarded merely as a continuation of Hellenistic jewellery. At the risk of over-simplification we may divide this period into two stages: (a) 27 B.C. to A.D. 200; (b) A.D. 200 to 400.

#### A. 27 B.C.—A.D. 200

This period is most fully represented by material from Pompeii and Herculaneum, which for the most part may safely be dated in the first century of our era, up to the year 79. In general, Hellenistic forms continued, but with certain differences. The distinction between East and West is still in some respects valid, but is obscured by the free passage of men and materials throughout the Empire. The bulla continued as a purely Italian feature. The fibula, imported from Celtic lands, was popular in the West, but rare in the East. The East continued to use the human, and animal-headed hoop-earrings, which had fallen into disuse in Greece and Italy as early as the second century B.C. A few new motives make their appearance: the wheel, which had magical properties; and a new type of crescent with knobs on the ends, frequently worn inverted. This new crescent was, like the Hellenistic moon-crescent, of Syrian origin; but it belonged not to the Moon-god, but to Baal Rekub, the charioteer-god.<sup>2</sup>

So far as the forms of jewellery are concerned, wreaths continue, but in a more stylized form; diadems are rare. The disc-and-pendant earring is succeeded by the ball-type and by other types. Necklaces and finger-rings are much as before. A few new types of bracelet are found.

Technically, there was some falling off in the standards of workmanship, although good work could still be produced. Love of polychrome inlay remained and even increased. Enamel is now virtually

<sup>1</sup> *BMCR*, pp. xviii ff.

<sup>2</sup> I owe this information to R. D. Barnett

unknown, except in areas under Celtic influence, where we find remnants of filigree-enamel, and, more commonly, champlevé in ornaments of bronze. Apart from polychromy, the accent is now on unbroken surfaces of gold; granulation and filigree were in consequence reduced to a minimum, although they were not completely discarded.

The evidence of the jewellery itself is generously supplemented by paintings from Roman Egypt: first and foremost, encaustic mummy-portraits (see frontispiece); secondly, painted coffins, especially cartonnage sarcophagi.<sup>1</sup>

#### B. A. D. 200-400

The principal sources of our material are more dispersed than for the first stage. Two good tombs in Gaul, at Lyons and Beaurains, give dates of the early third century and about 300 respectively. Supplementary evidence comes from other tombs in Gaul, Britain, Italy, North Africa and Syria. But amongst our best sources for this period are sculptures from Palmyra, in which women are depicted wearing jewellery of the kind found on Roman sites.<sup>2</sup> Mummy-portraits and other paintings from Egypt continue to supply useful information.

A new spirit pervades Roman jewellery, which at last asserts its independence of the Greek tradition. New forms and new methods of decoration supplant or supplement the old. These influences are believed to have originated in Western Asia. On the technical side, three new tendencies are noticeable. First, the piercing of gold in a kind of fretwork-technique became very popular, and completely transformed the unbroken surfaces of Early Imperial work. This process, known to the Romans as *opus interrasile*, is discussed on p. 31.

The second innovation is a new method of polychromy. In Hellenistic and Early Imperial polychromy stones and glass were set in substantial bezel-settings and were used with some restraint. Now they tend to be used with a minimum of setting or with no setting at all, and to be massed in a bewildering profusion of colours and materials.

A third technical innovation is the use of niello, a process which is

<sup>1</sup> Petrie, W. M. F. *Hawara, etc.* (London, 1889). Id., *Roman Portraits and Memphis* (London, 1911). Id., *Hawara Portfolio* (London, 1913). Edgar, *Gr. Eg. Coffins*. Coche de la Ferté, E. *Les portraits Romano-Egyptiens du Louvre* (Paris, 1952). Drerup, H. *Studien zur Geschichte u. Kultur des Altertums*, xix (Paderborn, 1933), 14 ff.

<sup>2</sup> *Iraq*, xi (1949), 160-85.

discussed above (p. 28). Although used intermittently from Hellenistic times onwards in gold and silver plate, it is not found in jewellery before about A.D. 300, when we find it on fibulae and finger-rings (see pl. 63D, F).<sup>1</sup>

These tendencies all lead on without a break into Early Christian and Byzantine jewellery, which are outside the scope of this survey.

Filigree and granulation did not quite die out, but were, if anything, less popular than in Early Imperial jewellery.

A new custom, which was introduced in the second century and quickly became popular, was the use of Imperial gold coins or medallions as bezels for finger-rings, as pendants on necklaces or as fronts of brooches. It is possible that rings with Imperial coins were awarded as military distinctions, but the necklaces are best explained as a form of flattery not uncommon in Court circles at any period.

Another feature of the new age was the increased use of the harder stones, sapphires, emeralds, aquamarines, topazes. Even diamonds, although uncut, are occasionally found in finger-rings.

The forms of jewellery in use now were very much those in use under the Early Empire, as modified by the new taste in decoration, but there were a few changes. The ball-earring disappeared, to be replaced by new types of pendant-earrings, and a new variety of necklace became popular, in the form of a rather coarse chain threaded with plasma, or, less commonly, garnet. Massive gold bracelets and cross-bow fibulae are also characteristic of this stage.

Much of the jewellery of this time is clearly recognizable in the sculptures from Palmyra, of the second and third centuries A.D., and it is more than possible that the innovations in forms and techniques came from this general direction.

Inscriptions from Spain of the same date record the jewels which decorated certain statues, and are not without interest. They refer to diadems, earrings, necklaces and bracelets and mention the presence of pearls, emeralds, garnets and cylinders; the latter are generally taken to be beads of plasma, which were frequently cut to a cylindrical shape.<sup>2</sup>

#### OTHER CONSIDERATIONS

The chief centres of production of Roman Imperial jewellery were probably in the first place the old Hellenistic centres of Alexandria and

<sup>1</sup> See also *BMCJ* nos. 2857-8.

<sup>2</sup> *BMCJ*, p. xlviiii.

Antioch, in the second place Rome itself, where we have evidence for the existence of goldsmiths' guilds, and where many epitaphs of goldsmiths and silversmiths have been found.<sup>1</sup> The Roman craftsmen, as in other arts and crafts, were doubtless to a large extent immigrants from the East. In this connection we may mention the often-illustrated goldsmith's sign in Rome, inscribed *aurifex brattarius*, which shows a Roman goldsmith at work.<sup>2</sup>

We also know from inscriptions that there were guilds of goldsmiths and silversmiths at Palmyra, but there is no evidence that they were working for anything more than the local market.<sup>3</sup>

It remains to consider the literary evidence for the jewellery of this period. It is not helpful, being virtually restricted to diatribes against the luxurious habits of the day, or satires upon them. Pliny tells us that Lollia Paulina, wife of Caligula, at an ordinary function wore emeralds and pearls on her head, hair, ears, neck, arms and fingers. He also tells us that women wore two or three pearls in their ears, so that they rattled. He attributes the origins for this love of jewellery to Pompey's victories in the East.<sup>4</sup>

#### THE SEQUEL

The two most characteristic aspects of Later Imperial jewellery survived well into Early Christian and Byzantine times. In the first place, the lace-like effect of much Byzantine jewellery is a logical development of the *opus interrasile* of the third and fourth centuries. Secondly, the indiscriminate use of coloured stones and glass is as characteristic of Byzantine work as it is of Later Imperial work.

### THE JEWELLERY

#### WREATHS

Roman Imperial wreaths are very different from the lifelike Hellenistic wreaths. They are made up of stylized leaves, frequently in groups of three, sewn to a background of some other material. Such wreaths are common in South Russian tombs, especially at Kerch, of the first and second centuries A.D. They can sometimes be dated by impressions of

<sup>1</sup> *BMCJ*, p. xliii.

<sup>2</sup> Coche de la Ferté, pl. 1.

<sup>3</sup> *BMCJ*, p. xliii.

<sup>4</sup> IX, 58. IX, 56. XXXVII, 6. See Richter, G. M. A. *Catalogue of Engraved Gems in the Metropolitan Museum* (New York, 1956), p. xviii.



coins placed in the centre. A mummy-portrait in London of a certain Artemidorus shows such a wreath in use.<sup>1</sup>

#### DIADEMS

Diadems are not common, but the Hellenistic repoussé variety continued, in the East at least. One in London from Naucratis can be dated from its inscription to the first century A.D.<sup>2</sup>

#### HAIR-ORNAMENTS

(1) Roman ladies wore pins, sometimes of gold, in their hair, as can be seen on mummy-portraits. A few pins in London, of gold, of silver, and of gold and ivory, may have served this purpose.<sup>3</sup>

(2) A complicated hair-ornament in London comes from Tunis and is closely paralleled on Palmyrene statues of the second and third centuries (pl. 62c, col. pl. D). It is composed of a row of oval and rectangular bezel-settings, some filled with plasma, some now empty, surrounded by a row of pearls in bezel-settings. Below hangs a horizontal rod, from which are suspended three vertical rods, threaded two with pearls and one with a sapphire. It matches closely the bracelet illustrated on pl. 60b, with which it was found.

#### EARRINGS

(1) The plain hoop continues in the East from the Hellenistic period, slightly modified. The ends are now hooked together.<sup>4</sup> Examples come from a tomb at Eleutheropolis in Palestine of the second century, a Roman tomb at Salonica, and many Cypriot tombs. This hoop is also at times fitted with a club as a pendant (pl. 54A).<sup>5</sup>

(2) Another hoop incorporates a round shield-like member. It commonly has a club as a pendant, in which form it occurs in Tombs 87 and 95 at Amathus, of the second century (pl. 54B).<sup>6</sup> A variant form from Eleutheropolis, of the second century, has a large decorated plaque as a pendant.

(3) The hoop with animal or human head and beads continued in Egypt and the East from the Hellenistic period into the first or perhaps the second century A.D.; it is discussed on p. 163. It also survives

<sup>1</sup> No. 21810.

<sup>2</sup> *BMCJ* no. 3045.

<sup>3</sup> *BMCJ* nos. 3029-41. But no. 3034 is Hellenistic; see p. 176.

<sup>4</sup> *BMCJ* nos. 2464-79.

<sup>5</sup> *BMCJ* nos. 2412-24. *ABC* pl. 24: 4.

<sup>6</sup> *BMCJ* nos. 2509-34.

in a degenerate version with a vestigial animal head,<sup>1</sup> or with no head at all. The latter type is represented at Pompeii and Thebes<sup>2</sup> and at a burial at Curium (Ayios Ermoyenis) of the Augustan period. It is also represented on mummy-portraits.<sup>3</sup>

(4) Some examples of the foregoing types, mostly of the first century A.D., are equipped with a long hook for insertion in the ear (pl. 54F, H). The type occurs at Zara and at Salonica, and is represented in Egypt on mummy-portraits and the baseboards of sarcophagi of the first and second centuries A.D.<sup>4</sup> In a pair in London, from Episkopi in Cyprus, the beads are replaced by an engraved gem.<sup>5</sup>

(5) An earring composed basically of a pendant club and an S-shaped hook was common in the first and second centuries A.D. It is found at Pompeii, Zara and Eleutheropolis, and at Rome in the tomb of Creperia Tryphaena.<sup>6</sup> In a pair from Bubastis in Egypt (in London), the club is replaced by a lotus-flower.<sup>7</sup>

(6) The ball-type appears suddenly in the first century A.D. and lasts into the second (pl. 54E). It consists basically of a hemisphere of gold with an S-shaped hook at the back. Subsidiary decoration is sometimes found in the shape of a smaller boss above the main element.<sup>8</sup> The type is represented in mummy-portraits and found at Pompeii, Herculaneum, and Boscoreale, on Siphnos, in Cyprus, and at Eleutheropolis in Palestine. In one example from Pompeii the hemisphere is doubled.<sup>9</sup> It is tempting to derive this type from Late Etruscan earrings, with their similarly curved surfaces and similar small bosses; but the intermediate stages, if they ever existed, no longer survive, and the origins of this widespread type must for the present remain a puzzle.

(7) Closely related to the foregoing type is an earring made up of a cluster of plasmas or pearls (pl. 54D). Many examples come from Pompeii and Boscoreale, and the type is represented on mummy-portraits.<sup>10</sup>

(8) An elaboration of the ball-type, with subsidiary bosses and

<sup>1</sup> *BMCJ* no. 2432. Segall, no. 121.

<sup>2</sup> Breglia, no. 470, = Siviero, no. 290. *BMCJ* no. 2565.

<sup>3</sup> Petrie, W. M. F. *Hawara, etc* (London, 1889), pl. 11.

<sup>4</sup> Edgar, *Gr. Eg. Coffins*, pls. 10 and 16. Also no. 6705 in London. *JHS* xxv (1905), 230, fig. 1c.

<sup>5</sup> *BMCJ* nos. 2677-8.

<sup>6</sup> Also *BMCJ* no. 2376.

<sup>7</sup> *BMCJ* nos. 2399-2400.

<sup>8</sup> *BMCJ* nos. 2616-21.

<sup>9</sup> Siviero, no. 252.

<sup>10</sup> *BMCJ* nos. 2622-3. Schäfer, 87, fig. 84.



D. ROMAN HAIR-ORNAMENT AND NECKLACE



imitation pendants in sheet metal, is found in Egypt and Syria, and is generally dated in the third century A.D. There are two pairs in London from Samsun in Asia Minor (fig. 30).<sup>1</sup>

(9) In the course of the second century there arose a new class of pendant earring, completely unrelated to the Hellenistic pendants, which rapidly replaced the ball-type in popularity. One type consists basically of a drop-pendant hanging from a bezel-set stone. It is secured in the ear by a hook, frequently S-shaped. Typical dated examples come from a tomb at Lyons of the early third century (fig. 31), and from a tomb at Vasa in Cyprus of the third century.



FIG. 30. *Earring from Samsun. Third century A.D.*



FIG. 31. *Earring from Lyons. About 200 A.D.*

(10) Another type of pendant earring consists basically of a stone or glass in a bezel-setting above a horizontal bar, from which hang two or three pendants, with stones threaded at their lower end (pl. 54c, G). These earrings are secured in the ear in the same way as the foregoing variety. This very popular type, which lent itself to countless minor variations, ran from the first to the third century A.D. and continued in a modified form into the Byzantine period.<sup>2</sup> It is represented at Pompeii and Herculaneum in the first century, and in tombs at Lyons and Villardu of the third century.

<sup>1</sup> Segall, no. 132. Zahn, R. *Sammlung Baurat Schiller* (Berlin, 1928), no. 71a and b. Nos. 1914. 10-14. 1-4, in London.

<sup>2</sup> *BMCJ* nos. 2643-73.

## NECKLACES

(1) A necklace composed either wholly or in part of linked stones in bezel-settings was taken over direct from Hellenistic jewellery. The stones are usually amethysts, garnets, topazes or sapphires. Plate 58 shows a singularly attractive example, where bezel-set stones are used in combination with a chain to form a necklace, and more bezel-set stones form a butterfly-shaped pendant. It can be dated by comparison with a similar one from Kerch of the first century A.D. The necklace of bezel-set stones continued in a simpler form into the early third century; it is represented in a tomb at Lyons of that date.

(2) A later version of this type, which came in about 200, is represented by some four examples from the above-mentioned tomb at Lyons, of the early third century, and by the example in London, on pl. 61B and col. pl. D. Stones in bezel-settings are now associated with patterns pierced in stout sheet-gold, in the so-called *interrasile* technique (see p. 31).

(3) Chains, of all known varieties, continued in popularity from the Hellenistic period, but usually with different adjuncts.

(a) They were worn without pendants throughout this period.

(b) An extremely popular type incorporated a wheel either as a pendant or as a finial (pl. 56). It occurs at Pompeii and Boscoreale in the first century, at Backworth, Carlisle and Eleutheropolis in the second, and at New Grange about 200.

(c) A crescent (generally of the knobbed kind mentioned on p. 179) is also a popular pendant to a chain (pl. 55B).<sup>1</sup> Examples come from Pompeii, Herculaneum and Boscoreale in the first century, and at Eleutheropolis in the second.

(d) A third popular form of pendant is a gold coin or medallion, sometimes by itself, sometimes in a decorative setting (pls. 56, 61C).<sup>2</sup> These necklaces can be dated by the coins; they are commonest in the second and third centuries.

(e) Another type of pendant, which died out in the first century A.D., after a very long history in Italy, is the bulla. It is found at Pompeii and Herculaneum and at Ostia.<sup>3</sup>

(f) Stones or glass in ornate bezel-settings achieved popularity as

<sup>1</sup> *BMCJ* nos. 2719-23, 2918-35.

<sup>2</sup> *BMCJ* nos. 2727, 2735, 2936-43.

<sup>3</sup> Becatti, nos. 506-7. Breglia, nos. 916-18.

pendants in the third and fourth centuries. The type is represented by several examples from a tomb at Beaurains of about 300, where topaz, amethyst, cornelian and glass were used (pl. 63G, 1).

(g) Another type of necklace is composed of a chain with very loose links, terminating in cylindrical finials, which frequently clip on either side of a relief-medallion. That illustrated on pl. 57B has a Medusa-head which may be compared with heads from the Forum Novum at Lepcis Magna, of the early third century.<sup>1</sup>

(4) Elongated beads of plasma became popular in the later part of this period. A necklace from Beaurains, of about 300, has such beads threaded on a chain (pl. 55A). An example from Syria (pl. 57A) has beads of the same type alternating with cut-out Heracles-knots, and one from Lyons of the early third century includes pierced-work elements and spool-beads.

(5) A necklace of gold beads representing vases in the Benaki Museum is said to come from a woman's grave in the Peiraeus of the early first century A.D. The beads, in the shape of a kantharos, a kalathos and a flask, are made of embossed sheet-gold, with details in filigree, and are inlaid with large pieces of plasma. A bracelet in London in exactly the same style is shown on pl. 59A.

(6) An unusual necklace from Pompeii is composed of a substantial chain of gold set with plasma and pearl.<sup>2</sup>

#### BRACELETS

(1) A popular bracelet of the first century, well represented at Pompeii, is the counterpart of the ball-earrings mentioned above (pl. 60A).

(2) A chain-and-wheel bracelet from a tomb at Backworth of the second century is the counterpart of the chain-and-wheel necklaces mentioned above.

(3) The snake-bracelet continued, in a rather more substantial form, from Hellenistic times (pl. 61E). It is found at Pompeii, but does not seem to have outlived the first century A.D.

(4) Another Hellenistic survival is a two-part bracelet, the upper section ending in lions' heads. This type, represented by one example from Pompeii, is clearly derived from the Hellenistic type described on p. 172.<sup>3</sup>

<sup>1</sup> Buschor, E. *Medusa Rondanini* (Stuttgart, 1958), pls. 40 and 41.

<sup>2</sup> Breglia, no. 473.

<sup>3</sup> Breglia, no. 348.

(5) A slender type of bracelet, found in a tomb at Lyons of the early third century, is made of twisted wires, arranged at one point to form a large Heracles-knot (fig. 32). Other slender bracelets of this general type are known.<sup>1</sup>

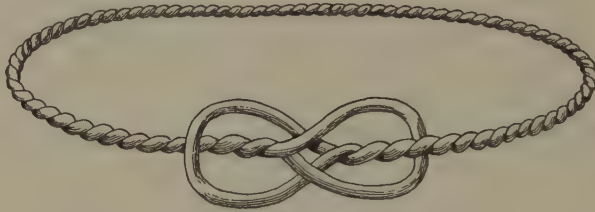


FIG. 32. *Bracelet from Lyons. About 200 A.D.*

(6) The typical bracelet of the second half of this period is a stout hoop, generally of twisted wires, the ends of which are secured by a large circular bezel-setting with a projecting stone (pl. 61D).<sup>2</sup> The type is represented at Lyons (about 200), and at Villardu and Doura Europos in the third century.

(7) The bracelet on pl. 60B is a less common type, but the technique is typical of jewellery of about the third century. It consists of a central disc inlaid with plasma and sapphire and threaded with pearls. On either side is an openwork band cut to represent a row of ivy leaves and threaded with pearls. It was found at Tunis with the hair-ornament on pl. 62C, and evidently formed part of the same ensemble.

(8) The bracelet illustrated on pl. 59A is composed of a centrepiece in the form of a gold kantharos, with wings below the handles. In the centre of the kantharos, and on all four sides, are squares of plasma; on top, flanking the plasma, are an ear of corn and a poppy. An ornamental band of gold is shown attached to the left side; it was originally bent round in a circle so that the far end joined the right side of the kantharos. It is decorated with a plaited band and with openwork leaves and berries. The decoration of the band recalls the bracelet from Palaeocastro of the first century B.C. (see p. 172), but the treatment of the kantharos and the plasma inlay are more to Roman taste. Beads very like the kantharos come from a tomb at Peiraeus of the early first century A.D. (see p. 187), and serve to date the bracelet.

<sup>1</sup> *BMCJ* nos. 2796 and 2801. Segall, nos. 186-198.

<sup>2</sup> *BMCJ* nos. 2810-15.



(9) A pair of somewhat similar bracelets, but without the centrepiece, comes from a tomb at Rhayader in Wales, of uncertain date.

(10) The bracelet illustrated on pl. 59B consists of nine square bezel-set plasmas; one, in the centre, is rather larger than the others. The plasmas are connected together by means of four Heracles-knots of thin wire. The appearance of the plasmas and the employment of the wires suggest that this bracelet is contemporary with the kantharos-bracelet, no. 8 above.

(11) A new variety of bracelet is found in the fourth century, consisting of a broad band with intricate openwork patterns. It is represented in the Treasure of Ténès, of the fourth century, and there is an example, in the Bibliothèque Nationale in Paris, from Pont Audemer.<sup>1</sup> A third example, in London, is illustrated on pl. 64A. There are four scenes, separated by ornamental discs. Three are hunting-scenes and one, apparently, a vintage-scene. The lace-like effect was to become typical of Byzantine jewellery.

#### FINGER-RINGS

Under the Empire the gold ring, although still regarded as a privilege and awarded as a military distinction, was very freely bestowed on all and sundry.

Apart from their uses as marks of dignity, as ornaments and as seal-rings, finger-rings had other purposes. Unlike the Greeks, the Romans used them as tokens of betrothal; and they also wore special rings with keys attached.<sup>2</sup>

Although in the first century B.C. it was unusual for a man to wear more than one ring, the habit of gem-collecting, which started about this time, soon caused a change. Crassus was one of the first men to be seen wearing two rings, and in Horace's time three on one hand was considered excessive. Martial (although he should not be taken too literally) speaks of a man who wore six rings on every finger day and night.<sup>3</sup>

Pliny says that the Emperor Claudius gave permission for people to wear his portrait engraved on a gold ring, and numbers of imperial portraits engraved on rings have survived.<sup>4</sup> The use of gold coins or

<sup>1</sup> Coche de la Ferté, pl. 44: 2.

<sup>3</sup> *op. cit.*, p. xxv.

<sup>2</sup> *BMCR*, pp. xv ff.

<sup>4</sup> XXXIII, 12.

medallions with the imperial portrait as the bezels of rings has been mentioned above.

So many different kinds of ring were in use in this period, that it is only possible to select certain prominent types, and to suggest dates for them.

(1) Snake-rings of the Hellenistic type continued into the first century A.D.: they are found at Pompeii and Herculaneum.<sup>1</sup> A new type, also found at Pompeii and Herculaneum, consists of a hoop with a snake's head at either end (pl. 62D).

(2) A seal-ring with a thick hoop, expanding slightly at the bezel (pl. 62A), was popular in the first and second centuries, and is found at Pompeii and Herculaneum, Slay Hill Saltings and Backworth.<sup>2</sup> In the third century it becomes more elliptical in shape, as in an example in London from the Tarsus Treasure.

(3) A seal-ring with bevelled shoulders, widening towards the bezel, which is sometimes an engraved stone, sometimes a coin (pls. 62E and 63D), ran from the late second century into the fourth.<sup>3</sup> It is found in the tomb of Crepereia Tryphaena in Rome, at Beaurains, and at Ilchester, Grovely Woods and Cardiff.

(4) A ring with humped shoulders was roughly contemporary with the foregoing (pl. 63H). The bezel is sometimes an engraved stone, sometimes a gold coin.<sup>4</sup> The type is represented in a tomb at Lyons of the early third century. The example here illustrated contains a coin of the second century.

(5) Another Roman ring is very massive, with strongly projecting shoulders and an eye-shaped bezel.<sup>5</sup> The type is found in the Tarsus Treasure, of the third century (pl. 62B).

(6) Rings with a thin hoop and a circular bezel come from Pompeii; the type is a Hellenistic survival.<sup>6</sup>

(7) A ring with a thick hoop spreading to a circular bezel also comes from Pompeii.<sup>7</sup> This type, like the foregoing, is a Hellenistic survival.

(8) A seal-ring with an oval bezel and a pair of globules at each

<sup>1</sup> Breglia, nos. 669-75. *BMCR*, p. xlvi, Types E ix and x.

<sup>2</sup> *loc. cit.*, Type E xvi.

<sup>3</sup> *op. cit.* p. xlviii, Type E xxxii. Also nos. 261-5.

<sup>4</sup> *op. cit.*, p. xlviii, Type E xxix. Also no. 266.

<sup>5</sup> *op. cit.*, p. xlviii, Type E xxxv.

<sup>6</sup> Breglia, nos. 594, 599, = Siviero, nos. 390, 436.

<sup>7</sup> Breglia, no. 668. *BMCR*, p. xlv, Type E v.

junction of hoop and bezel (fig. 33) belongs to the first and second centuries; it is found at Pompeii and Backworth.

(9) Ornamental rings with one or more stones standing out from them were extremely popular in the later part of this period (pl. 63A, E, F). The type, very like modern rings, is found in a rudimentary form



FIG. 33. *Finger-ring from Backworth. Second century A.D.*

as early as the first century of our era, for it occurs at Pompeii; but it is not common till the second century. It is represented in a tomb at Lyons of the early third century and in a tomb at Beaurains of about 300. The rings are of various forms, sometimes flimsy, sometimes robust. The stones are of many kinds; sapphires and amethysts are fairly common, and uncut diamonds are not unknown. The ring from Beaurains (pl. 63F) has a cabochon aquamarine and an inscription in niello.

(10) A circular ring with patterns in pierced-work is illustrated on pl. 63B. The type is very like the bracelets discussed above and shown on pl. 64A. Like them, it should be dated about the fourth century.

(11) An octagonal ring. One variety has a hoop with pierced open-work decoration and an engraved stone on one face. Another variety is made of solid metal, and frequently inscribed. The technique of the first variety, and the Gnostic and Early Christian associations of the second, combine to give a fourth-century date for these rings.<sup>1</sup>

(12) A ring with stones set all round the hoop is a late type, of the third and fourth centuries, to judge from the extent of the polychromy (pl. 63C). The stones used in the ring illustrated comprise garnets, cornelians, sapphires and plasma.

(13) Rings composed of two, three or four superimposed hoops are said to be Romano-Egyptian, and were probably made throughout this period.<sup>2</sup> There are Hellenistic precedents (see p. 175).

(14) Double and triple rings are occasionally found. They were made,

<sup>1</sup> *op. cit.*, p. xlix, Type E xl.

<sup>2</sup> *op. cit.*, p. xlv, Type E vii. Becatti, no. 518. Breglia, nos. 734-45, 990, 991, = Siviero, nos. 505-14.

to judge from their style, in the third and fourth centuries. It is possible, as Segall believes, that such rings were made only for funerary use.<sup>1</sup>

## FIBULAE

Roman fibulae do not derive from Etruscan fibulae, which probably fell out of use about the fourth century B.C., but are an innovation of Celtic origin. As their antecedents would suggest, they were not much used in Italy itself or further East, but are found in quantity in the former Celtic territories on the northern and western fringes of the Empire. They were chiefly made of bronze, and it is with bronze fibulae that the typology is established. The exceptional gold and silver fibulae are, however, the only ones with which we are concerned.

On pl. 64B is a fibula in London of La Tène affinities, which is dated about the first century A.D. It comes from Ravenna.

The commonest Roman fibula, the cross-bow type, developed from the foregoing variety in the second and third centuries and flourished in the fourth.<sup>2</sup> A fully developed example is shown on pl. 64C. Others come from Odiham and Colchester, and a number from a fourth-century treasure at Ténès in Algeria. The example from Odiham is decorated with niello.

## BROOCHES

Gold coins and medallions in ornate settings, like the pendants mentioned on p. 186, were also worn as brooches (pl. 61A).

Bronze brooches, richly decorated with champlevé enamel, are also found in the former Celtic areas of the Empire.<sup>3</sup> It may be objected that such articles have no place in a survey of this nature, since, being of bronze, they are not truly jewellery, and, being predominantly Celtic, they are not truly Roman. They do, however, merit a passing mention, if only for their attractive and novel appearance.

<sup>1</sup> *BMCR*, p. xlix, Type E xxxvii. Segall, no. 169.

<sup>2</sup> See *BMCJ* nos. 2853-9. Brailsford, *Antiqs. of Roman Britain*, 21, fig. 10.

<sup>3</sup> *BMC Bronzes* nos. 2162-2222.

## Bibliography and Site-lists

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THE FOLLOWING LISTS are designed to serve a dual purpose; to indicate the framework on which this survey is based and to be a guide to further reading.

Neither the bibliography proper nor the site-lists are exhaustive. The former is intended to include all recent works of importance, a study of which should lead the reader to earlier sources; the latter include only those sites which are important for chronology or provenance.

For the abbreviations used, see p. xxxv. Dates are B.C. except in the Roman section.

### GENERAL WORKS

Becatti, *Oreficerie Antiche* (= Becatti).

Beck, *Beads and Pendants*.

Cesnola, *Salaminia*, 12-50.

Coche de la Ferté, *Les bijoux antiques* (= Coche de la Ferté).

DA, s.v. 'Annulus', 'Armilla', 'Aurifex', 'Aurum', 'Brattea', 'Bulla', 'Caelatura', 'Catena', 'Inauris', 'Monile'.

Ebert, *Reallexikon*, s.v. 'Gold', 'Goldfunde', 'Goldschmiedekunst', 'Granulation'.

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AMORGOS. (1) Dokathismata. *AM* xi (1886), 16; Beil. 1. Tombs. EC pottery.

(2) Dokathismata. *AE* 1898, 154; pl. 8. EC tomb (contents rest on dealer's word).

(3) *Early Helladic*

## SITES

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(2) Tomb 20. Blegen, *op. cit.*, 180; pl. 20: 8, 9, 11. EH pottery.

(3) Houses A and D. Blegen, *op. cit.*, 183-4; pl. 20: 16, 17. EH pottery.

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#### SITES

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- (2) Tomb 2. EM II-early III pottery.
- (3) Tomb 4. EM II; re-used MM III.
- (4) Tomb 6. EM II pottery.
- (5) Tomb 16. EM II-MM I pottery.
- (6) Tomb 19. EM II-III pottery.
- (7) Tomb 21. EM II-III pottery.
- (8) Tomb 23. EM II-III pottery.

There were MM intrusions in a number of these tombs, but they were easily identifiable.

PLATANOS. Tholos A. Lower deposit, Xanthoudides, 88, pls. 15 and 57. EM II - ? pottery. Jewellery as in Mochlos EM tombs.

HAGIA TRIADA. Tholos. *Ann.* xiii-xiv (1930-1), 194; fig. 63. EM II-MM IIa pottery.

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- (4) Mavro Spelio. *BSA* xxviii (1926-7), 243-96. Tombs III, VII, IX and XVII. Communal burials. On the evidence of pottery, started in MM II<sub>B</sub> and were occupied continuously through this period and beyond it. Only one deposit, a pit in Tomb XVII, can be closely dated; it is MM II<sub>B</sub>.
- (5) Ailias, Tomb 5 (unpublished) MM II<sub>B</sub> pottery.
- (6) Ailias, Tomb 7. *JHS* lxxiv (1954), 166. MM IIIA pottery.
- (7) Gypsades, Tomb 18. *BSA* liii-liv (1958-9), 252; fig. 35; pl. 60b. MM III pottery.
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- (2) Mavro Spelio. *BSA*. xxviii (1926-7), 243-96. Tombs III, VII, IX continued in use from the previous period, probably into LM III<sub>B2</sub>.
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- (11) Tomb 36 (Chieftain's Tomb). Evans, *PTK*, 51. Warrior Grave; see *BSA* li (1956), 83. LM II or IIIA1.
- (12) Tomb 66. Evans, *PTK*, 71. LM IIIA2 pottery.
- (13) Tomb 75. Evans, *PTK*, 76. No pottery.
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- (15) Tomb 99. Evans, *PTK*, 89. LM III BI pottery.
- KNOSSOS. PALACE. Destruction level. Evans, *Palace*, iii, 412. Shortly before 1400.
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- (9) Tomb 515. op. cit., 50; pl. 32. LH II<sub>B</sub>-III<sub>C1</sub> pottery.
- (10) Tomb 518. op. cit., 75; pl. 38. LH II pottery.
- (11) Tomb 520. op. cit., 21, 27; fig. 12. LH IIIA<sub>2</sub> pottery.
- (12) Tomb 523. op. cit., 35; pl. 20. LH IIIA<sub>2</sub> pottery.
- (13) Tomb 524. op. cit., 38. LH IIIA<sub>2</sub>-B pottery.
- (14) Acropolis. 'Tsountas's House'. *AE* 1887, 160-72; pl. 13. Perhaps a shrine. LH III jewellery.
- (15) Acropolis. 'The Acropolis Treasure'. *BSA* xxxix (1938-9), 65-87. LH II metal vases, etc.
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- (4) Tomb 19. op. cit., fig. 116: 12. LH IIIA<sub>2</sub>-B pottery.
- (5) Tomb 33. op. cit., fig. 242. LH III<sub>A1</sub>-B pottery.
- (6) Tomb 37. op. cit., fig. 300. LH III<sub>A1</sub>-B pottery.
- (7) Tomb 41. op. cit., figs. 356-63. LH IIIA<sub>2</sub>-B pottery.
- (8) Tomb 44, lower stratum. op. cit., figs. 541-2. LH I-II pottery.
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 (3) Tomb 8. Persson, *New Tombs*, 37-51. LH II pottery.  
 (4) Tomb 10. op. cit., 59-95. LH II<sub>B</sub>-III<sub>AI</sub> pottery.
- ASINE. NECROPOLIS I. (1) Tomb 1. Frödin, Persson, *Asine*, 372; fig. 241. LH II-III pottery.  
 (2) Tomb 2. op. cit., 387; figs. 251-2. LH III<sub>AI</sub>-CI pottery.  
 (3) Tomb 5. op. cit., 399; fig. 262. Colour Pl. 3. LH III<sub>A2</sub> and CI pottery.  
 (4) Tomb 6. op. cit., 406; fig. 266. LH III<sub>A2</sub> and CI pottery.
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 Dated by gold diadem of Shaft Grave type, and by Middle Helladic character of grave. 1600-1550.
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 (3) Tomb 19. op. cit., 177; fig. 129. LH III<sub>B</sub> pottery.  
 (4) Tomb 21. op. cit., 183; fig. 132. LH III<sub>A2</sub> pottery.  
 (5) Tomb 25. op. cit., 188; fig. 134. LH III<sub>B</sub> pottery.
- THEBES. PALACE. (6) Destruction-level. *PAE* 1927, 43; figs. 7, 8. Shortly before 1400.
- GRITSA (THESSALY). Tomb. *PAE* 1951, 148. LH III<sub>CI</sub> pottery.
- VOLO (IOLKOS). Tholos. *AE* 1906, 211-40. A little LH II pottery; but as there were 20 bodies, it cannot be used for an exact dating.
- CEPHALLENIA. Tombs. *AE* 1932, 2-47. LH III<sub>CI</sub>-SM pottery, but the jewellery looks earlier, some as early as LH I or II. A puzzle.



## BIBLIOGRAPHY AND SITE-LISTS

- IALYSUS. (1) Old Tomb 13. Unpub. (in London). LH IIIc1 pottery.  
 (2) Old Tomb 37. Unpub. (in London). LH IIIA pottery.  
 (3) New Tomb 4. *Ann.* vi-vii (1923-4), 99; figs. 17 and 18. LH IIIA2 pottery.  
 (4) New Tomb 20. *op. cit.*, 139; fig. 61. LH IIIc1 pottery.  
 (5) New Tomb 28. *op. cit.*, 157; fig. 82. LH IIIB pottery.  
 (6) New Tomb 31. *op. cit.*, 164; figs. 92-4. LH IIIA2 pottery.  
 (7) New Tomb 61. *Ann.* xiii-xiv (1930-1), 259; figs. 4, 7, 8, LH IIIc1 pottery.
- ENKOMI. (1) Old Tomb 19. *Excav. in Cyprus*, 51. LH IIIB pottery.  
 (2) Old Tomb 58. *op. cit.*, 52. LH IIIc (iron present).  
 (3) Old Tomb 61. *op. cit.*, 52. Leech-shaped earrings. LH IIIc.  
 (4) Old Tomb 65. *op. cit.*, 52. LH IIIA pottery.  
 (5) Old Tomb 67. *op. cit.*, 52. LH IIIA pottery.  
 (6) Old Tomb 69. *op. cit.*, 53. LH IIIA pottery.  
 (7) Old Tomb 93. *op. cit.*, 54. LH IIIA pottery.

## 10. THE DARK AGES

### GENERAL WORKS

*Kerameikos*, v (1), 183-97.

### SITES

- ATHENS, CERAMEICUS. (1) SM Tomb 46. Inhumation. *Kerameikos*, i, 24, 86. *AM* li (1926), 137; Beil. 6.  
 (2) Other SM tombs, with bronze jewellery. *Kerameikos*, i, 85.  
 (3) PG Tomb 5. Cremation. *Kerameikos*, i, 97, 183, 220; pl. 76. Desborough, 24, 49, 79. Transitional SM-PG pottery.  
 (4) PG Tomb 22. Inhumation. *Kerameikos*, iv, 25, 32; pl. 39. Desborough, 2. Transitional SM-PG pottery.  
 (5) PG Tomb 25. Cremation. *Kerameikos*, iv, 25, 33; pl. 39. Desborough, 8. Transitional SM-PG pottery.  
 (6) PG Tomb 39. Cremation. *Kerameikos*, iv, 26, 39; pl. 39. Desborough, 37. Latest PG pottery.  
 (7) Geometric Tomb 7. Cremation. *Kerameikos*, v (i), 214, pl. 159. EG I pottery.  
 (8) Geometric Tomb 41. Cremation. *op. cit.*, 235; pl. 159. EG II-MG I pottery.

- (9) Geometric Tomb 42. Cremation. *op. cit.*, 236; pl. 158. EG II-MG I pottery.
- (10) Geometric Tomb 43. Cremation. *op. cit.*, 238; pl. 158. EG II-MG I pottery.
- (11) Geometric Tomb 13. Cremation. *op. cit.*, 218; pl. 158. MG I pottery.
- ATHENS. AGORA. (1) Tomb 14. Inhumation. *Hesperia*, vi (1937), 367; fig. 30. LPG pottery.
- (2) Tomb 26. Cremation. *Hesperia*, xviii (1949), pl. 72. Early EG I pottery.
- ATHENS (?). The Elgin Jewellery. *British Museum Quarterly*, xxiii (1961), 101 ff. Jewellery of SM to LG types. No other dating evidence.
- SALAMIS. Tombs, mostly inhumation, a few cremation; contents not separately recorded. *AM* xxxv (1910), 17-36, esp. 30. SM pottery, some earlier than any from the Cerameicus (*Kerameikos*, i, 36).
- CLENIA. Larnax burial. *AJA* lix (1955), 126; pl. 40, fig. 14. MG I pottery.
- TIRYNS. (1) 'The Tiryns Treasure'. Tomb-robbers' cache (?). *AM* lv (1930), 119-40. No pottery. Metalwork runs from LH II to SM or PG.
- (2) Tomb 2. Inhumation. Frickenhaus, A. etc., *Tiryns*, i (Athens, 1912), 128. Desborough, 207. EG pottery.
- ASSARLIK. Tomb B. *JHS* viii (1887), 69; fig. 7. *BMCJ* nos 1214-15. Desborough, 220. PG pottery.
- VROKASTRO. Chamber Tomb 1. Collective tomb; chiefly cremations. Hall, *Vrokastro*, 123 ff., esp. 138; fig. 82. Desborough, 264. SM-Geometric pottery.

## II. ORIENTAL INFLUENCES

## GENERAL WORKS

Ohly, *Griechische Goldbleche*.

Reichel, *Griechische Goldreliefs*.

## SITES

## (1) ATTICA, ETC.

ATHENS, CERAMEICUS. (1) Geom. Tomb 50. Inhumation. *Kerameikos*, v (1), 243; pl. 158. LG I pottery.

(2) Geom. Tomb 72. Cremation. *op. cit.*, 259; pl. 158 LG I-II pottery. ATHENS (?). The Elgin Jewellery. See above (p. 206).

ELEUSIS. (1) Isis Tomb. *AE* 1898, 106; pl. 6: 6. Reichel, no. 34. MG II pottery.

(2) Tomb A. *AE* 1898, 103; pl. 6: 7. Reichel, no. 35. MG I-II pottery.

(3) Unstratified deposit. *AE* 1885, 179; pl. 9: 3-4. Reichel, no. 33. Ohly, pl. 17: 4. *Boston Bull.* lxxviii (1943), 44.

SPATA. Tomb 3. *ADelt*, vi (1920-1), 136; fig. 10. Reichel, no. 32. LG II pottery.

ERETRIA. Tombs (cremation). *AE* 1903, 8. *AM* xxxviii (1913), 290-6. Reichel, nos. 25-8. Ohly, E 1, 2, 4 and 5. Geometric pottery and a fibula of the eighth century.

## (2) PELOPONNESE

CORINTH. (1) Tomb C. *AJA* xli (1937), 544; fig. 6. *Corinth* xii, nos. 1808, 2000, 2264-5. Geometric pins; Jacobsthal, *Pins*, figs. 512-513. Not closely datable; possibly Dark Age period.

(2) Tomb F. *AJA* xli (1937), 545; fig. 7. *Corinth* xii, nos. 1803-7, 1999, 2258-61. Jacobsthal, *Pins*, 7, n. 1. Dated by MG II pottery from twin-grave G: 800-750.

(3) Tomb D. *Corinth*, xii, no. 1802. No pottery, but form and location of tomb as Tomb F; *AJA* xli (1937), pl. 13: 2. 800-750 (?).

(4) Tomb. Jacobsthal, *Pins*, fig. 15. Alleged tomb-group in Oxford, with Geometric pins.

(5) Tomb. *AZ* 1884, pl. 8. Alleged tomb-group in Berlin.

PERACHORA. (1) Akraia Deposit. *Perachora*, i, pl. 18. Pottery, etc., of c. 825-725.

(2) Limenia Deposit. *Perachora*, i, pl. 84. Pottery, etc., of 750 B.C. onwards.

ARGOS. (1) Tomb. *BCH* lxxxix (1957), 385; fig. 66. Pottery of the later eighth century.

(2) An alleged tomb-group (in Athens). Amandry, nos. 42-5.

SPARTA. (1) Temple of Artemis Orthia. Dawkins, *Artemis Orthia*, 382; pls. 202-3. Deposits dated by pottery: chiefly seventh century.

(2) Menelaion. *BSA* xv (1908-9), 142; pl. 8. Laconian II pottery.

## (3) THE ISLANDS

KNOSSOS. Tekké burials. *JHS* lxiv (1944), 84; pls. 8-10. *BSA* xlix

- (1954), 215-28; pls. 27-8. Jacobsthal, *Pins*, figs. 58-61, 64. Becatti, nos. 154-7. Two related deposits; dated, by internal evidence, to the early seventh century.
- (2) Fortetsa. 'Tomb 1' (near Pithos 1). Brock, J. K. *Fortetsa* (Cambridge, 1957), 99, 197; pl. 76, nos. 1144, 1145. Orientalizing.
- PRAISOS. (1) Tomb A. *BSA* viii (1901-2), 243; figs. 11-12. Not closely datable.
- (2) Tomb 31. *BSA* xii (1905-6), 68; figs. 3-4. No dating evidence apart from jewellery.
- ARKADES. (1) Tomb L. *Ann.* x-xii (1927-9), 312-80; pl. 12. Pottery of the seventh century.
- (2) Tomb F 1. *op. cit.*, 93-6; pl. 12. No dating evidence.
- IDAEAN CAVE. Votive deposit. *AJA* xlix (1945), 315; fig. 23. Not closely datable.
- CAMIRUS. (1) Tomb 201. *Cl. Rh.* iv, 350; fig. 388. Pottery of 625-600.
- (2) Tomb 210. *Cl. Rh.* iv, 365; figs. 409, 410. Pottery of 625-600.
- (3) Tomb 11. *Cl. Rh.* vi-vii, 55 f.; figs. 53 and 58. Protocorinthian pottery of 650-625.
- (4) Tomb 13. *Cl. Rh.* vi-vii, 65; fig. 66. Corinthian pottery of 625-600.
- (5) Tomb 82. *Cl. Rh.* vi-vii, 199; fig. 239. Pottery of 700-650.
- (6) Votive deposit. *Cl. Rh.* vi-vii, 340; fig. 86. No close dating, but chiefly seventh century.
- (7) Sporadic finds. *Cl. Rh.* vi-vii, 210 f.; figs. 252-7.
- IALYSUS. (1) Tomb 23. *Cl. Rh.* iii, 53; fig. 44. Pottery of 700-650 (?).
- (2) Tomb 45. *Cl. Rh.* iii, 73; figs. 63-4. Pottery of 625-600.
- (3) Tomb 56. *Cl. Rh.* iii, 98; fig. 90. Pottery of 700-650 (?).
- (4) Tomb 57. *Cl. Rh.* iii, 97. Pottery of 700-650 (?).
- (5) Tomb 58. *Cl. Rh.* iii, 100. Pottery of 700-650 (?).
- (6) Tomb 98. *Cl. Rh.* iii, 129; fig. 121. No means of dating.
- (7) Tomb 107. *Cl. Rh.* iii, 135; fig. 128. Fibulae of the seventh century.
- (8) Tomb 112. *Cl. Rh.* iii, 139. Pottery of the seventh century.
- LINDUS. 'Couches Archaïques.' *Lindos*, nos. 270-94. Pottery of the seventh and sixth centuries.
- EXOCHI. Cemetery. *Acta Archaeologica*, xxviii (1957), 169-81. *AJA* lxiii (1959), 398. Pottery of about 750-650.

## BIBLIOGRAPHY AND SITE-LISTS

**THERA.** Tomb 116. *AM* xxviii (1903), 225; pl. 5. Heads in Middle Dedalic Style. Mid-seventh century.

**MELOS.** Tomb (?). *ILN* 27.4.1940. *AA* liii (1938), 125. *BCH* lxi (1939), 285; pl. 48.

**DELOS.** (1) Near Artemision. *Délos*, xviii, 291; fig. 342; pl. 87, fig. 740; no. A 296.

(2) Hieron. *Délos*, xviii, 303; fig. 371; pl. 88, fig. 766; no. A 785.

### (4) EASTERN GREECE

**EPHESUS.** Artemision. Hogarth, D. G. *Excavations at Ephesus* (London, 1908), pls. 3-12. *BMCJ*, p. xxii. *JHS* lxxi (1951), 85-95. Nearly all jewellery is of the seventh century.

**SAMOS.** Heraeum. *AM* lviii (1933), 167. Reichel, no. 62. 670 B.C. or earlier.

**ASSARLIK.** Tomb C. *JHS* viii (1887), 71, figs. 11-12. *BMCJ* nos. 1212-13. Desborough, 219. Geometric pottery, 'not the earliest'.

### (5) THE WEST

**SYRACUSE.** Tomb 404. *NS* 1895, 162. Protocor. pottery. Seventh century.

**MEGARA HYBLAEA.** Tomb 240. *MA* i (1890), 890. Protocor. pottery. Seventh century.

**GELA.** Tomb 5. *MA* xvii (1906), 34; fig. 2. Corinthian pottery of later seventh century.

## 12. ARCHAIC AND CLASSICAL

### SITES

**ATHENS.** 'Tomb of Aspasia'. *JHS* xxxvi (1916), 258, 288. Bronze vase of 450-400.

**HALAE.** Tombs. *AJA* xix (1915), 425. *Hesperia*, xi (1942), 370. Pottery of the later fifth century.

**ERETRIA.** (1) Tombs 1-5. Sarcophagi. *AM* xxxviii (1913), 296-319. Dated by pottery and by cross-links, 475-425.

(2) Tomb. Papavasileiou, 78; pl. 12: 1. Casson, S. *Journal Internationale d'Archéologie Numismatique*, xx, 89. No certain dating.

(3) Tomb. *BMCJ* nos. 1653-4. Pottery of 425-400.

- PERACHORA. Limenia Deposit. *Perachora*, i, pl. 84: 30, 45. No certain dating.
- ISTHMIAS. Temple of Poseidon. Archaic Deposit. *Hesperia*, xxiv (1955), 138; pl. 56c. Pottery of the sixth century.
- DELPHI. Deposit. *BCH* lxxiii (1939), 86 ff. Figured goldwork in style of 600-550.
- OLYNTHUS. Robinson, D. M. *Olynthus*, x (Baltimore, 1941).  
 (1) Tombs, mostly dated by pottery; fifth and fourth centuries to 348.  
 (2) Houses, mostly dated by destruction of 348 B.C.
- THASOS. Votive deposit. *Arch. Rep.* 1957, 15; pl. 1a. Not closely datable.
- SAMOS. Tomb 45. Boehlau, J. *Aus ionischen und italienischen Nekropolen* (Leipzig, 1898), pl. 15: 13. Pottery of the sixth century.
- TARRHA (CRETE). (1) Trench 1, Grave 7 B. *Hesperia*, xxix (1960), 95; pl. 30a. Pottery of the mid-fourth century.  
 (2) Trench 8. Grave 1 (latest interment). *op. cit.*, 96 f.; pl. 32. Pottery of the late fifth century.
- XANTHUS. Unstratified find. Demargne, P. *Fouilles de Xanthos*, i (Paris, 1958), pl. 4, no. 2102. No date.
- IALYSUS. (1) Tomb 153. *Cl. Rh.* iii, 155. Pottery of the late fifth century.  
 (2) Tomb 155. *Cl. Rh.* iii, 157. Pottery of the early fourth century.  
 (3) Tomb 157. *Cl. Rh.* iii, 159; fig. 152. Pottery of the mid-fourth century.  
 (4) Tomb 189. *Cl. Rh.* iii, 200. Terracottas of 500-475.  
 (5) Tomb 254. *Cl. Rh.* iii, 269; fig. 267. Pottery of c. 530.  
 (6) Marmaro, Tomb 10. *Cl. Rh.* viii, 112; figs. 99-101. Mid-sixth-century pottery.  
 (7) Marmaro, Tomb 35. *Cl. Rh.* viii, 157; fig. 143. Terracottas of the later sixth century.  
 (8) Marmaro, Tomb 41. *Cl. Rh.* viii, 160; fig. 146. No means of dating, except engraving on ring, in style of sixth century.  
 (9) Marmaro, Tomb 42. *Cl. Rh.* viii, 160; fig. 147. Pottery of the sixth century.
- LINDUS. 'Couches Archaiques'. See p. 208. On the evidence of Corinthian pottery, continues down to about 550 B.C.

- RHODES. Tomb 4. *Cl. Rh.* vi-vii, 450; figs. 5 and 9. Terracottas of 400-350.
- TARENTUM. (1) Tomb. Via Mazzini. Becatti, no. 313. Pottery of the sixth century.
- (2) Tomb. Via Principe Amedeo. Becatti, no. 380. No dating evidence.
- (3) Tomb. Via Cagliari. *AA* lxxi (1956), 203; fig. 4. No dating evidence.
- (4) Tomb 52. *NS* 1936-7, 139; fig. 30. Pottery of 350-25; cf. Trendall, A. D. *Vasi del Vaticano*, ii (Vatican, 1955), pl. 34, nos. X 1, X 3; pl. 45, no. V 33.
- ROCCANOVA. Tomb. Becatti, no. 423. Pottery of the fourth century.
- METAPONTUM. Tomb. Breglia, nos. 74-8. Jewellery in fourth-century style.
- CUMAE. Tomb 126. *MA* xxii (1913), 596. Breglia, pl. 9. Mid-fourth-century pottery.
- MEGARA HYBLAEA. (1) Tomb 16. *MA* i (1890), 806. Pottery of the sixth century.
- (2) Tomb 165. *MA* i (1890), 863. Pottery of the sixth century.
- (3) Tomb C. *NS* 1954, 87; fig. 9: 5. Pottery of the sixth century.
- (4) Tomb D. *NS* 1954, 90; figs. 12, 13. Pottery of the middle years of the sixth century.
- GELA. Tomb 60. *MA* xvii (1906), 50; fig. 22. Terracotta of 550-525.
- OLBIA. (1) Tomb 81. *AA* xxvii (1912), 353; figs. 41-3. Pottery of 550-500.
- (2) A tomb. *AA* xxix (1914), 243; fig. 60. Said to be of 550-500.
- (3) A tomb. *AA* xxix (1914), 243; fig. 61, centre, and bottom. Dated by earrings (as in Tomb 81); 550-500.
- (4) Tomb 76, principal grave. *AA* xxviii (1913), 198; fig. 39. Dated by style of gold pendant to the middle of the fourth century.
- KERCH. (1) Kekuvatski Tomb. *ABC*, 21. Rostovtzeff, *Sk. u. B.*, 177. Pottery of 380-360.
- (2) Kul Oba. *ABC*, *passim*. Minns, 195 ff. Rostovtzeff, *Iranians*, *passim*. Scythian royal burial; single deposit (the queen apparently slaughtered with the king). Ivory paintings in style of 400-350. Gold plaques in style of about 350. Most probable date, 375-350.
- (3) Pavloskoi Kurgan. *CR* 1859, pl. 3. Rostovtzeff, *Sk. u. B.*, 178.

- Schefold, 67, no. 3. Tomb. Coin of *c.* 330. Pelike of 340-30. Plastic lekythos, style of *c.* 340. Date of tomb, 340-330.
- NYMPHAEUM. (1) Tomb 2 (in Leningrad). *CR* 1877, 220; pl. 3: 5-16. Minns, 208; fig. 106. Pottery of 450-440.
- (2) Tomb 3 (in Leningrad). *CR* 1877, pl. 3: 19-35. Minns, 208; fig. 106. No pottery; jewellery as Tomb 2.
- (3) Tombs 1-5 (in Oxford). Five tumuli, each containing one burial. The find-spot is sometimes erroneously given as Kerch. *JHS* v (1884), 62-73. Rostovtzeff, *Iranians*, 76 ff. Tombs 1-3 and possibly 5 are dated by associated finds and cross-links to 450-400. Tomb 4 is dated by a silver vase to the fourth century, probably the first half.
- TAMAN. Great Blisnitza. Minns, 423. *CR* as under. Four tombs:
- (1) 'Priestess of Demeter'. *CR* 1865, pls. 1, 2, 3: 1-26. Pottery of about 340 (Schefold, pl. 3: 1). Gold plaques as Grave 4. Earrings as Grave 2. On balance, 350-325.
- (2) 'Third Lady'. *CR* 1869, pls. 1-3. Terracottas of 350-325.
- (3) 'Man's Grave'. *CR* 1866, pls. 1, 2: 1-32. A gold plaque paralleled in Grave 2. 350-325.
- (4) 'Burnt Grave'. *CR* 1865, pl. 3: 27-37. Gold stater of Alexander, in mint condition. Gold plaques as Grave 1. 330-320 (?).
- KUBAN. SEVEN BROTHERS. (1) Tomb in Kurgan II. *CR* 1876, 119; pl. 3: 1-26. Minns, 208; fig. 106. Figured objects in style of 500-450.
- (2) Tomb in Kurgan VI. *CR* 1876, 127; pl. 3: 27-36. Minns, 208; fig. 106. Figured objects in style of 450-400. Pottery of same date.
- KUBAN. KELERMES. Tomb. *AA* xx (1905), 59; fig. 4. Minns, 222. Rostovtzeff, *Iranians*, 49. Mirror of 600-550.
- AMATHUS. (1) Old Tomb 256. Sarcophagus II. *Excav. in Cyprus*, 125. *BMCJ* nos. 1644-7. Sarcophagus (*BMC Sculpture*, C 429) of fifth-century type.
- (2) Old Tomb 88. *Excav. in Cyprus*, 119. *BMCJ* nos. 1492, 1617-20, 1783, 1784. Sixth to fourth centuries (?).
- (3) Old Tomb 211. *Excav. in Cyprus*, 123. *BMCJ* nos. 1641-2. Gem of fifth century.
- (4) New Tomb 10. *SCE* ii, 69; pl. 17. Cypro-Archaic II pottery; 600-475.



- MARION. (1) Excav. of 1886. Tomb 131. Ohnefalsch-Richter, *Kypros*, 369; pls. 33, 67, 144; nos. 17-20. Pottery of c. 550.
- (2) Excav. of 1886. Tomb 24. Ohnefalsch-Richter, *Kypros*, 368; pl. 33; nos. 9-15. De Ridder, A. *Coll. de Clercq*, vii (Paris, 1911), nos. 1204, 1224, 1504-5, 1542, 1945-7. Pottery said to be of the fifth-fourth century.
- (3) New Tomb 41. *SCE* ii, 291; pl. 55. Pottery of late fifth and early fourth centuries.
- (4) New Tomb 60. First burial period; early interment. *SCE* ii, 356; pl. 68. Pottery of the early fourth century.
- (5) Tomb. *Arch. Rep.* 1958, 29; fig. 8. Fifth century.
- CURIUM. Tomb 73. *Excav. in Cyprus*, 82. Objects of 500-300.
- VOUNI. Palace. Hoard. *SCE* iii, 238; pl. 89: 14. Dated by destruction of 380 B.C.
- DUVANLIJ (THRACE). Tombs. Filow, B. D. *Die Grabhügelnekropole bei Duvanlij in Südbulgarien* (Sofia, 1934).
- (1) Muschovitsa Hill. op. cit., 82-97. Pottery of 500-475.
- (2) Kukuva Mogila. op. cit., 37-58. Pottery of 475-450.
- (3) Arabadzijskata Mogila. op. cit., 127-42. Pottery of 450-425. Jewellery; some Graeco-Thracian, some pure Greek.
- TREBENISHTE. Tombs. Filow, B. D., and Schkorpil, K. *Die archaische Nekropole von Trebenishte* (Berlin and Leipzig, 1927). *ÖJH* xxvii (1932), 1, 106; xxviii (1933), 164. *AA* xlvi (1933), 459. Jacobsthal, *Pins*, 201. Macedonian tombs with imported Greek metalwork (but no Greek jewellery).
- VETTERSSELDE. Tomb. Furtwängler, A. *Der Goldfund von Vetttersfelde* (Berlin, 1883). Graeco-Scythian metalwork in style of c. 500.
- VIX. Tomb. Joffroi, R. 'Le Trésor de Vix', in *Mon. Piot*, xlvi (1954). Becatti, pl. D. Greek metalwork and pottery of the late sixth century; no truly Greek jewellery.

## 13. EARLY ETRUSCAN

## GENERAL WORKS

Breglia, 103-25.

Curtis, C. D. *MAAR* i (1915-16), 63-85.

Dohan, *Italic Tomb-Groups* (Chronology).

Karo, G. in *St. e Mat.* i, 233-83; ii, 97-147; iii, 143-58.

McIver, *Villanovans*.  
Richter, *Etruscan Coll.*

## SITES

- For poorly published and unpublished material (earrings only) from these and other sites, see Hadaczek, *passim*.
- CAERE. (1) Regolini-Galassi Tomb. Pareti, L. *La Tomba Regolini-Galassi* (Rome, 1947). Mid-seventh century.
- (2) Banditaccia, Zone A, Tomb 10, Chamber of the Fire-dogs. *MA* xlii (1955), 342; fig. 72. Pottery of 650–625.
- PRAENESTE. (1) Bernardini Tomb. *MAAR* iii (1919), 7–90. Jewellery as Regolini-Galassi. Mid-seventh century.
- (2) Barberini Tomb. *MAAR* v (1925), 9–52. Jewellery as Regolini-Galassi. Mid-seventh century.
- VEII. Tre Fontanili, Tomb 2. *NS* 1954, 3; fig. 3. Jewellery of seventh-century types.
- TARQUINII. Tombs. See Hadaczek, 57, 60. Sixth and fifth centuries.
- VULCI. (1) Tomb(s) (in Munich). Karo, in *St. e Mat.* ii, pl. 2: 2–11. Pinza, G. *Etnologia Antica Toscano-Laziale* (Milan, 1915), 144, fig. 94; pl. 2. Montelius, *Civ. Prim. It.*, ii, pl. 261. Jewellery in style of c. 650–625.
- (2) Polledrara Tomb (Grotto of Isis). *BMC Sculpture*, i, pt. 2 (1931), 155 and refs. Montelius, *Civ. Prim. It.*, ii, pls. 265–8. Scarab of Psamtek I (663–609). Associated finds of c. 625–575.
- (3) Tomb (in New York). Richter, *Etruscan Coll.*, fig. 106. Jewellery mostly (if not all) in style of the later sixth century.
- (4) Tombs (in Vatican). *Museo Etrusco Vaticano*, i (Rome, 1842), pls. 68–74. Jewellery from unspecified tombs, to be dated stylistically from the sixth to about the first century B.C.
- NARCE AND FALERII. (1) Tombs. Karo, in *St. e Mat.* iii, 143–58. Montelius, *Civ. Prim. It.*, ii, pls. 307–31. *MA* iv (1894–5), 347–98. Jewellery as at Vetulonia. Seventh century.
- (2) Tombs 42M, 24M, 23M, 102F (in Philadelphia). Dohan, *Italic Tomb Groups*. About mid-seventh century.
- BISENZIO. Tombs. *MA* xxi (1912), 404–98. *NS* 1928, 434–67. McIver, *Villanovans*, 170–4; pl. 32. Jewellery somewhat like Rhodian of the early seventh century. Early seventh century?
- ORVIETO. Tombs. See Hadaczek, 57, 60. Sixth and fifth centuries.

MARSIGLIANA D'ALBEGNA. (1) Banditella Cemetery. Tombs 2, 10, 11, 14, 34, 39, 41, 63, 67, 94. McIver, *Villanovans*, 181-92; pl. 35. Minto, A. *Marsigliana d' Albegna* (Florence, 1921), pls. 11, 12, and 14. Much of jewellery as in Bernardini and Barberini Tombs. All could date around the middle of the seventh century.

(2) Circle of Perazetta. McIver, loc. cit. Minto, op. cit., pl. 13. Jewellery of about mid-seventh century.

VETULONIA. Some 27 tombs or groups of tombs; and other finds. The tombs listed below are the most important for the study of jewellery. *NS* 1887, 471-531. Karo, in *St. e. Mat.* i, 235-83; ii, 97-147. Id., *St. Etr.* viii (1934), 49-57. Montelius, *Civ. Prim. It.*, ii, pls. 178-203. MacIver, *Villanovans*, 100-54. The dating, which is approximate, is based on correlations with other cemeteries, and on internal evidence.

*Early Group*, perhaps 700-660.

- (1) Foreigner's Tomb.
- (2) Circle of the Bracelets.
- (3) Bes Circle.
- (4) Circle of the Oleasters.
- (5) Circle of the Silver Necklace.
- (6) Circle of Pellicie.
- (7) Acquastrini Circle.
- (8) Tumulus of Val di Campo.

*Middle Group*, perhaps 660-640.

- (9) Tomb of the Prince.
- (10) Hoard of the Threshing-floor (Aia Bambagini).
- (11) Tomb of the Lictor.

*Late Group*, perhaps 640-620.

- (12) Circle of Migliarini.
- (13) Graves of La Pietrera.

POPULONIA. (1) 'Tomb of the Intact Dome'. Minto, *Populonia*, 137; pl. 28. *NS* 1940, 376-97. Pottery of the late seventh and early sixth centuries.

(2) 'Tomb of the Bronze Fans'. Minto, *Populonia*, 139; pl. 30. *MA* xxxiv (1931), 289. Pottery of the late seventh and early sixth centuries.

CHIUSI. Pania Tomb. Montelius, *Civ. Prim. It.*, ii, pls. 224, 225. MacIver, *Villanovans*, 249-251. Pottery of the late seventh century.

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- CAPANNORI. Tomb. *NS* 1893, 403-18. Pottery of 475-450.
- BOLOGNA. Certosa Cemetery. Zannoni, A. *Scavi della Certosa di Bologna* (Bologna, 1876). Montelius, *Civ. Prim. It.*, i, pl. 102. Alfieri, N. etc. *Ori e Argenti dell' Emilia Antica* (Bologna, 1958), 37-40. Pottery of 525-400. Most of the jewellery is from fifth-century tombs.
- SPINA. Tombs. Alfieri, N. etc., op. cit., 43 ff. Becatti, pl. H. Tombs with jewellery, nearly all c. 440-390 (pottery). A few somewhat later.
- CUMAE. Tomb 104 (Artiaco Tomb). *MA* xiii (1903), 225-63. Breglia, nos. 3-12. Siviero, nos. 3, 7-12. Randall-MacIver, D. *The Iron Age in Italy* (Oxford, 1927), 169. Some jewellery as Regolini-Galassi, some perhaps earlier; 680-650 (?).
- RUVO. Tombs. Breglia, iii; pls. 3-6. Jewellery of sixth-fifth-century style.

### 14. LATE ETRUSCAN

#### GENERAL WORKS

Breglia, 103-25.

Richter, *Etruscan Coll.*

#### SITES

For poorly published and unpublished material (earrings only), from these and other sites, see Hadaczek, *passim*.

PRAENESTE. Tombs (Marini property). *NS* 1897, 254-69. Coins (*aes rude*) and character of jewellery suggest the fourth century.

CIVITAVECCHIA. Tomb E. *NS* 1941, 363, fig. 9. Pottery of the early fourth century.

VULCI. Tombs (now in Vatican). *Museo Etrusco Vaticano*, i (Rome, 1842), pls. 68-74, 78, 80, 81, 87-90. Becatti, nos. 357, 359-362. Jewellery of c. sixth to first centuries B.C. See above, p. 214.

POPULONIA. Tombs. Minto, *Populonia*, 182-3; pl. 47. Late Etruscan jewellery, in style of fourth-third century.

VOLTERRA. (1) Monteriggioni. Family tomb of Calenii Sepus. *St. Etr.* ii (1928), 133-76. Associated finds of c. fourth to first centuries B.C.

(2) Unspecified Tombs. Consortini, P. L. *Volterra nell' antichità* (Volterra, 1940). Late Etruscan jewellery.

## BIBLIOGRAPHY AND SITE-LISTS

- PERUGIA. (1) Sperandio Tomb. *NS* 1900, 554; fig. 2. *JHS* lxix (1949), 12, n. 53. Mirror of the fourth century.
- (2) Tombs. Shaw, C. *Etruscan Perugia* (Baltimore, 1939), 84. Jewellery of fourth–third century, described but not illustrated.
- TODI. (1) Peschiera, Tomb 1 (in Villa Giulia). *MA* xxiii (1914), 613–638. Becatti, nos. 341, 364, 410, 418. Pottery and bronzes of about 300.
- (2) Peschiera, Tombs 9, 16 *bis*, and 20 (at Florence). *St. Etr.* ix (1935), 287–303. Tombs 9 and 16 *bis*: mirrors of third century. Tomb 20: mirror of about 300.
- CAPENA. (1) Tomb 179. *MA* xlv (1958), 175; fig. 48. Late Etruscan jewellery; no other dating evidence.
- (2) Tombs B and E. *op. cit.*, 199; fig. 56. Gems of fourth or third century.
- SPINA. Tombs. See above, p. 216. Tombs 58 and 169 are of the fourth century.

## 15. HELLENISTIC

### GENERAL WORKS

Schreiber, 293–311.

### SITES

- CORINTH. Tomb. *Corinth*, xii, no. 2055. Coins of Philip II and Alexander. Later fourth century.
- THEBES. Tomb. *AE* 1914, 128; fig. 9. Mirror of about 300; Züchner, *Klappspiegel*, 52.
- ERETRIA. (1) Tomb. *AM* xxxviii (1913), 321; fig. 11; pls. 14: 6, 16: 13. Hadra vase, third century.
- (2) 'Family Tombs'. Papavasileiou, 51 ff. Jewellery has correspondences with Artjukhov's Barrow, the Carpenisi (?) Group from Thessaly, and Palaeocastro. No other evidence. Second to first centuries B.C.?
- DELOS. House. *Délos*, xviii, 300; fig. 368. Dated by the destruction of 69 B.C.
- RHENEIA. Tombs. *Délos*, xviii, 88; fig. 764. Hellenistic jewellery. No dating evidence.
- ANTICYTHERA. Shipwreck. *AE* 1902, 162; fig. 10. *AJA* lxiv (1960), 183. Pottery of 75–50 B.C.

- IALYSUS. Marmaro, Tomb 32. *Cl. Rh.* viii, 154; fig. 140. No certain means of dating. Jewellery of the late fourth century (?).
- KYME (AEOLIS). *BMCJ*, p. xxxviii, nos. 1612-14, 1632, 1662-5, 1670-3, 1709, 1844, 1889-90, 1936-42, 1944-6, 1953-6, 2002-7, 2010-12, 2036-7, 2059-61, 2082, 2097-2103. *BMCR* nos. 352, 577 (?) and 911. A collection of jewellery said to come from a tomb which also contained a coin of Alexander. Certain minor pieces may well have been added, but most of the jewellery goes well together, and may be dated by the coin to the late fourth century.
- MADYTUS (TROAD). Tomb (?). *B. Met. Mus.* i (1906), 118. Jewellery of the later fourth century.
- PERGAMON. Tomb. *AM* xxxiii (1908), pl. 25: 1. Coin of the third century.
- SYRIA. Tomb (?). *Archaeology*, viii (1955), 252-9. A collection of jewellery, now in Chicago, from an unidentified site in Syria. Possibly dated by coins to the second century, a date which is supported by the character of the jewellery.
- SAMOTHRACE. (1) Tomb. *Archaeology*, xii (1959), 166; fig. 4. 'Late fourth century'.
- (2) Tomb. *op. cit.*, 166; fig. 5. 'Third century'.
- (3) Tomb. *op. cit.*, 170; fig. 13. 'Augustan Period'.
- THESSALY. DEMETRIAS (?). Tomb. Amandry, nos. 217-31. Jewellery of about the later fourth century (diadem as in Salonica Sedes tomb).
- THESSALY. CARPENISI (?). Tomb(s). Segall, nos. 28-36. Amandry, nos. 232-66. See also Benton, *JHS* lxxv (1955), 174-5, and Segall, *Record of the Museum of Historic Art, Princeton University*, iv (1945), 1-11. No external dating evidence. Possibly contemporary with Artjukhov's Barrow. Second century (?).
- PALAEOCASTRO. Tomb (?). *AM* xxxvii (1912), 73-118; 1 (1925), 167-91. Dated by associated finds to the first century B.C.
- KOZANI. Tomb 1. *AE* 1948-9, 91; fig. 3. Coin of Alexander. Late fourth or early third century.
- AMPHIPOLIS. Tomb. *Ergon*, 1958, 73; fig. 76. Hellenistic.
- SALONICA. (1) Tomb. *Arch. Rep.* 1958, 13; fig. 15. Terracottas of the second century.
- (2) Tomb (?). *B. Met. Mus.* xxxii (1937), 290; fig. 2. Jewellery of later fourth century.

- (3) Sedes, Tomb Gamma. *AE* 1937, pt. 3 (pub. 1956), 866-95. Coin of Philip II. Jewellery and pottery of later fourth century.
- ABDERA. Tomb (?) (in Berlin). Zahn, *Ausstellung*, 72 ff., nos. 9-14. *Berl. Mus.* xxxv (1913-14), 78 ff.; figs. 39 and 40A. *AD* iv, 76-80; pl. 42. Jewellery only. Diadem related to one in Artjukhov's Barrow. Second century?
- MT PANGAEUS. Tomb (?) (formerly in Berlin). Zahn, *Ausstellung*, 71 ff., nos. 1-8. *Berl. Mus.* xxxv (1913-14), 71 ff. Jewellery of early third-century type.
- VARNA (ODESSUS). (1) Tumulus 1. *Bull. de la Société Archéologique de Varna*, x (1956), 100; pls. 1: 1-3, 2: 1, and 3: 1. Lamp of fourth-third century.
- (2) Tumulus 2. op. cit., 100; pls. 2: 2, 3: 1-4. Jewellery of the fourth-third century types.
- GALATA. Tumulus 6. *Bull. de la Société Archéologique de Varna*, viii (1951), 60 ff.; figs. 103, 112, 113. Jewellery of fourth-third century types.
- ITHACA. Tombs (Dr Lee's expedition, 1812). *Archaeologia*, xxxiii (1849), 36-54. Williams, *Gold and Silver Jewelry*, 147-53; pl. 18. *AD* i, 3; pl. 12. Von Stackelberg, O. M. *Die Gräber der Hellenen* (Berlin, 1837), pls. 73-4. Hellenistic jewellery.
- SYRACUSE. (1) Dammusi. *NS* 1915, 187. Tomb. Vases of late fourth century. For one, cf. Trendall, A. D. *Vasi del Vaticano*, ii (Vatican, 1955), pl. 34, no. Z 24. Another is of Gnathia ware.
- (2) Feudo. *NS* 1915, 234; fig. 37. Hoard of coins and jewellery. Buried in time of Agathocles (?). Late fourth century (?).
- MORGANTINA (SERRA ORLANDO). Cistern. *AJA* lxi (1957), 158; pl. 60, fig. 28. Coins of early second century.
- GELA. Hoard. *MA* xvii (1906), 539; fig. 371. Coins to c. 280. Must have been buried at destruction of Gela, c. 282.
- TARENTUM. Tomb 86. *NS* 1936-7, 179; pl. 9: 6. Hellenistic tear-bottles. Late fourth to first centuries B.C.
- CANOSA. 'Tomb of the Gold Ornaments'. *Iapigia*, vi (1935), 225-62. Becatti, nos. 353, 421, 427, 446-8. Mirror and glass of the third century.
- S. EUFEMIA (CALABRIA). *BMCJ* nos. 2113-29. *BMCR* no. 224. Coins of Agathocles (317-289). Early third century.
- TRESILICO. Tomb. *AA* xxix (1914), 198; fig. 9. Glass of third century.

- CUMAE. (1) Tomb (?). *MA* xxi (1913), 712; pl. 113. Jewellery of the late fourth or third century.
- (2) Tomb 157. *MA* xxii (1913), 621; pls. 114-16. Breglia, pl. 10. Late-fourth-century pottery. Hellenistic terracottas.
- TEANO DEI SIDICINI. Tombs. *MA* xx (1910), 6-152, esp. 39. Dated by pottery etc. of the late fourth and early third centuries. Tomb 79, Breglia, pl. 11.
- VULCI. (1) François Tomb. Messerschmidt, F. *Nekropolen von Vulci* (Berlin, 1930), 103 ff.; figs. 79-82. Family tomb, c. fifth to first centuries B.C. Jewellery belongs stylistically to the end of this period.
- (2) Tombs (in Vatican). *Museo Etrusco Vaticano*, i (Rome, 1842), pl. 74. Jewellery to be dated stylistically third to first centuries B.C. See above, pp. 214 and 216.
- VOLTERRA. (1) Poggio alle Croce. Tomb A. *St. Etr.* xxvii (1959), 258 f.; figs. 6 and 7. Coins of c. 225-50 B.C.
- (2) Monteriggioni. Family tomb of Calenii Sepus. *St. Etr.* ii (1928), 133-76. Associated finds of c. fourth to first centuries B.C. Urn 16 can be dated more exactly, by coins, to the late third century.
- PERUGIA. Tomb 30. Urn of Tannia Caia. Conestabile, G. *Mon. di Perugia*, iii (Perugia, 1855), 133; pl. 7-23, no. 9. About second century B.C.
- BETTONA. Tomb. *NS* 1916, 16; fig. 19. Coins of second century.
- TODI. Peschiera. Tombs 9 and 20 (at Florence). Contained Hellenistic jewellery. Third century. See above, p. 217.
- ANCONA. (1) Tomb 3. *NS* 1902, 460; fig. 29. Hellenistic tear-bottles. Late fourth to first centuries B.C.
- (2) Tomb 1. *NS* 1910, 349. Coins of third-second century.
- FILOTTRANO. Tombs. Dall' Osso, I. *Mus. Naz. di Ancona* (Ancona, 1915), 233, 234, 237, 285. Becatti, no. 303. About fourth-third century.
- MONTEFORTINO. Tombs 8, 23 and 32. *MA* ix (1901), pls. 3, 5 and 8. Bronzes of c. 300-250.
- CURIUM. (1) Old Tomb 69. *Excav. in Cyprus*, 85. *BMCJ* no. 1784. Coin of Alexander.
- (2) Old Tomb 80. *Excav. in Cyprus*, 83. *BMCJ* nos. 1728-9. Coin of Alexander.



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- MARION. (1) New Tomb 9. *SCE* ii, 206-10; pl. 38. Pottery and glass of 325-150.
- (2) New Tomb 58 (latest burial). *SCE* ii, 345-50; pl. 64. Tear-bottle, said to be Early Hellenistic.
- APHENDRIKA. Tomb 33. *R.D. Ant. Cyp.*, 1937-9, 62; pl. 31: i (5). Pottery of third and early second centuries.
- TOUKH EL QUARMOUS (EGYPT). Tomb. Rostovtzeff, *SEHHW*, i, 390; pl. 47. Amandry, 82. Coins of Ptolemy Soter (304-283).
- TANIS (EGYPT). House. Petrie, W. M. F. *Tanis*, i (London, 1885), 34; pl. 12: 45. Coins etc. of the first century B.C.
- KERCH. QUARANTINE ROAD. (The letters of identification given to these tombs are the present writer's.)
- (1) 'Tomb A.' *ABC*, 20. Schefold, 63. Coin of Philip II (359-36). Pottery of c. 330.
- (2) 'Tomb B'. *ABC*, 35. Rostovtzeff, *Sk. u. B.*, 188. Posthumous coin of Lysimachus, dated c. 250.
- (3) 'Tomb C'. *ABC*, 20. *AdI* 1840, pls. A-C. Rostovtzeff, *Sk. u. B.*, 186. Coin of Lysimachus; type not stated. Jewellery very like Tomb B. c. 250 (?).
- (4) 'Tomb D'. *ABC*, 19. *AdI* 1840, pls. A-C. Rostovtzeff, *Sk. u. B.*, 189. Coin of Leukon II (c. 250-225).
- (5) 'Tomb E'. *ABC*, 19. *AdI* 1840, pls. A-C. Schefold, 139. Pottery of early fourth century, but jewellery, by all other standards, is Hellenistic.
- TAMAN. (1) Great Blisnitza. See p. 212. The graves of the 'Priestess' and the 'Third Lady', and the 'Man's Grave' overlap this period and the preceding. The 'Burnt Grave' falls entirely into this period; c. 330-320.
- (2) Artjukhov's Barrow. *CR* 1880, pls. 1-4. Minns, 433. Posthumous coin of Lysimachus, 200-150. Coin of Pairisades, not certainly datable. Pottery of second century B.C. Rostovtzeff, *SEHHW*, iii, 1411. *Jahrb. des röm-german. Zentralmus. Mainz*, v (1958), 94 ff. *Sovietskaya Arkheologiya*, 1960, 46-58.
- (3) Tomb. *AA* xxviii (1913), 179; fig. 2. Jacobsthal, *Pins*, 70. Coin of Alexander. Pottery of 320. Later fourth century.
- (4) Tomb. *AA* xxvii (1912), 335; fig. 19. Coin of Alexander.
- KUBAN. Karagodeuashkh Tomb. Minns, 217. Jewellery of later fourth century (earrings exactly as in Dammusi Tomb at Syracuse).

## 16. ROMAN

## GENERAL WORKS

Brailsford, *Antiqs. of Roman Britain*.

Schreiber, 293-311.

## PRE-IMPERIAL ROME

Bloch, R. *The Origins of Rome* (London, 1960).

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## SITES

POMPEII AND HERCULANEUM. Houses. (1) Breglia and (2) Siviero, *passim*. Most jewellery should be of the first century A.D., to 79, but some may be earlier.

BOSCOREALE. House. *Mon. Piot*, v, 263-74. As for Pompeii and Herculaneum.

ROME. Sarcophagus of Crepereia Tryphaena. Becatti, no. 525. Sarcophagus in style of later second century.

ACAMPORE. Incineration. *Fasti*, i (1946), no. 1928; figs. 61-3. Coins of second and third centuries.

ZARA. Tombs. *ILN* 9.1.1932, 50; fig. 9. Associated finds most (perhaps all) of the first century A.D.

LYONS. Tomb. Comarmond, A. *Description de l'écrin d'une dame romaine trouvé à Lyon en 1841* (Paris and Lyons, 1844). Coins to 211.

VILLARDU. Sambon, A. *Collection de M. Guilhou, Objets Antiques* (Paris, 1905). Lots 198-208. Coins of third century.

BEAURAINS (NR. ARRAS). Treasure. Babelon, J. A., and Duquenoy, A. 'Médaillons d'or du Trésor d'Arras', *Aréthuse*, Jan. 1924, 45-52. *Numismatic Chronicle*, xiii (1933), 268-348. Bastien, P. *Bulletin de la Société Académique des Antiquaires de la Morinie*, xix, fasc. 358, March 1959. Coins, the latest of the early fourth century.

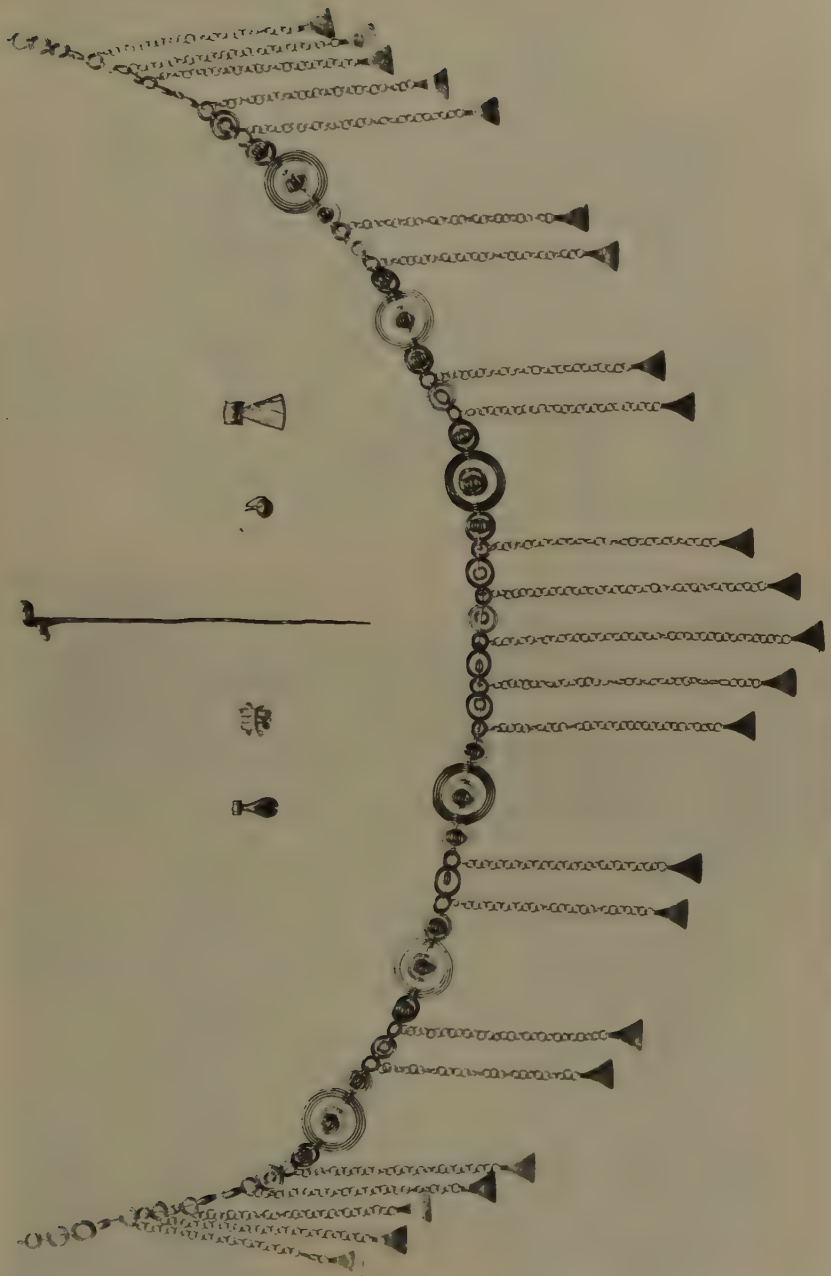
BACKWORTH. Tomb. *BMCJ* nos. 2738-40. *BMCR* nos. 451, 460, 461, 636, 943. Coins to 139.

RHAYADER. Tomb. Brailsford, *Antiqs. of Roman Britain*, 14, 28. Uncertain date.

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- CARLISLE: NEWTOWN. Tomb. Brailsford, *Antiqs. of Roman Britain*, 28. Coins to 180.
- CASTLETHORPE (BUCKS). Tomb. *Archaeologia*, xxxiii (1849), 348. *BMCR* no. 1162. Coins, 138-169.
- ILCHESTER. Tomb. *BMCR* no. 267. Coins, 222-235.
- NEW GRANGE (IRELAND). Tomb. *Archaeologia*, xxx (1844), 137; pl. 12. *BMCJ* nos. 2744, 2795-6. Coins of Geta (d. 212).
- SLAY HILL SALTINGS (KENT). Tomb. *BMCR* nos. 1164-6. Coins of Marcus Aurelius (161-180).
- ATHENS. (1) Tomb. *Hesperia*, vi (1937), 366; fig. 27. Roman date.  
(2) Bathing establishment. *Hesperia*, xviii (1949), 226; pl. 46: 6, 7, 8. *Terminus ante quem*: 250-300.
- PEIRAEUS. Tomb. Segall, nos. 93-8. Jewellery of the early first century A.D.; dated by two engraved rings.
- SIPHOS. Graves 14 and 23. *BSA* xliv (1949), 80 ff.; pl. 31. Coins of A.D. 75-80.
- CURIUM. Ayios Ermoyenis, Tomb 8, Burial 4. *AJA* l (1946), 449-489; pl. 45. Lamps of the Augustan period.
- VASA (CYPRUS). Tombs. *R.D. Ant. Cyp.*, 1940-8, pl. 3: 5 (no. 53). Glass of first to third centuries A.D.
- SHURAFI (EGYPT). Cemetery. Petrie, W. M. F., and Mackay, E. *Heliopolis, Kafr Amman and Shurafa* (London, 1915), pl. 52. The town is said not to have been founded much before the third century A.D. (but the jewellery is of first or early second century date).
- TÉNÈS (ALGERIA). 'The Ténès Treasure'. Heurgon, J. *Le Trésor de Ténès* (Paris, 1958). Jewellery of the fourth century.
- ELEUTHEROPOLIS (PALESTINE). Tomb. *Journal Internationale d'Archéologie Numismatique*, x (1907), 230; pl. 7. Coins of first and second centuries.
- TARSUS. 'The Tarsus Treasure'. *Revue Numismatique*, xiii (1868), 309-36. *BMCR* nos. 188, 268, 801. Coins, to 243.
- DOURA EUROPOS. Hoard. Baur, P. V. C., and Rostovtzeff, M. I. *Excavations at Doura Europos, The Second Season*, 78; pls. 15, 44-6. Coins of the third century.
- KERCH. (1) Tomb. *CR* 1881, 46; pl. 1: 10. Coin of Kotys I (45-62).  
(2) Tomb. Minns, 407; fig. 295. First century A.D.





I. EARLY HELLADIC JEWELLERY. C. 2000 B.C.



A



B



C



D

2. EARLY MINOAN JEWELLERY. 2200-2000 B.C.



A

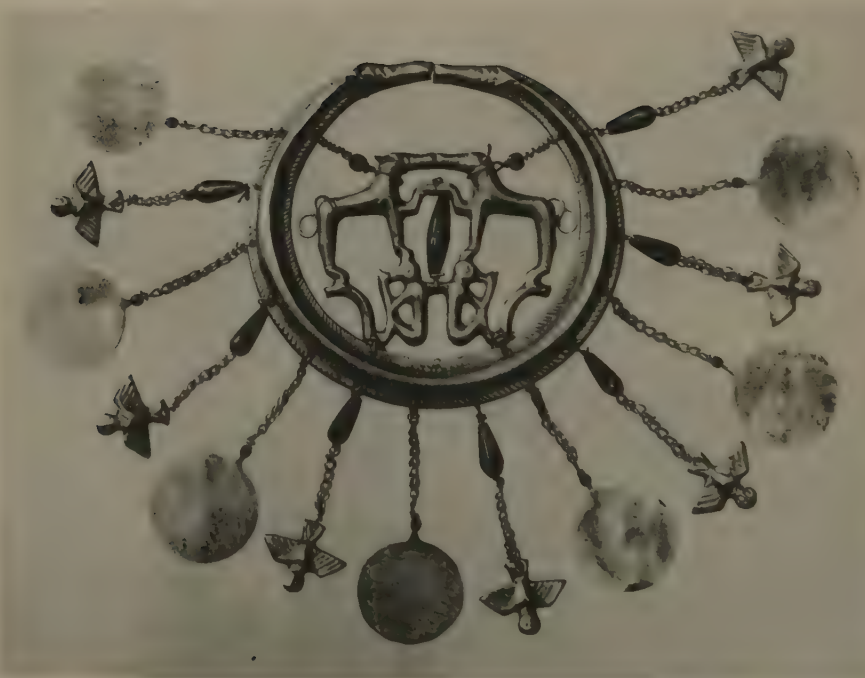


B

3. MIDDLE MINOAN JEWELLERY. 1700-1600 B.C.



A



B

4. MIDDLE MINOAN JEWELLERY. 1700-1600 B.C.





A



B



C



D



E



A



B

6. MYCENAEAN JEWELLERY. 1550-1500 B.C.



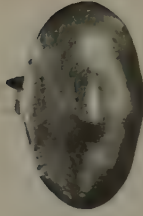
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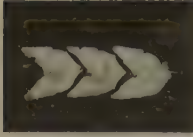
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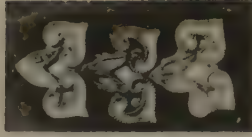
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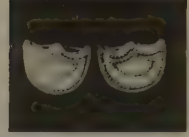
9. MYCENAEAN NECKLACE. 1450-1400 B.C.



A



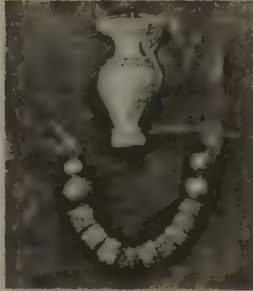
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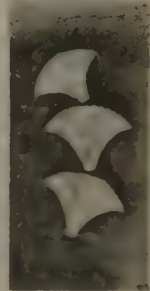
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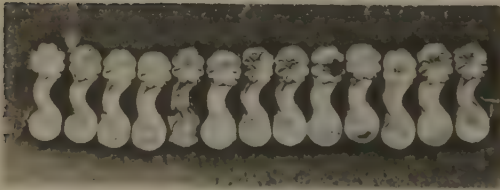
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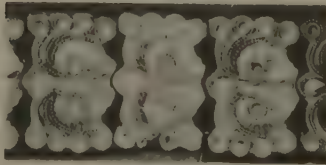
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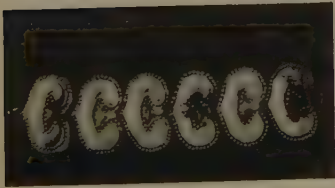
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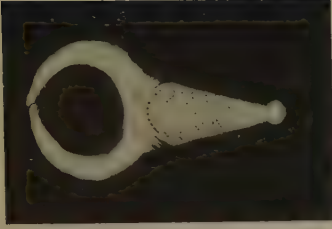
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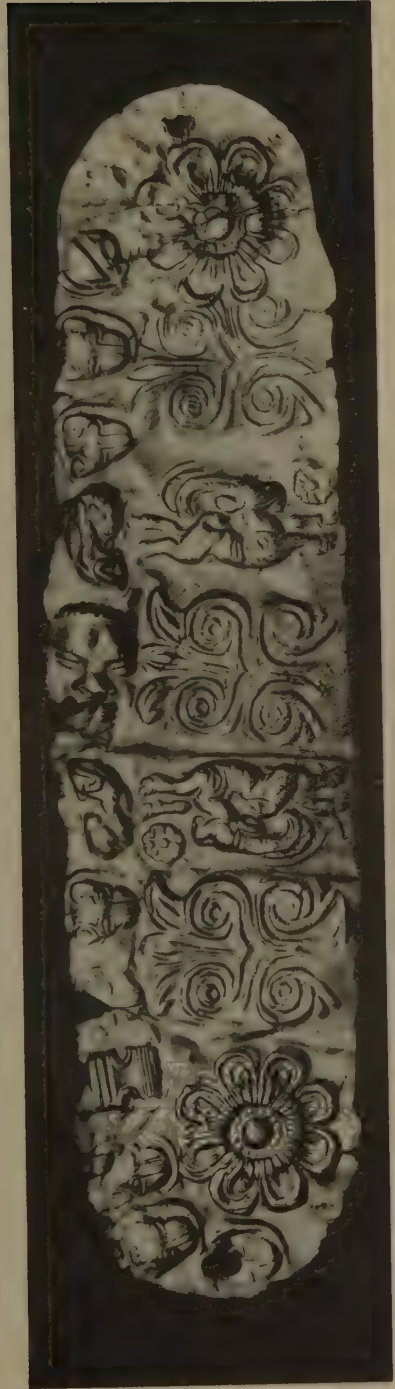
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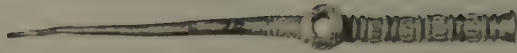


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D

II. MINOAN AND MYCENAEAN JEWELLERY. 1400-1100 B.C.



A



B



C



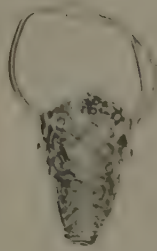
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13. GREEK JEWELLERY: ATTIC. 1100-700 B.C.



A



C



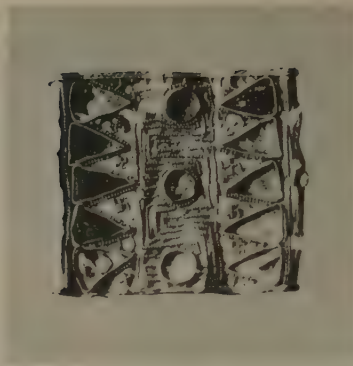
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14. GREEK JEWELLERY: ATTIC AND CRETAN. 800-650 B.C.

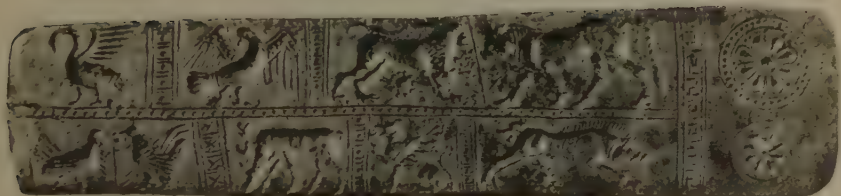


A



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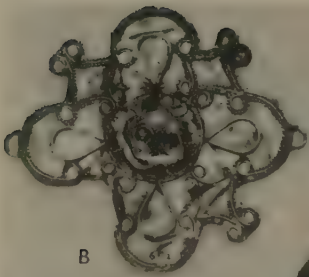
F



15. GREEK JEWELLERY: PELOPONNESIAN. 800-600 B.C.



A



B

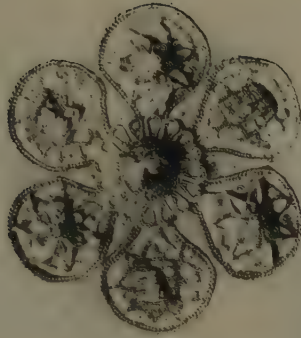


C



D

16. GREEK JEWELLERY: CRETAN. 700-650 B.C.



A



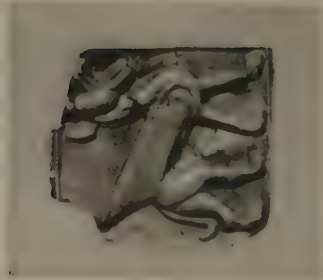
B



C



D



A



B



C



D



E

18. GREEK JEWELLERY: RHODIAN. 700-600 B.C.



A

B



C



D



E



19. GREEK JEWELLERY: RHODIAN. 700-600 B.C.

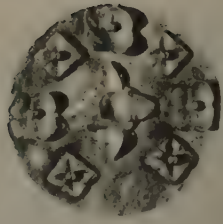


20. GREEK JEWELLERY: RHODIAN. 700-600 B.C.





21. GREEK JEWELLERY: EPHEBUS. 700-600 B.C.



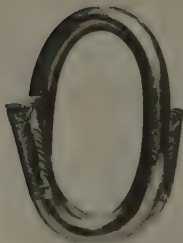
A



B



C



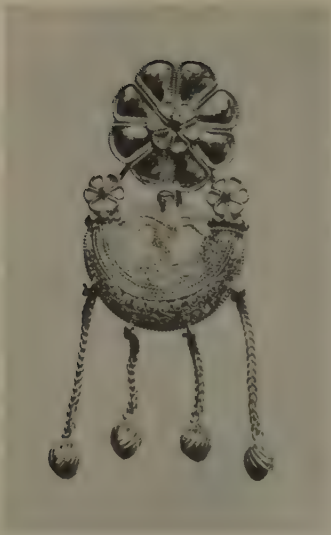
D



E



23. GREEK WREATH. 500-300 B.C.



A



B



C

D

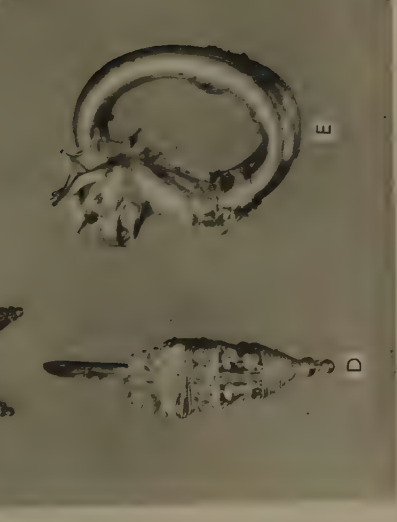
E



F G



24. GREEK JEWELLERY. 450-350 B.C.



25. GREEK EARRINGS. 450-330 B.C.



26. GREEK NECKLACES, 500-400 B.C.



27. GREEK NECKLACES. 450-350 B.C.



28. GREEK NECKLACE. 400-350 B.C.





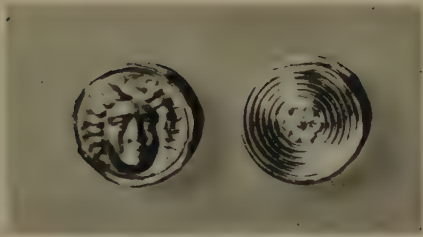
29. GREEK PENDANT. 375-350 B.C.



A



B

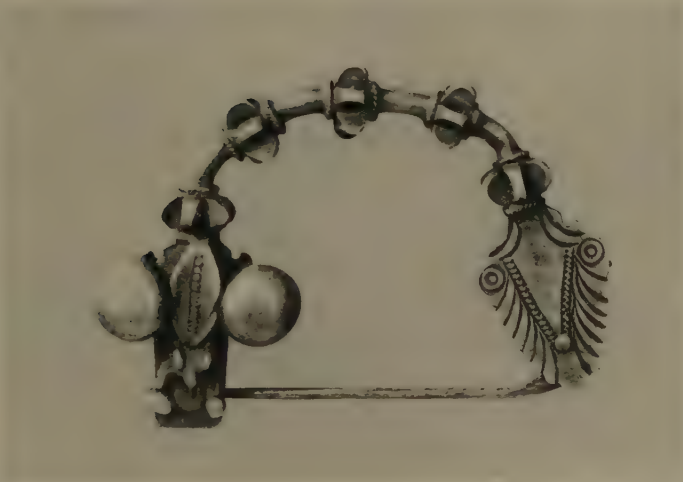


A

C



B



D



31. GREEK JEWELLERY. 500-330 B.C.



A



B



C



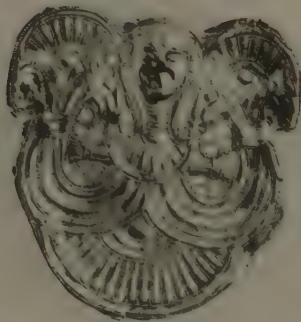
D



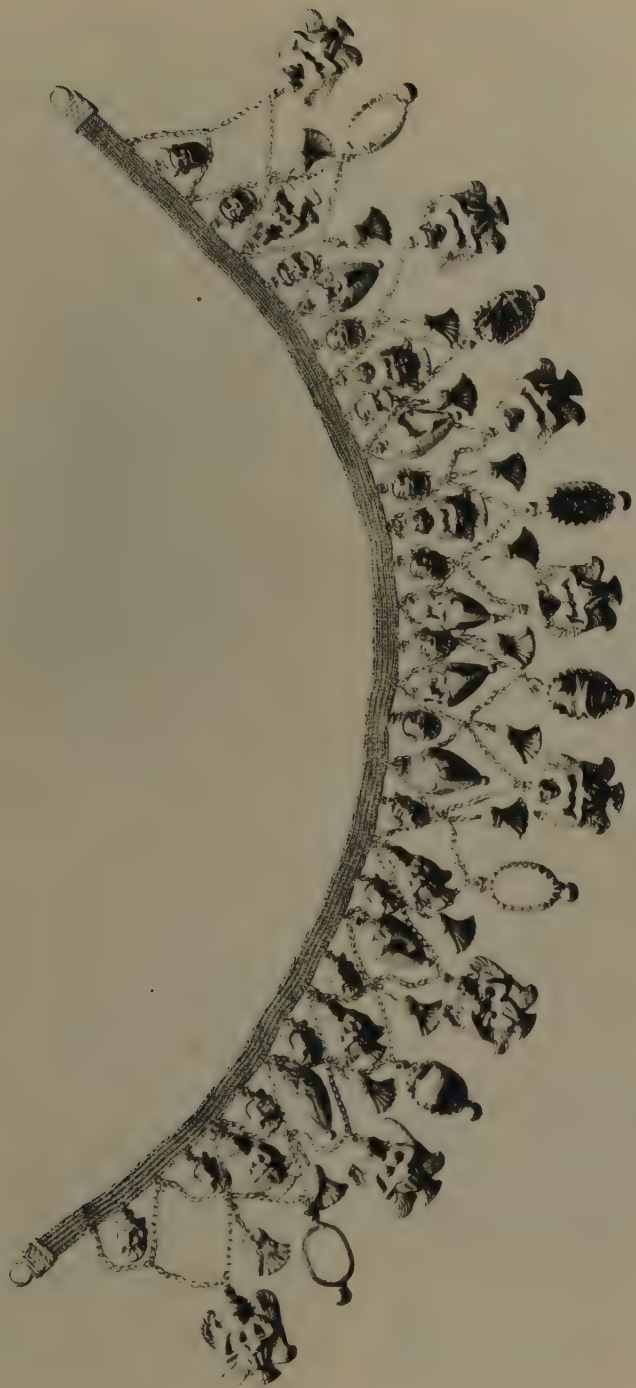
E



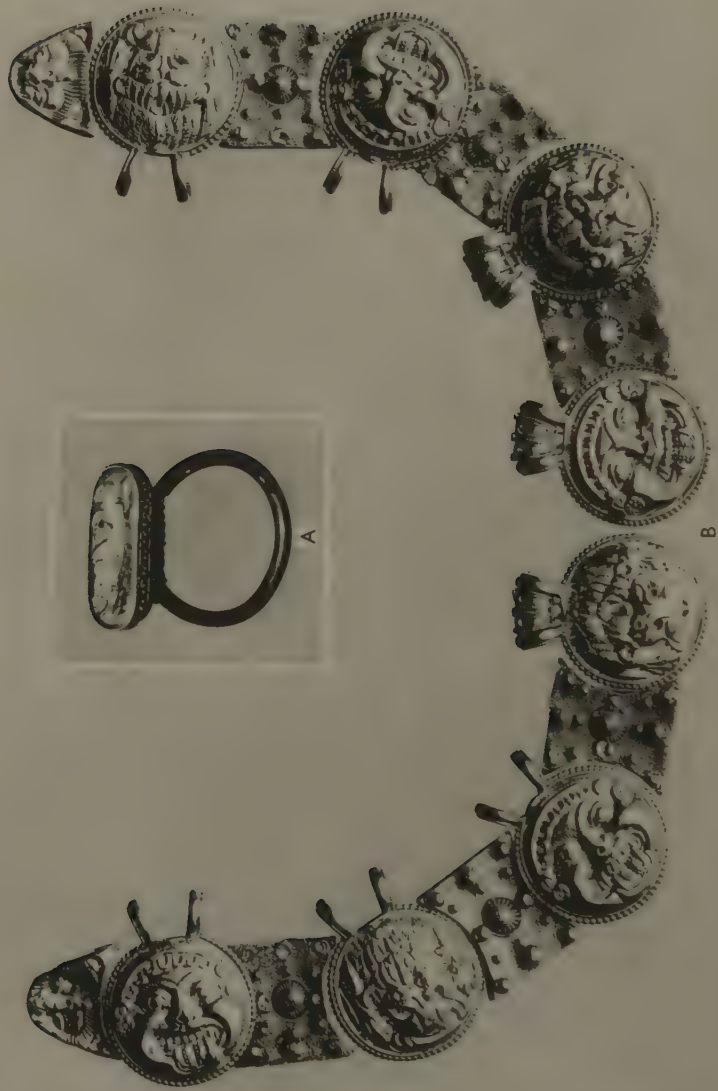
F



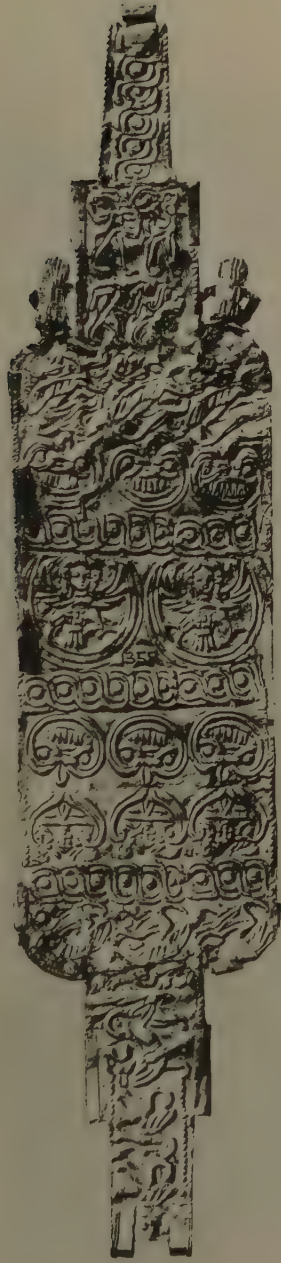
G



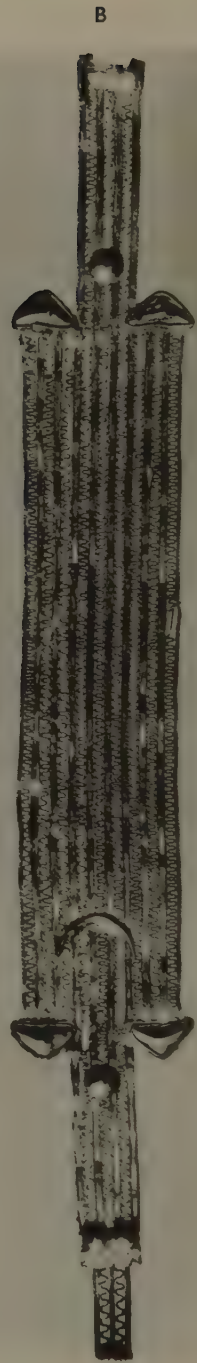
33. ETRUSCAN NECKLACE. 500 B.C.



34. ETRUSCAN JEWELLERY. 625-500 B.C.

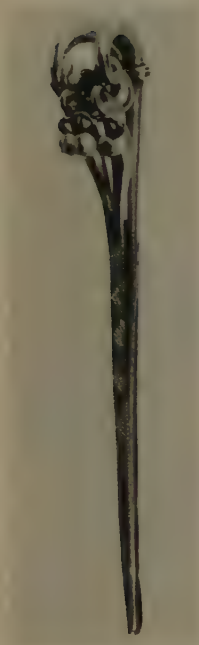


35. ETRUSCAN BRACELETS. 700-600 B.C.

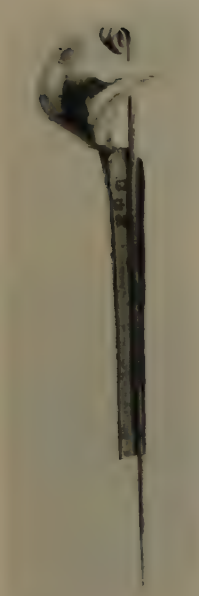


36. ETRUSCAN BRACELETS. 700-600 B.C.



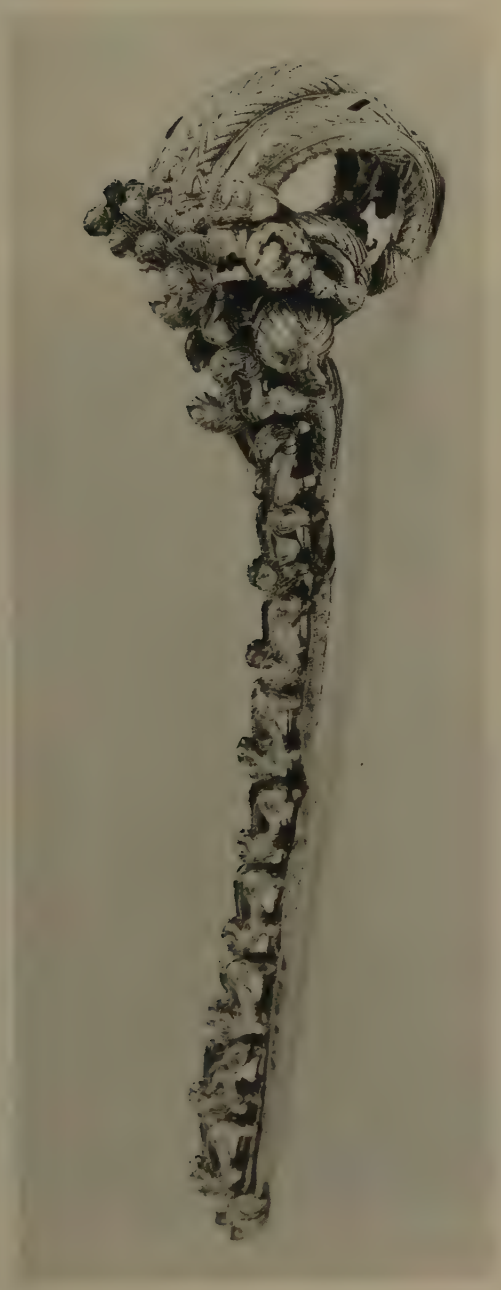


A



B

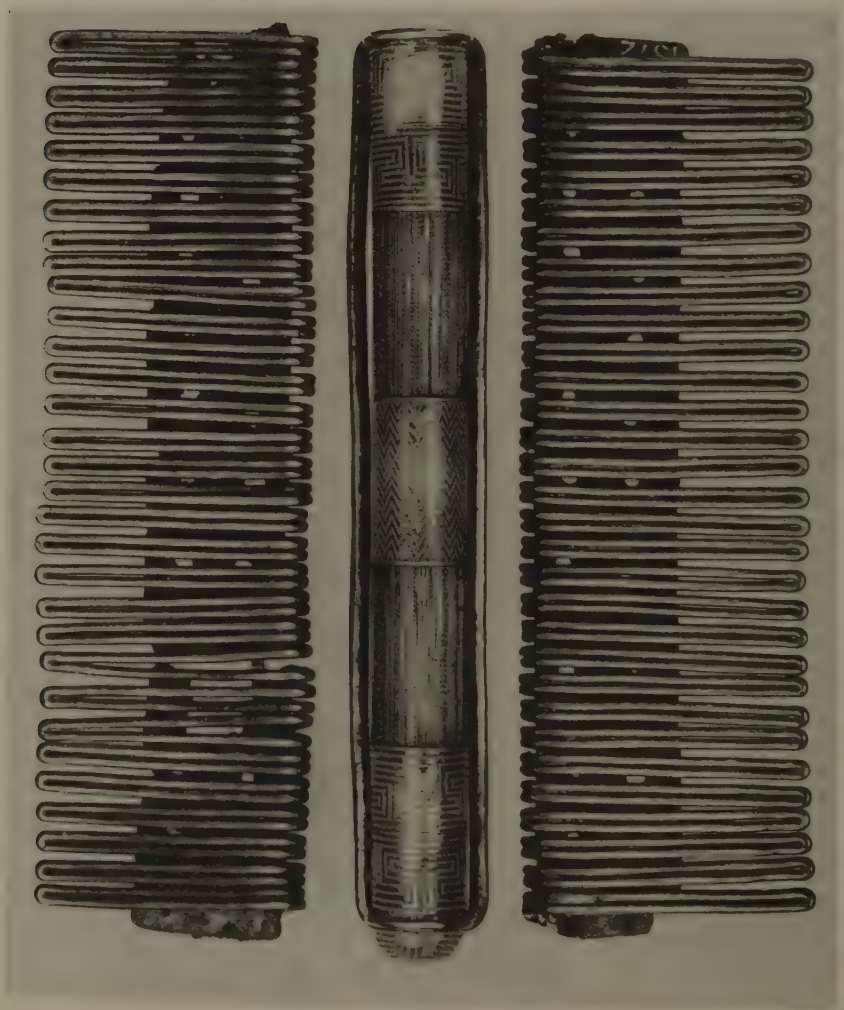
C



37. ETRUSCAN FIBULAE. 700-600 B.C.



A



B

38. ETRUSCAN FIBULAE. 700-600 B.C.



A



B



C

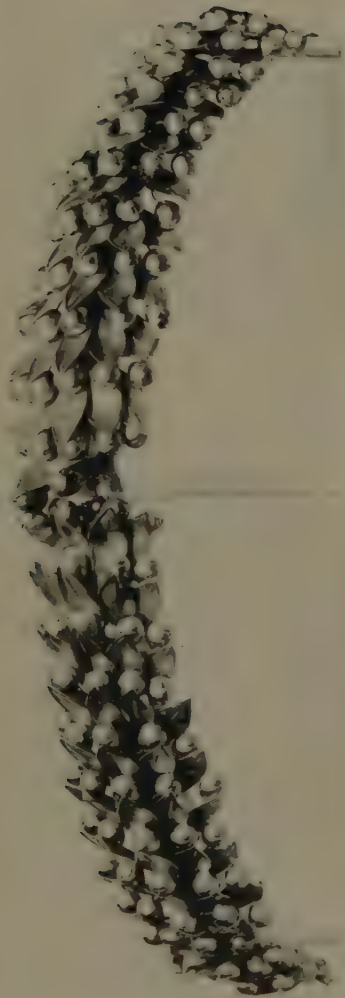


D

39. ETRUSCAN JEWELLERY. 700-500 B.C.



40. ETRUSCAN FIBULA. c. 650 B.C.



A

B



41. ETRUSCAN WREATHS. 400-250 B.C.



A



B

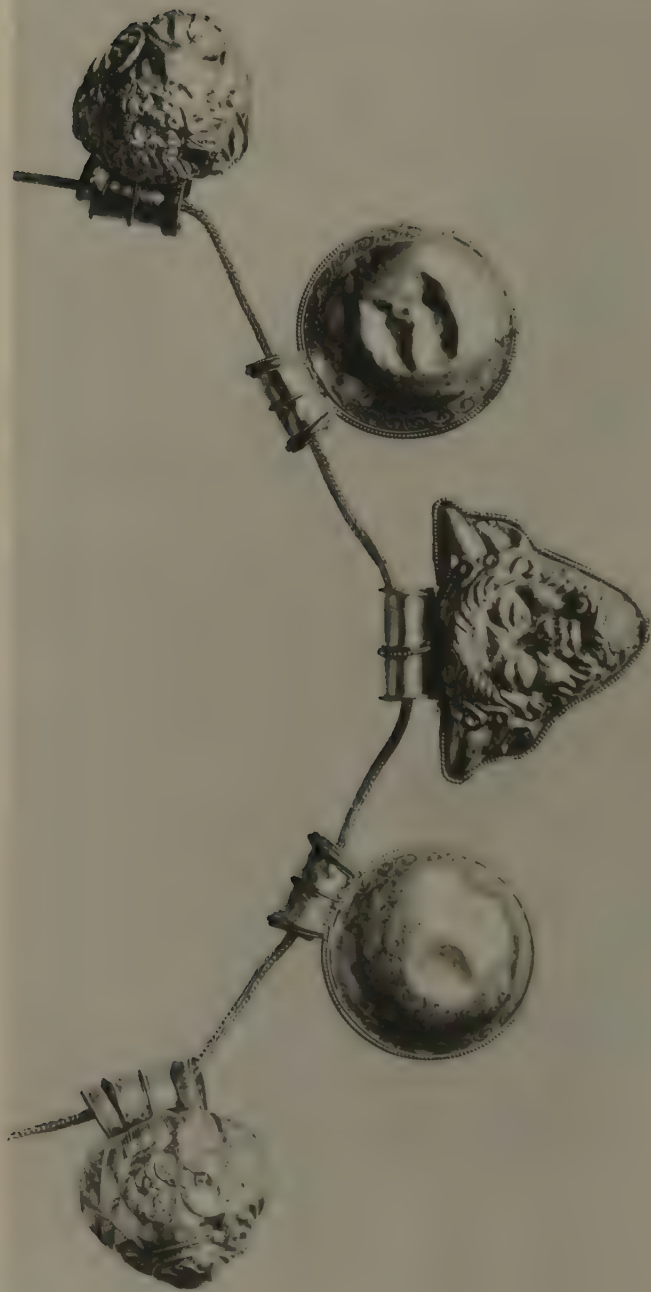


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43. ETRUSCAN JEWELLERY. 600-250 B.C.



44. ETRUSCAN NECKLACE. 400-350 B.C.



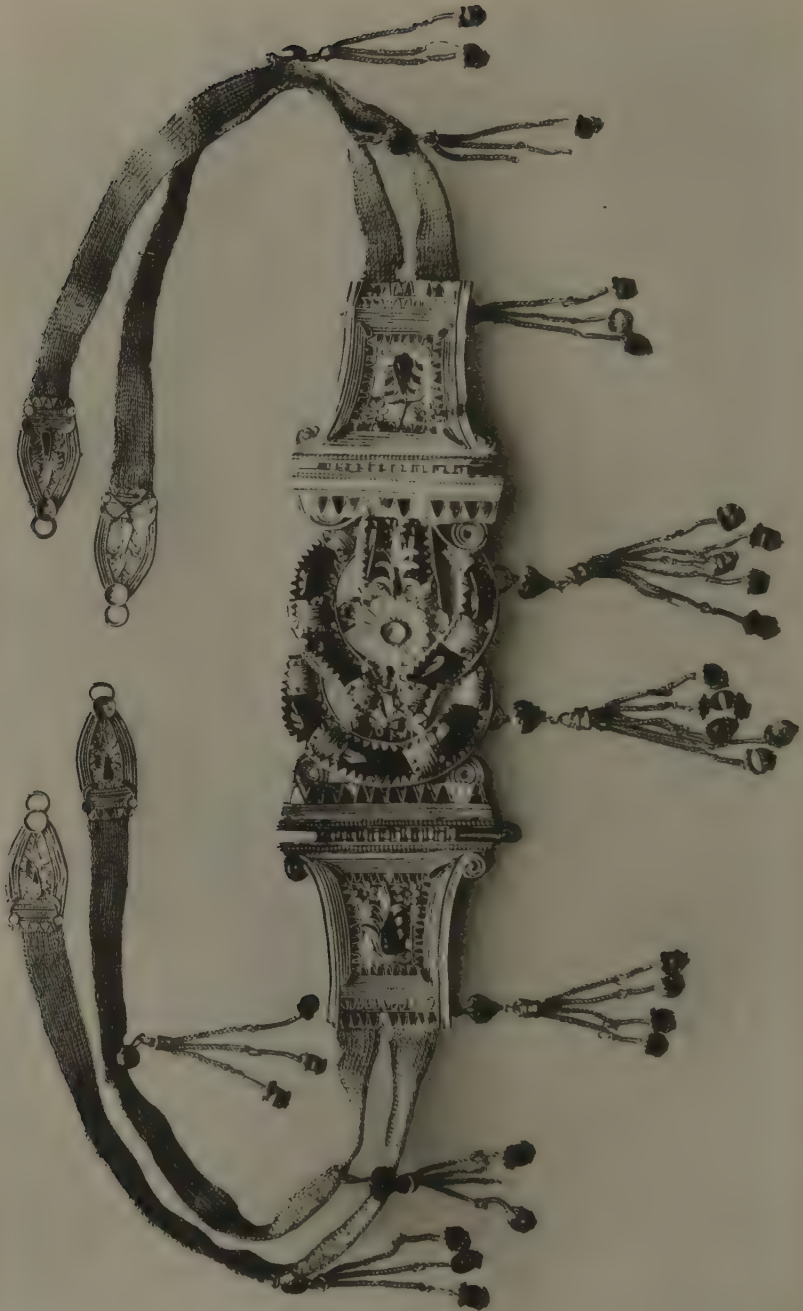


A



B

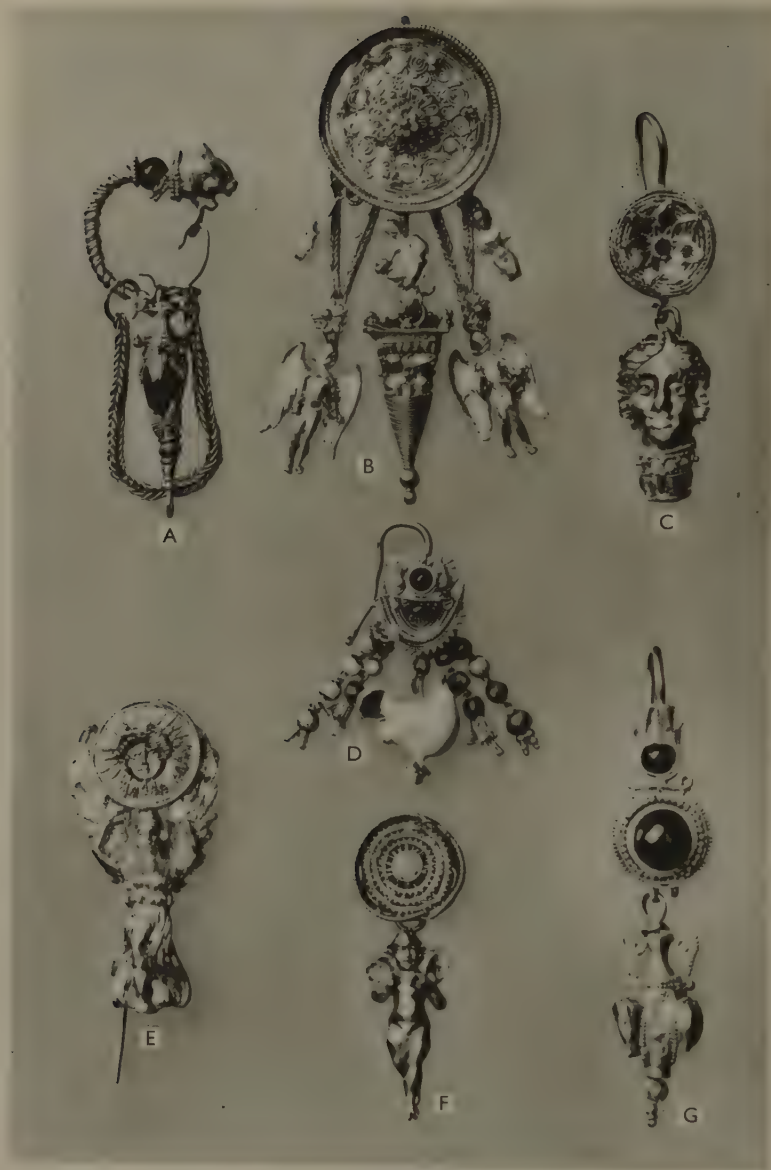
45. HELLENISTIC DIADEMS. 300-100 B.C.



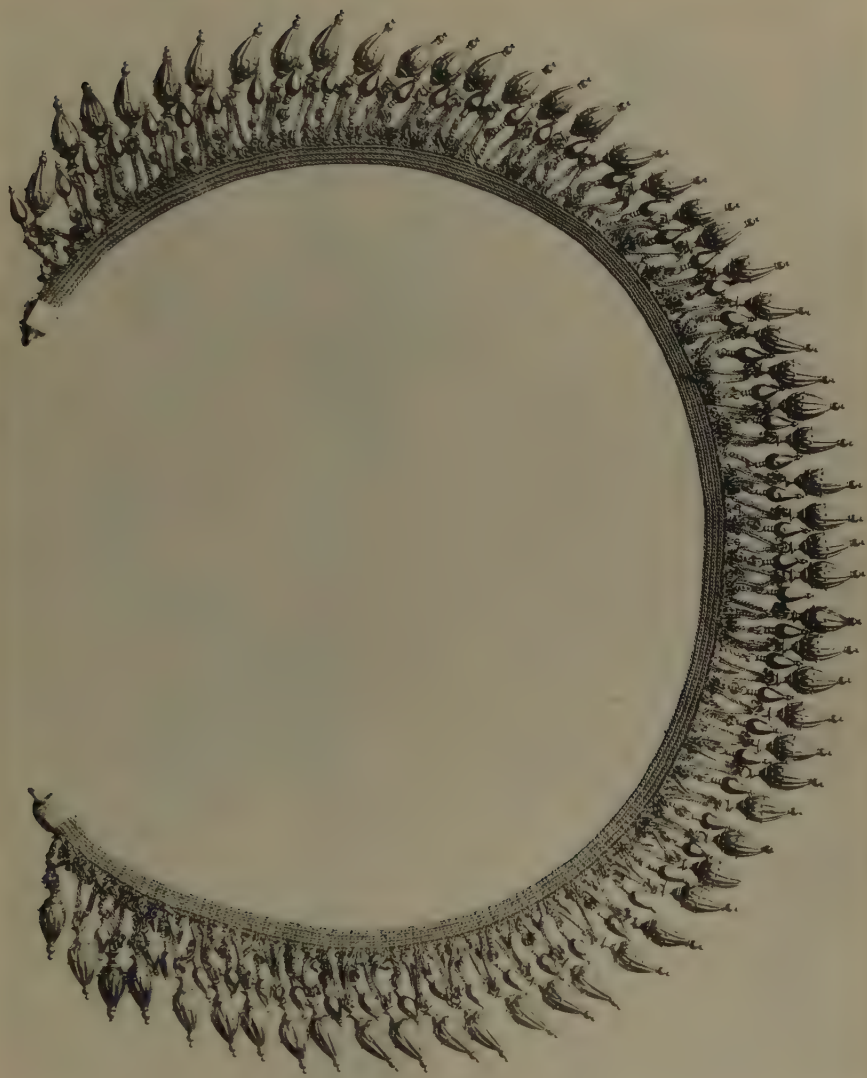
46. HELLENISTIC DIADEM. 250-150 B.C.



47. HELLENISTIC EARRINGS. 330-27 B.C.



48. HELLENISTIC EARRINGS. 330-27 B.C.



49. HELLENISTIC  
NECKLACE.  
330-200 B.C.



50. HELLENISTIC NECKLACE. 200-100 B.C.



A



B

51. HELLENISTIC NECKLACES. 200-27 B.C.



52. HELLENISTIC MEDALLION. 200-150 B.C.





A



B



C



D

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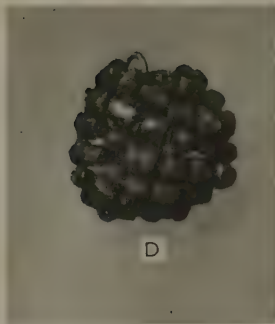
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H



54. ROMAN EARRINGS. 27 B.C.—A.D. 330



A



B

55. ROMAN NECKLACES. A.D. 100-300

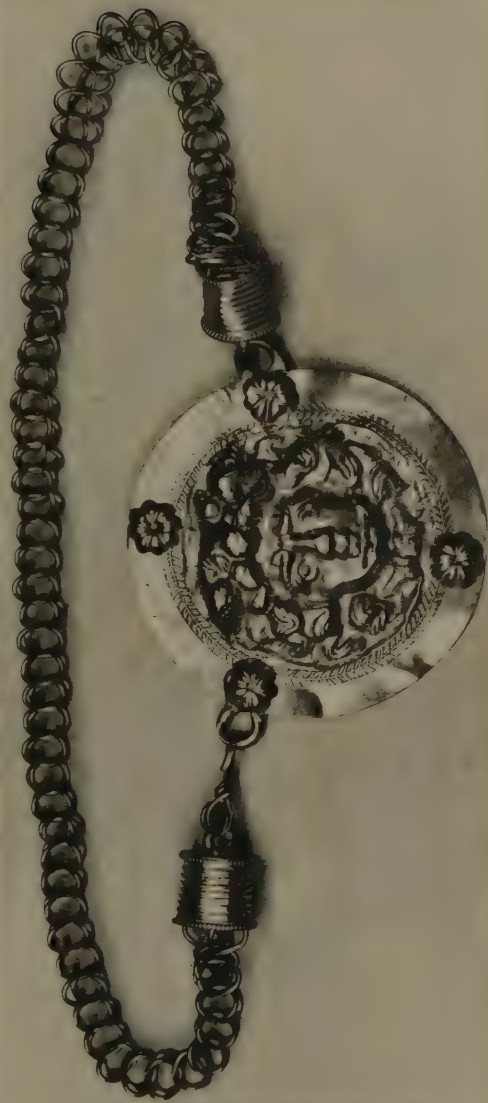


56. ROMAN NECKLACE. c. A.D. 100



A

B



57. ROMAN NECKLACES. C. A. D. 200



58. ROMAN NECKLACE. 27 B.C.—A.D. 100



A



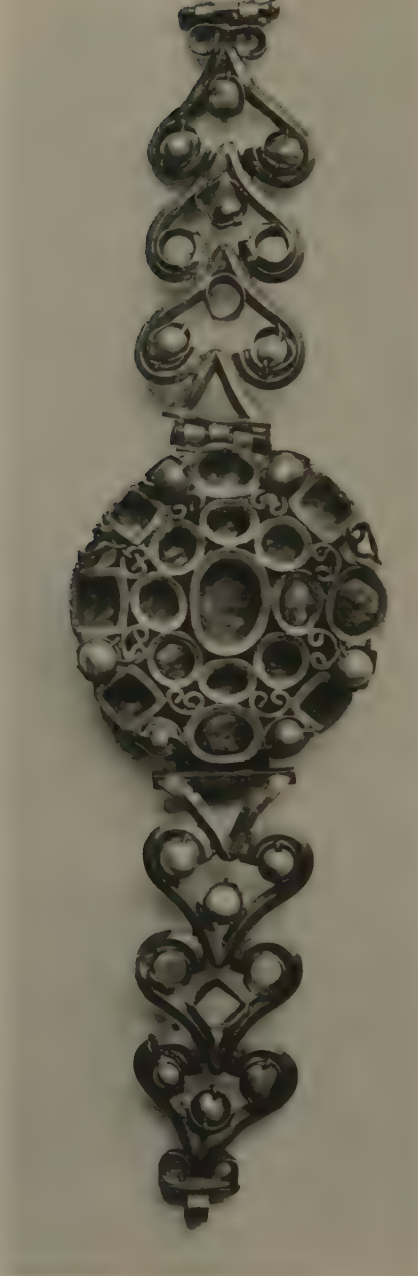
B

59. ROMAN BRACELETS. 27 B.C.—A.D. 50



A

B



60. ROMAN BRACELETS, 27 B.C.—A.D. 250

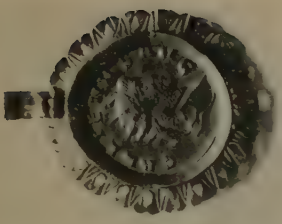




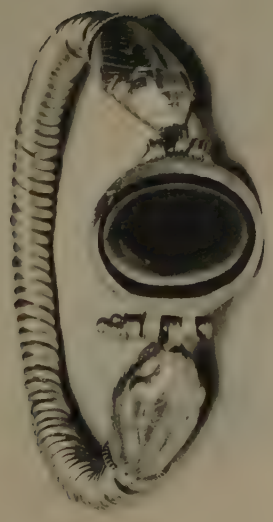
A



B



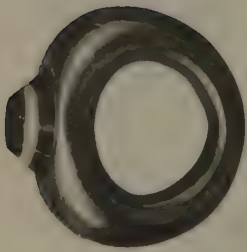
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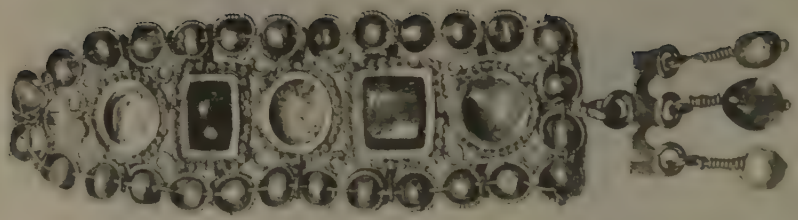
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D



E



A



B



C



D



E



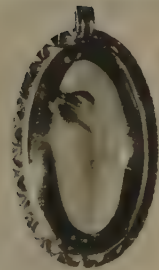
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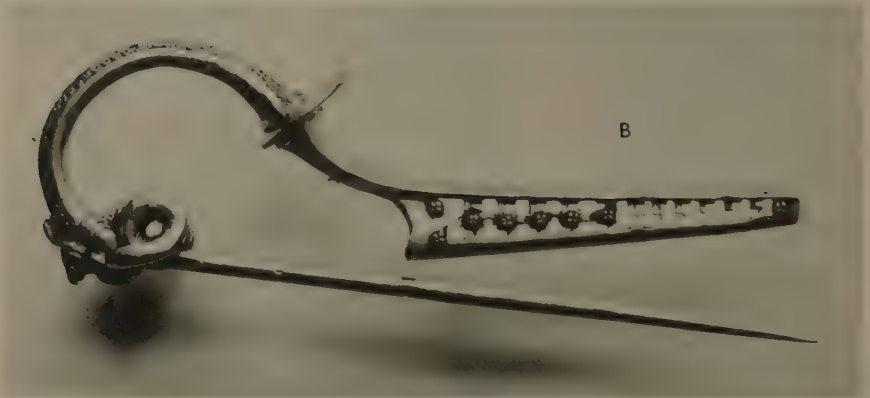
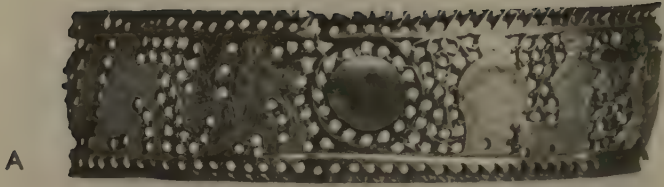
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The term *Orientalizing* is here used, for the sake of brevity, for the period covered by Chapter 11. It has been avoided in the text because it has a somewhat different chronological significance to students of vases, by whom it is commonly used.

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*The photograph on the front of the jacket is  
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# Greek Painted Pottery

R. M. COOK

63s net

# Greek Coins

CHARLES SELTMAN

60s net

# Roman Coins

HAROLD MATTINGLY

63s net

# Anglo-Saxon Coins

EDITED BY R. H. M. DOLLEY

63s net

# Orpheus and Greek Religion

W. K. C. GUTHRIE

30s net

# The Foundations of Roman Italy

J. WHATMOUGH

30s net

# Gemstones

G. F. HERBERT SMITH

50s net

