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The Bronze Italian Helmet: The development of the *Cassis*
from the last quarter of the sixth century B.C. to the
third quarter of the first century A.D.

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Abstract.

This thesis is a study of the bronze Italian helmet over six centuries, from the last quarter of the sixth century B.C to the end of the 1st century A.D. It surveys and examines the mainstream development and evolution of the helmet in the Apennine peninsula, in particular the nine major forms which dominate the equipment of the Italian warrior during this period i.e. The Apulo-Corinthian, the Negau, the Italo-Chalkidian, the Etrusco-Thracian, the Italo-Pilos, the Samno-Attic, the Montefortino, the Coolus and the Hagenau helmets. Starting from the premise that the majority of helmets no matter of what form, were intended to be functional and that their evolution is entirely dependent upon the type of warfare for which each form was developed, the changing nature of that warfare and the cultural affinities of the people who used it, this thesis discusses the external agencies and cultural influences that can be traced in the development of each form, the origins of the forms themselves and provides a definitive typology for each. Where possible it also establishes an absolute chronology for these typologies, based upon dated examples, the stylistic evolution of form, the size and shape of the helmet bowl, its decoration and standards of manufacture and finish.

Due to the complexities of the manufacturing processes involved in the production of bronze helmets and as many of the techniques used were common to all forms this study commences with an examination of these processes and the tools and technology employed including an examination of the growth of mass-production technique in Italian helmet production. Where possible workshop groups have been isolated

for each form and areas of regional production defined. This analysis is based on a detailed examination and comparison of the distribution of each type within each form, their dating, fittings i.e crest-fixtures, cheek-pieces etc and their decoration and its possible derivation.

Finally the functional aspects of the bronze Italian helmet are discussed and attempts are made to account for the overwhelming popularity of the Montefortino helmet which from the the end of the third century B.C. had eclipsed all other Italian helmet forms. It examines the disappearance of the majority of these culturally distinct types which is a marked feature of Rome domination of Italy. It concludes therefore that it is Rome's centralisation of production under her political and military control that led to the suppression of the widespread indigenous Italian arms industries and inevitably led to the progressive rearmament of the Apennine peninsula after the Roman and ultimately Celtic fashion and therefore that it is Rome's cultural control of Italy that led to the supremacy of the Montefortino helmet.

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77. A map showing the distribution of Italo-Chalkidian helmets.

78:1. An Italo-Chalkidian helmet of Type I, from a grave at Paestum. Now in the Museo Nazionale Naples.

78:2. An Italo-Chalkidian helmet of Type II, from a grave at Vulci. Now in the Bibliothèque Nationale, Paris. (2013, 5650).

78:3. An Italo-Chalkidian helmet of Type III, from a grave at Todi. Now in the Museo Nazionale di Villa Giulia (27,184-86).

79:4. An Italo-Chalkidian helmet of Type IV, from Perugia. Now in the Musée de Louvre, Paris. (1104, C6698)).

79:5. An Italo-Chalkidian helmet of Type IV, from the necropolis of Santa Guilliana near Perugia. Now in the Museo Nazionale, Perugia. (1101.).

79:6. An Italo-Chalkidian helmet of Type IV, from the Frontone Necropolis near Perugia. Now in the Museo Nazionale, Perugia. (361.).

80:7. An Italo-Chalkidian helmet of Type IV, from the Frontone Necropolis near Perugia. Now in the Museo Nazionale, Perugia. (354 B1654.).

80:8. An Italo-Chalkidian helmet of Type IV, unprovenanced but from the Marche. Now in the Museo Archeologico, Florence. (1238.).

81:9. An Italo-Chalkidian helmet of Type V, from the Abruzzo. Now in the Collection Leopardi in Penne.

81:10. An Italo-Chalkidian helmet of Type V, from Locri. Now in the Museo Nazionale, Naples. (5737.).

81:11. An Italo-Chalkidian helmet of Type V, from a grave at Ruvo. Now in the British Museum. (2830,1856,12-26.616.).

82:12. An Italo-Chalkidian helmet of Type VI, from Cerveteri, Lazio, Italy. Now in the Musée des Beaux Arts, Lyons. (X228.).

82:13. An Italo-Chalkidian helmet of Type VI, from Apulia, Italy. Now in the British Museum. (2822,1873-8-20.225.).

82:14. An Italo-Chalkidian helmet of Type VI, unprovenanced but from Italy. Its present whereabouts unknown.

83:15. An Italo-Chalkidian helmet of Type VI, from Metaponto. Now in the Museo Poldi Pezzoli, Milan. (N872).

83:16. An Italo-Chalkidian helmet of Type VII, from Locri. Now in the Museo Nazionale, Naples.

83:17. An Italo-Chalkidian helmet of Type VII, unprovenanced but from southern Italy. Now in the Museo Castel S. Angelo. (2010.).

84:18. An Italo-Chalkidian helmet of Type VII, unprovenanced but from southern Italy. Now in the Greek Museum, University of Newcastle upon Tyne (101.).

84:19. An Italo-Chalkidian helmet of Type VII, unprovenanced but from southern Italy. Now in the Museo Gregoriano Etrusco in the Vatican (12303.).

84:1. A crest-fixture of the type found on helmet No.11.

85:1. An Italo-Chalkidian cheek-piece of Type I.

85:2. An Italo-Chalkidian cheek-piece of Type II.

85:3. An Italo-Chalkidian cheek-piece of Type III.

85:4. An Italo-Chalkidian cheek-piece of Type IV.

85:5. An Italo-Chalkidian cheek-piece of Type V.

85:6. Method of securing the chin-strap on an Italo-Chalkidian helmet.

86:1. An Etruscan fresco from Chiusi, depicting a warrior wearing a helmet of Type VI.

86:2. An Etruscan fresco from Ceri, depicting a warrior wearing a helmet of Type IV.

87. An Etrusco-Thracian helmet.

88. A map showing the distribution of Etrusco-Thracian helmets.

89:1. An Etrusco-Thracian helmet of Type IB, from Italy. Now in the Musée des Beaux Arts Lyons (X924).

89:2. An Etrusco-Thracian helmet of Type IB, from Italy. In the collection of M. Le Marois.

89:3. An Etrusco-Thracian helmet of Type IA, from a tomb at Orsogna near Chieti. Now in the Museo Nazionale Chieti (4408.)

90:4. An Etrusco-Thracian helmet of Type IA, from Egnatia. Now in the Museo Nazionale Naples.

90:5. An Etrusco-Thracian helmet of Type IB, from Italy. Now in the Musée des Beaux Arts Lyons (X 924.)

90:6. An Etrusco-Thracian helmet of Type IB, from the Necropolis del Frontone near Perugia. Now in the Museo Nazionale Perugia. (358 B1251.)

91:7. An Etrusco-Thracian helmet of Type IB, from Monteluca near Perugia. Museo Nazionale Perugia (328 B1323.)

- 91:8. An Etrusco-Thracian helmet of Type IB, from the necropolis of Santa Giuliana near Perugia. Now in the Museo Nazionale Perugia (SG./32/1.).
- 91:9. An Etrusco-Thracian helmet of Type IB, from central Italy. Now in the Antiken Museum Berlin. (L 37.).
- 92:10. An Etrusco-Thracian helmet of Type IB, from Perugia. Now in the Antiken Museum Berlin (L 36.).
- 92:11. An Etrusco-Thracian helmet of Type IB, from Italy. Now in the Museo Arqueologico Madrid (MAN. 7359.).
- 92:12. An Etrusco-Thracian helmet of Type IB, from Italy. Now in the Antiken Museum Berlin (L 38.).
- 93:13. An Etrusco-Thracian helmet of Type IB, from Italy. Now in the Antiken Museum Berlin (10395.).
- 93:14. An Etrusco-Thracian helmet of Type IB, from Perugia. Now in the Antiken Museum Berlin (L 69.).
- 93:15. An Etrusco-Thracian helmet of Type II, from central Italy. Now in the Museo Gregoriano Etrusco in the Vatican (A47.).
- 94:16. An Etrusco-Thracian helmet of Type II, from central Italy. Now in the Museo Gregoriano Etrusco in the Vatican (A43.).
- 94:17. An Etrusco-Thracian helmet of Type III, from Toscana. Now in the Badisches Landesmuseum Karlsruhe (F433.).
- 94:18. An Etrusco-Thracian helmet of Type III, from Vulci. Now in the British Museum (2721 1837.6.9.91.).
- 95:19. An Etrusco-Thracian helmet of Type III, from Bomarzo Piamiano. Now in the Museo Gregoriano Etrusco in the Vatican (12.307.).
- 95:20. An Etrusco-Thracian helmet of Type III, from Campania. Now in the Musée de L'Armée Paris (E.9.).
- 95:21. An Etrusco-Thracian helmet of Type III, from Grave 55, Vulci. Now in the Villa Giulia Rome (63-688.).
- 96:22. An Etrusco-Thracian helmet of Type III, from Italy. Now in the Antiken Museum Berlin (10396.).
- 96:23. An Etrusco-Thracian helmet of Type IV, from the Celtic cemetery at Montefortino. Now in the Museo Nazionale Ancona.
- 96:24. An Etrusco-Thracian helmet of Type IV, from Toscana. Now in the Antiken Museum Berlin (L 39.).
- 97:25. An Etrusco-Thracian helmet of Type IV, from Talvon Hatzeg, Romania. Now in the Naturhistorisches Museum Vienna (S.65.).
- 97:26. An Etrusco-Thracian helmet of Type IV, from Central Italy. Now in the Museo Poldi Pezzoli, Milan (2419).
- 97:27. An Etrusco-Thracian helmet of Type V, from Toscana. Now in the Museo Archeologico, Florence (82318.).
- 98:1 A washer and pin crest-fixture.
- 98:2 A detail from the Gela Volute crater.
- 98:3 Method of fixing a chin-strap on an Etrusco-Thracian helmet.
99. An Italo-Pilos helmet.

100. A map showing the distribution of Italo-Pilos helmets.

101:1. An Italo-Pilos helmet of Type I, from Paestum. Now in the Museo Nazionale Naples.

101:2. An Italo-Pilos helmet of Type I, from Sicily. Now in the Metropolitan Museum of Fine Arts New York (08, 24.).

101:3. An Italo-Pilos helmet of Type I, unprovenanced but from Italy. Now in the Kunsthistorisches Museum Vienna.

102:4. An Italo-Pilos helmet of Type I, unprovenanced but from Italy. Present whereabouts unknown.

102:5. An Italo-Pilos helmet of Type II, from the Basilicata. Now in the Bibliothèque Nationale Paris (1994.).

102:14. An Italo-Pilos helmet of Type IV, from Rudiae, Puglia, Italy. Now in the Museo Provinciale di Lecce.

103:6. An Italo-Pilos helmet of Type III, from Canosa di Puglia. Now in the Badisches Landesmuseum Karlsruhe (F434.).

103:12. An Italo-Pilos helmet of Type III, unprovenanced from Italy. Now in the Frankfurt am Main Museum.

104:7. An Italo-Pilos helmet of Type III, unprovenanced from Italy. Now in the Musée du Louvre, Paris (1105, C6958.).

104:8. An Italo-Pilos helmet of Type III, unprovenanced from Italy. Now in the Musée du Louvre Paris (S 1534).

105:9. An Italo-Pilos helmet of Type III, from Ruvo di Puglia. Now in the British Museum (2824. 8-20. 22.).

105:10. An Italo-Pilos helmet of Type III, unprovenanced from Italy. Now in the Hermitage, St Petersburg.

106:11. An Italo-Pilos helmet of Type III, from Conservano. Now in the Museo Nazionale Bari.

106:13. An Italo-Pilos helmet of Type III, from Rudiae. Now in the Museo Provinciale di Lecce.

107. A Samno-Attic helmet.

108. A map showing the distribution of Samno-Attic helmets.

109:1. A Samno-Attic helmet of Type I, from Agrigento. Now in the Museo Nazionale Agrigento (AG1310).

109:2. A Samno-Attic helmet of Type I, from south Italy. Now in the Museo di Castel Sant' Angelo, Rome (3165).

109:3. A Samno-Attic helmet of Type I, from the sanctuary at Pietrabbondante. Now in the Museo Nazionale, Naples (5741).

110:4. A Samno-Attic helmet of Type I, from Paestum. Now in the Museo Nazionale, Naples.

110:5. A Samno-Attic helmet of Type I, from south Italy. Now in the Musée du Louvre, Paris (1129 C6968).

110:6. A Samno-Attic helmet of Type I, from south Italy. Now in the The Hermitage, St. Petersburg.

- 111:7. A Samno-Attic helmet of Type I, from south Italy. Now in the Museo Poldi-Pezzoli, Milan (2427).
- 111:8. A Samno-Attic helmet of Type II, unprovenanced but from Italy. Now in the Museo Arqueologico, Madrid (7360).
- 111:9. A Samno-Attic helmet of Type II, unprovenanced but from Italy. Now in the Museo Arqueologico, Madrid (7364).
- 112:10. A Samno-Attic helmet of Type III, unprovenanced but from Italy. Now in the Museo Arqueologico, Madrid (7363).
- 112:11. A Samno-Attic helmet of Type III, from south Italy. Present whereabouts unknown.
- 112:12. A Samno-Attic helmet of Type III, from south Italy. Now in the Bibliothèque Nationale Paris (2018).
- 113:13. A Samno-Attic helmet of Type III, from south Italy. Now in the Museo Poldi-Pezzoli, Milan (2422).
- 113:14. A Samno-Attic helmet of Type IV, from the River Tyne at Newcastle. Now in the Yorkshire Museum.
- 113: 15. A Samno-Attic helmet of Type IV, from a grave at Ruvo di Puglia. Now in the Badisches Landesmuseum Karlsruhe (F 431).
- 114:16. A Samno-Attic helmet of Type IV, from a tomb in regione III at Paestum. Now in the Museo Archeologico, Paestum.
- 114:17. A Samno-Attic helmet of Type IV, from south Italy. Its present whereabouts are unknown.
- 114:18. A Samno-Attic helmet of Type IV, from Athens, Greece. Now in the British Museum (2817. 1873. 8.20-225).
- 115:19. A Samno-Attic helmet of Type IVB, from a tomb at Cumae. Now in the Royal Armouries, H.M Tower of London (II, 197).
- 115:20. A Samno-Attic helmet of Type V, from south Italy, Now in the Musée de l'Armée, Paris (E7).
- 115:21. A Samno-Attic helmet of Type V, from Vulci. Now in the British Museum (2724 1842.7.28-711).
- 116:22. A Samno-Attic helmet of Type V, from Apulia. Now in the Levy Collection, New York.
- 116:23. A Samno-Attic helmet of Type VI, from Pretoro. Now in the Museo Nazionale, Chieti (1103).
- 116:24. A Samno-Attic helmet of Type VI, from south Italy. Now in the Musée de l'Armée, Paris (E5).
- 117:25. A Samno-Attic helmet of Type VI, from south Italy. Now in the Musée de l'Armée, Paris (E6).
- 117:26. A Samno-Attic helmet of Type VI, from Capodignano. Now in the Musée de l'Armée, Paris (E4).
- 117:27. A Samno-Attic helmet of Type VI, from Pertosa Salona. Now in the Museo Nazionale, Naples.
- 118:28. A Samno-Attic helmet of Type VI, from south Italy. Was in the Antiquarium, Munich (destroyed in World War II).
- 118:29. A Samno-Attic helmet of Type VI, from south Italy. Now in the John Paul Getty Museum, Malibu. (80AC12).

118:30. A Samno-Attic helmet of Type VII, from Ruvo. Now in the Bibliothèque Nationale, Paris (2002).

119:31. A Samno-Attic helmet of Type VII, unprovenanced but from Italy. Now in the Bibliothèque Nationale, Paris (1998).

119:32. A Samno-Attic helmet of Type VIIB, from Tomb 10 Conservano near Bari. Now in the Museo Nazionale, Bari (20890).

120:33. A Samno-Attic helmet of Type VIII, from Herculaneum. Now in the Museo Nazionale Naples.

120:34. A Samno-Attic helmet of Type VIII, from Herculaneum. Now in the Museo Nazionale Naples.

121:1. A detachable crest-fixtue with a "U" -shaped crest-bracket.

121:2. A detail of a Samno-Attic helmet from a painting of a Campanian cavalryman from Capua but destroyed in the Second World War.

121:3. A detail of a Samno-Attic helmet from a painting from Capua but destroyed in the Second World War. It shows applied horns on a Samno-Attic helmet

121:4. Method of fastening a chin-strap on a Samno-Attic helmet.

122.1. A cheek-piece of Type 1.

122.2. A cheek-piece of Type 2.

122.3. A cheek-piece of Type 3.

122.4. A cheek-piece of Type 4.

122.5. A cheek-piece of Type 5.

122.6. A cheek-piece of Type 6.

123. A Montefortino helmet.

124. A map showing the distribution of Montefortino helmets of types I-IV.

125. A map showing the distribution of Montefortino helmets of types V-XII.

126:1 A Montefortino helmet of Type I, from the Tomba di Benacci near Bologna. Now in the Museo di Civico Bologna, (R144).

126:2. A Montefortino helmet of Type I, from Italy. Now in the British Museum, (2727 47.8.6.1594).

126:3. A Montefortino helmet of Type I, from Sainte Foy des Lyons, France. Now in the British Museum, (51.8.13.46).

127:4. A Montefortino helmet of Type I, from Populonia. Now in the Museo Archeologico Florence, (94404).

127:5. A Montefortino helmet of Type I, from Florence. Now in the Museo Archeologico Florence, (1629).

127:6. A Montefortino helmet of Type I, from Monteluca near Perugia. Now in the Museo Nazionale Perugia, (B324 B1325).

128:7. A Montefortino helmet of Type I, from Santa Giuliana, Perugia. Now in the Museo Nazionale Perugia, (SG/36/1).

128:8. A Montefortino helmet of Type I, from Ancona. Now in the Musée du Louvre, (1122 MNC. 1030).

- 128:9. A Montefortino helmet of Type I, from Cervéteri. Now in the Musée du Louvre, (C6766 (1120)).
- 129:10. A Montefortino helmet of Type I, from Tomb VI La Peschiera necropolis, Todi, Italy. Now in the Museo Nazionale Villa Giulia, (9670).
- 129:11. A Montefortino helmet of Type I, from Sicily. Now in the Metropolitan Museum of Fine Art, New York, (08.2.1).
- 129:12. A Montefortino helmet of Type I, from Italy. Now in the Germanisches Museum Nuremburg.
- 130:13. A Montefortino helmet of Type I, from a Gallic grave at Casaselvatica di Berceto. Now in the Museo Nazionale Parma.
- 130:14. A Montefortino helmet of Type I, from Italy. Now in the Museo Poldi Pezzoli, Milan, (2423).
- 130:15. A Montefortino helmet of Type I, from Tomb VII Gherando Ghirandini near Volterra. Now in the Museo Guarnacci Volterra, (756).
- 131:16. A Montefortino helmet of Type I, from Italy. Now in the Real Armeria Turin, (A.93).
- 131:17. A Montefortino helmet of Type II, from the Benacci Necropolis near Bologna. Now in the Museo Civico di Bologna, (R7).
- 131:18. A Montefortino helmet of Type II, from Italy. Now in the Bibliothèque Nationale, Paris, (2020).
- 132:19. A Montefortino helmet of Type II, from Italy. Now in the Bibliothèque Nationale, Paris, (2019).
- 132:20. A Montefortino helmet of Type II, from Apulia. Now in the British Museum, (2840.1873.8.20.2260).
- 132:21. A Montefortino helmet of Type II, from Apulia. Now in the Badisches Landesmuseum Karlsruhe, (430).
- 133:22. A Montefortino helmet of Type II, from Siacca. Now in the Metropolitan Museum of Fine Arts New York, (G.R.500).
- 133:23. A Montefortino helmet of Type II, from from a well between Daphne and the Piraeus Greece. Now in the Metropolitan Museum of Fine Art New York, (08.258.13).
- 133:24. A Montefortino helmet of Type II, from Monteluca, Perugia. Now in the Museo Nazionale Perugia, (326 B1317).
- 134:25. A Montefortino helmet of Type II, from Italy. Now in the Musée du Louvre, (C6677 (1119)).
- 134:26. A Montefortino helmet of Type II, from Gerace Minor. Now in the Museo Archeologico Locri.
- 134:27. A Montefortino helmet of Type II, from Italy. Now in the Schloss Erbach, (256).
- 135:28. A Montefortino helmet of Type II, from Italy. Now in the Museo Poldi Pezzoli, (2416).
- 135:29. A Montefortino helmet of Type II, from Italy. Present location unknown.
- 135:30. A Montefortino helmet of Type III, from Talamone. Now in the Museo Archeologico Florence, (70841).

- 136:31. A Montefortino helmet of Type III, from Pietrabbondante. Now in the Museo Nazionale Naples, (5744).
- 136:32. A Montefortino helmet of Type III, from Pietrabbondante. Now in the Museo Nazionale Naples, (5745).
- 136:33. A Montefortino helmet of Type III, from Italy. Was in the Burg Rheinstein bei Bingen Museum.
- 137:34. A Montefortino helmet of Type III, from Paestum. Now in the Museo Nazionale Paestum.
- 137:35. A Montefortino helmet of Type III, from Italy. Now in the Musée du Louvre, (C6728 (1118)).
- 137:36. A Montefortino helmet of Type III, from Cervéteri. Now in the Musée du Louvre, (C7228 (1123)).
- 138:37. A Montefortino helmet of Type III, from Cervéteri. Now in the Musée du Louvre, (C6677 (1119)).
- 138:38. A Montefortino helmet of Type III, from Vetulonia. Present location unknown.
- 138:39. A Montefortino helmet of Type III, from Istria. Now in the Staatliches Museum Berlin, (L.73).
- 139:40. A Montefortino helmet of Type III, from Italy. Now in the Trier Landesmuseum, (3924).
- 139:41. A Montefortino helmet of Type III, from Italy. Now in the Museo Stibbert Florence, (3875).
- 139:42. A Montefortino helmet of Type III, from Rome. Now in the Museo Gregoriano Etrusco Vatican, (12318).
- 140:43. A Montefortino helmet of Type III, from Gallic grave at Pegazzano. Now in the Museo Civico La Spezia.
- 140:44. A Montefortino helmet of Type IV, from Italy. Now in the British Museum, (2728. 1867.5.8202.3).
- 140:45. A Montefortino helmet of Type IV, from Monte Tezio nei Dintorni, Perugia. Museo Nazionale Perugia, (1014).
- 141:46. A Montefortino helmet of Type IV, from Frontone, Perugia. Now in the Museo Nazionale Perugia, (362 B1286).
- 141:47. A Montefortino helmet of Type IV, from Italy. Now in the Museo Nazionale di Villa Giulia, Rome, (51240).
- 141:48. A Montefortino helmet of Type IV, from Acquaviva. Now in the Staatliches Museum Berlin, (L.72).
- 142:49. A Montefortino helmet of Type IV, from Talamone, Italy. Now in the Museo Archeologico Florence, (70840).
- 142:50. A Montefortino helmet of Type IV, from Tomb of the Seven Rooms at Orvieto. Now in the Museo Archeologico Florence, (70517).
- 142:51. A Montefortino helmet of Type IV, from Italy. Now in the Metropolitan Museum of Fine Arts New York, (08.2.3).
- 143:52. A Montefortino helmet of Type IV, from Perugia. Now in the Los Angeles Museum of Art. (50.37.19).
- 143:53. A Montefortino helmet of Type IV, from Vulci. Now in the Museo Gregoriano Etrusco Vatican, (A,30).

- 143:54. A Montefortino helmet of Type IV, from Italy. Now in the Musée de l'Armée Paris, (C.2).
- 144:55. A Montefortino helmet of Type IV, from Lyons. Now in the Musée de l'Armée Paris, (C.1).
- 144:56. A Montefortino helmet of Type IV, from Chieti. Now in the Museo Nazionale Chieti, (10782).
- 144:57. A Montefortino helmet of Type IV, from Italy. Now in the Staatliches Museum Berlin, (Fr 1020).
- 145:58. A Montefortino helmet of Type IV, from Italy. Now in the Museo Poldi Pezzoli, (2421).
- 145:59. A Montefortino helmet of Type IV, from Italy. Present whereabouts unknown.
- 145:60. A Montefortino helmet of Type V, from Italy. Now in the possession of the Société Archéologique de Montpellier.
- 146:61. A Montefortino helmet of Type V, from Italy. Now in the Musée de Clermont Ferrand.
- 146:62. A Montefortino helmet of Type V, from Italy. Now in the Musée Borély Marseilles, (2308).
- 146:63. A Montefortino helmet of Type V, from Ses Paisses. Now in the Majorca Museum.
- 147:64. A Montefortino helmet of Type V, from a grave at St Laurent des Arbres. Now in the Musée Calvet Avignon.
- 147:65. A Montefortino helmet of Type V, from Lyons. Now in the Musée de Antiquites Nationale St. Germain en Laye.
- 147:66. A Montefortino helmet of Type V, from Thesprotia. Now in the Civic Collection Polydrosso Thesprotia.
- 148:67. A Montefortino helmet of Type V, from San Gelbert de Dalt. Now in the a private collection in Majorca.
- 148:68. A Montefortino helmet of Type V, from Tomb 560, Almeria Villaricos. Now in the Museo Nacional Arqueologico Madrid.
- 148:69. A Montefortino helmet of Type V, from Albacete. Now in the Museo Arqueologico Albacete.
- 149:70. A Montefortino helmet of Type V, from Almeria Villaricos. Now in the Museo Nacional Arqueologico Madrid.
- 149:71. A Montefortino helmet of Type V, from Tomb 1080, Almeria Villaricos. Now in the Museo Nacional Arqueologico Madrid.
- 149:72. A Montefortino helmet of Type V, from a shipwreck at Albenga. Now in the Museo Navale Romano Albenga, (418(F)).
- 150:73. A Montefortino helmet of Type V, from Grave No. 10, Ampurias. Now in the Museo Arqueologico Ampurias.
- 150:74. A Montefortino helmet of Type V, from Grave No. 13, Ampurias. Now in the Museo Arqueologico Ampurias.
- 150:75. A Montefortino helmet of Type V, from Grave No. 110, Ampurias. Now in the Museo Arqueologico Ampurias.
- 151:76. A Montefortino helmet of Type V, from Grave No. 31, Ampurias. Now in the Museo Arqueologico Ampurias.

- 151:77. A Montefortino helmet of Type V, from Grave No. 7, Ampurias. Now in the Museo Arqueologico Ampurias.
- 151:78. A Montefortino helmet of Type VI, from the Necropolis at Bolsena. Now in the Museo Hermitage, St. Petersburg, (ΔΟΗ).
- 152:79. A Montefortino helmet of Type VI, from the Casa di Palloti near Bologna. Now in the Museo Civico Bologna, (714).
- 152:80. A Montefortino helmet of Type VI, from Italy. Now in the Castel S. Angelo Rome, (2029).
- 152:81. A Montefortino helmet of Type VI, from Sanzeno nell'Anaunia. Present location unknown.
- 153:82. A Montefortino helmet of Type VI, from Tomb XXV, Montefortino. Now in the Museo Nazionale Ancona, (2140).
- 153:83. A Montefortino helmet of Type VI, from the River Adda at Pizzeghetone. Now in the Museo Civico Cremona, (ST 11055 317(332)).
- 153:84. A Montefortino helmet of Type VI, from a tomb at Vulci. Now in the Museo Nazionale di Villa Giulia, (63208).
- 154:85. A Montefortino helmet of Type VI, from Canosa di Puglia. Now in the Badisches Landesmuseum Karlsruhe, (437).
- 154:86. A Montefortino helmet of Type VI, from Rieti. Now in the Staatliches Museum Munich, (69).
- 154:87. A Montefortino helmet of Type VI, from Italy. Now in the Schloss Erbach, (150).
- 155:88. A Montefortino helmet of Type VI, from a shipwreck in the harbour of Heraclea Minor. Now in the Museo Nazionale Agrigento, (C1648).
- 155:89. A Montefortino helmet of Type VI, from a shipwreck in the harbour of Heraclea Minor. Now in the Museo Nazionale Agrigento, (C1651).
- 155:90. A Montefortino helmet of Type VI, from a shipwreck in the harbour of Heraclea Minor. Now in the Museo Nazionale Agrigento, (C1649).
- 156:91. A Montefortino helmet of Type VI, from a shipwreck in the harbour of Heraclea Minor. Now in the Museo Nazionale Agrigento, (C1650).
- 156:92. A Montefortino helmet of Type VI, from Italy. Now in the Römisch Germanisches Zentral-Museum Mainz, (0.12897).
- 156:93. A Montefortino helmet of Type VI, from Italy. Now in the Römisch Germanisches Zentral-Museum Mainz, (0.39459).
- 157:94. A Montefortino helmet of Type VI, from a Gallic tomb at Cascina Mairana. Now in the Museo Civico Lodi, (I).
- 157:95. A Montefortino helmet of Type VI, from the harbour of Taranto. Now in the Museo Nazionale Taranto.
- 157:96. A Montefortino helmet of Type VI, from a grave find Pago de Gorrita. Now in the Museo Arqueologico Valladolid, (10.533).
- 158:97. A Montefortino helmet of Type VII, from Italy. Now in the British Museum, (2726.1975.6.3.1).

158:98. A Montefortino helmet of Type VII, from Italy. Now in the Museo Stibbert Florence, (3874).

158:99. A Montefortino helmet of Type VII, from Loreto Apruntino, Italy. Now in the Collection Leopardi Penne.

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Introduction.

Our knowledge of pre-Roman Italian and Republican Roman military equipment has traditionally been based largely on literary references in the ancient authors supported by surviving pictorial and sculptural evidence. These sources have been studied principally by historians and art historians and although this imbalance has to a certain extent been redressed by the work of a number of scholars over the last twenty-five years or so, in particular Peter Connolly, the archaeological picture is still far from complete. What is certain however is that with the emergence of the Villanovan culture in the 9th and 8th centuries B.C. and the rise of a powerful ruling elite in Etruria a century or so later, an indigenous arms industry, with a clearly definable tradition of bronze working, was firmly established in Italy.

Over the subsequent eight centuries the products of this industry were to be subject to numerous external influences, in particular Greek colonisation in southern Italy and the Gallic incursions into northern and central Italy. These external stimuli while precipitating changes in both form and manufacturing techniques revitalised this industry rather than causing its demise. The decline of the Italian armament industry was caused conversely by the conquest of Italy by Rome and the subsequent expansion of her empire, culminating in the establishment of permanent frontier garrisons in the 1st century A.D., far from their original sources of supply in Italy, that led to the establishment and exploitation of new manufacturing centres beyond the confines of the Apennine peninsula.

As Connolly (1981, 87.) has pointed out: "the weaponry, organisation and tactics of the Roman army, were not an invention of the Romans but the result of a process of adoption and adaption"... It might be said that the same is true of the other Italian military systems as a whole, no where can this be more clearly seen than in the helmet forms made and used in Italy from the end of the 6th century B.C onwards.

With the exception of the shield, and because of the extreme vulnerability of the head in combat and the usually fatal consequences of a head wound, helmets were and are worn in many cultures in preference to any other form of defensive equipment.. Indeed in Italy this is amply attested to by the military equipment found in Villanovan contexts and by the equipment of the Roman army of the Servian reforms, as described by Livy and Dionysius of Halicarnassus, in which only the first class wore body armour and helmets while the second and third classes wore helmets and only the fourth and fifth classes (the poorest) being without armour at all, being protected simply by a shield.

Partially because of the factors discussed above and partially due to their structural integrity and strength, since they are often made of one piece, more bronze helmets survive from antiquity than any other form of defensive military equipment. It is for this reason that their study is particularly important not only for the helmets themselves but for what they can tell us about the nature of the warfare for which they were developed.

Over the last century, bronze armour of the classical period has attracted considerable but variable academic interest. Much of this scholarly research and attention has been focused on the helmets and

armour of archaic and classical Greece rather than those of Italian manufacture which seem to have been regarded as somehow inferior. A number of the bronze helmet forms of both Greece and Italy have been studied, usually in isolation, but some have received little or no attention at all in the archaeological literature. As yet these studies have not produced a single complete survey of the bronze Italian helmet, its development and manufacture. Nor indeed accounted for the changes in the design of the Pre-Roman, the Republican Roman and early Imperial bronze helmets. Therefore the main aim of this thesis is to produce, for the first time, a comprehensive survey of the bronze helmets manufactured in Italy during the six centuries from the last quarter of the 6th century B.C. to the third quarter of the 1st century A.D. To this end it is intended to examine and classify the nine main helmet forms, the Negau, the Apulo-Corinthian, the Italian Chalkidian, the Samno-Attic, the Italo-Pilos, the Etrusco-Thracian, the Montefortino, the Coolus and the Hagenau. The Greek Corinthian helmet, which was certainly in use in Italy from the 7th century onwards, has been excluded from this survey for the following reasons; without doubt this helmet form was widely copied by Italian armourers in the 7th and 6th centuries B.C. but it was certainly losing popularity by the last third of the 6th century and had been superseded by other forms, and as such it falls outside the scope of this thesis, although of course its influence can be detected in the Italian derivatives, the Italo-Chalkidian and the Apulo-Corinthian helmets. Moreover the excellent and comprehensive treatment it has received from numerous scholars from the 19th century onwards, especially Furtwängler (1890), Kukahn (1936), Kunze (1961 and 1967),

has rendered further work in relation to its development unnecessary. Finally, since it is extremely difficult to distinguish between the 7th and 6th century native Italian copies of the Corinthian and the Greek imports and as it is not the purpose of this thesis to study Greek helmets forms these also have been excluded. In addition, parade helmets of all forms and derivations have been excluded from this study on the basis that as parade helmets they are de facto primarily for display and not for use in battle. As such they fall outside the mainstream development and evolution of the Italian bronze helmet and have little or no influence on its development, function or evolution.

A starting date of c.525 B.C. for this work was chosen for a number of reasons, not least because it was arguably the period of the greatest Etruscan expansion and power following the Etrusco-Carthaginian naval victory over the western Greeks at Alalia. Secondly it coincides with the period immediately following the military and social reforms of Servius Tullius at Rome and the adoption of the modified Greek hoplite phalanx. Finally it also coincides with the appearance of a number of new, specifically Italian, helmet forms such as the Negau, the Italo-Chalkidian and the Apulo-Corinthian.

Similarly a closing date of the last quarter of the 1st century A.D. was chosen because it coincides with the virtual disappearance from the archaeological record of the last Italian bronze helmet form, the Hagenau helmet and its complete replacement by the iron "Imperial Gallic" helmet, of Gallic manufacture as its name implies, and as such

marks the end of the tradition of bronze helmet manufacture in Italy that had lasted for over eight hundred years.

Since many of the techniques used in the manufacture of bronze helmets are common to all forms, it was decided that the thesis should commence with an examination of the manufacturing processes involved and the tools and technology used in Italian helmet production throughout this period. It seeks to identify and document the growth of the techniques of mass-production in Italian helmet manufacture, such as the widespread adoption of spinning at the end of the 2nd and the beginning of the 1st centuries B.C. By examining the decoration, construction and distribution of each form it attempts to define workshop groupings for each type and areas of regional production.

This thesis therefore seeks to trace the development and evolution of the nine main forms, drawing together for the first time all of the extant helmets, from this period to provide the completest survey possible. It discusses the origins of each of the nine main forms and provides where necessary a new definition of type (e.g. Italo-Chalkidian, Samno-Attic and the Etrusco-Thracian helmets). It attempts to supply a definitive typology, with where possible an absolute chronology, based upon dated examples, and linked to a relative chronology based upon the stylistic evolution of form, the size and shape of the helmet bowl, its decoration and fixtures, the standard of manufacture and finish. In addition contemporary pictorial and sculptural evidence has been used to help refine some of these features and the dating where necessary. It examines in detail the distribution of each type, their dating, fittings, i.e. crest-fixtures, cheek-pieces and chin-strap fixtures, and their

decoration. It discusses the development and evolution of each form, not only in respect of themselves but also of their inter-relationships one to another. It chronicles the evolution of each helmet type and examines the external agencies and cultural influences that can be traced in the development of each form.

The majority of helmet forms are by their very nature functional and therefore their development and evolution is dependent upon the defensive qualities of the helmet type itself, the type of warfare for which it is designed and the cultural affinities of the peoples who used it. The invention, adoption or adaption of an individual form may therefore often be related to social and or political change as well as the impact of a superior or more successful military system. Like all defensive military equipment the helmet reflects the warfare for which it has been designed and if it does not evolve with it the helmet rapidly becomes obsolete and is discarded. Therefore this study attempts to examine the Italian helmet in use and its functional aspects. It seeks to account for the overwhelming popularity of the Montefortino helmet which from the end of the third century B.C. supersedes all other forms in Italy. Accordingly therefore it examines the changes which took place in the armament of the Roman army during the later Republic and early Empire and discusses the disappearance of the majority of the culturally distinct Italian helmet forms which marked Rome's dominance of Italy, both militarily and socially.

Because of the lack of general academic agreement over the exact derivation and definition of many of the helmet forms included in this thesis and because of the inadequacies of such typologies that exist

the author has had to construct entirely new typologies for the majority of forms, or re-evaluate and amend the existing ones. The definitions and typologies used in this thesis are the author's own and may not in all cases gain universal acceptance. The compilation of the corpus of information included in the main body of the text has involved the detailed study of 450 helmets in over 110 museums throughout Europe as well as searches through the the archaeological literature, museum, sale and collection catalogues, periodicals, excavation reports and journals. The majority of the helmets have previously only received cursory attention in the academic literature and have often been only the subject of a note without any illustration, details of provenance context, dimensions, decoration or construction etc which has necessitated their re-examination at first hand. Some 92 or 20 percent of helmets included in this thesis are previously entirely unpublished while over 180 or 40 percent of the remainder are incompletely published, of which some 83 are only illustrated in Lipperheide (1896) and some 36 are noted in Coarelli (1976).

One of the major problems with the study of not only the Italian bronze helmet but that of arms and armour in general is that of dating. The majority of helmets included in this study do not come from securely dated contexts. Many were discovered in the nineteenth century and the early years of this century, when little or no accurate record was made of the circumstances of their discovery or their archaeological context. Where items found during this period are dated, it is usually by association with dateable objects found with them, for example ceramics. Often therefore they can only be

dated broadly within a given century or centuries. This problem has been alleviated to some extent in recent years by scientific excavation which has yielded a number of securely dated examples of most forms. Certainly difficulties concerned with dating are exacerbated by the funerary customs of the peoples of the Latin league who did not practice inhumation with armour. Most of the datable helmets from the late 6th to the first quarter of the 3rd century B.C come from graves and as the influence and dominance of Rome spread through Italy this habit disappears.

A word must be said about the conventions used for the description of the helmets included in this survey and the scales used for illustration. The term "assigned date", unless specifically stated otherwise, is used to indicate the date given to a helmet by the author on the basis of its relative position in the typology of that form and similar helmets from archaeologically dated contexts. With regard to the tables: table 1 in each chapter is a preliminary listing arranged in alphabetical order of the museum in which the material is situated, whereas table 2, which uses the same numbering sequence, is arranged typologically and alphabetically.

In respect to the measurement, overall width is taken to be the distance from the outer front edge to the outer rear edge of the neck-guard, whereas internal width is taken to be the measurement from the inner edge of the front rim of the helmet to the inside of the junction of the bowl with the neck-guard. Likewise the breadth is taken to be the distance from side to side and overall breadth is measured from outer edge to outer edge and internal breadth from the inner edge of the helmet rim to inner edge.

Each chapter deals with a separate helmet form and is subdivided under a number of headings as follows: Introduction, which outlines the form and previous scholarship, Definition, which as explained above is the author's definition of type, Table 1 which is a preliminary listing of the material including dimensions and provenance, Distribution, Manufacture, which discusses manufacturing processes specific to individual forms, Typology including a dating table, A detailed listing of the helmets including Museum and Inventory number, decoration, inscriptions and the full publication of the helmet, Cheekpieces, Crest-fixtures, Decoration and finally a detailed study of an example of each type.

The thesis has been divided into two volumes; this is partially because of the amount of material but also to allow the integration of the illustrations into the text to which they relate for the benefit of the reader. The division comes at a natural break between those helmets of Mediterranean and those of Celtic origin, i.e. the Montefortino the Coolus and the Hagenau. The division coincidentally divides those helmet forms that can be shown to have definitely been used by the Roman army from those which cannot. Due to the number of helmets encompassed in this survey, (over four hundred and fifty) and the need to keep the size of the volumes manageable a scale of 1:3 has been chosen for the drawings. In the same way the number of photographs which are to be found at the end of volume II have been restricted to representational evidence, specific details and particular helmets.

The Manufacture of Bronze Italian Helmets.

The period from the 5th century B.C. to the 1st century A.D. witnessed almost constant military activity throughout Italy and there must have been many thousands of bronzesmiths producing armour to supply the needs of the Italian peoples, yet unfortunately none has left a treatise or a manual on his craft, nor indeed has a single undoubted armourer's workshop come to light. It is not certain whether at this early period in Italy the production of helmets was a specialised craft in itself, as it was to become under the late Empire in the large Imperial "Fabricae" established by Diocletian, or whether the Italian armourer followed contemporary Greek practice and produced a full range of weaponry. The only guides to the techniques employed by the armourer are the helmets themselves and the surviving tools, of which it is often difficult if not impossible to say whether they were specifically produced for bronzeworking and the armourer.

Little can be positively said about the organisation of the armourers' trade. It is not known if the Italian workshop owners, again following Greek practice where the industry was staffed almost completely by slaves, sometimes up to as many as 120, viewed their businesses simply as an investment. Certainly this is likely to have been the case towards the end of the Republic when so much of the agriculture and industry was served by slaves and freedmen. It is possible that the Italian armament industry, at least until Rome's complete domination of the peninsula, was organised around free-born craftsmen. The Etruscan cities of Perugia, Vulci and Caere were famed in antiquity for their bronze production (Scullard 1967 159ff,

119ff and 97ff.) and the large numbers of similar helmets, dating from the 5th to the 3rd centuries B.C., found in and around the first two of these cities would seem to indicate that they were large armour producing centres as well. Both Capua and Aquileia were also noted for their armour production and there is no doubt that there were a number of southern Italian workshops notably in Puglia and Reggio Calabria in full production at least until the third century B.C.

Although little can be ascertained about the organisation of individual workshops certain conclusions can be drawn about the scale of the industry in the 2nd and 1st centuries B.C. Helmets of this period show a considerable decline in the standards of manufacture and finishing and exhibit all the signs of hurried or mass production. This is confirmed by three Montefortino helmets dating to the 2nd and 1st centuries B.C.; these show clear signs of the above mentioned deteriorating standards of manufacture, but in addition they all bear Latin makers' stamps of one sort or another which is a total break with previous custom and practice. (Chapter 8 Nos. 86, 99 and 123. pls 1a, 1b and 2a.) By their very presence these stamps imply that since it was worth while going to the trouble of producing a special die, the scale of production must have been considerable. This is further confirmed in the 1st century B.C. when spinning is introduced as a method of manufacture. The advantages of this method only become apparent when the scale of production is large because of the time and effort involved in setting up the lathes and preparing the blanks for spinning.

Before discussing the helmets and tools themselves it is important to consider the properties of bronze, the medium in which the Italian armorer of this period was working. The major constituent is copper, a soft ductile metal, which is alloyed with tin in greater or lesser proportions. The addition of tin affects changes in the mechanical properties of the resultant alloy and hardens and toughens the metal. Tin is added in proportions up to but not exceeding 13.2%, an admixture containing above this quantity makes the alloy too brittle for subsequent cold working or percussive use (Brown 1976, 25.). The average proportion in ancient armour is between 8 and 10% (Craddock 1977, 111.)

Lead is also often found as a constituent of bronze; it increases the ductile qualities of the alloy and is essential for bronze which is to be cast. Analysis on ancient bronzes show that lead can reach as much as 30% of a bronze mixture but above that level it is hard to keep the constituent metals alloyed. Objects that are to be reworked after casting rarely contain more than 10% lead as it make the resultant metal too soft. It is in fact rare that helmets contain more than 4%.

Table 1: Analyses *

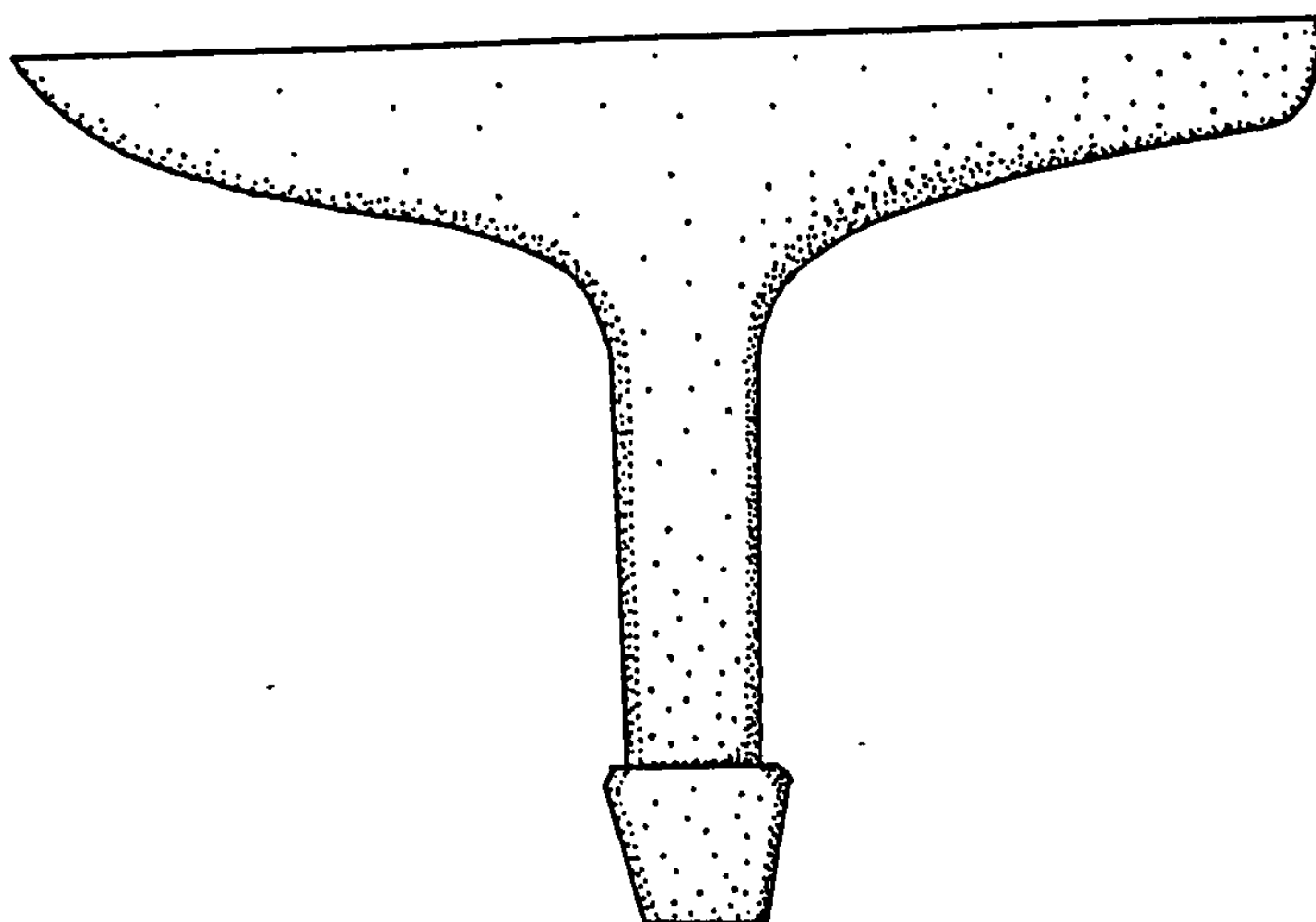
Museum and Inv. No.	Cat No.	Cu	Ni	Zn	Al	Sn	Pb	Fe	P	S
Chalons sur Saône No Inv. No.	106	87.4	0.4	4.0	-	8.2	-	tr	-	tr
Museo Civico La Spezia. No Inv No.	162	88.7	-	-	-	10.5	tr	tr	-	tr
British Museum 1856,12-26,697	174	94.0	.015	-	-	6.00	.05	.06	-	-
British Museum 1873. 8-20,225	184	90.0	.16	.005	-	9.00	.06	.025	-	-
British Museum 1837 6,9,91	185	90.0	.045	.030	-	9.5	.02	.36	-	-
British Museum 1842 7,28,711	188	94.0	.045	-	-	5.20	.10	.30	-	-
British Museum 1847,8-6,159	189	90.0	.040	.010	-	9.50	.13	.035	-	-
British Museum 1873,8,20,226	191	90.5	.050	-	-	9.30	.07	.040	-	-
British Museum 1867,5-8,202	192	91.5	.040	-	-	8.90	.10	.060	-	-
Museo Poldi Pezzoli N872,	240	85.0	-	-	tr	10.0	4.0	tr	-	.5
Musée de l' Armée C1,	308	90.7	tr	.15	tr	8.8	-	.03	-	.05
Musée de l' Armée C2,	307	91.7	-	-	tr	8.0	.25	tr	-	.5

* compiled from various sources.

Although no undoubted Italian armourer's workshop dating from the 5th century B.C. to the 1st century A.D. has been excavated a number of depictions survive, some of a slightly later date, and these give a clear picture of what they were like. The charcoal burning hearth was an essential part of the armourer's workshop. It is almost invariably depicted as being raised on a platform, probably of brick or stone with the fire covered by a hood, this was augmented by a pair of bellows operated by an assistant. This is clearly shown in a graffito from the Catacomb of Domatilla in Rome (fig 1:1) where the assistant works the bellows from the rear of the hearth, sheltered from its heat by the hood, and the smith works his anvil in front. The primary tools of the armourer's trade were his hammers and anvil and stakes. A fragmentary fresco from Pompeii, now in the Museo Nazionale Naples, Inv. No. 9529. (Zschietzschmann 1959, 191. and Ling, 1991, 126.), depicting Venus at the forge of Vulcan, shows an armourer and his assistant making a pair of greaves (pl. 2b). The armourer is seated at his anvil (*incus*) which is mounted on a wooden block with his tongs (*forceps*) and hammers (*malleus*) at his feet. A marble sarcophagus relief, now in the Museo delle Terme Rome (Inv. No. 900), depicts an armourer's workshop manned by *putti*. At the left is clearly shown the canopied hearth, next to this two *putti* are beating a billet of metal on an anvil whilst it is held steady by with tongs by a third who is seated. Adjacent to this a seated *putto* adds the finishing touches to a shield with a "crosspein" hammer whilst it is steadied by another. Finally at the right three others carry away a finished helmet.



1 A smith and assistant from the catacomb of Domatilla

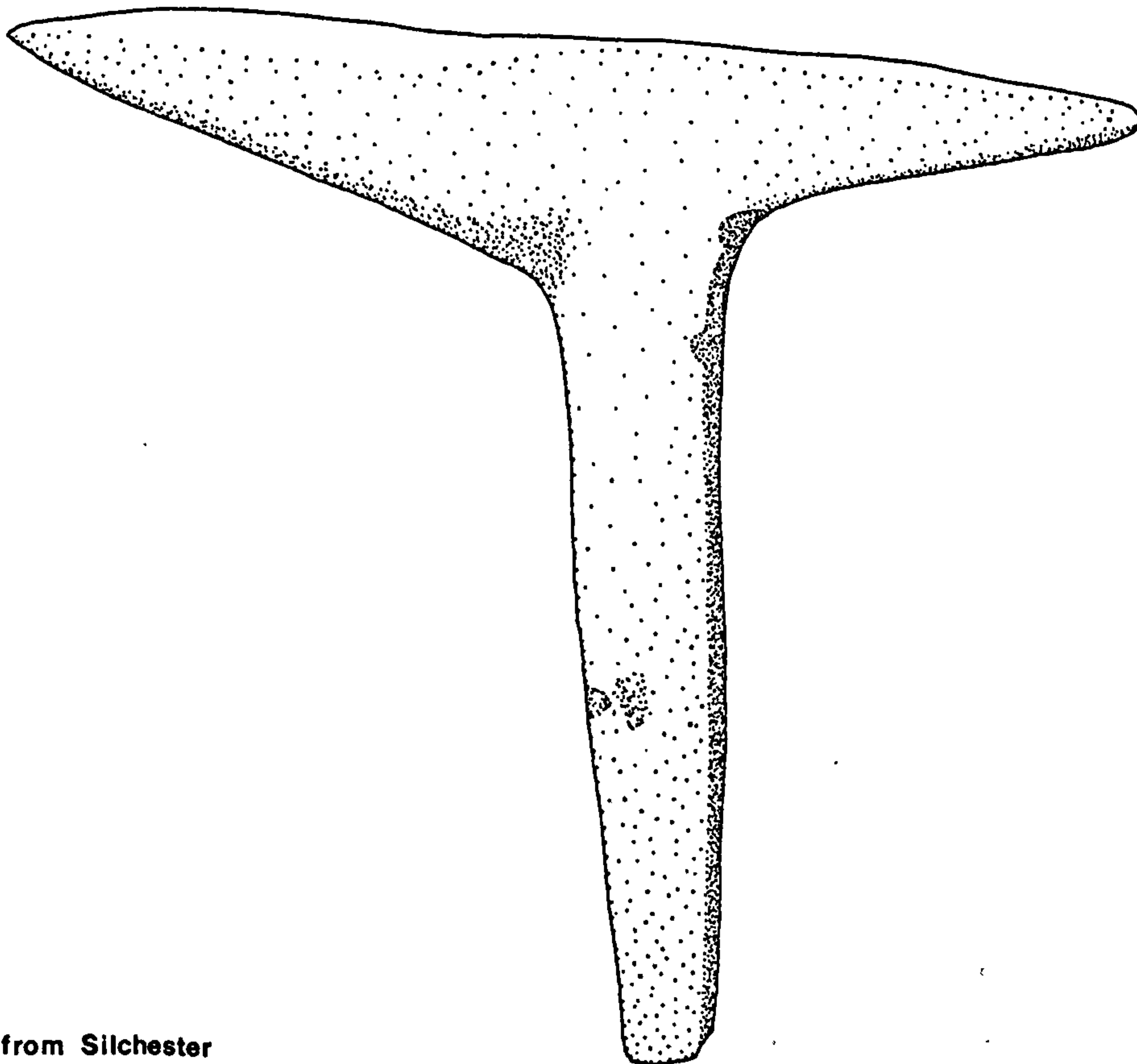


2 A modern bickiron

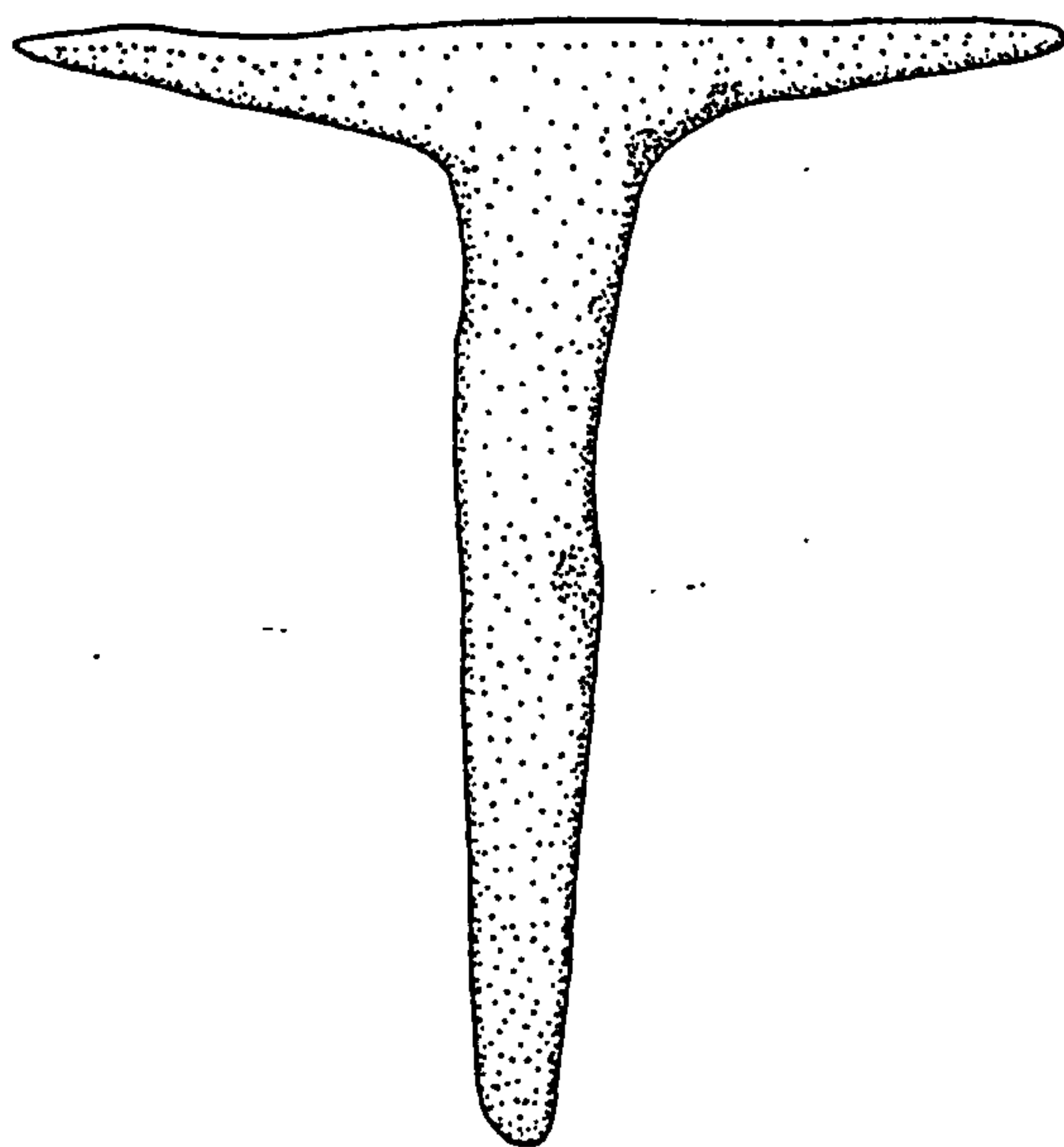
This picture of the armourer's workshop is further augmented by a relief of Hadrianic date, from the Palazzo dei Conservatori, Rome (Zschietzschmann. 1959, 190.), which represents Vulcan making armour for Achilles. Vulcan is seated at his anvil over which is laid a circular shield. In his right hand he holds a small crosspein hammer while he steadies the work with his left. Disposed around him are three assistants wielding large sledge hammers presumably used in the preliminary stages of the shield's manufacture.

It is apparent from surviving excavated examples of metalworking tools found at Numantia (Schulten 1909, 207.), Silchester (Evans 1890) and Newstead (Curle 1911, 285-6.), that many of the basic tools employed by Italian and Roman smiths and armourers are very similar to those employed today.

Herbert Maryon (1954, 113.) states that, "hollow vessels of almost any shape can be hammered from one piece of sheet metal without a join. This process is known as raising ". A fact as true in antiquity as it is today. Essential for this process are metal stakes and hammers. The most important stake being a 'T' shaped anvil or *Bickiron*. The overall length of a modern *Bickiron* is about 300 millimetres, one arm is flat on top while the other is circular in section and both taper towards their ends. This tool is usually mounted in a large block of wood (fig. 1:2.). Six examples of Roman anvils or stakes of this form are known ranging in date from the 1st to the 4th century A.D., one from an iron working hoard found at Heiderburg in Germany, now in the Rheinisches Landesmuseum Mainz (Lindenschmidt 1911 pl. 46,787.), two from Saint-Dié (Vosges), France (Gallia 38 1980, 432.), one from Silchester (fig 2:1) (Evans 1890,



1 A beaked anvil from Silchester



2 A beaked anvil from Pompeii

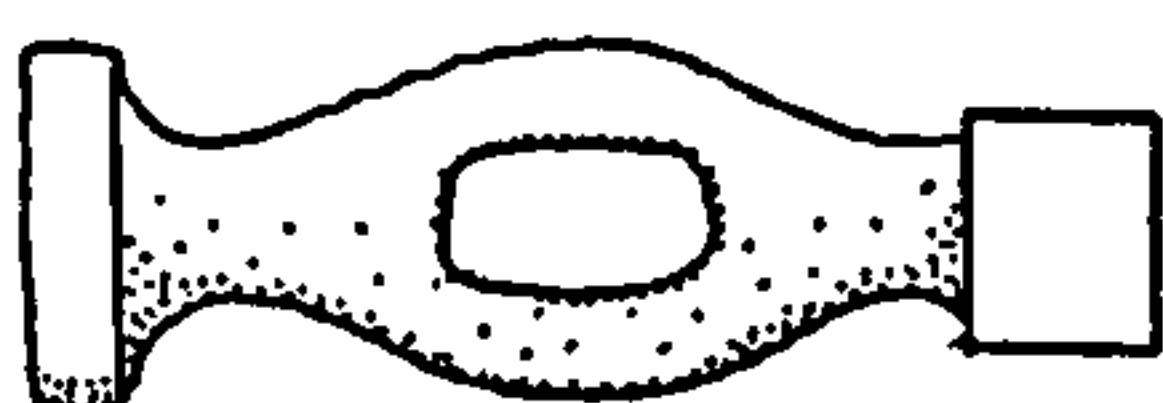
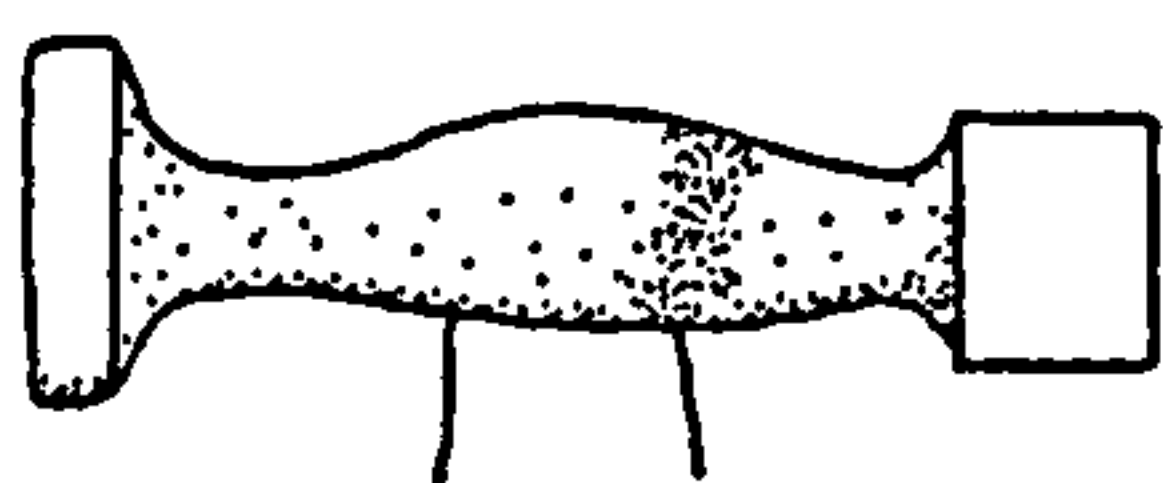
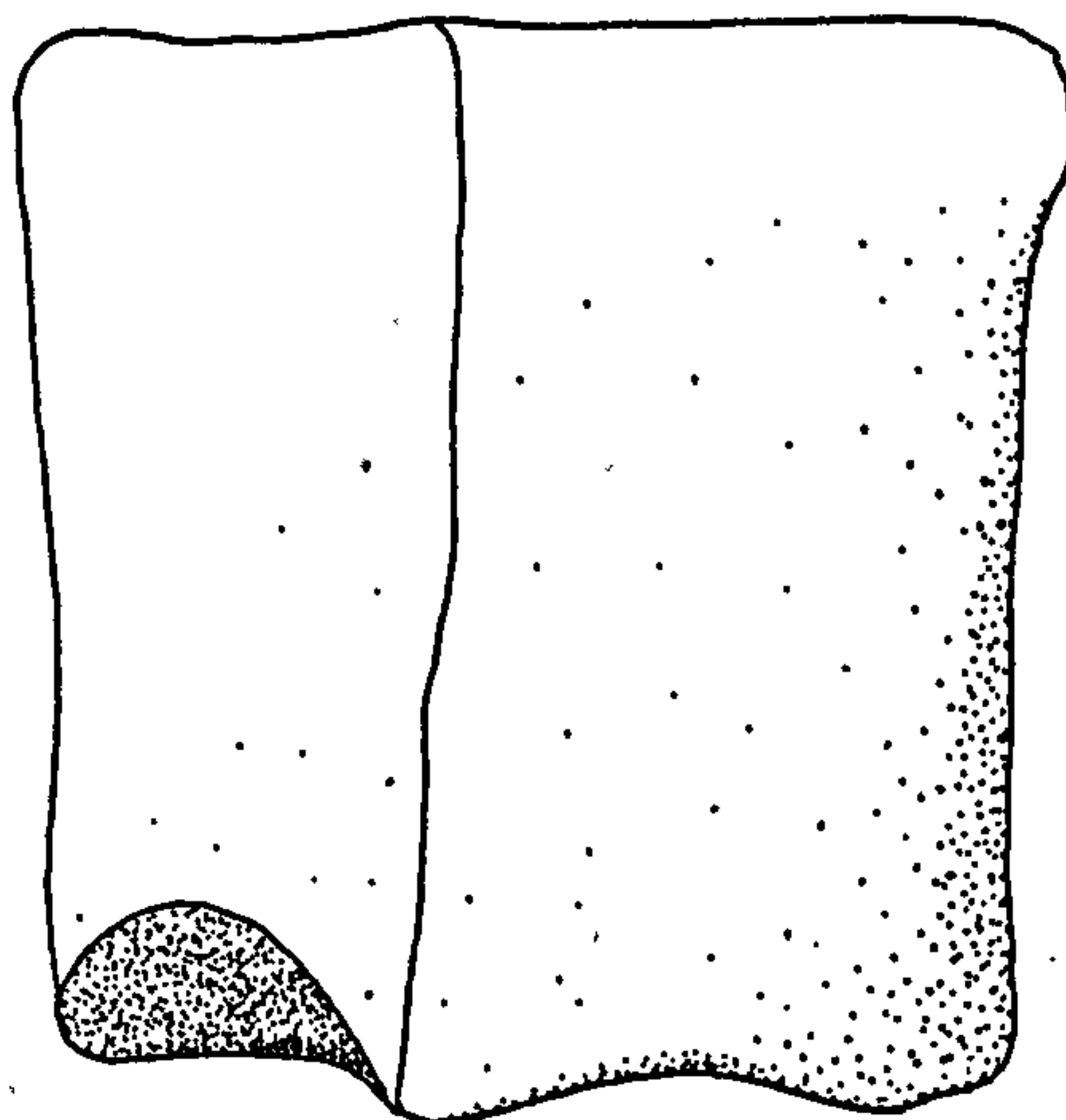
142.), now in the Reading Museum, one from the Waltham Abbey hoard now on loan to the British Museum (Manning 1988, 4-5.) and finally one from Pompeii (fig. 2:2), now in the Museo Nazionale Naples (Inv. No. 72.035) (Petri 1917, 40, pl. XLIII, 45.).

The Silchester anvil, now in Reading Museum, weighs some 20 pounds and is 330 millimetres in length and is almost indistinguishable from its modern counterpart. However the majority of surviving anvils from the period 5th century B.C to the first century A.D are approximately square in shape and about 300 millimetres high. (e.g. a block anvil from Pompeii now in the Museo Nazionale Naples Inv. No. 71961 (Petrie 1917, XLIII, 43.). (fig. 3:1) They taper slightly towards the base and are set in or onto a block of wood to bring them to a convenient working height. Sometimes, as in an example from Great Chesterford in Essex (Neville 1856), these are given a slight stem so that they can be mounted into the wooden block. Anvils of this form would be well suited to the beating of ingots into billets and billets into sheet indeed one is clearly being used for this purpose by the putti in the relief in the Museo del Terme. An anvil of this form can also be seen on an Attic red figure bowl c.480 B.C (pl. 3a) (now in the Ashmolean Museum Oxford Inv. No. G267 V518) at the feet of a seated armorer holding a helmet and file. For the refining of the helmet's shape a number of smaller round headed stakes would be necessary. Unfortunately none have yet been identified as such. However a 5th century B.C. red figure Athenian *pelike* depicting a seated armorer working a helmet on such a stake is preserved in the Petit Palais in Paris (pl. 3b). In addition to his stakes the armorer would require a "sinking" block,

usually a section of tree trunk with different sized hollows cut into to its top.

The other basic tools of the armourer are his hammers and tongs neither of which have changed greatly in the intervening years. The Italian armourer would have a complete range of hammers from the two-handed sledge to the light crosspein for delicate raising and decorative work. The sledge hammers found at Great Chesterford (Neville 1856, 6, pl. 1.), Silchester (Evans 1894, 145. figs. 8 and 9.) and in pit XVI at Newstead (Curle 1911, 285 pl. LXIII, 1 and 11.) differ little from their modern counterparts. In fact the only modern hammer form not known in antiquity is the "ballpein" equipped with a flat face at one end and a ball-shaped one at the other. The ancient armourer used a crosspein hammer instead, where the flat face is balanced at the other end by a rounded "chisel" edge set at right angles to the plane of the handle. This was the most commonly used type of hammer and corresponds closely to a combination of the modern "raising " and planishing hammers (figs. 3:2 and 3:3). The resemblance is so close that a hammer head from Southshields fort (Allason-Jones and Milet. 1984, 288.), now in Southshields Museum (Inv. No. SS 1900 103.) conforms almost exactly to the average dimensions of a modern raising hammer, its length being 74 millimetres as opposed to 75 and its width and depth respectively 24 and 13 millimetres instead of 30 and 10. Of the thirteen hammers found in two hoards from Silchester (Evans 1894, 146.) twelve of them were of this form (figs. 3:4, 3:5 and 4:1).

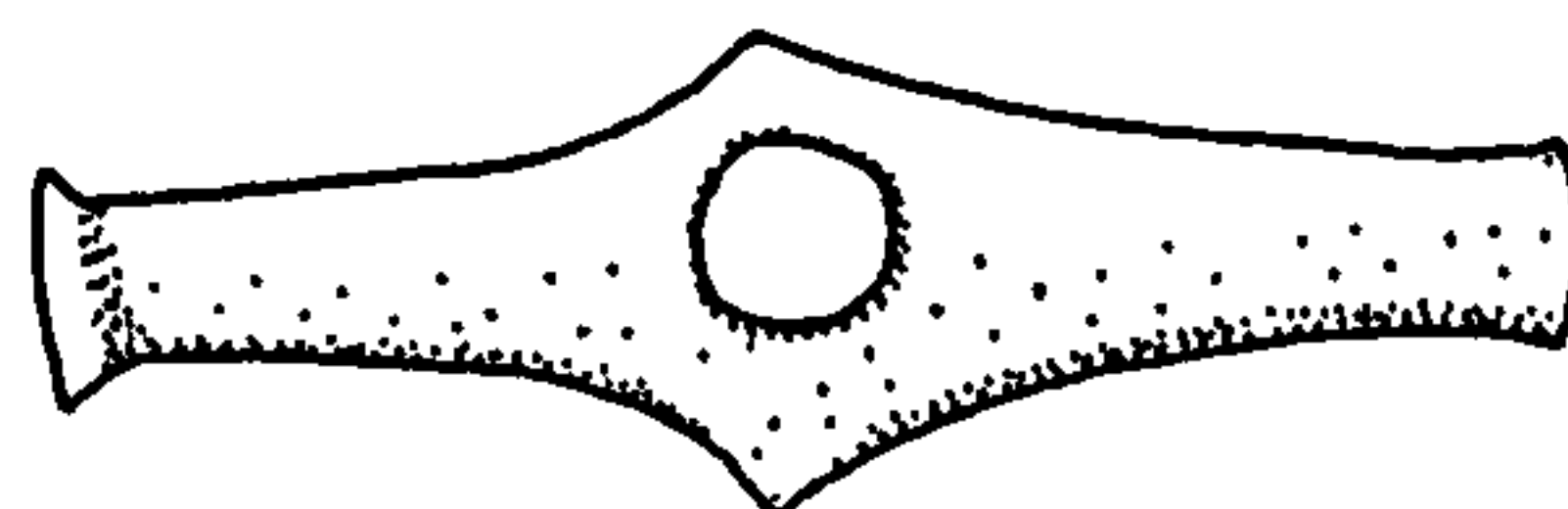
1 A block anvil from Pompeii



2 A modern planishing hammer

3 A modern raising hammer

4 A combined hammer from Newstead



5 A planishing hammer from Hod Hill



FIG. 3

Tongs also formed an important part of the armourer's equipment, for removing the hot metal from the hearth and holding billets of metal steady while they are beaten into sheet as is depicted in the Museo del Thermi sarcophagus. There were many different forms of tongs known from Republican and Imperial Roman sites, the majority of which are given an outward bow which ends in parallel gripping faces; examples of this type of tong are known from Pompeii (Petri 1917, 41, pl XLV.) Newstead (Curle 1911, 286, pl. LXIII 2 and 4.), Silchester (Evans 1894, 146, fig. 10.), London (Manning 1988, 6, pl.2.) and many other sites and they are depicted in the scenes of armourers at work discussed above (fig. 4:2).

Files are not common archaeological finds although they are essential to the armourer as well as many other metalworkers. They took a number of different forms: square varieties are known from Silchester (Reading Museum 07700-1) and Halton Chesters, now in the Museum of Antiquities Newcastle (1959.7) (Manning 1976, 24 fig. 14, 53.), Pompeii (Gaitzsch 1980, 346.) and Rheingönheim (Ulbert 1969, 53 taf. 48.). For decorative work such as chasing, repoussé and engraving punches graving tools and tracers were also widely used and are known from London (Manning 1988, 11.).

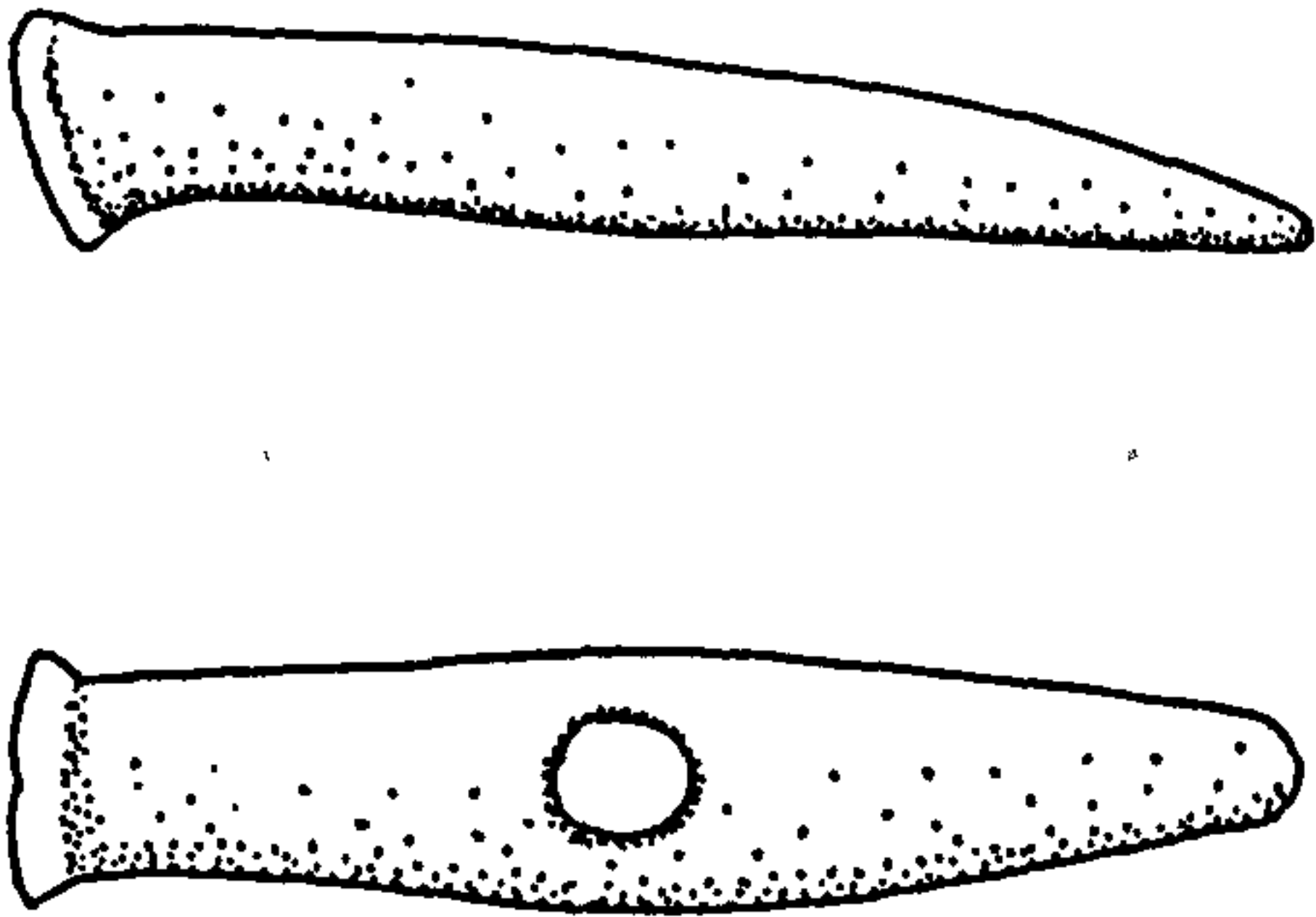
Although it cannot be categorically said that these tools were employed in exactly the same way as they are by the modern bronze worker or that the methods of manufacture described below are identical, they are without doubt all necessary in the shaping of a helmet and since the properties of bronze are determined by its constituents and are therefore to a great extent immutable, so are the methods for working it. The following discussion of the manufacturing

techniques employed is therefore based partially on those of the modern bronze worker and partially on the writer's own experiences and experiments whilst employed for three years at the Tower Armouries where amongst other things he actually "raised" a simple helmet of a Coolus form in "gilding" metal (a zinc/bronze).

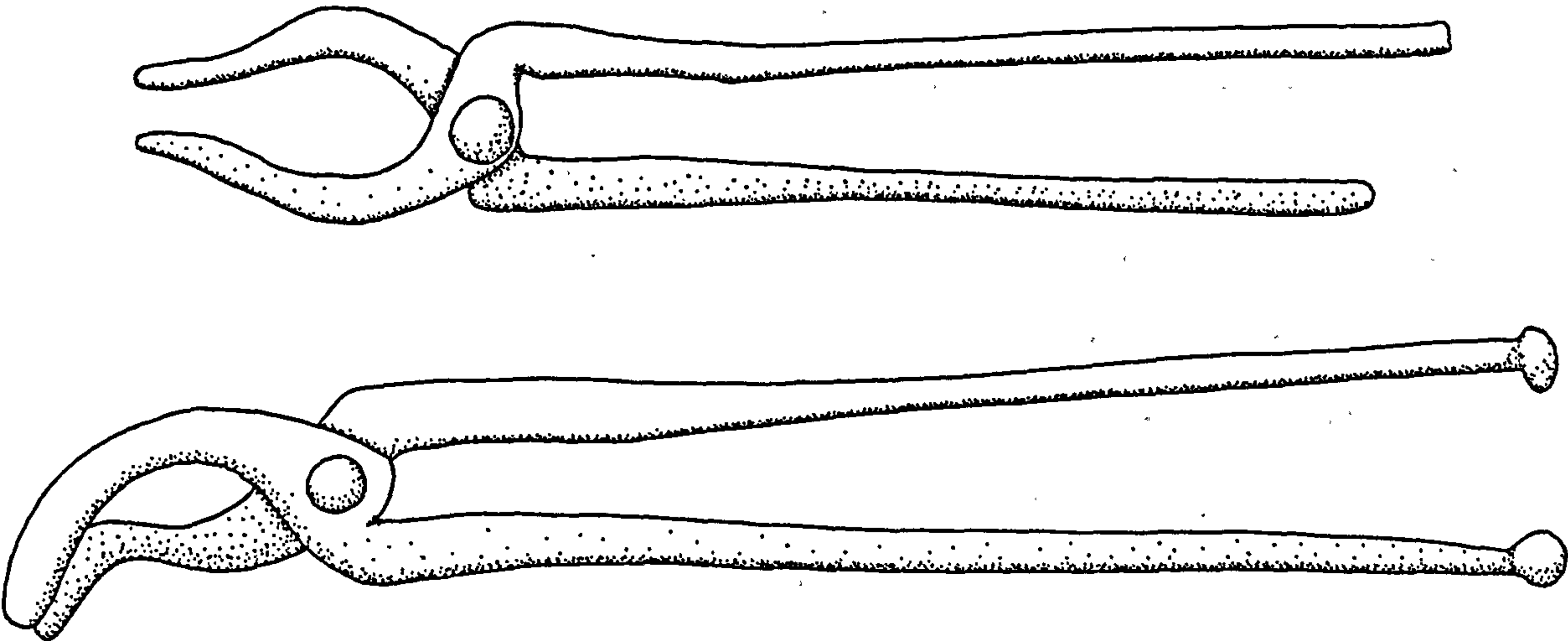
Whether or not the armourer would have smelted his own ore and cast his own ingots of bronze is open to question, but as a specialist himself it is likely that he bought his raw material in ingot form from a smelter. These ingots would need to be hammered into billets and sheet for forging into helmets.

Starting then with a thick sheet of bronze, the armourer would have annealed this by heating it in a charcoal forge to a "cherry red" colour, 426-676 degrees centigrade. The advantage of bronze over iron for armour manufacture is that it can be cold worked, consequently it is an easier medium for working and requires less fuel. Hammering cold bronze "work hardens" it and will eventually cause it to crack unless it is annealed. The hardening is due to the distortion of the crystalline structure and annealing allows this to reshape itself and restores the softness and the malleability of the metal. The sheet would then be quenched, the rapid cooling of bronze unlike that of iron does not harden the metal but further softens it. Bronze which is allowed to cool slowly in fact becomes approximately twenty-five percent harder than bronze which has been quenched. (Blyth 1977.)

1 A combined hammer from Silchester



2 Two pairs of tongs from Newstead



3 The method used for creating an indented brow-band

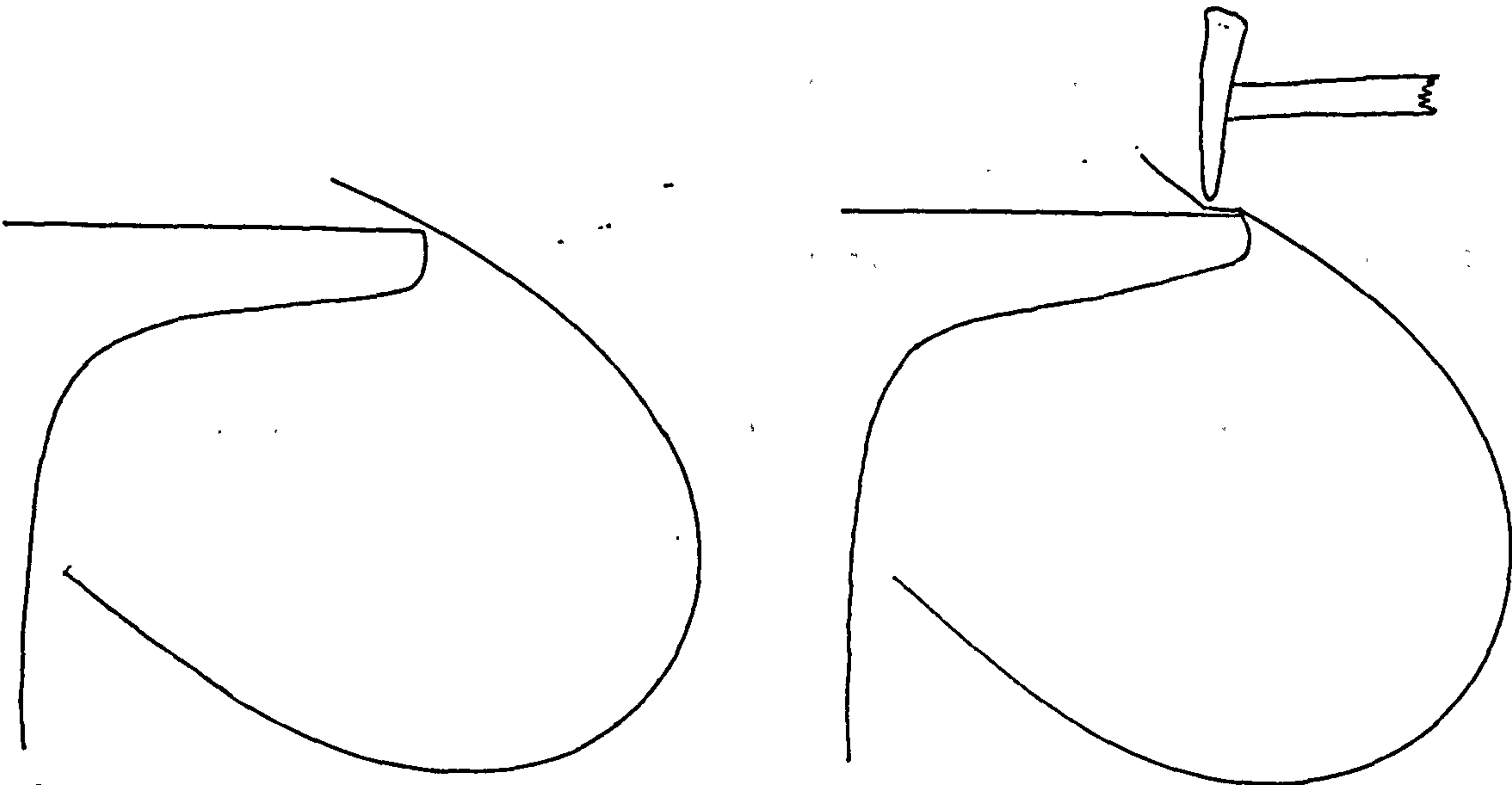


FIG. 4

The work would be marked out around the central point in concentric circles to act as a guide for the hammering with a pair of dividers, finds of which are common throughout the Roman world. The size of the sheet of bronze that the armourer would need for a helmet was partially determined by the thickness of the bronze sheet he started with but is also calculated on the basis of the diameter of the original sheet of bronze being equal to the diameter of the finished article plus its height. To obtain a smooth curve to the helmet bowl, it is essential that the hammer blows are consistent and spread evenly over the metal, spiralling out from the centre, in order to avoid overstretching of the metal in any one area.

First the smith would "hollow" or "block" the bronze sheet by hammering it into a specially cut depression in a tree trunk or sand bag. This was done by working the metal from the outer edge with concentric hammer blow spiralling to the centre, thus producing a shallow bowl shape. After reannealing, the metal was then worked into a deep bowl, by being driven down over a domed or round headed stake to the required depth of the helmet; during this process the bronze would need constant annealing and quenching. On those helmets with a crest-fixture raised in one with the bowl e.g the "Montefortino" and certain types of "Hagenau" helmets (Chapters 8. and 10.) an allowance would have to be left at the apex of the bowl from which to form the crest knob. The armourer would be very careful to overlap his hammer blows as he worked in order to stretch the metal evenly (pl. 4a). This hammering with a "raising" or crosspein hammer would force the surplus metal down towards the rim. Concentric hammering would ensure

an even thickness and a symmetrical bowl. Slowly the metal would thicken towards the bottom and so begin to form the lower rim.

To produce crest-knobs or Phrygian bonnets in one with the rest of the helmet bowl the surplus metal at the apex would be drawn up by "swelling" the metal with consistent and concentric hammer blows over a very small area from the inside of the bowl. This being completed the armourer would proceed to "raise" the crest-knob by drawing in the swelling to produce a neck and then to form the hollow crest fixture on a thin round headed rod-like stake. The bowl would be finished by returning it to the ball headed stake, the armourer then concentrating on producing an even thickness throughout the skull, usually between 0.7 mm and 2 mm. and forcing any surplus to the lower edge.

The small projecting neck-guard on helmets such as the "Montefortino" and "Coolus" (chapters 8 and 9.) were produced by drawing the metal outwards at the back, whereas on helmets which had deep fitted neck-guards such as the "Etrusco-Thracian", the "Attic" and the "Chalkidian" the neck-guard formed an extension to a well-fitted indented brow-band which was drawn in and downwards by hammering it over the edge of a flat stake or a *bickiron* from the angle between the bowl and brow-band. (fig. 4:3) The line of the brow-band would be scribed on the outside of the work and the half formed helmet bowl would be placed over the stake so that the marked line was a hammer's width away from the edge. The metal would then be struck on the line and driven downwards. The armourer would turn the work slightly after each blow rotating it until he had completed a revolution.

The Negau, Chalkidian and Attic helmets, have bowls with marked longitudinal medial ridges. These must have been formed in one of two ways or by a combination of both, either by placing the bowl over an elliptically shaped stake and raising the ridge from the outside or by placing the helmet onto a sand bag or wooden block and hammering the ridge from the inside using a chisel shaped punch.

When the basic form had been achieved, the lower rim would need to be finished by evening up the upper line and trimming back the excess. This would then be "caulked" with a hammer, i.e. inverted and placed on a sand bag and the edge thickened by hammering it to give it a strong even thickness, up to 7 or 8 mm on some Montefortino helmets (chapter 8.) but usually about 2 to 4 mm on most other forms. On some helmets produced between the first century B.C and the first century A.D. e.g some late Montefortino and some Hagenau helmets this edge was left squared up, but on the majority of other forms to a lesser or greater extent it was given a round or oval section.

After reannealing, the armourer would have repeated the hammering process with the round flat side of his hammer, which would have acted in the same way as a modern "planishing hammer", to remove all the dents and marks in the surface produced by the "raising". Planishing produces the quasi-hexagonal marks so characteristic of articles raised with the hammer. Usually this surface patterning is removed when the helmet is ground and polished and can then only be seen on the inside, however a number of poorly finished helmets of the 1st century B.C. have not been ground or polished and so these marks have not been removed e.g. two late Montefortino helmets, one from Montenerodomo in Italy, now in the collection Leopardi in Penne and

one now in the British Museum (figs 158:99, 166:123 and 167:126. (Chapter 8, table 1, Nos. 99, 123 and 126.))

All that now remained to be done was the decorating followed by the "glazing" processes i.e. the grinding and the polishing. The majority of helmets dating from the 5th to the 2nd centuries B.C. are decorated in some form or another and on many^{this} is quite exquisite and complex. This decoration takes a number of forms, either the embossing of the helmet bowl or cheek-pieces themselves, by a technique known as repoussé (literally pushed out), or engraving and chasing with punches and gravers or pointillé work or plating or by the applying of decoration which is soldered or riveted on. This appliqué work may in itself be embossed, cast, or turned on a lathe.

Perhaps the most common form of decoration on Italian bronze helmets of the 5th to the 3rd centuries B.C. is embossed and chased decoration. The technique known as repoussé is executed from the inside of the helmet with punches and crosspein hammers. The helmet is placed face down on a pad of some material that will yield to the force of the blow given but which will at the same time support the metal nearby and stop it being disturbed. For this purpose it is necessary that the supporting material is in continuous contact with the underside of the metal. The best substance for this purpose is pitch, which is brittle when cold and so is usually mixed with brick dust. Before he started the embossing the armourer would gently heat the pitch block and inbed the helmet. The main shaping of the decoration is executed from the inside with hammers and punches; a Samnite-Attic helmet from Vulci decorated with embossed volutes at each temple, now in the British Museum, Inv. No. 2724 1842.7.28-711.,

(chapter 7, Table I, No. 21) clearly shows traces of punch and hammer marks on the inside of the volutes (pl. 4b). Having thus embossed the basic form of the decoration, the helmet would then be heated gently to remove it from the pitch block and the fine details such as individual curls in the the locks of hair and the palmettes on a Chalkidian helmet now in the British Museum, Inv. No. 2830, 1856,12-26.616., (chapter 4, Table I, No. 11.) (fig. 81:11) would then be chased in from the outside with a fine chisel shaped graver or tracer and a light hammer. The depth of the engraving on this and many of the Apulo-Corinthian helmets leaves no doubt that it was executed with similar tools.

Not all incised decoration was executed with a graver: some was applied with punches, as on considerable numbers of Negau helmets which are decorated by a continuous band of punched volutes which demark the junction between the indented brow-band and the helmet bowl itself. Quite often on helmets of the later 2nd and 1st centuries B.C. the incised decoration was simply added with a file.

The applied decoration on Italian helmets was manufactured in a number of different ways and calls for expertise in a number of techniques. Some early 5th century Negau and Chalkidian helmet are decorated with cast appliqué figurines, perhaps the most famous of which is the early Chalkidian helmet from Vulci, now in the Bibliothèque Nationale, Paris, Inv. No 2013, 5650. (chapter 4, Table 1, No.2.) Further examples of cast applied decoration occur on a group of 4th and early 3rd century B.C Etrusco-Thracian helmets (chapter 5.) which are equipped with cast bronze zoomorphic earguards in the form of seven-toed webbed feet. It is impossible to tell

whether the armourer made these castings himself or whether they were to some extent sub-contracted, but the most likely process employed in producing them was "*cire perdue*" or lost wax casting. This involved the modelling of an original in wax and then coating it in a clay mantle which was then fired to remove the wax. Molten metal was then poured into the mould and when it had cooled the mantle was simply broken open. This process is time-consuming and not cost-effective if a number of similar objects or motifs are to be produced. An alternative was to produce simple motifs in a similar fashion but in reuseable two piece moulds, a well tried technique used in Italy from at least the 7th century B.C.

The Italian armourer also applied repoussé and embossed sheet bronze decoration. The extent and type of this decoration was regional and varied from one workshop to another and from one helmet type to another. Its use as a decorative technique is more widespread in southern than northern Italy. The armourers of Lucania riveted repoussé bronze wings to the sides of Samnite Attic helmets (chapter 7, nos. 17, 27, 28 and 29.) and other south Italian craftsmen decorated the cheek-pieces of a regional variant of the Chalkidian helmet with embossed bronze sheet rams' heads which are soldered on. Despite the concentration of helmets utilising this technique in the south the Etruscan armourers also exploited it e.g. embossed sheet bronze eyebrows soldered to a Chalkidian helmet from Perugia in Umbria now in the Louvre, Inv. No. 1104 (chapter 4, Table 1, No.4.).

Although some applied repoussé decoration was riveted to helmets, the overwhelming majority was soldered. Modern solders are an alloy of copper, silver and tin; Theophilus however recommended two parts

silver to one part copper and this is the most likely composition for the solder used by the Italian armourer as it combines strength with ease of use. Softer solders were known : the analysis of a 4th century A.D. silver hoard from Traprain Law in Scotland has shown that solders of 85% tin and 15% lead were in use (Piggott 1955, 38-50.).

In addition to casting and embossing the armourer also used the technique of turning decoration on a lathe. Examples of applied lathe turned decoration are restricted to the earguards of a number of Etrusco-Thracian helmets from Perugia and Vulci (Chapter 5.).

Finally some helmets, albeit a minority, were partially or totally plated with other metals tin, silver and gold. The plating of the bronze served two purposes, the first was purely to enhance its appearance and the second to protect the bronze from the deleterious effects of the atmosphere and sweat.

The process of tinning is a simple one and relies on the fact that the melting temperature of bronze is higher than that of tin. The armourer simply poured molten tin into the helmet bowl and swilled it about and then poured out the residue, similarly the outer surface of the helmet was plated by pouring the tin on the outside and smoothing it over to obtain an even coating. To all intents and purposes tinned bronze appears like silvered bronze. However a number of helmets totally or partially coated in silver are known (e.g. the Todi Chalkidian, now in the Villa Giulia Museum Inv. No. 27,184-86. and the Chalkidian helmet from the Santa Giuliana necropolis near Perugia, now in the Museo Nazionale di Perugia Inv. No. 1101 (Chapter 4, Nos. 3 and 5.)). Two methods of gilding were known to both the Etruscans and the Romans: the first consisted of cutting gold foil to shape and

overlapping the sheets and then simply glueing it or soldering it in position. The other and the one most readily applied to helmets was mercury gilding. This was done by making an amalgam of mercury and gold, coating the object with it and then gently heating the helmet whereby the mercury evaporates thus coating the surface in gold. Obviously any such plating would only be carried out after the helmet had been polished and assembled but before the lining had been added.

Prior to the final pickling in an acid solution, to remove the impurities collected on the surface of the bronze during the raising process, and grinding and polishing, the holes for attaching the internal and external fixtures such as the cheek-piece hinges and crest-fixtures would be drilled or punched. In addition to the cheek-pieces some helmet forms are equipped with a third point of attachment for the chin-strap, usually a double loop fastening riveted to the inside of the neck-guard (fig. 5:1). Hinged cheek-pieces were shaped separately and riveted to the helmet after polishing.

The number of hasps on the hinges vary between one form of helmet and another, the Attic and Chalkidian types are multi-hasped whereas the Montefortino and Coolus helmets have only a single hasp projecting from the helmet bowl and two from the cheek-piece. However many hasps the upper section of the hinge has, it is made in the same way. It consists of a small thin sheet of bronze, usually under 0.7 mm thick, shaped by simply hammering it over on itself around an iron rod and then attaching it with two or more rivets to the inside lower edge of the helmet bowl. The hasps for the lower half of the hinge are formed from the upper edge of the cheek-piece which are similarly turned over the same rod. This iron rod is often replaced in helmets

of the 3rd century onwards by a bronze one. In general on only 5th to 3rd century and some of the 2nd Century B.C. helmets are the hinges made with care, the corners being rounded and the plate being trimmed up to size and riveted by two small iron or bronze rivets. On helmets of the 2nd and 1st century B.C. the workmanship in general is shoddy and the hinge plates are simply formed from any scrap of bronze which is roughly folded over and riveted without any attempt at tidying up or trimming. This collapse in the manufacturing standards in armour during the late Republic is general and is not remedied until the early years of the Principate and is clearly related to the removal of the property qualification for entry to the legions by Marius and the vast and rapid increase in the size of the armies of the late Republic. In the year 49 B.C. alone, Caesar raised five fresh legions, all requiring new equipment: assuming a strength of four thousand men per legion and a reuse of old equipment and equipment in store of around twenty percent a conservative estimate of the number of helmets required would be 16,000. This calculation does not take into account that Pompey was also raising and arming new legions and so the total of new helmets supplied in one year would perhaps be as many as twice this number. (For a possible explanation for the beginning of the decline of standards see discussion in chapter 11.)

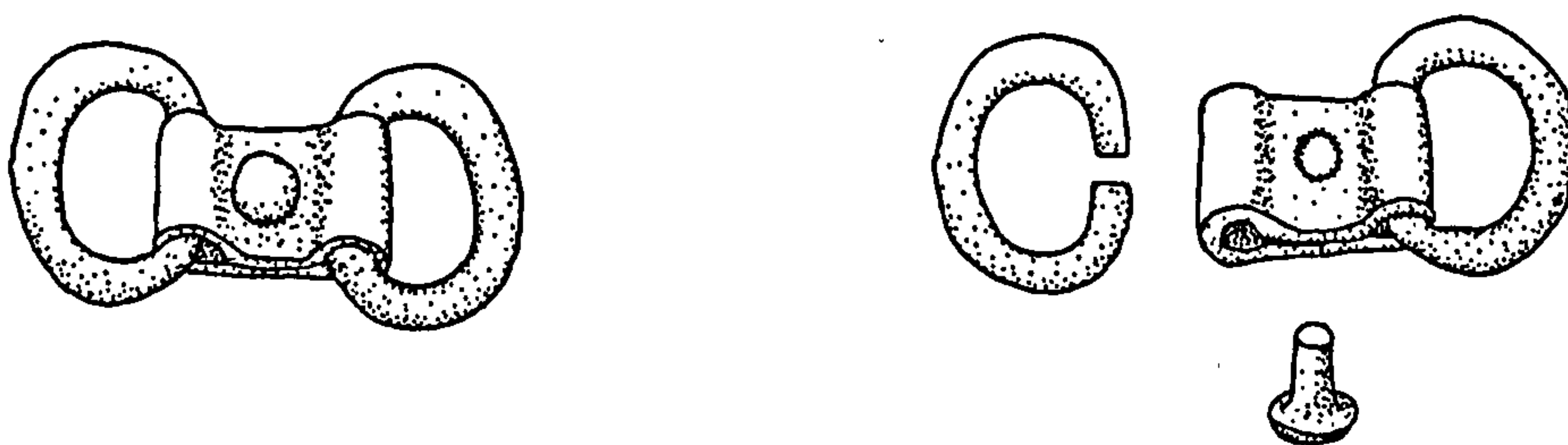
With the exception of most Montefortino helmets produced between the 5th and the 1st century B.C., the majority of crest-fixtures were generally made separately and applied to the helmet after it had been polished. Some show considerably less competence and skill in their manufacture and application than do the helmets themselves. In these instances it may perhaps be that this work was passed to an

apprentice, although as the crest-fixture was usually applied to the finished item it seems odd that the master craftsman would take the risk of allowing his carefully formed helmet to be ruined by inexperienced hands. The other possibility is that the helmets were sold without crest-fixtures to the individual to have the crest of his choice added or to a middleman who simply added more crudely made crest-fixtures before resale. Unfortunately not enough is known about the supply of arms in pre- Imperial Italy to be able to say for certain.

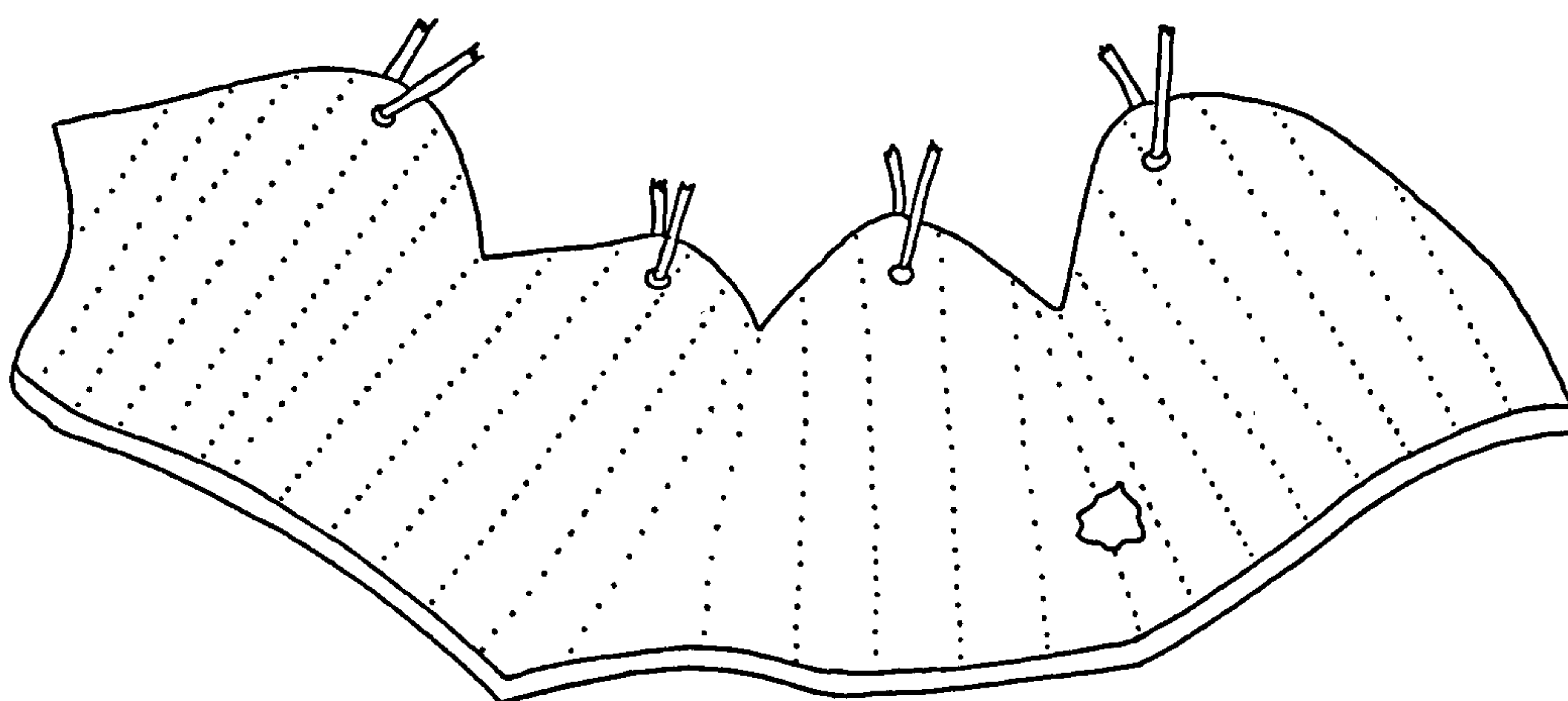
Before the constituent parts of a helmet were assembled i.e. the bowl and cheek-pieces they would be polished individually. This process was laborious and the initial stages were probably started with fine iron files, the armourer then progressing through a number of abrasive stones and powders including pumice of decreasing coarseness. Sherlock states that it appears to have been normal practice throughout the Roman period to polish all regularly shaped silver vessels on a lathe (Sherlock, D. 1976, 17.) this is also likely to have been the case for spun bronze items and therefore it seems likely that the lathe was used to polish at least those helmets produced by spinning if not those regularly shaped ones produced by raising

All helmets regardless of how they were manufactured must have a lining of some sort. No matter how well made or how thick a helmet is, it is of limited defensive potential without a lining. Whilst the metal of the helmet may absorb a proportion of the kinetic energy of a blow and stop it penetrating, if there is no lining the rest of the force would be transferred directly to the wearer's skull causing

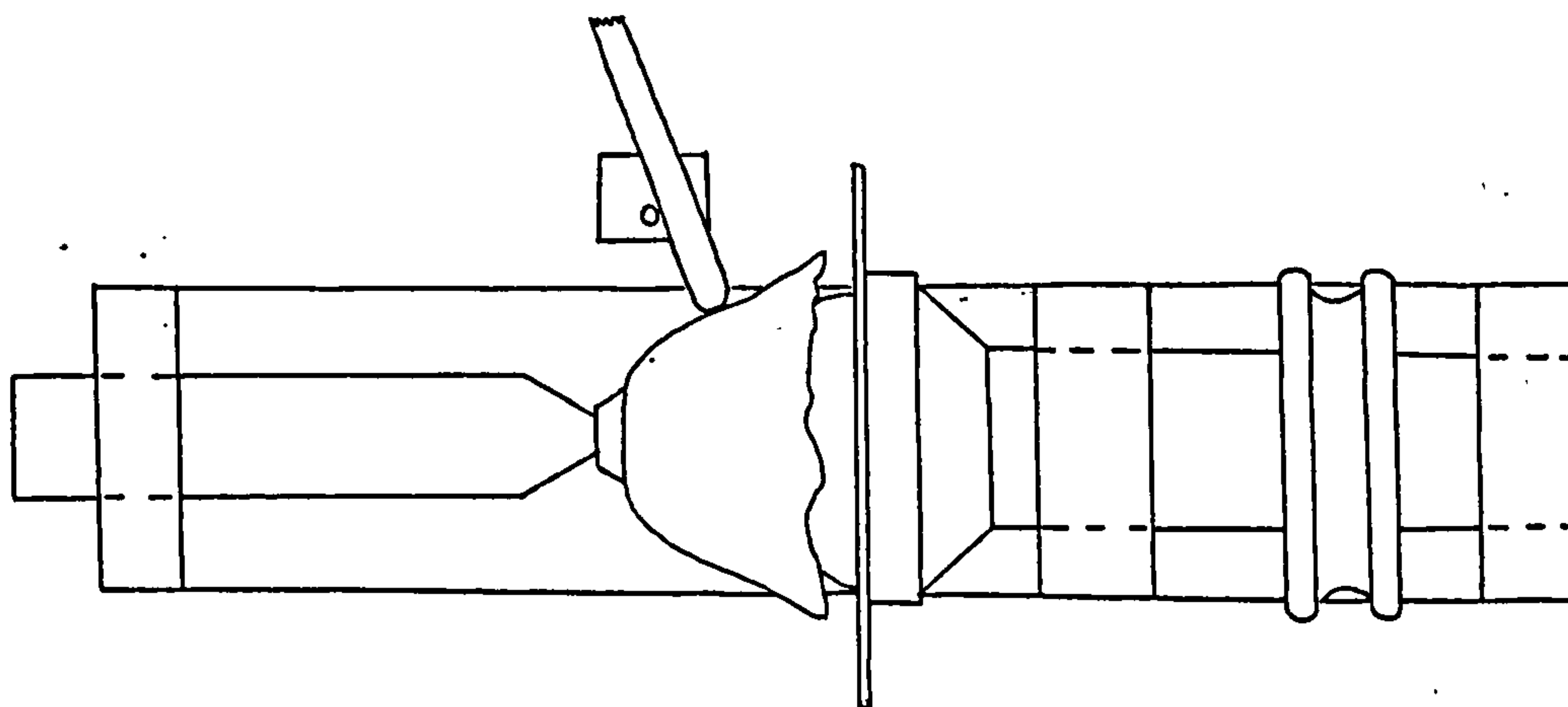
concussion or fracture at best. The lining is therefore used to absorb and dissipate this force. Scholars have often suggested that leather was used for lining helmets. This theory can be rejected, first and foremost on the basis of practicality and secondly by analogy with other ancient and mediaeval helmets. If not oil tanned, leather becomes stiff and brittle when subjected to constant soaking. Therefore a leather helmet lining which would be constantly saturated with the wearer's perspiration would not only become very uncomfortable to wear but would deteriorate and need constant replacement and its use may be rejected on these grounds alone. Furthermore leather that is wet would chafe the wearer's skull and cause acute discomfort especially in the heat of the Mediterranean summer. Leather may also be rejected on the basis of analogy with the majority of surviving helmet linings up to the 17th century. Considerable numbers of helmet linings survive in Europe from the fourteenth century onwards and these are invariably made of coarse linen quilted over tow wool or grass stuffing. This is a very efficient shock absorber, comfortable to wear and readily soaks up perspiration. It is ludicrous to suggest that the peoples of Italy had not learnt of the advantages of this type of lining, not least because quilted armour itself was known. From the 5th century onwards Etruscan sarcophagi show armour of this type in use and Caesar (The Civil War Bk III 44,7.) in commenting on the actions of his troops, at the siege of Dryacchium states that they prepared quilted jackets for themselves, to wear over their armour, to counteract the arrows of the Pompeian troops.



1 A double-loop chin-strap fixture



2 A lining from a helmet in the Wallace Collection



3 A diagrammatic reconstruction of a helmet turning lathe

FIG. 5

The other substance long recognised in the ancient world for its defensive potential is felt. Indeed in the Iliad (Book X, 265.) Odysseus is described as wearing a boar's tusk helmet lined with felt. The forerunners of the Pilos and Boeotian helmet the *pílos* cap and the *petatos* were both made of felt. It is therefore likely that Italian helmet linings were made of one or more of these materials.

There are no surviving Italian helmet linings from the period between the 5th century B.C and the 1st century B.C. but there are, however, three pieces of direct evidence, two from Roman helmets excavated in Britain and one from a Hellenistic helmet from Kertch in the Crimea, which cast some light on the subject. The first is a cheek-piece from Hod Hill (Brailsford 1962, 5.), dating to the 1st century A.D., which bears traces of having been lined with a coarse woven fabric, probably linen. The second is a 2nd century iron "sports helmet", of the type used by the auxiliary cavalry during the empire, from the fortress at Newstead. Curle (1911, 170.) states that the inside was coated with a sticky substance possibly resin which would act as a glue for attaching the padded woollen lining. There is a mask from a similar sports helmet from Hellingen in Holland which also has a similar substance inside it. Finally evidence from a 3rd century B.C. iron Hellenistic helmet from Kertch (Schröder 1912, 317.) would also seem to corroborate this evidence. Where there are no traces of stitching holes, it must be assumed that linings were glued in, using a similar substance to that found in the Newstead and Hellingen helmets.

On a number of Chalkidian and Apulo-Corinthian helmets the main bottom edges of the neck-guard and brow-band are pierced with small holes, to facilitate the sewing in of the lining. This echoes the 6th century practice common on the Corinthian helmet. In addition for a similar purpose, the majority of Negau helmets were equipped with a separate internal, pierced, lining ring. Although it seems likely that these linings were made of padded textile either felt, linen or wool, the actual form they took can only remain conjectural. By analogy with Mediaeval and later helmet linings it is possible that they were like them divided into four segments each tapering towards the top and pierced at their apex for a lace to enable them to be drawn together to produce a comfortable fit (fig. 5:2).

In addition to the traditional method of helmet manufacture by raising it is evident from the study of some extant helmets especially late Montefortino and Hagenau helmets that a completely different process was also being employed i.e. spinning on a lathe. As with all ancient manufacturing processes, it is of course impossible to say how exactly an Italian armourer would set about spinning a helmet bowl, but in all its principle parts it cannot have been dissimilar to that employed by a modern metal worker.

The process known as spinning is applicable to shapes which are circular in section, although the finished form may be altered by the use of snarling irons or subsequent reshaping over stakes with a hammer. There is evidence for the use of the lathe by the Etruscans and by the late Republic, if not before, the process was in general use amongst Roman bronze-smiths to whom the ease with which a number of exactly similar copies of a shape was important. This is confirmed

by Vitruvius who says of the lathe "Non minus quae sunt..... cisia torni ceteraque." (10.1.1) and again in Book 10.4.1. he says "Ad tornum aut circinum fabricatus (axis)". According to Pliny the Elder (Natural Histories Book 7:198.) Theodorus of Samos was the inventor of the lathe. Both Pliny (Natural Histories 36:90.) and Vitruvius (Book 9:86.) document its use for shaping stone.

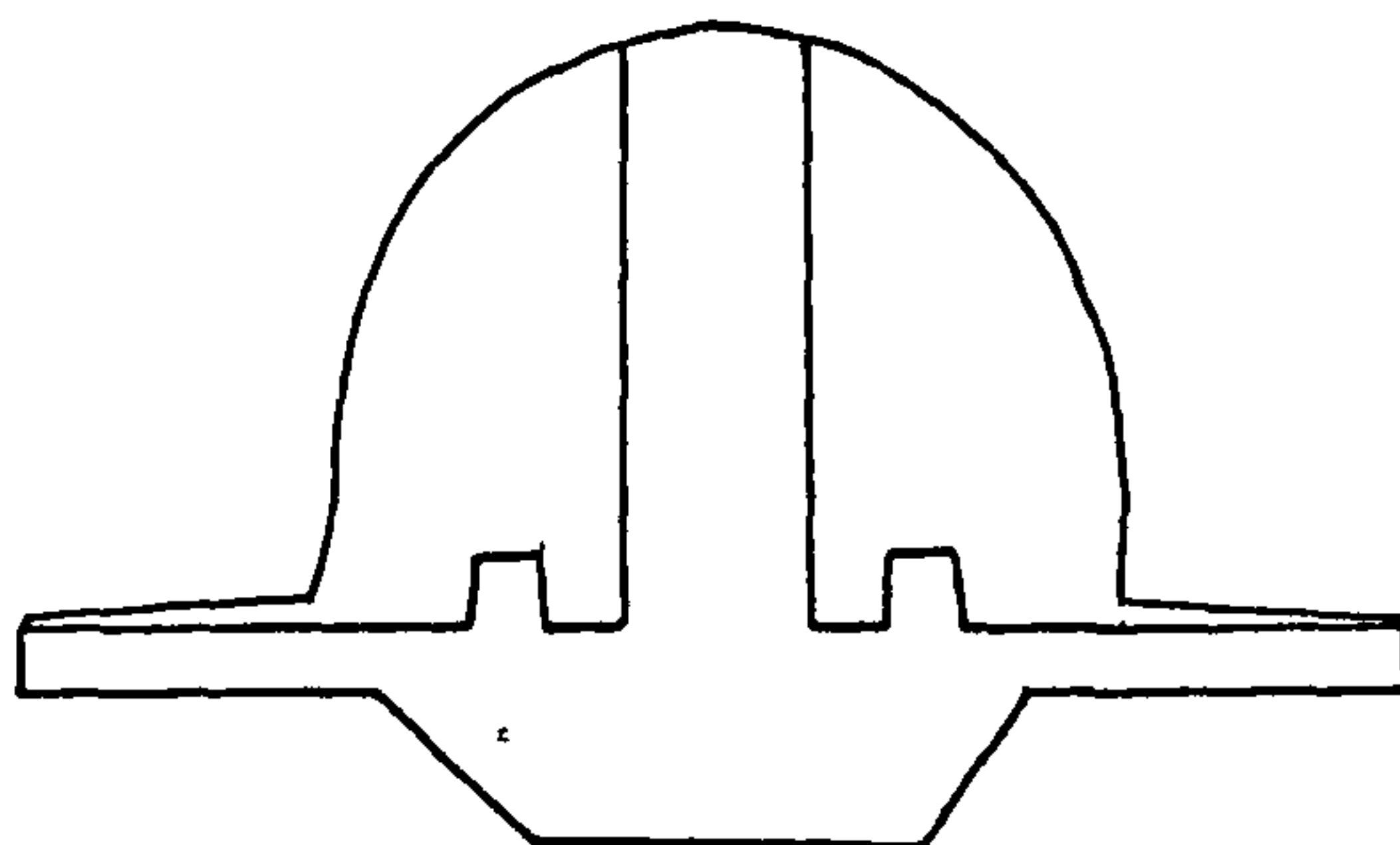
The principal tools employed are a lathe, a wooden pattern, called a 'former' and spinning tool. Almost any single geared lathe may be used.

Dr Mutz has made a considerable and very detailed study of Roman lathe turned domestic items, and has in addition made a number of experimental reconstructions of Roman lathes (Mutz 1972, 14-52.) (fig. 5:3). This lathe incorporates all the features which can be inferred from the products themselves. This lathe requires a minimum of two workmen, one to crank the lathe and the other to actually turn the work. The lathe itself is geared to give seven revolutions of the spindle for every revolution of the wheel.

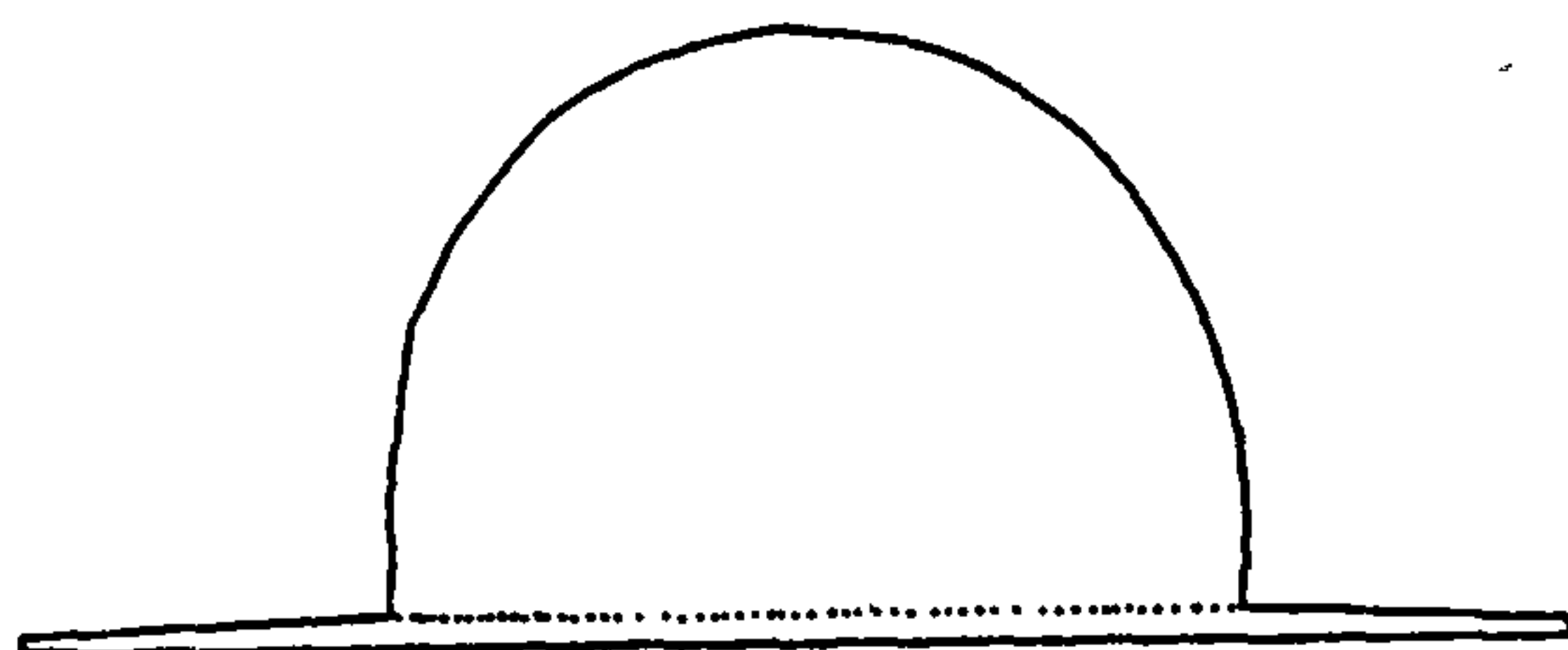
The former is a block of hard wood of exactly the desired shape of the helmet bowl, although slightly smaller by only the thickness of the metal to be used. When the finished shape is such that the former may be easily withdrawn from the completed helmet (as is the case with Hagenau helmets.) the former is made in one piece. If the shape of the helmet were complicated by undercuts, a sectioned former would be employed (fig. 6:1)

The spinning tools used would of necessity be quite large and heavy, somewhere in the region of 600 millimetres in length and 20 to 30 millimetres thick , made of hardened and carburised iron. All spinning tools would have to have a very highly polished surface with no sharp edges which might damage the work. To spin a helmet bowl therefore the smith would first produce a former of the right shape , but with a slightly flattened apex which could be coated with pitch to provide better adhesion to the bronze. A disc of bronze would be placed between the former and spindle. The disc would be centred by holding a piece of wood against its outside edge while it rotated. When centred the tail stock of the lathe would be tightened to clamp the work, the spinning tool would be placed against a rest and the smith taking position close to the spindle would press slowly and firmly against the disc as it rotated, stroking from the centre to the edge, gradually forcing the bronze against the former (figs. 6:1 - 6:5). Because of the heat and friction between the tool and the work, a lubricant must have been used. For this a mixture of oil and tallow is most likely. Whenever the metal became work hardened it would have to be annealed. When the bronze had assumed the shape of the former it was trimmed to size whilst still in position on the lathe, and indeed sometimes polished and planished there. Some helmets (e.g. Chapter 8, Nos. 131 and 139. and Chapter 10, Nos. 3, 15 and 26.) did not receive the final polishing process and therefore still exhibit concentric spinning marks. Occasionally chatter marks ,a scuffing on the bronze where the spinning tool has not been held firmly enough and as a result has skidded across the metal, producing a characteristic scar (e.g. Chapter 8, No. 139. and Chapter 10, Nos. 3 and 15.).

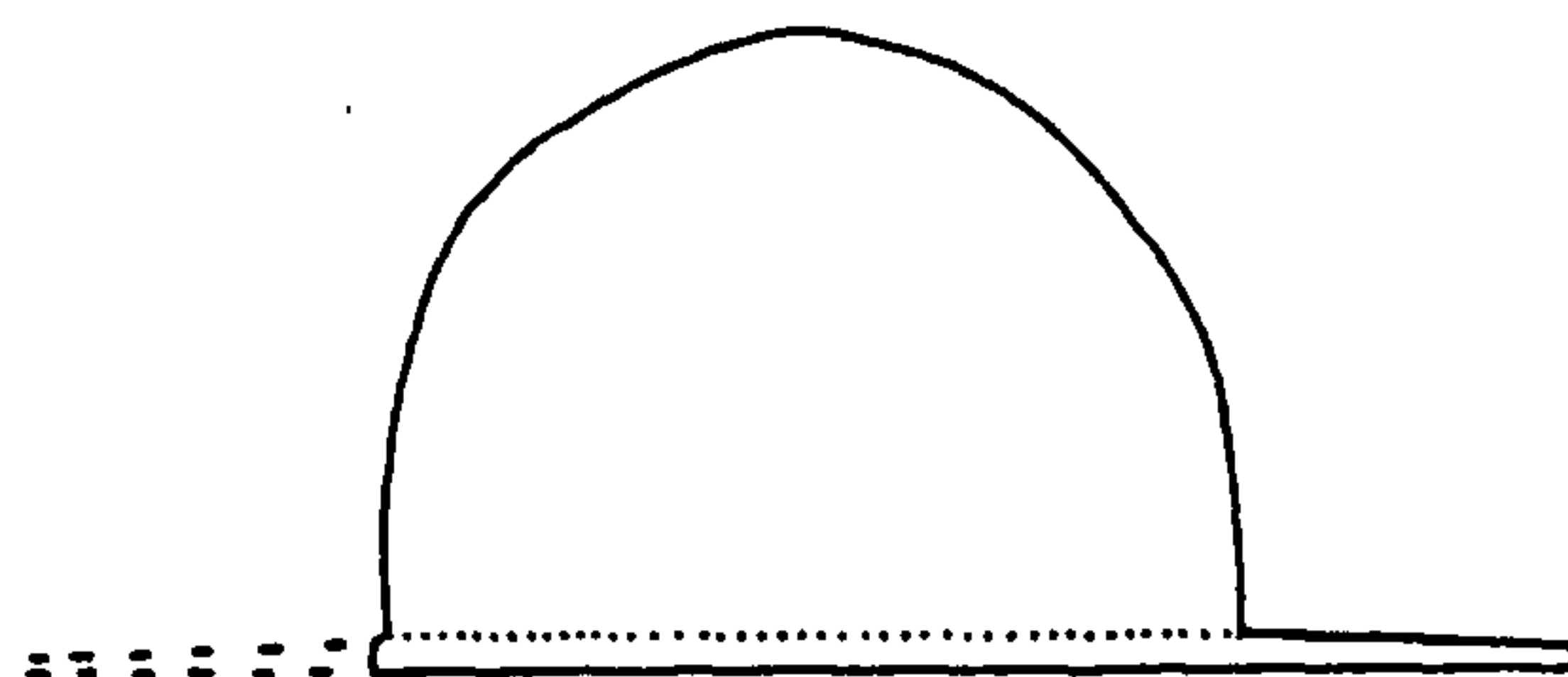
1 A sectioned chuck



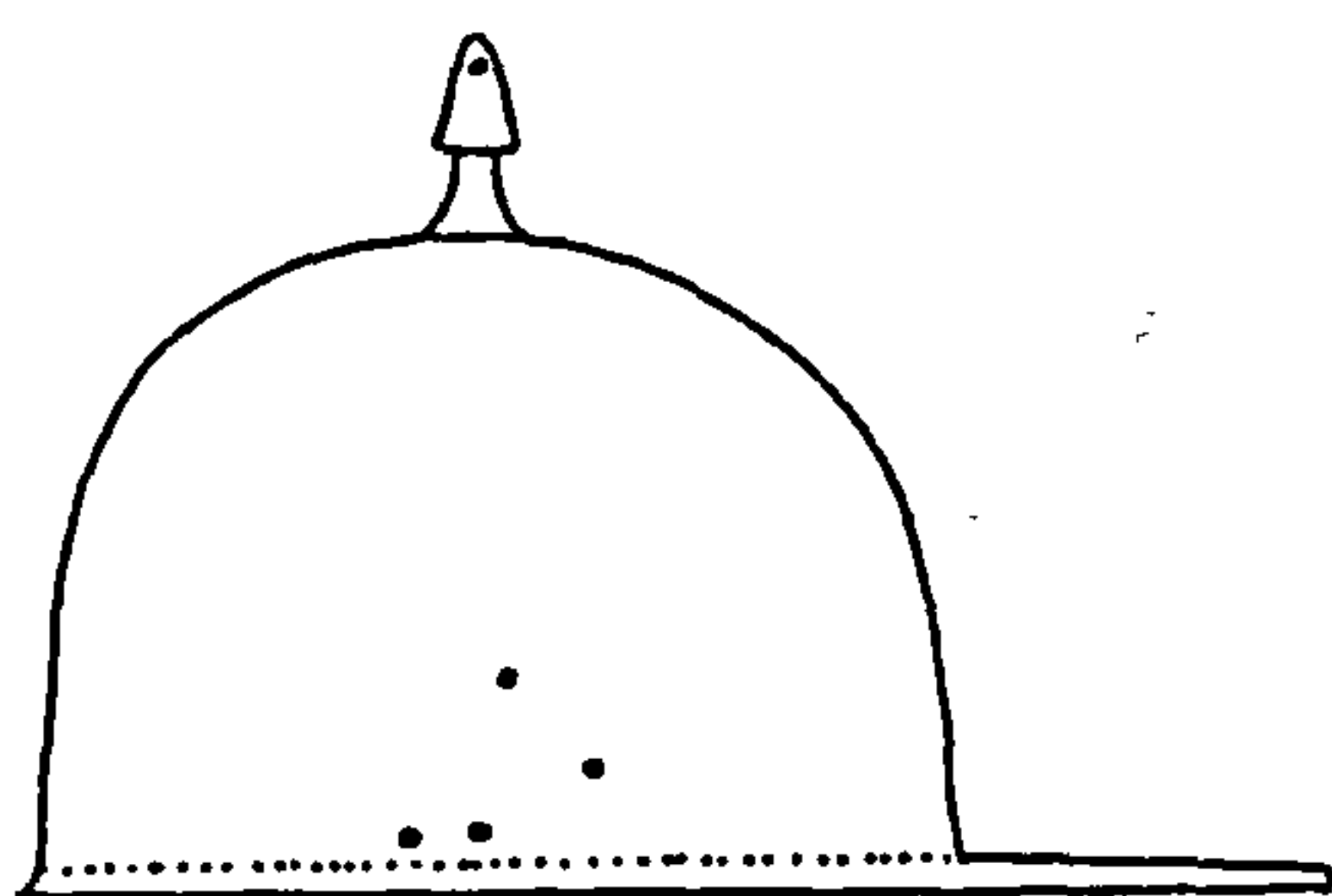
2 A spun helmet blank in the form of a flanged bowl



3 Bowl with the flange trimmed to form the neckguard



4 Bowl with applied crest-knob



5 Finished helmet with cheek-pieces

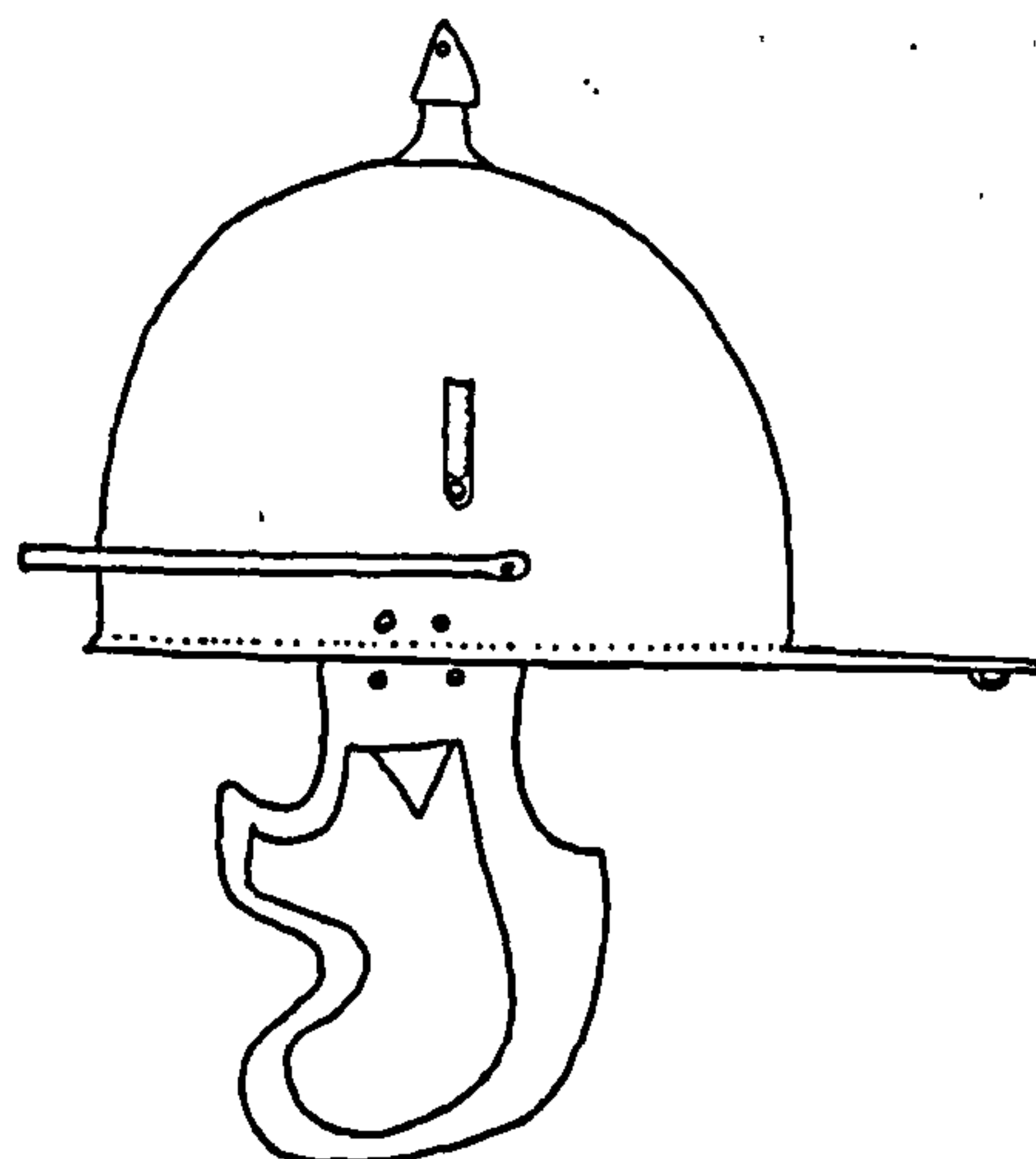


FIG. 6 Stages in producing a "spun" Hagenau helmet
Scale 1:5

The final result would, of course , depend on the shape of the original former and the skill of the smith, but in most cases the simplest shape would be a diagnostically hemispherical bowl with an everted flange at the base, which could be cut away to leave a flat neck guard, as is found on early Imperial Coolus, Montefortino and Hagenau helmets. Considerable numbers of 1st century A.D. spun shield *umbones* must have utilised formers of similar style.

The advantages of spinning are quite obvious, firstly that it allows for the production of large numbers of standardised helmets; secondly helmets could be produced more quickly by spinning than by raising , and arguably requiring less skill from the armourer.

Considerable numbers of late Republican and early Imperial helmets display close similarity of shape and dimension. Although a single smith raising helmets by hand can achieve impressively consistent results, it is unlikely if not inconceivable that many hundreds of smiths working in numerous scattered workshops will achieve the same consistency. It is therefore probable that the production of certain 1st century A.D. helmet forms was widely carried out using spinning over standardised formers.

The use of spinning in helmet production was by no means an innovation in armour manufacture as the author has stressed earlier (Paddock 1985, 145.), and the technique had previously been employed in the Greek world for the manufacture of Pilos helmets probably as early as the 4th if not 5th century B.C. (Paddock 1981, 65.) Although a number of scholars have suggested that certain helmet forms, not least the Etrusco-Thracian, may have been spun, the first widescale application of spinning to Italian military equipment does not occur

before the end of the 2nd century B.C. and indeed is closely associated with the sharp decline in quality of the product noticed above. By the 1st century A.D. this technique is widely applied to the manufacture of Montefortino and Hagenau helmets, shield bosses commonly used by the Auxiliaries and also that of the military patera or mess bowl. The application of spinning to these items is in no way a break with mainstream Italian manufacturing techniques as, from the end of the 2nd century B.C., it was being widely applied to a large variety of domestic utensils, vessels and even stone columns, indeed it would be strange if not incomprehensible that the Italian armourer would not have taken advantage of such a technical advance.

It has often been said that some ancient helmets may have^{been} cast, including some Montefortino forms. This has never been satisfactorily repudiated. Firstly, casting would make the bowl very brittle due to the change that the crystalline structure undergoes especially when the walls of the helmet bowl are usually 1.5 mm thick. Furthermore without a modern vacuum chamber it is unlikely that the bronze could be forced to fill all the cavities in the mould. The work involved in preparing an original and then preparing a mould and finally casting the item, would far outweigh the cost of it being raised by beating. It has also been suggested that the basic form of the helmet was cast and then the bowl was reannealed and worked but this would not sufficiently alter the cast structure of such thin bronze so as to overcome the brittleness of the cast metal. These assertions are confirmed by Craddock (1984) whose recent analyses of Etruscan helmets in the collections of the British Museum indicate that all the helmets tested had^{been} raised from sheet metal and not cast.

Having discussed the manufacture of bronze helmets in general terms it is now appropriate to study each form in turn.

Apulo-Corinthian Helmet.

Introduction.

The Apulo-Corinthian helmet is a southern Italian derivative of the classic Greek Corinthian helmet. It is clearly a development of the Greek form and is derived from it and the Italian copies of it, manufactured in the coastal cities of Magna Graecia. From an initial nucleus in Apulia, the Apulo-Corinthian helmet spread throughout the whole of southern Italy and, via the Etruscan possessions in Campania, to Etruria itself. The helmet form emerged in the last quarter of the 6th century B.C. and continued in use to at least the end of the 4th century. However it continued to be represented in art as late as the first century B.C. Over the last century the type has been studied by a number of scholars, each of whom has given it a different name.

This form of helmet was classified by Kukahn in his seminal study of Greek helmet types (1936, 43. note 269.) as "Ionian Chalkidian" although, as early as the end of the 19th century, Furtwängler (1890, 169. and note 1.) had already associated it with southern Italy and indeed was the first scholar to suggest that these helmets were intended to be worn pushed back upon the head rather than drawn down to cover the face. Connolly (1981, 99.) however has used the term Italo-Corinthian to describe them. Adamesteanu (1966, 199-208.) was the first to suggest Apulia as their place of origin and to call them Apulo-Corinthian.

The majority of the helmets of the form are decorated with engraving either in the "archaic" Italic styles of the 6th and early

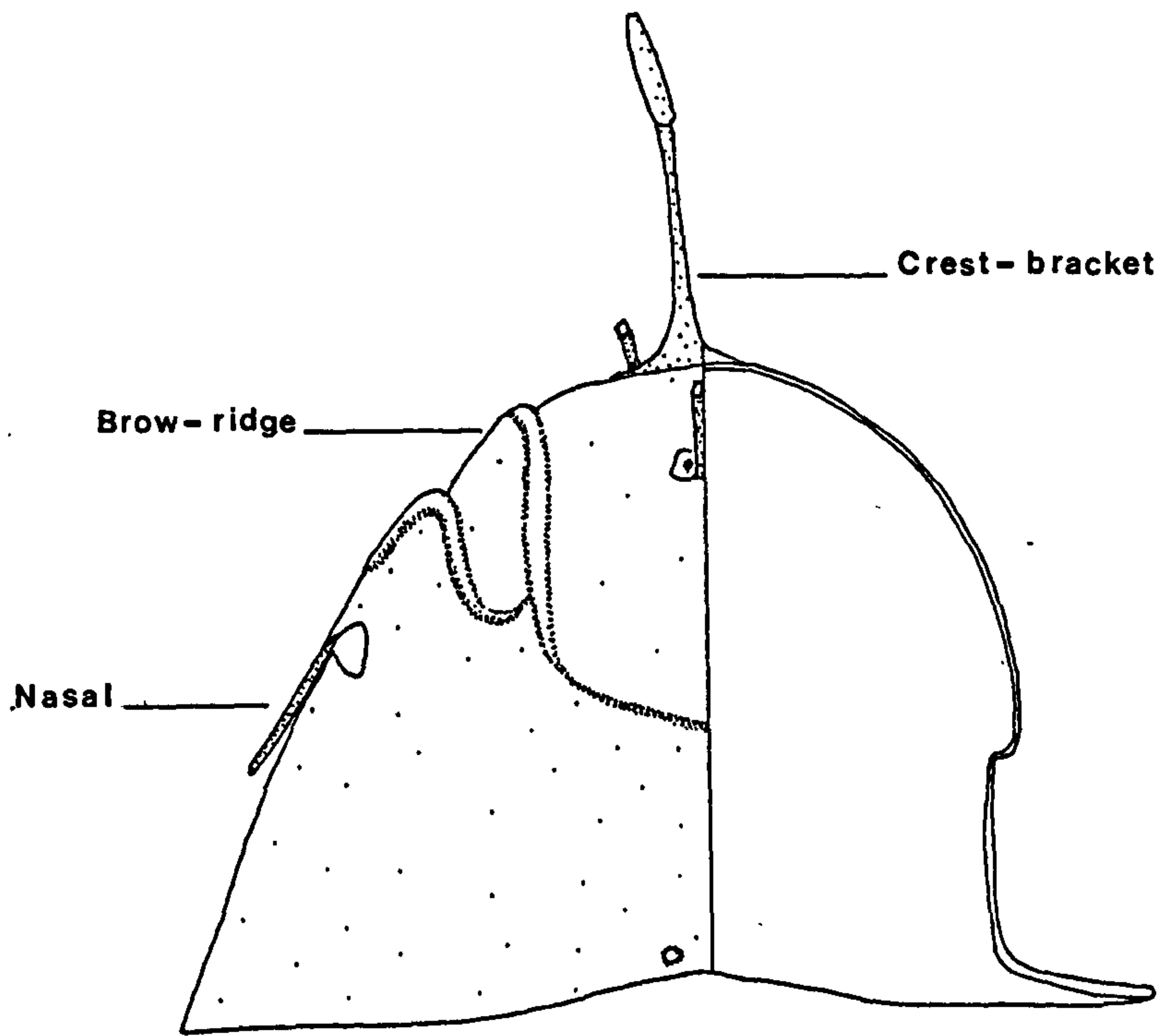
5th centuries B.C. or the more "naturalistic" Hellenic styles of the 4th century B.C. The restricted decorative repertoire and variation of form of the early examples are such as to suggest an initial area of production over a limited period of time, perhaps as little as a century, followed by a period of dissemination throughout Italy south of a line between Naples and Picenum. From the distribution of the finds of these helmets it is clear that their origin should be sought not in Magna Graecia in general but more precisely in central and Northern Apulia. In short there can be no doubt that this helmet form is derived from the mainland Greek Corinthian helmet and that its place of origin is Apulia: therefore there can be no argument with their designation as Apulo-Corinthian helmets.

Definition of Type

The Apulo-Corinthian helmet is characterised by a low but prominent and bulbous bowl, which is drawn down at the rear to form a shallow neck-guard. The neck-guard is sharply everted at its base to produce a broad flat neck-flange. At the front, the integral cheek-defences enclose the whole facial area and either touch or are joined beneath the nasal. The bowl is divided from the rest of the helmet, at the front by embossed eyebrows and brow-ridges; these converge at the wearer's temples and the resultant embossed line or step is carried round the rear of the helmet. In the majority of instances the eye-holes are so small as to serve no practical purpose and in fact in the most developed form there are no eye-holes at all; these being inlaid or simply engraved. All Apulo-Corinthian helmets are equipped with a single hole pierced centrally through the neck-flange and a single hole

in the base of each side of the helmet to receive the fastening for the chin-strap.

The majority of these helmets, if worn drawn fully down to cover the face would, by virtue of the shallowness of their bowls and the closeness of their eye-openings, be totally impractical and indeed a liability and not a defence on the battlefield. Most scholars therefore accept that these helmets were not intended to be worn in the same manner as their Greek counterparts (Furtwängler, 1890, 109-110.; Fosdyke, 1929, 76.; Emanuele, 1982, 174-175.) although some have gone as far as suggesting that they were never intended for wear at all (Bleoch, 1976, 87.: Orlandini, 1971, 289.: Adamesteanu, 1971.), that they were simply votive or parade items.



AN APULO-CORINTHIAN HELMET

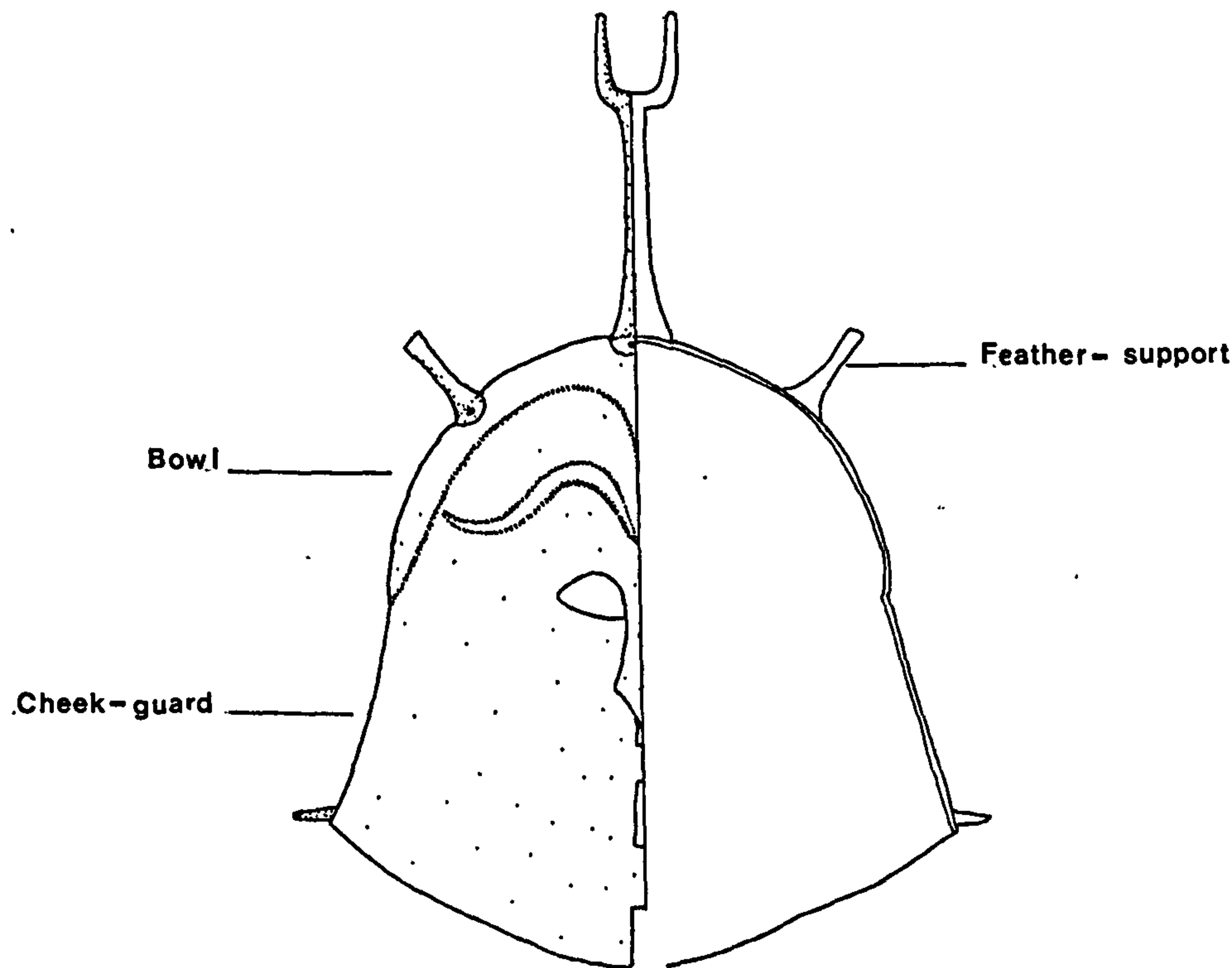


Table 1

No.	Museum and Inventory No.	Cat. No.	Dimensions:			Provenance.
			H.	V.	B.	
1.	Antiken Museum Berlin L,27.	(43)	167	250	215	Sicily.
2.	Antiken Museum Berlin L,28.	(44)	170	270	215	South Italy.
3.	Antiken Museum Berlin L,29.	(45)	146	257	223	Syracuse, Sicily.
4.	Bibliothèque Nationale 2015.	(309)	200	236	D	South Italy.
5.	Museo Provinciale Potenza, 50246.	(357)	169	250	215	Chiucchari, Puglia, Italy.
6.	Museo Nazionale Melfi 50245.	(231)	185	260	172	Chiucchari, Puglia, Italy.
7.	Dallas Museum of Fine Arts. No Inv. No.	(123)	188	241	219	South Italy.
8.	Collection of A. Guttmann, Berlin.	(83)	171	256	173	Taranto, Italy.
9.	Lucerne Private Collection.	(202)	162	247	209	The Basilicata, Italy.
10.	Present whereabouts unknown. Sold London 13.7. 1987.	(434)	174	246	172	South Italy.
11.	British Museum 2823 1873 8-20,224.	(173)	163	231	178	Apulia, Italy.
12.	Museo Nazionale Naples 5732.	(256)	176	251	-	Ruvo, Puglia, Italy.
13.	Museo Nazionale Taranto 140173.	(393)	201	260	-	Rutigliano, Puglia, Italy.
14.	British Museum 2831 1856 12-26,616.	(174)	187	270	-	Ruvo, Puglia, Italy.
15.	Germanisches Museum Nuremburg	(291)	180	282	-	South Italy.
16.	Armeria Reale Turin A,12.	(403)	220	285	200	Friuli, Italy.

No.	Museum and Inventory No.	Cat.	Dimensions:				Provenance.
			No.	H.	W.	B.	
17.	Armeria Reale Turin A.13.	(404)	225	277	192		Ordona, Italy.
18.	Present whereabouts unknown sold in Basel 14.3.1975.	(435)	215	323	215		South Italy.
19.	Collection of A. Guttmann, Berlin	(84)	182	247	187		South Italy.
20.	Museo Nazionale Melfi 52959.	(232)	198	283	175		Leonessa, Puglia, Italy.
21.	Museo Nazionale Melfi 50388.	(233)	190	304	178		Chiucchari, Puglia, Italy.
22.	Museo Nazionale Melfi 52888.	(234)	192	305	170		Lavello, Puglia, Italy.
23.	Museo Nazionale Melfi 50389.	(235)	195	285	173		Chiucchari, Puglia, Italy.
24.	Museo Nazionale Melfi 118161.	(236)	195	285	173		Ripacandida, Puglia, Italy.
25.	Museo Provinciale Potenza.	(358)	204	285	-		Chiucchari, Puglia, Italy.
26.	Musée du Cinquantenaire Brussels. A703.	(102)	213	291	-		South Italy.
27.	British Museum 2832 1856 12-26.669.	(175)	220	326	178		Pomarico, Basilicata Italy.
28.	Boston Museum of Fine Arts, U.S.A 69.1075.	(98)	191	275	180		Chiucchari, Puglia, Italy.
29.	Museo Nazionale Naples	(257)	215	305	178		Naples, Italy.
30.	Present whereabouts unknown, Sold London. 11.12.1987	(436)	210	248	-		South Italy.
31.	National Museum Copenhagen ABa 889.	(114)	198	300	-		South Italy.
32.	Melfi Museum 50753.	(237)	192	279	-		Chiucchari, Puglia, Italy.
33.	Museo Nazionale di Regio Calabria. 50753	(362)	250	D	180		Banzi, Puglia, Italy.

No.	Museum and Inventory No.	Cat.	Dimensions:				Provenance.
			No.	H.	W.	B.	
34.	Antiken Museum Berlin L.30	(46)	195	240	185		Krsko, Yugoslavia
35.	Antiken Museum Berlin 31590.	(47)	201	322	-		South Italy.
36.	Pergamon Museum Berlin 10398.	(48)	197	283	220		South Italy.
37.	Museo Poldi Pezzoli 2420	(238)	198	242	182		South Italy.
38.	A Emmerich Gallery Basel Switzerland	(40)	210	276	-		South Italy.
39.	Museo Nazionale Bari 2242.	(36)	213	270	-		Canosa, Puglia, Italy.
40.	Museo Nazionale Taranto 61488.	(394)	204	291	-		Rutigliano, Puglia, Italy.
41.	Antiken Museum Berlin FR 1011.	(49)	178	270	191		South Italy.
42.	Antiken Museum Berlin L.90.	(50)	163	277	213		South Italy.
43.	Badisches Landesmuseum Karlsruhe 432 R 1079.	(148)	203	295	192		Canosa, Puglia, Italy.
44.	Badisches Landesmuseum Karlsruhe 430 R 1076	(149)	190	290	220		Canosa, Puglia, Italy.
45.	Museo Nazionale di Materna, 9584	(230)	180	200	185		Montescaglioso, Materna, Italy.
46.	Museo Nazionale Naples 5707	(258)	190	276	210		Ruvo, Puglia, Italy.
47.	Museo Nazionale Taranto 165191.	(395)	207	275	-		Rutigliano, Puglia, Italy.
48.	Museo Nazionale Taranto 138864.	(396)	192	279	-		Rutigliano, Puglia, Italy.
49.	Museo Nazionale Taranto 141420.	(397)	195	282	-		Rutigliano, Puglia, Italy.
50.	Museum für Völkerkunde Leipzig, UG 13172.	(170)	198	269	-		Capua, Campania, Italy.

No.	Museum and Inventory No.	Cat.	Dimensions:				Provenance.
			No.	H.	W.	R.	
51.	Private Collection Köln,	(160)	207	256	-		Taranto, Italy.
52.	Museo Provinciale Potenza, V284,	(359)	174	276	-		Serra Vaglio, Puglia, Italy.
53.	National Museum Copenhagen, ABa 412	(115)	177	255	-		Ponte Cucchiaio, Toscana, Italy.
54.	Queensland University Museum, 77,1	(360)	195	305	185		South Italy.
55.	British Museum 2722 47, 8,6,160,	(176)	190	243	204		Vulci, Toscana, Italy.
56.	British Museum 2723 1856 12-26,664,	(177)	190	320	195		Etruria, Italy.
57.	Bibliothèque Nationale Paris, 2017	(310)	198	224	182		South Italy.
58.	Museo Nazionale Bari 7697,	(37)	204	282	-		Ruvo, Puglia, Italy.
59.	Museo Nazionale Pontecagnano, 34809,	(355)	195	270	-		Cairano, Campania, Italy.

Distribution

Many of these helmets were discovered in the 19th century and therefore their exact provenance is uncertain: it is often given as little more than "Italy" or at best "southern Italy". Of the fifty-nine surviving examples, only thirty-eight have more specific findspots than this and only eighteen come from dated archaeological contexts. However, given the limits of the evidence, it is possible to make certain generalisations about the distribution of the Apulo-Corinthian helmet both spatially and temporally.

Three examples have findspots outside the Italian peninsula and Sicily, these are helmet No. 16 from Friuli, helmet No. 34 from Krsko in Yugoslavia and helmet No. 35 from Athens. As these three finds fall not only so far outside the spatial bounds set by the distribution of other examples but also are from museum collections established before 1896, when they were recorded by Lipperheide, (1896) they must be viewed with some caution. However it is possible and even probable that the examples from the head of the Adriatic reached there as the result of trade. On the other hand without further corroborative evidence the Athenian provenance must still remain questionable.

Of the thirty-eight helmets, where a more exact location is available, ninety percent come from Italy, south of a line drawn between Naples and Foggia. From their distribution in this area, it is obvious that the origins of the Apulo-Corinthian helmet are without doubt to be found in Magna Graecia, but more specifically in northern and central Apulia. The majority of these helmets come from the modern provinces of Foggia, Potenza, Matera and Avellino, with the greatest

concentration being in the Ofanto valley and around Rutiligiano between Bari and Taranto.

Inside Apulia there are concentrations of helmets around the major centres of Canosa, Melfi and Ruvo.

Twenty seven percent, i.e eleven helmets (Nos. 5, 6, 20, 21, 22, 23, 24, 25, 28, 32 and 33.) come from Melfi and its immediate hinterland. No doubt as Adamesteanu maintains these represent the products of an hitherto unlocated school of craftsmen working from a centre near Melfi. With two exceptions these helmets all date from the end of the 6th century B.C to the end of the 5th century and thus perhaps represent the working lifespan of three generations of armourers making Adamesteanu's hypothesis possible.

There is a concentration of seven helmets, approximately twenty percent (Nos. 12, 14, 39, 43, 44, 46 and 58) from north-eastern Puglia, around the towns of Canosa di Puglia and Ruvo di Puglia. All of these date from the end of the 5th century to the end of the fourth century B.C. which again may be taken to suggest a manufacturing centre at one or both of these important towns.

Likewise there is a group of seven helmets, Nos. 8, 13, 40, 47, 48, 49 and 51. from the area between Bari and Taranto, mostly from graves at Rutigliano. These include examples of types I, IV and V giving them a date range of between the late 6th century B.C. and the 4th century B.C.

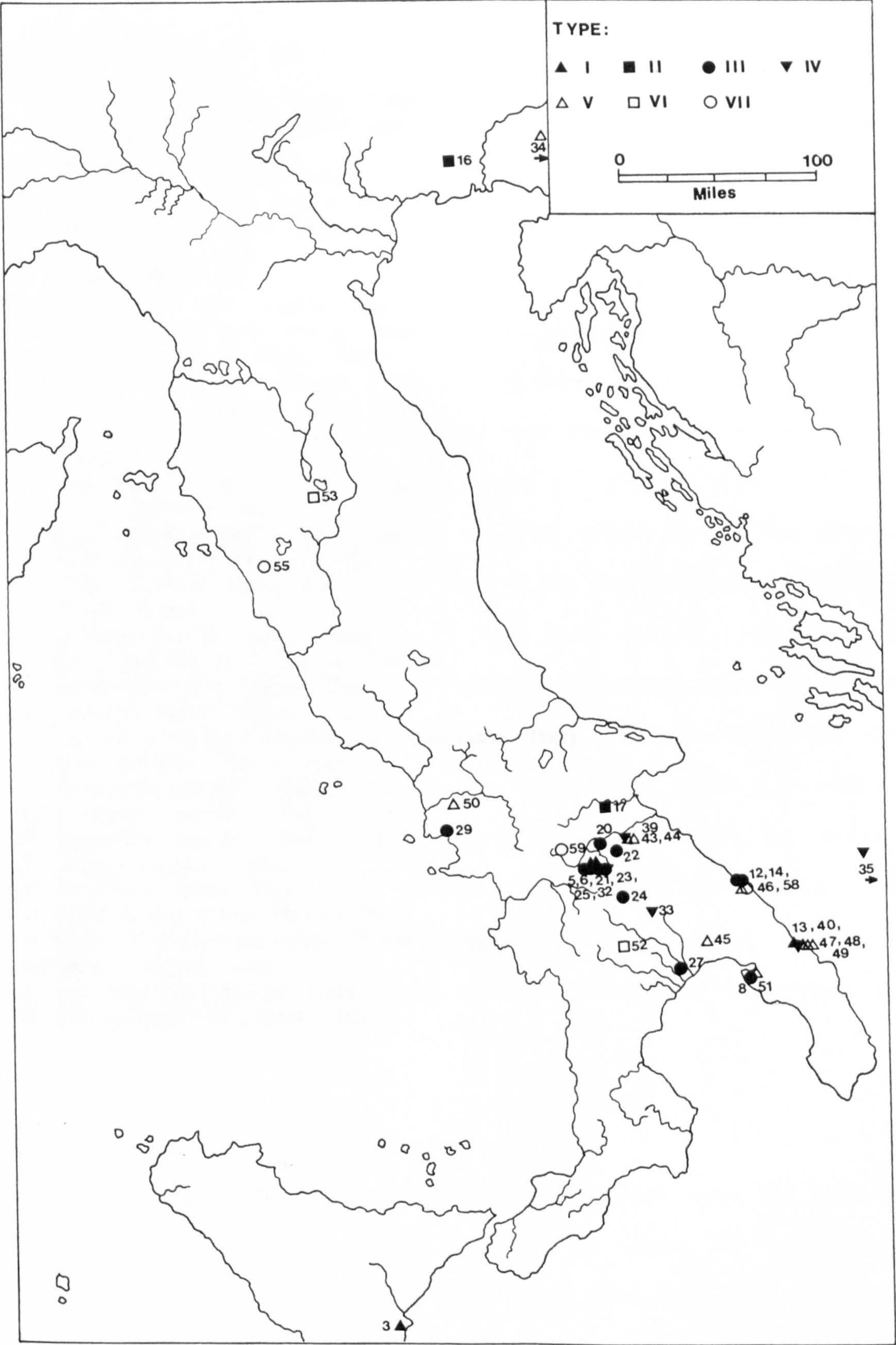
There is a further group of four helmets from southern Apulia, from the Basilicata, which are concentrated in the river valleys of the Gravina and Bradeno (helmets Nos. 9, 11 and 27. 45). These are of types I, III and V.

Outside Apulia the distribution is more sporadic, the two helmets from Sicily (Nos. 1 and 3.), which are both of type I and therefore early in the sequence possibly belonged to mercenaries serving there. This would seem to agree with other evidence for Italian mercenaries at this period as attested by finds of Italic defensive equipment found on Corsica and in North Africa.

The remaining five provenanced examples fall well beyond the area of Apulian influence. They consist of two helmets from Campania and three from Etruria. The two helmets from Campania (Nos. 25 and 50.) come from Naples and Capua respectively and are of types III and V. This gives them a date range of between the 5th and the 4th centuries B.C. i.e the period of Etruscan domination. The three remaining helmets (Nos. 53, 55 and 56.) come from Etruria, two have more accurate provenances and come respectively from Chiusi and Vulci.

Although Stary (1982, 5.) has questioned the provenance of at least one of these three Etruscan finds, he presents little evidence to prove his case and an Etruscan context is just as likely since these items could easily have reached Etruria by way of trade and is a reasonable explanation given their commonplace depiction in Etruscan and Roman art from the 4th to the 1st centuries B.C.

FIG. 8 Distribution of Apulo-Corinthian helmets



Key to Distribution map fig 8.

- 3) Syracuse, Sicily
- 5) Chiucchari near Melfi, Puglia, Italy.
- 6) Chiucchari near Melfi, Puglia, Italy.
- 8) Taranto, Le Murde, Italy.
- 12) Ruvo near Bari, Puglia, Italy.
- 13) Rutigliano near Bari, Puglia, Italy.
- 14) Ruvo near Bari, Puglia, Italy.
- 16) Friuli, Foggia, Italy.
- 17) Ortona, Foggia, Italy.
- 20) Leonessa near Melfi, Puglia, Italy.
- 21) Chiucchari near Melfi, Puglia, Italy.
- 22) Lavello near Melfi, Puglia, Italy.
- 23) Chiucchari near Melfi, Puglia, Italy.
- 24) Ripacandida near Melfi, Puglia, Italy.
- 25) Chiucchari near Melfi, Puglia, Italy.
- 27) Pomarico, Basilicata, Italy.
- 28) Chiucchari near Melfi, Puglia, Italy.
- 29) Naples, Campania, Italy.
- 32) Chiucchari near Melfi, Puglia, Italy.
- 33) Banzi near Melfi, Puglia, Italy.
- 34) Krsko, Carinola, Yugoslavia.
- 35) Athens, Greece.
- 39) Canosa di Puglia, Puglia, Italy.
- 40) Rutigliano near Bari, Puglia, Italy.
- 43) Canosa di Puglia, Puglia, Italy.
- 44) Canosa di Puglia, Puglia, Italy.
- 45) Montescaglioso Contrada Sterpino, Basilicata, Italy.
- 46) Ruvo near Bari, Puglia, Italy.
- 47) Rutigliano near Bari, Puglia, Italy.
- 48) Rutigliano near Bari, Puglia, Italy.
- 49) Rutigliano near Bari, Puglia, Italy.
- 50) Capua, Campania, Italy.
- 51) Taranto, Le Murde, Italy.
- 52) Serra di Vaglio near Potenza Italy.
- 53) Ponte Cucchiaio near Chiusi, Tuscany, Italy.
- 55) Vulci, Tuscany, Italy.
- 58) Ruvo near Bari, Puglia, Italy.
- 59) Cairano near Pontecagnano, Italy.

Manufacture.

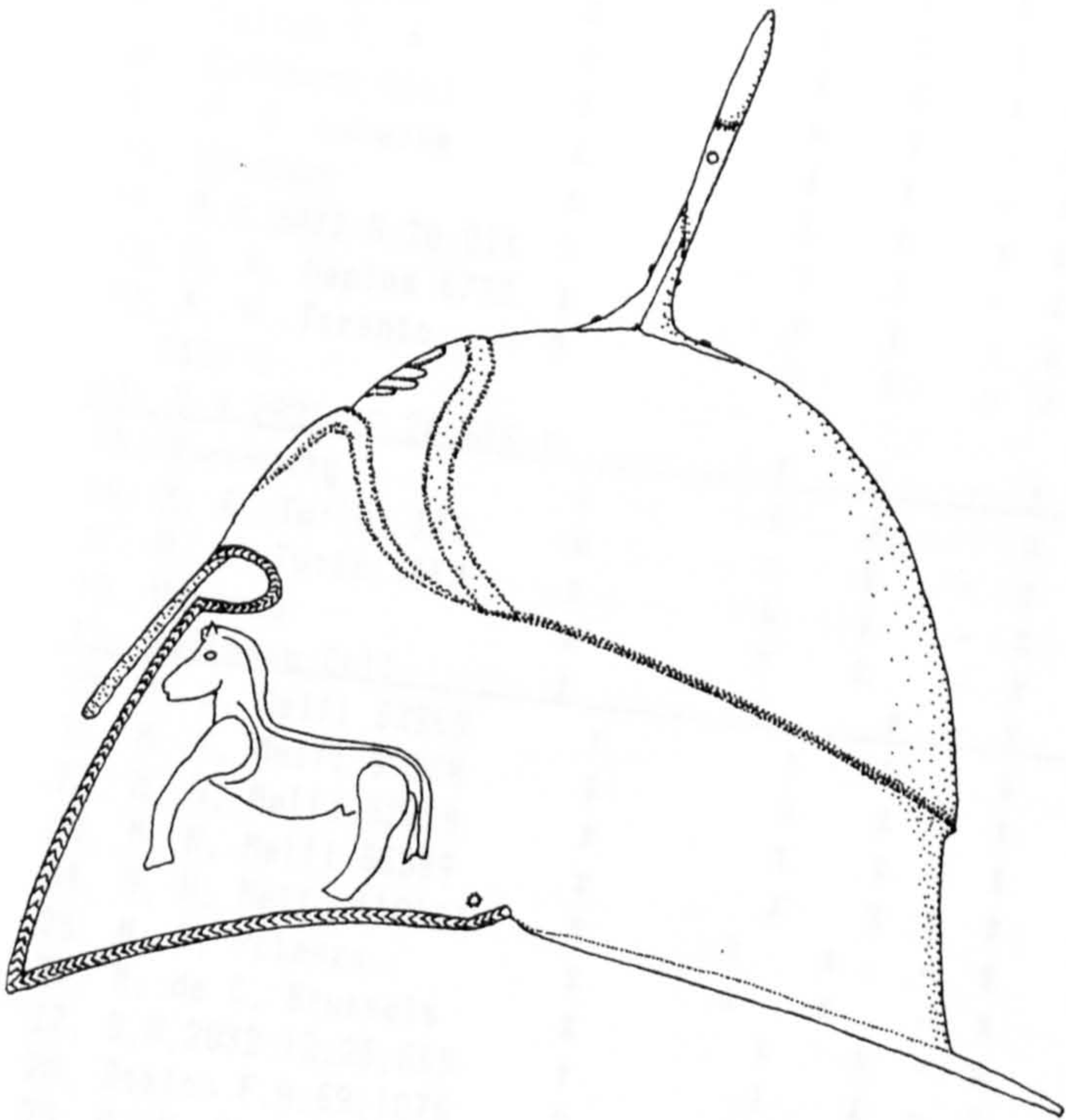
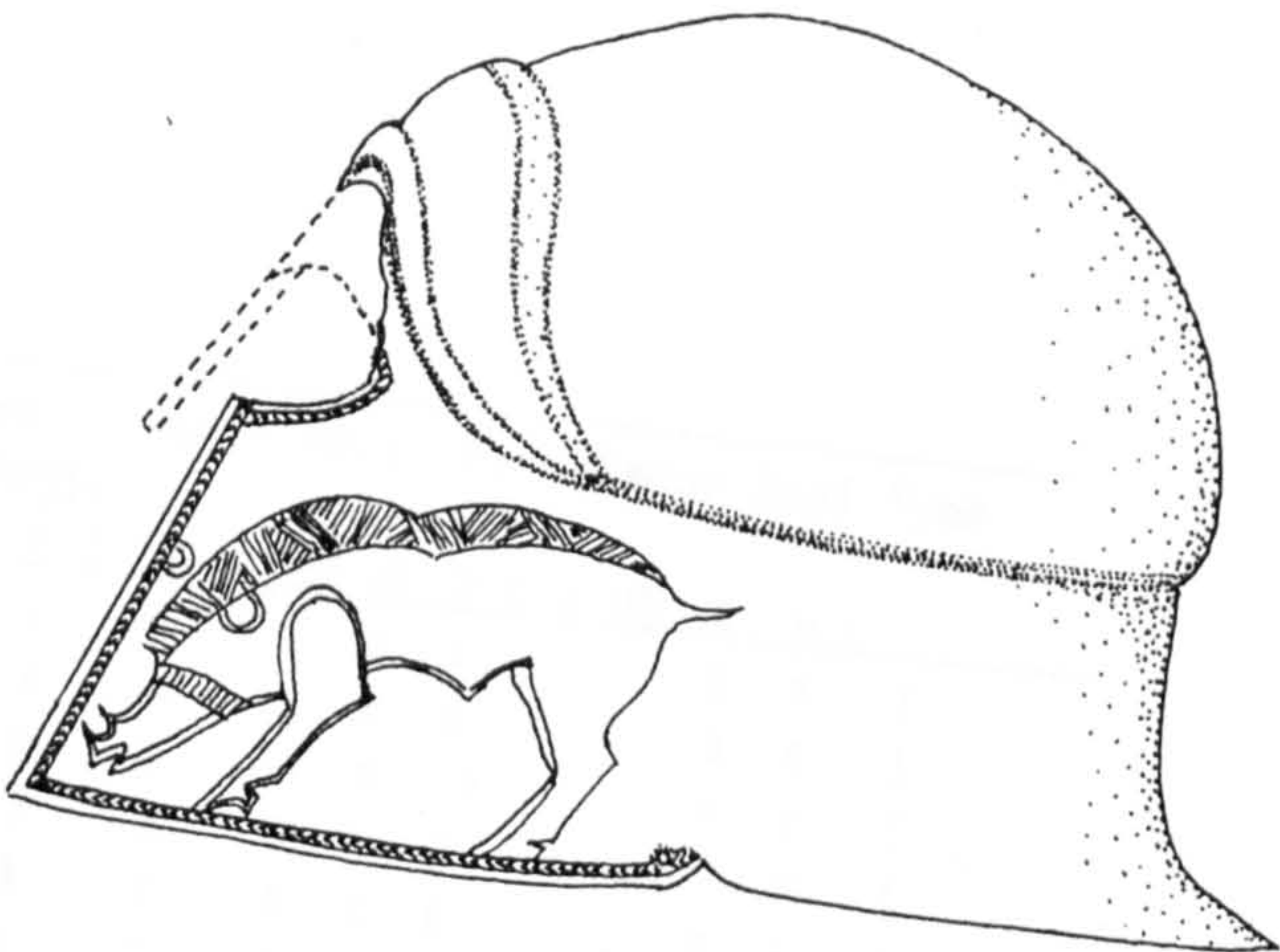
All Apulo-Corinthian helmets were made in a similar fashion and indeed in the same way as most other hand raised bronze Italian helmets of the 5th to 3rd centuries B.C. The sheet metal or billet was first dished by "sinking", or hammering it into a wooden block or former; it was then raised over stakes of different sizes and the helmet finally planished to remove the raising marks, prior to polishing. The repoussé eyebrows, temporal lobes and ridge which encircles the rear of the helmet, found on every example of this type of helmet, were almost certainly embossed in a pitch block during the raising process. The hammer used in this process was without doubt of a crosspein form as there are the tell-tale marks left by its use on the inside of helmets 11 and 27. The incised decoration found on many of these helmets was executed with a scriber. The crest-fixtures were manufactured separately, in one of five ways; (see fig. 34.) by casting the piece individually as is the case on helmet 2 or by riveting various combinations of the component parts together. These were either riveted in place or were constructed in such a way to be removable. Likewise the feather supports were made separately and riveted on.

Typology.

The prototypes for the Apulo-Corinthian helmet were the imported Greek Corinthian helmets, which started to appear on the Italian mainland from the 7th century B.C.. These gave rise to contemporary locally made copies of the Greek Corinthian, which for the sake of

convenience are known as Italo-Corinthian helmets (for Italo-Corinthian see introduction). In its earliest form the Apulo-Corinthian helmet is stylistically very similar to its contemporary Greek and Italian counterparts. The later developments of this form exhibit considerable divergence from these early prototypes, and within a century the whole form and defensive attributes of the helmet had changed. Bottini (1988, 107ff.) divides this helmet form into five types. However based upon the following analysis of their form, including the configuration of the face-guard, eye-apertures and neck-guards, and decoration, it is clear that the corpus of surviving Apulo-Corinthian helmets can in fact be divided typologically into seven distinct groups, some of which are contemporaneous. They reflect the process of adoption and subsequent adaptation of a mainland Greek import to local tradition and the changing nature of Italian warfare.

1



2

3

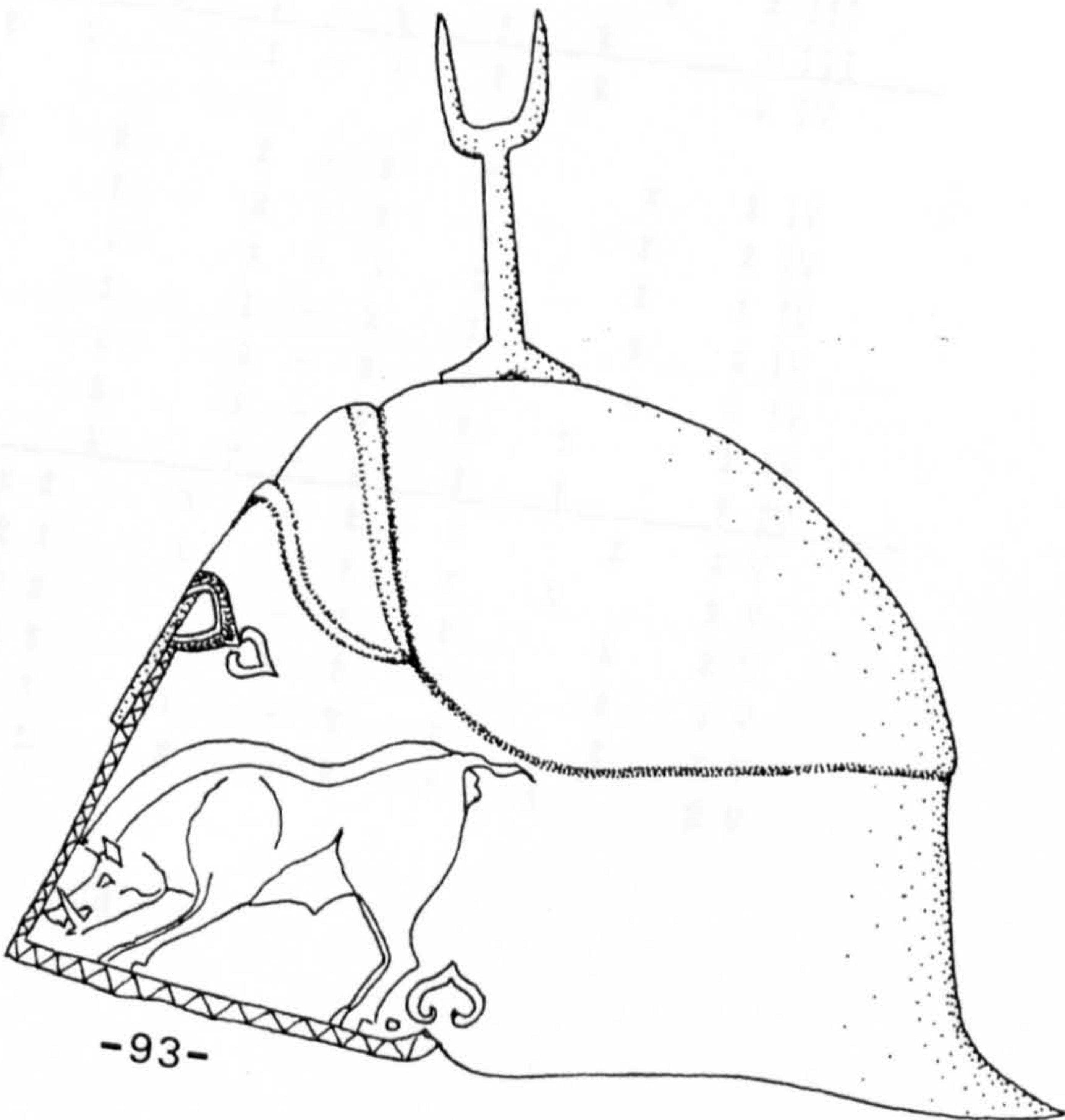


Table 2: Typology

No.	Museum & Inv. No.	Face-guard					Nasal	Neck-guard	Eyes-Decor					Bowl	Type				
		Opening		Angle					Holes										
		D	I	2	3	C			A	M	D	M	S			CO	NF	U	C
1.	A. M. Berlin, L.27	*					*	*	*	*	*	*					*	*	I
2.	A. M. Berlin, L.28	*					*	*	*	*	*	*					*	*	I
3.	A. M. Berlin, L.29	*					*	*	-	*	*	*					*	*	I
4.	Bib. Nat. 2015	*					*	*	*	*	*	*			*		*	*	I
5.	Melfi 50246	*					*	*	*	*	*	*					*	*	I
6.	Melfi 50245	*					*	*	*	*	*	*	*				*	*	I
7.	Dallas F. A.	*					*	*	*	*	*	*					*	*	I
8.	Guttmann Coll.	*					*	*	-	*	*	*			*		*	*	I
9.	P. C. Lucerne	*					*	*	-	*	*	*					*	*	I
10.	Unknown	*					*	*	*	*	*	*					*	*	I
11.	B.M.2823 8.20.224	*					*	*	-	*	*	*			*		*	*	I
12.	M. N. Naples 5732	*					*	*	-	*	*	*			*		*	*	I
13.	M. N. Taranto 140173	*					*	*	-	*	*	*			*		*	*	I
14.	B.M.2831 12.26.616	*					*	*	-	*	*	*			*		*	*	I
15.	Nuremburg	*					*	*	-	*	*	*	*				*	*	II
16.	R. A. Turin, A12	*					*	*	-	*	*	*	*				*	*	II
17.	R. A. Turin, A13	*					*	*	-	*	*	*	*				*	*	II
18.	Unknown	*					*	*	-	*	*	*	*				*	*	II
19.	Guttmann Coll.	*					*	*	-	*	*	*	*			*	*	*	II
20.	M. N. Melfi 52959	*					*	*	-	*	*	*	*			*	*	*	III
21.	M. N. Melfi 50388	*					*	*	-	*	*	*	*			*	*	*	III
22.	M. N. Melfi 52888	*					*	*	-	*	*	*	*			*	*	*	III
23.	M. N. Melfi 56389	*					*	*	*	*	*	*	*	*		*	*	*	III
24.	M. N. Melfi 118161	*					*	*	-	*	*	*	*			*	*	*	III
25.	M. P. Potenza	*					*	*	-	*	*	*	*			*	*	*	III
26.	M. de C. Brussels	*					*	*	-	*	*	*	*			*	*	*	III
27.	B.M.2832 12.26.669	*					*	*	-	*	*	*	*			*	*	*	III
28.	Boston F.A.69.1075	*					*	*	-	*	*	*	*	*		*	*	*	III
29.	M. N. Naples	*					*	*	*	*	*	*	*			*	*	*	III
30.	Unknown	*					*	*	-	*	*	*	*			*	*	*	III
31.	N.M. Copenhagen 889	*					*	*	-	*	*	*	*			*	*	*	III
32.	M. N. Melfi 50753	*					*	*	-	*	*	*	*	*		*	*	*	III
33.	Reggio Calabria 50753			*		*		*	-	*	*	*	*	*		*	*	*	IV
34.	A. M. Berlin L.30			*		*		*	-	*	*	*	*	*		*	*	*	IV
35.	A. M. Berlin 31590			*		*		*	-	*	*	*	*	*		*	*	*	IV
36.	A. M. Berlin 10398			*		*		*	-	*	*	*	*	*		*	*	*	IV
37.	Poldi Pezzoli 2420			*		*		*	-	*	*	*	*	*		*	*	*	IV
38.	A Emerich Gallery			*		*		*	-	*	*	*	*	*		*	*	*	IV
39.	Bari 2242			*		*		*	-	*	*	*	*	*	*	*	*	*	IV
40.	Taranto 61488			*		*		*	-	*	*	*	*	*	*	*	*	*	IV
41.	A. M. Berlin 1011			*	*			*	-	*	*	*	*	*	*	*	*	*	V
42.	A. M. Berlin L.90			*	*			*	-	*	*	*	*	*	*	*	*	*	V
43.	Karlsruhe F432			*	*			*	-	*	*	*	*	*	*	*	*	*	V
44.	Karlsruhe F430			*	*			*	-	*	*	*	*	*	*	*	*	*	V
45.	M. N. Materna 9584			*	*			*	-	*	*	*	*	*	*	*	*	*	V
46.	M. N. Naples 5707			*	*			*	-	*	*	*	*	*	*	*	*	*	V

No. Museum & Inv. No.	Face-guard				Nasal				Neck		Eyes-Decor				Bowl		Type		
	Opening				Angle				guard		Holes								
	O	1	2	3	C	A	M	O	M	S	CO	NF	U	C	N	UD		D	H
47. Taranto 165191					*	*			*		-	*	*	*	*			*	V
48. Taranto 138864					*	*			*		-	*	*	*	*			*	V
49. Taranto 141420					*	*			*		-	*	*	*		*		*	V
50. Leizig UG13172					*	*			*		-	*	*	*		*		*	V
51. P. Coll. Köln					*	*			*			*	*	*		*		*	V
52. M. P. Potenza V284					*	*			*		-	*	*	*		*		*	VI
53. N.M. Copenhagen 412					*	*			*		-	*	*	*		*		*	VI
54. Queensland 77.1					*	*			*		-	*	*	*		*		*	VI
55. B.M.2722 B.6.160					*	*			*		-	*		*		*		*	VII
56. B.M.2723 12.26.664					*	*			*		-	*		*		*		*	VII
57. Bib.Nat. 2017					*	*			*		-	*		*	*			*	VII
58. Bari 7697					*	*			*	*	-	*		*	*			*	VII
59. M. N. Pontecagnano 34809					*	*			*		-	*		*		*		*	VII

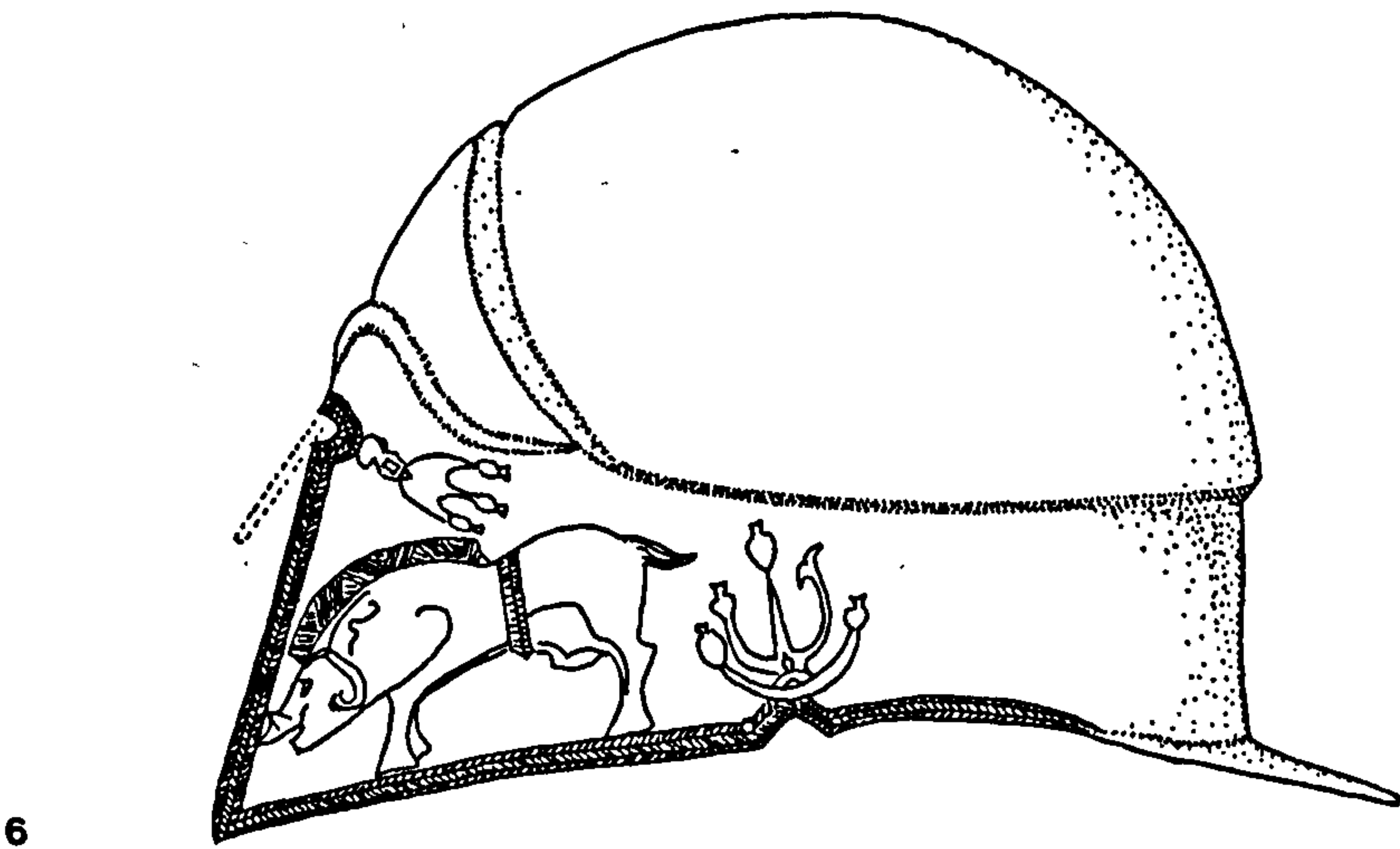
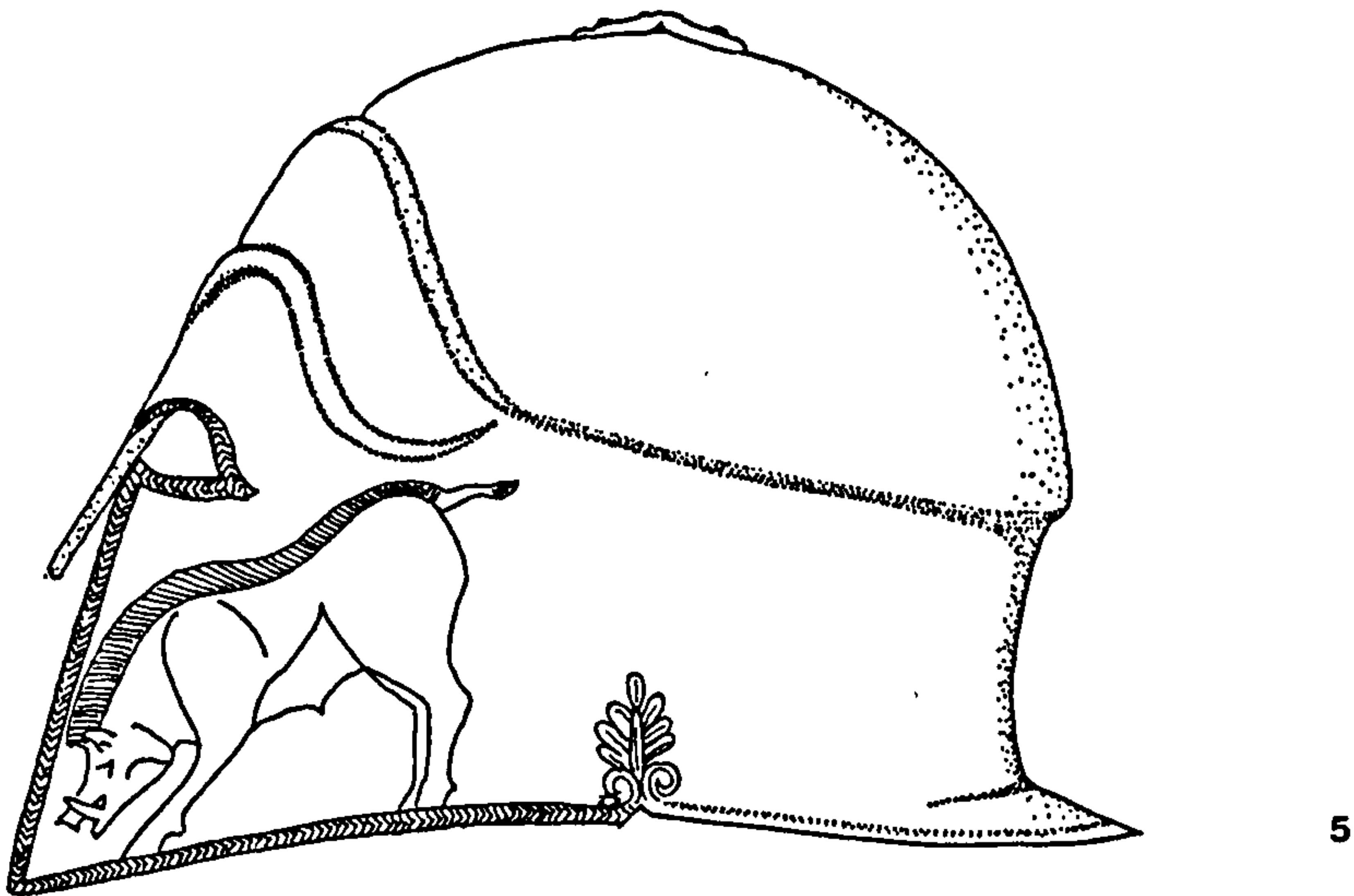
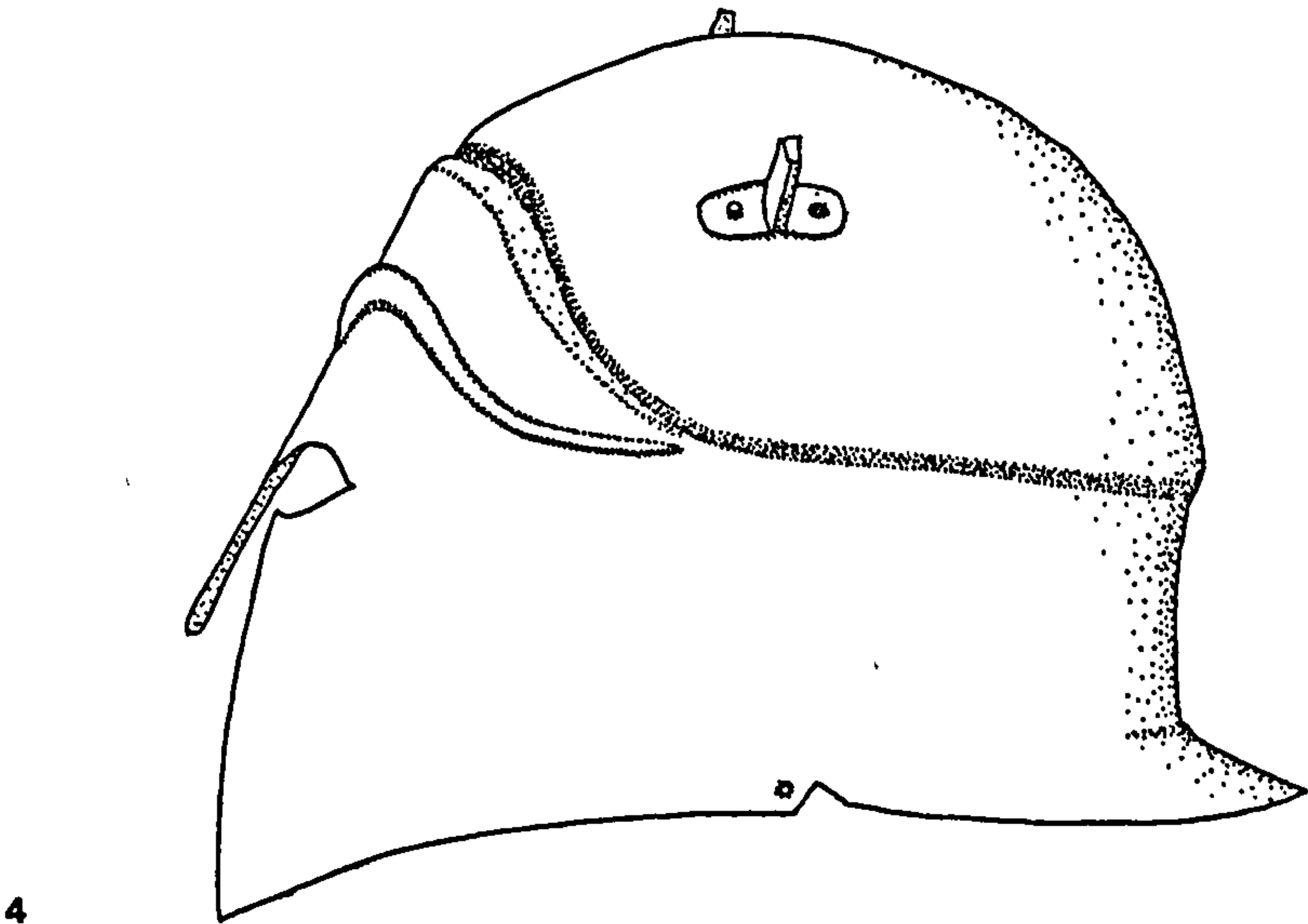
Key: Faceguard Opening; O- Open, 1- 1 join, 2- 2 joins, 3- 3 joins, C- Closed, Angle of slope of Faceguard; A- Acute, M- Moderate, O- Obtuse, Nasal length; M- Moderate (over 60 mm.), S- Short (under 45 mm.) Neckguard; CO- Cutouts in front of neck-guard, NF- Neckflange, Eyeopenings; U- Usable, C- Closely spaced, N- None, Decoration; UD- Undecorated, D- Decorated, A- archaic Style, N- Naturalistic Style, Height of Bowl; H- High, L- Low.

Table 3. Dating

No.	Type	Context	Provenance
1.	I.	Undated	Sicily.
2.	I.	Undated	South Italy.
3.	I.	Undated	Syracuse, Sicily.
4.	I.	Undated	South Italy.
5.	I.	Undated	Potenza, Italy.
6.	I.	Early 5th B.C.	Chiucchari Necropolis near Melfi.
7.	I.	Undated	South Italy.
8.	I.	Undated	Taranto.
9.	I.	Undated	Basilicata.
10.	I.	Undated	South Italy.
11.	I.	Undated	Apulia.
12.	I.	Undated	Ruvo di Puglia.
13.	I.	c. 425-400 B.C.	Rutigliano.
14.	I.	Undated	Ruvo di Puglia.
15.	II.	Undated	South Italy.
16.	II.	Undated	Tomb at Friuli Foggia.
17.	II.	c. 350 - 300 B.C.	Tomb at Ordona Foggia
18.	II.	Undated	South Italy.
19.	II.	Undated	South Italy.
20.	III.	End 6th - 5th B.C.	Tomb 7 Leonessa near Melfi.
21.	III.	Early 5th B.C.	Tomb F Chiucchari Necropolis, Melfi.
22.	III.	End of 5th B.C.	Tomb 56 Lavello near Melfi.
23.	III.	Early 5th B.C.	Tomb F Chiucchari Necropolis, Melfi.

No.	Type	Context	Provenance
24.	III.	c. 500-450 B.C.	Tomb 82 Ripacandida near Melfi.
25.	III.	Early 4th B.C.	Tomb A Chiucchari Necropolis, Melfi.
26.	III.	Undated	South Italy.
27.	III.	Undated	Pomarico Basilicata.
28.	III.	Undated	Chiucchari Necropolis, Melfi.
29.	III.	Undated	Naples.
30.	III.	Undated	South Italy.
31.	III.	Undated	Unknown.
32.	III.	Undated	Chiucchari Necropolis, Melfi.
33.	IV.	4th B.C.	Tomb A Banzi Necropolis near Melfi.
34.	IV.	Undated	Gurkfeld Yugoslavia.
35.	IV.	Undated	Athens, Greece.
36.	IV.	Undated	South Italy.
37.	IV.	Undated	South Italy.
38.	IV.	Undated	South Italy.
39.	IV.	Undated	Canosa di Puglia.
40.	IV.	Undated	Tomb 3 Rutigliano near Taranto.
41.	V.	Undated	South Italy.
42.	V.	Undated	South Italy.
43.	V.	4th B.C.	Tomb Canosa di Puglia.
44.	V.	4th B.C.	Tomb Canosa di Puglia.
45.	V.	4th B.C.	Tomb Montescaglioso Contrada Sterpino.
46.	V.	Undated	Tomb at Ruvo di Puglia.
47.	V.	c. 450-400 B.C.	Grave 77 Rutigliano near Taranto.
48.	V.	c. 425-400 B.C.	Grave 19 Rutigliano near Taranto.
49.	V.	c. 425-400 B.C.	Grave 11 Rutigliano near Taranto.
50.	V.	Undated	Capua.
51.	V.	Undated	Taranto.
52.	VI.	Undated	Serra di Vaglio.
53.	VI.	Undated	Tomb at Ponte Cucchiaio near Chiusi.
54.	VI.	Undated	South Italy.
55.	VII.	Undated	Vulci.
56.	VII.	Undated	Etruria.
57.	VII.	Undated	South Italy.
58.	VII.	Undated	Tomb at Ruvo di Puglia.
59.	VII.	c. 450-400 B.C.	Grave 16 Cairano.

FIG. 10



Type I (Helmets 1-13.)

This is the earliest and least developed form of Apulo-Corinthian helmet; it still closely resembles the early Italian copies of the classic Greek Corinthian helmet. Helmets of type I are characterised by a high slightly bulbous skull defined at the front by embossed forehead lobes and eyebrows; these converge, at the wearer's temples, and the resultant embossed step is carried round the rear of the helmet. The central opening in the face-guard is unobstructed and the nasal is of moderate length. The incline of the face-guard is shallow and the nasal projects considerably beyond this line. The majority of helmets of this type have usable eye-openings, i.e. they would not greatly restrict the wearer's vision when pulled down to cover the face, however on one example (helmet No. 6) the eye-openings are quite closely set. All the helmets have a "U"-shaped crest-holder on a stemmed support, the majority of which are mounted longitudinally. This was to become the standard type of crest-holder and is found on every Apulo-Corinthian helmet. This is supplemented on helmets Nos. 4 and 6 by feather or plume supports, of inverted trapezoid shape, which are riveted to the bowl on either side of the crest-holder, so that they project at an angle of approximately forty-five degrees. These two helmets are typologically the most developed of this group and it is perhaps significant that they, and not those helmets which exhibit stronger Greek influence, should be equipped with these additional features. Unfortunately only two helmets come from dated contexts, helmet No. 5 from Potenza and helmet No. 6 from the Chiucchari necropolis near Melfi. These both date to the period from the end of the 6th century to the first half of the 5th century B.C. This is not

a sufficiently large number to date this type but it does provide some form of fixed point.

Type II. (Helmets 14-19.)

This type of helmet has many of the characteristic features of the previous form. However it exhibits a number of quite significant developments. It has the usual embossed eyebrows and frontal lobes and slightly bulbous bowl although this is of a lower form than are found on the previous type. The face-guard is joined centrally just below the nasal, which is of moderate length and projects only slightly beyond the line of the face-guard. The face-defence itself is more elongated than on the preceeding form although it still projects at a moderate angle. Its lower portion does not cling to the wearer's face, as in the previous type, but projects away from it. The eye-openings are closely spaced but still anatomically correctly positioned and usable. At the rear the neck-guard is strongly everted, almost at right angles to the bowl, where it forms a broad flat neck-flange. The cut-out in the sides of the helmet at the base of the neck-guard are no longer present.

All the helmets of this type have a "U" shaped crest holder mounted at their apex. These are accompanied by the trapezoid-shaped feather supports, which have the appearance of "antennae". These are riveted at either side of the bowl of the helmet at an angle of approximately forty-five degrees and give these helmets their distinctive appearance. Where these are complete they are pierced towards their top edge, presumably in order to tie on the plumes or feathers.

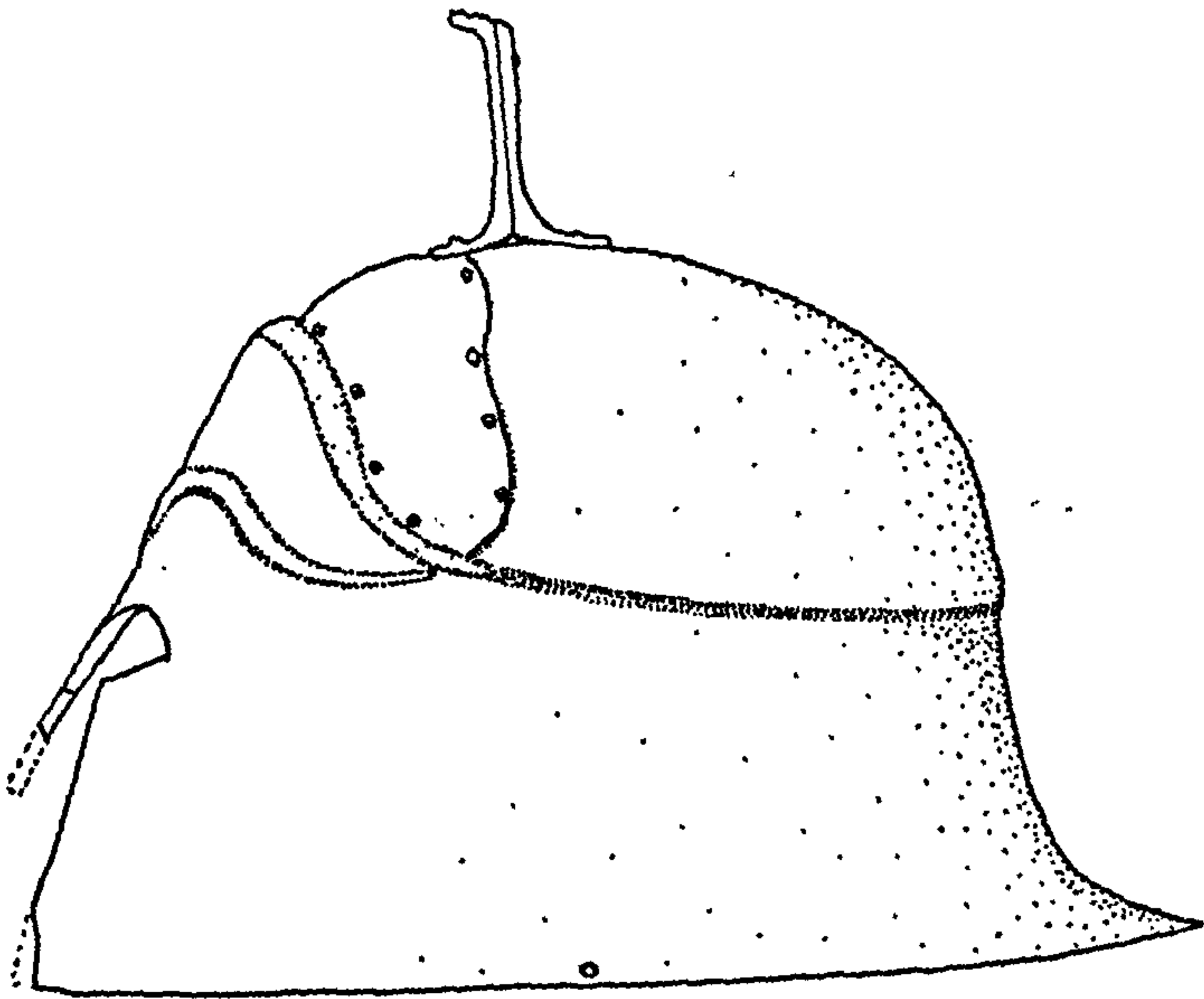
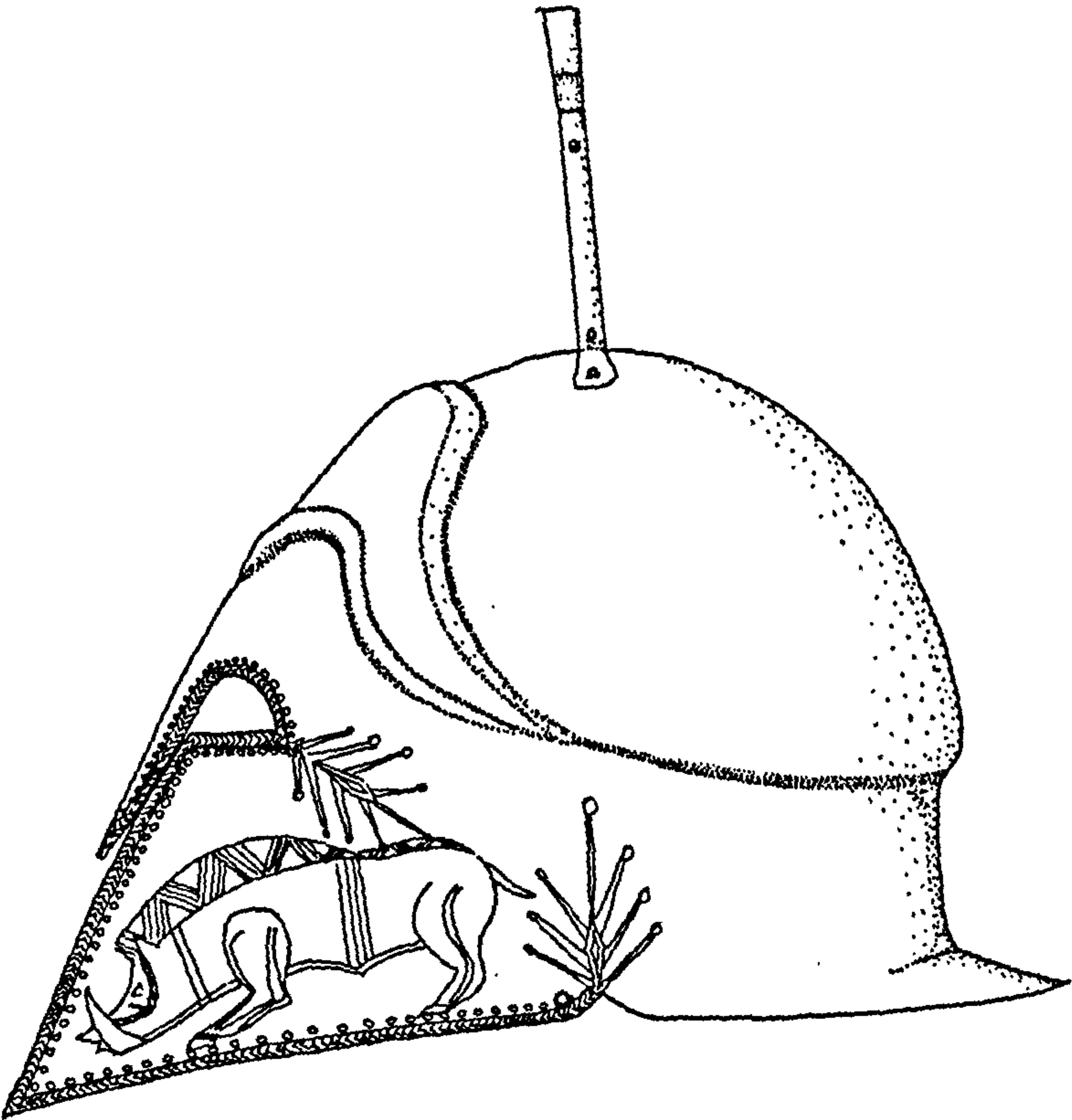
Unfortunately the only dating evidence for this type of Apulo-Corinthian helmet comes from the nineteenth century excavations at

Friuli and Ordona, on the basis of which they have been assigned a date between the 4th and 3rd centuries B.C. (Angelucci 1890). Stylistically however they do bridge the gap between type I, which dates to the 6th to 5th century B.C and type III, which can be dated to the 5th to 4th century B.C. On the basis of this and the style of their decoration it seems reasonable to assign this type tentatively to the 5th and possibly early 4th centuries B.C.

Type III. (Helmets Nos. 20-32.)

This form is more developed than the two preceding types. It is characterised by a low bowl from which projects an elongated and obliquely sloping face guard. This is joined in two separate places beneath a short nasal. The nasal hardly projects beyond the line of the face-guard. The eye-apertures, on helmets of this type, are set so closely together and are so small that they cannot possibly have corresponded to the wearer's anatomy and therefore cannot have served a practical purpose. The neck-guards have a broader neck-flange than on the foregoing types. Approximately a quarter of extant Apulo-Corinthian helmets of this type are undecorated (Nos. 23, 28 and 32.). The majority of the rest have incised decoration executed in the "archaic" style, usually depicting opposed charging boars or more rarely horses. Although portraying the same subject matter the decoration on helmets 20, 25 and 30 is executed in a more naturalistic style.

Nearly all the helmets of this type were excavated in recent years and come from dated contexts. Helmets Nos. 20, 21, 22, 23 and 24 can be dated to the 5th century and helmets nos. 25 and 28 to the 4th century B.C.



Type IV. (Nos. 33-40.)

This type of Apulo-Corinthian helmet has a low bowl with an acutely sloping face-guard, which gives these helmets a more cylindrical appearance than the preceding types. The face-guard is joined in three separate places below a short pointed nasal, which, as on helmets of type III, is hardly raised beyond the line of the face-guard. Similarly the eye-openings are small and closely spaced, rendering them impractical. At the rear, the neck-guard is everted to form a moderately sized neck-flange. All helmets of this group are equipped with the standard form of "U" shaped crest-holders which are mounted either laterally or transversely at the apex of the bowl. These are accompanied by the usual side mounted feather supports.

Two thirds of the helmets of this type are decorated with incised work executed in an "archaic" manner. These designs incorporate charging beasts confronting each other, either boars or lions, one on each cheek-guard.

Only one helmet of this type comes from a dated context, helmet No. 33, which comes from tomb A/34 at Banzi and is dated by a Greek stamnos and other bronzes to the 4th century B.C. Although it is not safe to base any conclusions about dating on a single find, this form of Apulo-Corinthian helmet is more developed than the previous type and it would seem reasonable to assume a date range for Type IV of between the mid 5th century B.C. to the mid 4th century B.C.

Type V. (Helmets 41-51.)

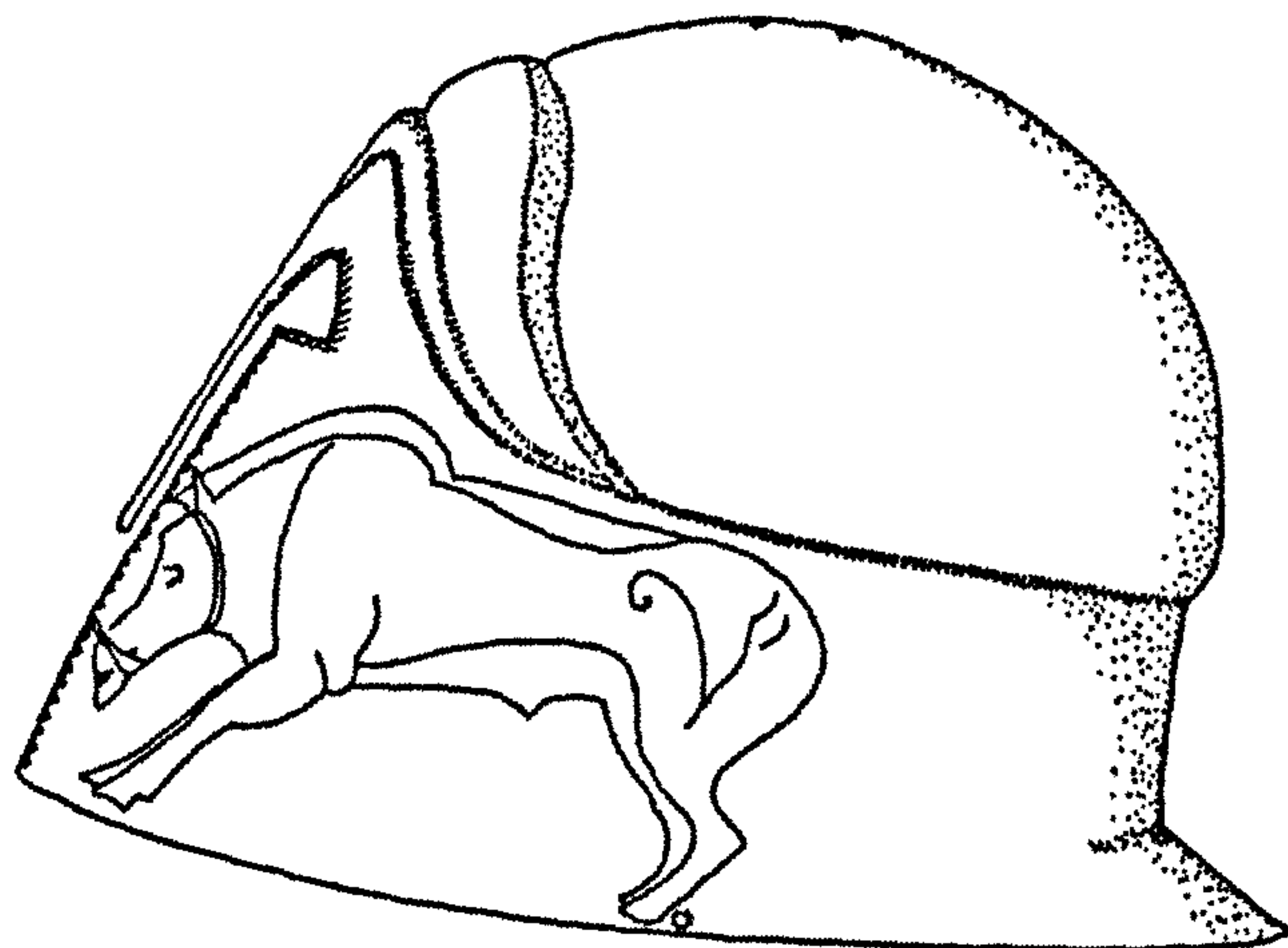
This type is characterised by a low bowl with an acutely sloping face-guard completely closed beneath the nasal. Like the preceding form, helmets of type V have a slightly cylindrical appearance. The

nasal is of moderate length and projects forward from the face-guard very slightly. At the rear the neck-guards are drawn out to form large neck-flanges. These helmets are equipped with transversely mounted 'U' shaped crest-holders, but of a new and more sophisticated form. These are removable. They are accompanied by the usual side mounted feather supports which are permanently fixed. The decoration on these helmets is Hellenic and naturalistic in style and very well executed.

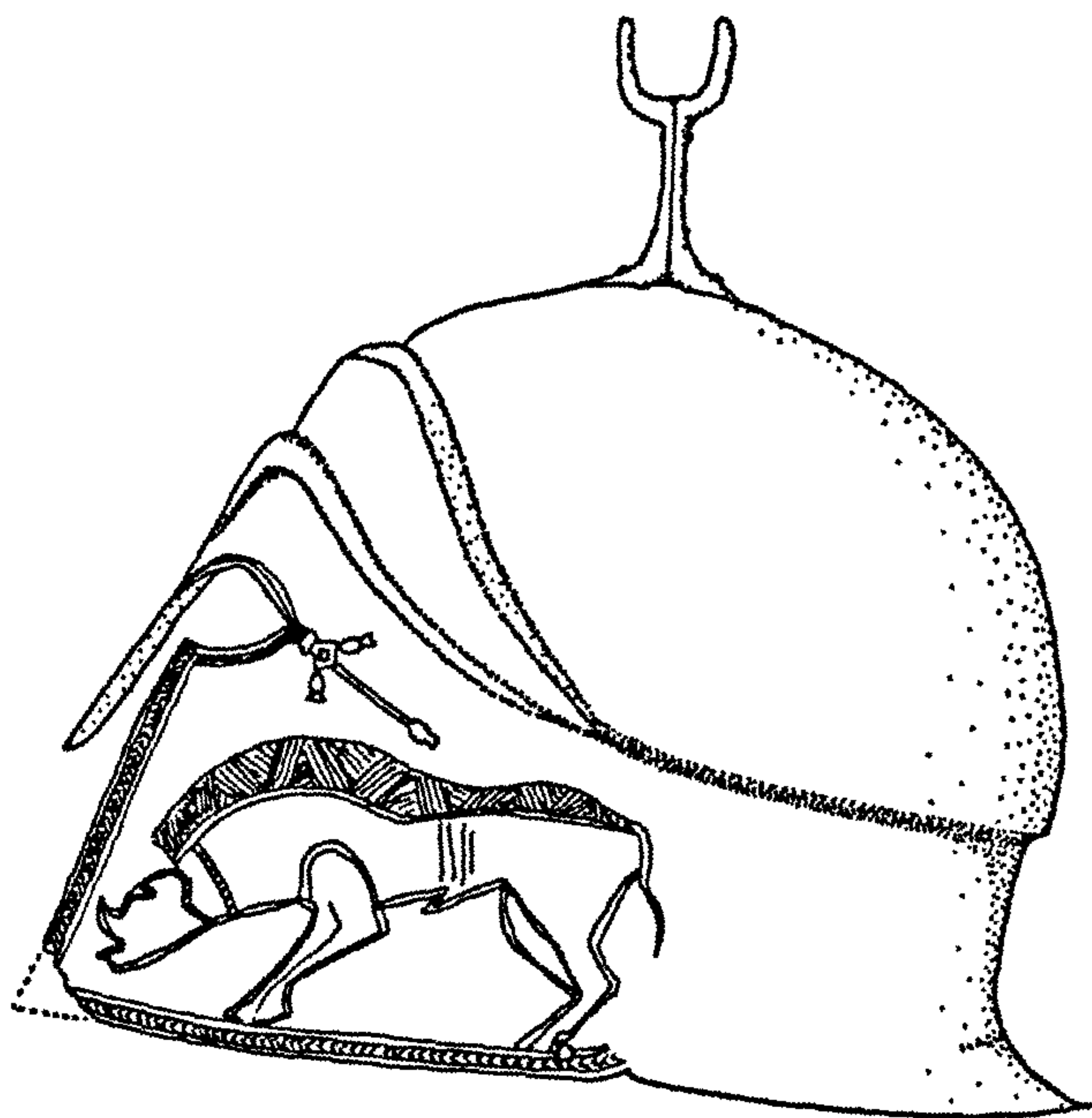
Six helmets of type V come from dated contexts. They are Nos. 47, 48 and 49, which all come from Rutigliano and date to the last quarter of the 5th century B.C., Nos. 43 and 44 from Canosa di Puglia, which date to the mid 4th century, and finally No. 45 from Montescaglioso Contrada Sterpino, which dates to second half of the 4th century B.C.

Type VI. (Helmets 52-54.)

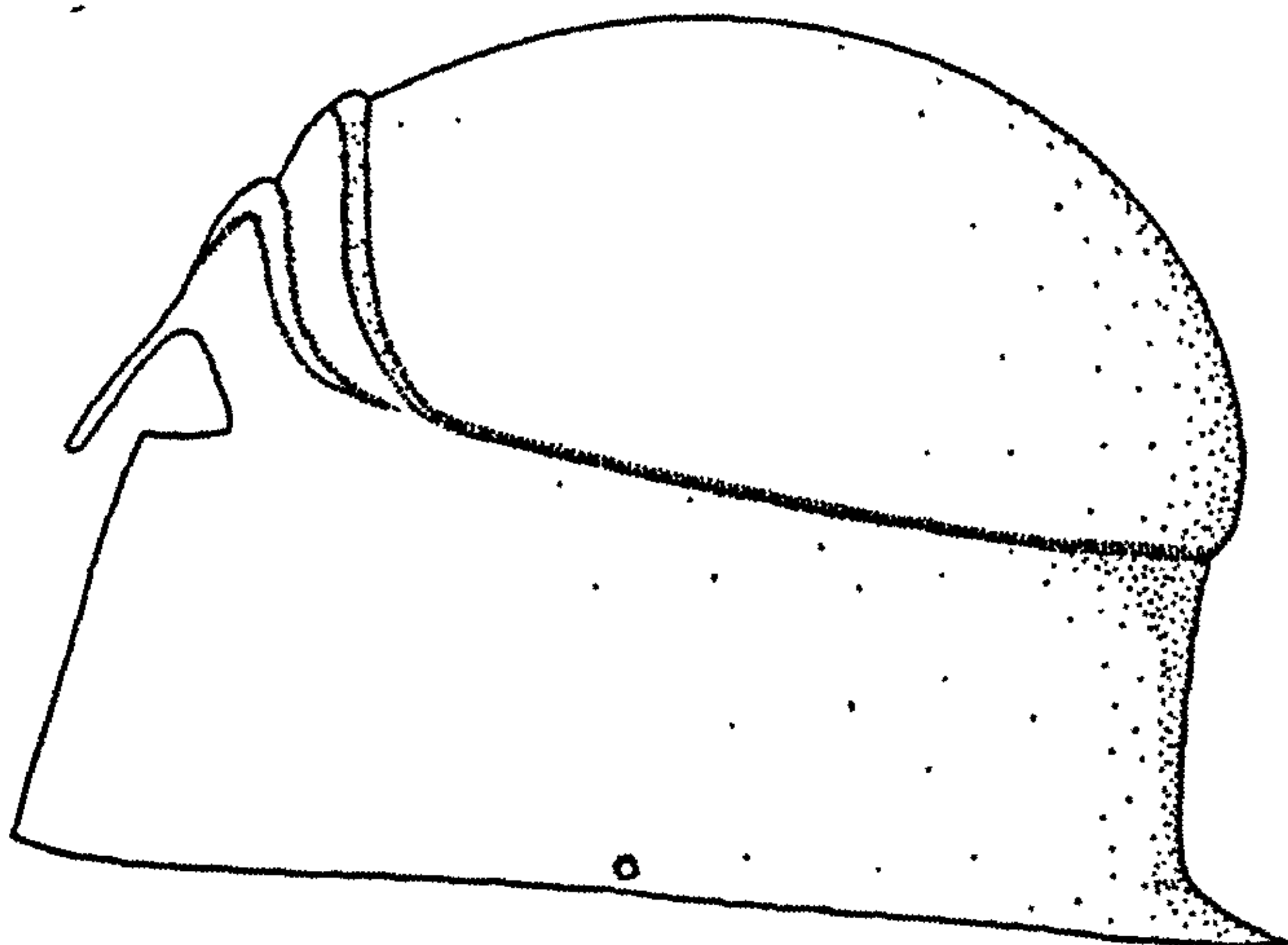
Helmets of type VI are very similar to the preceding form and are characterised by the same low bowl with an acutely sloping face-guard which gives them a cylindrical appearance. The face-guards of these helmets are completely enclosed, the nasal being simply indicated by engraving. At the rear, the neck-guards are strongly everted to form large neck-flanges. All three helmets have transversely mounted 'U' shaped crest holders which were accompanied by side mounted plume supports. The decoration on these helmets is Hellenistic in style and well executed. Unfortunately none of these helmets come from a dated context.



9



10

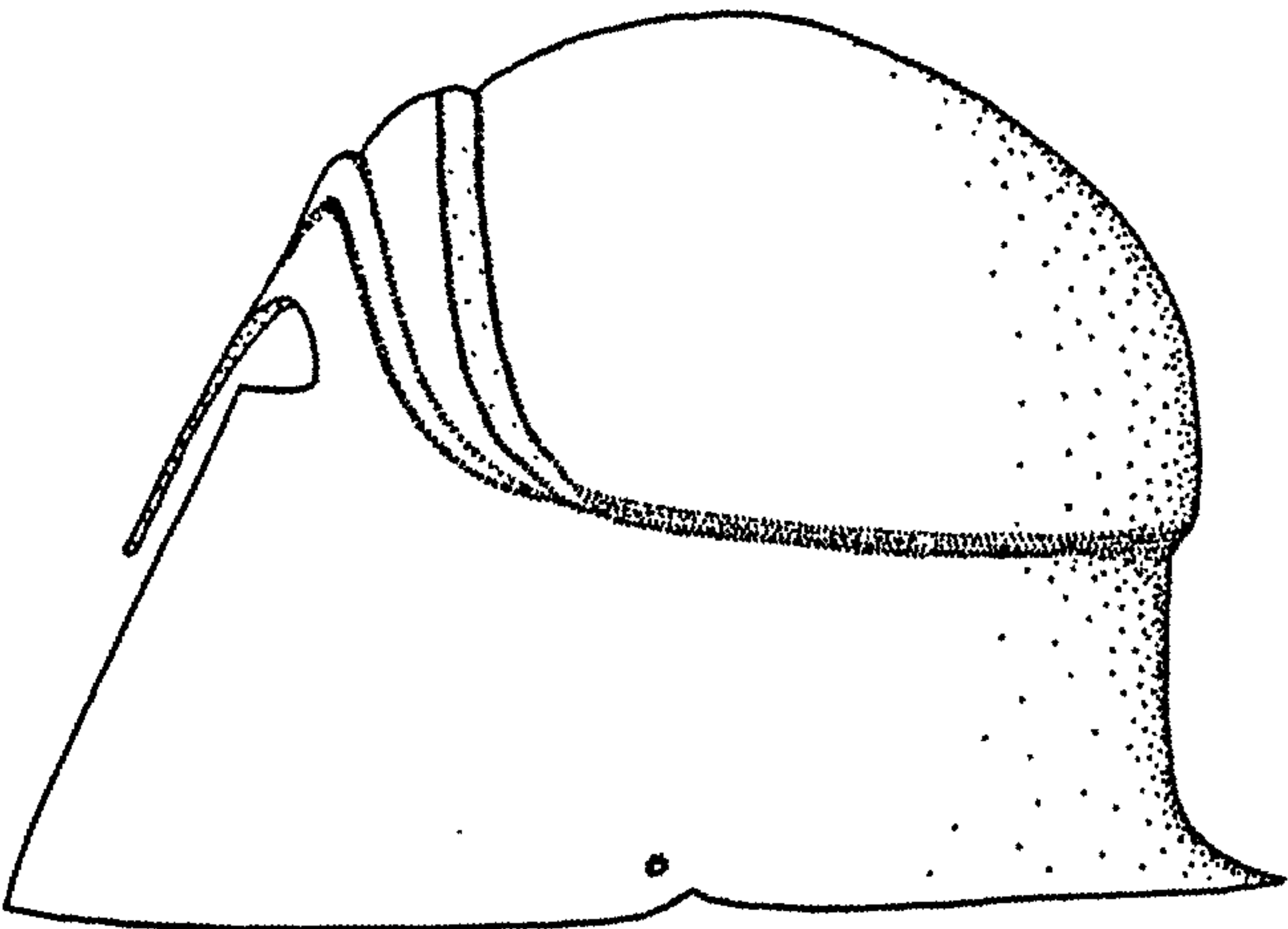


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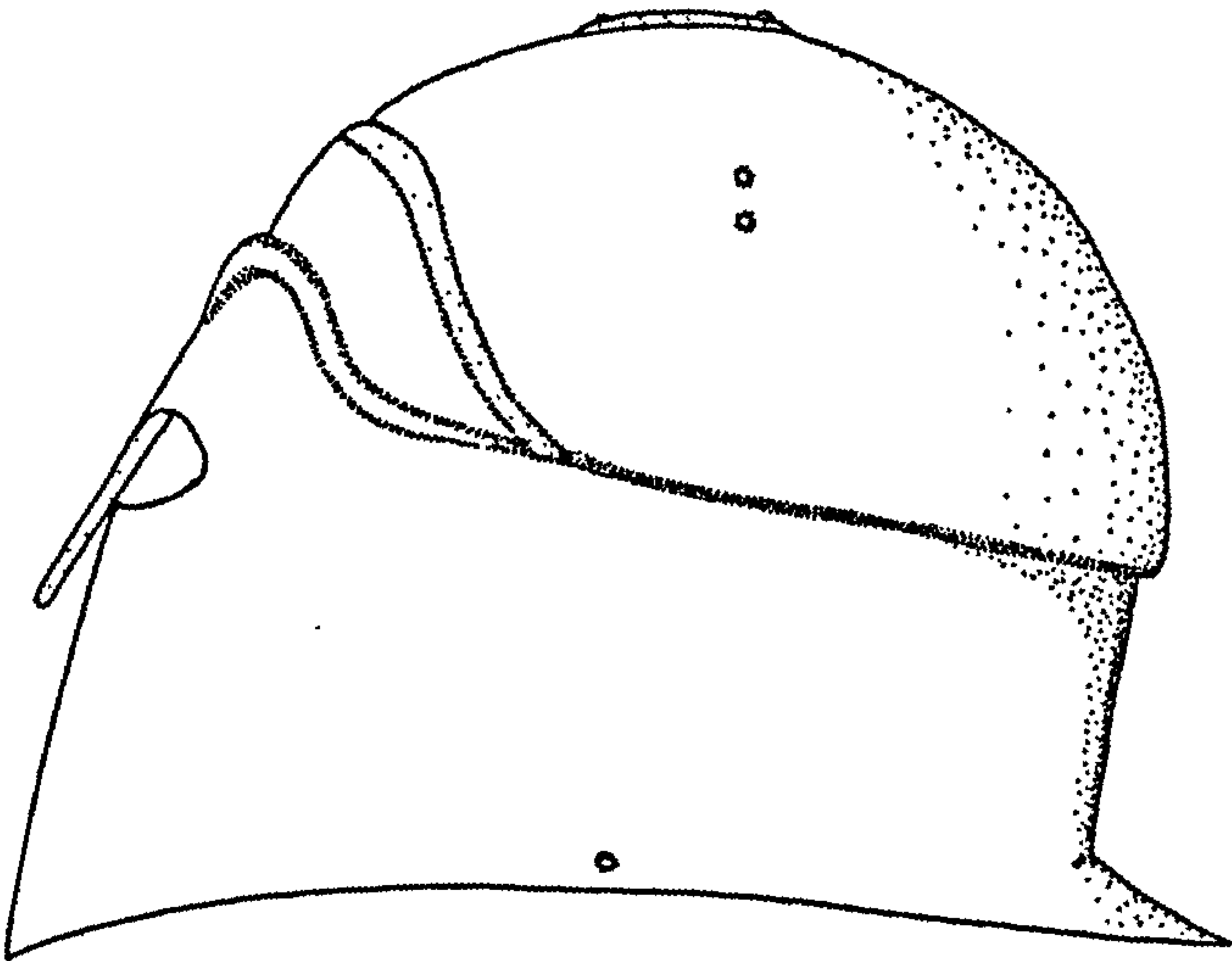
Type VII. (Helmets 55-59.)

Helmets of type VII are distinguished by their low slightly bulbous and angular bowls which sometimes have a central ridge. They are equipped with short, acutely sloping face-guards, which are completely enclosed and have no eye openings. These are usually indicated by engraving as on helmets Nos. 55, 56 and 59, or are inlaid as on helmets Nos. 57 and 58. At the rear, the helmet is extended to form a small neck-flange. In general this form is very shallow and forms little more than a skull cap which could only be worn on the top of the head and not drawn down at all. The "U" shaped crest holders are mounted longitudinally and although no feather supports survive in situ there are two rivet holes on either side of the bowl of each example to show where these were mounted. There is only one dated example of this type of Apulo-Corinthian helmet, that is No. 59 from a grave at Cairano which dates to the second half of the 5th century B.C. However there is plenty of pictorial evidence depicting their use as late as c. 100 B.C. (i.e. the Domitius Ahenobarbus reliefs, now in the Louvre, pl. 10b.). Therefore it would seem reasonable to place these as the final development of the Apulo-Corinthian helmet probably dating from the later part of the 5th century B.C.

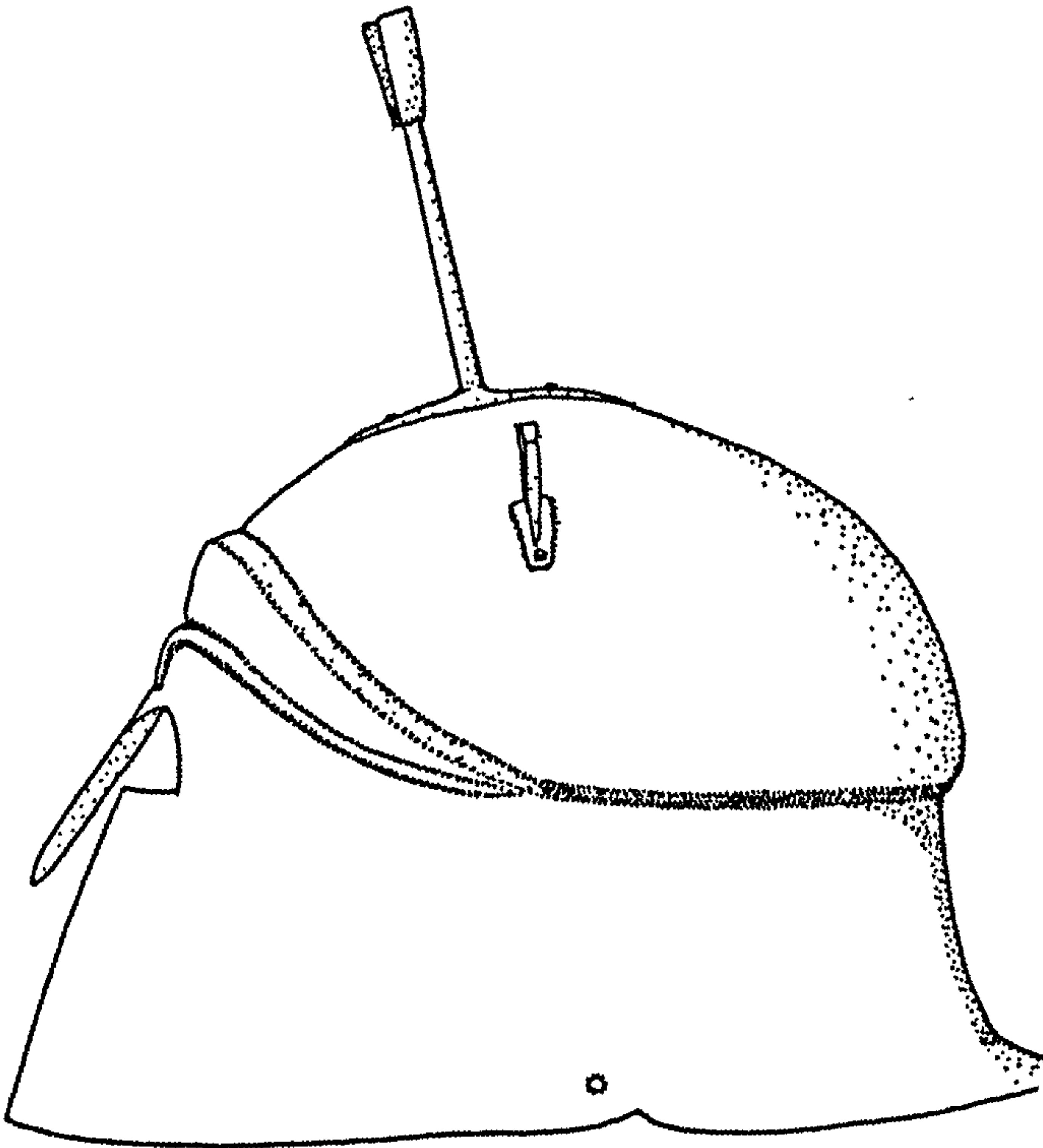
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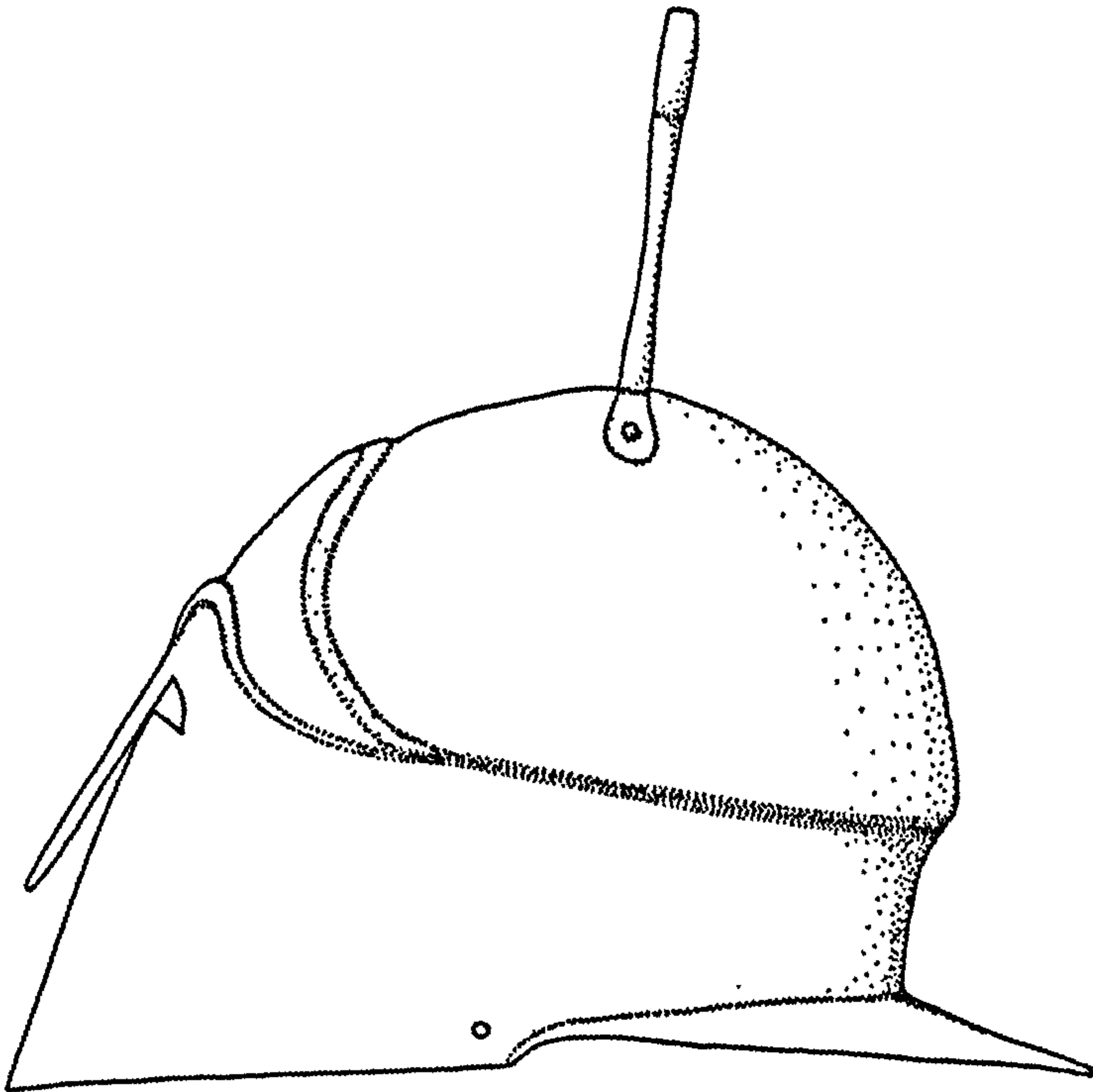
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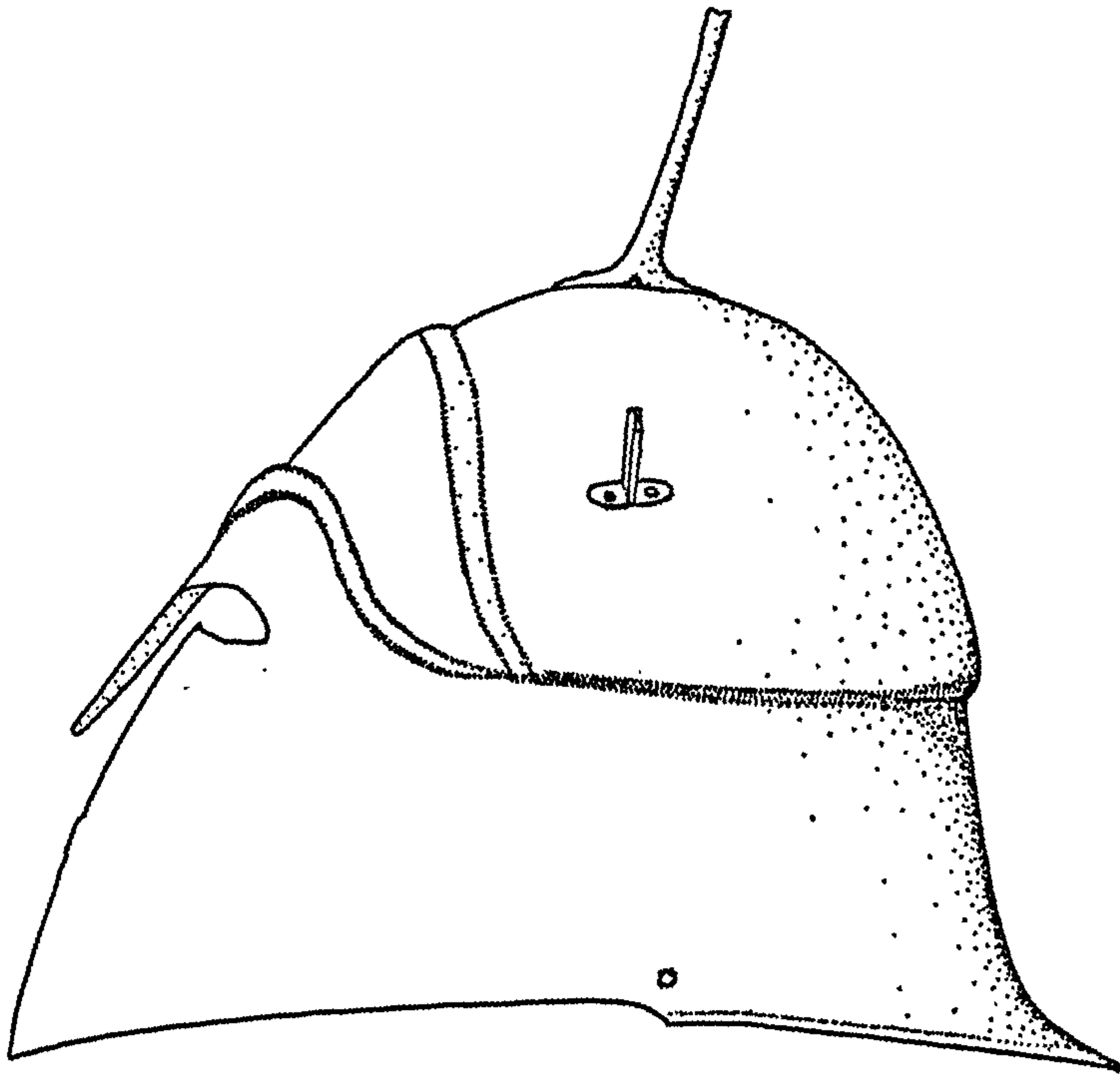
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15

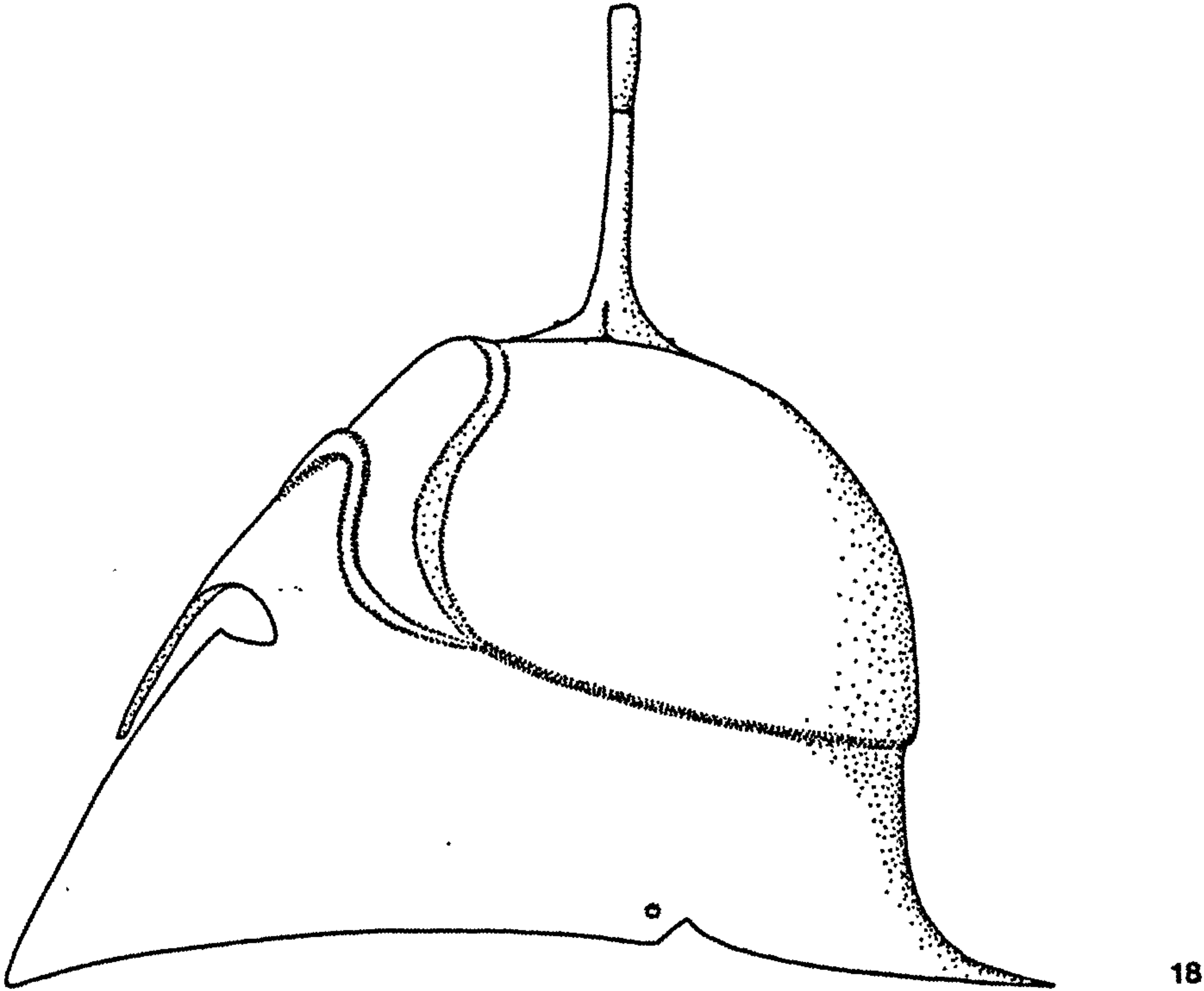
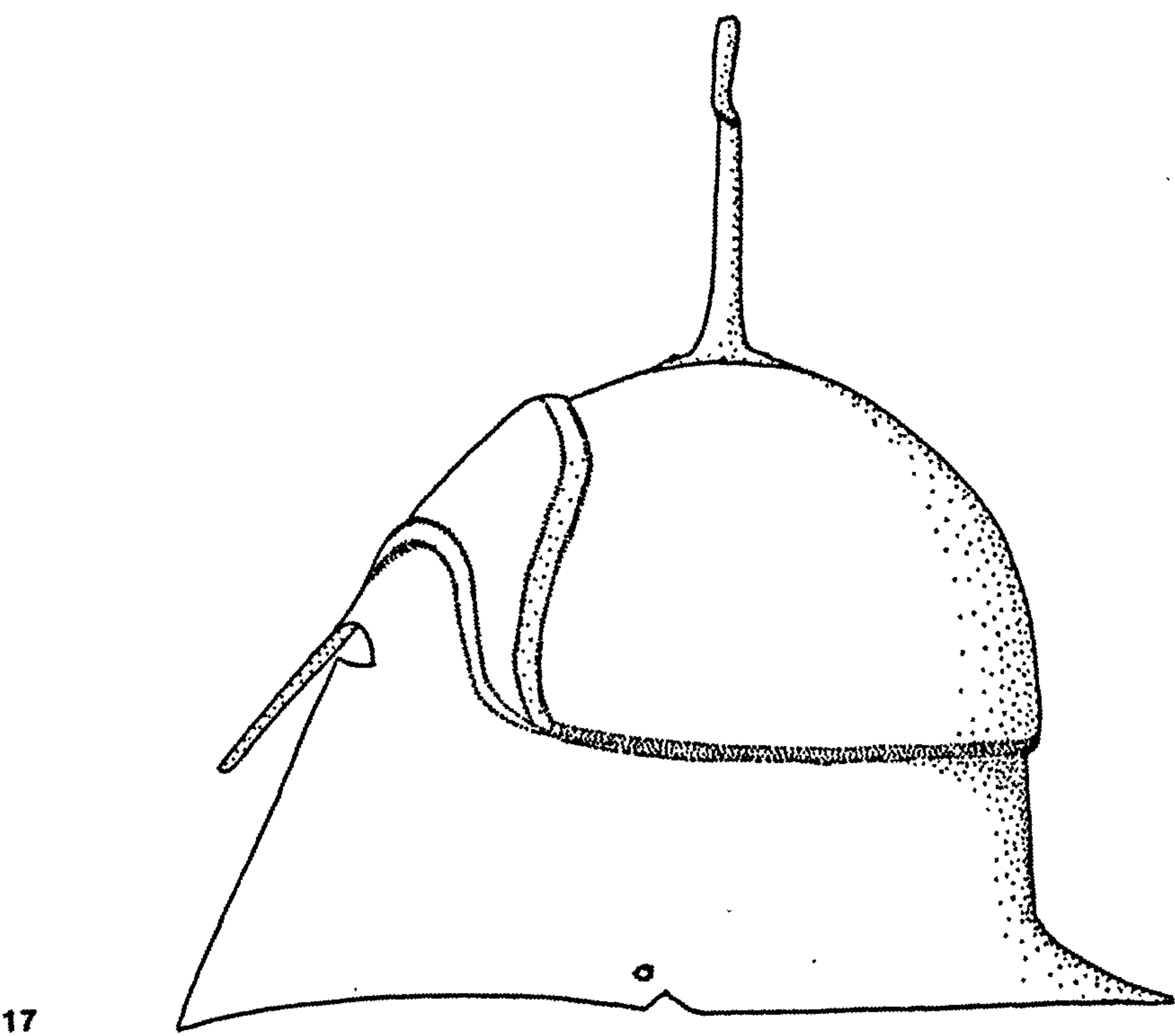


16



Type I.

1. Sicily. Antikenmuseum Berlin (L27.). Undecorated. (fig 9:1.) 
Lipperheide, von. 1896, 66.
2. South Italy. Antikenmuseum Berlin (L28.). Decorated: Opposed archaic leaping horses. (fig. 9:2.) Schröder. 1905, 15-30.
3. Syracuse, Sicily. Antikenmuseum Berlin (L29.). Decorated: Opposed charging boars in a naturalistic style. (fig. 9:3.) Lipperheide, von. 1896, 74.
4. South Italy. Bibliothèque Nationale. (2015.). Undecorated. (fig. 10:4.) Lipperheide, von. 1896, 68. Adam. 1984, 119.
5. Tomb A. Chiucchari Necropolis near Melfi, Puglia Italy. Museo Nazionale di Melfi. (50246). Decorated: Opposed charging boars in a naturalistic style. (fig. 10:5.) Hermann. 1966, 317. fig 86. Orlandini. 1971, 290.
6. Tomb A. Chiucchari Necropolis near Melfi, Puglia Italy. Museo Nazionale di Melfi. (50245). Decorated by a horse on the left side and a charging boar on the right both in an archaic style. (fig. 10:6.) Adamesteanu. 1974, 182. Orlandini. 1971, 291.
7. South Italy. Dallas Museum of Fine Arts. Decorated: Opposed charging boars in an archaic style. (fig. 11:7.) Hoffmann. 1970, 162-3, No.77.
8. Taranto, Le Murde, Italy. Collection A. Guttman Berlin. Undecorated. (fig. 11:8.) Anon. 1977, 70, No.404
9. The Basilicata, Italy. Private Collection in Lucerne. Decorated: Opposed charging boars in a naturalistic style. (fig. 12:9.) Bloesch. 1974, 50. no.303. Bloesch. 1976, 83-7.



10. South Italy Sold Sotheby's 13.7.1987 Lot 410. Decorated: Opposed charging boars in an archaic style. (fig. 12:10) Anon. 1987, 147, Lot. 410.

11. Apulia, Italy. British Museum (2823. 1873.8-20.224.) Undecorated. (fig. 12:11.) Walters. 1899, 349, No.2823. Stary, 1982, 4-5.

12. Ruvo di Puglia, Italy. Museo Nazionale Naples (5732). Undecorated. (fig. 13:12.) Fiorelli. 1869, 1, No.3.

13. Grave 24 Rutigliano near Bari, Puglia, Italy. Museo Nazionale Taranto. (140173). Undecorated. (fig. 13:13.) Lo Porto. 1977, 741.

14. Ruvo di Puglia, Italy. British Museum (2831 1856.12-26.616,). Decorated: Opposed charging boars in a naturalistic style. (fig. 13:14.) Walters. 1899, 349. No.2831. Stary. 1982, 5.

Type II.

15. South Italy. Nurnberg Museum. Undecorated. (fig. 14:15.) Lipperheide, von. 1896, 73.

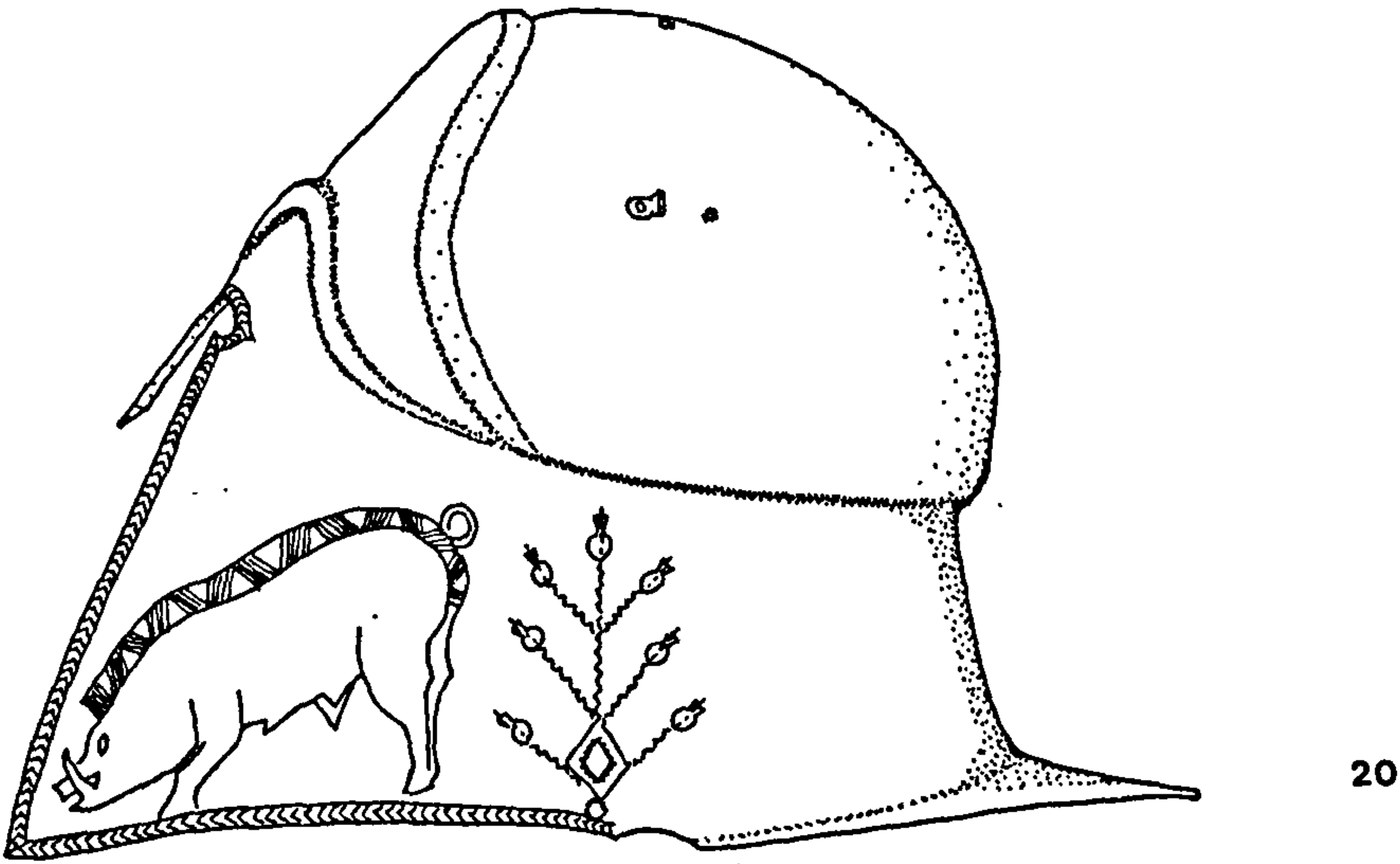
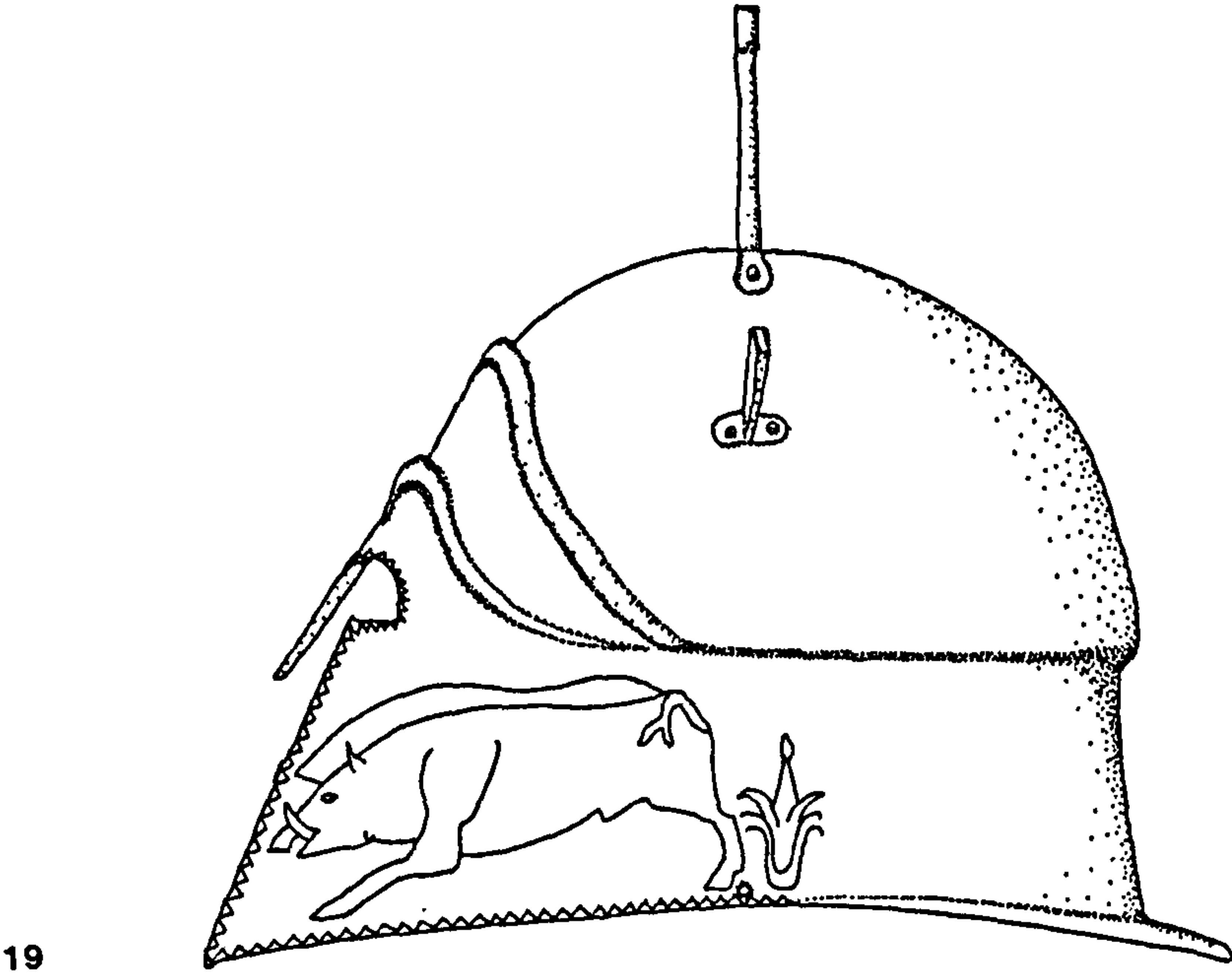
16. Friuli, Italy. Armeria Reale Turin. (A12). Undecorated. (fig. 14:16.) Angelucci. 1890, 13. Lipperheide, von. 1896, 70.

17. Tomb 25 at Ordona, Italy. Armeria Reale Turin. (A13). Undecorated. (fig. 15:17.) Angelucci. 1890, 13. Lipperheide, von. 1896, 70.

18. South Italy. Present whereabouts unknown. Undecorated. (fig. 15:18.) Anon. 1975, 98, pl.59.

19. South Italy. Collection A. Guttmann, Berlin. Decorated: Opposed charging boars in a naturalistic style. (fig. 16:19.) Anon. 1974, 23, Lot. 200.

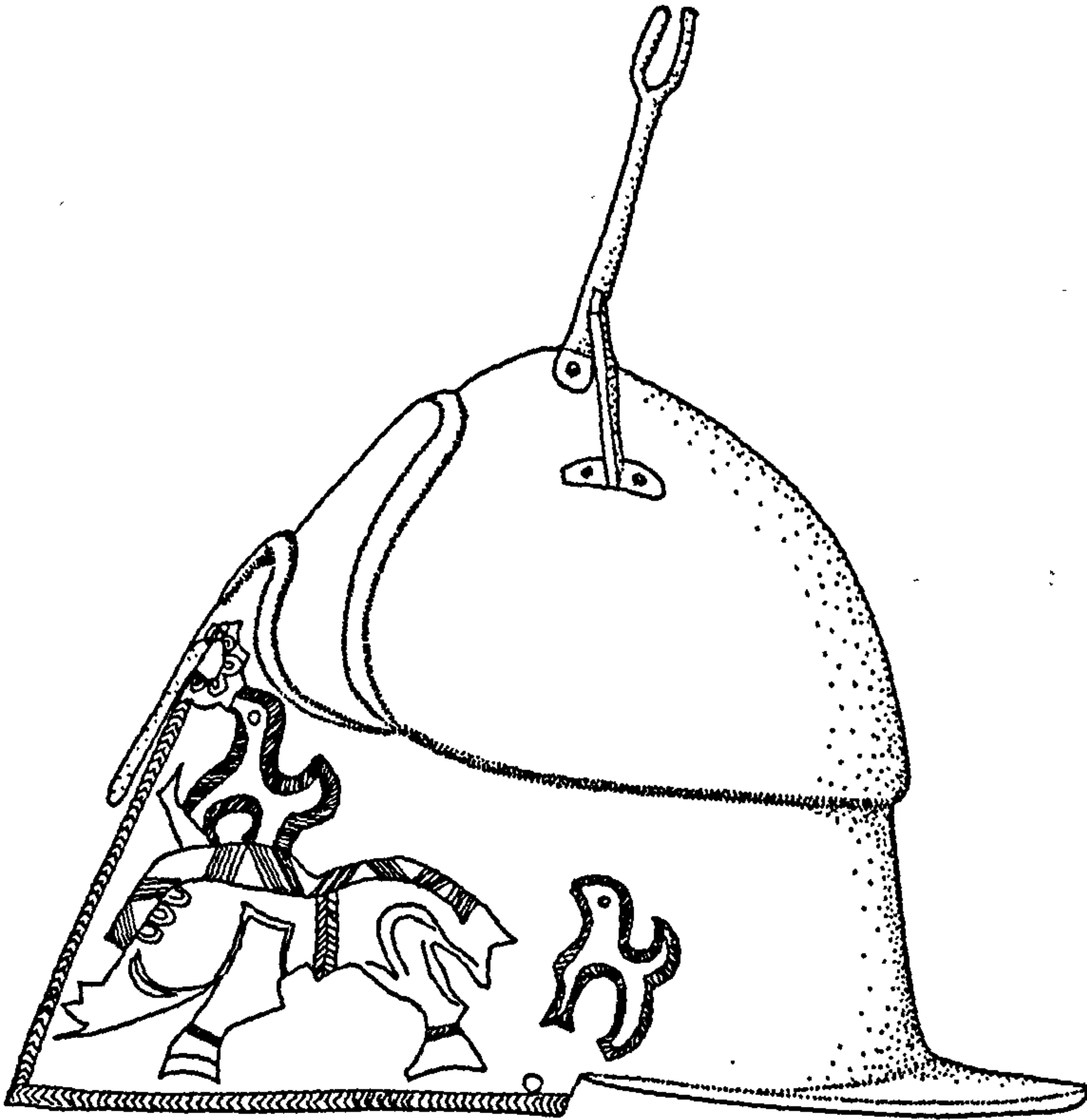
FIG. 16



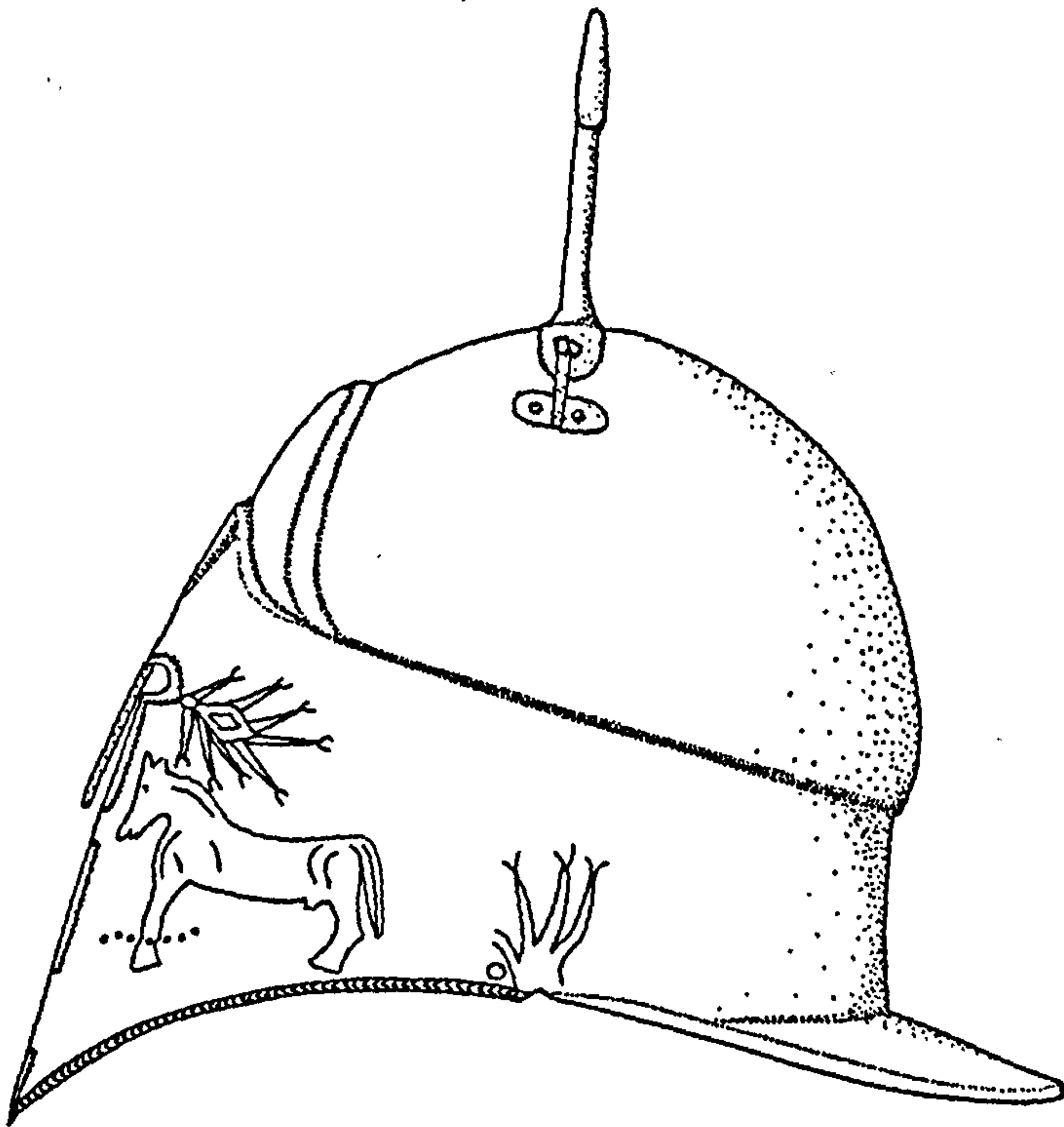
Type III.

20. Tomb 7, Leonessa near Melfi, Puglia, Italy. Museo Nazionale Melfi (52960) Decorated: Opposed charging boars in an archaic style. (fig. 16:20.) Orlandini. 1971, 290. Adamesteanu. 1971, 105-6.
21. Tomb F. Chiucchari Necropolis near Melfi, Puglia Italy. Museo Nazionale di Melfi. (50389). Decorated: Opposed charging boars in an archaic style. (fig. 17:21.) Adamesteanu. 1971, 105-6. Orlandini. 1971, 290. Tocco. 1971, 105.
22. Tomb 56. Lavello Necropolis near Melfi, Puglia Italy. Museo Nazionale di Melfi. (52888). Decorated: Opposed rearing horses in an archaic style. (fig. 17:22.) Adamesteanu. 1971, 115-6. Orlandini. 1971, 290. Tocco. 1971, 111.
23. Tomb F. Chiucchari Necropolis near Melfi, Puglia Italy. Museo Nazionale di Melfi. (50388). Decorated: Opposed charging boars in an archaic style. (fig. 18:23.) Adamesteanu. 1971, 105-6. Orlandini. 1971, 290. Tocco. 1971, 105.
24. Grave 82 Ripacandida Necropolis near Melfi, Puglia Italy. Museo Nazionale di Melfi. (118161). Decorated: Double incised line around main and subsidiary edges. (fig. 18:24.) Unpublished.
25. Chiucchari Necropolis near Melfi, Puglia Italy. Museo Provinciale di Potenza Melfi. (50389). Decorated: Opposed charging boars executed in an naturalistic style. (fig. 19:25.) Bertarelli. 1957, 27.
26. South Italy. Musée du Cinquantenaire Brussels (A703). Decorated: Opposed charging boars, lions, cavalry, warriors and a sphinx in an archaic style. (fig. 19:26.) De Mot. 1904, 69. Amandry. 1949, 441, pl. 25.

21



22

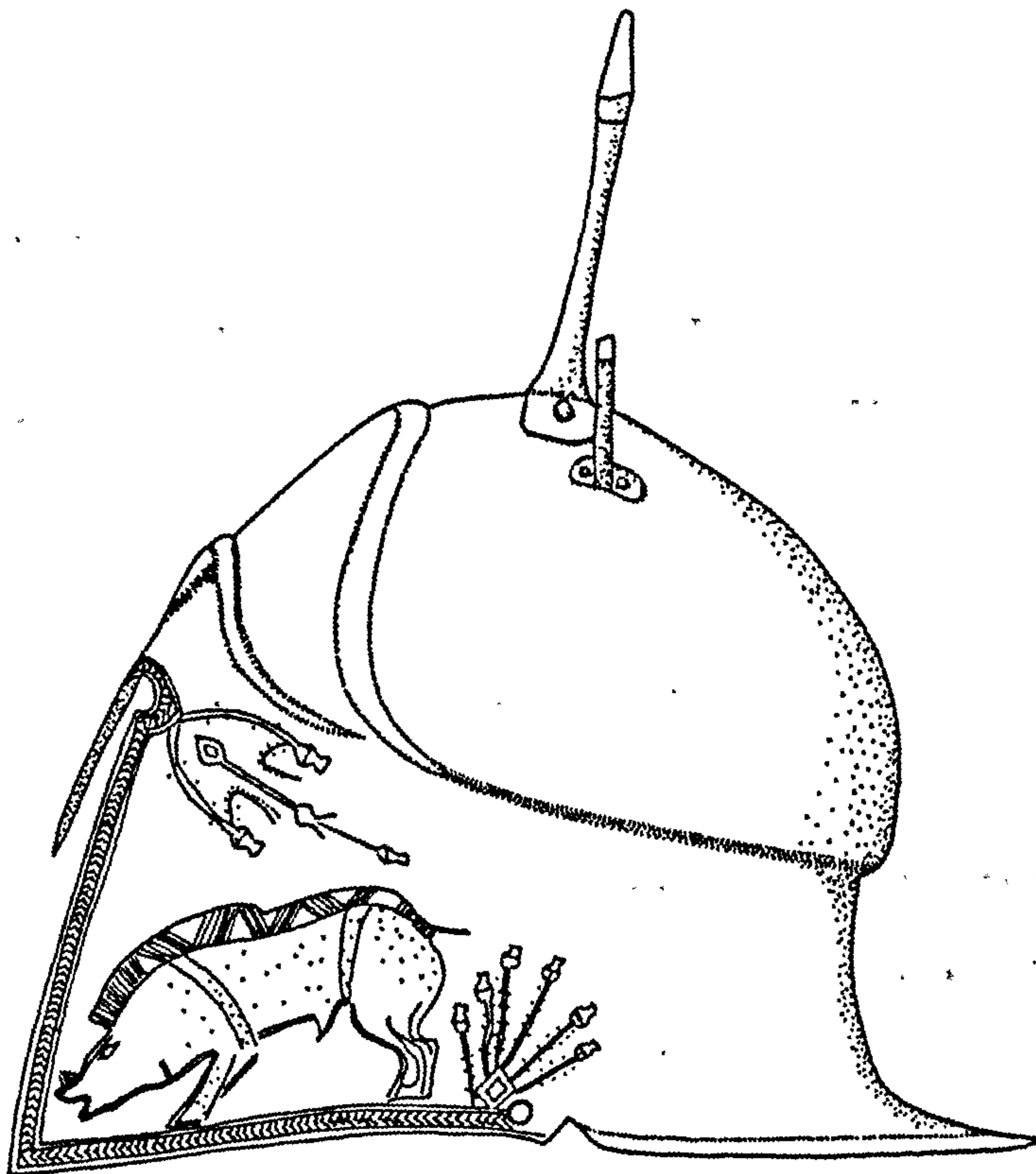


27. Pomarico, Basilicata, Italy. British Museum (2832 1856.12-26.669.) Decorated: Opposed charging boars supported by a lion and a sphinx all in an archaic style. (fig. 20:27.) Lipperheide, von. 1896, 72. Walters. 1899, 349 No.2832. Stary. 1982, 6.
28. Chiucchari Necropolis near Melfi, Puglia Italy. Museum of Fine Arts Boston. (69.1075). Undecorated. (fig. 20:28.) Comstock and Vermeule. 1971, 494-5. pl.589.
29. Naples, Italy. Museo Nazionale Naples. Decorated with palmettes and snakes. (fig. 21:29.) Kukahn. 1936, 95, No. 166.
30. South Italy. Sold at Christies, London. 11.12.1987. Decorated: Palmette on left cheek-guard. (fig. 21:30.) Anon. 1987, 17, Lot. 38.
31. South Italy. National Museum Copenhagen. (ABa 889). Decorated: Opposed charging boars supported by a lion and a Sphinx all in an archaic style. (fig. 22:31.) Lipperheide, von. 1896, S.504.
32. Chiucchari Necropolis near Melfi, Puglia Italy. Museo Nazionale di Melfi. (50753). Undecorated. (fig.22:32.) Orlandini. 1971, 290.

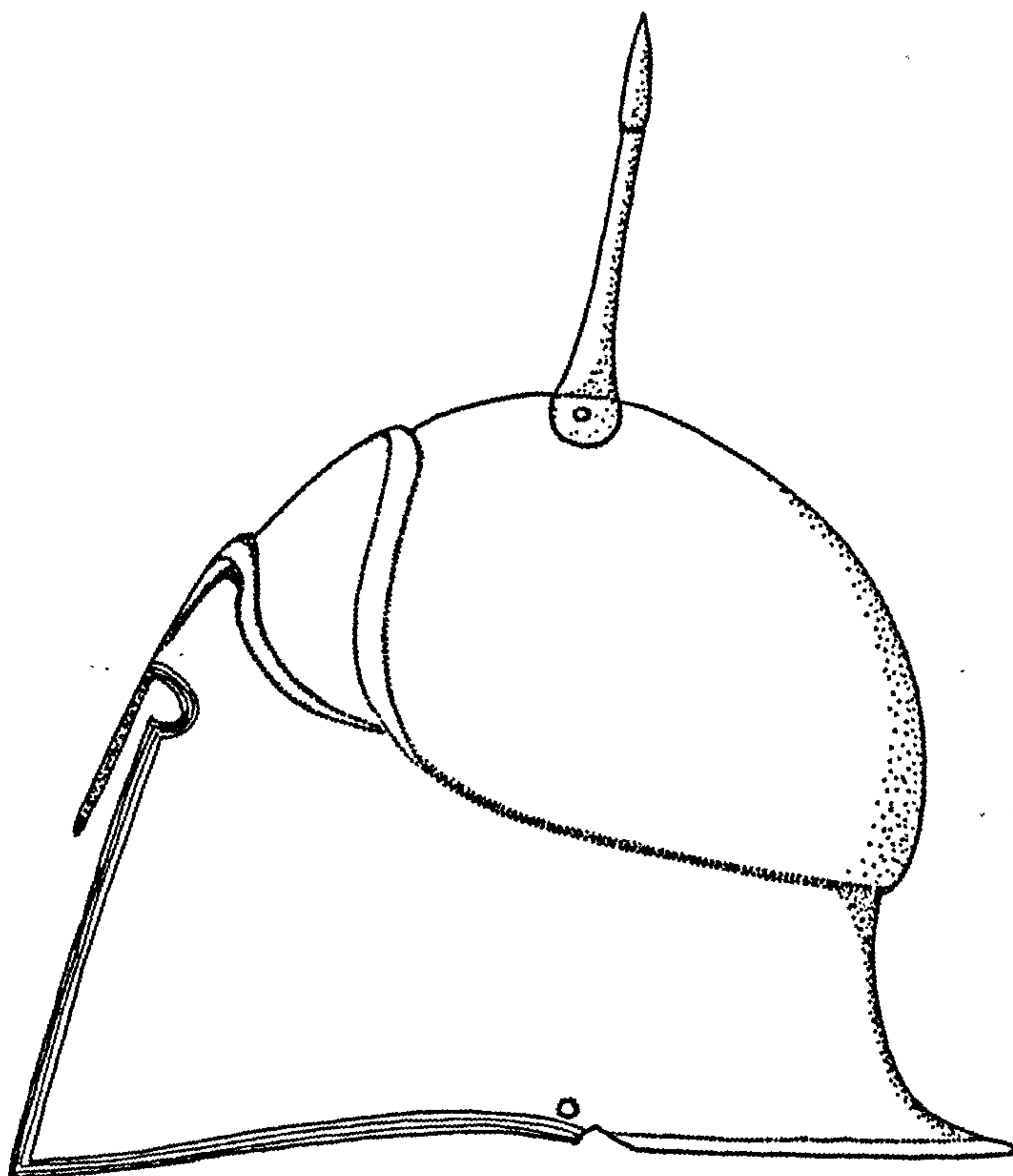
Type IV.

33. Tomb A/34 Banzi, Italy. Museo Nazionale Reggio Calabria. (50753) Undecorated. (fig. 23:33.) Pesce. 1936, 428-39.
34. Krsko, Yugoslavia. Antikenmuseum Berlin (L.30.). Decorated: Opposed charging boars in a naturalistic style. (fig. 23:34.) Lipperheide, von. 1896, 69. Kukahn. 1936, 95, No. 165.
35. South Italy. Antikenmuseum Berlin (31590). Decorated: Opposed charging boars in an archaic style. (fig. 24:35.) Lipperheide. von. 1896, 71.

23



24



36. South Italy. Antikenmuseum Berlin (10398). Decorated: Opposed charging boars supported by a lion, horse, eagle and sphinx all rendered in an archaic style. (fig. 24:36.) Bottini. 1988, 135, No.19.

37. South Italy. Museo Poldi Pezzoli Milan (2420). Decorated: Opposed archaic lions. (fig. 25:37.) Cavalieri-Manasse. 1985, 36, no.29A, pl. 29A.

38. South Italy. Sold in Basel April 1970. Decorated: Opposed charging boars in an archaic style. (fig. 25:38.) A. Emmerich Gallery. 1970, 39, no.57.

39. Canosa di Puglia, Italy. Museo Nazionale Bari. (2242). Undecorated. (fig. 25:39.) De Juliis. 1983, 119.

40. Grave 3 Rutigliano near Bari, Puglia, Italy. Museo Nazionale Taranto. (61488). Undecorated. (fig. 26:40.) Unpublished.

Type V.

41. South Italy. Antikenmuseum Berlin (FR1011.). Decorated: A combat between a centaur, Hercules and Iolaus. (fig. 26:41.) Lipperheide, von. 1896, 79.

42. South Italy. Antikenmuseum Berlin (L.90). Undecorated. (fig. 26:42.) Unpublished.

43. Canosa di Puglia, Italy. Badisches Landesmuseum Karlsruhe (F430.). Decorated: Lion on the left cheek-guard opposing a bull on the right cheek-guard rendered in a naturalistic style. (fig. 27:43.) Schumacher. 1890, 130. Lipperheide. von. 1896, 77.

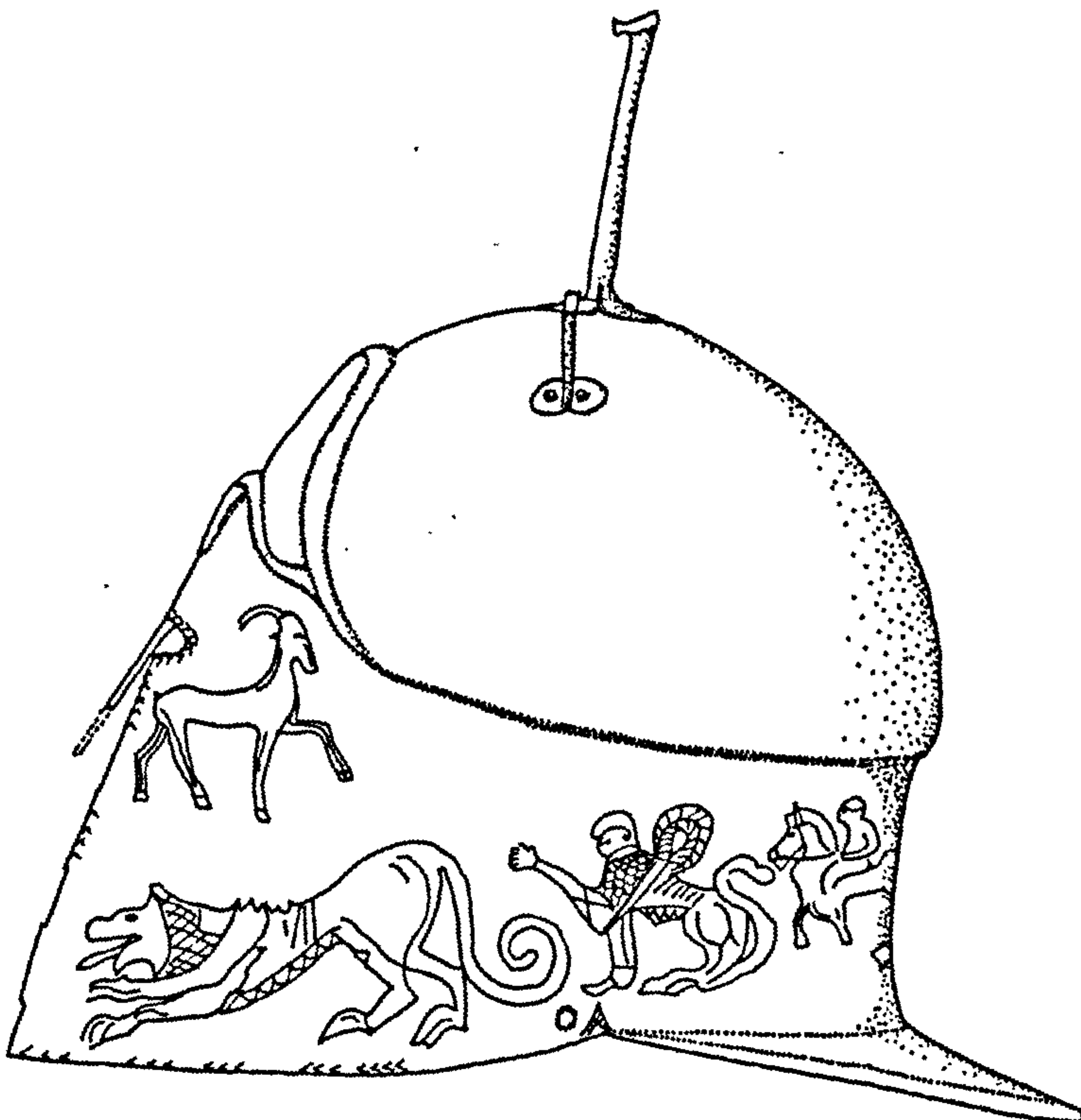
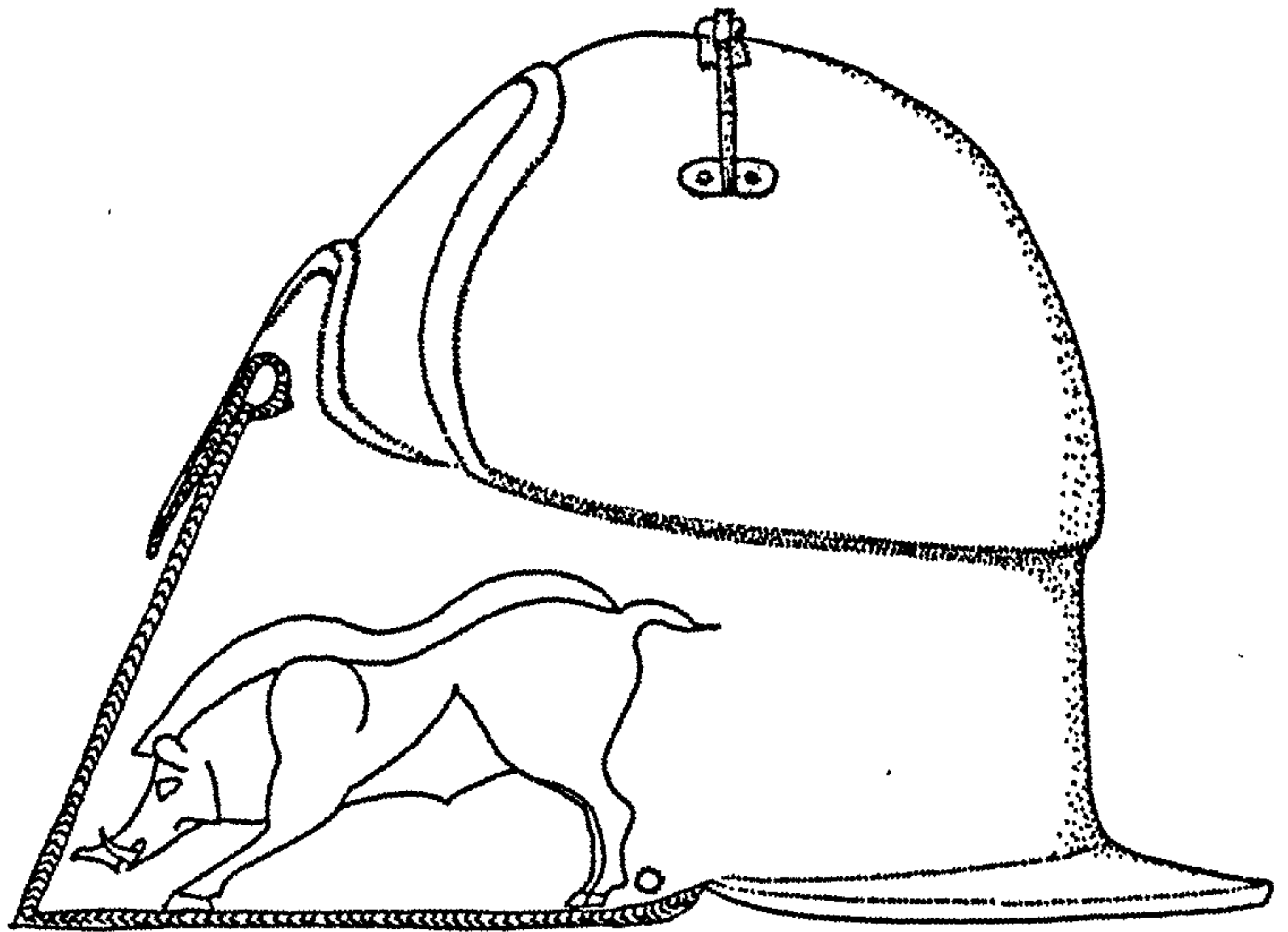
44. Canosa di Puglia, Italy. Badisches Landesmuseum Karlsruhe (F432.). Decorated: Boar on the left cheek-guard opposing a bull on the right

- cheek-guard supported by seabests rendered in a naturalistic style.
(fig. 27:44.) Schumacher. 1890, 130. Lipperheide, von. 1896, 78.
45. Montescaglioso, Materna, Italy. Museo Nazionale Materna (9584).
Decorated: Lion on left cheek-piece opposing a boar on the right.
(fig. 27:45.) Lattanzi. 1976, 130.
46. Ruvo di Puglia, Italy. Museo Nazionale Naples (5707).
Undecorated. (fig. 28:46.) Kukahn. 1936, 94, no.164.
47. Grave 77 Rutigliano near Bari, Puglia, Italy. Museo Nazionale
Taranto. (165191). Undecorated. (fig. 28:47.) Unpublished.
48. Grave 19 Rutigliano near Bari, Puglia, Italy. Museo Nazionale
Taranto. (138864). Undecorated. (fig. 29:48.) Unpublished.
49. Grave 11 Rutigliano near Bari, Puglia, Italy. Museo Nazionale
Taranto. (141420). Decorated: Opposed butting bulls supported by
dolphins. (fig. 29:49.) Unpublished.
50. Capua, Campania, Italy. Museum für Völkerkunde Leipzig.
(UG134172). Decorated: Opposed charging boars in an archaic style.
(fig. 29:50.) Hoffmann. 1961, 106.
51. Taranto, Italy. Private collection in Cologne. Decorated: Lion
hunt rendered in a naturalistic style. (fig. 30:51.) Anon. 1968, 61.

Type VI.

52. Serra di Vaglio near Potenza, Italy. Museo Provinciale Potenza
(V284). Decorated: Opposed charging boars in a naturalistic style.
(fig. 30:52.) Sestieri-Bertarelli. 1957, 29, pl. S.65.
53. Tomb at Ponte Cucchiaio near Chiusi, Italy. National Museum
Copenhagen (ABa 412.). Decorated: Opposed charging boars in a
naturalistic style. (fig. 30:53.) Lipperheide, von. 1896, S409.

25



26

54. South Italy. St Lucia Museum, University of Queensland. (77.1.)
Decorated: Opposed charging boars in a naturalistic style. (fig.
31:54.) Anon⁽²⁾. 1977, lot. 189.

Type VII.

55. Vulci, Italy. British Museum (2722.47.8.6.160). Decorated:
Opposed charging boars in a naturalistic style. (fig. 31:55.)
Lipperheide, von. 1896, 75. Walters. 1899, 342, No. 2722. Stary.
1982, 6.

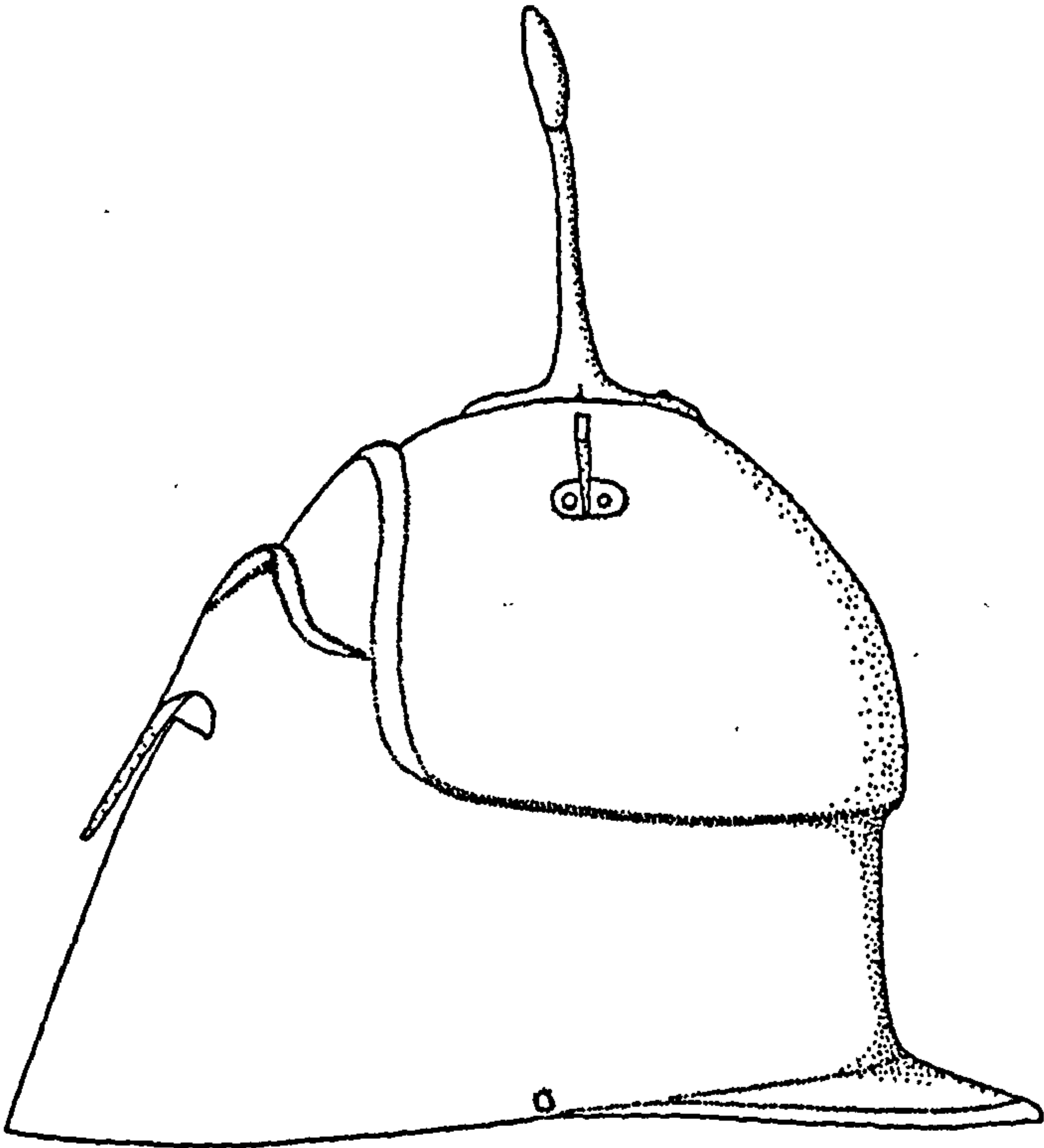
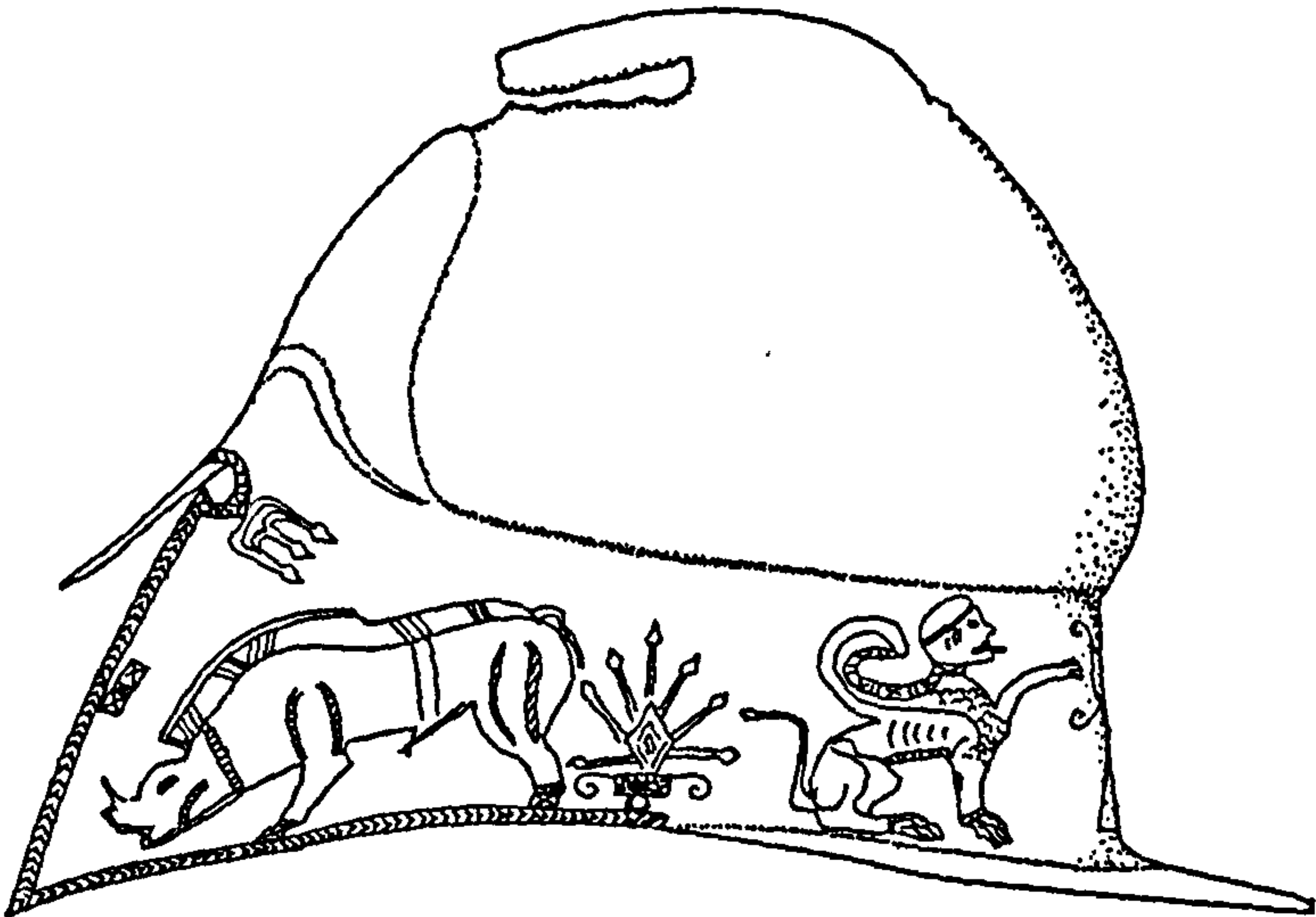
56. Etruria, Italy. British Museum. (2723. 1856.12-26.664.).
Decorated: Opposed charging boars in a naturalistic style. (fig.
31:56.) Walters. 1899, 342, No. 2723.

57. South Italy. Bibliothèque Nationale. (2017.). Decorated: Eyes
inlaid. (fig. 32:57.) Lipperheide, von. 1896, 76 Adam. 1984. 118
no.149.

58. Ruvo di Puglia, Italy. Museo Nazionale Bari. (7697). Decorated:
Embossed curls of hair eyes inlaid with ivory. (fig. 32:58.) De
Juliis. 1983, 119.

59. Grave 16. Cairano, Campania, Italy. Museo Nazionale Pontecagnano
(34809.). Decorated: Opposed charging boars in a naturalistic style.
(fig. 32:59.) Baillo Modesti. 1980, 25-8.

27



28

Table 4 : Crest-features.

No.	Construction		Mounted		Removeable	Feather Supports	Crest Type	Helmet Type
	2 Piece	3 Piece	Long	Trans.				
1.	*		*			-	3	I.
2.	*		*			-	3	I.
3.	*		*			-	1	I.
4.	*			*		*	2	I.
5.	*		*			-	3	I.
6.	*		*			-	3	I.
7.	*		*			-	3	I.
8.	*			*		-	2	I.
9.	*		*	*		-	2&3	I.
10.	*			*		-	2	I.
11.	*		*	*		-	2&3	I.
12.	*			*		-	2	I.
13.	*			*		-	2	I.
14.	*		*			*	3	I.
15.	*			*		*	2	II.
16.	*		*			*	3	II.
17.	*		*			*	3	II.
18.	*			*		*	2	II.
19.	*			*		*	2	II.
20.	*			*		*	2	III.
21.	*			*		*	2	III.
22.	*			*		*	2	III.
23.	*			*		*	2	III.
24.	*			*		*	2	III.
25.		*		*	*	*	5	III.
26.	*			*		*	2	III.
27.	*		*			*	3	III.
28.	*			*		*	2	III.
29.	*		*			*	3	III.
30.	*		*			*	3	III.
31.	*		*			*	3	III.
32.	*		*			*	3	III.
33.	*			*		*	2	IV.
34.	*			*		*	2	IV.
35.	*		*			*	3	IV.
36.		*	*		*	*	4	IV.
37.		*	*		*	*	4	IV.
38.	*			*		*	2	IV.
39.	*			*		*	2	IV.
40.	*			*		*	2	IV.
41.		*		*	*	*	5	V.
42.	*			*		*	2	V.
43.		*		*	*	*	5	V.
44.		*		*	*	*	5	V.
45.		*		*	*	*	5	V.
46.	*			*		*	2	V.
47.	*			*		*	2	V.
48.	*			*		*	2	V.
49.	*			*		*	2	V.

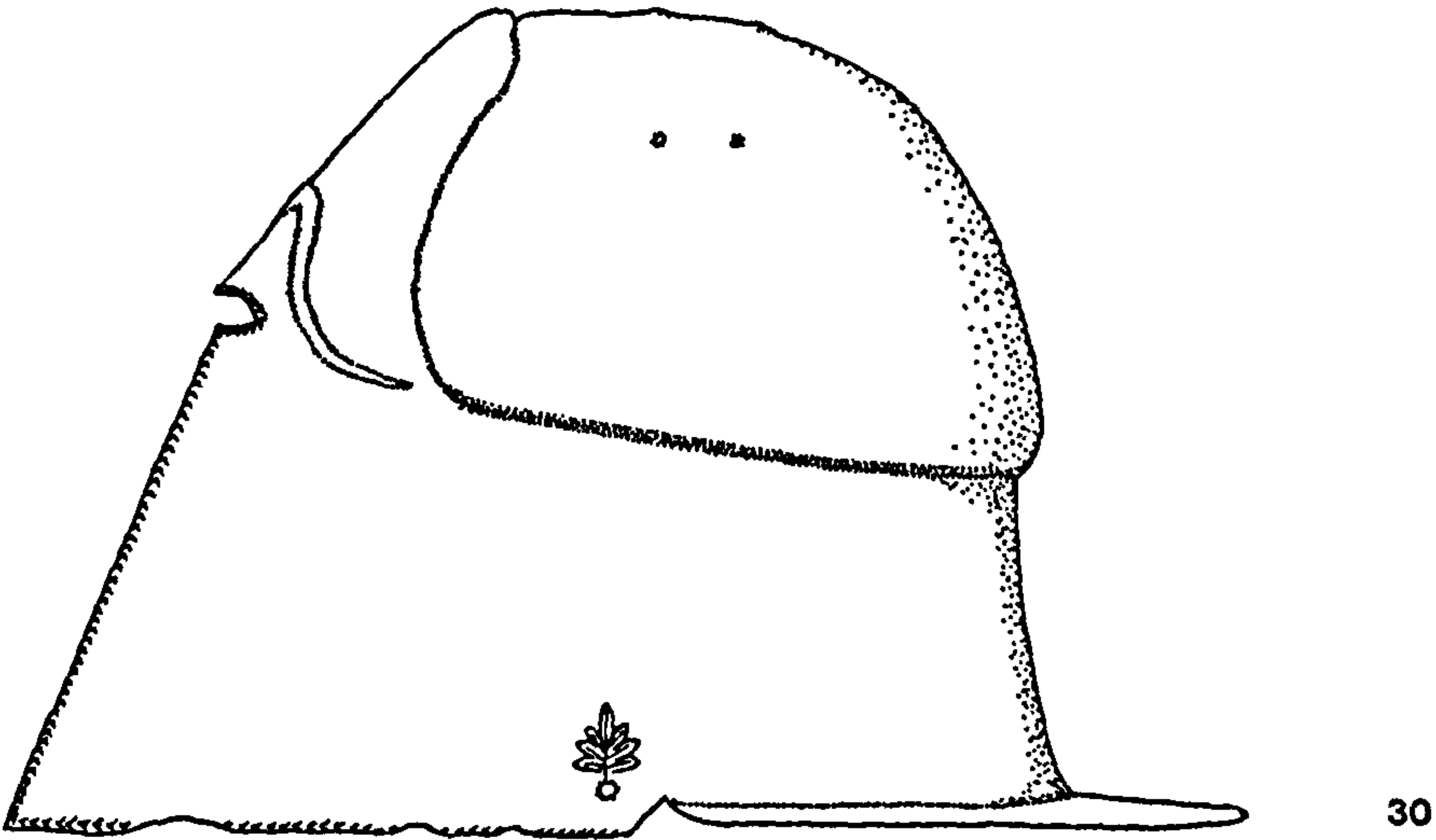
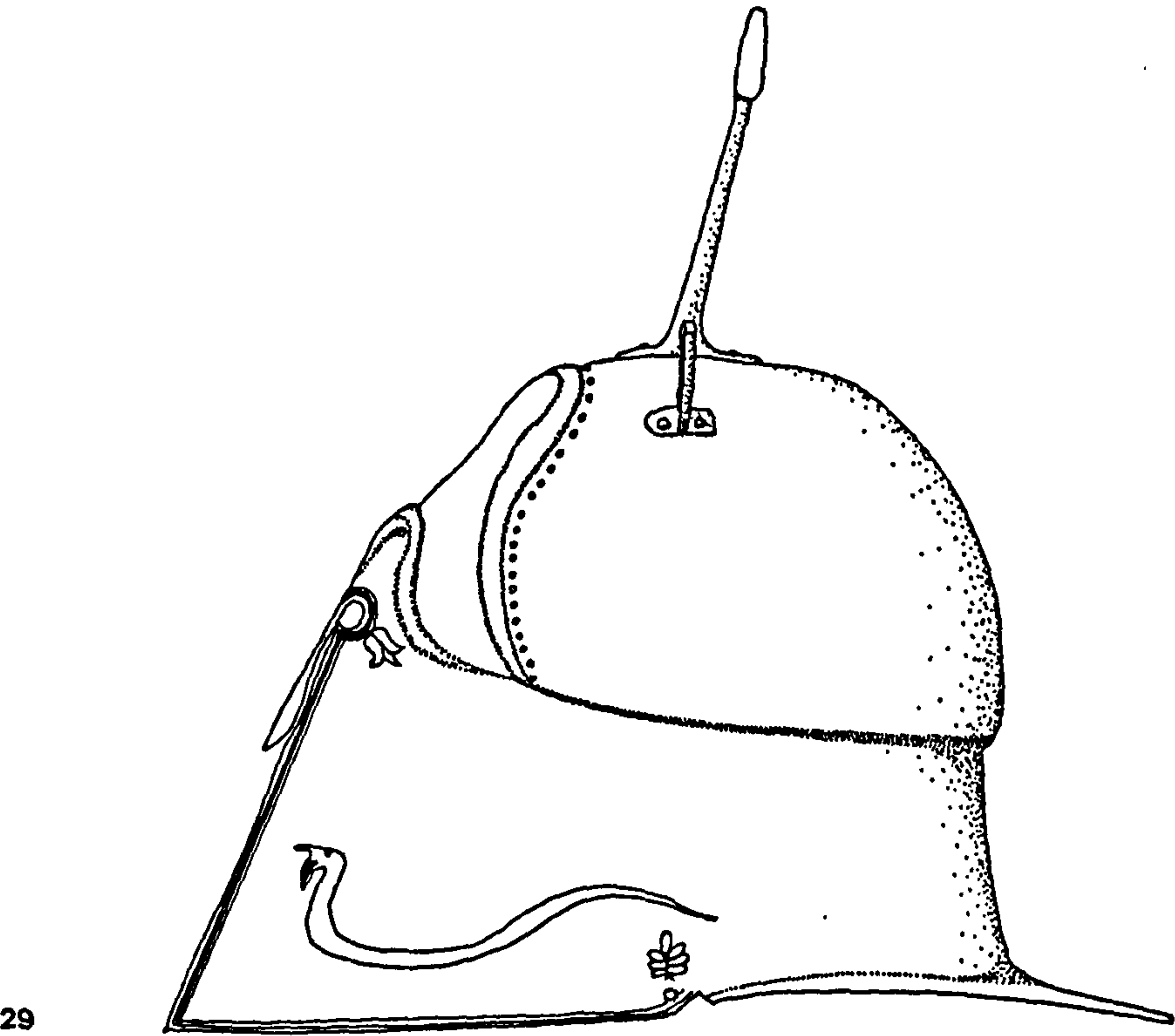
No.	Construction		Mounted		Removeable	Feather Supports	Crest Type	Helmet Type
	2 Piece	3 Piece	Long	Trans.				
50.	*		*			*	2	V.
51.		*	*		*	*	5	V.
52.	*		*			*	2	VI
53.	*		*			*	2	VI.
54.	*		*			*	2	VI.
55.	*		*			*	2	VII.
56.	*		*			*	2	VII.
57.	*		*			*	2	VII.
58.	*		*			*	2	VII.
59.	*		*			*	2	VII.

KEY:

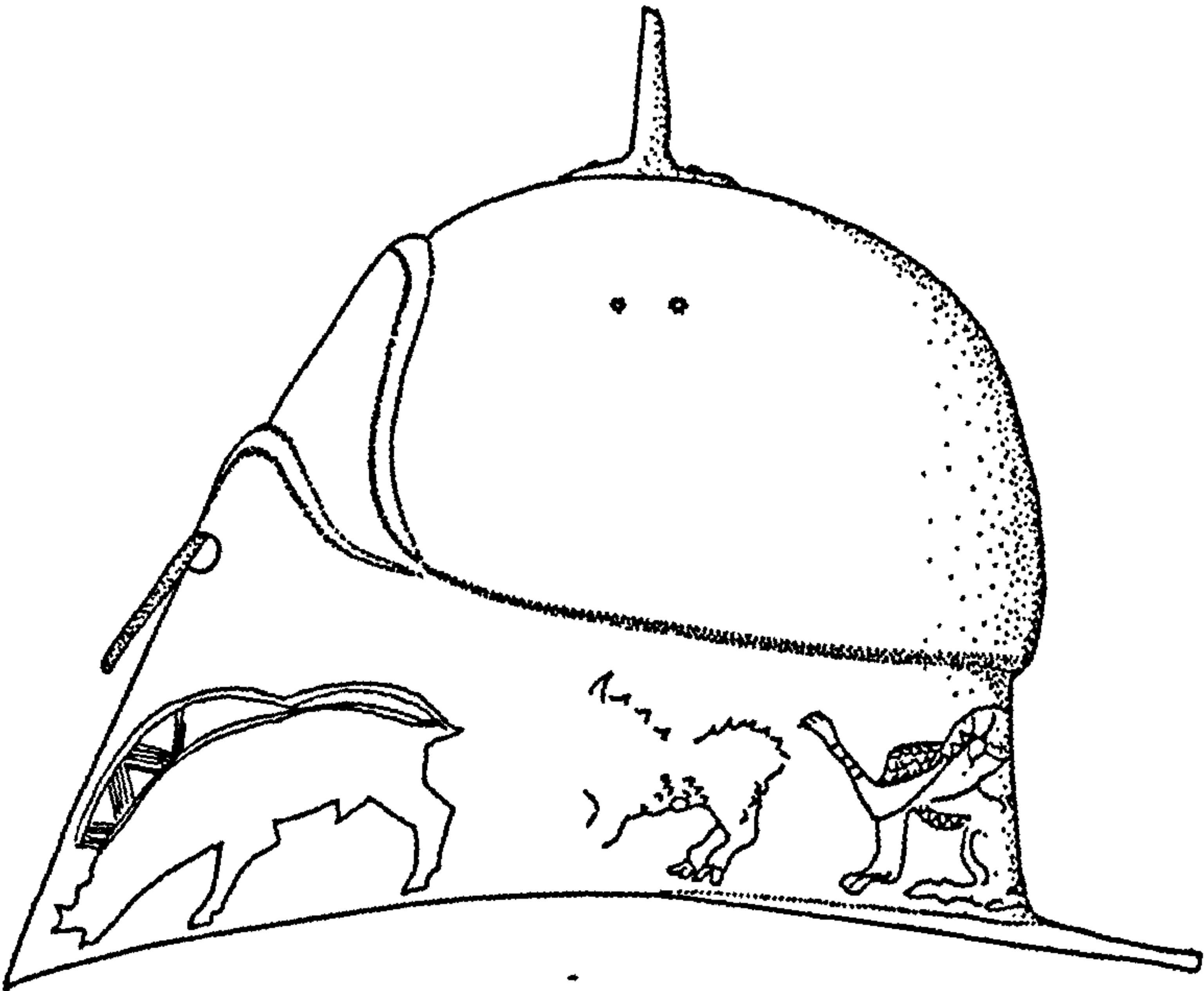
Long - Longitudinally mounted.

Trans - Transversely mounted.

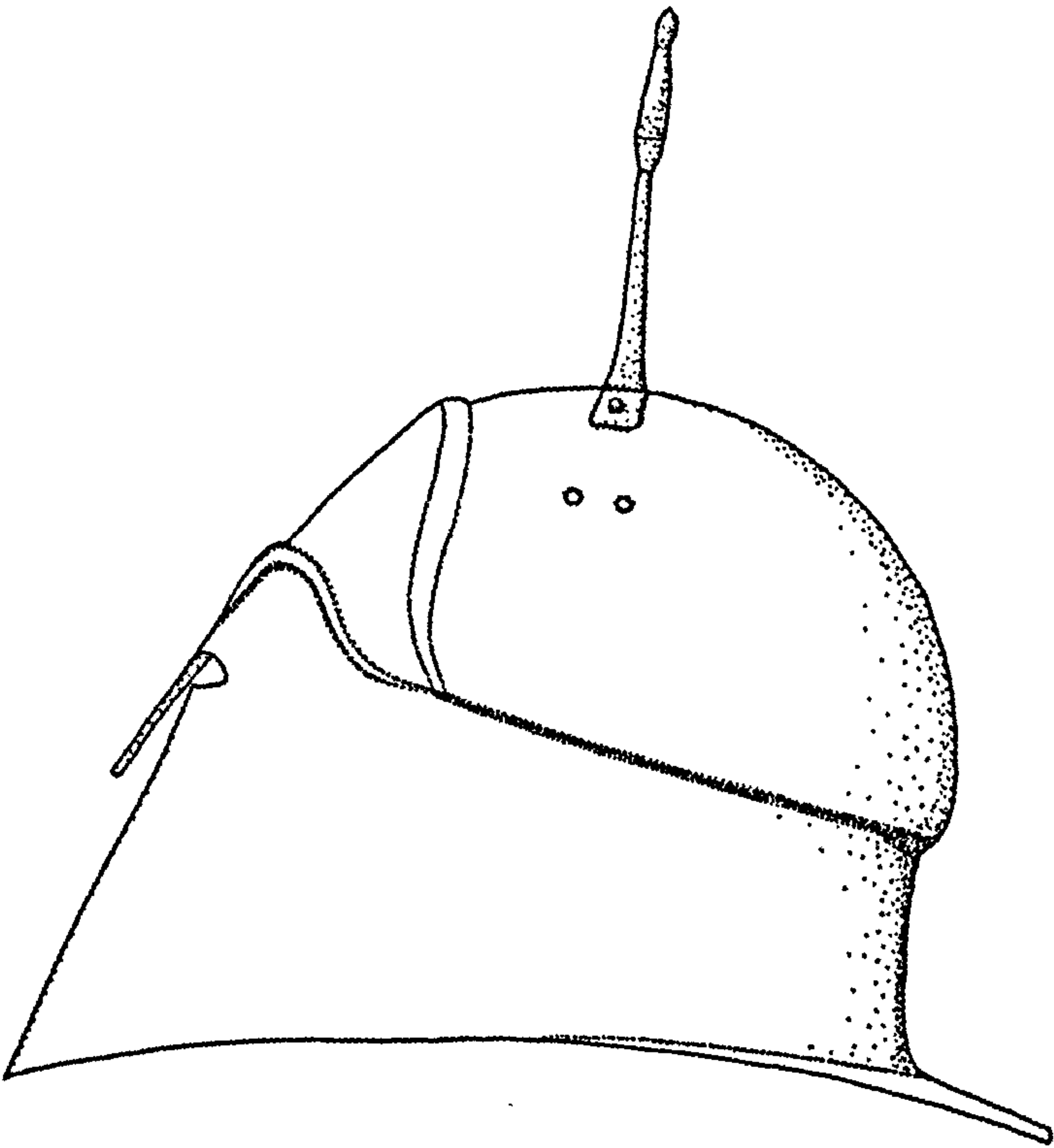
FIG. 21



31



32



Crest-features

The crest-features associated with the Apulo-Corinthian helmets are of a very specific nature. All the helmets have traces of a centrally mounted crest bracket which consists of a long stem usually some 80-100 millimetres in length, from which projects a "U" shaped holder. With the exception of most of the helmets of type I, this is accompanied on all Apulo-Corinthian helmets by two side mounted plume supports or holders which look like "antennae". These consist of narrow inverted trapezoid-shaped strips of bronze of rectangular section. Each is attached to the bowl by two rivets and projects at an angle of approximately forty-five degrees. These plume supports are constructed in one of two ways; either simply by splitting the lower end of the trapezoid and bending each side outwards at ninety degrees to form flanges, which are then pierced to take rivets, or by forming the support from two strips of bronze riveted together the ends of which have been bent outwards to form the flanges which are again pierced to take rivets. Where the upper parts of these plume supports survive undamaged they are sometimes pierced by a single hole towards their upper edge, presumably for tying on feathers as can be seen on helmets 20 and 25.

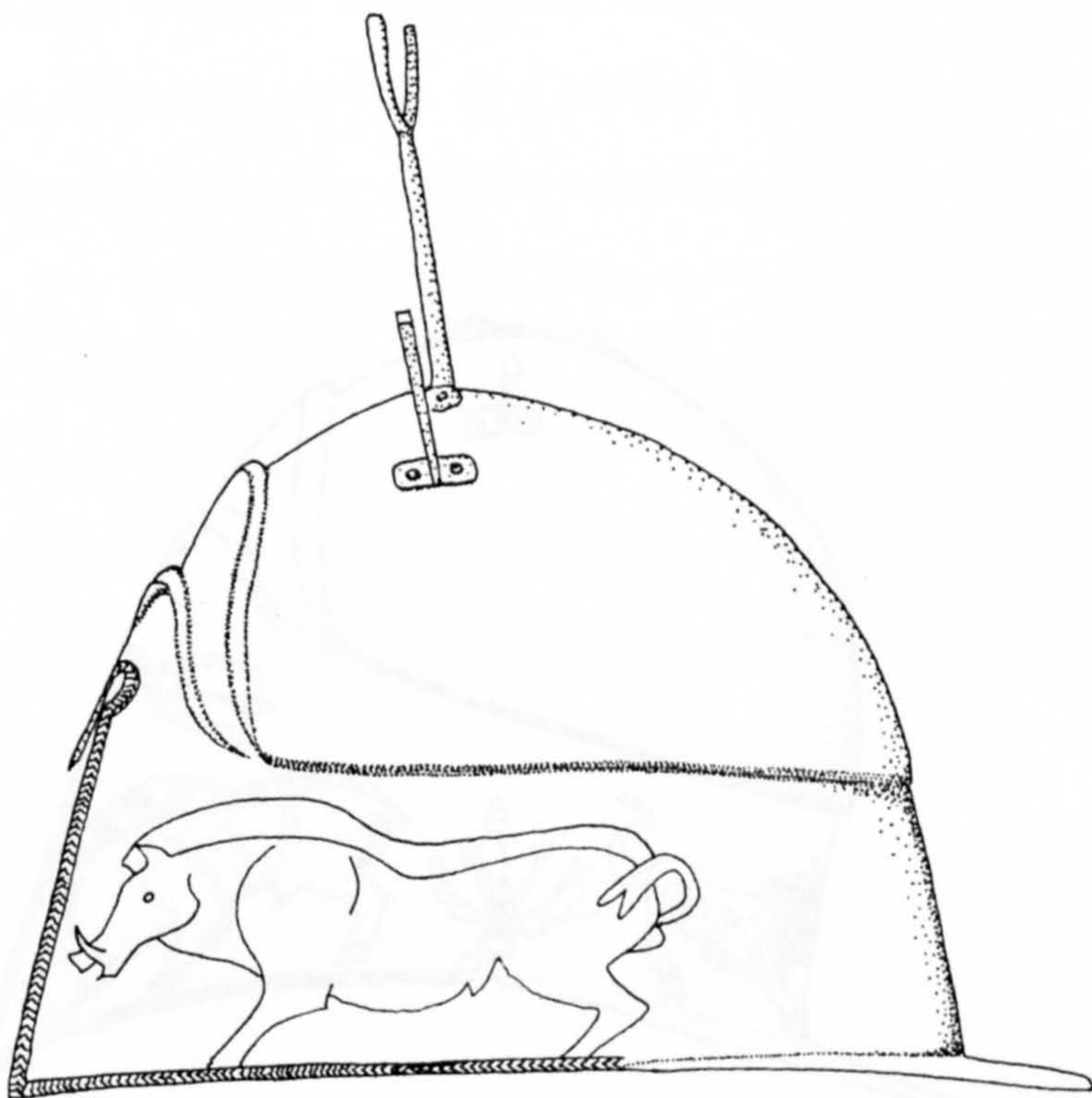
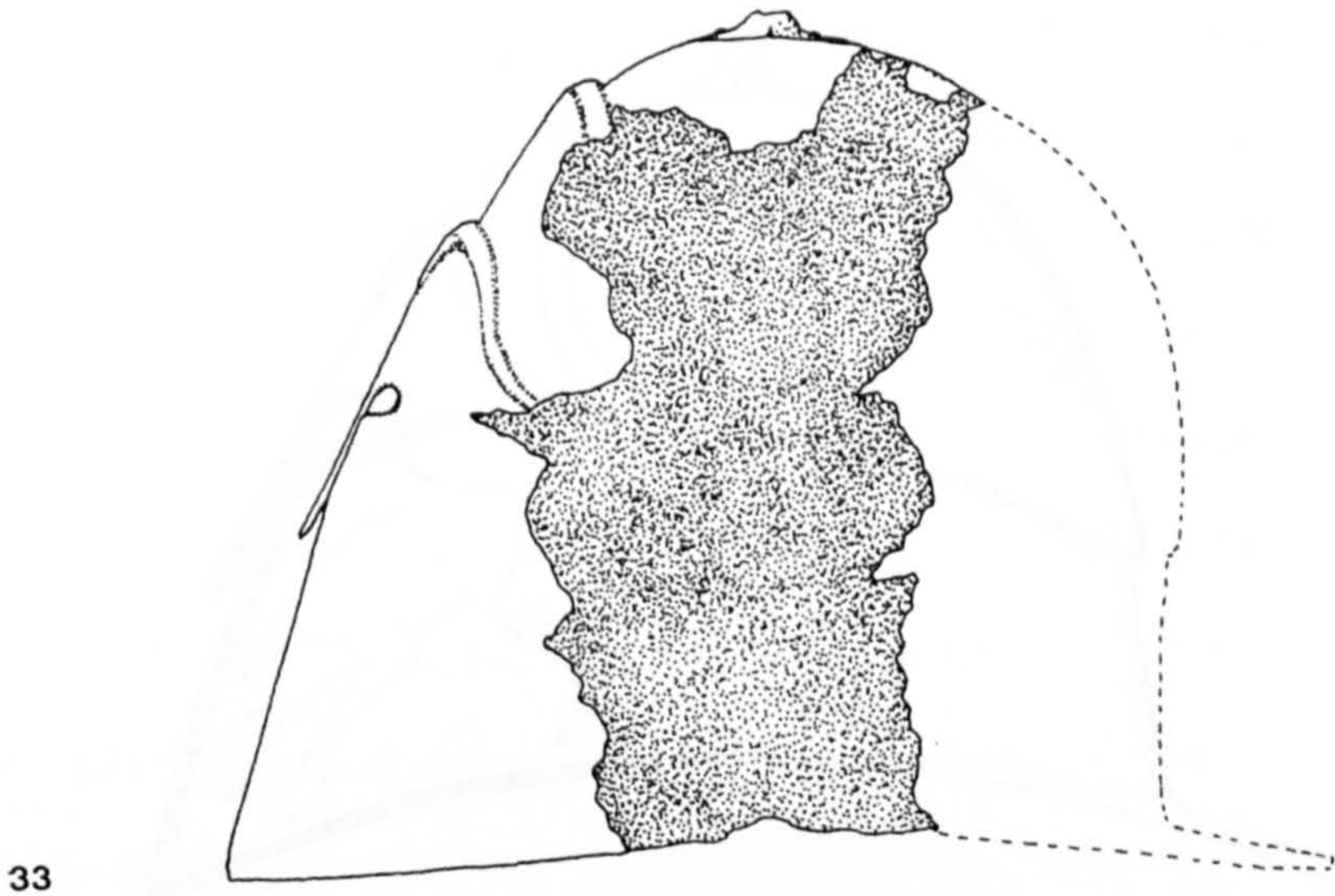
The 'U' shaped crest-holders are made in one of four ways (figs. 34:1-34:4) and this taken in conjunction with the style of the engraved decoration helps to refine the helmet typology. The first form which is found only on one example, helmet No. 3 from Syracuse, consists of a cast bronze bracket which is mounted along the longitudinal axis of the helmet although the "U" shaped bracket is positioned in the same plane

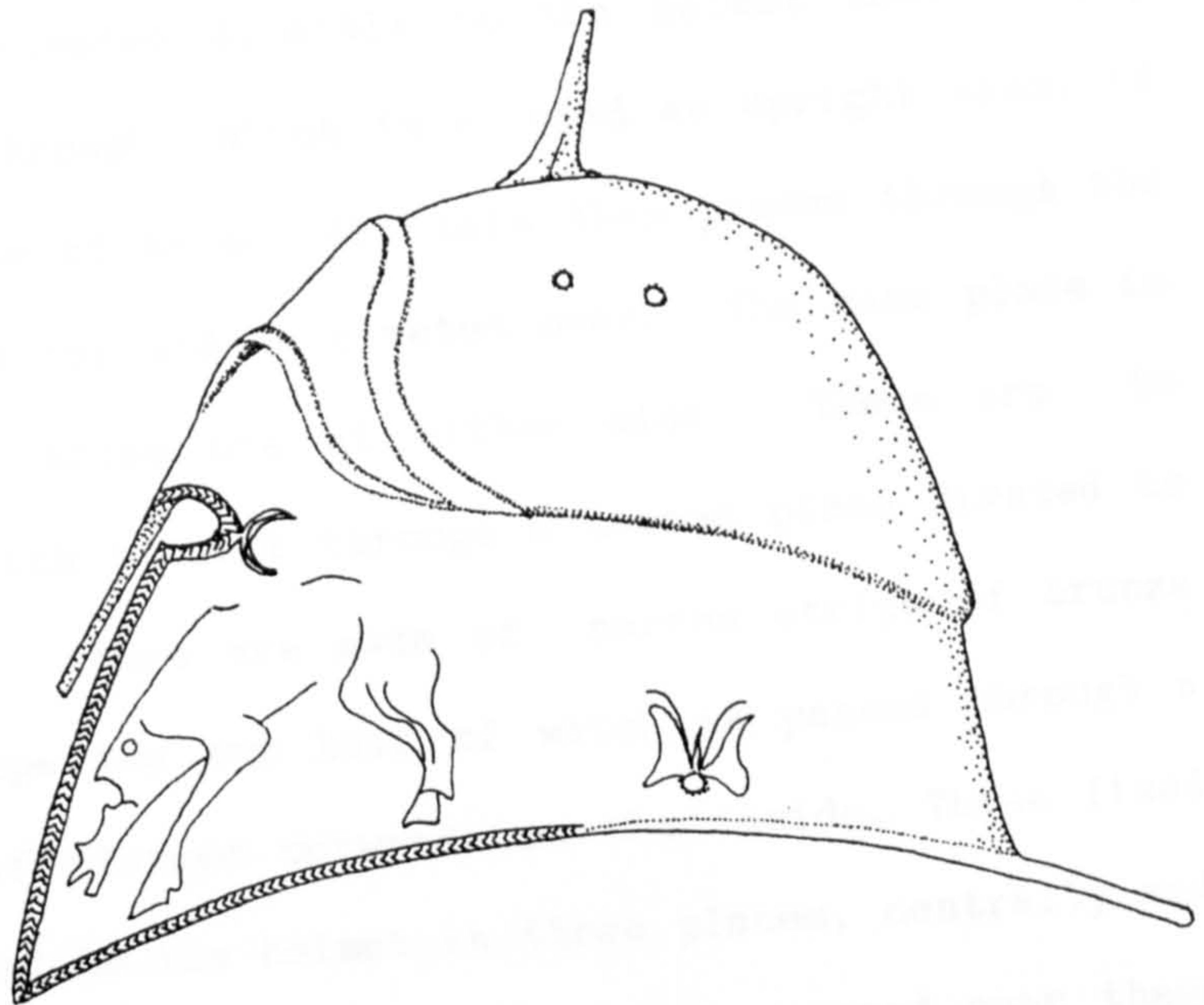
as the fixing flange so that it must have carried a transverse crest. Types 2 and 3 are variants of the same general form and are constructed from two thin bars of bronze riveted together and shaped to form the crest-holder at the top and a flange at the base which is then pierced for riveting to the helmet bowl.

The second type is found on thirty-six helmets (Nos. 4, 7, 8, 9, 10, 11, 12, 13, 15, 18, 19, 20, 21, 22, 23, 24, 26, 28, 29, 33, 34, 38, 39, 40, 42, 46-50 and 52-59.) and consists of the above mentioned two strips of bronze riveted together to form the stem; this is then simply turned out at the base, to form a fixing flange, and shaped at the top, to form the "U" bracket. All three sections remain in the same plane. The flange is then riveted transversely across the apex of the helmet bowl.

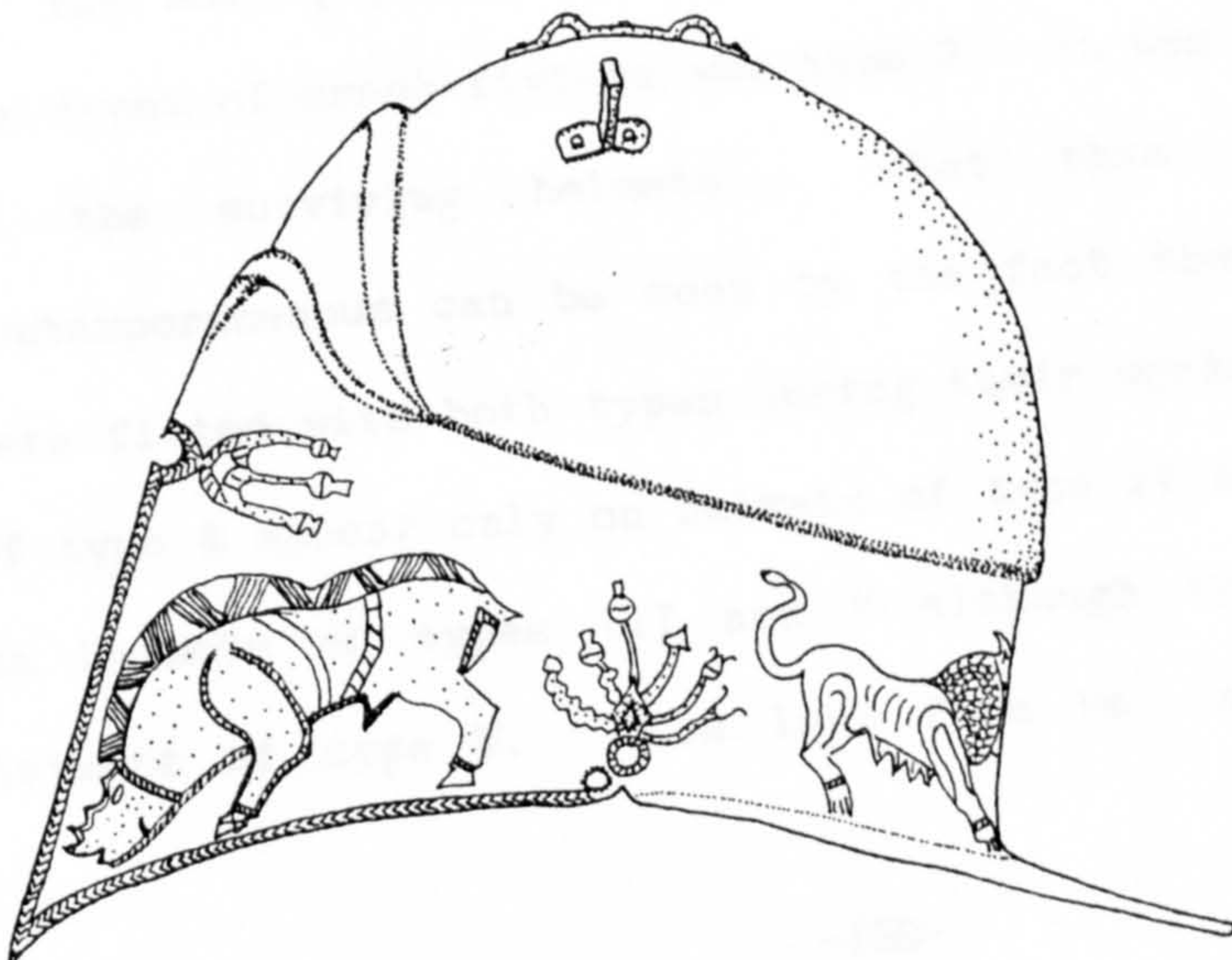
The third type occurs on seventeen helmets (Nos. 1, 2, 3, 5, 6, 7, 9, 11, 14, 16, 17, 27, 29, 30, 31, 32 and 35.). This is constructed in the same manner as the previous form, with the exception that the stem is given a ninety degree twist so that the flange is riveted along the longitudinal axis of the helmet bowl. A variant of this type is found on helmet No. 46 from Bari where the stem of the crest-holder is given a continuous spiral twist for its whole length.

The final two forms of crest-holders types 4 and 5 are arguably the most complex and sophisticated. They are found mounted longitudinally (Type 4.) on helmets Nos. 36 and 37 and transversely (Type 5.) on helmets No. 25, from Melfi, Nos. 41, 43 and 44, from Canosa, 45 from Montescaglioso and 51 from Taranto.





35



36

Both these types of crest-holder are made of three separate pieces of bronze and are not riveted directly to the helmet bowl. They consist of a base plate through which is riveted an upright stem, of square section in the case of helmet 43, this then passes through the "U" shaped bracket at the top and is riveted over. The base plate is pierced with rectangular holes one at either side. These are to accommodate two loops which project through a second plate riveted to the apex of the helmet; these are made of narrow strips of bronze which are bent into loops the top half of which is passed through a plate and the lower half flanged outwards on the inside. These fixed base plates were riveted to the helmet in three places, centrally and at each side. The bottom of the crest-holder was passed over these loops and a split iron pin was inserted through each loop to retain it firmly in place. An interesting variant of this form of crest-holder occurs on helmet No.51 from Taranto which instead of having the usual straight upright stem has a curled stem of the type depicted on numerous Apulian red figure wares, including the famous volute crater from Canosa, now in the Museo Nazionale in Naples by the Darius painter, depicting a scene from the burial rites of Patroclus.

The most popular and therefore presumably the most successful of the types of crest-fixture was type 2. It was fitted to well over half of the surviving helmets. That this type and type 3 are contemporaneous can be seen by the fact that both helmets 8 and 11 were fitted with both types during their working life. Crest-fixtures of type 4 appear only on helmets of type IV but those of type 5 appear on helmets of types III and V although the majority are found on helmets of type V. This last form is also found on Samno-Attic

helmets of the 4th century B.C. Whether the idea was transferred from Samnium and Lucania to Apulia or the other way around cannot be stated categorically but that they are related is without doubt. In this respect it is important to note that helmet no 25, from Melfi which carries a crest-holder of type 5, probably dates to the 5th century at least fifty years before this form of crest-holder appears on Samno-Lucanian helmets. It is interesting that this sophisticated removable crest-fixture was superceeded on helmets of types VI and VII by the simpler fixed type 2. Perhaps these had proved themselves impractical in use, or are simply a regional variant, as suggested by the sophistication and cohesiveness of the decoration of the helmets which are equipped with them.

Chin-strap Fixture.

Every surviving Apulo-Corinthian helmet is pierced by three holes, one on either side towards the lower edge of the helmet just forward of the neck-guard and a third hole in the centre of the neck-guard flange. These holes must all serve the same purpose. They are part of the fittings for the chin-strap. Although they are depicted in art, none of the extant Apulo-Corinthian helmets appear ever to have been equipped with hinged cheek-pieces similar to those found on contemporary helmets of other forms. A different form of chin-strap fitting was therefore necessary to retain the helmet on the wearer's head. Bottini (1988. 108, fig. 1.) (figs. 35:1 and 35:2) has reconstructed the chin-strap fitting of the Apulo-Corinthian helmet as consisting of simply two rings which are attached to the helmet by split pins threaded through the holes at either side of the helmet bowl, through which is fitted the chin-strap. This cannot be correct

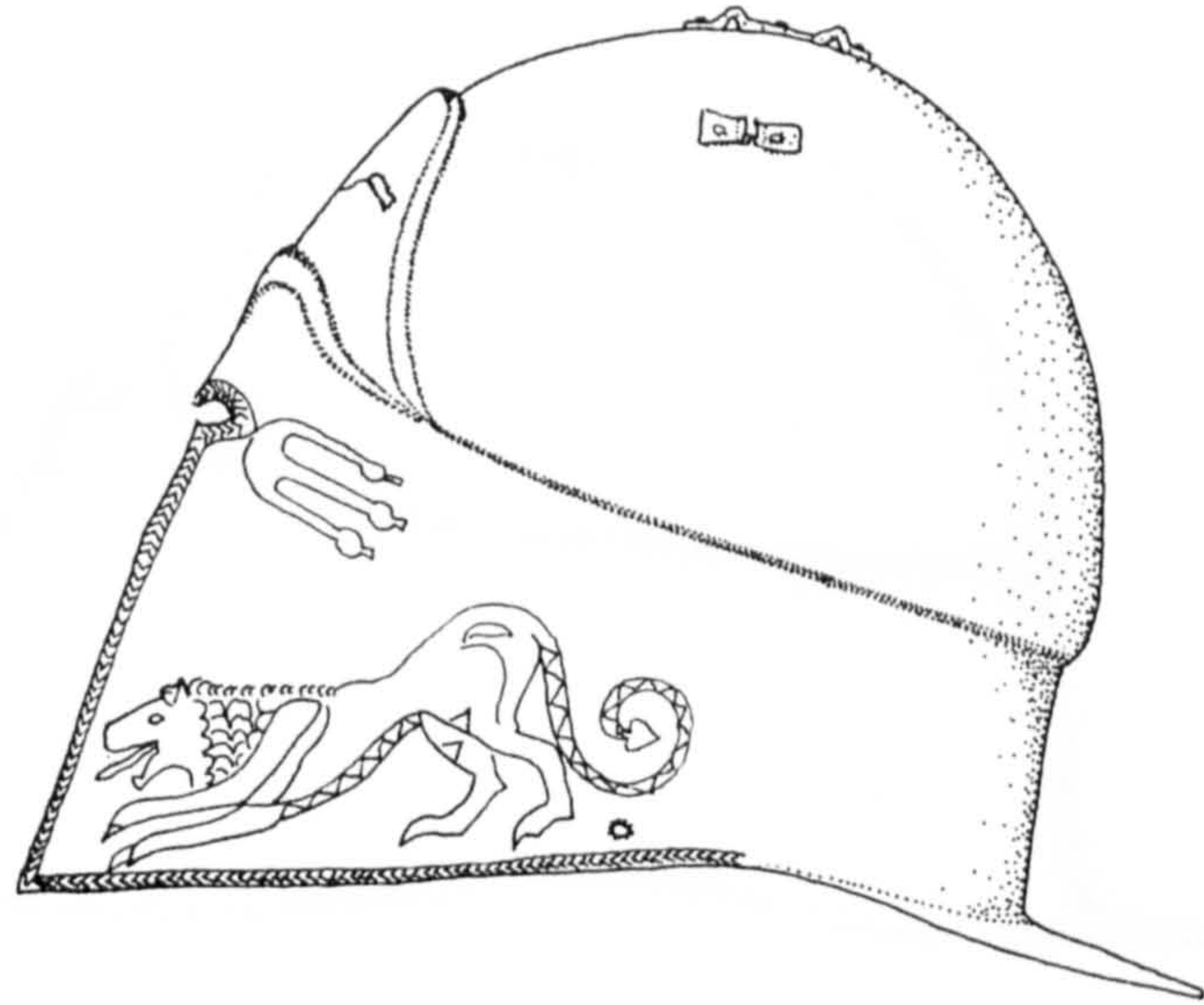
as it fails to take into account the role of the hole in the neck-guard and also would not have given the helmet sufficient stability in wear. A downward blow on the front of the helmet would have caused it to pivot on the chin-strap and to be driven down over the wearer's eyes. The answer must therefore lie in a different chin-strap arrangement incorporating the third hole. This may well have consisted of rings threaded through the holes at either side but the ring at the rear would have to have been attached by a different method, either a split pin or held by a piece of bronze threaded through it and then folded over and riveted to the neck-flange. Such fixtures are found on all Montefortino helmets and numerous other Italian helmet forms contemporary with the Apulo-Corinthian helmet. There are no surviving rivets found in the neck-flanges or the holes in the side of any Apulo-Corinthian helmet which militates therefore in favour of the threaded ring or split pin solution.

Irrespective of how these rings were attached, it is clear that each played an important role in the functioning of the chin-strap. Two solutions present themselves: the chin-strap may have consisted of a single strap which was threaded through the ring in the neck-flange, each end then passed diagonally across the wearer's neck, round under his chin and was fastened to the ring in the side of the helmet opposite (figs. 35:3 and 35:4.). Alternatively the chin-strap could have consisted of two separate straps, one passing through the ring at the rear and fastening at the chin and a second strap which was simply threaded through the rings at the side of the helmet, also fastening at the chin (fig. 35:5.). A system using two straps would perhaps be cumbersome but was capable of modification by either riveting or

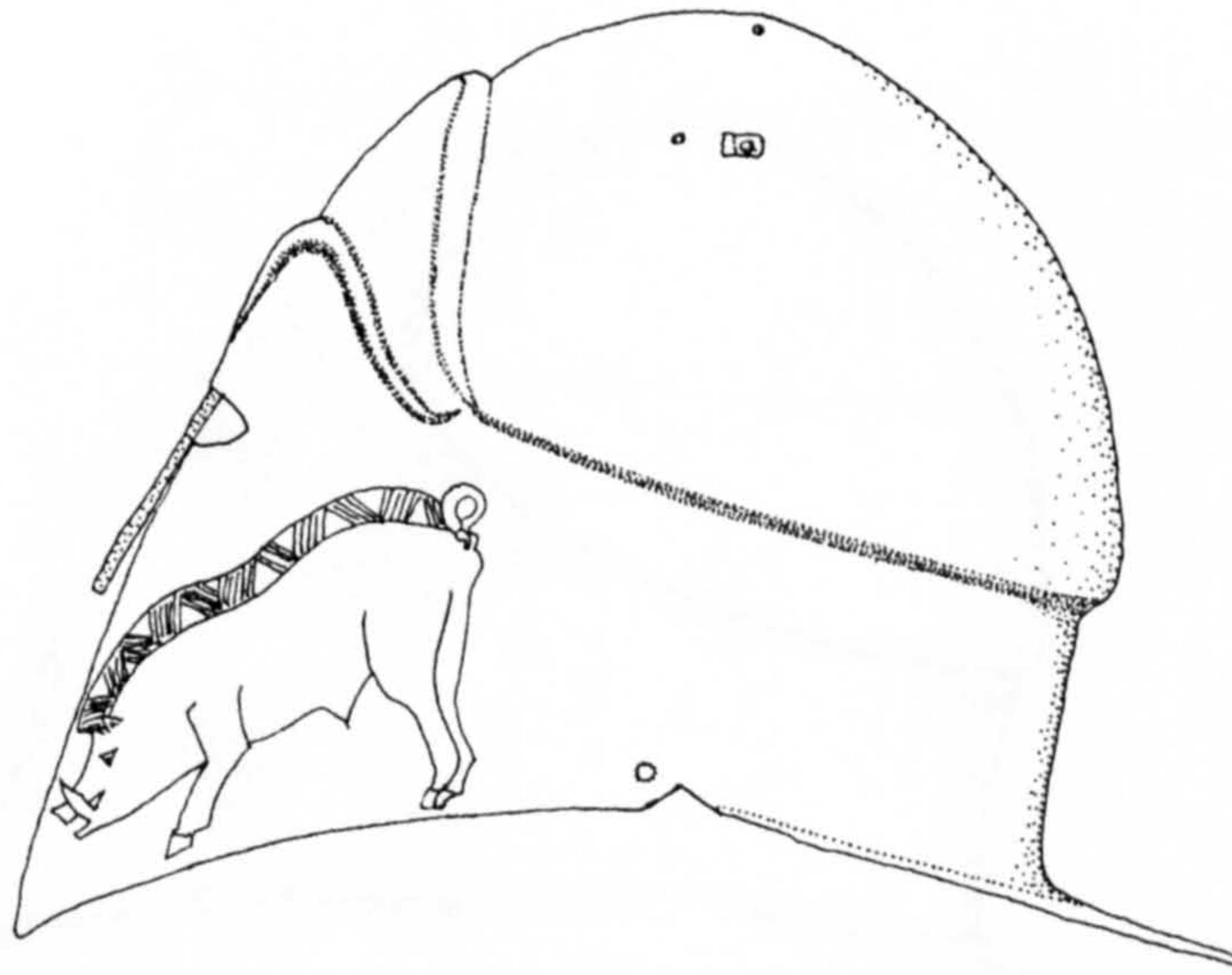
stitching the rear strap to the chin-strap proper at an angle of approximately forty-five degrees, or by passing the chin-strap through a loop made from the end of the rear strap, thus forming a "Y" shaped strap, a type coincidentally often found on helmets of the Middle Ages (fig. 35:6.).

FIG. 25

37



38



39

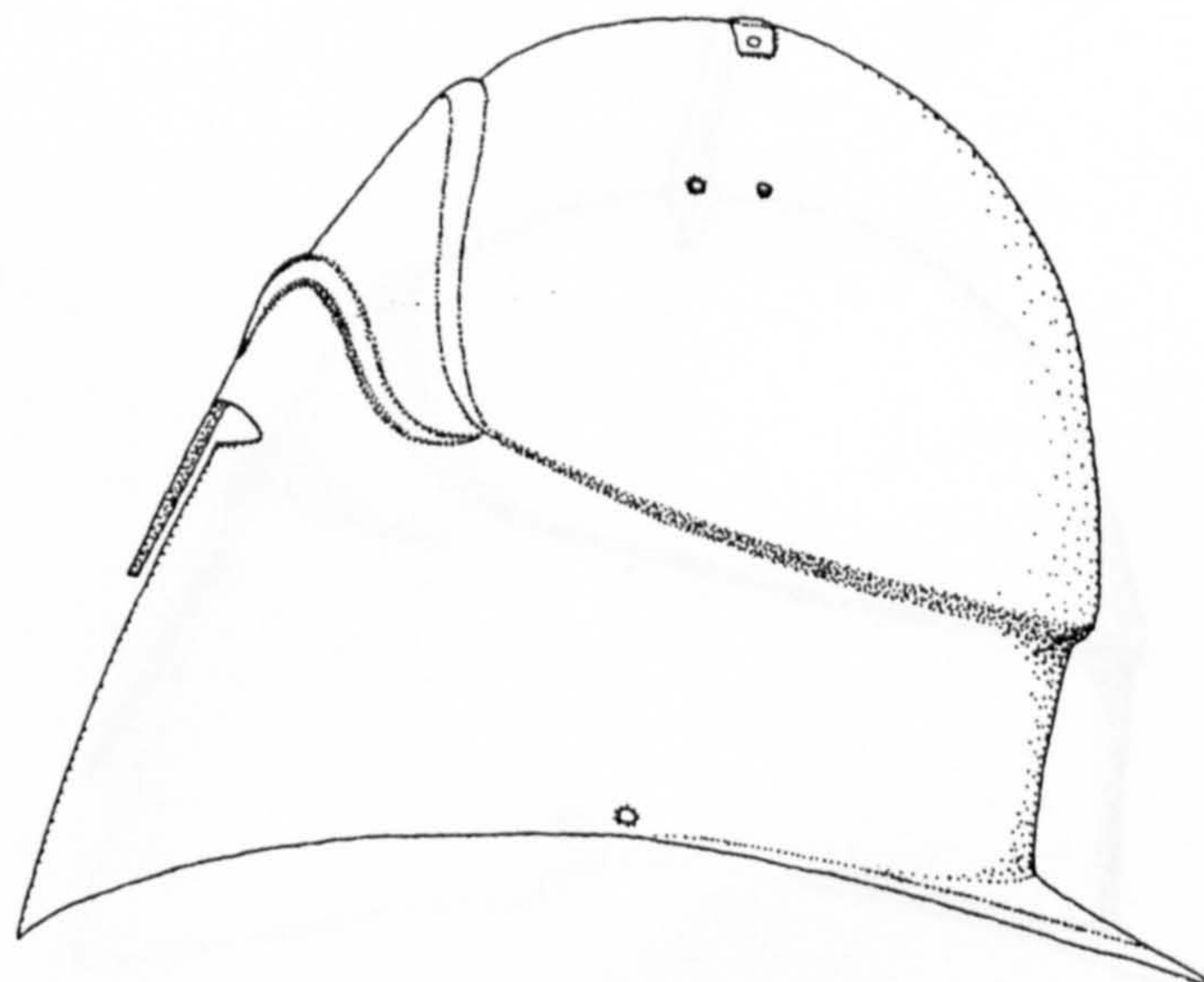
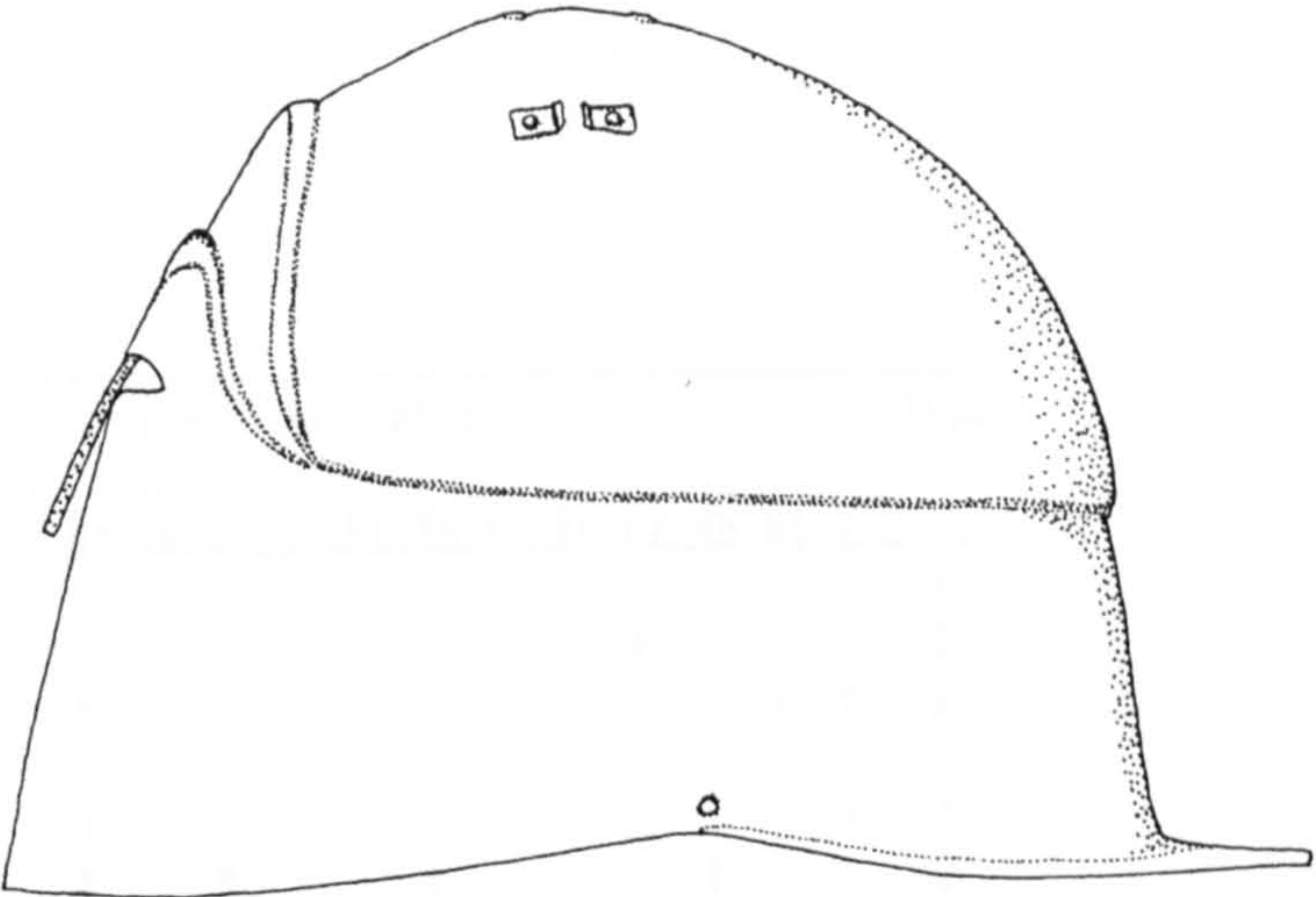
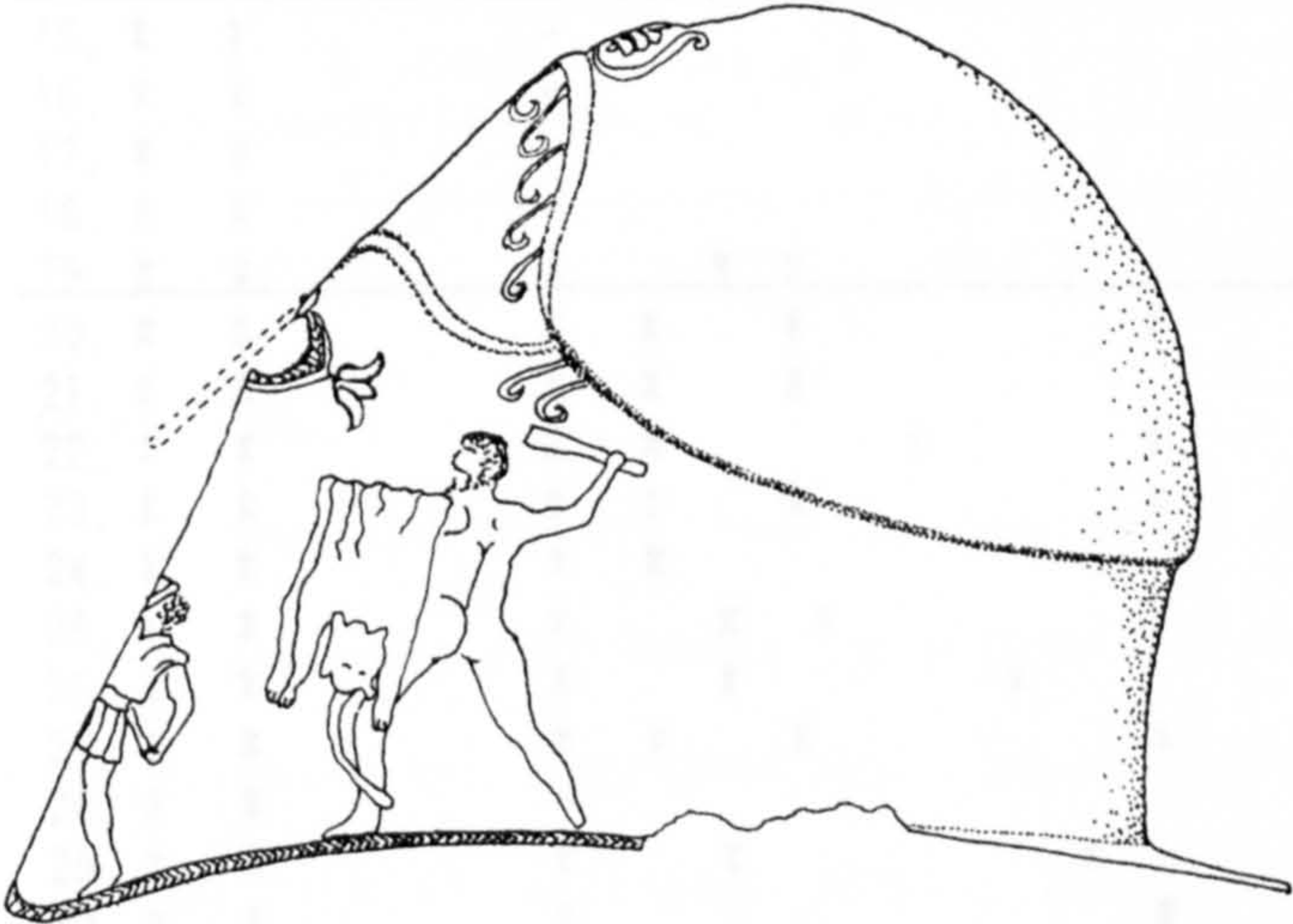


FIG. 26

40



41



42

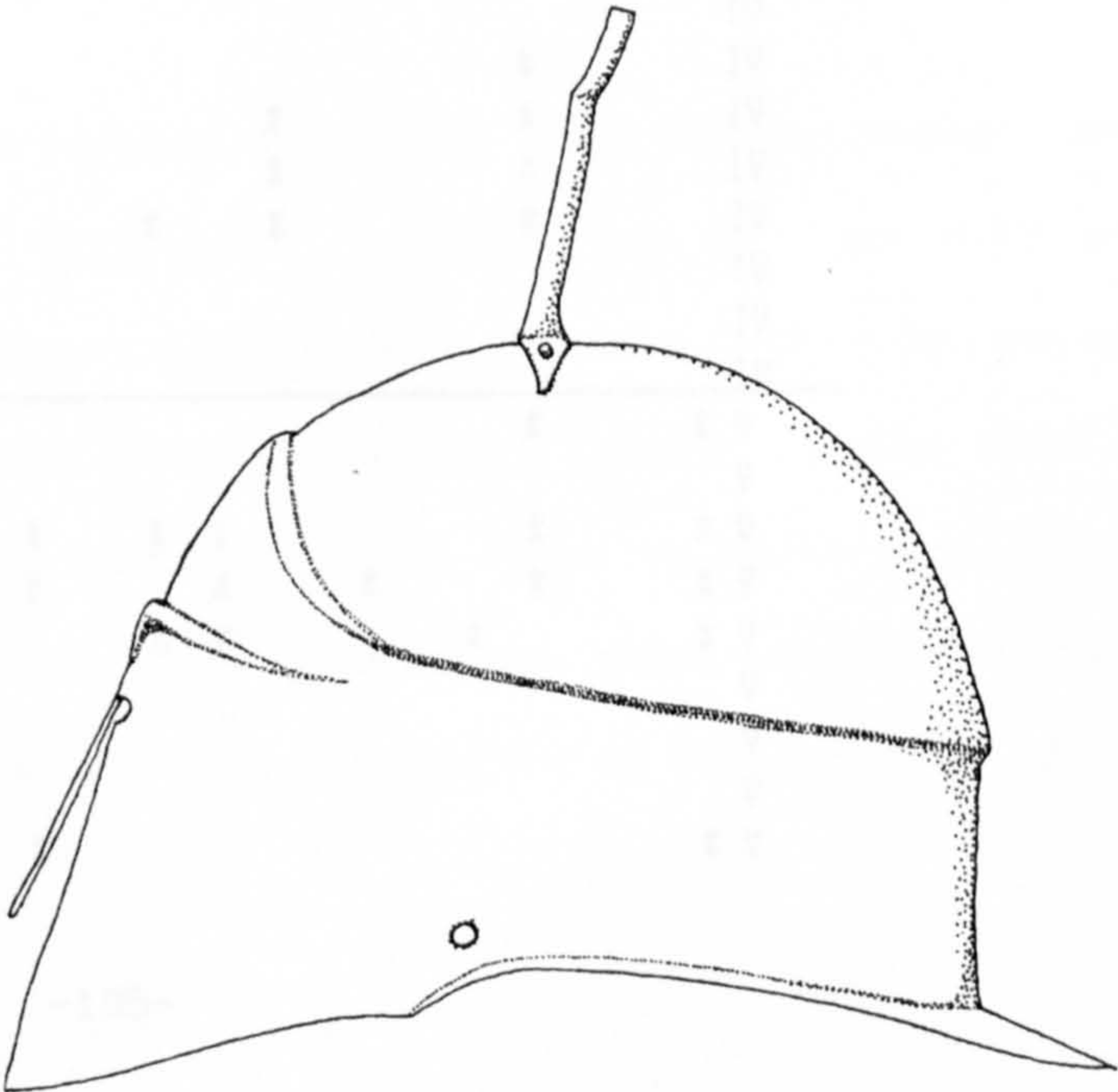


Table 5: Decoration

No.	Embossed Eyes					Incised Decoration															Type	
						Style					Subject											
	Eb	Br	Il	Eg	P	A	N	Bo	Bu	Ho	Ln	Pl	Th	Sb	Sn	Pa	Hb	Ht	V	D		
1.	*	*			*	*		*													I	
2.	*	*			*	*				*						*					I	
3.	*	*			*		*	*										*	*		I	
4.	*	*			-																I	
5.	*	*			*	*		*											*		I	
6.	*	*			*	*		*		*			*				*				I	
7.	*	*			*	*		*					*						*		I	
8.	*	*			-																I	
9.	*	*			*		*	*									*		*		I	
10.	*	*			*	*		*					*				*				I	
11.	*	*			-																I	
12.	*	*			-																I	
13.	*	*			-																I	
14.	*	*			*		*	*													I	
15.	*	*			-																II	
16.	*	*			-																II	
17.	*	*			-																II	
18.	*	*			-																II	
19.	*	*			*		*	*									*		*		II	
20.	*	*			*	*		*					*				*				III	
21.	*	*			*	*		*									*		*		III	
22.	*	*			*	*				*			*				*				III	
23.	*	*			*	*		*					*				*				III	
24.	*	*			*	*													*	*	III	
25.	*	*			*		*	*											*	*	III	
26.	*	*			*		*				*								*		III	
27.	*	*			*	*		*					*				*				III	
28.	*	*			-																III	
29.	*	*			*		*					*				*	*		*		III	
30.	*	*			*								*				*	*			III	
31.	*	*			*	*		*			*						*		*		III	
32.	*	*			-																III	
33.	*	*			-																IV	
34.	*	*			*		*	*									*				IV	
35.	*	*			*	*		*					*				*				IV	
36.	*	*			*	*		*					*				*				IV	
37.	*	*			*	*					*		*				*				IV	
38.	*	*			*		*	*													IV	
39.	*	*			-																IV	
40.	*	*			-																IV	
41.	*	*			*		*										*		*		V	
42.	*	*			-																V	
43.	*	*			*		*		*		*	*					*		*		V	
44.	*	*			*		*	*	*			*			*		*		*		V	
45.	*	*			*		*	*			*	*				*			*		V	
46.	*	*			-																V	
47.	*	*			-																V	
48.	*	*			-																V	
49.	*	*			*		*		*										*		V	

No.	Embossed Eyes				Incised Decoration																Type
					Style		Subject														
	Eb	Br	Il	Eg	P	A	N	Bo	Bu	Ho	Ln	Pl	Th	Sb	Sn	Pa	Hb	Ht	V	D	
50.	*	*			*	*	*													V	
51.	*	*			*		*				*								*	V	
52.	*	*			*		*	*										*	*	VI	
53.	*	*			*		*	*				*	*						*	VI	
54.	*	*			*		*	*												VI	
55.	*	*		*	*		*	*									*			VII	
56.	*	*		*	*		*	*									*			VII	
57.	*	*	*		-															VII	
58.	*	*	*		-															VII	
59.	*	*		*	*		*	*									*			VII	

KEY:

Embossed decoration; Eb- Eyebrows Br- Browridges.

Eyes; IL- inlaid; Eg- Engraved.

Incised decoration style; A- archaic; N- Naturalistic.

Incised decoration subject; Bo- Boar; Bu- Bull; Ho- Horse; Ln- Lion;

Pl- Plant; Th- Thistle Sb- Seabeast; Sa- Snake; Pa- Palmete; Hb-

Herring-bone Ht- Heart-shape; V- Vandyking; D- Other.

Decoration.

The one decorative feature shared by all Apulo-Corinthian helmets is the presence of embossed eyebrows echoed by forehead lobes or brow-ridges above the eye-openings. These converge at the wearer's temples and the line of moulding is then carried around the helmet as a step dividing the slightly bulbous skull from the more close fitting cheek and neck-guards.

The broad uncluttered cheek-guards offered the bronze worker an ideal surface for elaborate decoration, a fact they did not fail to take advantage of. All the seven helmet types contain highly decorated examples although undecorated helmets are more common in the middle part of the sequence. The incised decoration found on Apulo-Corinthian helmets can be divided into two broad categories; those with archaic or stylised decoration and those with naturalistic decoration of a

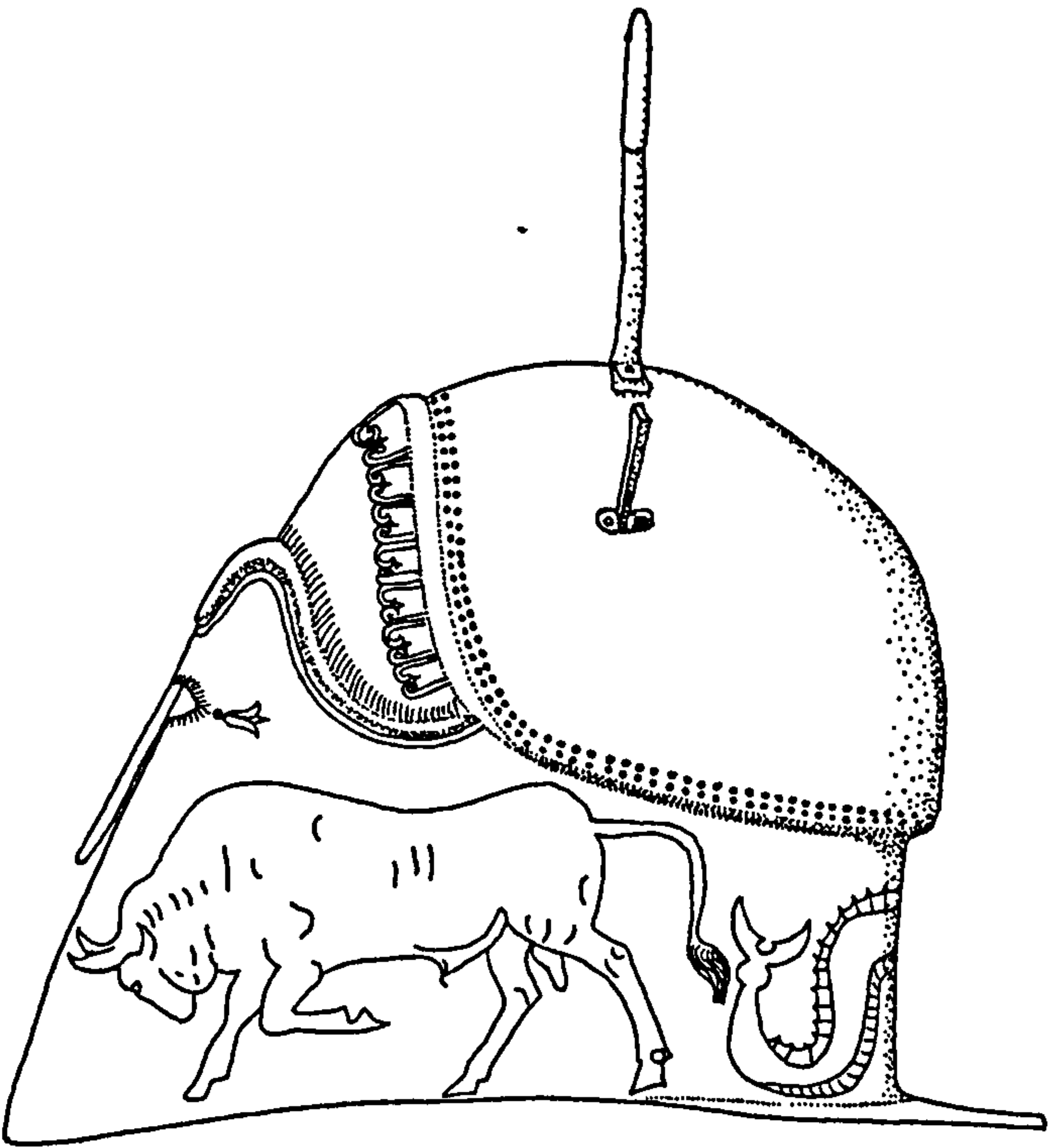
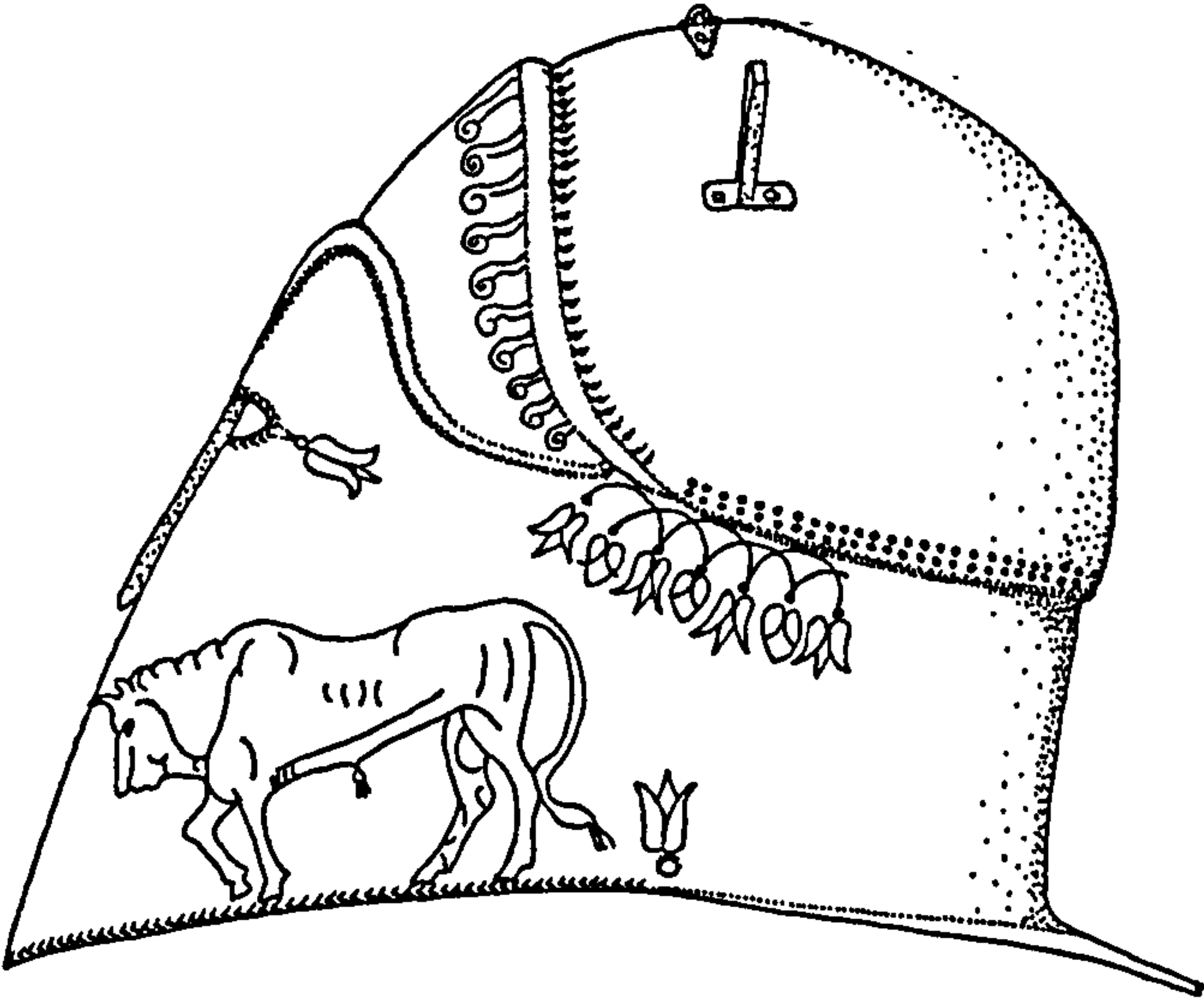
Hellenic style. By far the most popular motif is a pair of opposed boars which occurs on twenty three helmets. The origin of the animal motifs and especially the opposed boars are connected to earlier Greek iconography. Both Orlandini and Bleosch have demonstrated the direct link between the archaic opposed boars and the decoration on Corinthian painted vases.

The incised decoration on the majority of the early helmets is executed in an stylised archaic manner. The main decorative feature consists of opposed and charging animals, which with the exception of helmets No.2, from Sicily and No.6, from the Chiucchari necropolis near Melfi, are always wild boars. The animals are extremely stylised, rendered in an angular manner with the details being picked out with geometric patterns. The tusks of the boars are depicted in such a manner that they both appear to issue from the top of the snout rather than from either side of the lower jaw. This gives the tusks the appearance of the horns and consequently causes each boar to resemble a rhinoceros.

Helmet No. 6 differs from the rest of the decorated examples of this type in that the animal on its right cheek-guard is a trotting horse, which is also depicted in a stylised manner. On helmet 2 both cheek-guards bear similar horses. The main and subsidiary edges, of helmets 6, 7 and 10, are bordered by a single or double line of incised herring bone pattern contained within single incised lines. Behind each boar, above the cut-out, and issuing from the outside corner of the eye-opening is a spikey floral motif possibly a thistle.

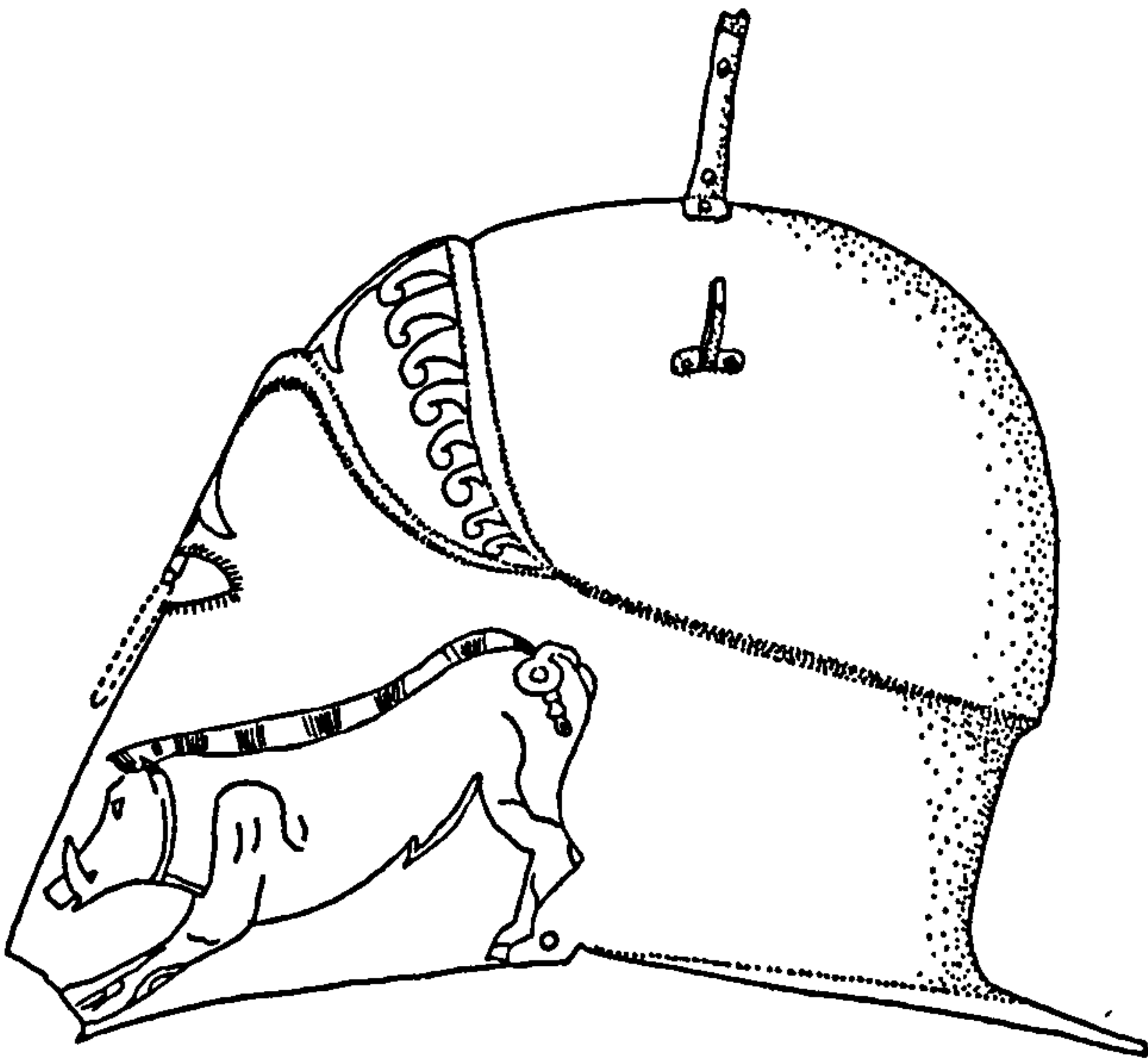
FIG. 27

43

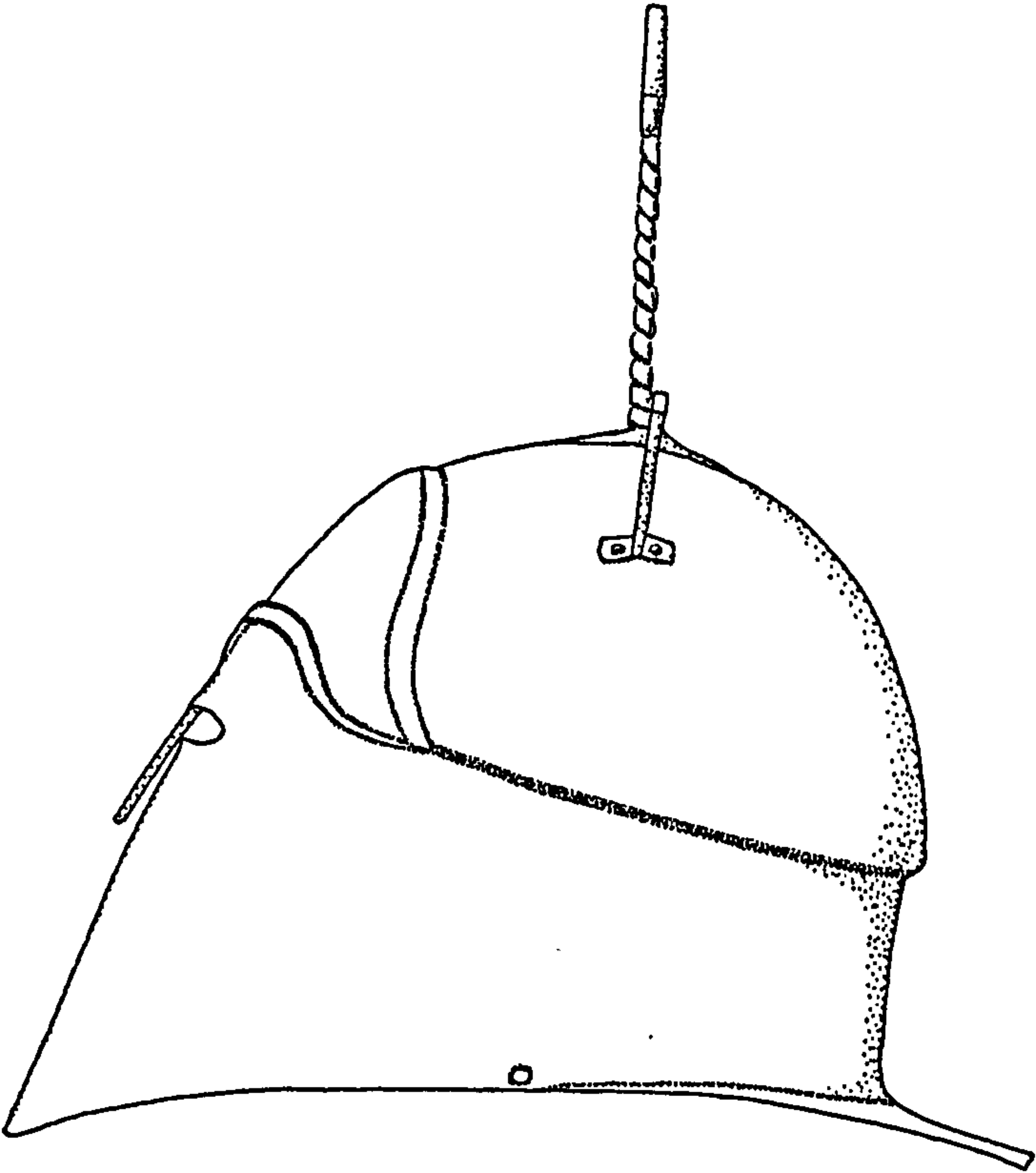


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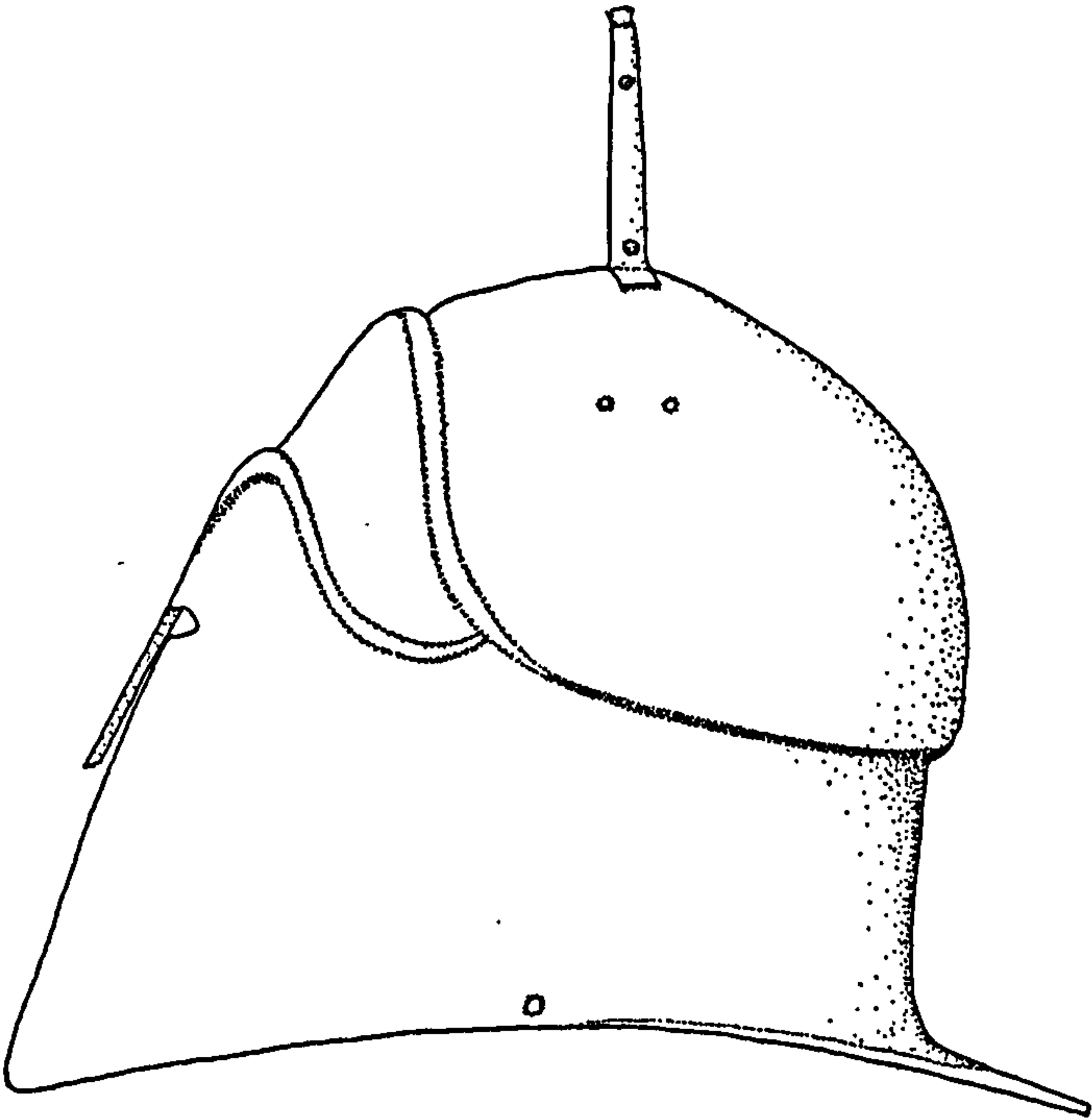
45



46



47



In contrast helmets Nos. 3, 5, 9 and 14 have incised decoration of a more naturalistic style incorporating the opposed charging boar motif. Helmets 3 and 5 have inverted heart-shaped motifs instead of the thistle-like decoration of helmets 6, 7 and 10. These heart-shaped motifs are accompanied by *vandyking* or a *zig-zag* pattern along the base of the helmet, a feature also forming part of the decorative scheme of helmet no.9. Helmets 4 and 8 are devoid of any incised ornament. Although the overall shape of helmets 7 and 10 is slightly different, their decoration is so similar as to suggest a single workshop.

In contrast to helmets of type I, those of type II are, by and large, undecorated. The only exception is helmet 19 which has naturalistically rendered charging boars on its cheek-pieces and incised herring-bone decoration around the eye-openings and the edge of the nasal, and *vandyking* along its base.

Where helmets of type III are decorated they show a greater diversification in the engraver's repertoire. Of the surviving eleven decorated examples, only six bear the common symbolism of the charging boars. This is executed in an archaic fashion on helmets 20, 21, 23, 27 and 31. The decoration on helmets Nos. 27 and 31 consists not only of these opposed boars but also of a lion and a sphinx facing each other across the neck-guard; while the motifs used in the decoration of helmet 26 are even more diverse. On each cheek-guard is a stylised lion facing towards the central opening, above each of these is a goat facing towards the neck-guard. Immediately to the rear of the lions but facing the same way is a sphinx behind which, on the right, is a horseman and on the left two men wrestling; finally at the centre back are two seated warriors. The decoration on helmet 25 however, whilst

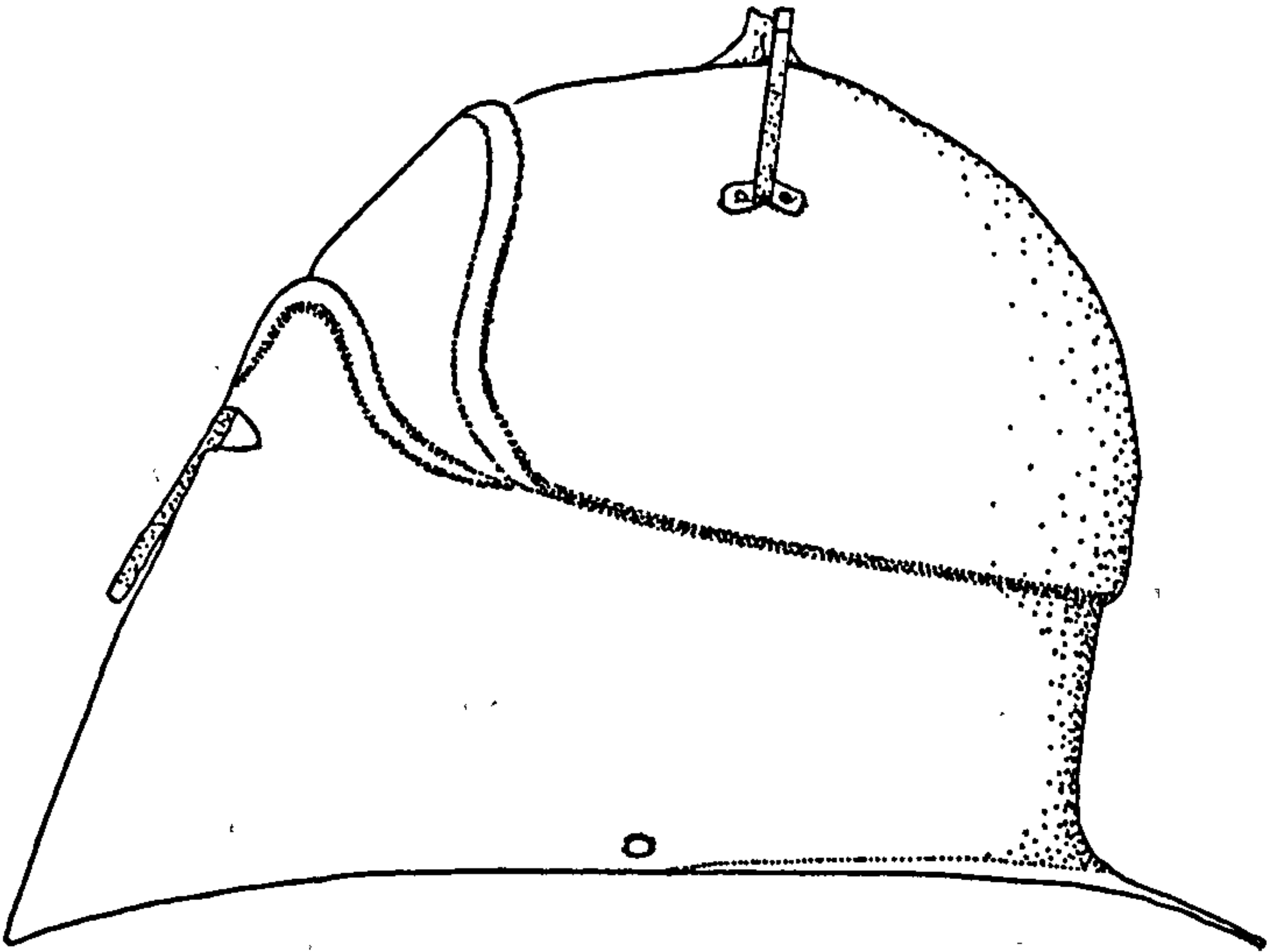
depicting the usual opposed boars, is rendered in a naturalistic style. This helmet dates from the end of the 5th or beginning of the 4th century B.C. comes from Tomb A in the Chiucchari necropolis and so is probably the latest example of a helmet of type III.

Helmets of type IV, although probably contemporary with each other, exhibit a mix of the archaic and the naturalistic styles of decoration. They retain the same decorative repertoire as the helmets of the preceeding types. Helmets Nos. 33, 39 and 40 bear no incised decoration whatsoever, whereas helmets 34, 35, 36 and 38 have incised herring-bone decoration bordering their main edges and charging wild boars on their cheek-pieces. The decoration on helmet 34 is executed in a naturalistic style whereas on the other decorated helmets it is stylised.

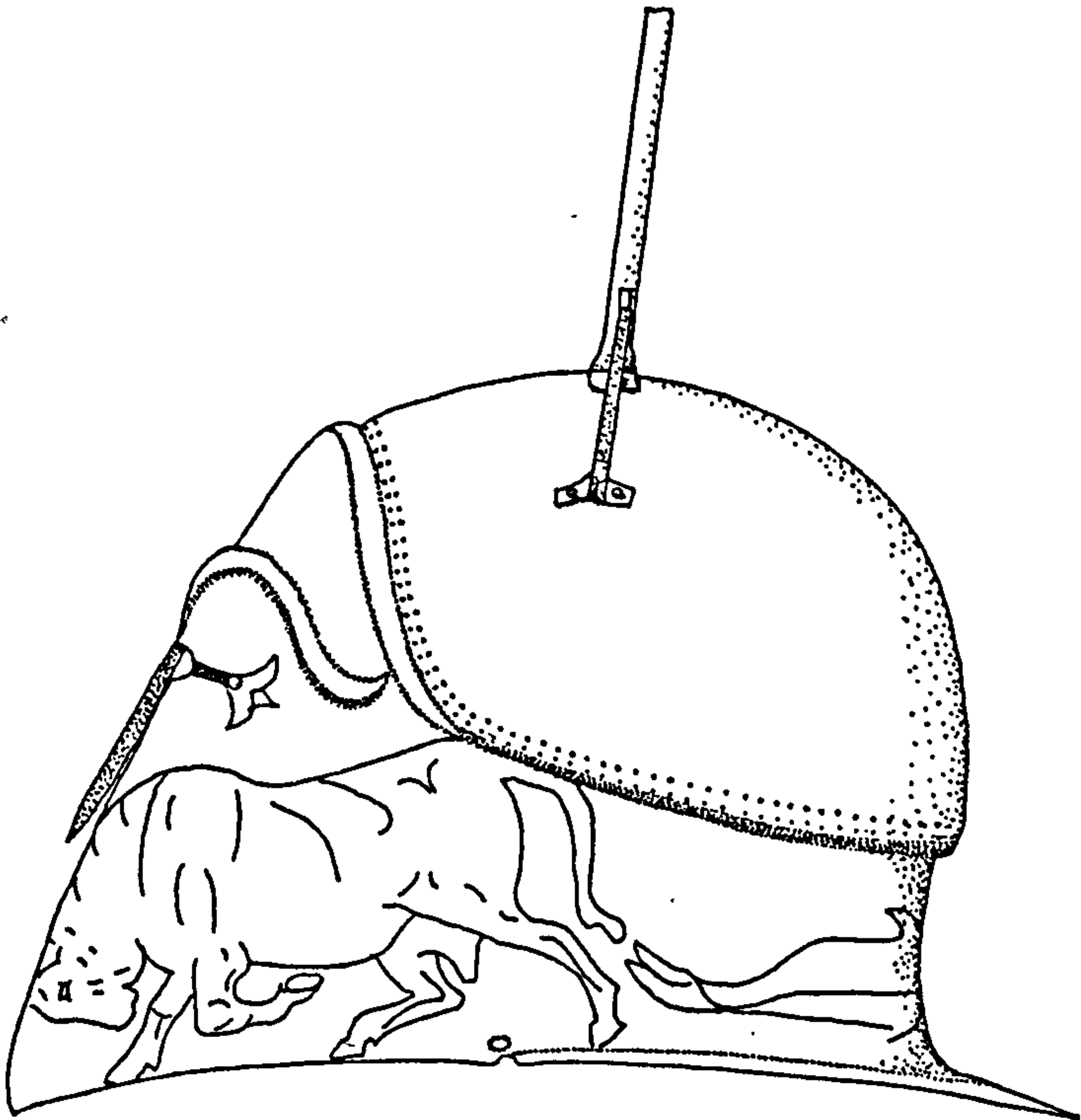
Helmets Nos. 36 and 37 both have stylised decoration, but it is expressed by a wider range of motifs. Helmet 36, in addition to the opposed boars is embellished with a lion, a horse, an eagle and a sphinx around its neck-guard and as such has very close links to helmet no 27 which would suggest a single workshop. In contrast helmet no. 37 has stylised opposed lions on its cheek-guards rather than boars and a thistle issuing from the corner of each eyeopening. The main and subsidiary edges of the helmet are bordered with an incised herring bone pattern. The shared decorative features, as well as a workshop link, between the helmets of types III and IV, indicates that the two forms were in use contemporaneously.

FIG. 29

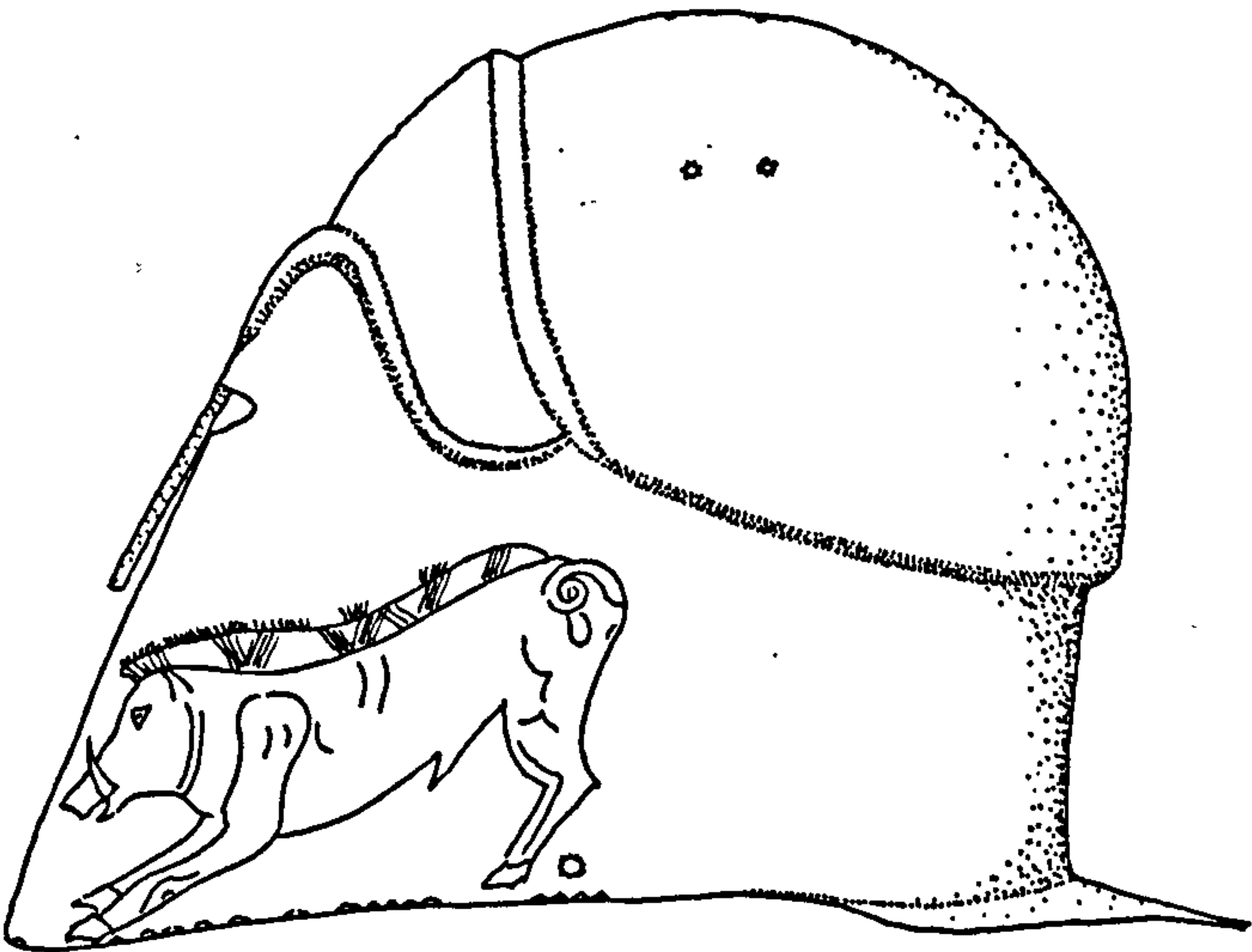
48



49



50



The next group of helmets all date to the 4th century B.C. and although four helmets of type V are undecorated (helmets Nos. 42, 46, 47 and 48) the remaining seven exhibit a complete break with the previous decorative schemes and styles. Whilst still retaining motifs and elements of the earlier artistic repertoire they show a freedom of interpretation and execution more reminiscent of the Hellenistic products of Greece and the eastern Mediterranean (Paddock 1981). These helmets are distinguished by the use of infilling subsidiary motifs such as the palmettes (on helmet 51 from Taranto and helmet 45 from Montescaglioso), rows of small incised circles (on helmets 43, 44 and 49.) and scrolling lotus flowers (on helmet 43.). On helmets of type V the bronze smiths introduced other new motifs to their repertoire to include not only lions (helmets 43 and 45) butting bulls, dolphins, seabeasts and scallop shells (helmets 44 and 49), but also scenes from Greek mythology (helmet 41 shows Hercules and Iolaus fighting a Centaur.) These subjects have strong iconographical links with other applied arts in Apulia and Magna Graecia in general, as exemplified in small bronzes and other depiction of mythological scenes and Centauromachies and in the decoration of Apulian red figure pottery, dating to the 4th and 3rd centuries B.C. specifically in a scene depicted on a volute krater by the Iliupersis painter (Trendall. 1978, I, 193, 15.).

For the first time on Apulo-Corinthian helmets, the use of incised decoration is extended to the area of the embossed frontal lobes above the eyebrows. This takes the form of an incised scrolling hair motif (Helmets 43, 44, 45 and 49.). Incised decoration is also extended along the junction between bowl and neck-guard in the form of scrolling

lotus flowers in the case of helmet 43 and incised circles on helmets 44 and 49. The main edges of these helmets are decorated with the usual incised herring bone patterns but at the corners of the eye-opening and above the chin-strap hole are three petalled lotus flowers. Palmettes are also incorporated into the decoration of some helmets, for example on helmets 45 and 51. Both these motifs are borrowed from the repertoire of painters of Apulian pottery of the 4th century B.C.

The two helmets from Canosa and the helmet from Rutigliano form a very closely linked workshop group. Helmet 43 is decorated with a lion opposing a bull. Whereas helmet 44 has a boar opposing a butting bull supported by two bearded sea beasts on the neck-guard, which are reminiscent of the knotted snakes on 5th century Chalkidian helmets. Finally helmet 49 is decorated by opposed butting bulls supported by dolphins and a scallop shell on the neck-guard. Bottini (1988, 124.) has suggested that the motif of the butting bull may have derived from the 4th century coins of Thurii. If this is so then the dolphin and scallop shell probably similarly derive from the scene of Taras riding a dolphin and the scallop shells depicted on the coins of Tarentum of the same period.

All three helmets of type VI bear the same incised decoration which is executed in a Hellenic style. This decoration is once more restricted in its repertoire and shares few of the features of the previous type. It consists of opposed charging boars on the cheek-guards. The front opening and nasal are indicated by a double line of herring-bone pattern which also encircles the eye-openings. The bottom edge of the helmet is bordered by a line of vandyking which stops at the neck-guard. At the corner of each eye is a heart shaped motif and

on helmet 53 there is a three petalled lotus incised just in front of the holes for the chin-strap. A unique feature of this group of helmets is that below the junction of the eyebrows the embossing is continued downwards in a straight line, for a short distance along the nasal between the eye-openings.

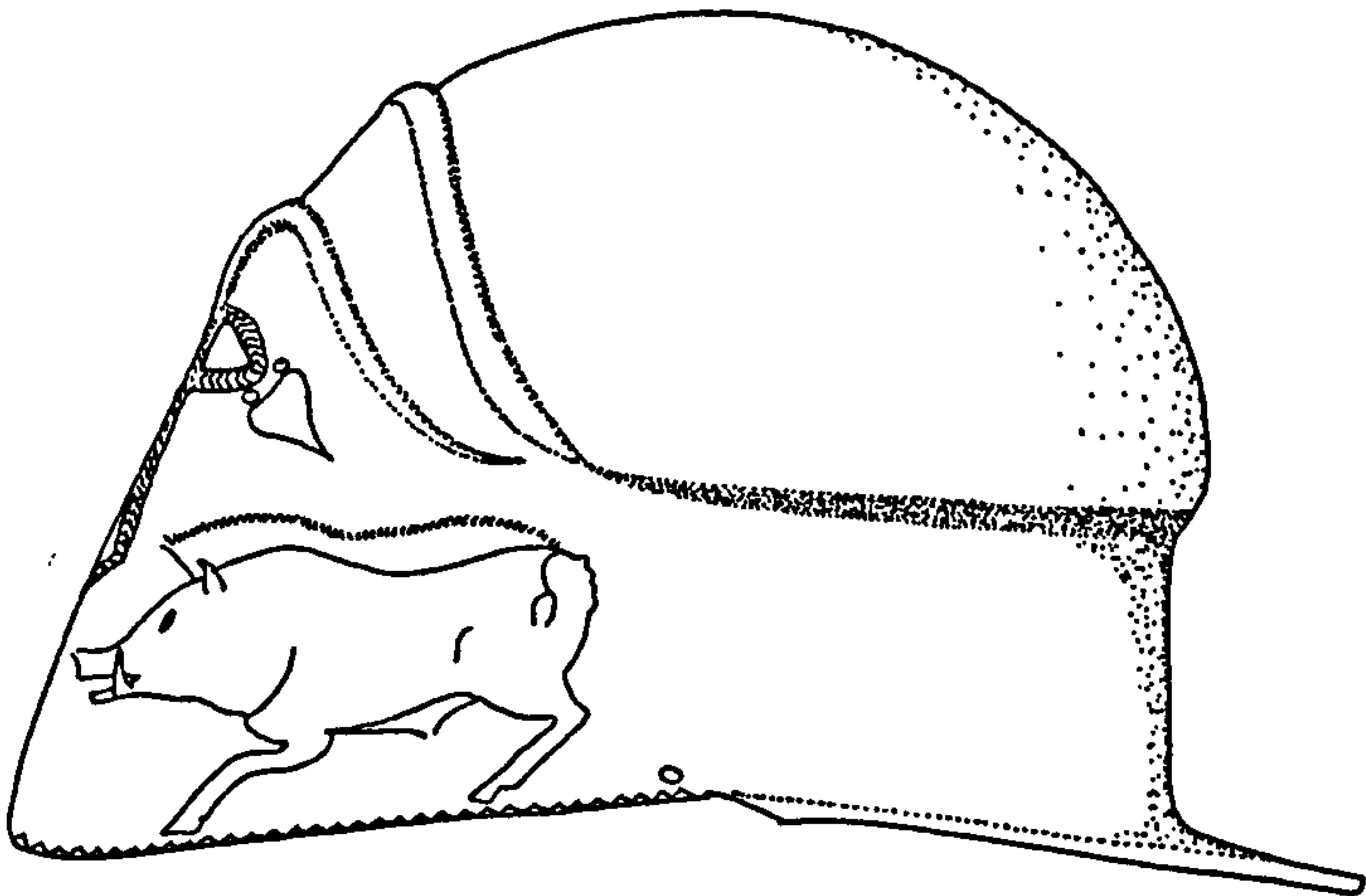
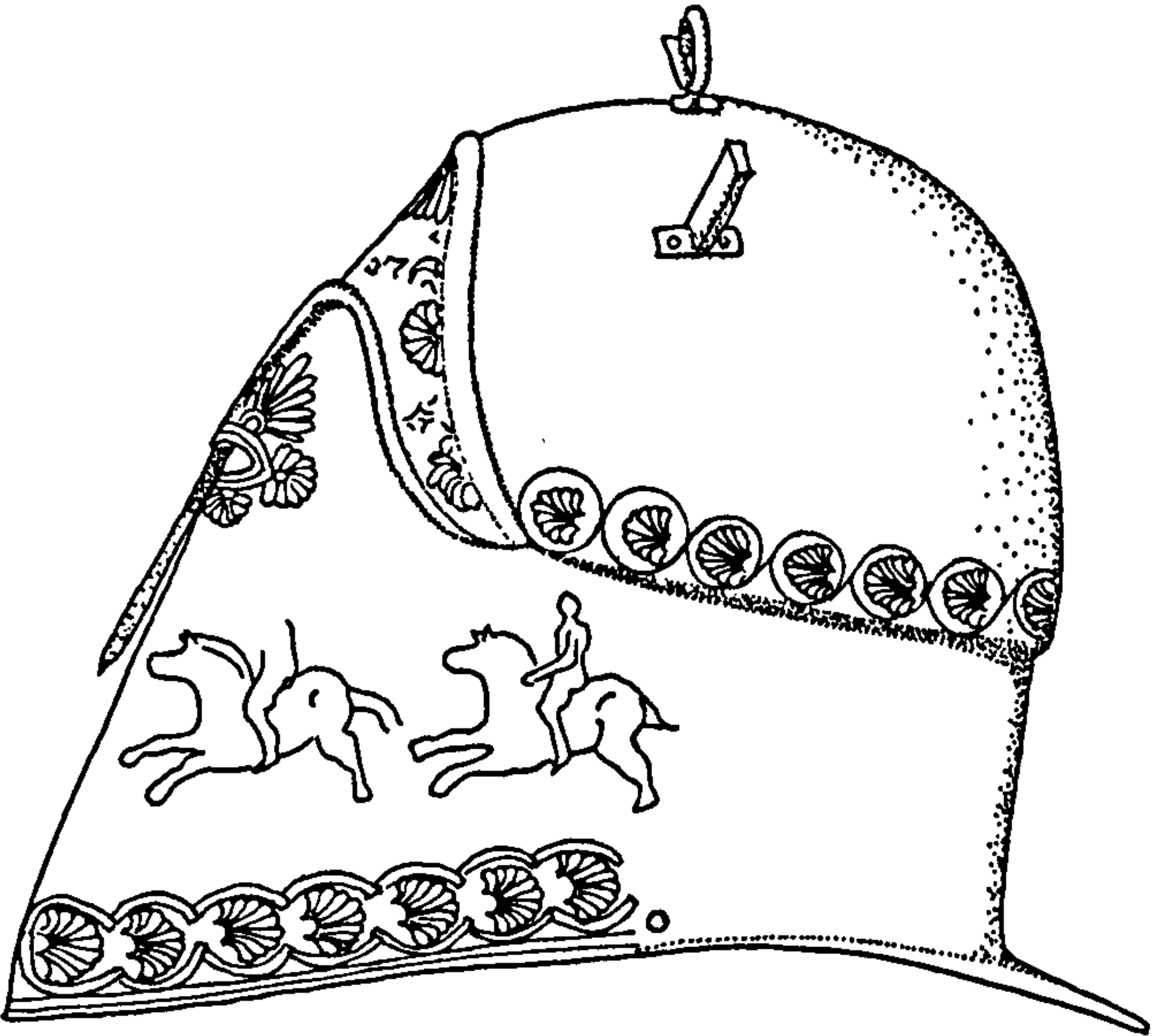
Finally helmets of type VII are decorated in one of two ways. On helmets 57 and 59 the eyes are inlaid, in ivory in the case of helmet 58 from Ruvo. The inlay is missing from helmet no 57. This is accompanied by embossing round the eyes and an embossed nasal. In addition helmet 58 from Ruvo has embossed scrolling curls of hair on the forehead, a decorative motif obviously borrowed from helmets of type V. The remaining helmets of this type (Nos. 55, 56 and 59) are simply decorated with incised work. These helmets exhibit all the features of the decoration of the helmet of type VI. They are decorated with the usual charging boars executed in a naturalistic style, the position of the eye-openings are indicated by a slight depression outlined with a herring bone pattern as is the nasal and the position of the front opening. This pattern is carried round the lower edge of the helmet to the neck-flange. The continuation of the embossed eyebrows is also a feature of this group of helmets.

Throughout the two centuries of its use the Apulo-Corinthian helmet is remarkable for the consistency of its decorative repertoire. Not only are embossed eyebrows and brow-ridges common to all seven types but so is the use of opposed charging animal motif. The first major alteration in these decorative schemes is the introduction of the naturalistic Hellenic style of depiction. This gradually superseded the "archaic" Italic styles common on helmets of the 6th and early 5th

century B.C. This change starts early in the 5th century B.C. and is complete by the 4th century B.C. Helmets of types III and IV exhibit a mixture of styles of decoration. Some of these helmets are contemporary and therefore both styles of decoration must have coexisted for some considerable time in the 5th century B.C. The increased artistic repertoire of the bronze worker in the 4th century, exemplified by helmets of type V, exhibits close links with other minor applied arts in southern Italy and presupposes common sources of inspiration possibly in the form of pattern books from the Hellenistic world. It is perhaps ironic that a helmet that was inspired by a Greek form which was adapted to purely Italian usage, should, at the end of its development, return to the source of its original inspiration for its decorative repertoire.

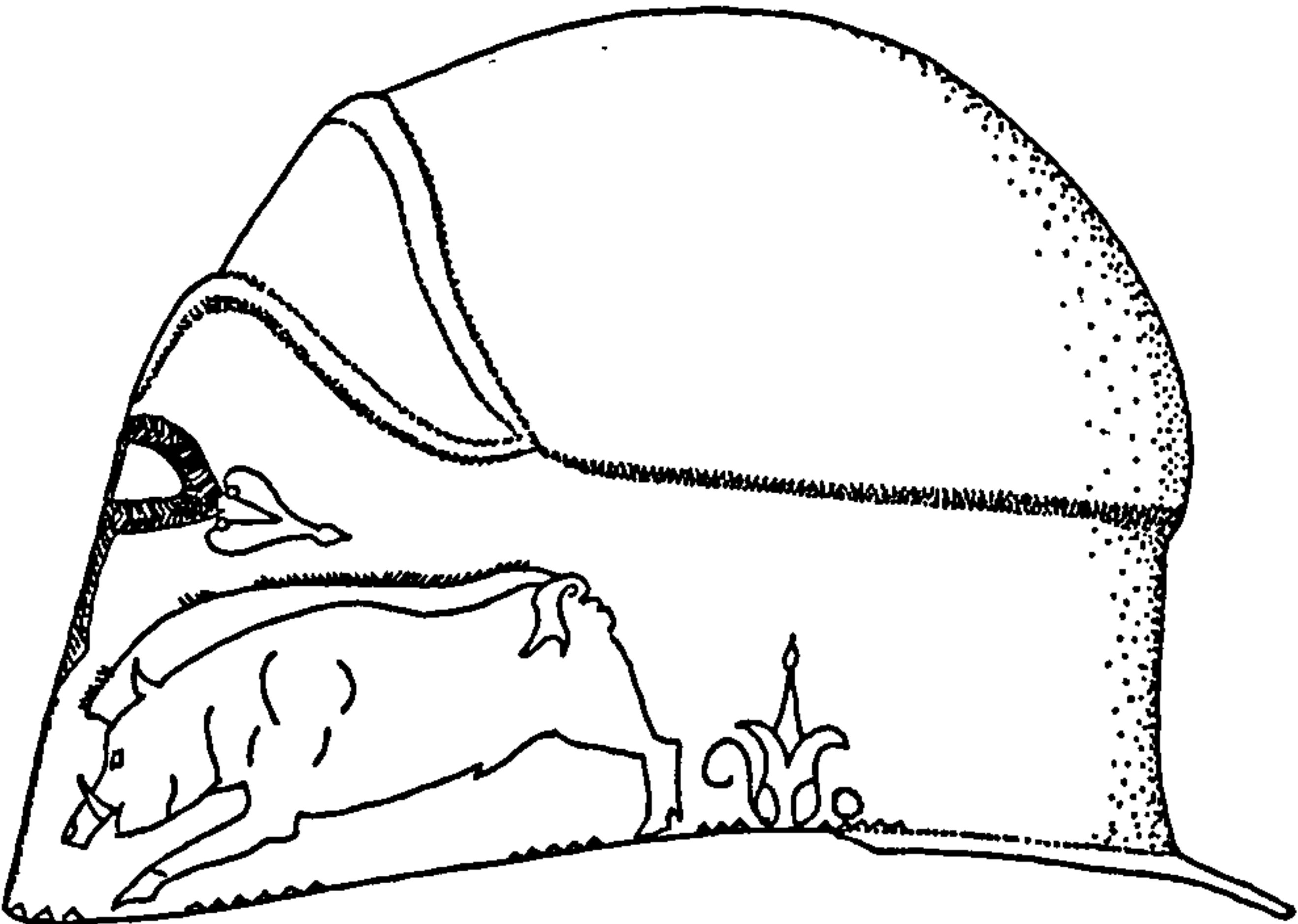
FIG. 30

51

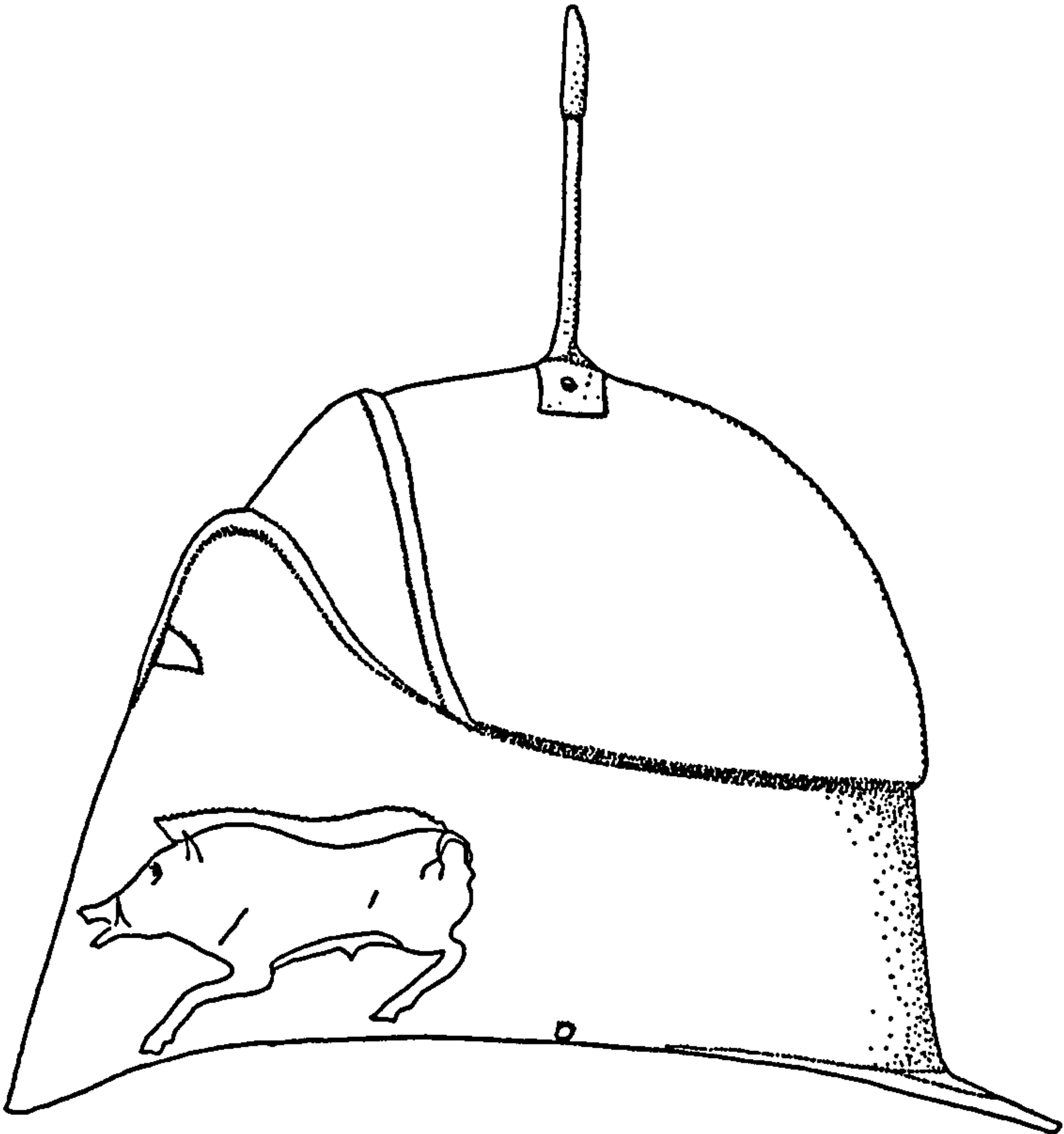


52

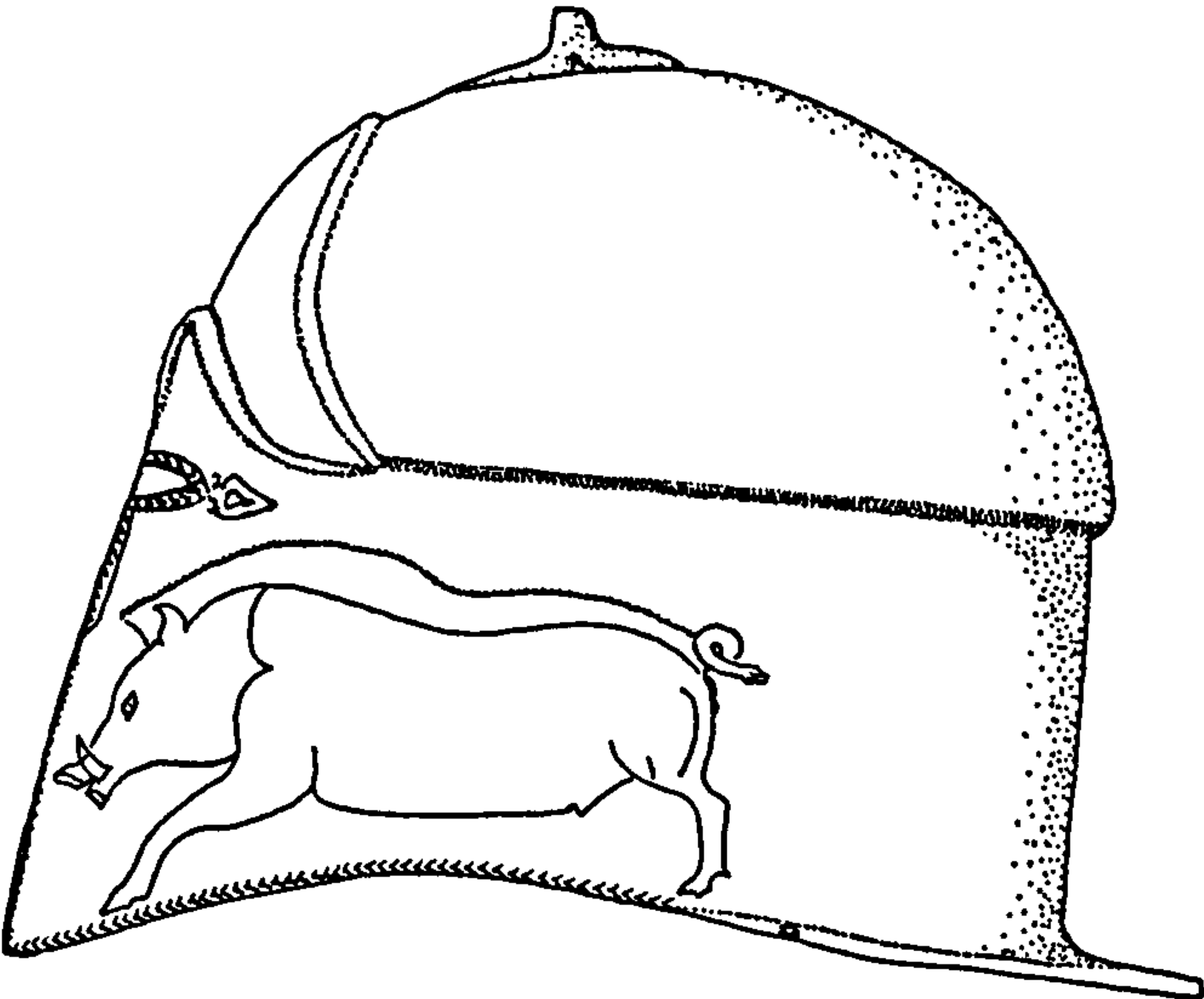
53



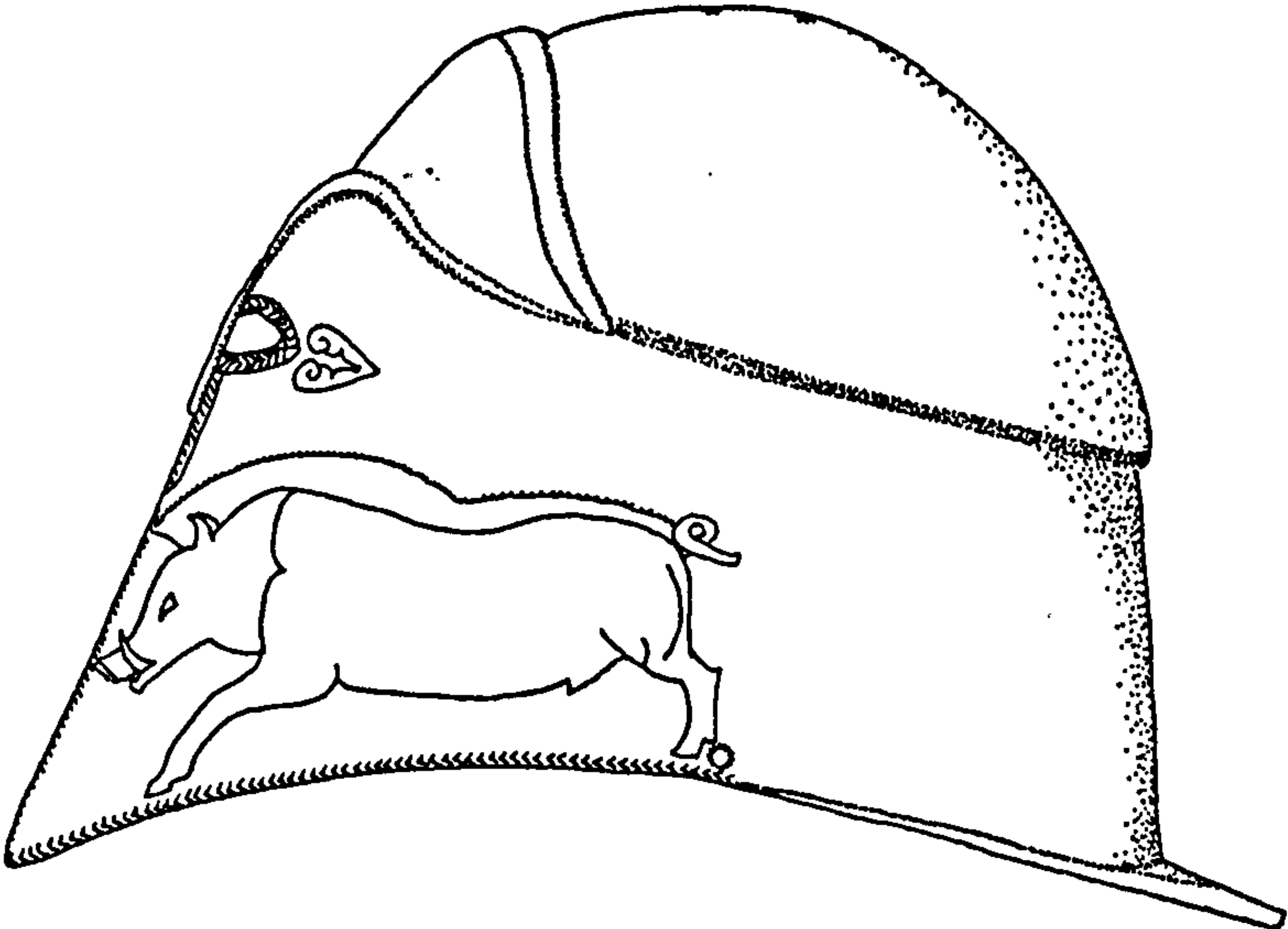
54



55



56



Detailed Studies of an example of each type:

Helmet No.9

Type: I.

Location: Now in a Private Collection in Lucerne.

Inventory No. None.

Provenance: The Basilicata, Italy.

Context: Unknown.

Suggested date: Early 5th Century B.C.

Material: Bronze.

Dimensions: Height	162 mm
Width (overall)	256 mm
Width (internal)	223 mm
Breadth (overall)	209 mm
Breadth (internal)	199 mm
Thickness (sides)	2 mm
Thickness (bowl)	1.5 mm

Chin-strap Fixtures: A single hole in each side 8mm above the base level with the wearer's ears. In the centre of the neck-flange is a single hole to take a looped fitting for the chin-strap in the same fashion as is found on other helmet forms e.g. the Montefortino helmet.

Crest-fixtures: No crest-fixtures remain, however there are six rivet holes in the apex of the bowl. These form three pairs of holes. Two sets are pierced to attach the crest-holder longitudinally and one to hold it transversely. These are working life

repairs and prove that this helmet cannot have been made as a funerary offering as Bloesch (1976, 84.) maintains. The original pair of longitudinally spaced holes are in line with the nasal, the second set are offset at an angle, presumably not to weaken the central apex of the bowl. The third set of holes was presumably aligned transversely for a similar reason.

Decoration: The helmet has the usual embossed eyebrows and brow-ridges above the eye-openings. These converge at the temple and the line of moulding is then carried around the helmet as a step, dividing the slightly bulbous bowl from the more close fitting cheek and neck-guards. Around the eye-openings there is an incised herring-bone pattern and down either side of the front opening is an unconnected zigzag pattern. On each cheek-piece, facing inwards, is engraved a charging boar. The decoration is executed in a fairly naturalistic manner.

Manufacture: Made by "raising" from a single sheet of bronze. The crest-fixture was manufactured separately and riveted in place.

Description: The helmet is low with a hemispherical bowl of moderate height. At the front, above the eye-apertures it has embossed eyebrows. Above these, and echoing the line of the eyebrows, are embossed brow-ridges. These lines converge at the side of the

helmet just over the wearer's temples. The resultant moulding then continues around the bowl. This line marks the division between the slightly bulbous bowl from the face and neck-guards. The face-guard has a central opening and slopes acutely. The helmet is equipped with small but usable eye-openings and a nasal of moderate length. The neck-guard is straight with a small everted neck-flange. The helmet is competently made and the decoration carefully executed. The helmet has a granular green patina.

Other Features: None.

Published: Bloesch. 1974, 50, no. 303. Bloesch. 1976, 83-7.

Helmet No. 16.

Type: II.

Location: Reale Armeria Turin.

Provenance: A tomb at Friuli

Context: Unknown

Suggested date: 4th century B.C.

Material: Bronze.

Dimensions: Height Overall. 272mm.

Height 220mm.

Width overall 285mm.

Width 240mm.

Breadth overall 200mm

Thickness (sides) 1mm.

Thickness (bowl) 0.5mm

Chin-strap Fixtures: A single hole in each side 10 mm. above the base level with the wearer's ears. In the centre of the neck-flange is a single hole to take a looped fitting for the chin-strap.

Crest-fixtures: These consist of a "U" shaped crest-holder and two feather supports. The crest-holder is constructed from two narrow strips of bronze riveted together to form the stem, this is then simply turned out at the base, to form a fixing flange, and shaped at the top to form the "U" bracket. The stem is given a ninety degree twist so that the flange is riveted along the longitudinal axis of the bowl. The "U" shaped bracket is broken away and is now missing. This is accompanied by two side mounted plume supports. These consist of narrow inverted trapezoid-shaped strips of bronze of flattened oval section. These feather supports are made by splitting the lower end of the trapezoid and bending each side outwards at ninety degrees, then flattening the ends to form flanges which are then pierced to take rivets. Each is attached to the bowl by two rivets and projects at an angle of approximately forty-five degrees. These are broken along their top edges and are of unequal lengths.

Decoration: The decoration on this helmet only consists of embossed eyebrows and brow-ridges.

Manufacture: The helmet is raised from a single sheet of bronze with applied crest-fixtures.

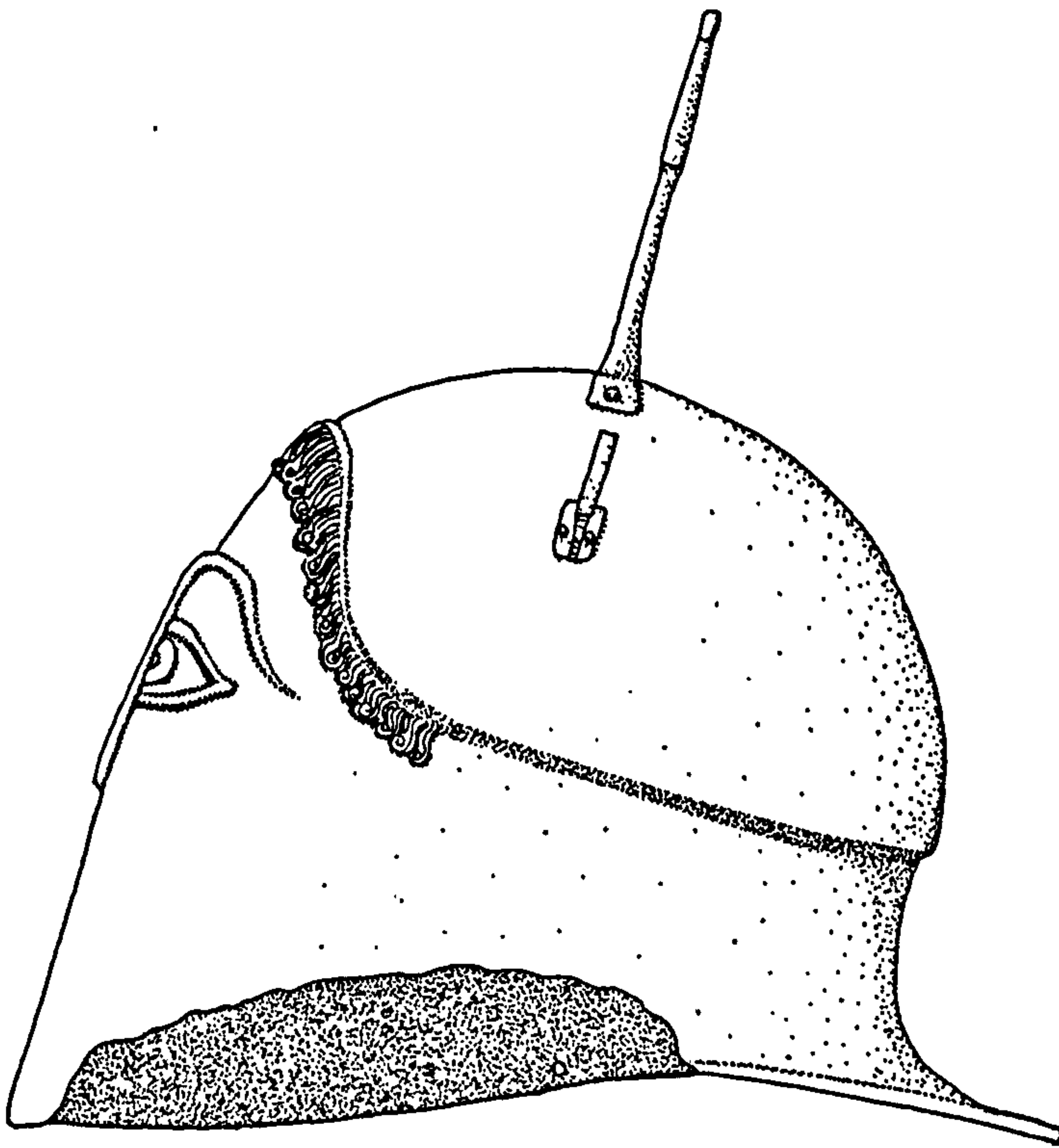
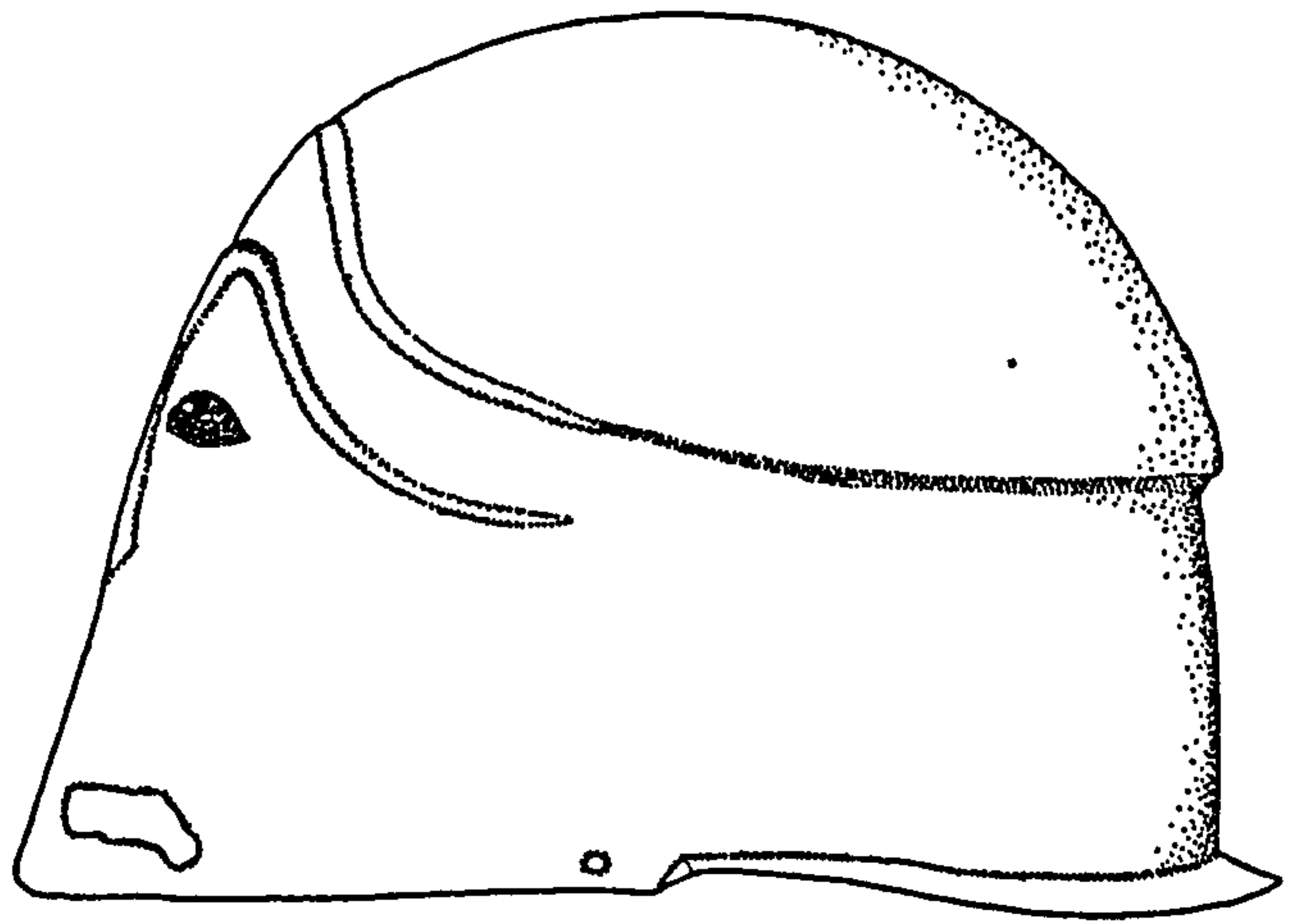
Description: This helmet has a low slightly bulbous bowl. At the front above the eye apertures it has embossed eyebrows. Above these and echoing the line of the eyebrows are embossed brow-ridges. These lines converge at each side of the helmet just over the wearer's temples. The resultant moulding then continues around the rear of the bowl. The face-guard is elongated and projects at a moderate angle, however its lower section does not follow the shape of the wearer's face but slopes away from it. The face-guard is joined centrally just below the nasal. This is of moderate length and projects slightly beyond the line of the face-guard. The eye-openings are closely spaced but still of a practical nature. The neck-guard is strongly everted to produce a flange which is almost at right angles to the bowl. There are no cut-outs in the sides of the helmet which sweep up and back to meet the base of the neck-guard. The helmet is well made and finished and has a granular patina.

Other features: None.

Published: Angelucci. 1890, 13. Lipperheide. von. 1896, 70.

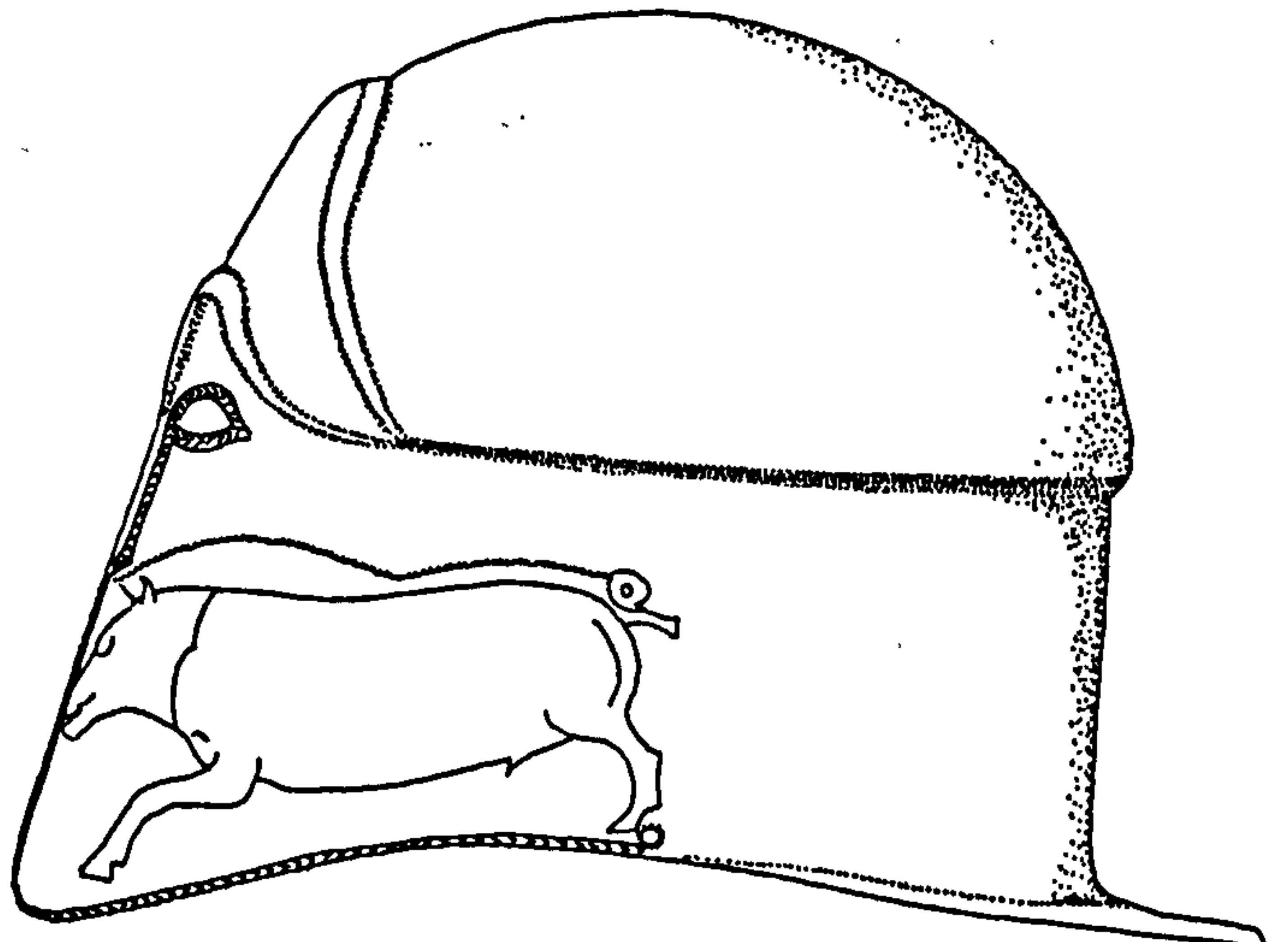
FIG. 32

57



58

59



Helmet No. 28.

Type III.

Location: The Museum of Fine Arts Boston (U.S.A)

Inventory No. 69.1075.

Provenance: Chiucchari Necropolis near Melfi.

Context: Unknown.

Suggested date: 5th to 4th centuries B.C.

Material: Bronze.

Dimensions: Height overall	285 mm.
Height helmet.	191 mm.
Width overall	275 mm.
Width	221 mm.
Breadth overall	187 mm.
Breadth	170 mm.
Thickness (sides)	0.85 mm.
Thickness (skull)	1 mm.

Chin-strap fixture: A single hole in each side 6 mm. above the base level with the wearer's ears. In the centre of the neck flange is a single hole to take a looped fitting for the chin-strap

Crest-fixtures: These consist of a "U" shaped crest-holder and two feather supports. The crest-holder is constructed from two narrow strips of bronze riveted together to form the stem, both strips are bent outwards at the base, to form a fixing flange, and shaped at the top, to form the "U" bracket. The stem is given a ninety degree twist so that the flange can be

riveted along the longitudinal axis of the bowl. This is accompanied by two side mounted feather supports. These consist of narrow inverted trapezoid-shaped strips of bronze of rectangular section. These are made by splitting the lower end of the trapezoid and bending each side outwards at ninety degrees to form flanges which are then pierced to take rivets. Each is attached to the bowl by two rivets and projects at an angle of approximately forty-five degrees.

Decoration: This helmet is decorated solely by embossing in the form of eyebrows and brow-ridges.

Manufacture: Manufactured from a single piece of bronze by blocking and raising. The crest-fixtures were made separately and riveted in place.

Description: This helmet is characterised by a low bowl from which projects an elongated and obliquely sloping face guard. At the front above the eye apertures it has embossed eyebrows which converge over the nasal. Above these and echoing their shape are embossed brow-ridges. These lines converge at the side of the helmet just over the wearer's temples. The resultant moulding then continues around the bowl. The cheek-guards are joined in two separate places beneath a short angular nasal. This only projects slightly beyond the line of the face-guard. The eye-openings, on this helmet are set too closely together to have served a practical

purpose. At the sides of the helmet the cheek-guards sweep up and back to meet the base of the neck-guard. This is given a broad flat neck-flange 54 mm. wide. The helmet is well made and has suffered no major damage. It has a smooth brown patina.

Other Features: None

Published: Comstock and Vermeule. 1971, 496-7.

Helmet No. 27.

Type III.

Location: The British Museum.

Inventory No.: 2832. 1856.12-26.669.

Provenance: Pomarico in the Basilicata.

Context: Unknown.

Suggested date: 5th to 4th centuries B.C.

Material: Bronze.

Dimensions: Height overall	220 mm.
Height helmet.	220 mm.
Width overall	300 mm.
Width	250 mm.
Breadth overall	190 mm.
Breadth	180 mm.
Thickness (sides)	0.85 mm.
Thickness (bowl)	1 mm.

Chin-strap fixture: A single hole in each side above the base level with the wearer's ears and just in front of the springing of the neck-guard flange. In the

centre of this flange is a single hole to take a looped fitting for the chin-strap.

Crest-fixtures: These originally consisted of a "U" shaped crest-holder and two feather supports. The crest-holder was shown in place in Lipperheide (1896, 72.) but is now missing. It was constructed from two narrow strips of bronze riveted together to form the stem, these were then simply turned out at the base, to form the fixing flange, and shaped at the top, to form the "U" bracket. The stem is given a ninety degree twist so that the flange could be riveted along the longitudinal axis of the bowl. There are three rivet holes along the apex of the helmet all about 2 mm. in diameter, one of which still retains a rivet, implying that the crest-fixture had been replaced at least once. This was accompanied by two side mounted feather supports these are now missing but were also shown in Lipperheide. These consisted of the usual narrow inverted trapezoid-shaped strips of bronze of rectangular section. The left was attached to the bowl by three rivets and the right by two. They originally projected from the bowl at an angle of approximately forty-five degrees.

Decoration: This helmet is decorated by embossing in the form of eyebrows and brow-ridges and elaborate incised decoration executed in an archaic manner. This consists

of a charging boar on each cheek-guard behind which is a thistle pattern. This is accompanied by a seated sphinx, with recurved wings, on the right and a lion on the left side. Between these at the centre of the neck-guard is a stylised plant or tree motif. Around the edges of the face-opening, the eye-openings and the nasal is an incised border of herring-bone pattern. This border also runs along the base of the helmet as far as the beginning of the neck-flange.

Manufacture: Manufactured from a single piece of bronze by blocking and raising probably with a crosspein hammer as there are marks made by a hammer of this type inside the cheek-pieces. The crest-fixtures are made separately and riveted in place.

Description: It is characterised by a low bowl from which projects an elongated and obliquely sloping face guard. At the front above the eye-apertures it had embossed eyebrows. Above these and echoing their shape were embossed brow-ridges. These lines converge at the side of the helmet. The resultant moulding then continues around the rear of the bowl. The cheek-guards were joined in two separate places beneath a short nasal, these junctions are now broken. The nasal is short and angular and does not project far beyond the line of the face-guard. The eye-openings are set so closely together and are so small that they cannot possibly have served a practical purpose. The neck-flange

is broad, being 50 mm. in depth. The helmet has been considerably damaged and has been extensively restored. The frontal lobes have been flattened by restoration and there is a large hole at the front and apex of the helmet. There is some damage to the base of the right cheek-piece and the rear of the neck-flange which is split. Much of the rear left side of the bowl is restored. The helmet is in a very poor condition and is covered with traces of solder and glue from restoration. It has a patchy light green granular patina in places the rest of the helmet has been cleaned to produce a smooth brown / green patina.

Other Features: None

Published: Lipperheide. von 1896, 72. Walters. 1899, 349. Forsdyke. 1929. 76.

Helmet No. 34.

Type: IV.

Location: The Antiken Museum Berlin.

Inventory No. L.30.

Provenance: Krsko, Yugoslavia.

Context: Unknown.

Suggested date: 5th to 4th century B.C.

Material: Bronze.

Dimension: Height overall. 271 mm.

Height 185 mm.

Width overall	291 mm.
Width	253 mm.
Breadth overall	192 mm.
Breadth	187 mm.
Thickness (sides)	1-0.7 mm.
Thickness (bowl)	2 mm.
Weight	538 Grms.

Chin-strap fixture: A single hole in each side 7 mm. above the base level with the wearer's ears. In the centre of the neck-flange is a single hole to take a looped fitting for the chin-strap.

Crest-fixtures: These consist of a "U" shaped crest-holder and two feather supports. The crest-holder is constructed from two narrow strips of bronze riveted together to form the stem, this is then turned out at the base, to form a flange, and shaped at the top, to form the "U" bracket. All three sections are in the same plane. The flange is riveted transversely across the apex of the helmet bowl. This is accompanied by two side mounted feather supports. These consist of narrow inverted trapezoid-shaped strips of bronze of rectangular section. Each is attached to the bowl by two rivets and projects at an angle of approximately forty-five degrees. These feather supports are made by splitting the lower end of the trapezoid and bending each side outwards at ninety degrees to form flanges which are then pierced to

take rivets.

Decoration: This helmet is decorated on the cheek-guards by incised opposed charging boars executed in a naturalistic style. The eye-openings, the nasal and the front opening are bordered by a band of herring-bone pattern. This pattern is continued along the bottom edge of the helmet and ends at the beginning of the neck-flange. At the outside corners of the eye-openings is a stylised heart-shaped motif.

Manufacture: Manufactured from a single piece of bronze by "blocking" and "raising". The crest-fixtures are made separately and riveted in place.

Description: This helmet has a low bowl with a moderately sloping face-guard which gives the helmet a hemispherical form. At the front over the eye-openings are embossed eyebrows which converge over the nasal. Above these and echoing their shape are embossed brow-ridges. These lines converge at the side of the helmet. The resultant moulding then continues around the bowl. The face-guard is joined in three places beneath the short pointed nasal. This itself lies almost flush with the line of the face-guard. The eye-holes are very small and closely spaced rendering them impractical. The lower edge of the helmet is almost level. At the rear the neck-guard is everted to form a moderately sized neck-flange 38 mm. deep. The helmet is well made and decorated. It is in good condition and is undamaged.

It has a smooth green/brown patina.

Other features: None.

Published: Lipperheide, von. 1896, 69., Schröder. 1905, 17.

Helmet No. 43.

Type: V.

Location: Karlsruhe Museum

Inventory No.: 432 R1079.

Provenance: A tomb near Canosa di Puglia

Context: 4th century B.C. Dated by association with Apulian wares
found in the Tomb.

Suggested date: Contemporary with the burial.

Material: Bronze.

Dimensions: Height Overall	203 mm.
Height.	198 mm.
Width Overall	249 mm.
Width	210 mm.
Breadth overall	192 mm.
Breadth	171 mm.
Thickness (sides)	1.5 mm.
Thickness (bowl)	0.5 mm.

Chinstrap Fixtures: The sides of the helmet are each pierced by a single hole, approximately ten millimetres above the bottom edge. At the rear in the centre of the neck-flange is also a single hole presumably to take the double loop fixture commonly found on other contemporary helmet forms.

Crest-fixtures: On the apex of the skull are the remains of a type V crest-holder (see fig 34:4.). This consists of a rectangular strip of bronze, 2 centimetres wide, riveted to the skull by three iron rivets, one at the centre and one at each side. At either end of this strip is a square cutout through which projects a small bronze loop. Both loops contain the remains of iron split pins for fastening the crest holder. Mounted longitudinally on either side of the bowl at approximately forty-five degrees to the perpendicular are two bronze feather supports. These are both damaged and attached by only one rivet, whereas they originally had two. They are made from a single strip of bronze split at its base to form two projecting flanges to facilitate its attachment.

Decoration: This helmet is elaborately decorated with incised work executed in a naturalistic Hellenic style. On the left cheek-piece is a crouching lion and facing it on the right cheek-guard is a standing bull. The embossed brow-ridges above the eyebrows are decorated with incised scrolling hair. Along the upper line of this moulding is a band of decoration consisting of circles and dashes. Incised decoration also extends along the junction between bowl and neck-guard in the form of lotus flowers joined by scrolling foliage. The main edges, the nasal and the eye-openings of this helmet

are bordered with an incised herring-bone pattern. At the outer corner of each eye-opening and also above the chin-strap hole are three petalled lotus flowers.

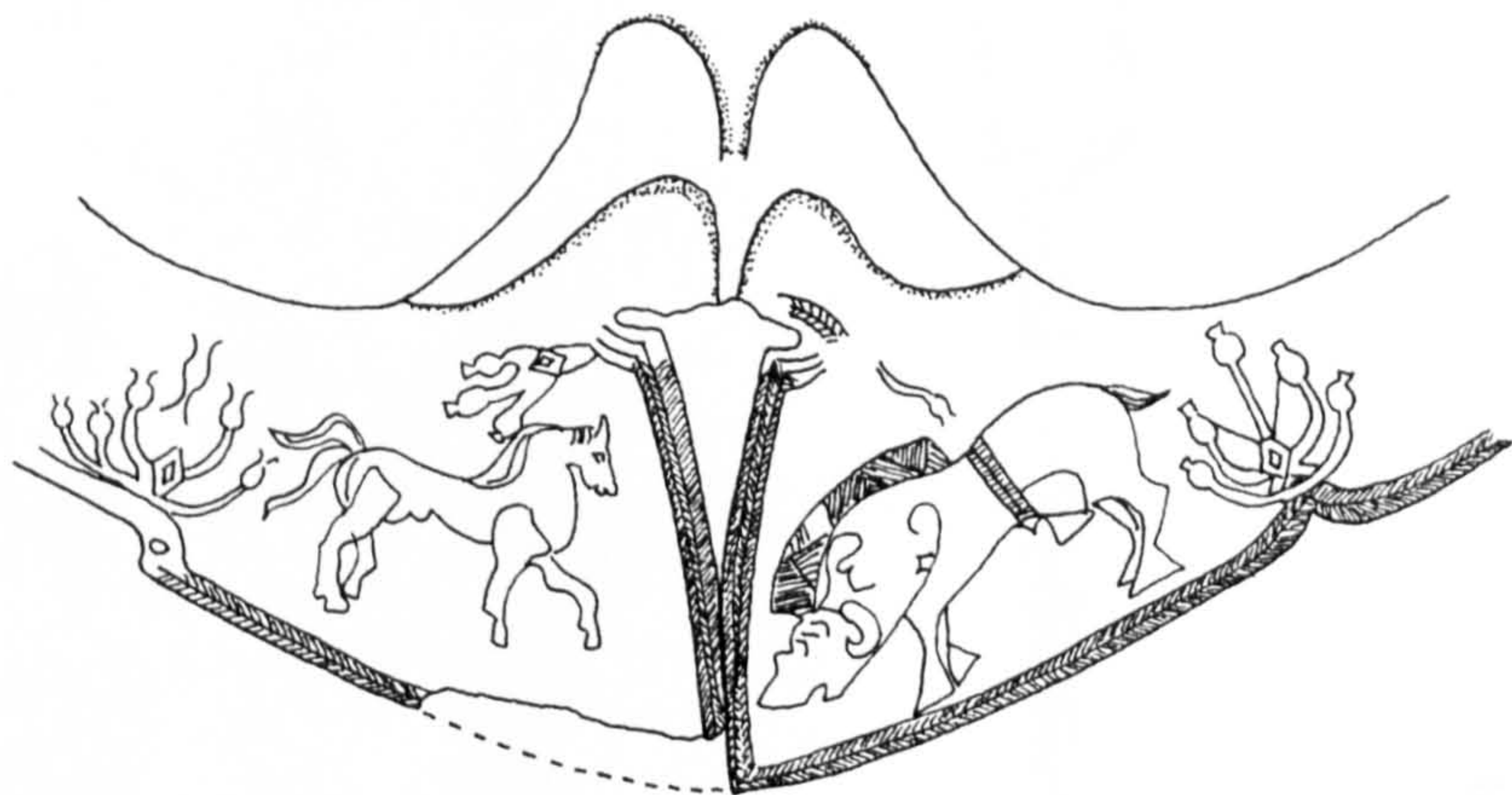
Manufacture: Forged by blocking and raising from a single sheet of bronze. It has been both hot and cold worked.

Description: This helmet has a low bowl with an acutely sloping face-guard. This gives the helmet an elongated cylindrical appearance. At the front above the eye apertures it has embossed eyebrows. Above these and echoing their shape are embossed brow-ridges. These two lines of embossing converge at the side of the helmet. The resultant moulding then forms a ridge which continues around the bowl. The face-guard is completely enclosed beneath the nasal. The nasal is of moderate length and of a sinuous form. It does not project forward very far beyond the line of the face-guard. The eye openings are closely spaced, almond shaped and small. At the sides the cheek-guards sweep up and back to meet the large neck-flange. The transversely mounted crest holder was of type V and removable. It was accompanied by side mounted feather supports which are permanently fixed. The helmet is extremely well made and decorated. It is in an excellent condition and has no repairs or restorations. It has a smooth brown patina.

Other features: None.

Published: Schumacher. 1890, 130, No.694., Lipperheide, von. 1896, 77.

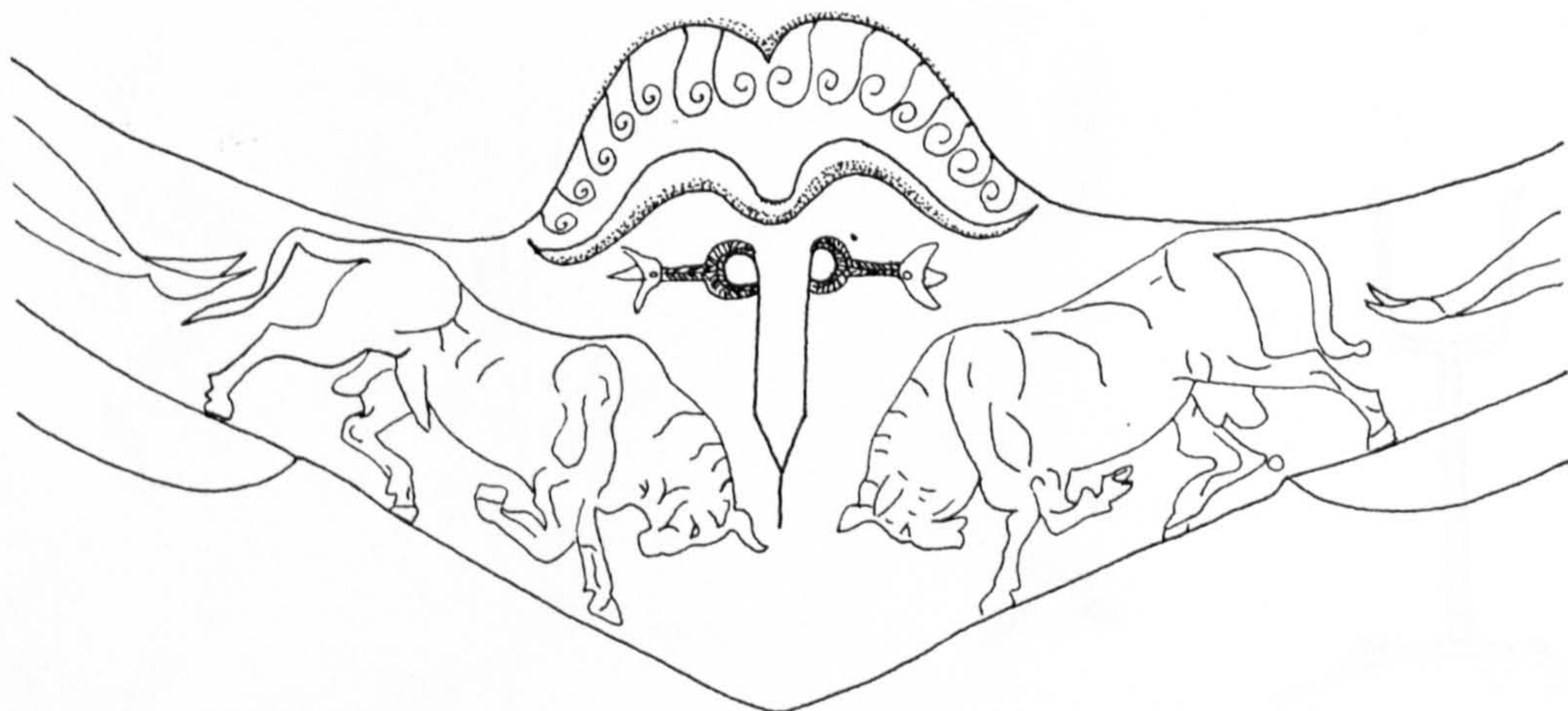
FIG. 33: Decoration



1. Helmet no. 6, from Tomb A Chiucchiari

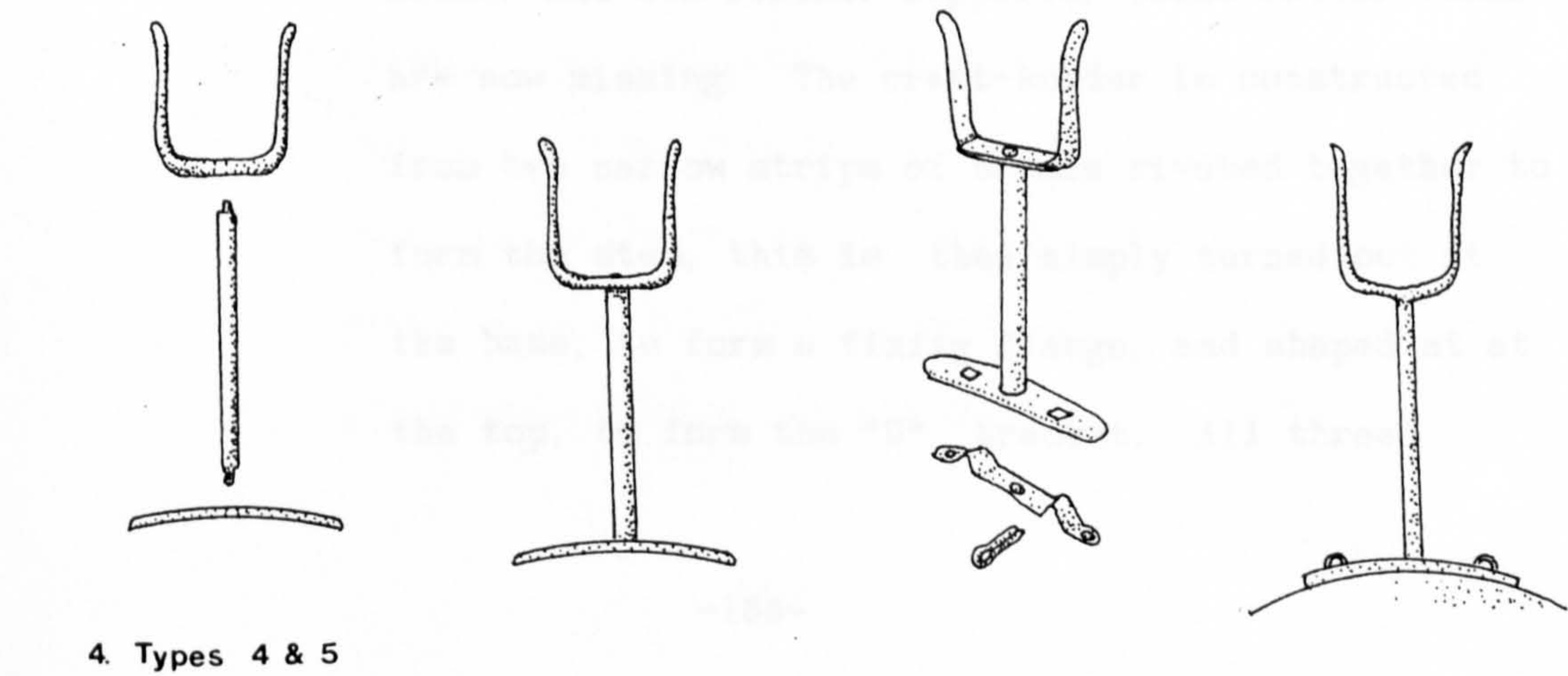
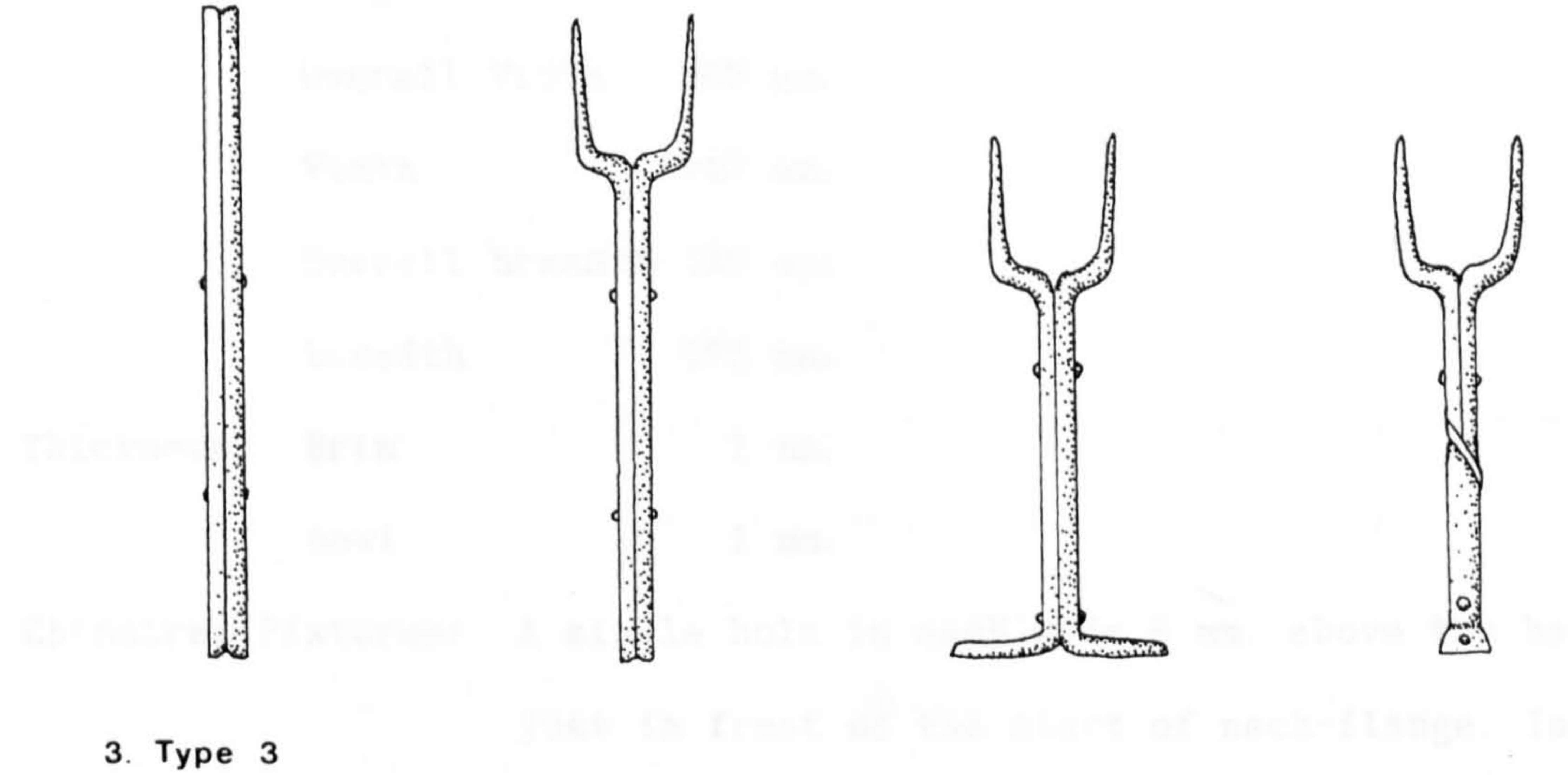
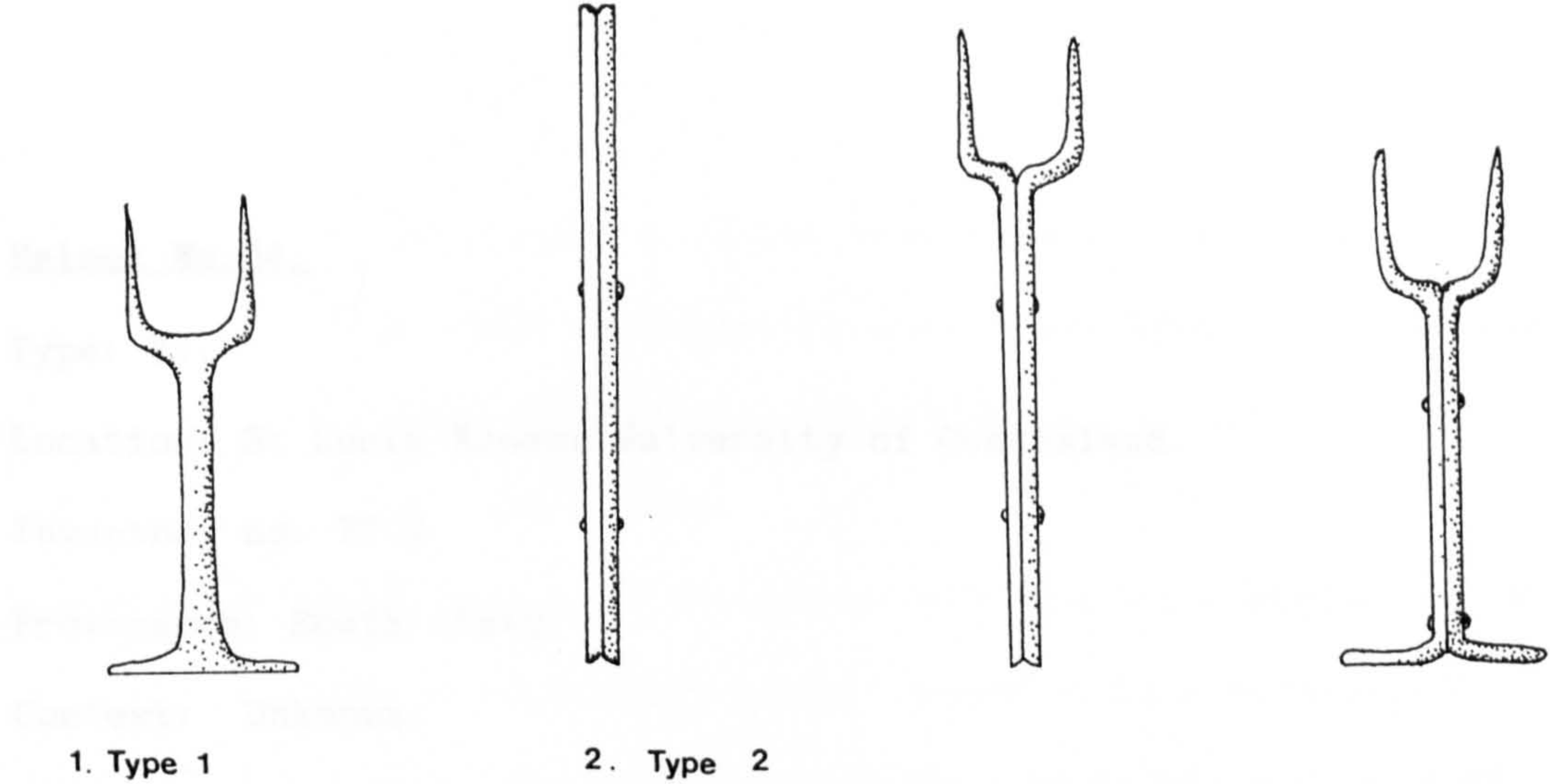


2. Helmet no. 21, from Tomb F Chiucchiari



3. Helmet no. 49, from Tomb 11 Rutigliano

FIG. 34: Construction of Crest-fixtures.



Helmet No. 54.

Type: VI.

Location: St Lucia Museum University of Queensland.

Inventory no. 77.1.

Provenance: South Italy.

Context: Unknown.

Suggested date: 4th century B.C.

Material: Bronze.

Dimensions: Overall Height 305 mm.

Height. 208 mm.

Overall Width. 305 mm.

Width 247 mm.

Overall breadth 185 mm.

Breadth 175 mm.

Thickness Brim 1 mm.

bowl 1 mm.

Chinstrap Fixtures: A single hole in each side 8 mm. above the base just in front of the start of neck-flange. In the centre of the neck-flange is a single hole to take a looped fitting for the chin-strap.

Crest-fixtures: These consisted originally of a "U" shaped crest-holder and two feather supports, these latter items are now missing. The crest-holder is constructed from two narrow strips of bronze riveted together to form the stem, this is then simply turned out at the base, to form a fixing flange, and shaped at at the top, to form the "U" bracket. All three

sections are in the same plane. The flange is riveted transversely across the apex of the helmet bowl. The feather supports were attached to the bowl by two rivets.

Decoration: This helmet is decorated with the two charging boars, one on each cheek-guard, executed in a naturalistic style. The eye-openings are bordered by a band of herring-bone pattern, as is the outline of the nasal and the position of the front opening. This pattern is carried round the lower edge of the helmet to the neck-flange.

Manufacture: This helmet is manufactured from a single piece of bronze by blocking and raising. The crest-fixtures were made separately and riveted into place.

Description: This helmet has a low hemispherical bowl with a fairly acutely sloping face-guard. It has a cylindrical appearance. At the front, above the eye apertures, it has embossed eyebrows which meet above the nasal. Extending downwards from this is a line of embossing which runs the length of the nasal. Above eyebrows and echoing their shape are embossed brow-ridges. The eyebrows and brow-ridges converge at the side of the helmet. The resultant moulding then continues around the bowl. The face-guard is completely enclosed, the nasal is no longer made separately but is made in one with the rest of the cheek-guards. The eye-openings are closely spaced, almond-shaped and small. At the

sides the cheek-guards rise up and sweep back to meet the moderately deep neck-flange. The helmet is moderately well made and decorated. It is in good condition and has a smooth light green patina.

Other features: None.

Published: Anon⁽²⁾. 1977, Lot No. 189

Helmet No. 56.

Type; VII.

Location: the British Museum.

Inventory no. 2723 1856. 12-26.664.

Provenance: Etruria.

Context: Unknown.

Suggested date: 4th B.C.

Material: Bronze.

Dimensions: Height. 190 mm.

Overall Width. 320 mm.

Width 283 mm.

Overall breadth 200 mm.

Breadth 195 mm.

Thickness Brim 2.5 mm.

bowl 1 mm.

Chinstrap Fixtures: A single hole in each side 10 mm. above the base just in front of the start of the neck-flange. In the centre of the neck-flange is a single hole to take a looped fitting for the

chin-strap.

Crest-fixtures: These are missing. However, there are two holes, 2 mm. in diameter and 24 mm. apart, pierced one on either side of the apex of the helmet bowl. This indicates that the helmet was once equipped with a transversely mounted crest-holder.

Decoration: This helmet is decorated on the cheek-guards by incised opposed charging boars executed in a naturalistic style. The position of the eye-openings are indicated by a slight depression outlined with a herring-bone pattern as is the nasal and the position of the front opening. This pattern is carried round the lower edge of the helmet to the neck-flange.

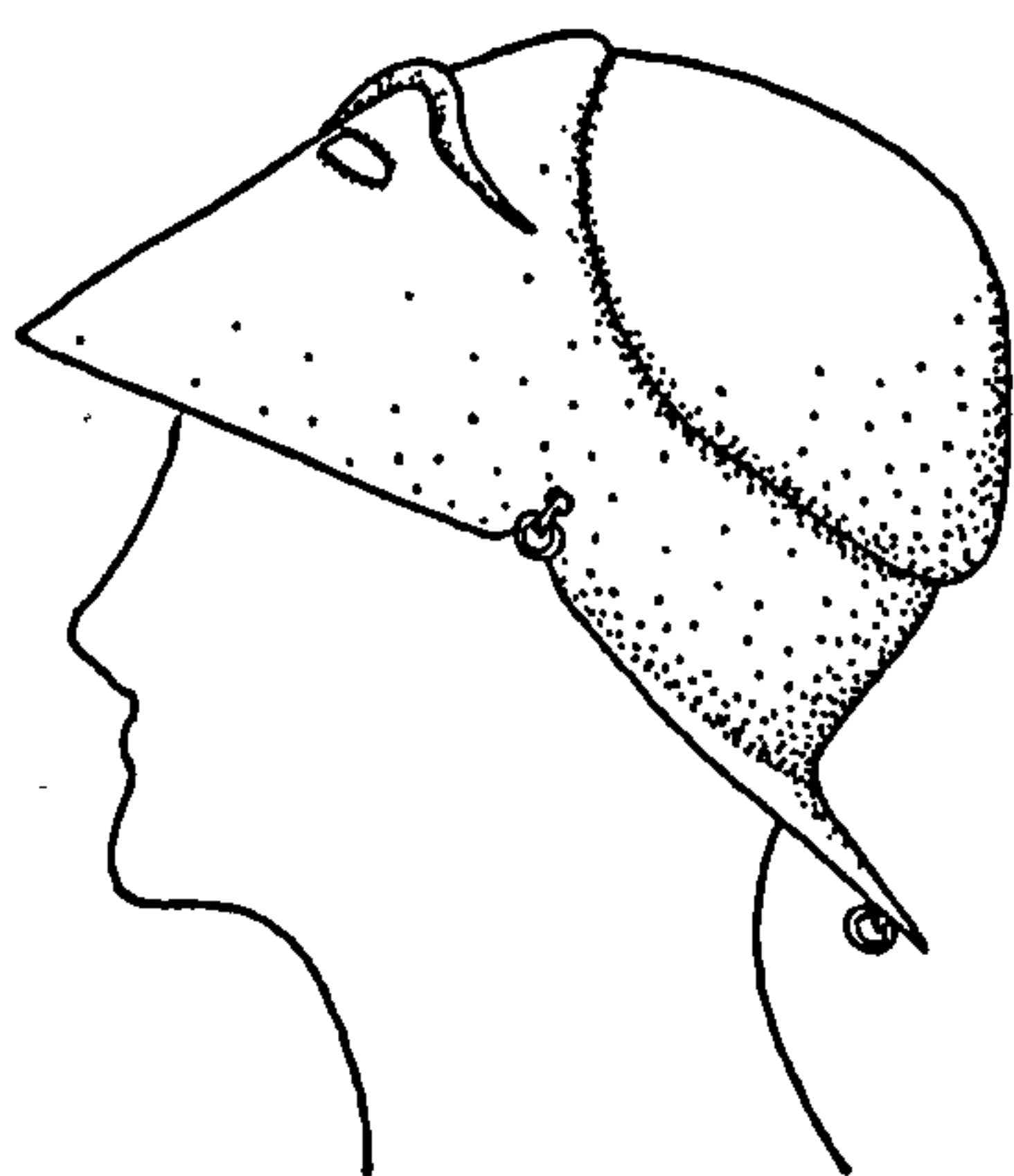
Manufacture: This helmet is manufactured from a single piece of bronze by blocking and raising. The crest-fixtures were made separately and riveted into place.

Description: It has a low slightly bulbous and angular bowl with a central ridge. The face-guard is short and slopes forward acutely. It is completely enclosed and is not equipped with eye-openings which are simply indicated by engraving. At the front above the eye-apertures it has embossed eyebrows, these meet over the nasal and the embossing is continued in a straight line down it for a short distance. Above the eyebrows and following their shape are embossed brow-ridges. These mouldings converge at the side of the helmet. The resultant moulding then continues as a ridge around to the rear

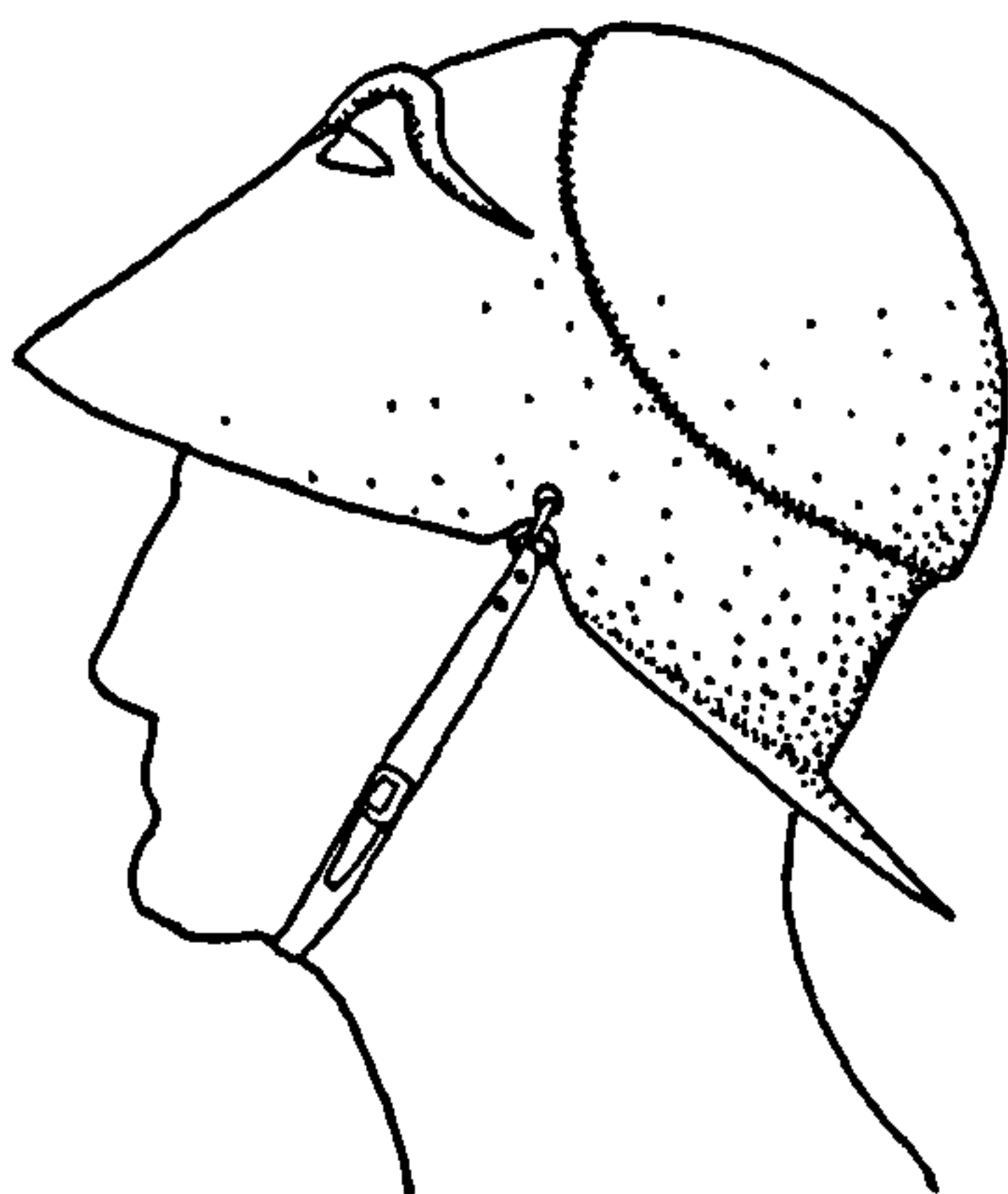
of the helmet bowl. The lower edge of the helmet is strongly recurved and sweeps up at the rear to meet the neck-guard. At the rear of the helmet the neck-guard is drawn and out to form a small neck-flange 34 mm. in depth. The helmet is very shallow and is little more than a skull cap. The helmet is in good condition and has a smooth light green patina.

Other features: None.

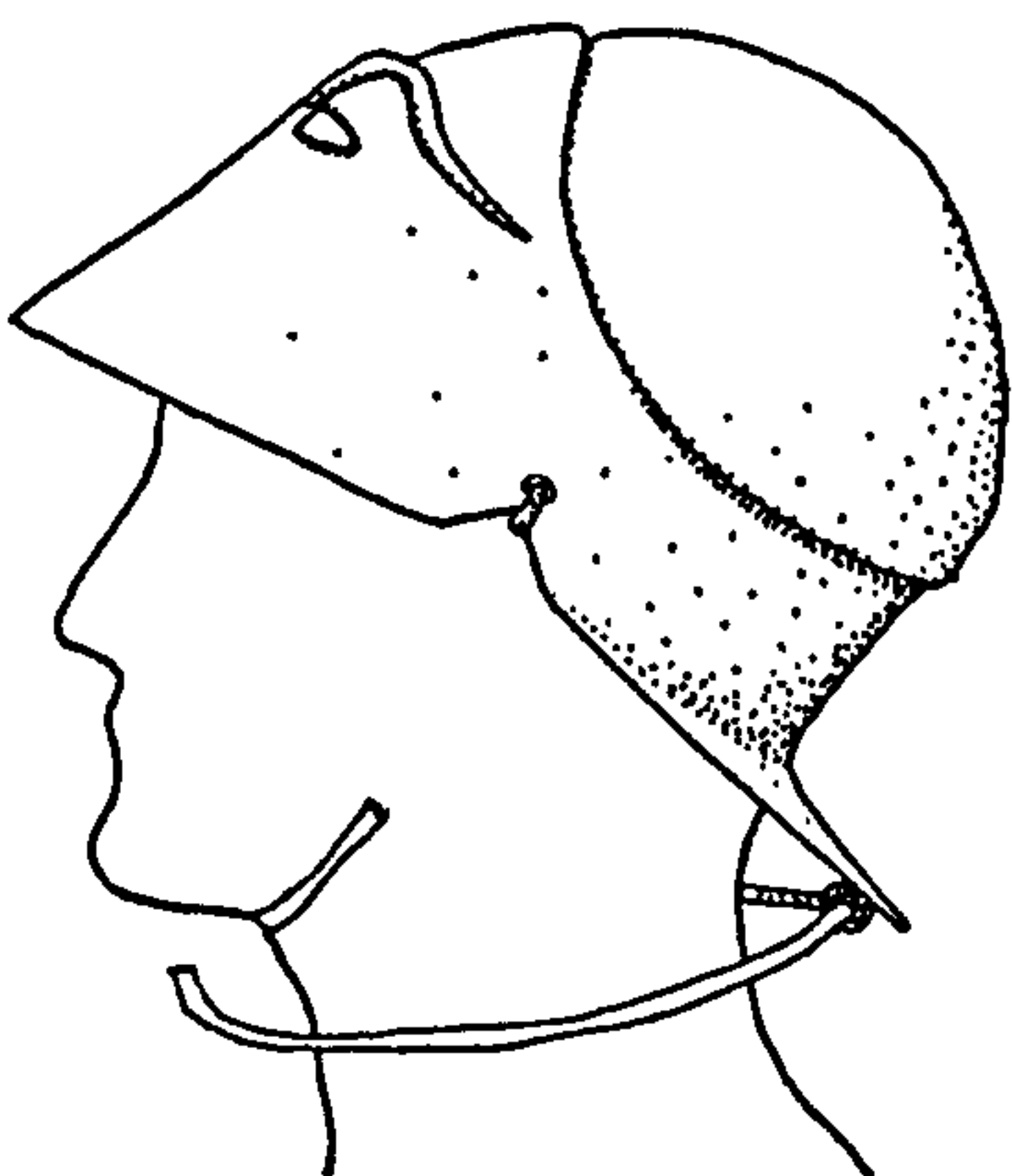
Published: Walters. 1899, 342.



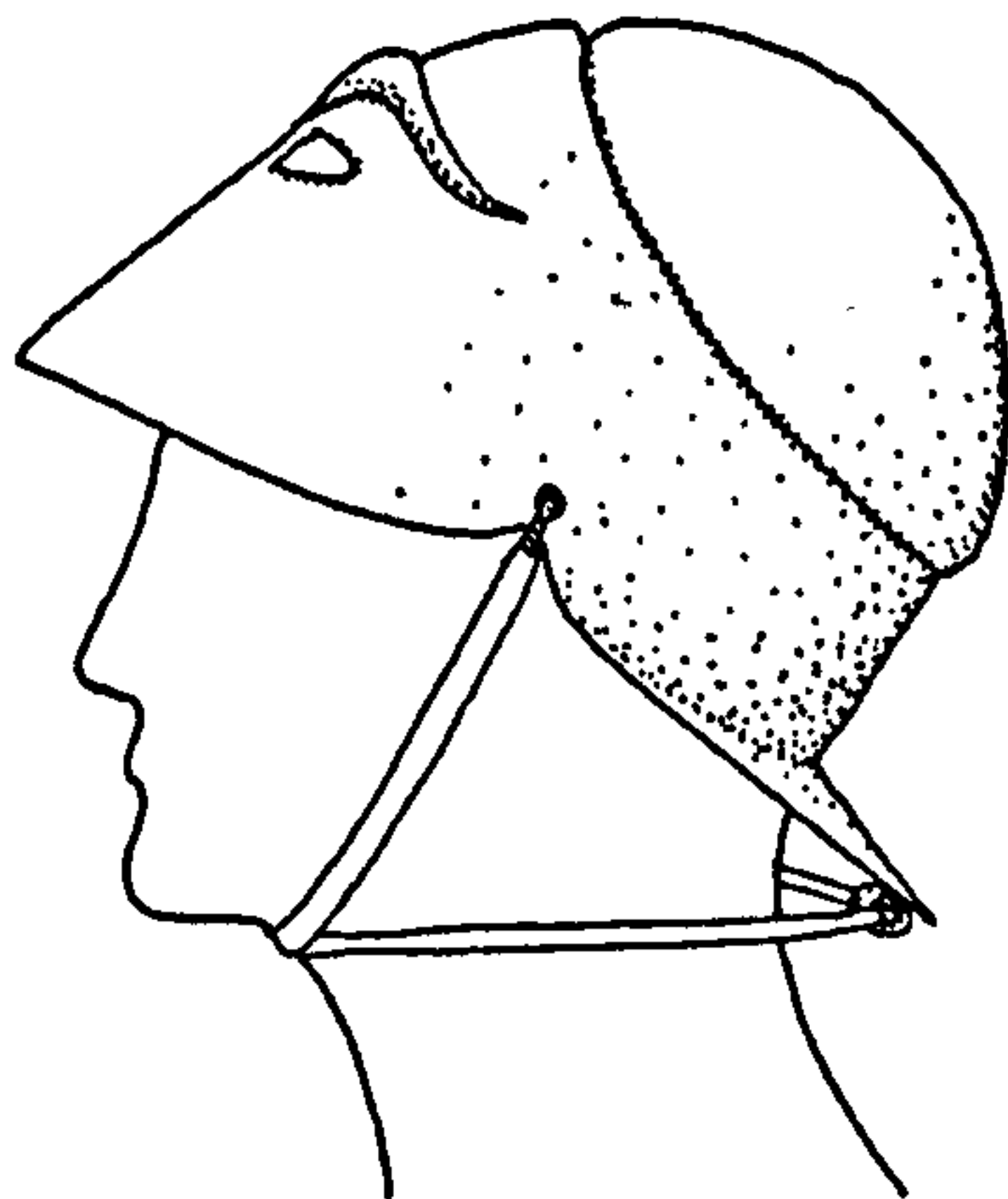
1 Position of chin-strap loops



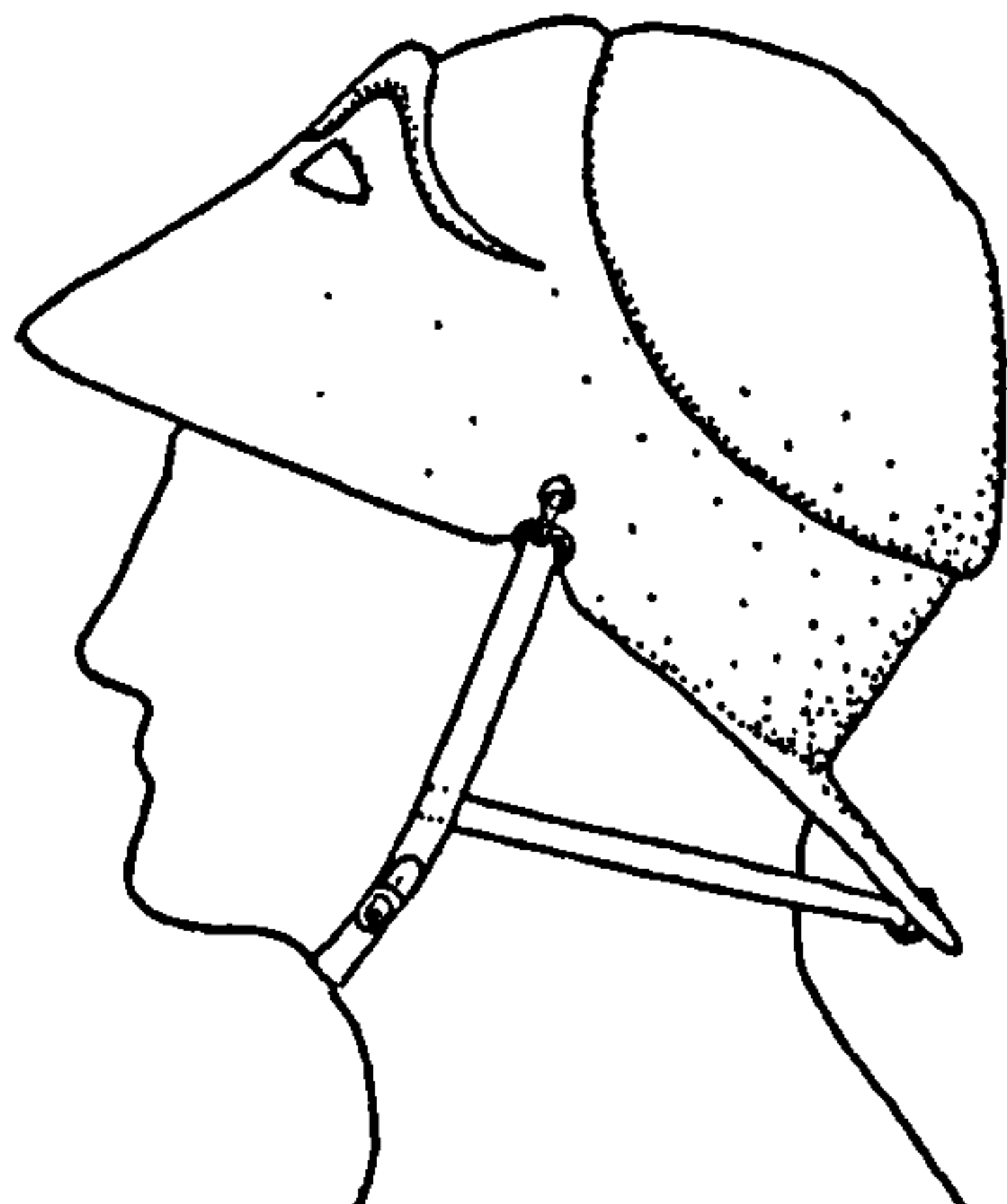
2 After Bottini



3 Using a single strap



4 Using two straps



5 Two straps joined

The Negau Helmet.

Introduction.

The Negau helmet was first defined by St Gabrovec (1966) and was named after a find of a number of helmets made near Obrat-Zenjak in Yugoslavia, formerly in the domain of Negau. It is arguably the only helmet form, dating from the period from the end of the 6th century B.C to the 1st century A.D., indigenous to Italy, the others, such as the Italian Chalkidian and Pilos, being derived from the Greeks, and the Montefortino and the Coolus being derived from the Celts.

The Negau helmet is clearly derived from the central, eastern Italian "pot" helmets of the late 7th and the 6th centuries B.C. It first appeared in central Italy in the 6th century B.C., which is without doubt its place of origin. Its invention can only be assigned to the Etruscans. The vast majority of the extant Italian examples come from Etruria where the Negau helmet remained in constant use, certainly from the 6th century to the 5th century and perhaps even into the 4th century B.C. It disappears from the archaeological record at the time of Rome's final subjugation of Etruria and its ruthless stamping out of Etruscan resistance. The subsequent suppression of Etruscan industrial capacity led to the end of over two and a half centuries of armament manufacture in Umbria and Etruria.

The Italian Negau helmet is one of the most numerous and most successful of all ancient helmet forms, with over 112 extant examples of Italian manufacture surviving. Its distribution spread outwards from Etruria to Campania in the south, Corsica in the west, and north

to the Po valley reaching the Alps where it was adopted by the Celts in the 4th century B.C. From there it spread to the head of the Adriatic.

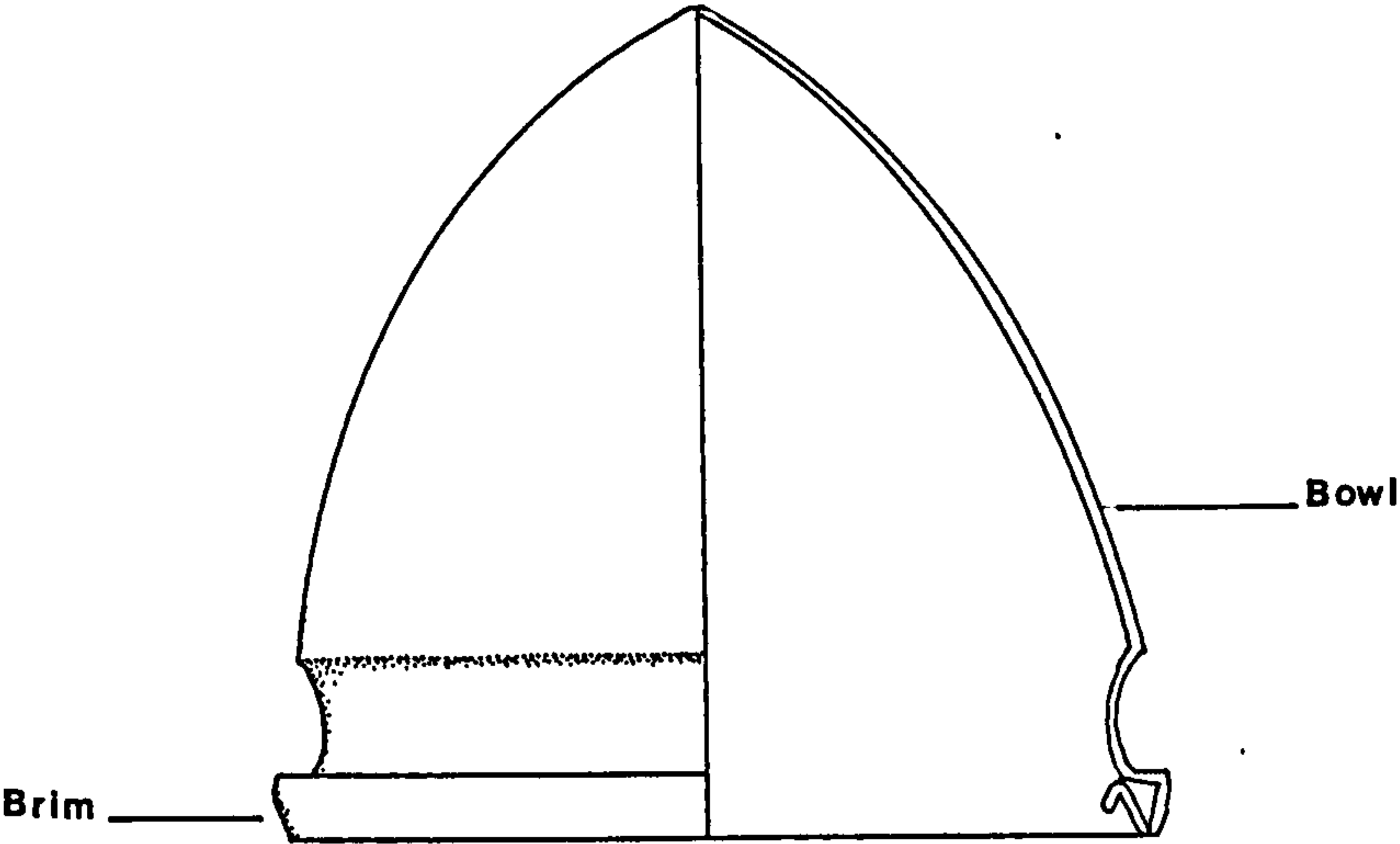
The three main areas of Negau helmet production are spatially, temporally and culturally separate and correspond to central Italy, the central Alpine range and an area roughly equivalent to modern Slovenia. The production of the bronze Negau helmets in these distinct areas is independent although the original inspiration for the other two industries is that of central Italy. The Negau helmet form was spread to the Alpine and Slovene regions partly through trade and partly through the agency of the Celts and their warlike activities. As these helmets from the Alps and Slovenia are culturally distinct from those of central Italy, and are not of Italian manufacture, and as such are not influential on the Italian form and its development they have been excluded from this survey. (see St Gabrovec 1962 and Egg 1986).

There are marked differences in the quality and standard of manufacture, the form and the decoration applied to the Italian Negau helmet. However they fall into two main groups: those that have a poorly defined form, raised from thin sheet bronze to produce a helmet with a homogeneous thickness, these are generally undecorated; and those helmets that are well formed with a clearly defined shape, manufactured to produce a variable thickness, with the thicker portions coinciding with the most vulnerable parts of the helmet i.e. the apex and sides of the bowl, with carefully executed stamped and punched decoration.

Definition.

The Negau helmet is invariably made of bronze and is characterised by a tall, slightly bulbous and angular bowl, usually with a well defined medial ridge. This ridge or keel inclines the apex of the bowl sharply, to provide it with two opposed, glancing surfaces, designed to deflect blows. At the base of the bowl, the helmet is drawn in to form a strongly indented, concave and fitted brow-band. This in turn flares at its base to form a narrow but well defined flanged brim. The helmet has neither a neck-guard nor facial defences and was therefore solely designed to provide protection to the top of the head. In addition, with one questionable exception, the Negau helmet was never fitted with cheek-pieces. The majority of Italian Negau helmets were fitted with a separately manufactured perforated lining ring which was soldered inside the brim and it is to this that the chin-strap was attached.

FIG. 36



A NEGAU HELMET.

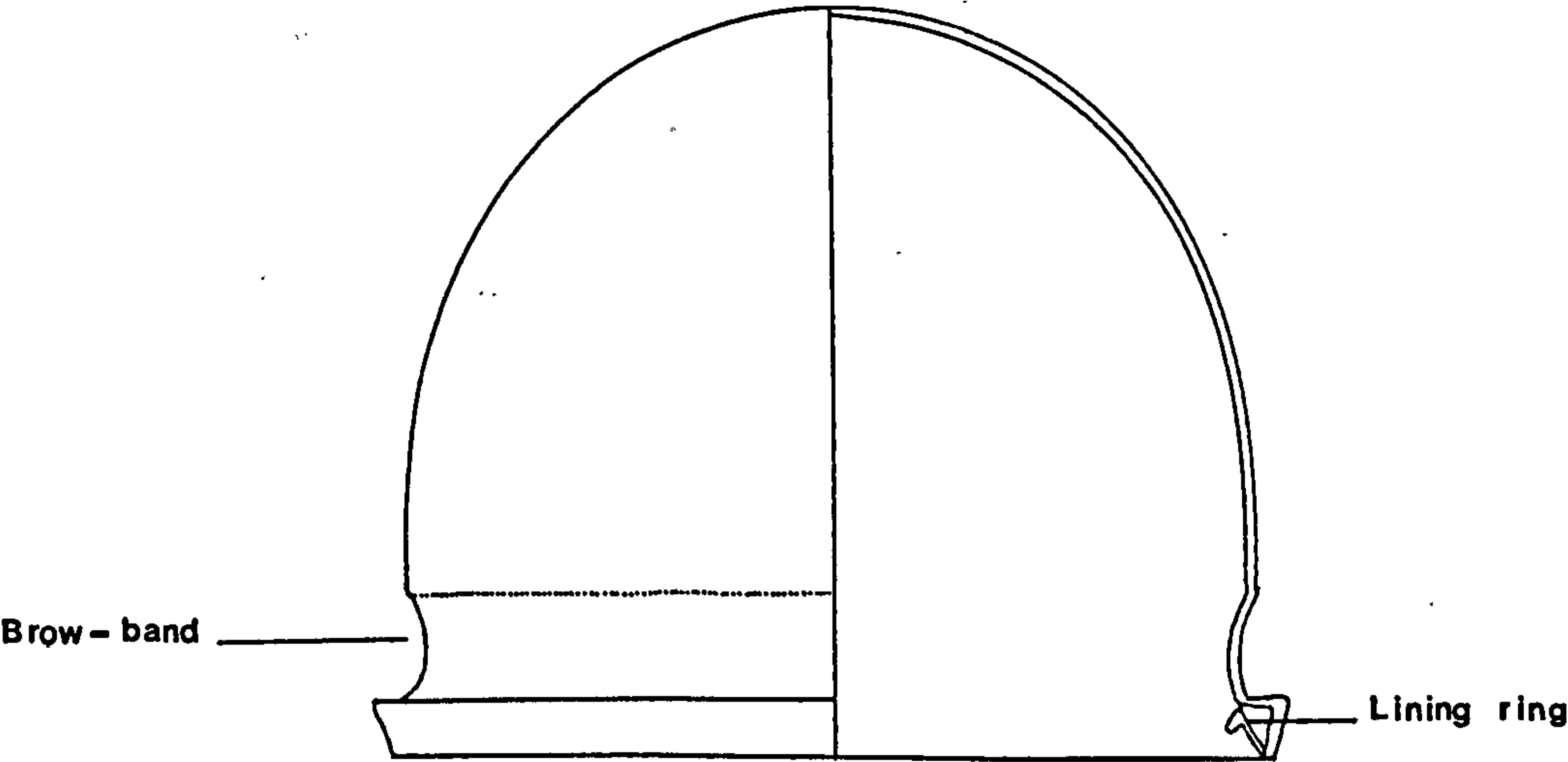


Table 1.

No.	Museum and Inventory No.:	Cat. No.:	Dimensions:			Provenance
			H.	W.	B.	
1.	Museo Nazionale Ancona, 15122,	(24)	180	260	230	Grottamare, Italy.
2.	Walters Art Gallery Baltimore, 54168.	(34)	188	268	220	Italy.
3.	Antiken Museum Berlin L.53.	(51)	200	270	243	Volterra, Italy
4.	Antiken Museum Berlin L.54.	(52)	193	268	234	Marche, Italy.
5.	Antiken Museum Berlin L.55.	(53)	192	263	242	Marche, Italy.
6.	Antiken Museum Berlin L.56.	(54)	166	260	224	Italy.
7.	Antiken Museum Berlin L.64.	(55)	204	269	232	Sicily.
8.	Antiken Museum Berlin L.65.	(56)	195	270	240	Sicily.
9.	Museo Civico Bologna R451.	(85)	217	287	256	Casalfiumanese, near Bologna, Italy.
10.	Museo Civico Bologna 20696.	(86)	187	265	220	Imola near Bologna Italy.
11.	Museo Archeologico di Forli, 27167.	(140)	205	265	245	Dovadola S. Ruffillo near Forli, Italy.
12.	Hermitage Leningrad B545.	(388)	185	250	225	Italy.
13.	British Museum, 250.	(178)	190	215	200	Olympia, Greece.
14.	Musée St. Pierre Lyons X924.	(204)	210	210	210	Italy.
15.	Reiss-Museum Mannheim No Inv. No.	(227)	194	246	223	Italy.
16.	Museo Poldi Pezzoli Milan, 2415.	(239)	200	243	214	Italy
17.	Bibliothèque Nationale Paris, 2021.	(311)	210	255	225	Italy.

No.	Museum and Inventory No.:	Cat. No.:	Dimensions:			Provenance
			H	W	B	
18.	Musée du Louvre Paris 1114.	(319)	190	260	235	Italy.
19.	University Museum Philadelphia, 1409.	(353)	204	270	240	Italy.
20.	Castel S. Angelo Rome No Inv. No.	(364)	200	251	220	Italy.
21.	M. A. N. St. Germain en Laye, 4761.	(383)	196	247	227	Italy.
22.	Musée Archéologique Aléria, 67/320.	(13)	200	245	210	Aléria, Corsica.
23.	Musée Archéologique Aléria, 67/330.	(14)	203	240	210	Aléria, Corsica.
24.	Musée Archéologique Aléria, 67/348.	(15)	205	250	210	Aléria, Corsica.
25.	Musée Archéologique Aléria, 67/462.	(16)	218	255	210	Aléria, Corsica.
26.	Museo Nazionale Ancona, 4364.	(25)	197	255	223	Numana, Marche, Italy.
27.	Museo Nazionale Ancona, 4369.	(26)	179	250	220	Numana, Marche, Italy.
28.	Museo Nazionale Ancona, 6725.	(27)	204	242	215	Pianello Castelbellino, near Ancona, Italy.
29.	Museo Nazionale Ancona, 9406.	(28)	215	240	215	Numana, Marche, Italy.
30.	Museo Nazionale Ancona, 31533.	(29)	220	244	222	Numana, Marche, Italy.
31.	Walters Art Gallery Baltimore, 54167.	(35)	215	244	244	Italy.
32.	Antiken Museum Berlin, Fr.1018.	(57)	204	232	216	Vulci, Toscana, Italy.
33.	Antiken Museum Berlin, 10392.	(58)	192	242	229	Italy.
34.	Antiken Museum Berlin, 10393.	(59)	198	237	218	Italy.

No.	Museum and Inventory No. ; Cat.	No. :	Dimensions:			Provenance
			H.	W.	D.	
35.	Antiken Museum Berlin, 10394,	(60)	226	247	223	Italy.
36.	Antiken Museum Berlin, Misc. 10399,	(61)	191	245	220	Unknown
37.	Antiken Museum Berlin, L.59.	(62)	211	253	217	Caserata near Capua, Campania, Italy.
38.	Antiken Museum Berlin, L.60.	(63)	214	229	207	Sulmona, Abruzzi, Italy.
39.	Antiken Museum Berlin, L.61.	(64)	189	223	192	Sulmona, Abruzzi, Italy.
40.	Antiken Museum Berlin, L.62.	(65)	209	237	243	Pisa, Livorno, Italy.
41.	Antiken Museum Berlin, L.63.	(66)	223	260	209	Istria, Yugoslavia.
42.	Antiken Museum Berlin, L.66.	(67)	203	240	226	Sicily.
43.	Museo Civico Bologna, 19964,	(87)	190	250	225	Montericco, Emilia Romagna, Italy.
44.	Museo Civico Bologna, No Inv. No.	(88)	Fragmentary			Certosa, Italy.
45.	Museo Civico Bologna No Inv. No.	(89)	219	240	235	Sta. Maria Maddalena di Cazzano, Italy.
46.	Museum of Fine Arts Boston, 1970.35,	(99)	227	256	240	Italy.
47.	Burg Rheinstein bei Bingen,	(104)	Destroyed in 1945.			Unknown.
48.	Museo Nazionale Chieti 5270,	(107)	200	250	233	Villamagna, Abruzzi, Italy.
49.	Museo Nazionale Chieti 10781,	(108)	200	245	223	Abruzzi, Italy.
50.	Museo Nazionale Chieti 10783,	(109)	200	227	210	Chieti, Abruzzi, Italy.
51.	National Museum Copenhagen, ABA 414,	(116)	220	250	225	Unknown.

No.	Museum and Inventory No.;	Cat. No.:	Dimensions:			Provenance
			H.	W.	B.	
52.	Museo Archeologico Florence, 1630.	(128)	220	245	225	Unknown.
53.	Museo Archeologico Florence, 1239	(129)	210	240	210	San Cerbone, Toscana, Italy.
54.	Museo Archeologico di Forli, 27163.	(141)	220	256	227	Dovadola S. Ruffillo near Forli, Italy.
55.	Museo Nazionale Maremma Grosseto, 70842.	(144)	207	230	202	Talmone, Toscana, Italy.
56.	Museo Civico Imola, 336A.	(146)	209	248	221	Morine di Sotto Imola, Emilia Romagna, Italy.
57.	Museo Civico Imola, 338A.	(147)	220	260	216	Casola Valsenio Monteroni, Emilia Romagna, Italy.
58.	Badisches Landesmuseum Karlsruhe, F435.	(150)	225	245	199	Etruria, Italy.
59.	Badisches Landesmuseum Karlsruhe, F436.	(151)	219	252	233	Etruria, Italy.
60.	Badisches Landesmuseum Karlsruhe, F438.	(152)	203	238	216	Paestum, Campania, Italy.
61.	Badisches Landesmuseum Karlsruhe, F439.	(153)	Fragmentary			Etruria, Italy.
62.	British Museum, 2717, 1878, 10-19, 302.	(179)	234	240	230	Canino Toscana, Italy.
63.	British Museum, 2718, 1975, 6-3, 5	(180)	190	240	222	Italy.
64.	British Museum, 2719, 1856, 12-26.	(181)	216	225	201	Italy.
65.	British Museum, 2720, 1975, 6-3, 4.	(182)	210	250	210	Italy.
66.	Royal Armouries, Tower of London, IV, 542.	(198)	220	262	200	Italy.
67.	Royal Armouries, Tower of London, IV, 543.	(199)	210	243	221	Italy.
68.	Staatliche Antiken- sammlung Munich, 70.	(250)	220	240	220	Italy.

No.	Museum and Inventory No.:	Cat. No.:	Dimensions:			Provenance
			H.	W.	B.	
69.	Getty Museum Malibu 73 AC 33.	(224)	181	240	219	Italy.
70.	Getty Museum Malibu 73 AC 34.	(225)	216	240	210	Italy.
71.	R.G.Z.M. Mainz. 039819.	(218)	209	242	226	Italy.
72.	Museo Nazionale Naples No Inv. No.	(259)	210	230	210	Egnazia, Apulia, Italy.
73.	Germanisches National- Museum Nuremburg. R388.	(292)	198	240	194	Italy.
74.	Archaeological Museum Olympia.	(294)	200	240	210	Olympia, Greece.
75.	Museo Civico Orvieto. 105.	(295)	200	225	190	Orvieto, Toscana, Italy.
76.	Museo Civico Orvieto. 1057.	(296)	230	240	210	Orvieto, Toscana, Italy.
77.	Ashmolean Museum Oxford. 1874.489.	(297)	200	245	223	Italy.
78.	Musée de l'Armée Paris. E10.	(301)	200	241	215	Southern Italy.
79.	Musée du Louvre Paris. 1110 (1373 NS796.)	(320)	210	232	204	Italy.
80.	Musée du Louvre Paris. 1111 (C6969.)	(321)	208	243	210	Italy.
81.	Musée du Louvre Paris. 1112 (C6683).	(322)	200	245	205	Italy.
82.	Musée du Louvre Paris. 1113 (C6721).	(323)	197	230	210	Italy.
83.	Musée du Louvre Paris. 1115.	(324)	200	250	192	Italy.
84.	Musée du Louvre Paris. 1116.	(325)	200	230	210	Italy.
85.	Musée du Louvre Paris. 1117. (C6978.)	(326)	199	245	230	Italy.

No.	Museum and Inventory No.;	Cat. No.:	Dimensions:			Provenance
			H.	W.	B.	
86.	Museo Archeologico Ravenna.	(361)	200	243	217	S. Martino in Gattara near Ravenna, Italy.
87.	Castel S. Angelo Rome No Inv. No.	(365)	200	242	201	Italy.
88.	Museo Preistorico Etnografico Rome. 5530.	(370)	200	236	209	Italy.
89.	Museo di Villa Giulia Rome.	(371)	214	240	221	Cavilupo, Vulci, Toscana, Italy.
90.	Museo di Villa Giulia Rome, 43577.	(372)	194	235	212	Gualdo Tadino, Marche, Italy.
91.	Museo di Villa Giulia Rome, 44399.	(373)	216	242	220	Montellane di Spoleto, Campo di Villa, Umbria Italy.
92.	Museo di Villa Giulia Rome, 44429.	(374)	226	241	226	Gualdo Tadino, Marche, Italy.
93.	Museo di Villa Giulia Rome, 44430.	(375)	200	245	210	Gualdo Tadino, Marche, Italy.
94.	M. A. N. St. Germain en Laye, 35577.	(384)	218	242	226	Italy.
95.	Armeria Reale Turin. All.	(405)	220	240	203	Italy.
96.	Museo Gregoriano Etrusco, Vatican, 12300	(408)	194	242	223	Italy.
97.	Museo Gregoriano Etrusco, Vatican, 12301	(409)	207	238	238	Italy.
98.	Museo Gregoriano Etrusco, Vatican, 12302	(410)	203	235	213	Italy.
99.	Museo Gregoriano Etrusco, Vatican, 12308	(411)	224	254	221	Italy.
100.	Museo Gregoriano Etrusco, Vatican, 12309	(412)	230	210	214	Italy.
101.	Museo Gregoriano Etrusco, Vatican, 12310	(413)	208	245	232	Pianmaiano Bomarzo Lazio, Italy.

No.	Museum and Inventory No.:	Cat. No.:	Dimensions:			Provenance
			H.	W.	B.	
102.	Naturhistorisches Museum Vienna, No Inv. No.	(422)	205	240	227	Italy.
103.	Naturhistorisches Museum Vienna, 46705,	(423)	Fragmentary			Vetulonia, Toscana, Italy.
104.	Whereabouts unknown, Sold Christies London 10.7.1974, Lot. 23,	(437)	216	240	210	Unknown.
105.	Whereabouts unknown, Sold Christies London 27.4.1976, Lot. 189.	(438)	203	240	210	Unknown.
106.	Whereabouts unknown, Sold Sothebys London 10.7.1979, Lot. 301.	(439)	241	245	220	Unknown.
107.	Whereabouts unknown, Sold Sothebys London 10.12.1984, Lot. 346.	(440)	203	240	225	Unknown.
108.	Whereabouts unknown, Sold Summa Galleries California, U.S.A 18.9.1981, Lot. 44.	(441)	215	227	210	Unknown.
109.	Antiken Museum Berlin, Fr 1014.	(68)	191	190	173	Unknown.
110.	Museo Nazionale Naples 5693.	(260)	225	230	210	Canosa, Puglia, Italy.
111.	Museo Nazionale Pontecagnano, 35888.	(356)	220	232	208	Cairano, Campania, Italy.
112.	Whereabouts unknown, Sold Christies London 31.10.1984, Lot. 295.	(442)	240	245	210	Unknown.

Distribution

Many of the extant Negau helmets were discovered in the 19th century and therefore their exact provenance is uncertain. Where it is recorded it is often given as little more than Italy or at best central Italy. Of the 112 surviving examples only 46 have more specific find spots and only 20 come from dated archaeological contexts. However given the limits of the evidence it is possible to make certain generalisations about the distribution of the Italian Negau helmet both spatially and temporally.

Only five helmets of type I have firm provenances, although the majority are recorded as having come from central Italy. A number of the provenanced finds and the undoubtedly Etruscan form of the lion's head crest-fixtures indicate Etruria as their place of origin (Brown 1966, 108.), although they have obvious links with the earlier forms of "pot" helmets from the Picenum region and indeed helmet No.1 from Grottomare and helmet No.5 both come from the Marche. Three helmets, Nos. 9, 10 and 11, come from the Romagna which Colonna (1974, 3ff.) suggests may reflect the Etruscan-Umbrian colonisation of the Po valley. Likewise the inscription on the helmet dedicated by Hieron at Olympia, No.12, also confirms an Etruscan origin for this type.

The only two finds that fall far outside this distribution are helmets 7 and 8 which are said to have come from Sicily. The presence of these two helmets may be explained by the widespread use of Italian mercenaries by the cities of Sicily and Magna Graecia at this period.

Helmets of type II have a similar distribution: the majority (Nos. 32, 40, 53, 55, 62, 75, 76, 89 and 103) originate from Etruria. It seems likely that the concentration of finds from the Emilia Romagna (Nos. 43, 45, 54, 56, 57 and 91.) also reflect direct Etruscan influence and are certainly connected with the Etruscan occupation of this area. The occurrence of four helmets, Nos. 22-25, of this type on Corsica in the necropolis at Aléria (Jehasse 1974) is also to be expected, especially in light of its close links to Etruscan trade and manufacturing industry. Likewise the find from Caserta near Capua No. 37 can be seen as dating from the time of the Etruscan colony.

There is a concentration of twelve helmets of this type (Nos. 26-30, 38, 39, 48, 50, 90, 92 and 93) in Picenum, where Etruscan armour forms were extremely popular (Stary 1981.) and where its occurrence must reflect trade routes and trading patterns as do the examples from Liguria, No. 44, and from Istria, No. 41.

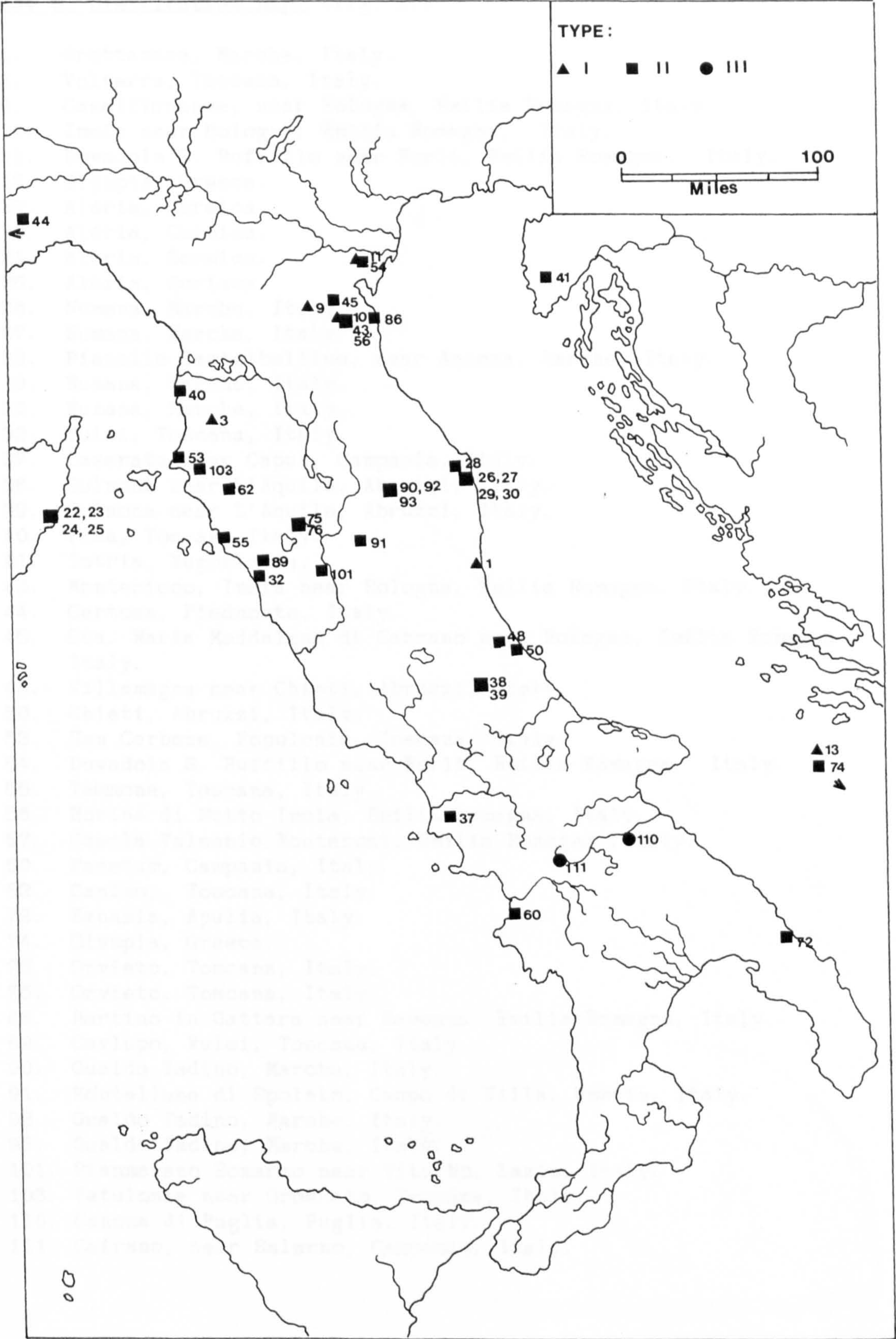
There are only two provenanced helmets of type III both of which come from southern Italy, helmet No. 110 from Canosa di Puglia and helmet 111 from Cairano near Salerno in Campania.

The general distribution of all three types of Negau helmets can be interpreted as showing an original localised area of production and distribution in the late 6th and early 5th century B.C. This is reflected in the provenances of helmets of type I, which are mostly restricted to central Italy with some examples coming from the Marche. This distribution is subsequently widened during the early years of the 5th century B.C. with the advent of helmets of type II. Like its predecessor type II exhibits a high concentration, over twenty-one helmets (nos. 32, 40, 43-5, 52-9, 62, 75, 76, 86, 89, 91, 99 and

103.), in Etruria and the Emila-Romagna but there are also a substantial number of helmets spreading into central and southern Picenum (Nos. 26-30, 38-9, 48-50, 90, 92 and 93.) with a few outlying helmets distributed from Lazio to Sicily (Nos. 60, 72 and 101).

The distribution of the final phase of the development of the Negau helmet exemplified by helmets of type III appears to be concentrated in the extreme south of Italy between the bay of Naples and Puglia. This southerly distribution taken in conjunction with the high *pilos*-like bowl of the helmet may perhaps be seen as a local southern Italian variant of this Etruscan helmet form.

FIG. 37 Distribution of Negau helmets



Key to Distribution Map. (fig. 37)

1. Grottamare, Marche, Italy.
3. Volterra, Toscana, Italy.
9. Casalfiumanese, near Bologna, Emilia Romagna, Italy.
10. Imola near Bologna, Emilia Romagna, Italy.
11. Dovadola S. Ruffillo near Forlì, Emilia Romagna, Italy.
13. Olympia, Greece.
22. Aléria, Corsica.
23. Aléria, Corsica.
24. Aléria, Corsica.
25. Aléria, Corsica.
26. Numana, Marche, Italy.
27. Numana, Marche, Italy.
28. Pianello Castelbellino, near Ancona, Marche, Italy.
29. Numana, Marche, Italy.
30. Numana, Marche, Italy.
32. Vulci, Toscana, Italy.
37. Caserata near Capua, Campania, Italy.
38. Sulmona near L'Aquila, Abruzzi, Italy.
39. Sulmona near L'Aquila, Abruzzi, Italy.
40. Pisa, Toscana Italy.
41. Istria, Yugoslavia.
43. Montericco, Imola near Bologna, Emilia Romagna, Italy.
44. Certosa, Piemonte, Italy.
45. Sta. Maria Maddalena di Cazzano near Bologna, Emilia Romagna , Italy.
48. Villamagna near Chieti, Abruzzi, Italy.
50. Chieti, Abruzzi, Italy.
53. San Cerbone, Populonia, Toscana, Italy.
54. Dovadola S. Ruffillo near Forlì, Emilia Romagna, Italy.
55. Talamone, Toscana, Italy.
56. Morine di Sotto Imola, Emilia Romagna, Italy.
57. Casola Valsenio Monteroni, Emilia Romagna , Italy.
60. Paestum, Campania, Italy.
62. Canino, Toscana, Italy.
72. Egnazia, Apulia, Italy.
74. Olympia, Greece.
75. Orvieto, Toscana, Italy.
76. Orvieto, Toscana, Italy.
86. Martino in Gattara near Ravenna, Emilia Romagna, Italy..
89. Cavlupo, Vulci, Toscana, Italy.
90. Gualdo Tadino, Marche, Italy.
91. Montellane di Spoleto, Campo di Villa, Umbria, Italy.
92. Gualdo Tadino, Marche, Italy.
93. Gualdo Tadino, Marche, Italy.
101. Pianmaiano Bomarzo near Viterbo, Lazio, Italy.
103. Vetulonia near Grosseto, Toscana, Italy.
110. Canosa di Puglia, Puglia, Italy.
111. Cairano, near Salerno, Campania, Italy.

FIG. 38

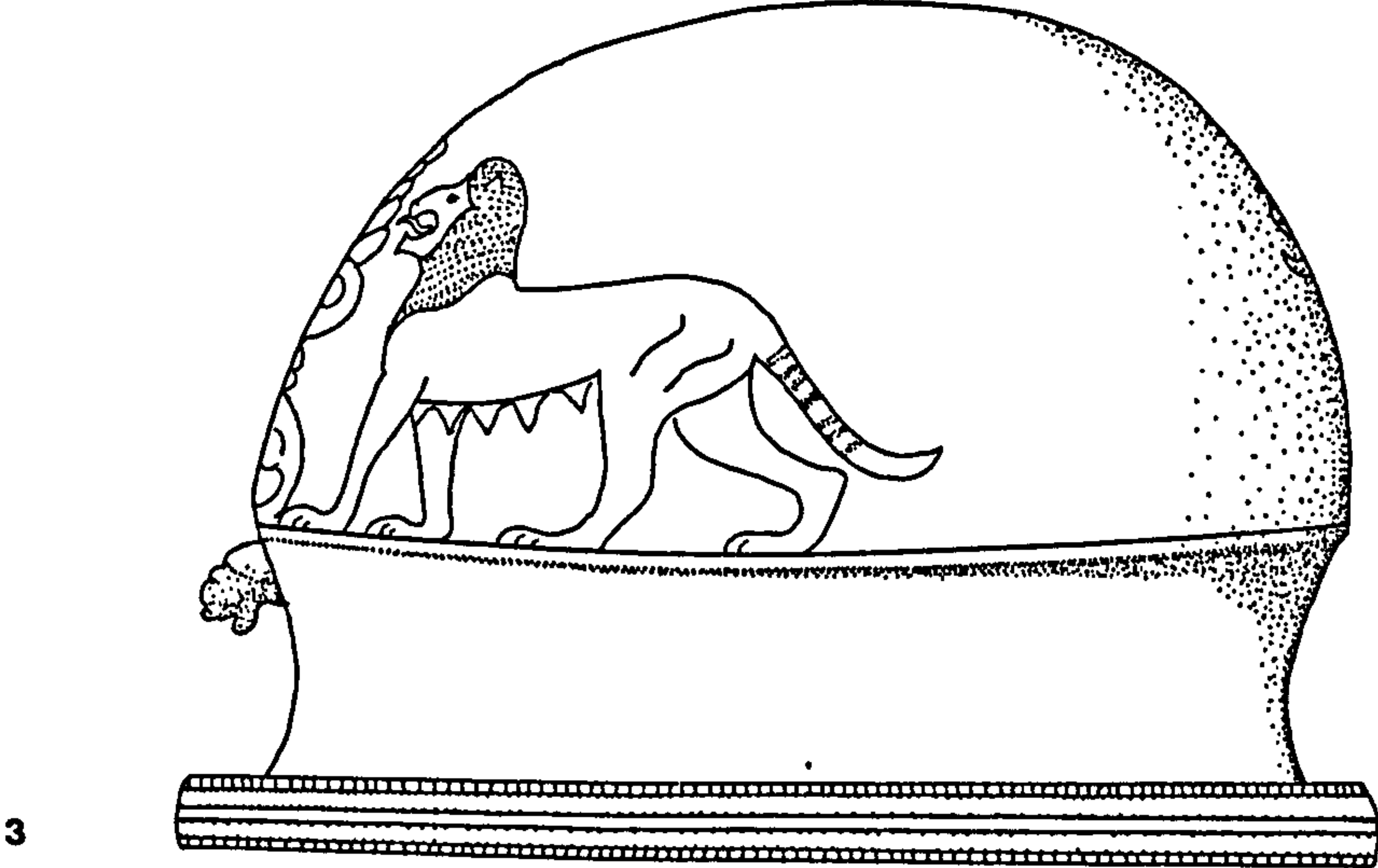
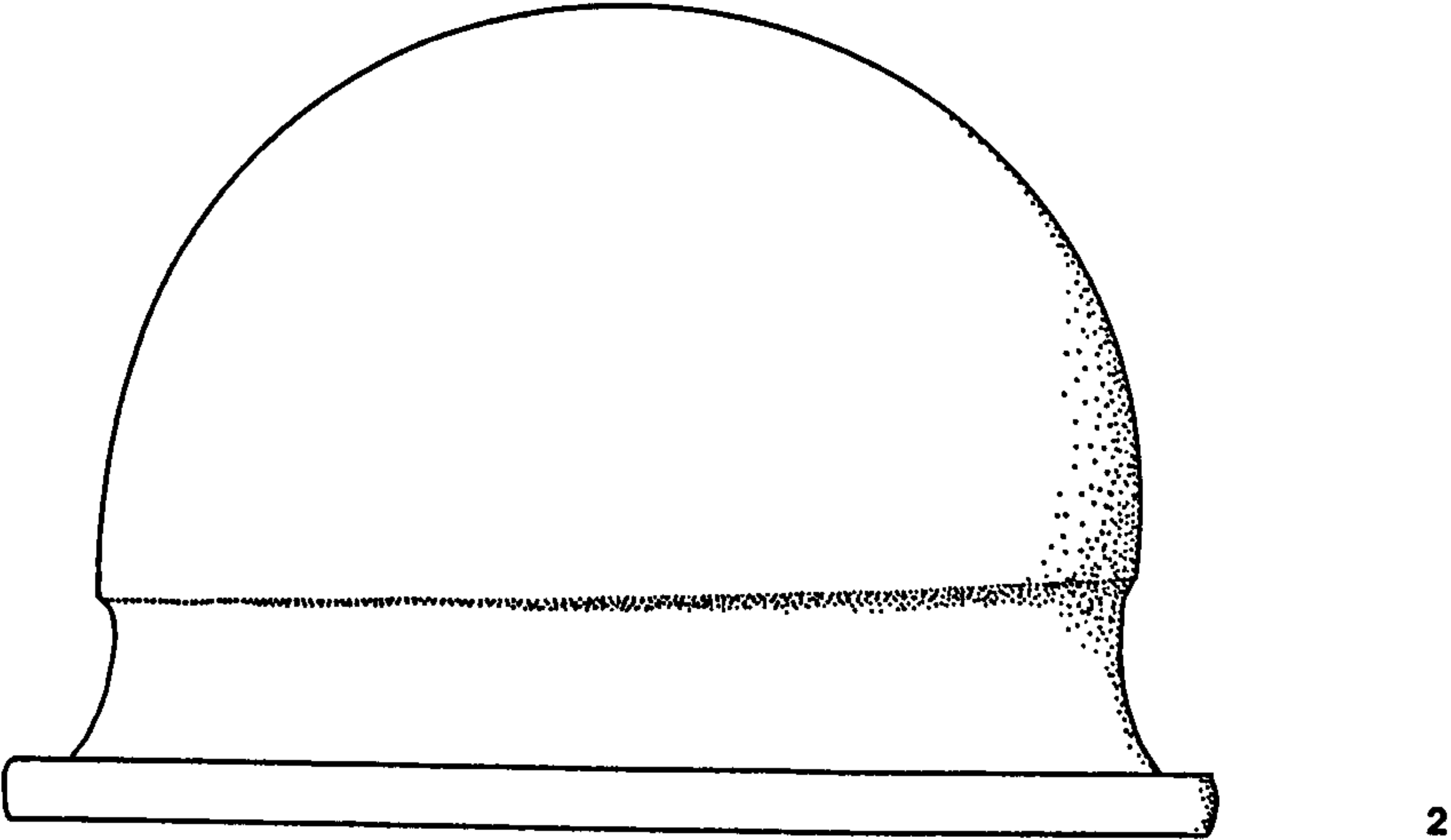
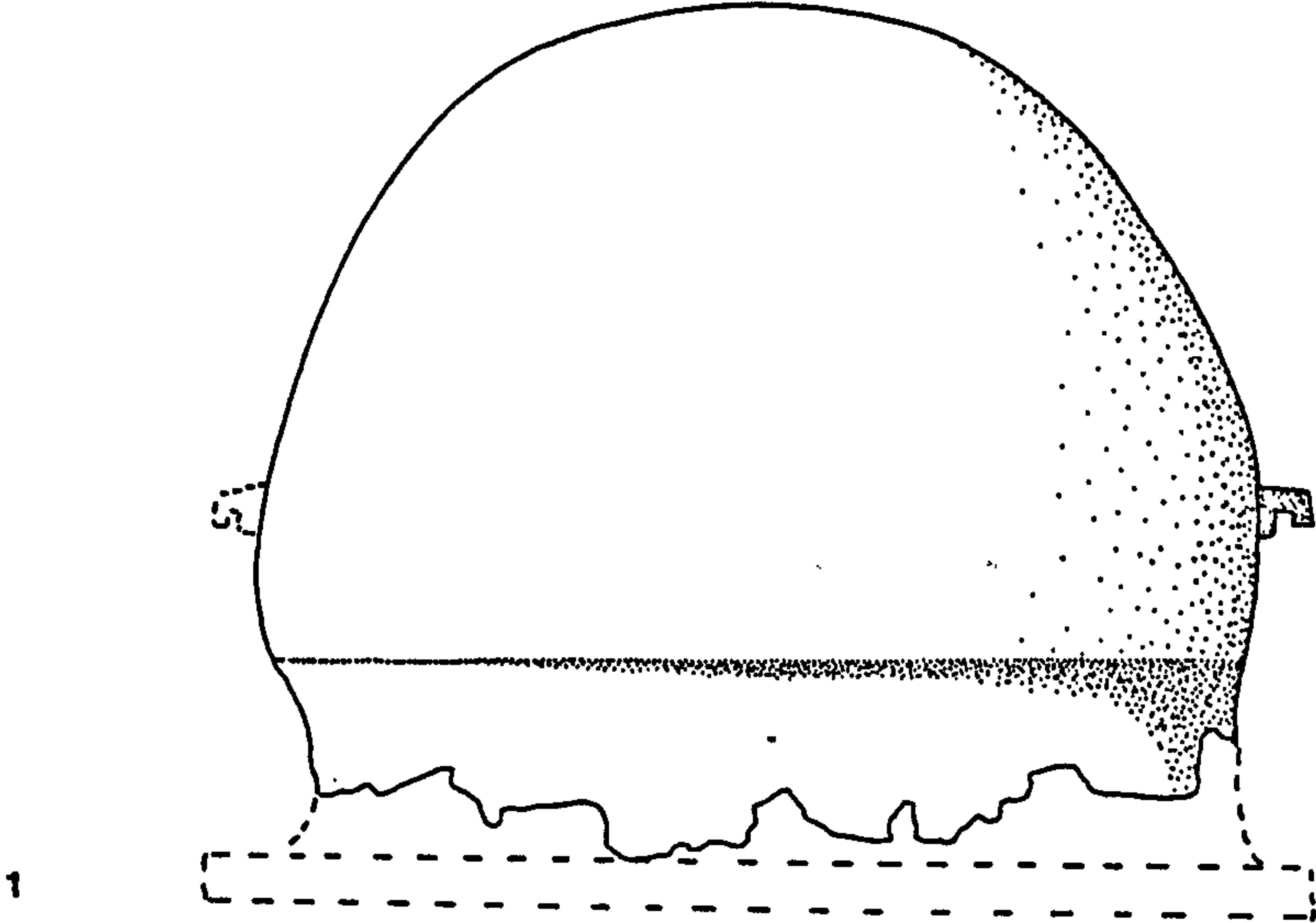
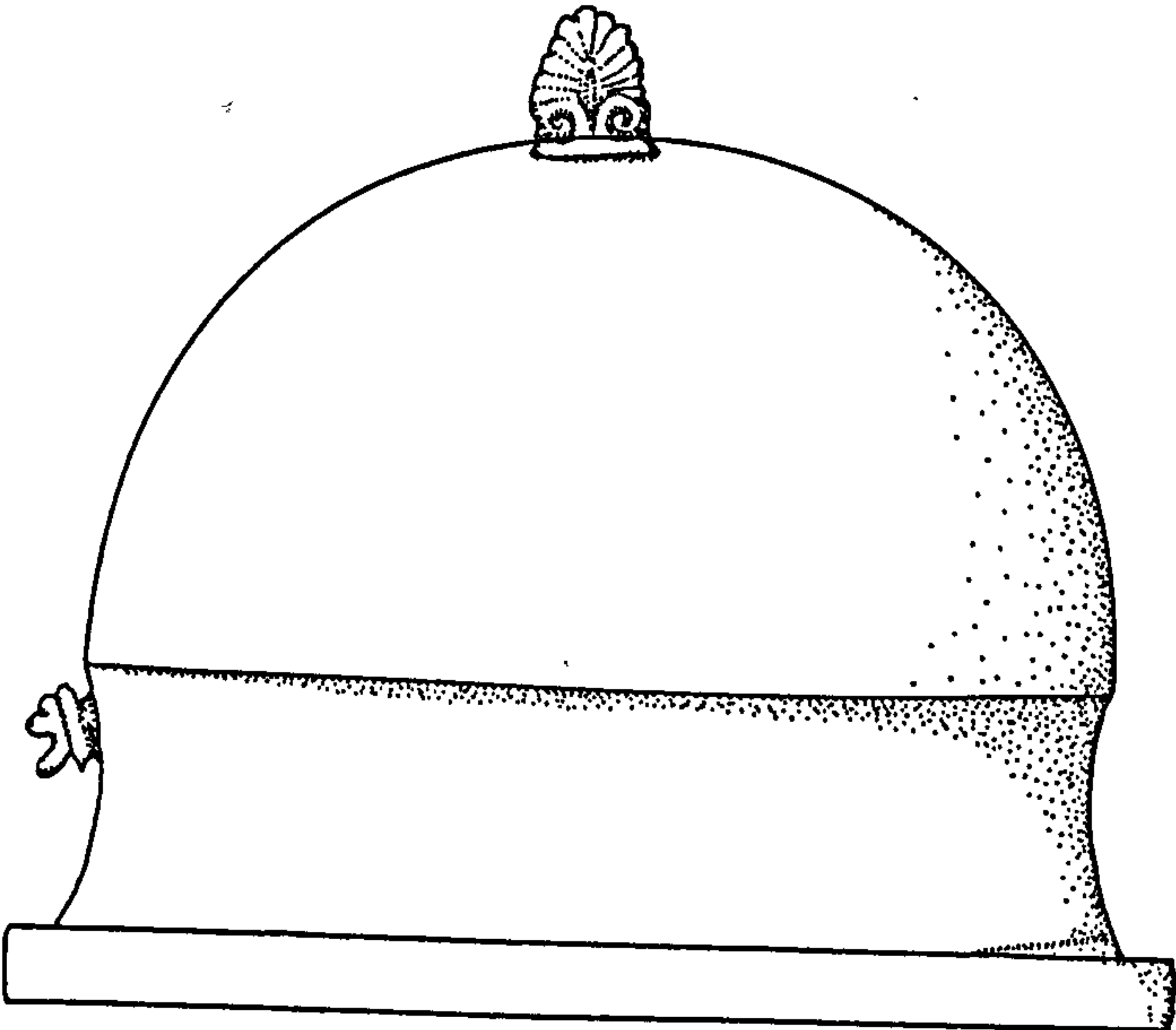
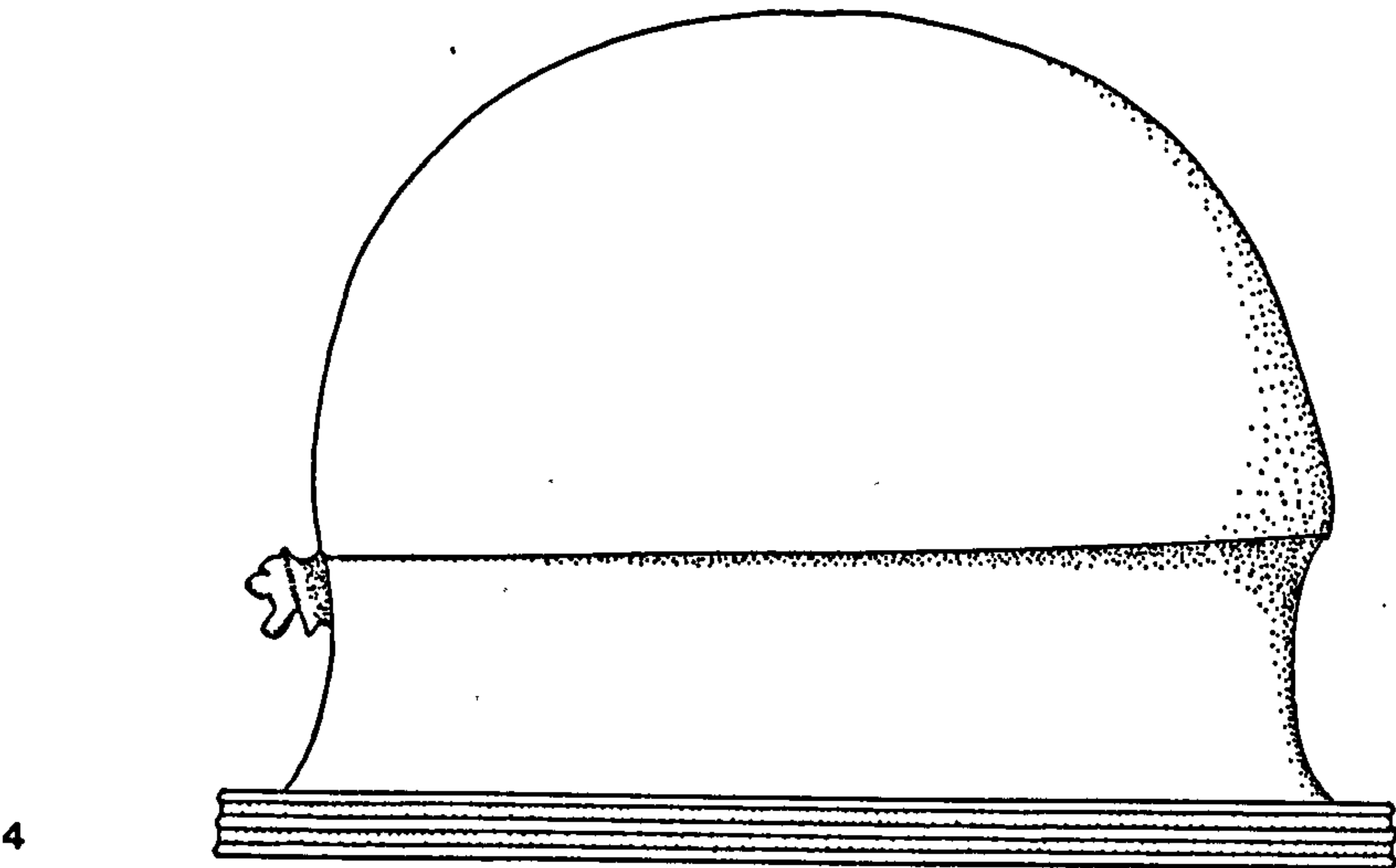
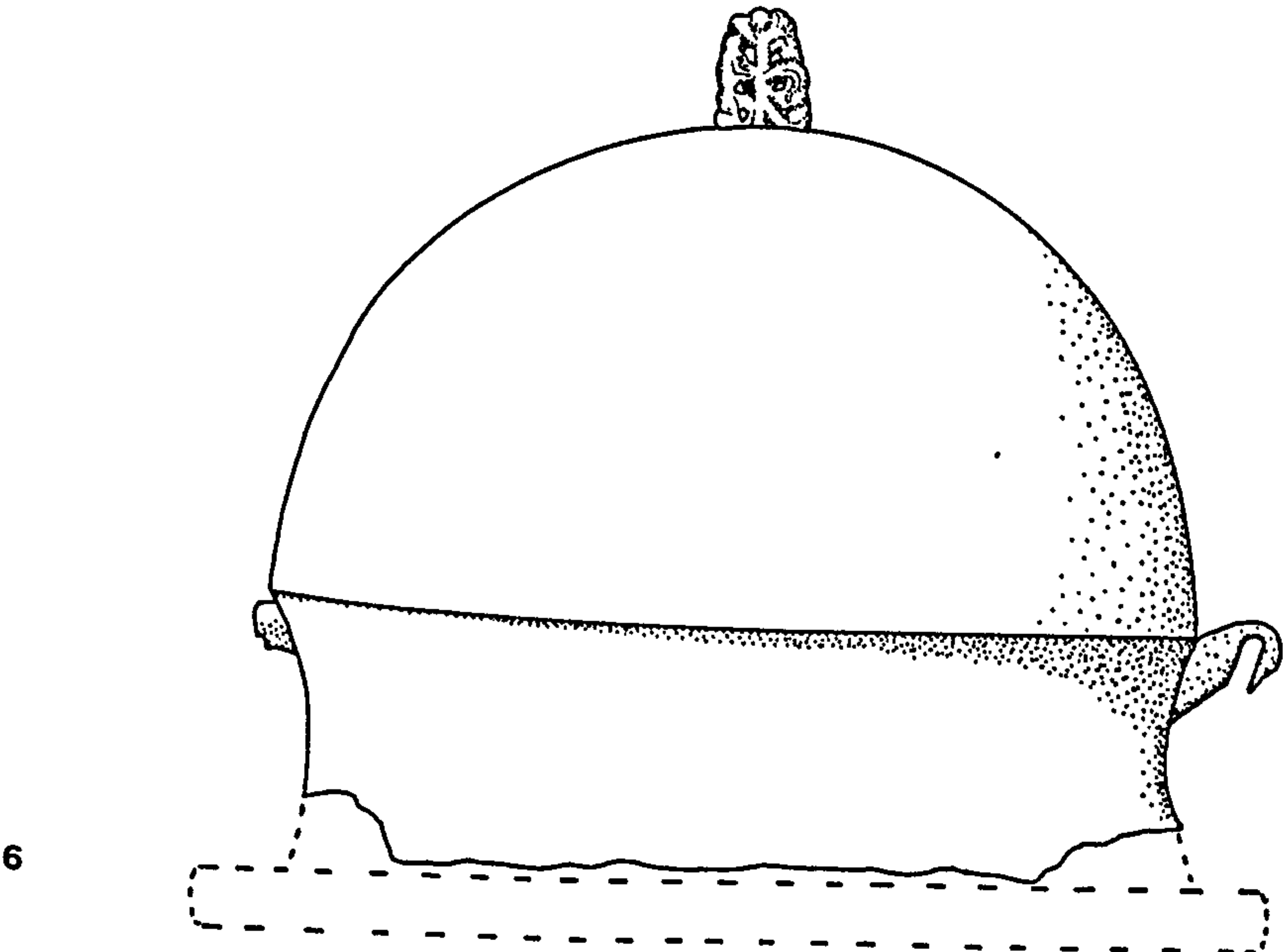


FIG. 39



5

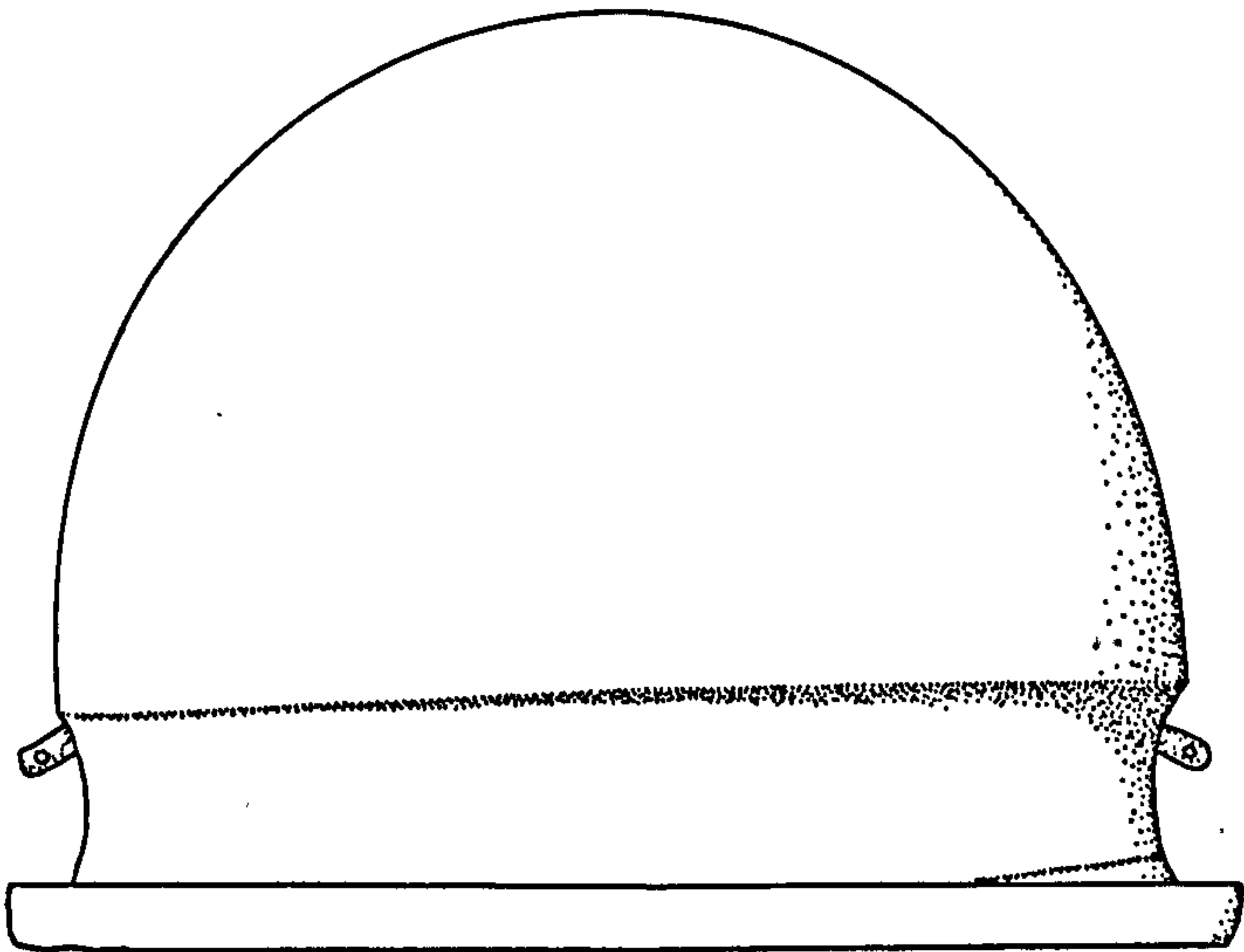


Manufacture

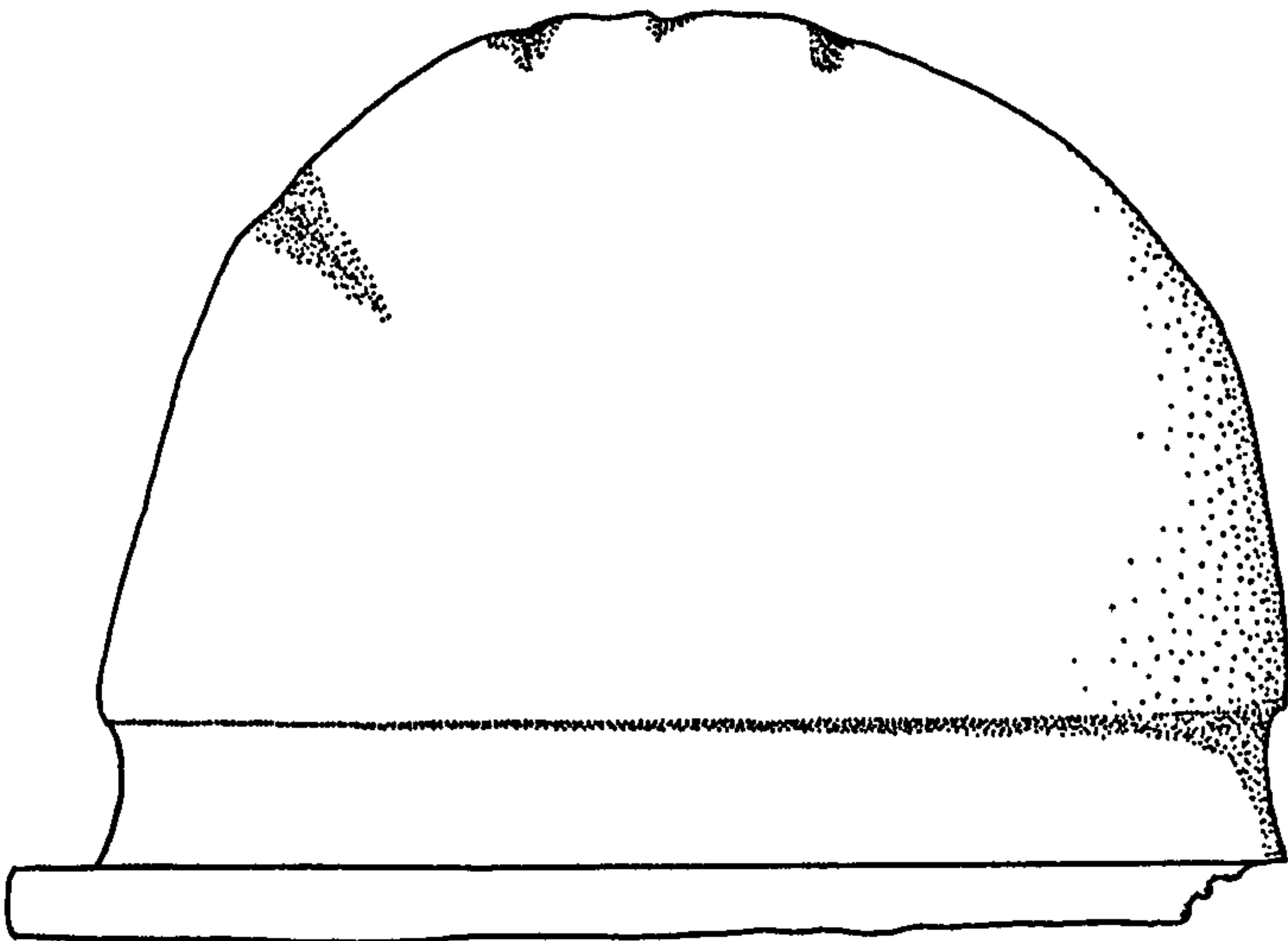
Although Egg (1986, 41.) has suggested that a number of the heaviest Negau helmets were pre-cast and then "raised" this must remain a matter of conjecture until sufficient analyses have been carried out to confirm or disprove this theory. However from close examination although not analysis it would appear to the writer that the vast majority were manufactured in the same manner as all other Italian-made bronze helmets i.e. starting from a sheet or billet of bronze which was first "hollowed" or "blocked" into a depression in a wooden block or anvil, then "raised" and planished over a variety of stakes and formers. Finally they were ground and polished and the decoration added either by chasing with gravers or in the case of a considerable number of surviving examples of type II with specially manufactured punches. All the zoomorphic and palmette crest-fixtures and supports, found on helmets of type I and II, were cast using the *ciré perdue* method and then either riveted or soldered to the bowl. In addition the vast majority of the surviving Negau helmets were fitted with an internal, pierced, lining ring, made from a single strip of bronze soldered together. This was soldered to the inside of the flanged brim. In most cases the intervening space was then filled with lead. Finally the lining was sewn into the ring.

FIG. 40

7



8



9

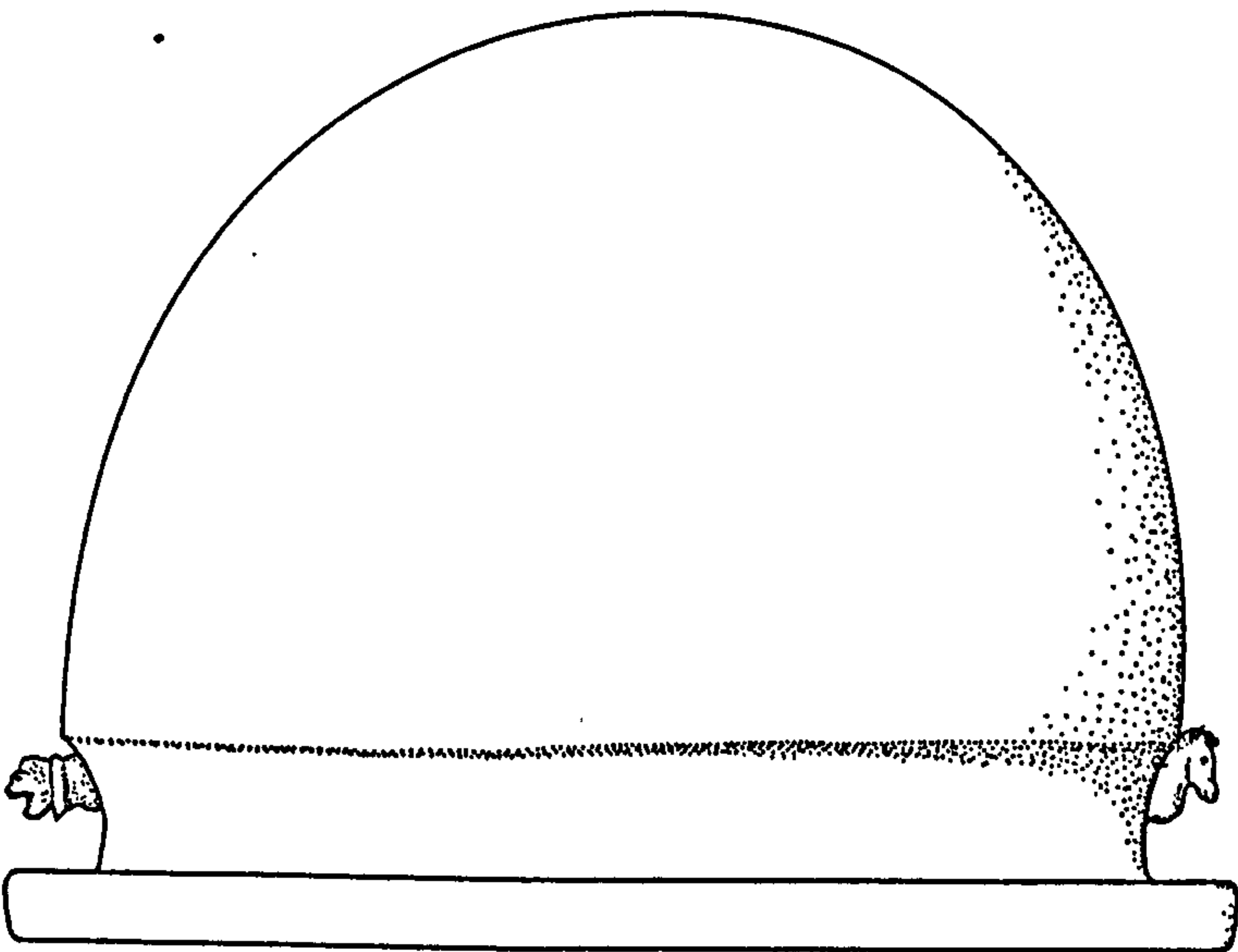


FIG. 41

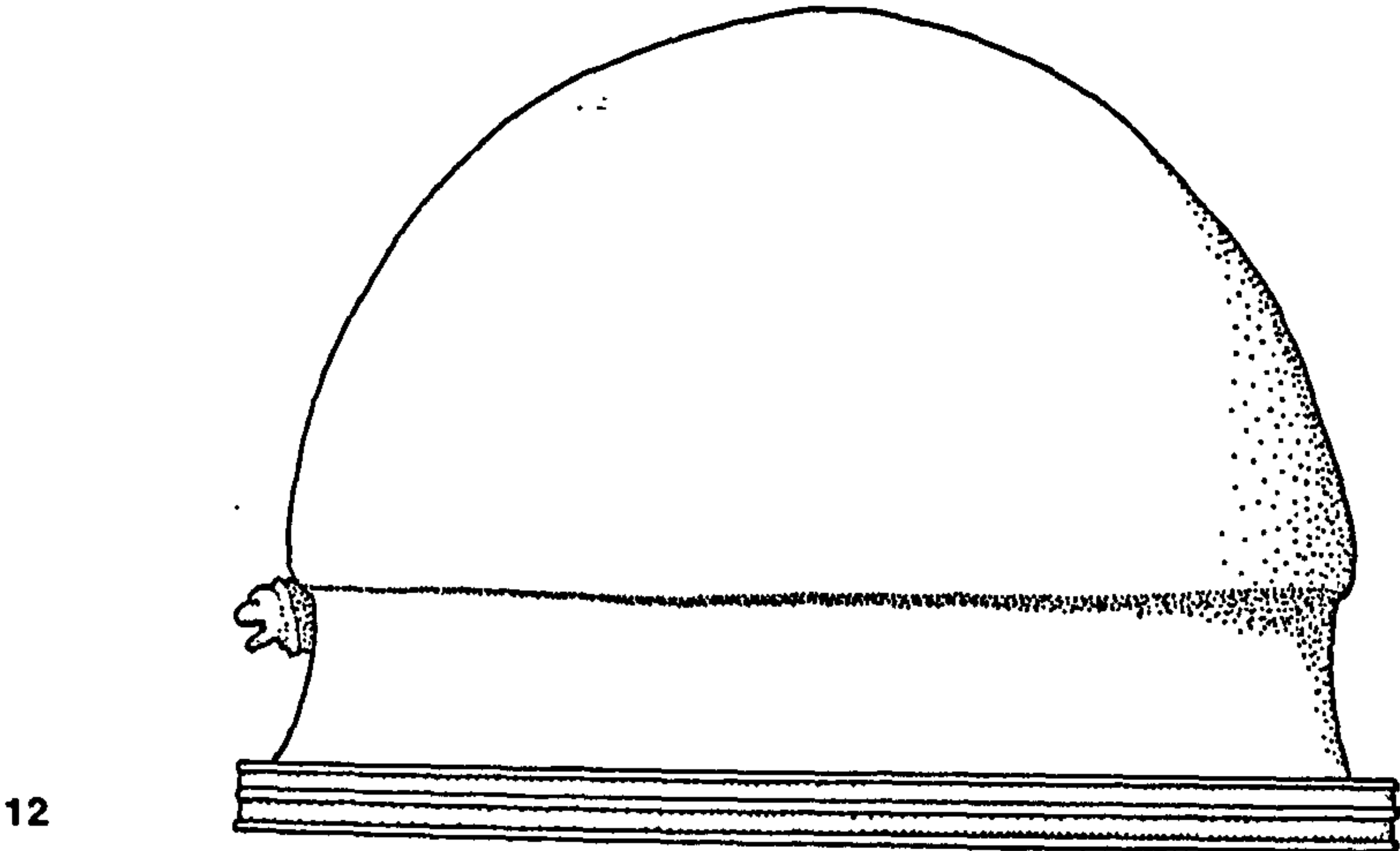
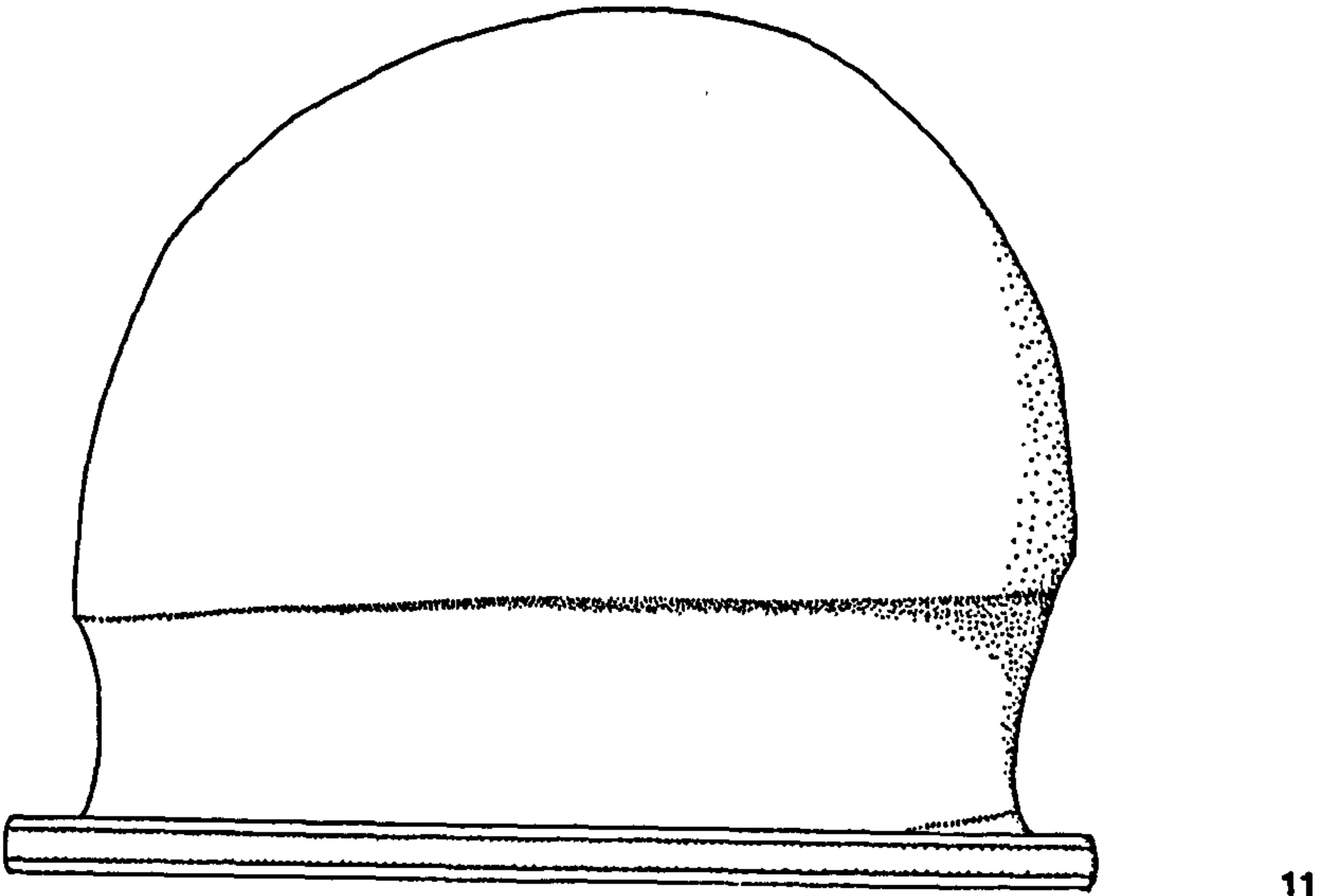
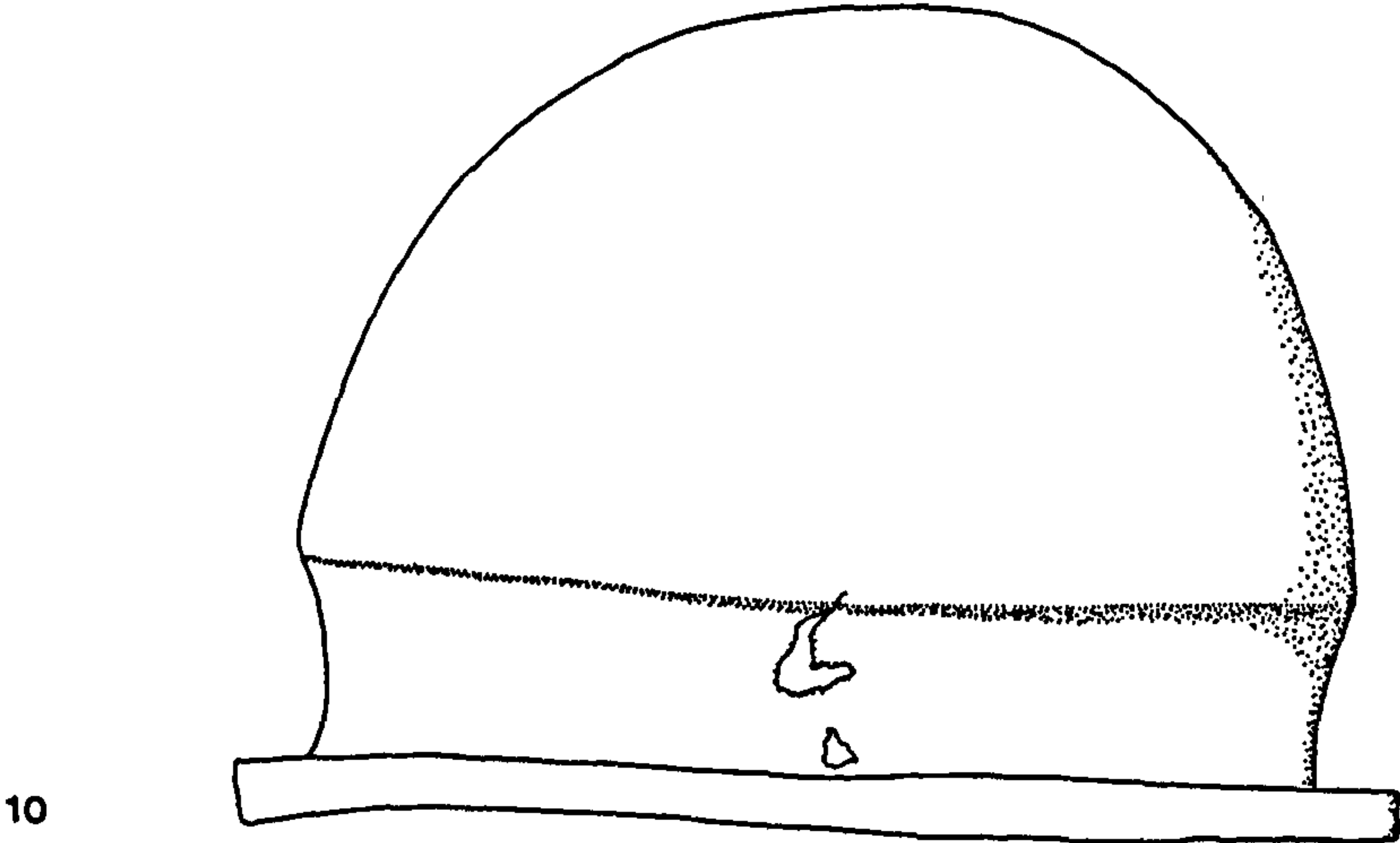


Table II: Typology

No.	Bowl Form:	Brow-band:	Brim:	Decoration:	Height mm.:	Width mm.:	Type:								
	Ang	Bul	Co	High	Low	W	N	N.	App	Inc.	>220	220<	>250	250<	
1.	*	*		*	*						*		*		I
2.	*	*		*	*						*		*		I
3.	*	*							*	*	*		*		I
4.	*	*		*		*		*	*		*		*		I
5.	*	*		*		*			*		*		*		I
6.	*	*		*		*			*		*		*		I
7.	*	*		*		*		*			*		*		I
8.	*	*		*		*		*			*		*		I
9.	*	*		*		*			*		*		*		I
10.	*	*		*		*		*			*		*		I
11.	*	*		*		*		*			*		*		I
12.	*	*		*		*			*	*	*		*		I
13.	*	*		*		*		*			*		*		I
14.	*	*		*		*		*			*		*		I
15.	*	*		*		*				*	*		*		I
16.	*	*		*		*		*			*		*		I
17.	*	*		*		*		*			*		*		I
18.	*	*		*		*		*			*		*		I
19.	*	*		*		*			*		*		*		I
20.	*	*		*		*		*			*		*		I
21.	*	*		*		*		*			*		*		I
22.	*			*		*	*				*		*		II
23.	*			*		*	*				*		*		II
24.	*			*		*	*				*		*		II
25.	*			*		*	*				*		*		II
26.	*			*		*			*		*		*		II
27.	*			*		*			*		*		*		II
28.	*			*		*			*		*		*		II
29.	*			*		*	*				*		*		II
30.	*			*		*			*		*		*		II
31.	*			*		*			*		*		*		II
32.	*			*		*	*				*		*		II
33.	*			*		*	*				*		*		II
34.	*			*		*	*				*		*		II
35.	*			*		*	*				*		*		II
36.	*			*		*	*				*		*		II
37.	*			*		*			*		*		*		II
38.	*			*		*			*		*		*		II
39.	*			*		*			*		*		*		II
40.	*			*		*	*				*		*		II
41.	*			*		*	*				*		*		II
42.	*			*		*	*				*		*		II
43.	*			*		*	*				*		*		II
44.	*			*		*	*				*		*		II
45.	*			*		*			*		*		*		II
46.	*			*		*			*		*		*		II
47.	*			*		*		*			*		*		II
48.	*			*		*			*		*		*		II
49.	*			*		*	*				*		*		II

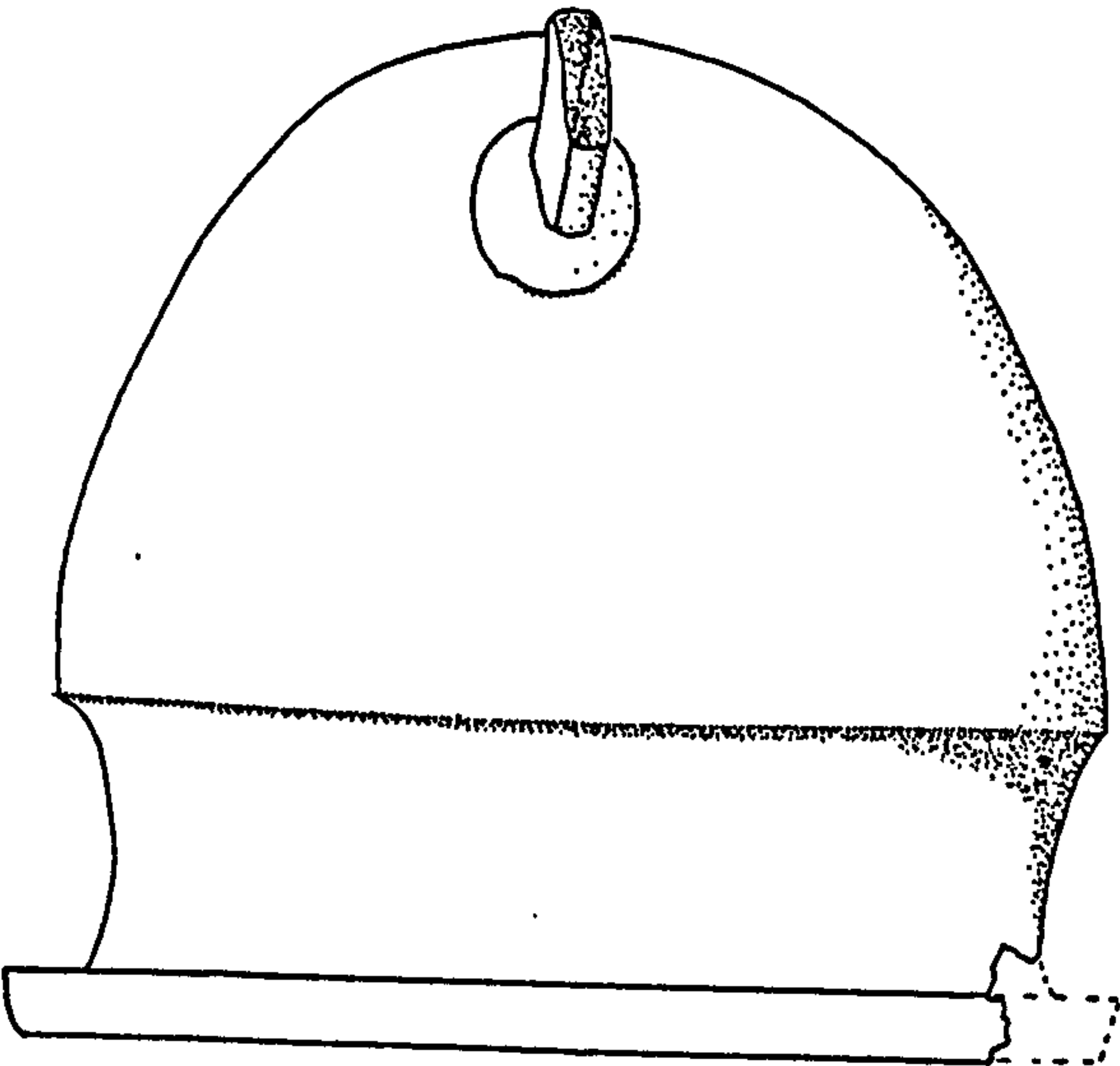
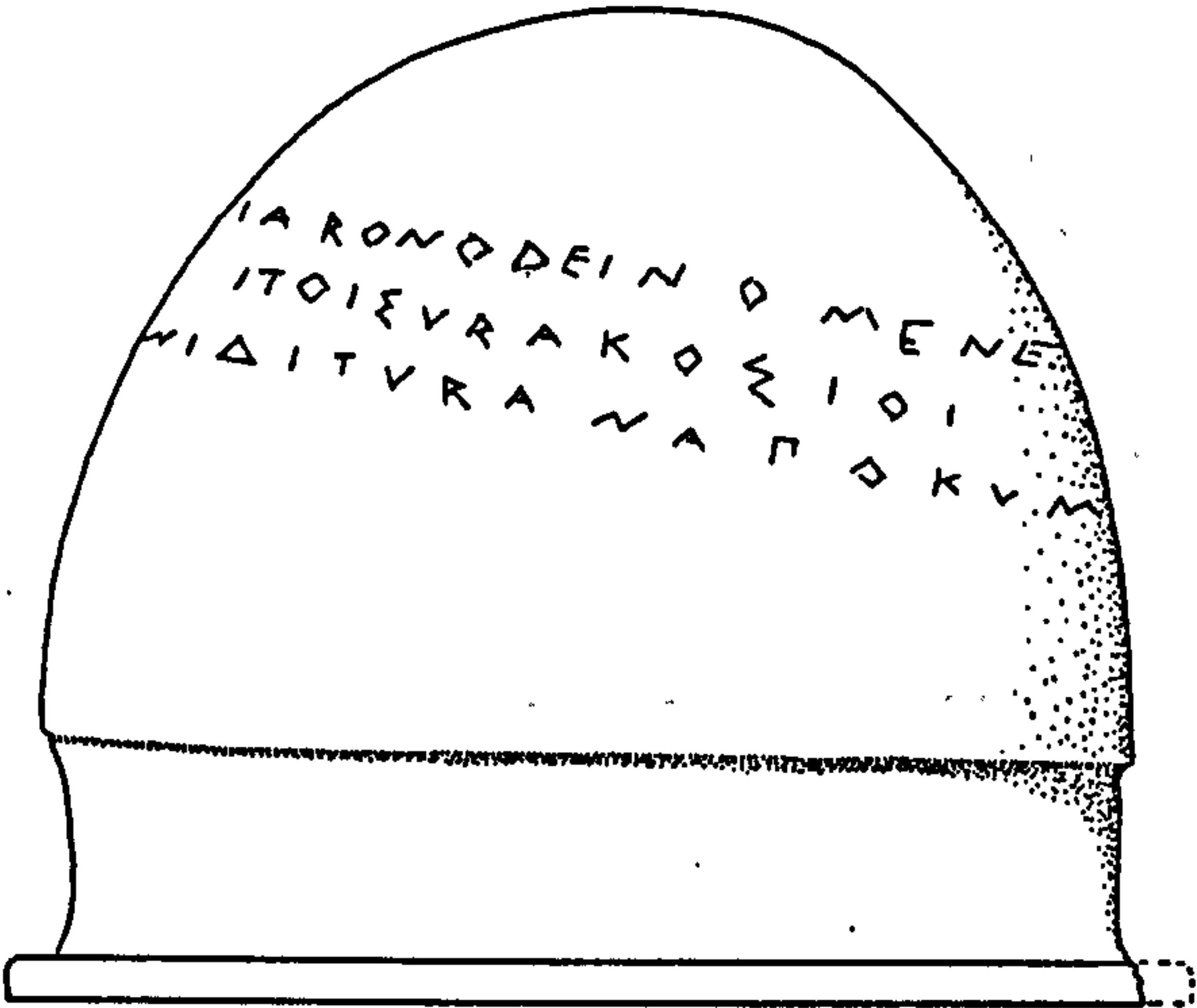
No.	Bowl Form:	Brow-band:	Brin:	Decoration:	Height mm.:	Width mm.:	Type:								
	Ang	Bul	Co	High	Low	W	N	N	App	Inc.	>220	220<	>250	250<	
50.	*				*		*		*		*		*		II
51.	*				*		*		*		*		*		II
52.	*				*		*	*	*		*		*		II
53.	*				*		*		*		*		*		II
54.	*				*		*		*		*		*		II
55.	*				*		*		*		*		*		II
56.	*				*		*		*		*		*		II
57.	*				*		*		*		*		*		II
58.	*				*		*	*	*		*		*		II
59.	*				*		*	*	*		*		*		II
60.	*				*		*	*	*		*		*		II
61.	*				*		*	*	*		*		*		II
62.	*				*		*		*		*		*		II
63.	*				*		*		*		*		*		II
64.	*				*		*		*		*		*		II
65.	*				*		*		*		*		*		II
66.	*				*		*	*	*		*		*		II
67.	*				*		*	*	*		*		*		II
68.	*				*		*	*	*		*		*		II
69.	*				*		*		*		*		*		II
70.	*				*		*	*	*		*		*		II
71.	*				*		*	*	*		*		*		II
72.	*				*		*		*		*		*		II
73.	*				*		*	*	*		*		*		II
74.	*				*		*	*	*		*		*		II
75.	*				*		*		*		*		*		II
76.	*				*		*	*	*		*		*		II
77.	*				*		*		*		*		*		II
78.	*				*		*		*		*		*		II
79.	*				*		*	*	*		*		*		II
80.	*				*		*		*		*		*		II
81.	*				*		*	*	*		*		*		II
82.	*				*		*	*	*		*		*		II
83.	*				*		*		*		*		*		II
84.	*				*		*		*		*		*		II
85.	*				*		*		*		*		*		II
86.	*				*		*	*	*		*		*		II
87.	*				*		*	*	*		*		*		II
88.	*				*		*	*	*		*		*		II
89.	*				*		*		*	*	*		*		II
90.	*				*		*	*	*		*		*		II
91.	*				*		*		*		*		*		II
92.	*				*		*		*		*		*		II
93.	*				*		*	*	*		*		*		II
94.	*				*		*	*	*		*		*		II
95.	*				*		*	*	*		*		*		II
96.	*				*		*	*	*		*		*		II
97.	*				*		*	*	*		*		*		II
98.	*				*		*		*		*		*		II
99.	*				*		*	*	*		*		*		II
100.	*				*		*	*	*		*		*		II

No.	Bowl Form:		Brow-band:		Brim:		Decoration:		Height mm.:		Width mm.:		Type:	
	Ang	Bul Co	High	Low	W	N	N	App	Inc.	>220	220<	>250		250<
101.	*			*		*			*	*		*		II
102.	*			*		*			*	*		*		II
103.	*			*		*			*	*		*		II
104.	*			*		*	*			*		*		II
105.	*			*		*	*			*		*		II
106.	*			*		*	*			*		*		II
107.	*			*		*	*			*		*		II
108.	*			*		*	*			*		*		II
109.		*		*		*	*			*		*		III
110.		*		*		*		*		*		*		III
111.		*		*		*	*			*		*		III
112.		*		*		*		*			*	*		III

KEY: Ang-Angular, Bul- Bulbous, Co- Conical; Brim: W- wide N- Narrow;
 Decoration: N- None, App- Applied, Inc- Incised,

FIG. 42

13



14

15

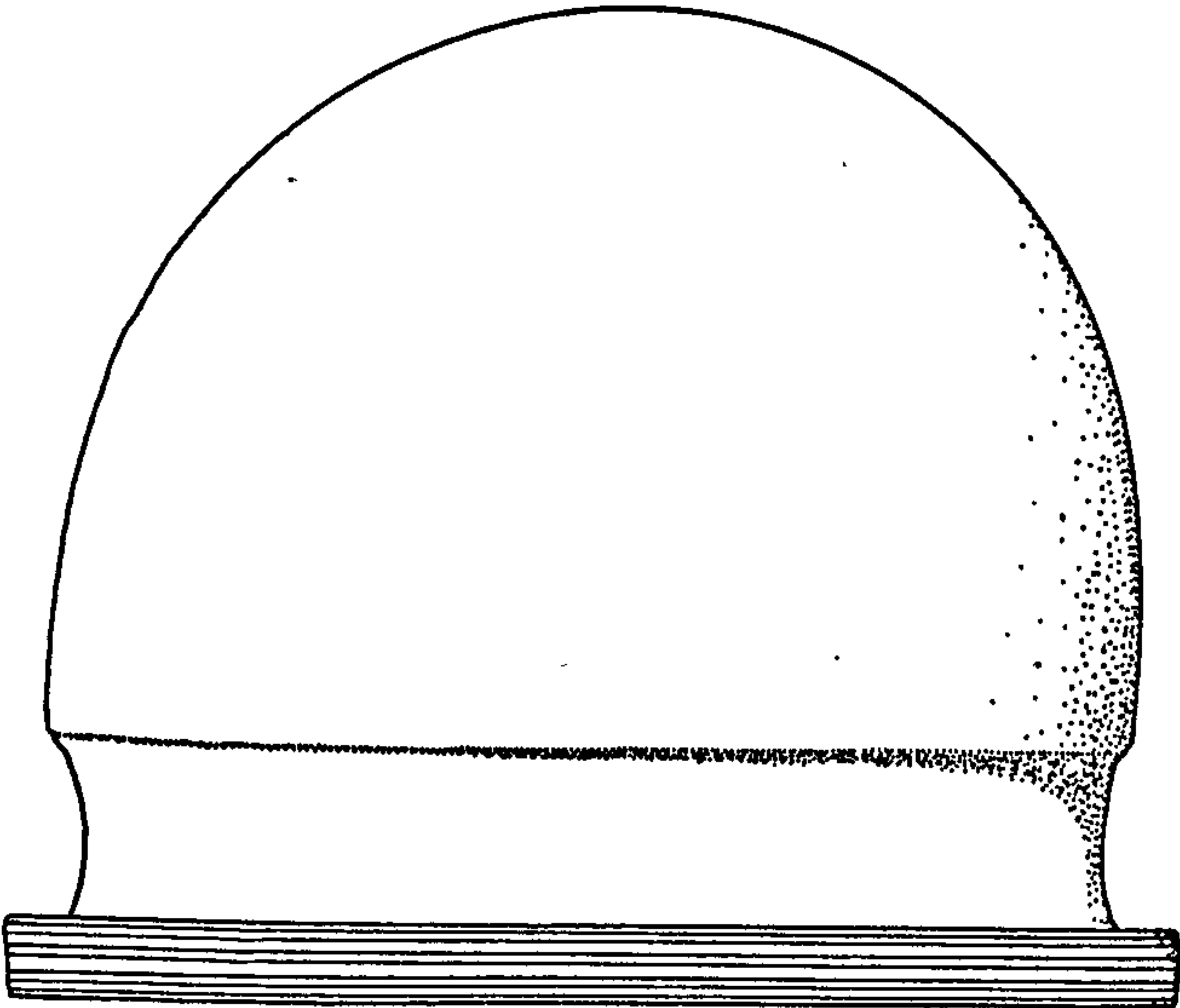
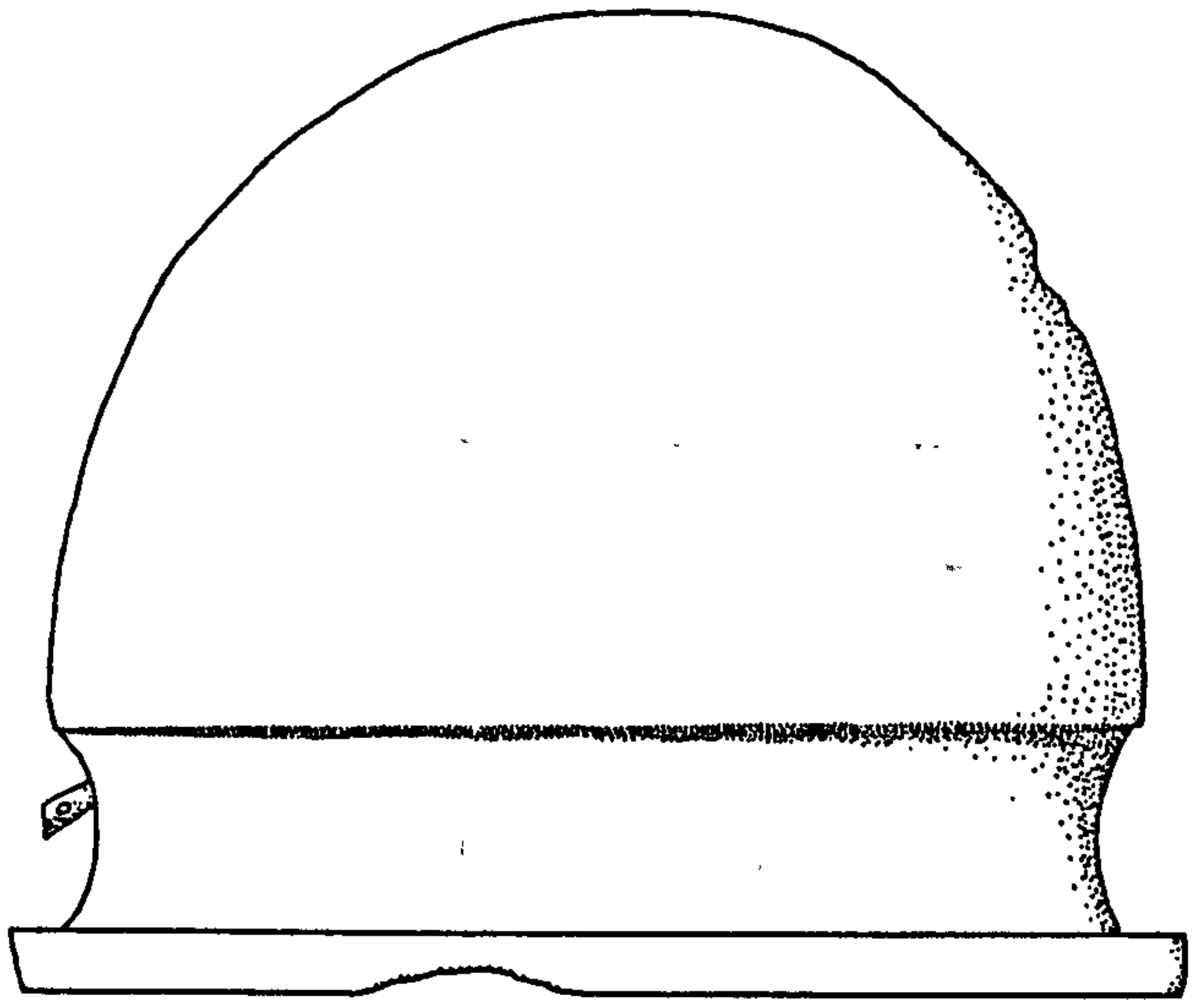
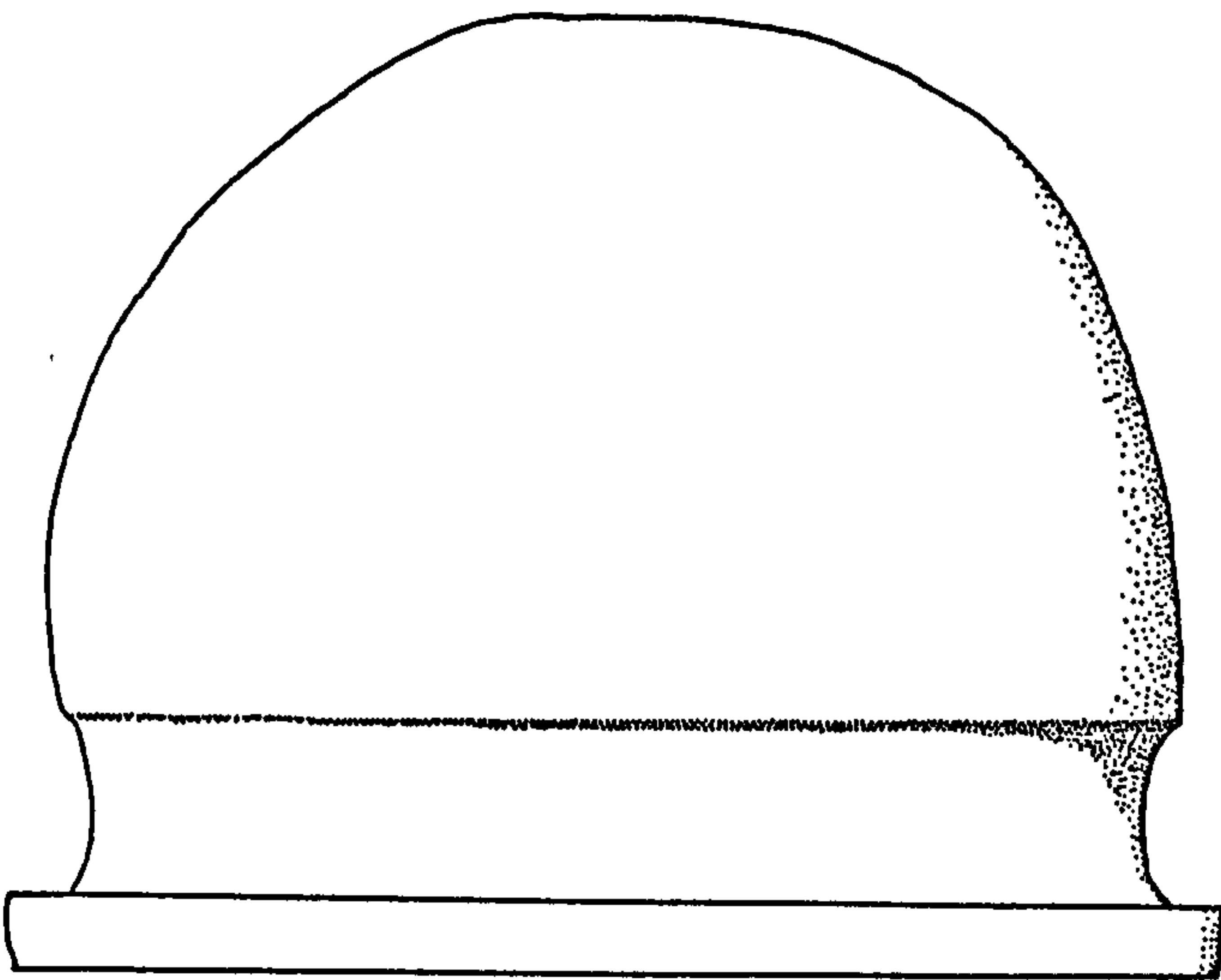


FIG. 43

16



17



18

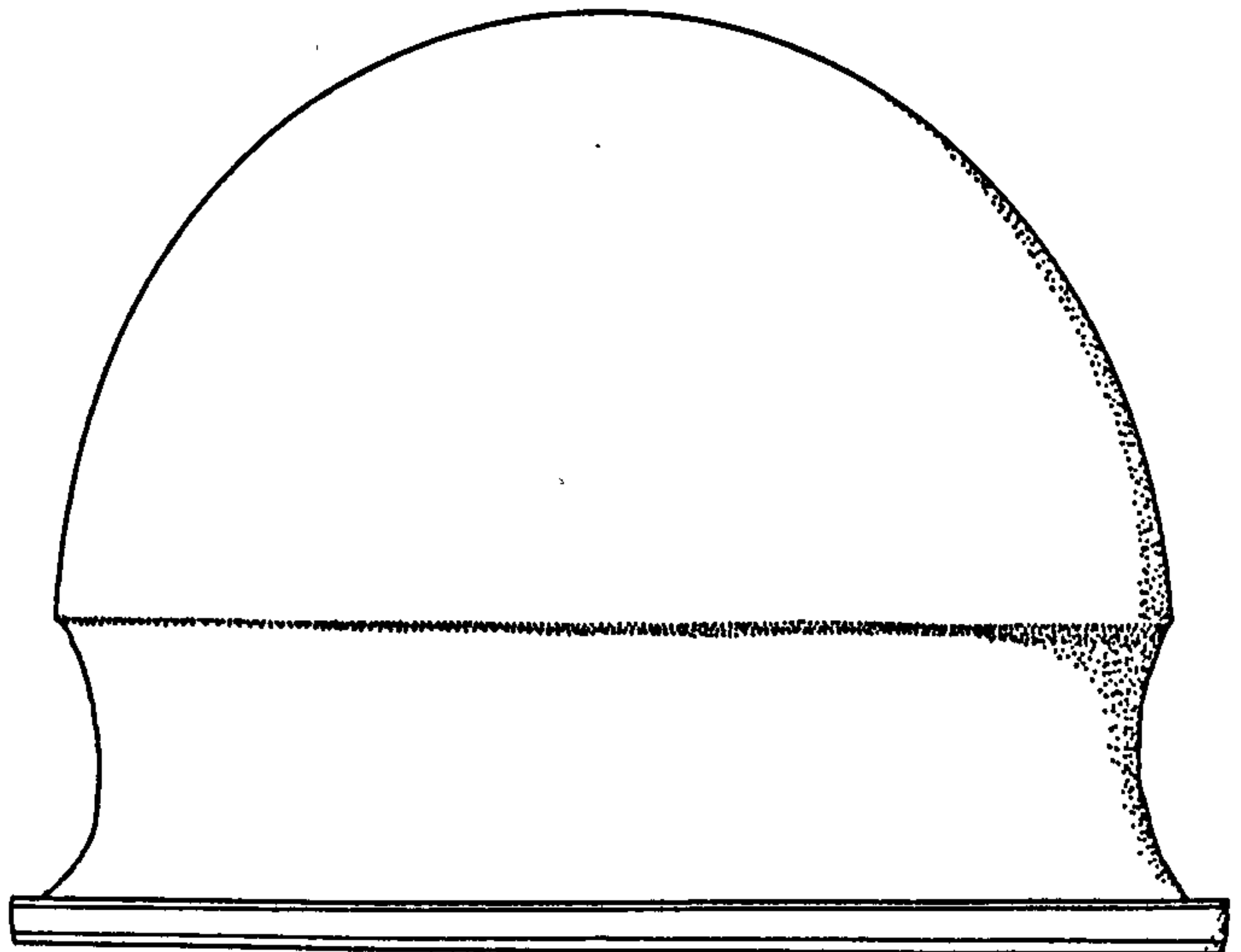


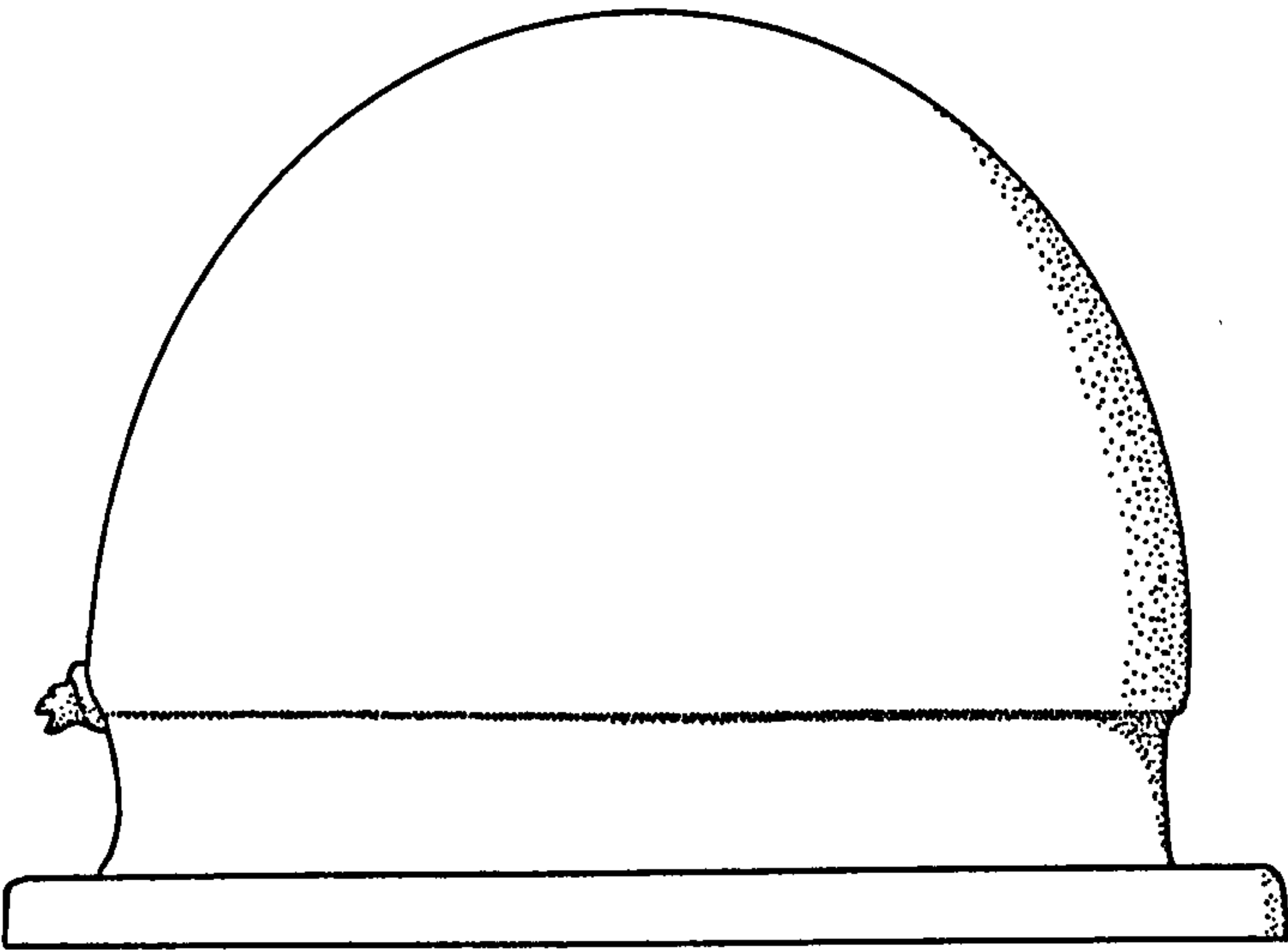
Table III: Dating Evidence.

No.	Context:	Provenance:	Suggested Date B.C.
9.	Early 5th century B.C. dated by associated ceramics	A grave at Casalfiumanese, Emilia Romagna, Italy	-
10.	Early 5th century B.C. dated by an associated Attic kylix crater.	Grave 72 at Imola, Emilia Romagna, Italy	-
13.	Dated by dedication by Hieron from the spoils of the battle of Cumae 474 B.C.	Olympia, Greece	Early 5th
22.	Early 5th century B.C. dated by associated ceramics.	Grave 89 at Aléria, Corsica.	-
23.	Early 5th century B.C. dated by associated ceramics.	Grave 90 at Aléria, Corsica.	-
24.	Early 5th century B.C. dated by associated ceramics.	Grave 91 at Aléria, Corsica.	-
25.	Early 5th century B.C. dated by associated ceramics.	Grave 92 at Aléria, Corsica.	-
30.	Mid 5th century B.C. dated by associated ceramics.	Grave 520 at Numana near Ancona, Marche, Italy.	-
44.	Mid 5th century B.C. dated by associated Red-figure Kantharos Krater by the Eretria painter.	Grave 180 at Certosa Piedmonte, Italy.	-
54.	Early 5th century B.C. dated by associated ceramics.	Grave 3 at Dovadola S. Ruffillo, Emilia Romagna, Italy.	-
56.	Mid 5th century B.C. dated by associated ceramics.	Grave 9 Imola, near Bologna, Emilia Romagna, Italy.	-
57.	5th century B.C. dated by associated ceramics	Grave 2 at Casola Valsenio, Emilia Romagna, Italy.	-

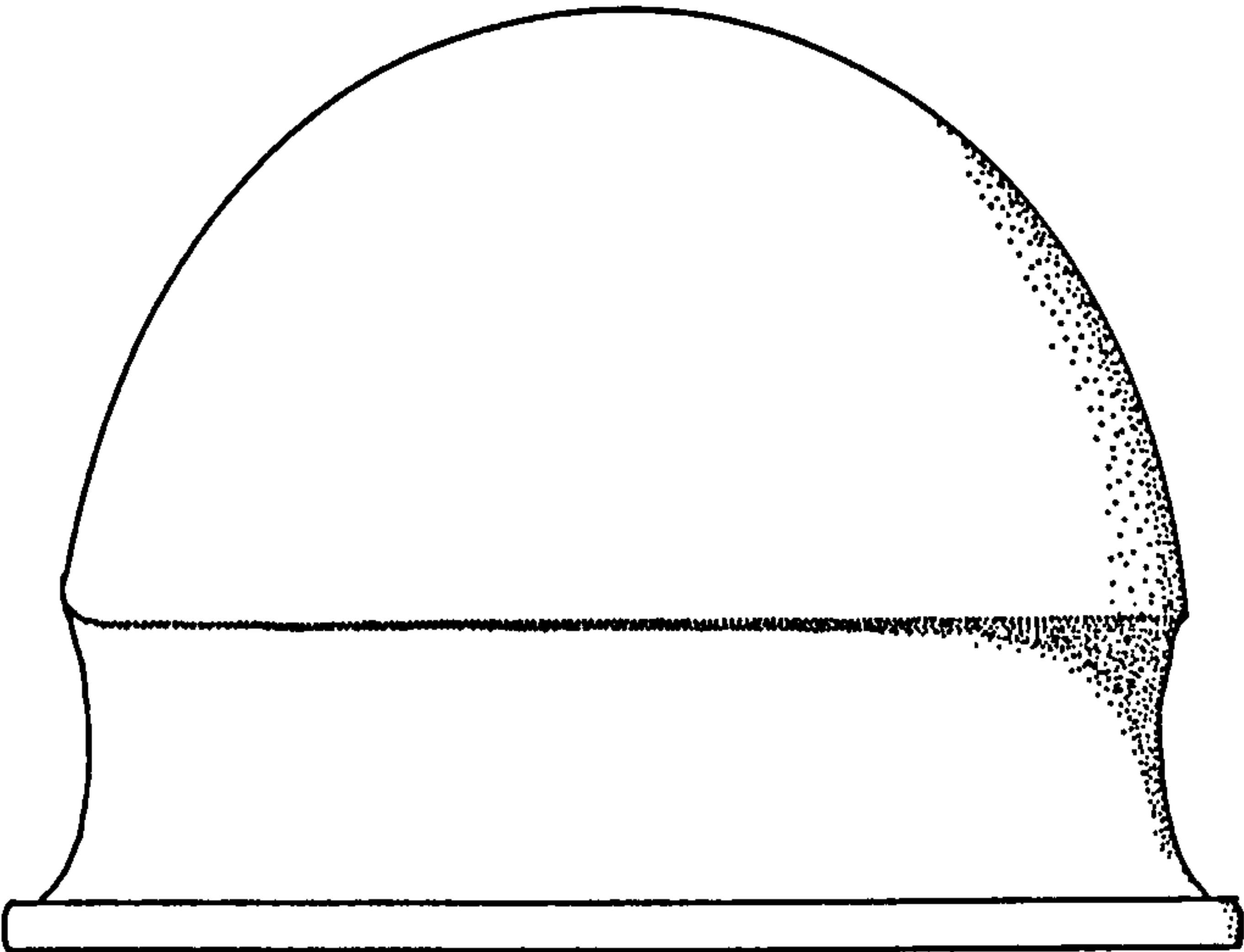
No.	Context;	Provenance;	Assigned Date B.C.
74.	Dated by dedication by Hieron from the spoils of the battle of Cumae 474 B.C.	Olympia, Greece	Early 5th
86.	Late 5th century B.C. dated by associated red-figure kylix krater.	Grave 10 at S. Martino in Gattara, near Ravenna, Emilia Romagna, Italy.	-
89.	C.510-500 B.C. dated by associated Athenian pelike.	Grave 47 at Cavalupo, Vulci Toscana, Italy.	-
92.	Mid 5th century B.C. dated by associated red-figure column krater	Grave XII at Malpasso Gualdo Tadino, Marche, Italy.	-
93.	Mid 5th century B.C. dated by associated red-figure column krater	Grave XII at Malpasso Gualdo Tadino, Marche, Italy.	-
101.	Mid 5th century B.C. dated by associated ceramics	A grave at Pianmaiano Bomarzo near Viterbo, Lazio, Italy.	-
111.	Mid 5th century B.C. dated by associated ceramics	Grave 17 at Cairano near Salerno, Campania, Italy.	-

FIG. 44

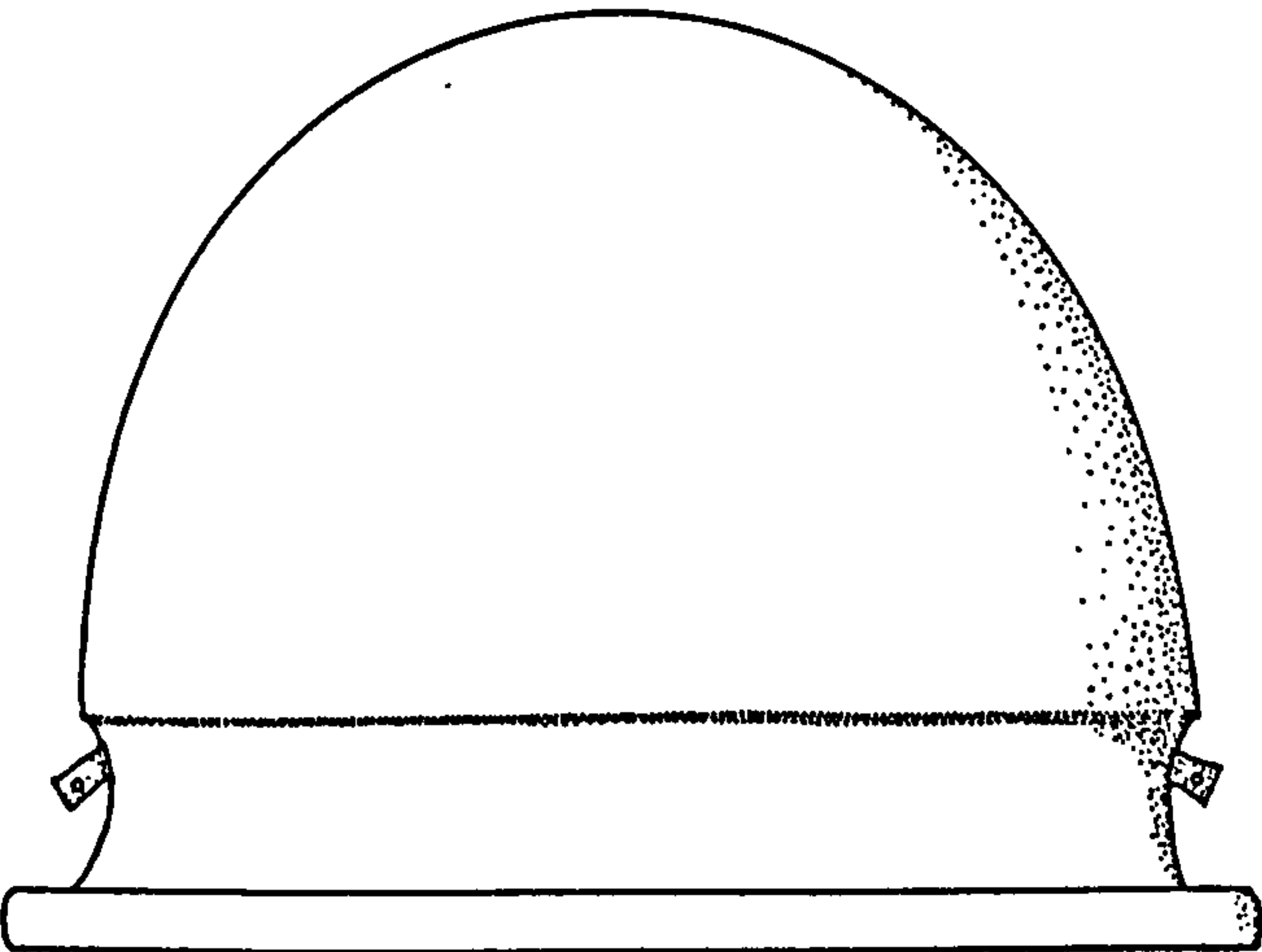
19



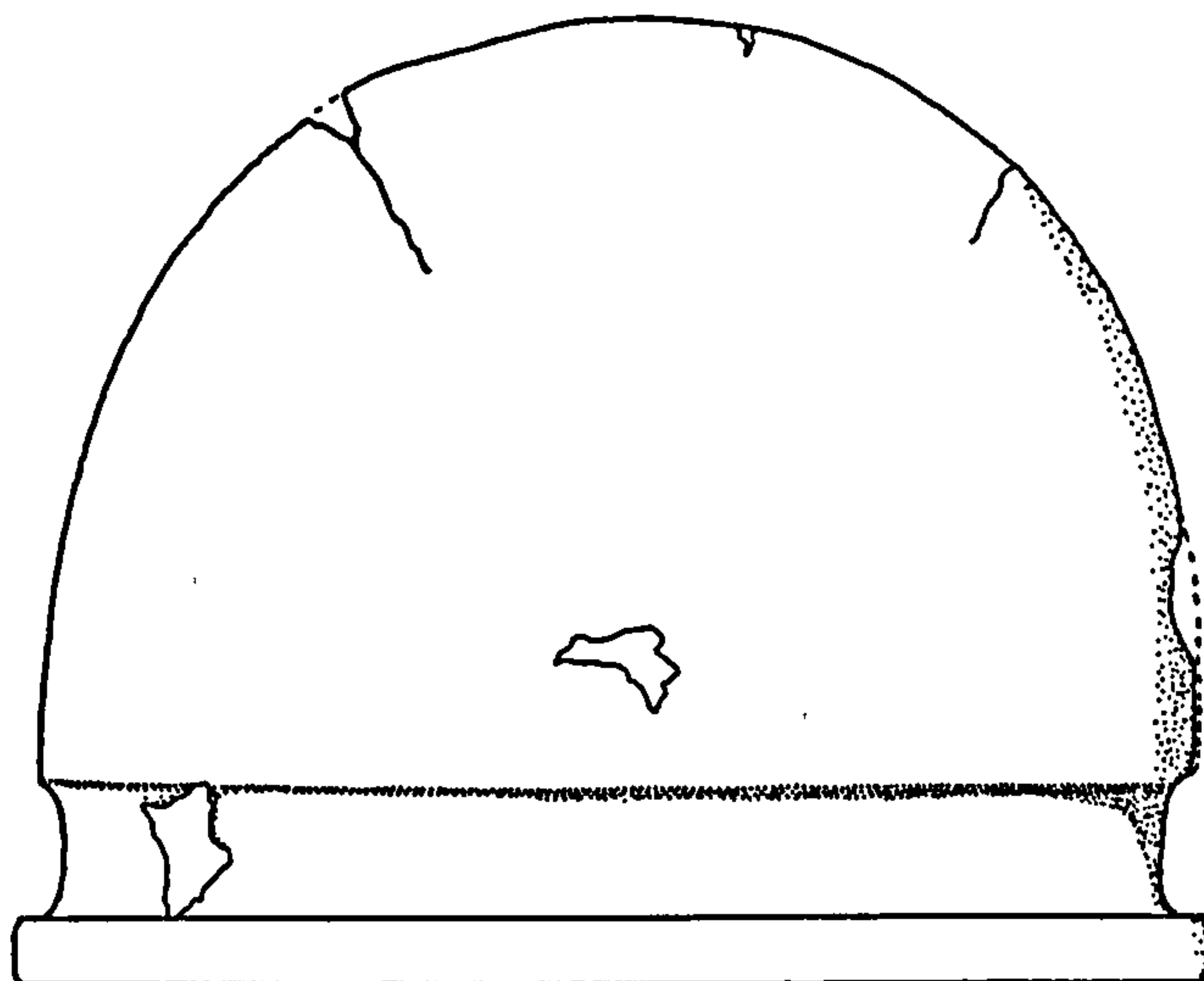
20



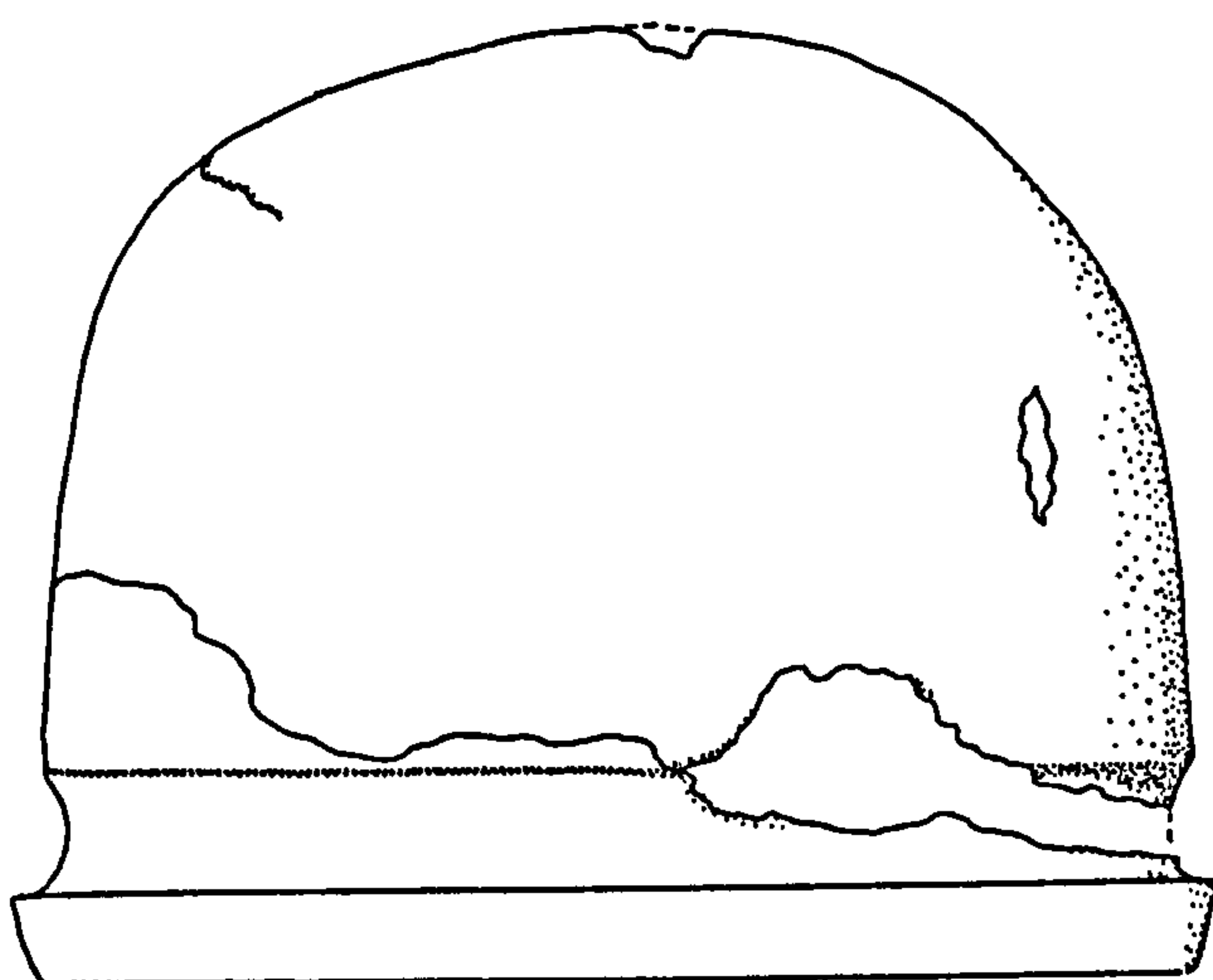
21



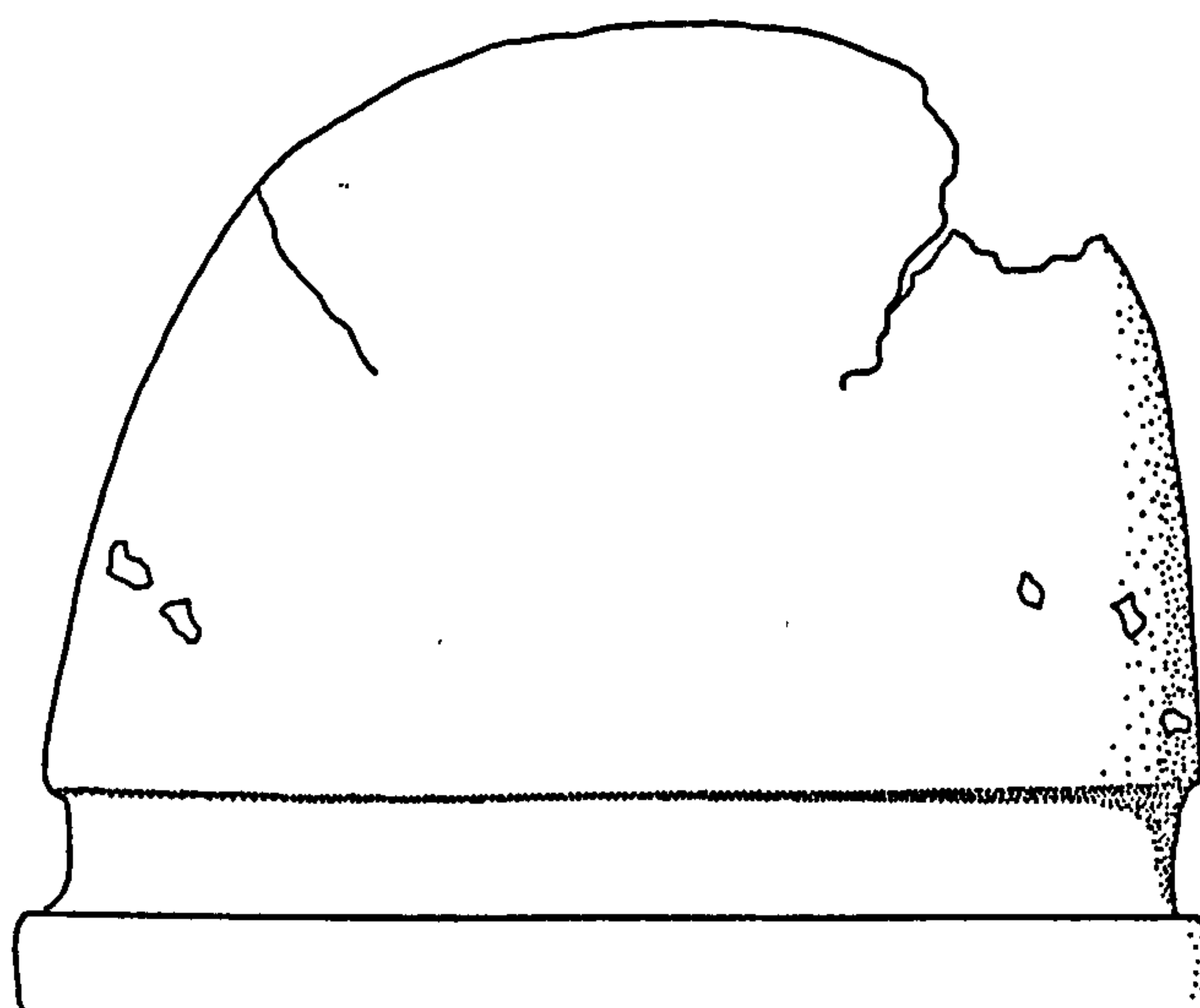
22



23



24



Typology.

Although Egg (1986) has divided the developed Negau helmet into two main categories, the "Volterranean" and the "Vetulonian" types, his typology seems to include, in the latter variety, a small but significant group of helmets which would appear to represent a southern Italian development of this Etruscan form. Therefore whilst accepting the validity of his division of the main body of these helmets into two types, Types I and II equating to his "Volterranean" and "Vetulonian" types, it has been felt necessary to add a third category, type III, to differentiate this final group.

Type I. (Nos 1-21.)

The helmets of type I are characterised by a high domed bowl which is provided with a weak medial ridge. The bowl is asymmetrical being higher at the rear than at the front. It swells above a slightly concave, fitted, brow-band. This is deep (usually 35 mm. to 48 mm.) and also rises at the rear echoing the shape of the bowl. The brow-band flares at its base to form a wide flanged brim some 20-30 mm. wide. Most of the helmets of this type were fitted with an internal lining ring, but some helmets (Nos. 1, 7 and 20) are pierced at the side to receive a rivet to retain the lining and chin-strap.

The helmets of this form vary in quality from heavy well made examples, eg. Nos. 3, 4, 5, 12, 15 and 19, with thick well formed bowls to thin slightly amorphous shaped examples, such as Nos. 1, 2, 6-11, 13, 15, 16-18, 20 and 21, where the bowl varies little in thickness and has a slightly battered appearance. Many of the helmets of this

type possess cast bronze, figurative or zoomorphic crest-fixtures. These usually take the form of a pair of or a single archaic lion's head. With one exception, helmet No. 3 from Volterra, the decoration on helmets of type I is restricted to the brim. This usually takes the form of horizontal mouldings, sometimes notched vertically.

Type II. (Nos. 22-108.)

Helmets of type II differ from those of type I in a number of important ways. They are characterised by a steep angular bowl with a very prominent medial ridge, unlike those of type I the bowl is symmetrical and does not rise at the rear, although its longitudinal axis is significantly greater than its lateral one, this gives the helmet bowl an almost "almond"-shape. The bowl is defined along its base by a right-angled step which marks the junction with the deeply concave but narrow brow-band. This is level and flares at its base to form a shallow flanged brim. The flange on this form is considerably deeper than that of Type I.

Most of the helmets of this type were fitted with an internal lining ring. The helmets of this form vary in quality from heavy well made examples (eg. Nos. 26-9, 31, 37-9, 45-8, 50, 51, 56-7, 62-5, 68-9, 78, 80, 83-5, 89-93, 98-9, 101 and 103.) with thick well formed bowls of graduated thickness, to thin slightly amorphous shaped examples such as Nos. 30, 32-6, 40-4, 49, 52-5, 58-61, 66-7, 70-7, 79, 81-2, 86-8, 94-7, 100, 102 and 104-8. where the bowl varies little in thickness and has a slightly battered appearance.

The characteristic form of decoration found on helmets of type II is executed with stamps. It is restricted to the brim and the bowl, forming a frieze in the zone immediately above the brow-band. These

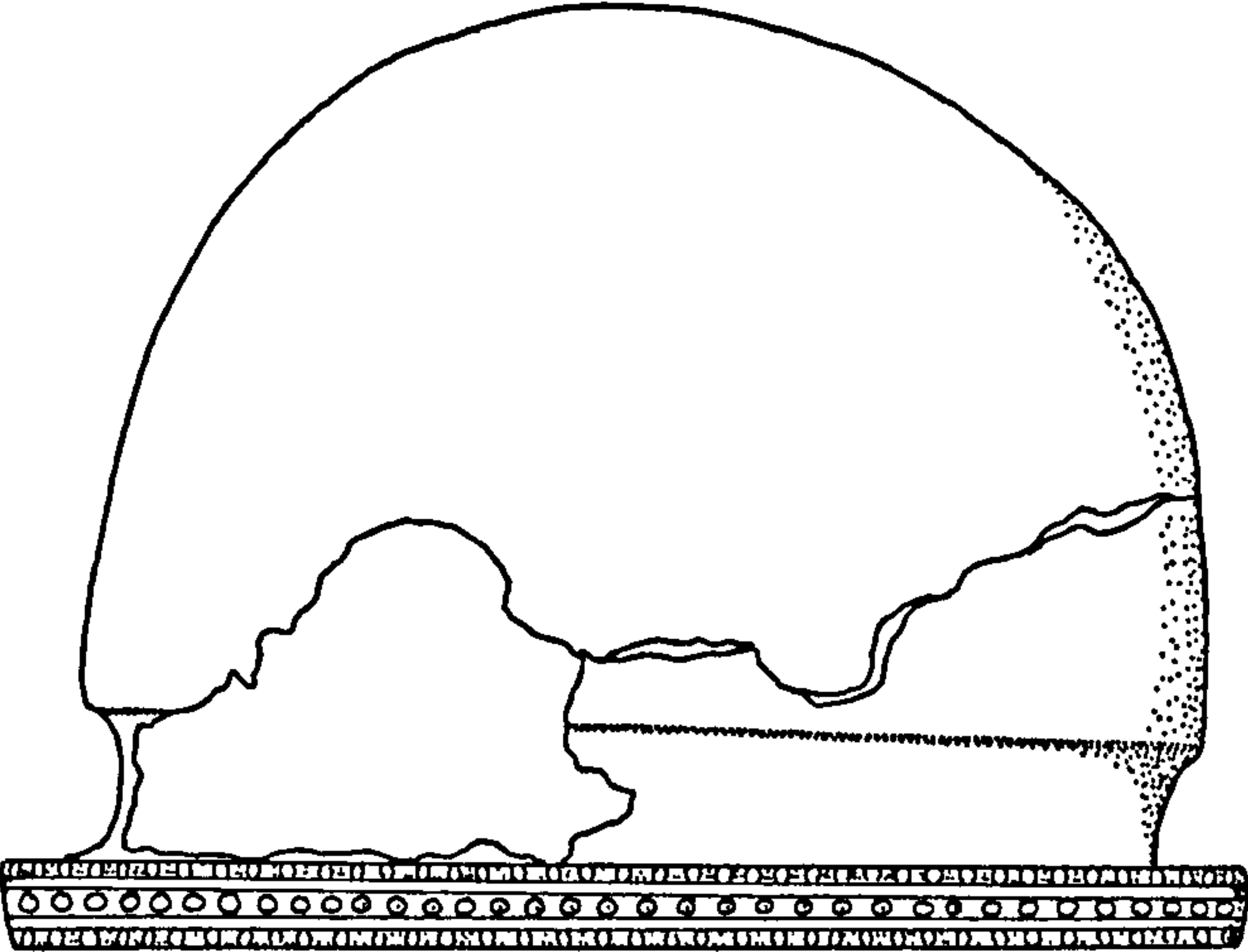
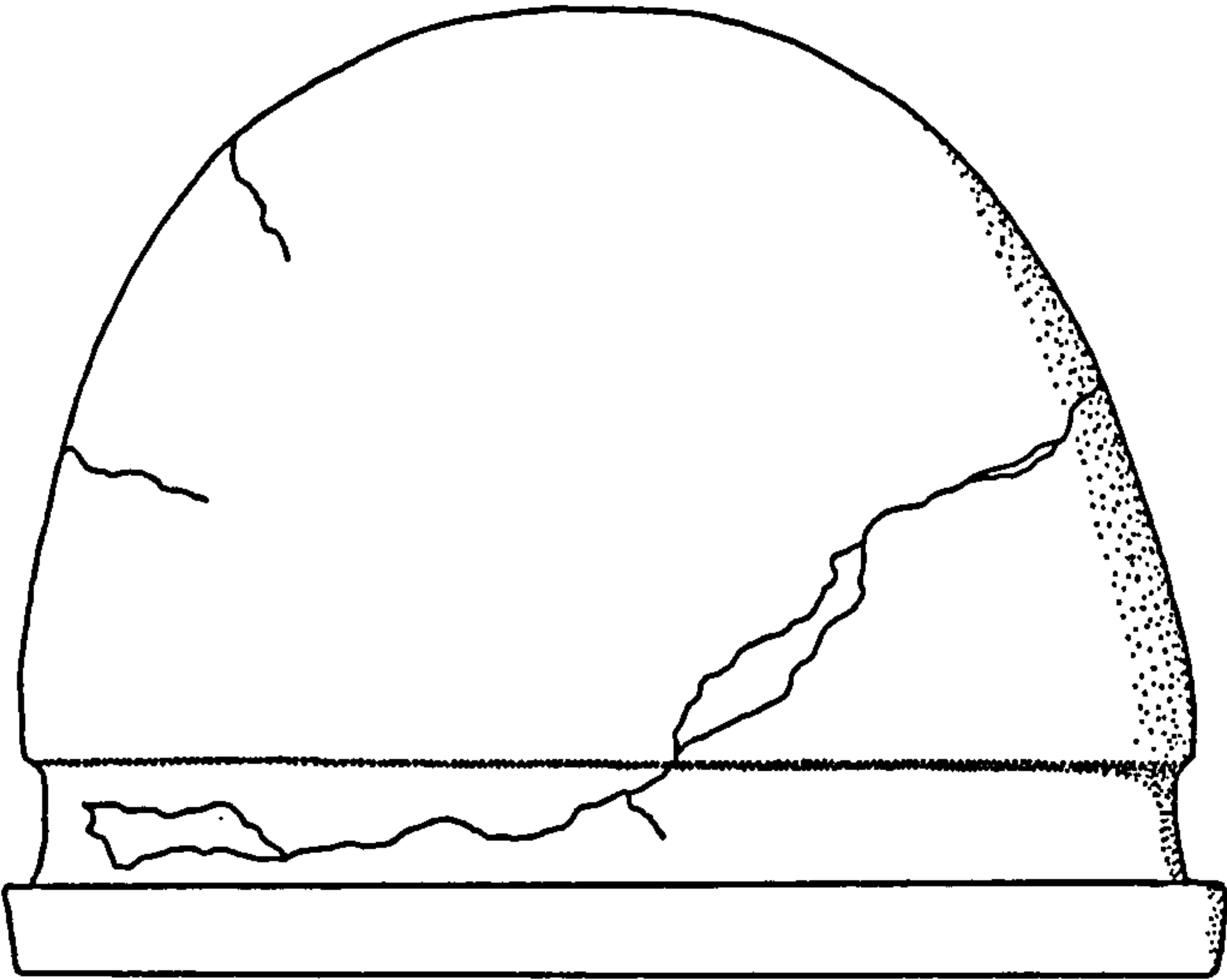
stamps consist of rows of rectangles imitating "egg and dart" or "dental" pattern which are used on the brim, and volutes and palmettes which are combined to form the frieze around the bowl. Based on the combination of these decorative motifs or indeed their absence, it has been possible for the writer to establish the presence of at least five separate workshop groupings for this type of helmet.

Type III. (Nos. 109-111.)

Helmets of type III share many of the characteristics of those of type II in that they are characterised by a steep angular bowl with a very prominent medial ridge. Like those of type II the lower edge of the bowl is level and does not rise at the rear, although its longitudinal axis is significantly greater than its lateral one. The main difference however is in the height of the bowl, this is equivalent to its longitudinal depth thus imparting a much more attenuated appearance to this type of helmet. The bowl is defined along its base by a right-angled step which marks the junction with the deeply concave but low brow-band. This is flared at its base to form a narrow flanged brim. The decoration on this type of helmet is restricted once more to the brim and takes the form of plain horizontal mouldings.

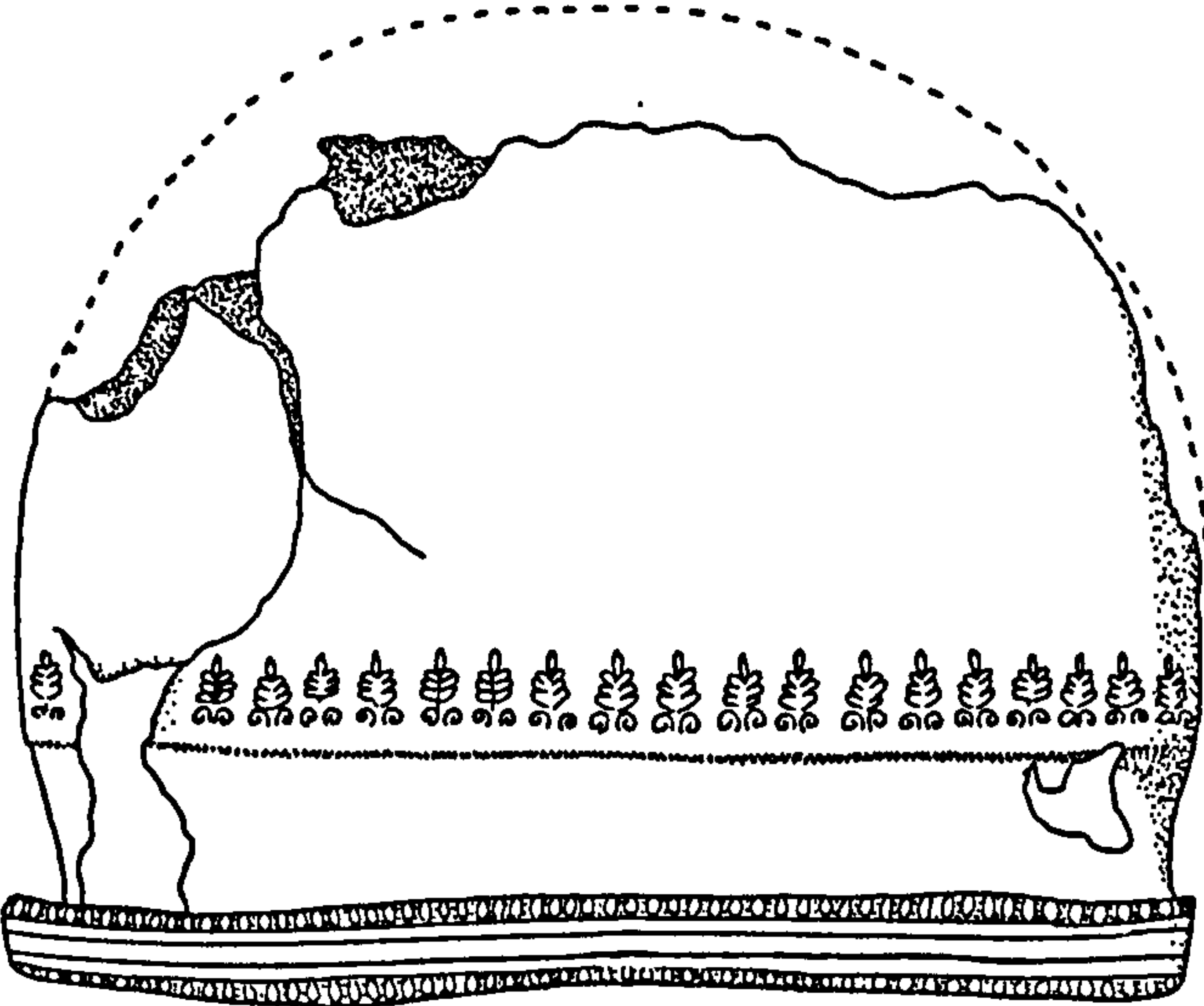
FIG. 46

25

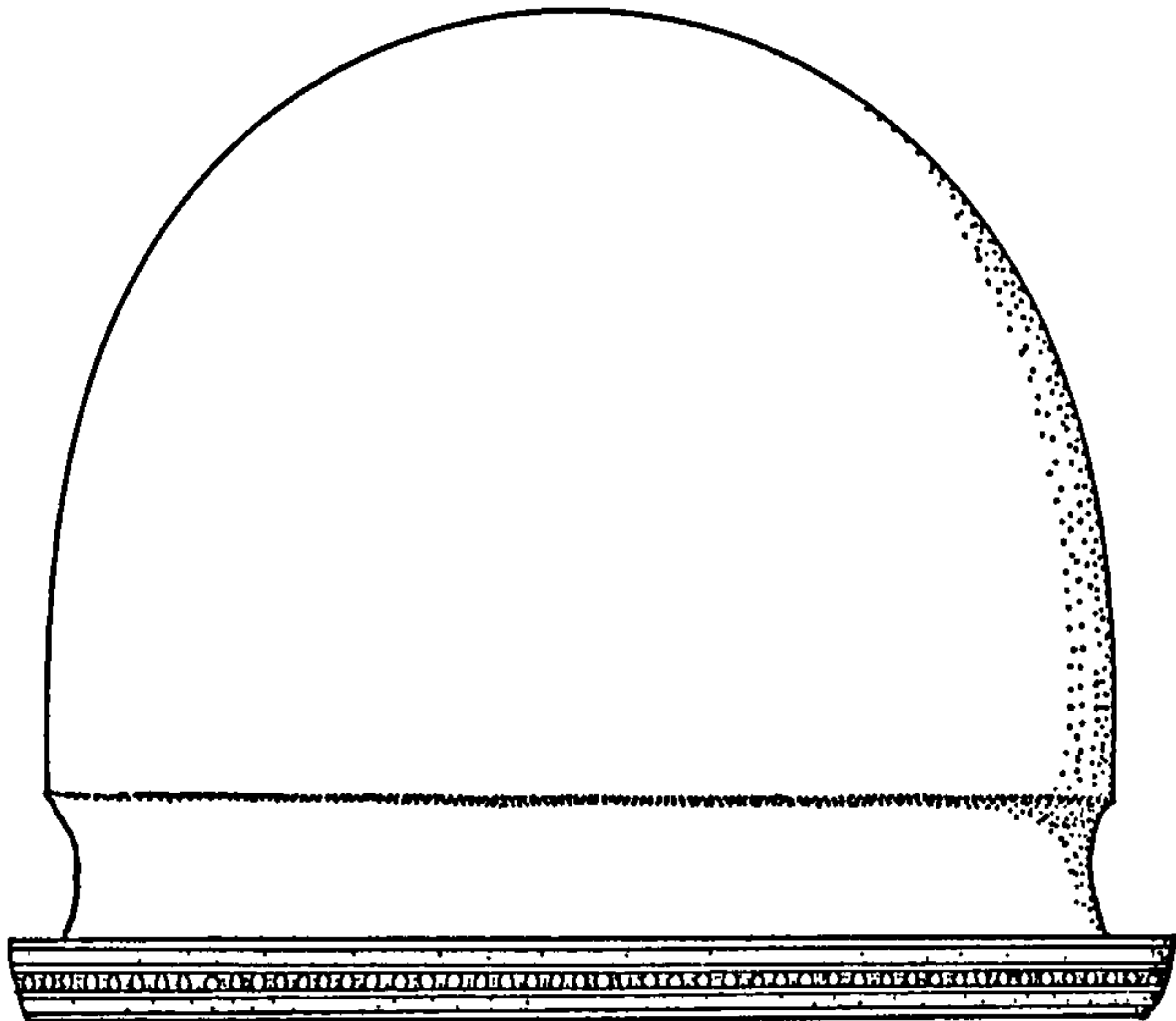


26

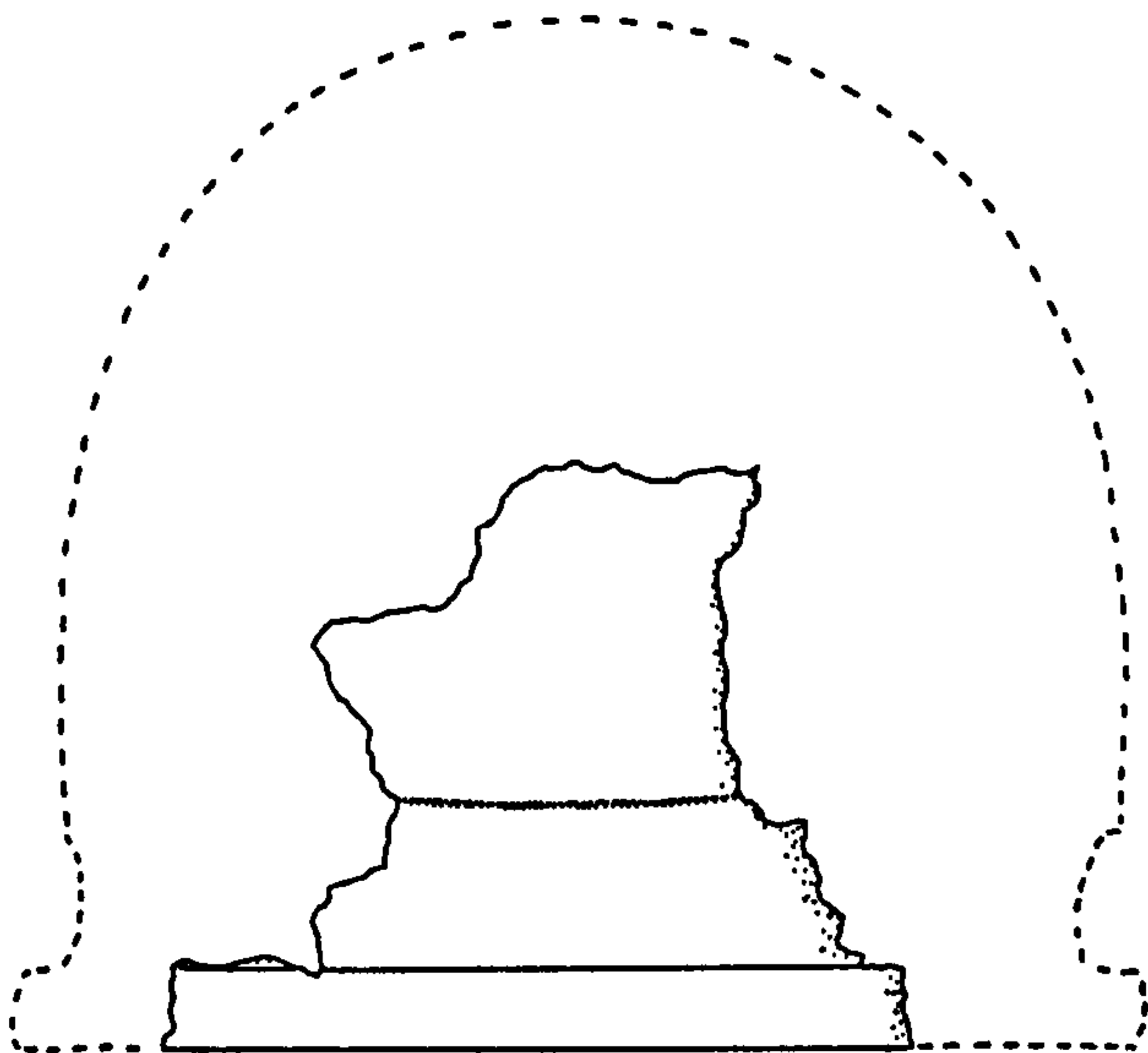
27



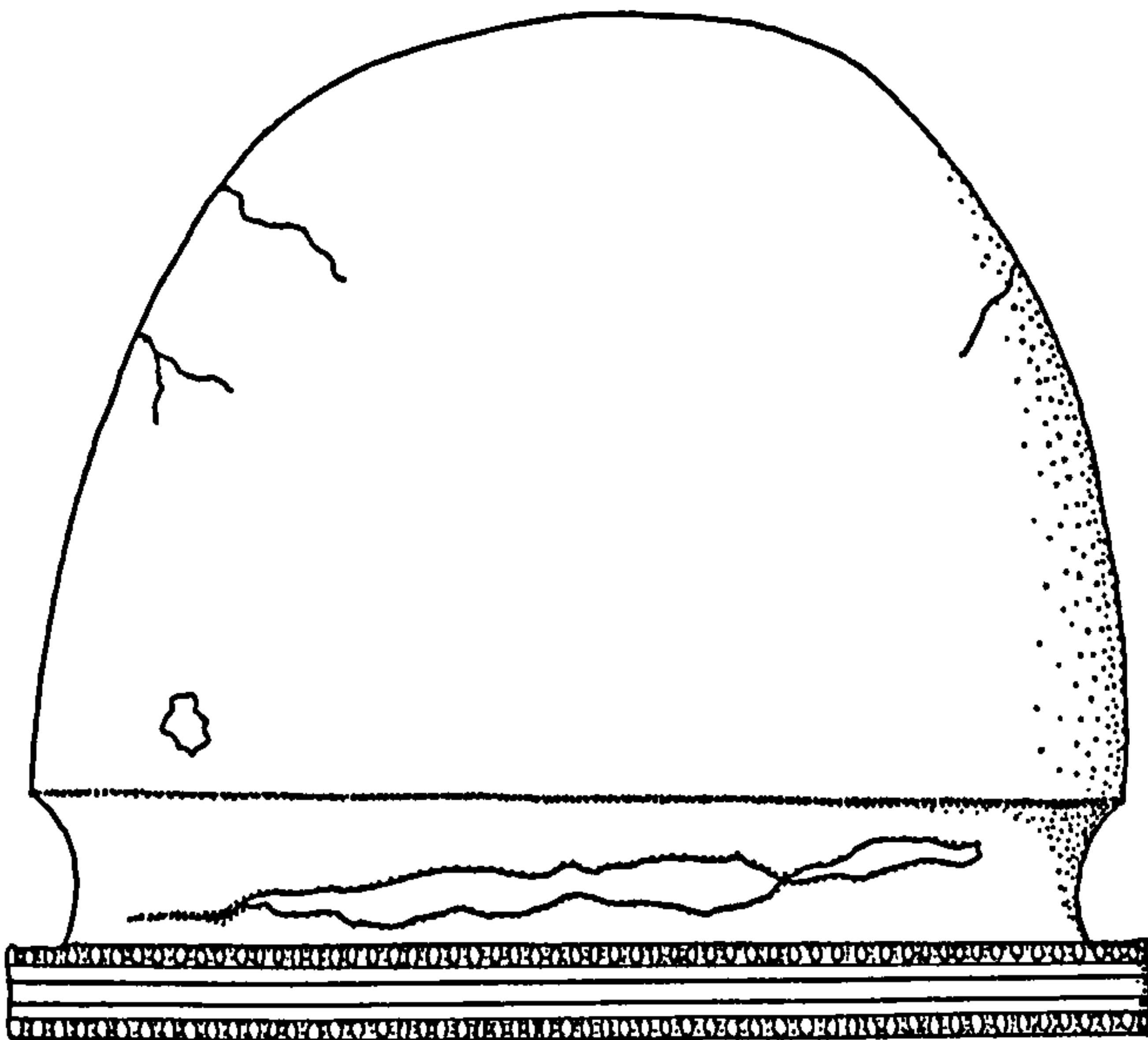
28



29



30

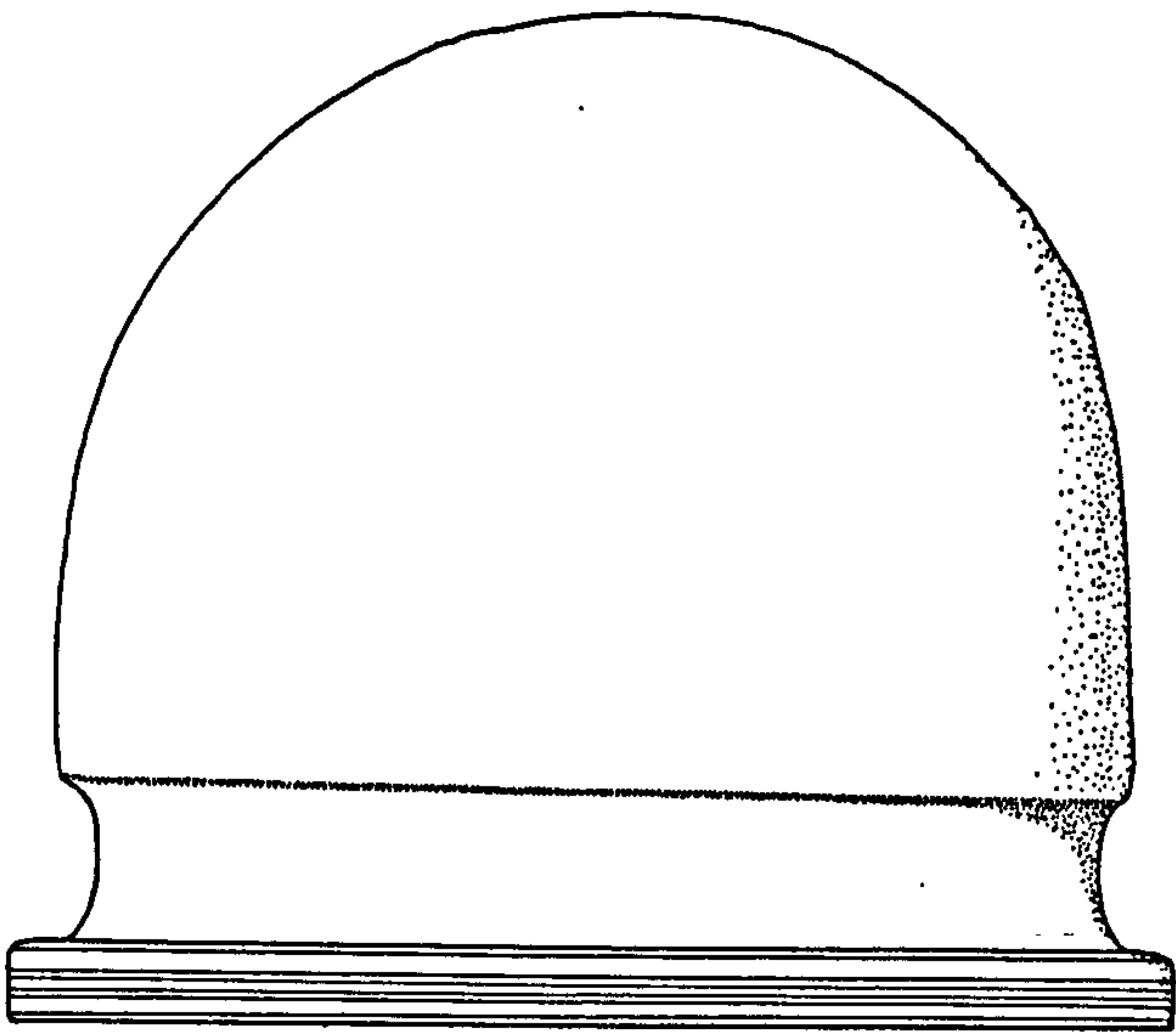


Type I.

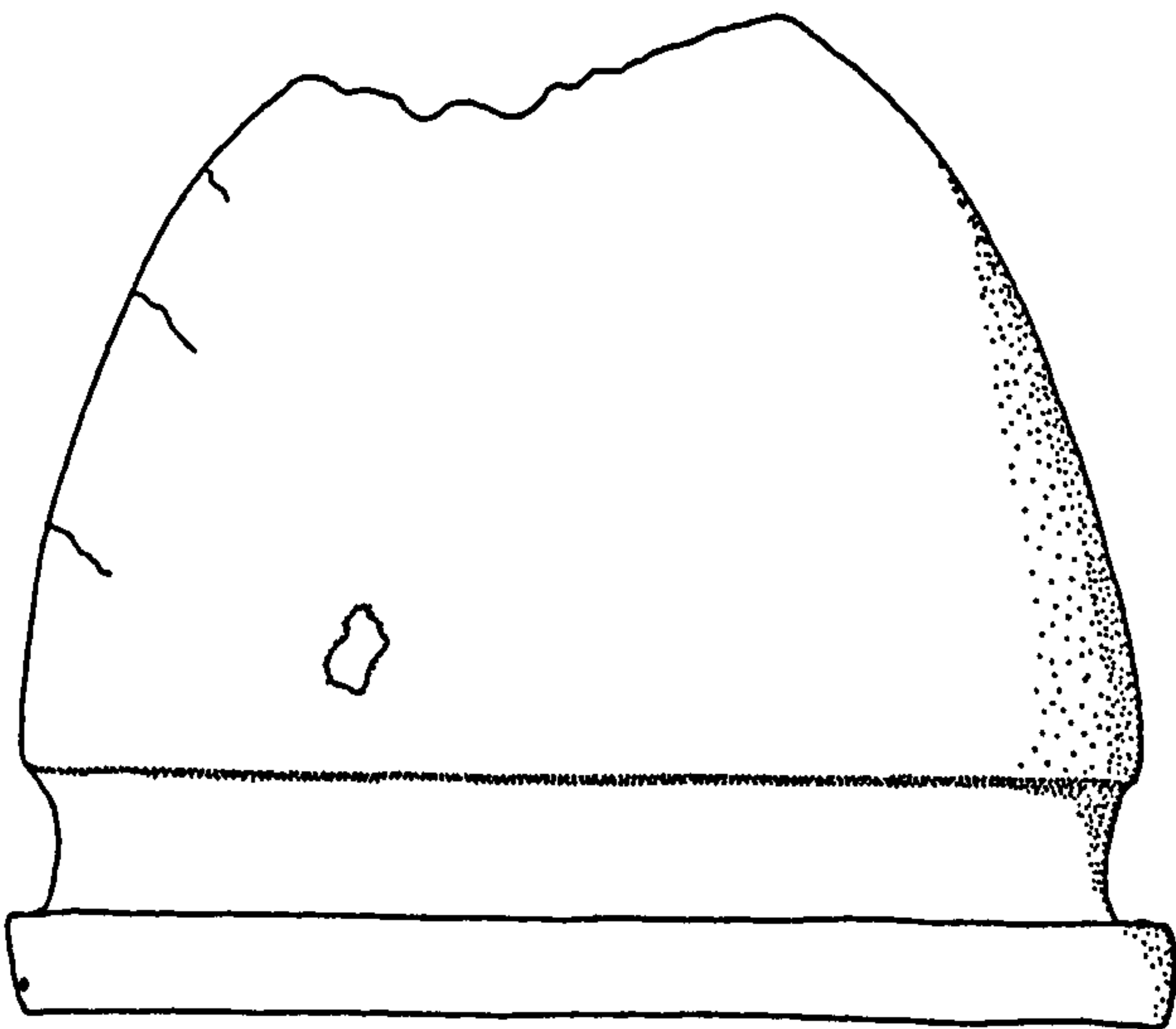
1. Grottamare, Marche, Italy. Museo Nazionale Ancona. 15122.
Undecorated. (fig. 38:1) Egg 1986, 197.
2. Italy. Walters Art Gallery Baltimore. 54168. Undecorated. (fig. 38:2) Unpublished.
3. Volterra, Toscana, Italy. Antiken Museum Berlin. L.53.
Decorated: Bowl; A pair of engraved lionesses facing each other, one
either side a pair of converging volutes surmounted by a palmette.
Brim; Three beaded, horizontal mouldings. Cast bronze, archaic,
lion's head crest-fixture. (fig. 38:3) Lipperheide; von 1896, 192.
4. Marche Italy, Antiken Museum Berlin. L.54. Decorated: Brim;
Single incised line. Cast bronze, archaic, lion's head crest-fixture.
(fig. 39:4) Lipperheide, von 1896. 188. Schröder, 1905. 27. Egg
1986. 195.
5. Marche, Italy. Antiken Museum Berlin. L.55. Undecorated. (fig.
39:5). Lipperheide, von 189. 189. Schröder, 1905. 27. Egg 1986.
195.
6. Italy. Antiken Museum Berlin. L.56. Decorated. Cast bronze,
archaic, swan's head and volute crest-fixtures. (fig. 39:6)
Lipperheide, von. 1896, 196. Schröder. 1905, 27. Egg. 1986, 196.
7. Sicily. Antiken Museum Berlin. L.64. Undecorated. (fig. 40:7)
Schröder. 1905, 27. Egg. 1986, 206.
8. Sicily. Antiken Museum Berlin. L.65. Undecorated. (fig. 40:8)
Egg. 1986, 206.
9. Casalfiumanese, near Bologna, Italy. Museo Civico Bologna. R451.
Decorated: Cast bronze, archaic, lion and horse's head crest-fixture.
(fig. 40:9) Zuffa. 1950, 120.

10. Imola near Bologna, Italy. Museo Civico Bologna. 20696. Undecorated. (fig. 41:10) Egg 1986, 192.
11. Dovadola S. Ruffillo near Forlì, Italy. Museo Archeologico di Forlì. 27167. Undecorated. (fig.41:11) Negrolì. 1926, 27
12. Italy. Hermitage Leningrad. B545. Decorated: Brim; Consists of two plain narrow mouldings delineated by incised lines over a band of hatched work over two narrow mouldings separated by incised lines. (fig. 41:12) Lipperheide, von. 1896, 191.
13. Olympia, Greece. British Museum. 250. Undecorated. Inscribed: 'Ιερών ο Δεινομένηος καὶ τοὶ Συρακοῖσι τοῦ Δι τρυφὰν ἀπὸ Κούας' "Hieron son of Deinomenes and the Syracusans, to Zeus: Etruscan spoils from Cumae." (fig. 42:13) Lipperheide, von 1896, 170. Forsdyke. 1929, 81.
14. Italy. Musée St. Pierre Lyons. X924. Undecorated. (fig. 42:14) Boucher. 1964, 102.
15. Italy. Reiss-Museum Mannheim. No Inv. No. Decorated: Brim; Consists of two groups of three incised lines. (fig.42:15) Egg 1986, 196.
16. Italy. Museo Poldi Pezzoli, Milan. 2415. Undecorated. (fig.43:16) Frova, A. 1972 p.96. Cavalieri Manasse. 1988, 37.
17. Italy. Bibliothèque Nationale Paris. 2021. Undecorated. (fig.43:17) Babelon and Blanchet 1895. 660. Adam 1984, 116.
18. Italy. Musée du Louvre Paris. 1114. Undecorated. (fig. 43:18) Ridder, de 1915, 3. Egg 1986, 197.
19. Italy. University Museum Philadelphia. 1409. Undecorated. (fig. 44:19) Egg. 1986, 196.

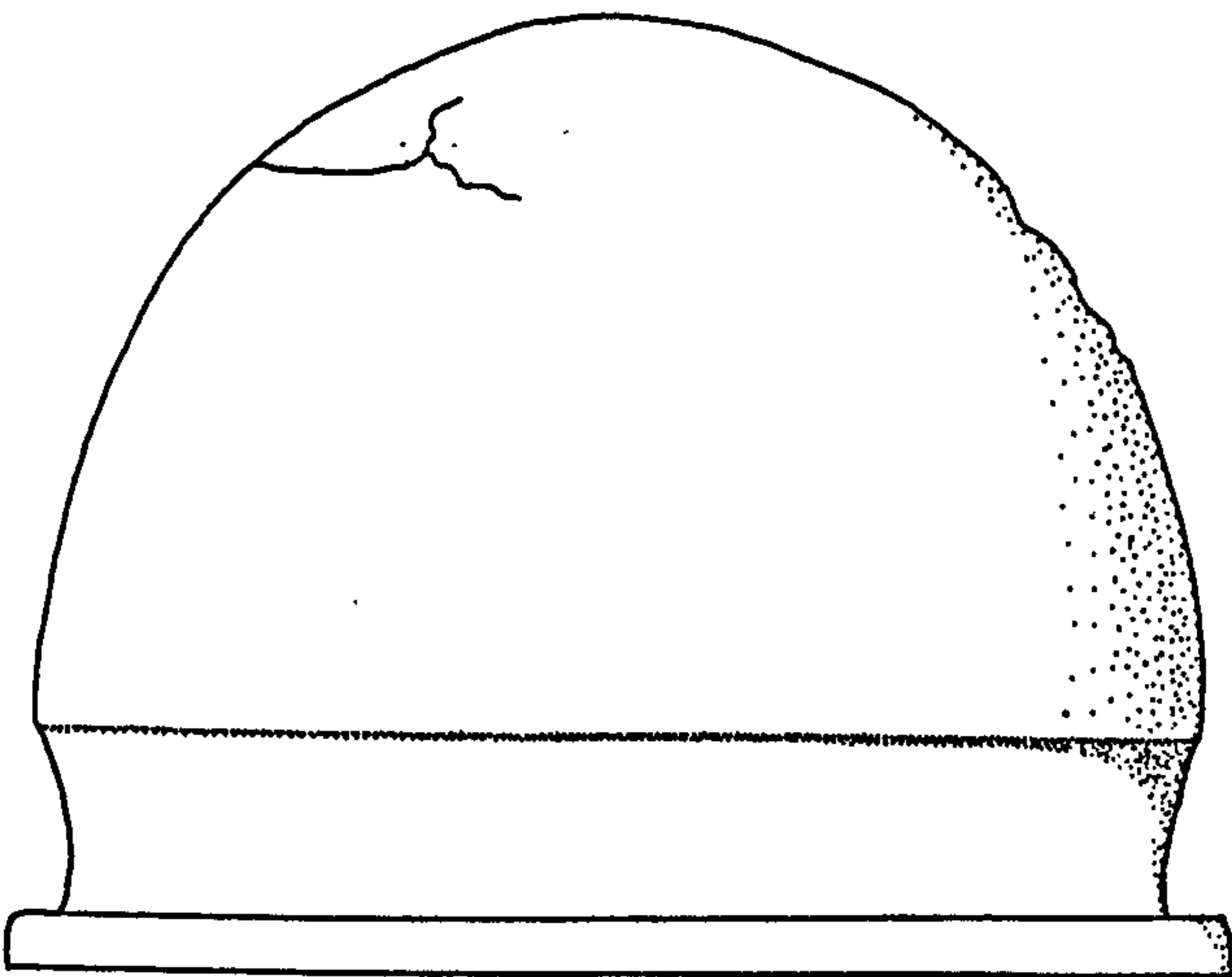
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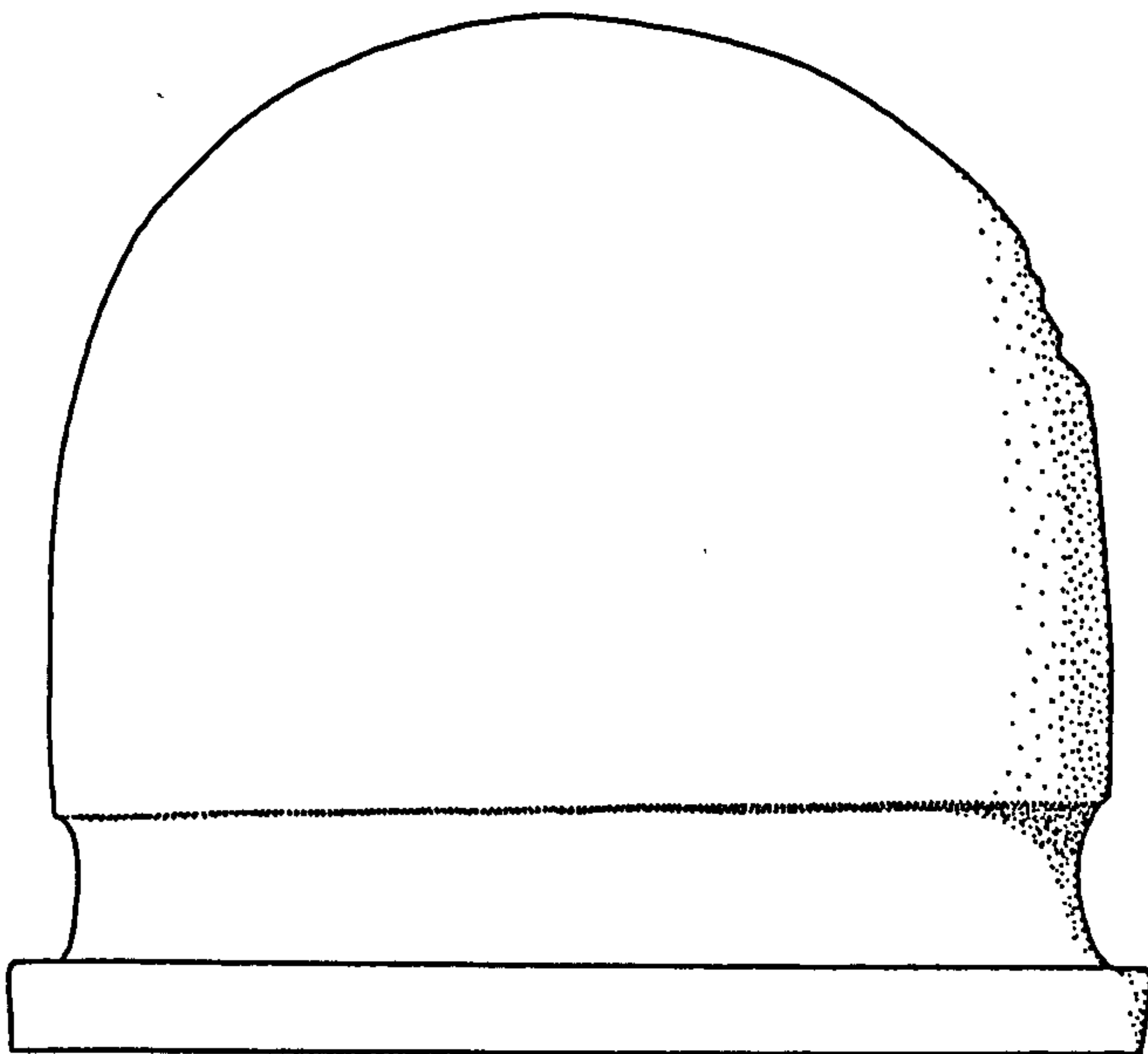
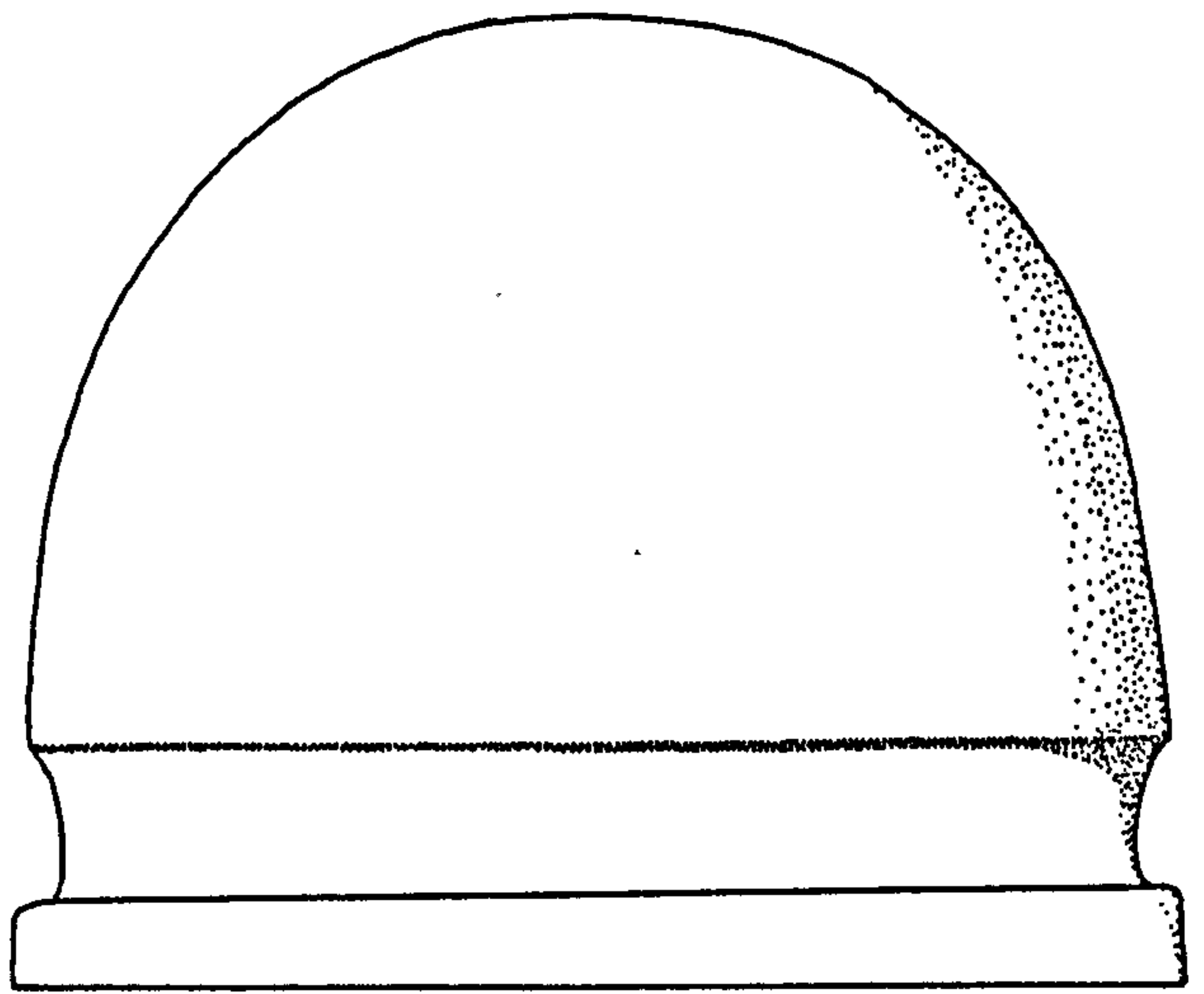
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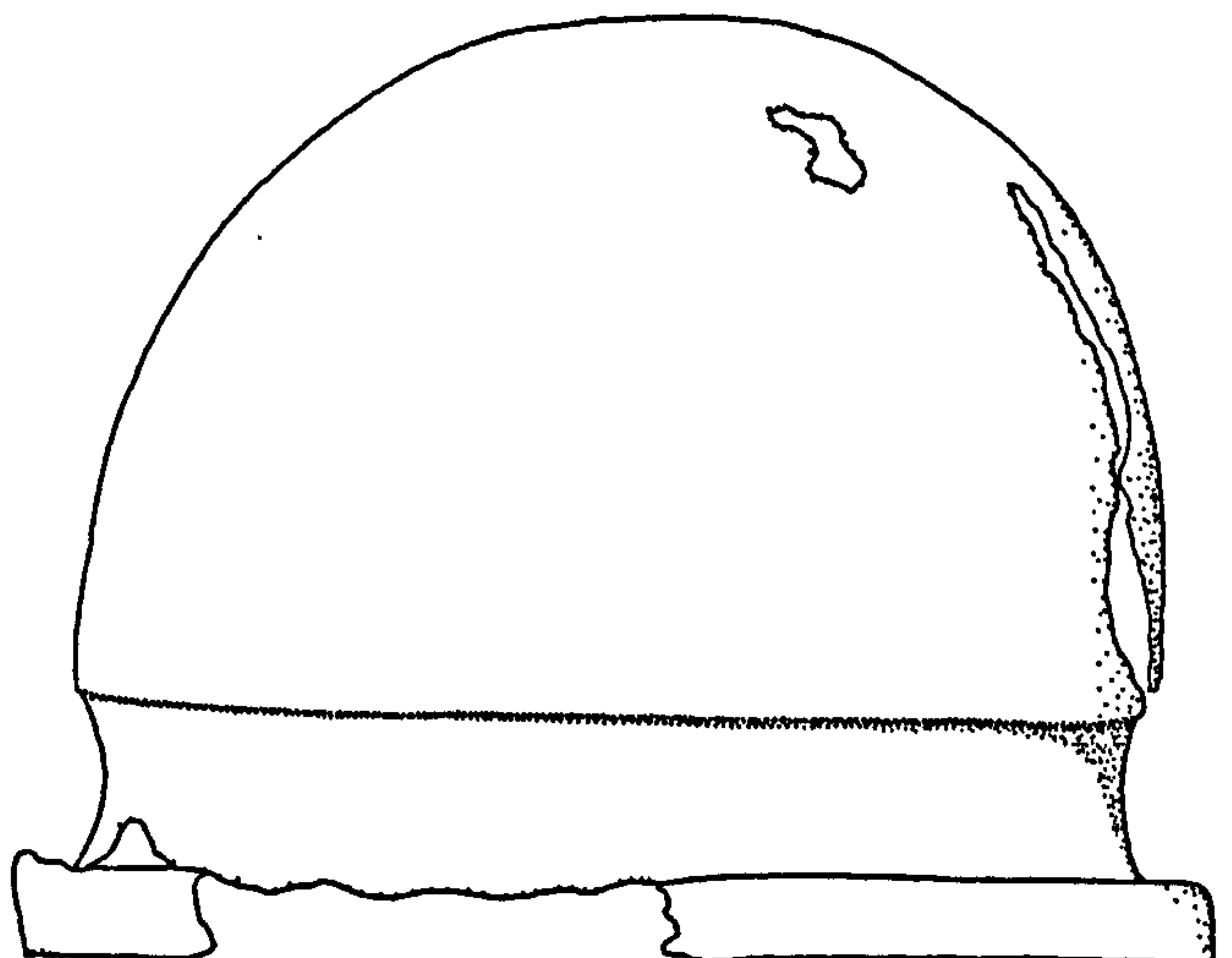


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20. Italy. Castel S. Angelo Rome. No Inv. No. Undecorated. (fig. 44:20) Unpublished.

21. Italy. Musée des Antiquités Nationales St. Germain en Laye. 4761. Undecorated. (fig. 44:21) Unpublished.

Type II.

22. Aléria, Corsica. Musée Archéologique Aléria. 67/320. Undecorated. (fig. 45:22) Jehasse 1973, 436.

23. Aléria, Corsica. Musée Archéologique Aléria. 67/330. Undecorated. (fig. 45:23) Jehasse 1973, 422.

24. Aléria, Corsica. Musée Archéologique Aléria. 67/348. Undecorated. (fig. 45:24) Jehasse 1973, 450.

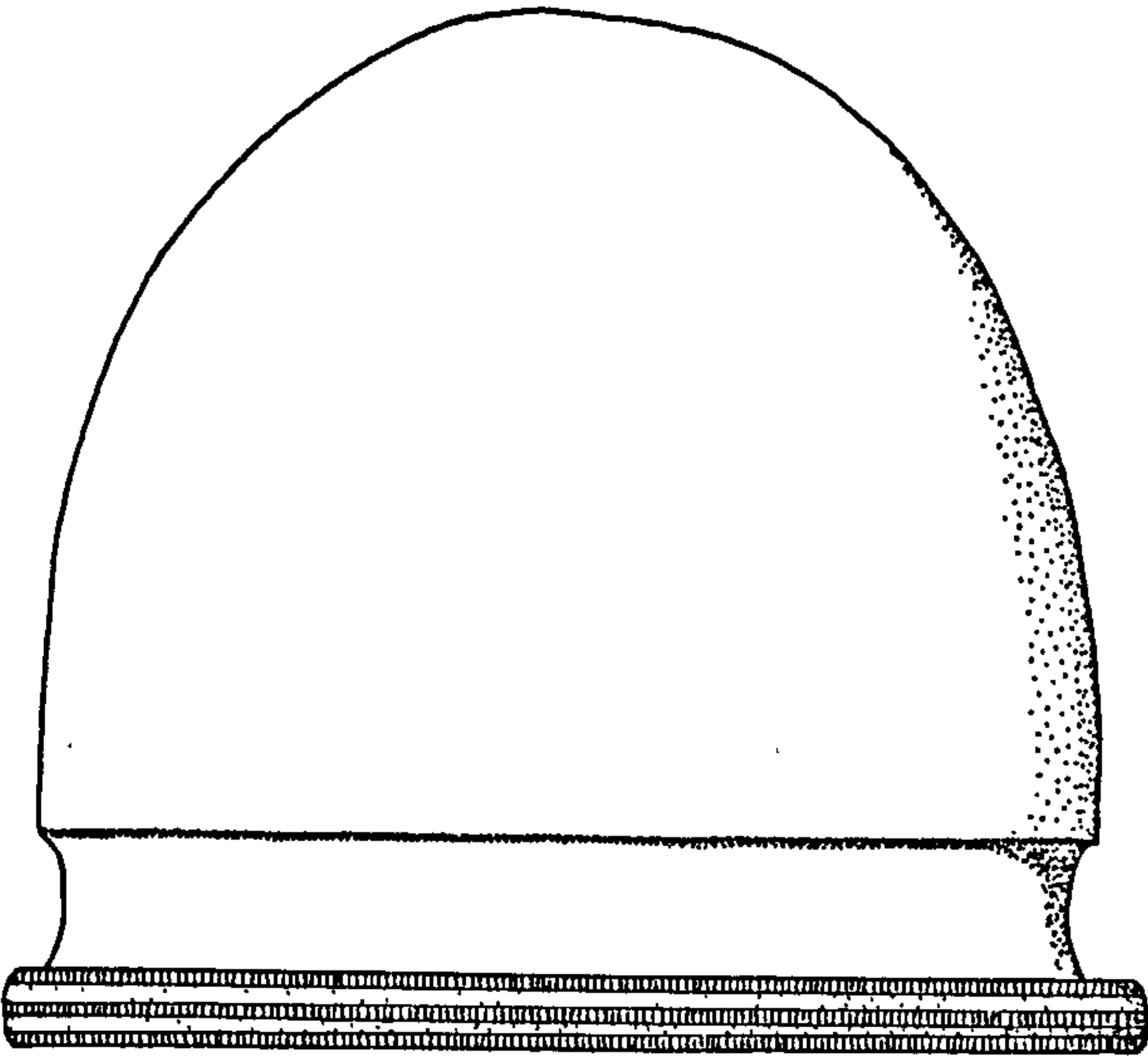
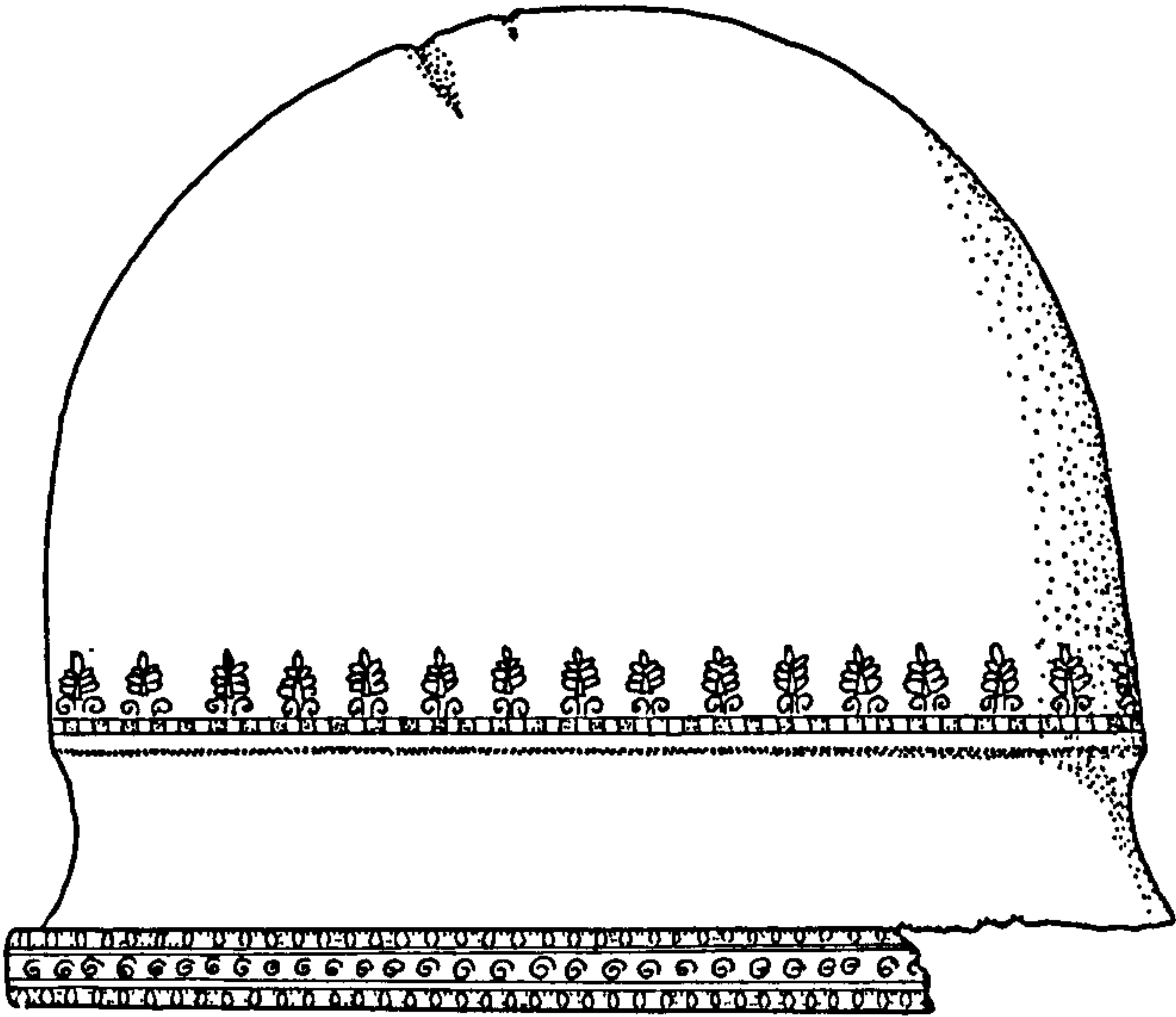
25. Aléria, Corsica. Musée Archéologique Aléria. 67/462. Undecorated. (fig. 46:25) Jehasse 1973, 467.

26. Numana, Marche, Italy. Museo Nazionale Ancona. 4364. Decorated: Restricted to the brim. It consists of a band of egg and dart moulding surmounted by two incised lines and a band of ring and dot motif, this is surmounted in its turn by two incised lines and a band of egg and dart motif. (fig. 46:26) Egg 1986, 204.

27. Numana, Marche, Italy. Museo Nazionale Ancona. 4369. Decorated: Stamped on brim and bowl. The brim decoration consists of a band of egg and dart moulding surmounted by two incised lines either side of a plain band which is surmounted in its turn by a band of egg and dart motif. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes. (fig 46:27) Egg 1986, 204.

FIG. 50

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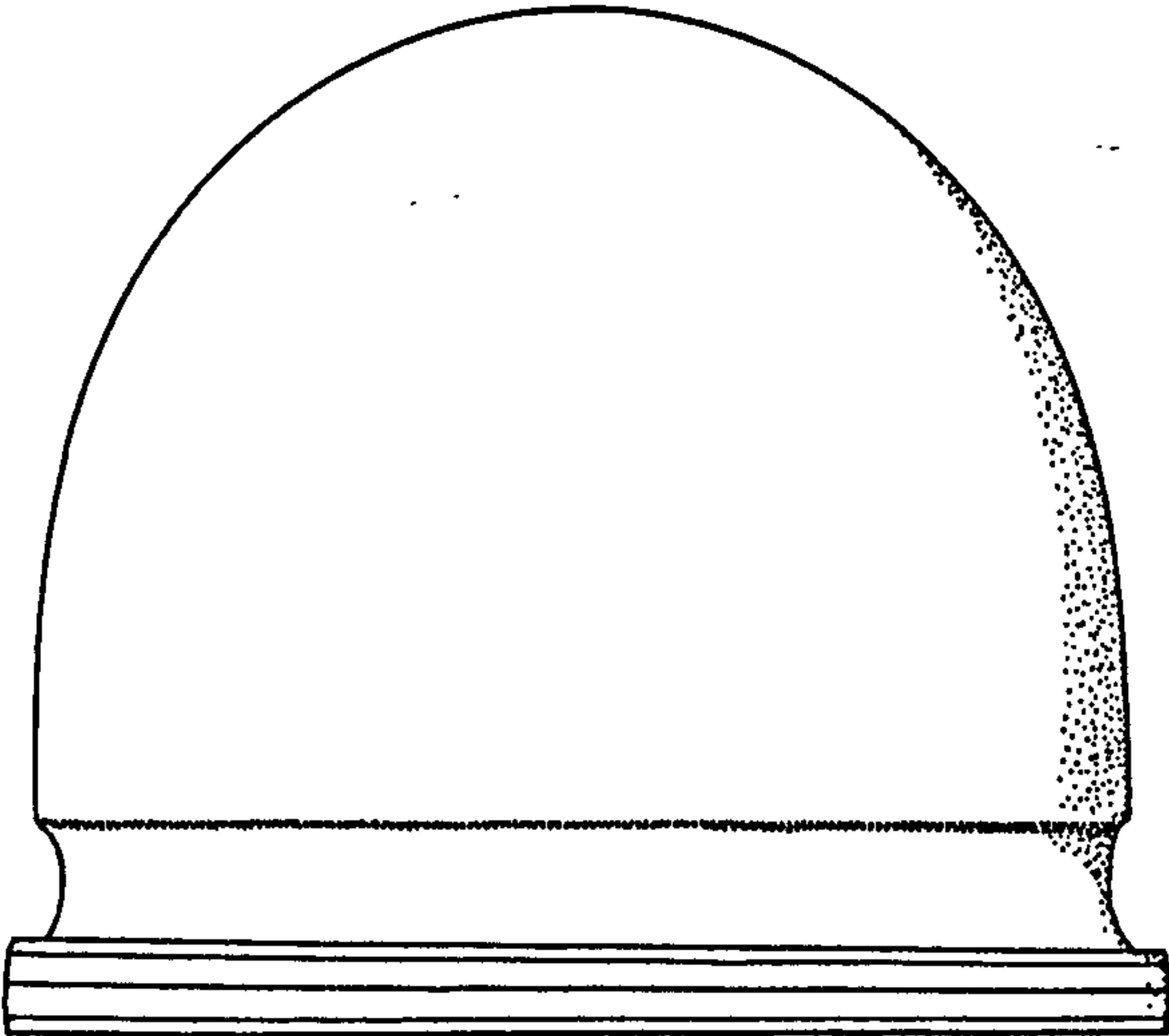
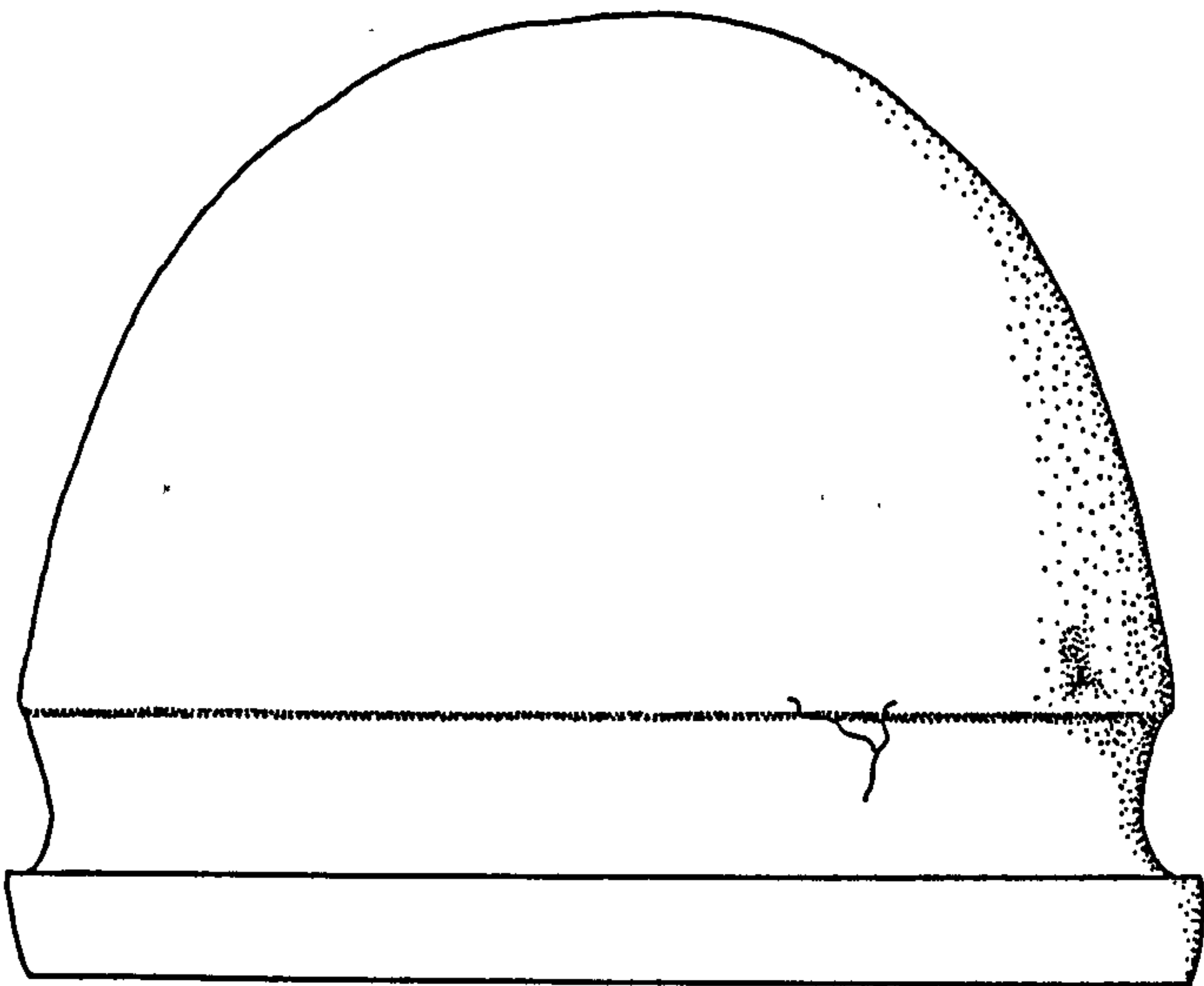
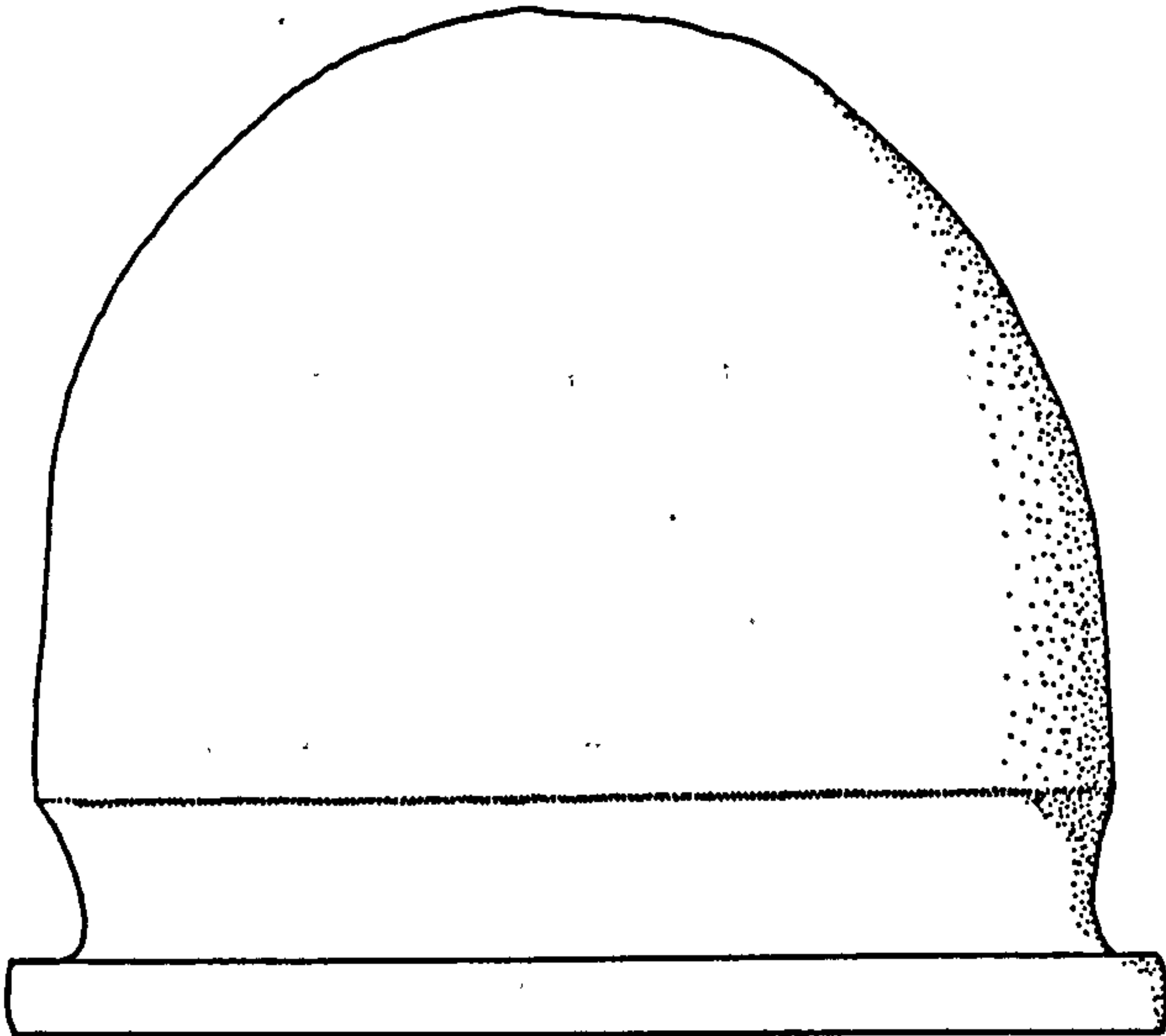


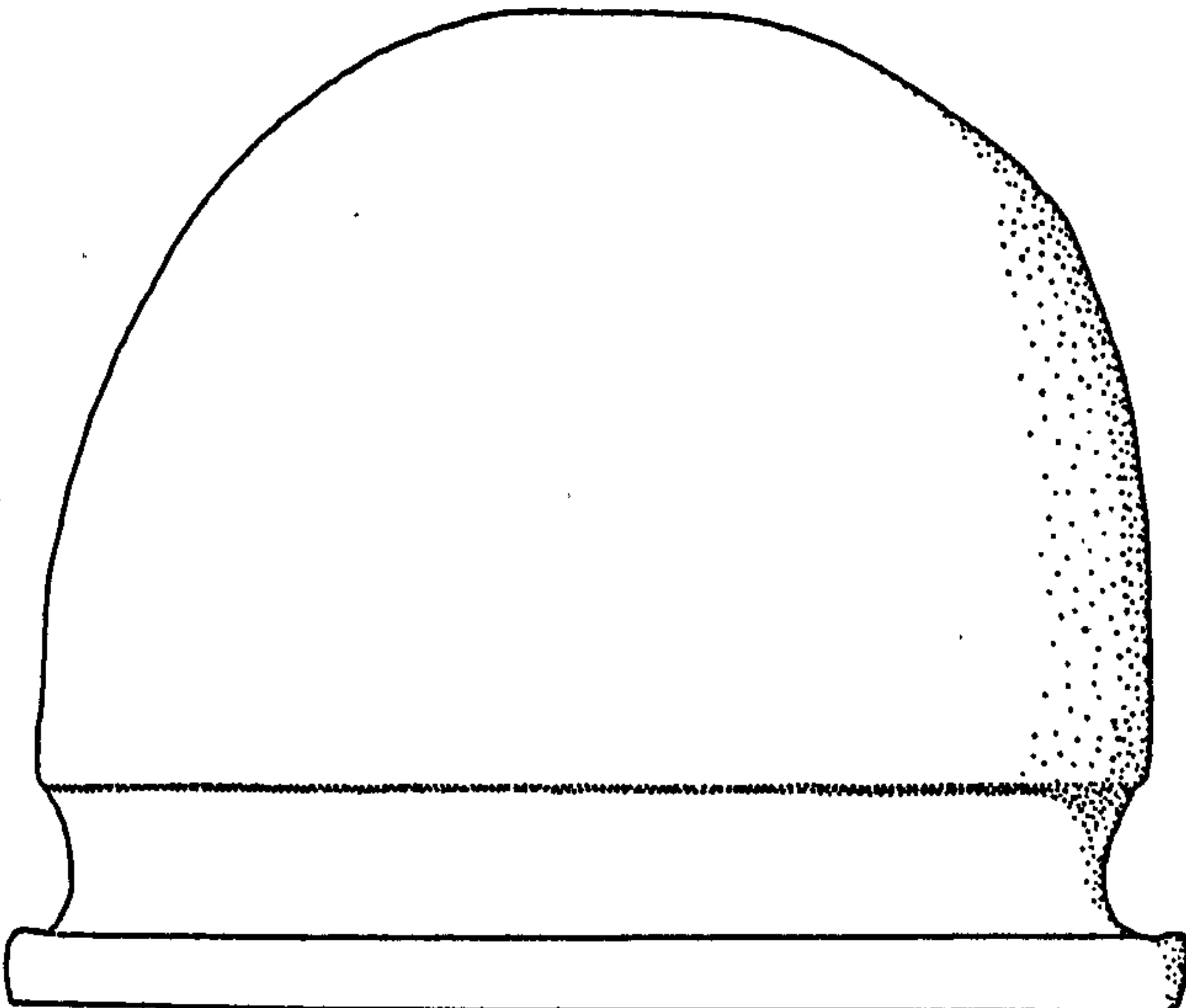
FIG. 51

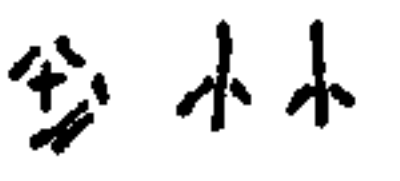
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28. Pianello Castelbellino, near Ancona, Marche Italy. Museo Nazionale Ancona. 6725. Decorated: Restricted to the brim. It consists of two incised lines either side of a plain band which is surmounted in its turn by a band of egg and dart motif surmounted by two incised lines either side of a plain band. (fig. 47:28) Egg 1986, 200.
29. Numana, Marche, Italy. Museo Nazionale Ancona. 9406. Undecorated. (fig. 47:29) Egg 1986, 197.
30. Numana, Marche, Italy. Museo Nazionale Ancona. 31533. Decorated: Restricted to the brim. It consists of a band of egg and dart moulding surmounted by two incised lines either side of a plain band which is surmounted in its turn by a band of egg and dart motif. (fig. 47:30) Egg 1986, 204.
31. Italy. Walters Art Gallery Baltimore. 54167. Decorated: Restricted to the brim. It consists of four pairs of incised lines. (fig. 48:31) Egg 1986, 215.
32. Vulci, Tuscany, Italy. Antiken Museum Berlin. Fr.1018. Undecorated. (fig. 48:32) Egg 1986, 212.
33. Italy. Antiken Museum Berlin. 10392. Undecorated. (fig.48:33) Egg 1986, 212.
34. Italy. Antiken Museum Berlin. 10393. Undecorated. Inscribed:  (fig. 49:34) Egg 1986, 212.
35. Italy. Antiken Museum Berlin. 10394. Undecorated. (fig. 49:35) Egg 1986, 212.
36. Unknown. Antiken Museum Berlin. Misc. 10399. Undecorated. (fig. 49:36) Egg 1986, 212.
37. Caserata near Capua, Campania, Italy. Antiken Museum Berlin. L.59. Decorated: Stamped on brim and bowl. It consists of two bands of

dental pattern bordering a frieze of punched volutes but separated by double incised lines. (fig. 50:37) Lipperheide, von 1896, 207.

38. Sulmona near L'Aquila, Abruzzi, Italy. Antiken Museum Berlin. L.60. Decorated: Restricted to the brim. It consists of three bands of egg and dart moulding contained within single incised lines. (fig. 50:38) Lipperheide, von 1896, 204.

39. Sulmona near L'Aquila, Abruzzi, Italy. Antiken Museum Berlin. L.61. Decorated: Restricted to the brim. It consists of three equally spaced incised lines around the brim. (fig. 50:39) Lipperheide, von 1896, 203.

40. Pisa, Livorno Italy. Antiken Museum Berlin. L.62. Undecorated. (fig. 51:40) Egg 1986, 212.

41. Istria, Yugoslavia. Antiken Museum Berlin. L.63. Undecorated. (fig. 51:41) Egg 1986, 212.

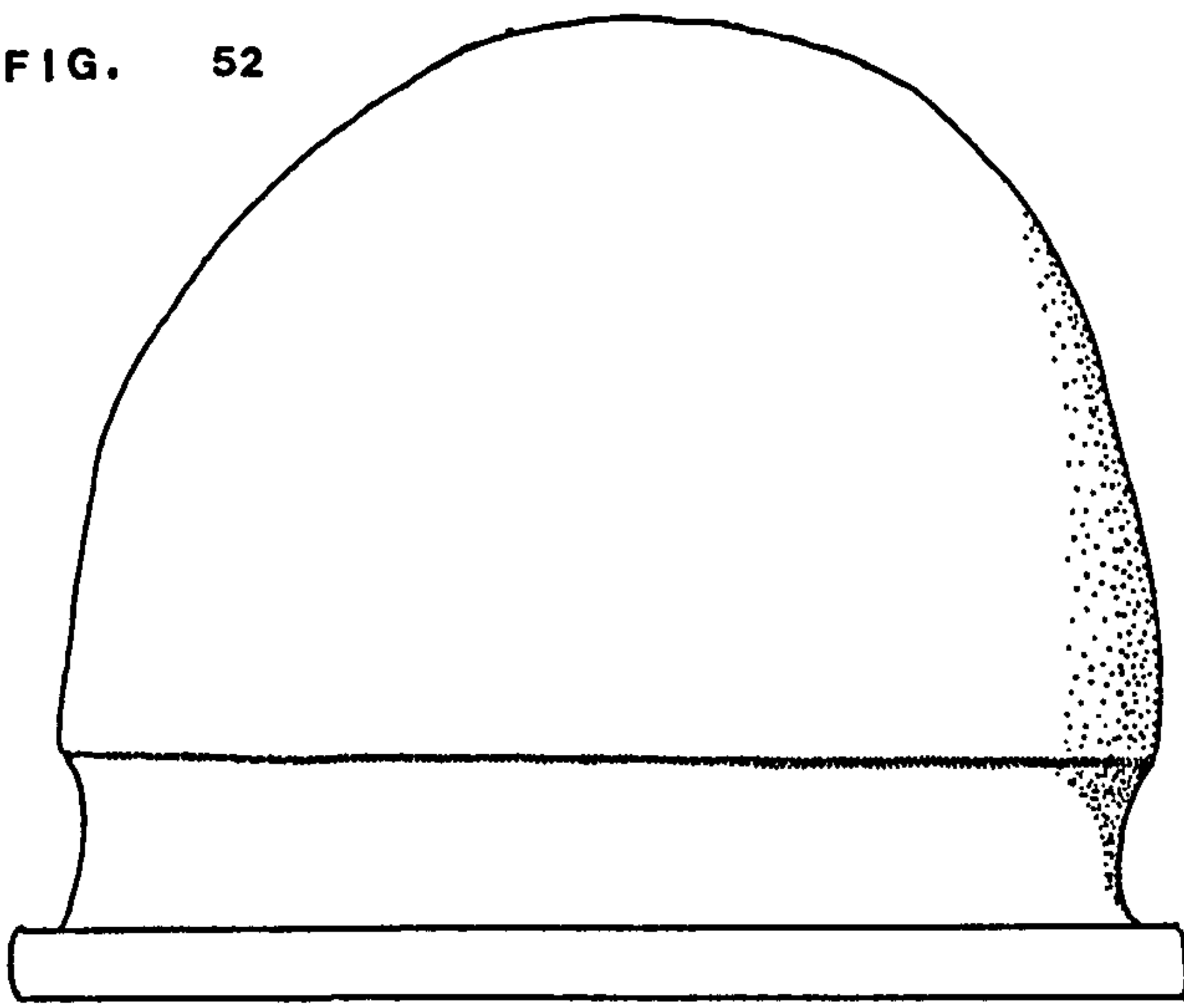
42. Sicily. Antiken Museum Berlin. L.66. Undecorated. (fig. 51:42) Egg 1986, 206.

43. Montericco, Imola near Bologna, Italy. Museo Civico Bologna. 19964. Undecorated. (fig. 52:43) Egg 1986, 204.

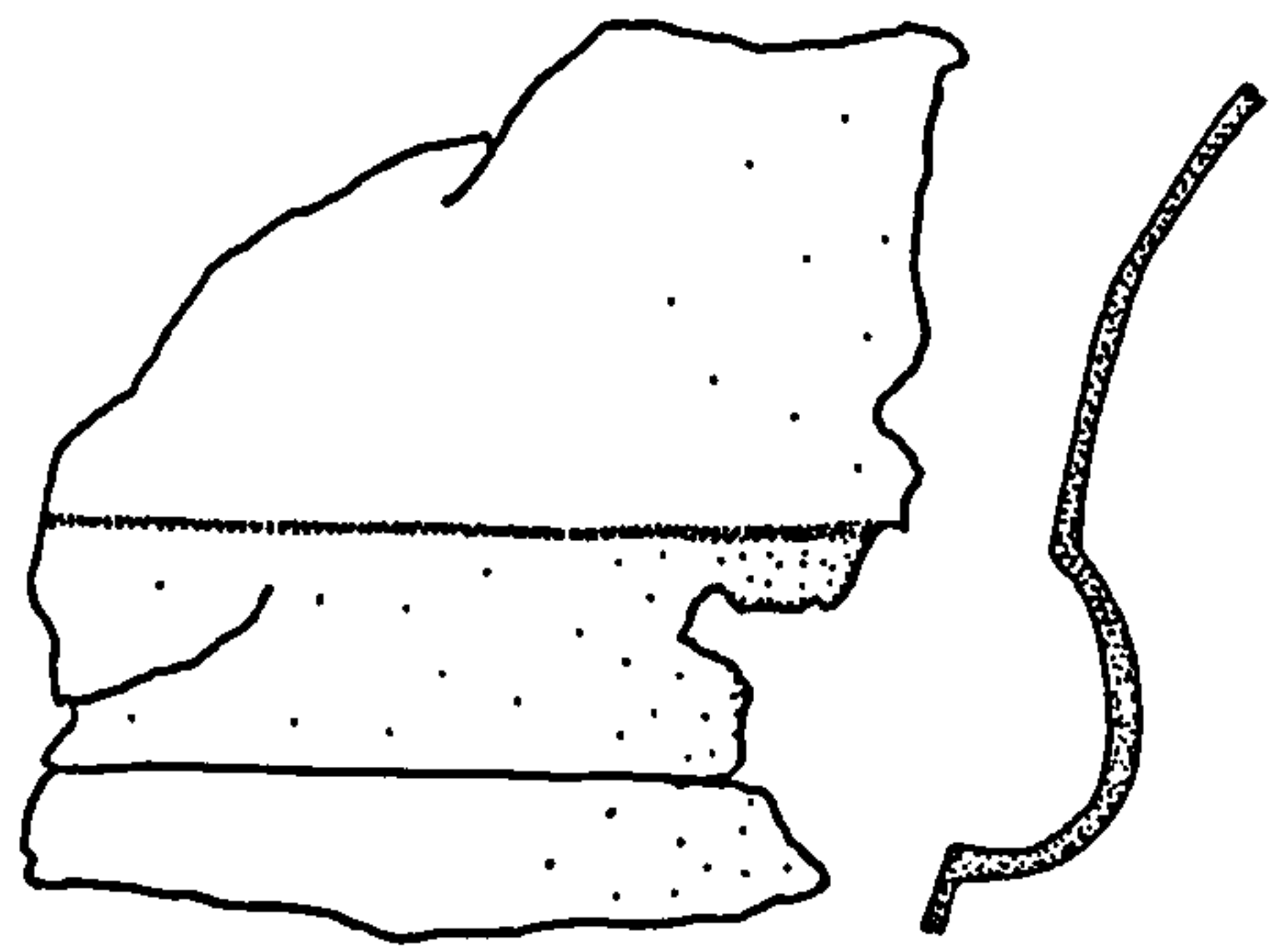
44. Certosa, Italy. Museo Civico Bologna. No Inv. No. Undecorated. (fig. 52:44) Zannoni 1876, 247.

45. Sta. Maria Maddalena di Cazzano near Bologna, Italy. Museo Civico Bologna. No Inv. No. Decorated: Restricted to the brim. It consists of a pair of single incised lines, one at each edge of the brim bordering a plain moulding, one either side of a pair of bands of diagonal hatching bordered by single incised lines and separated by a plain moulding. (fig. 52:45) Hatt, 1960, 362.

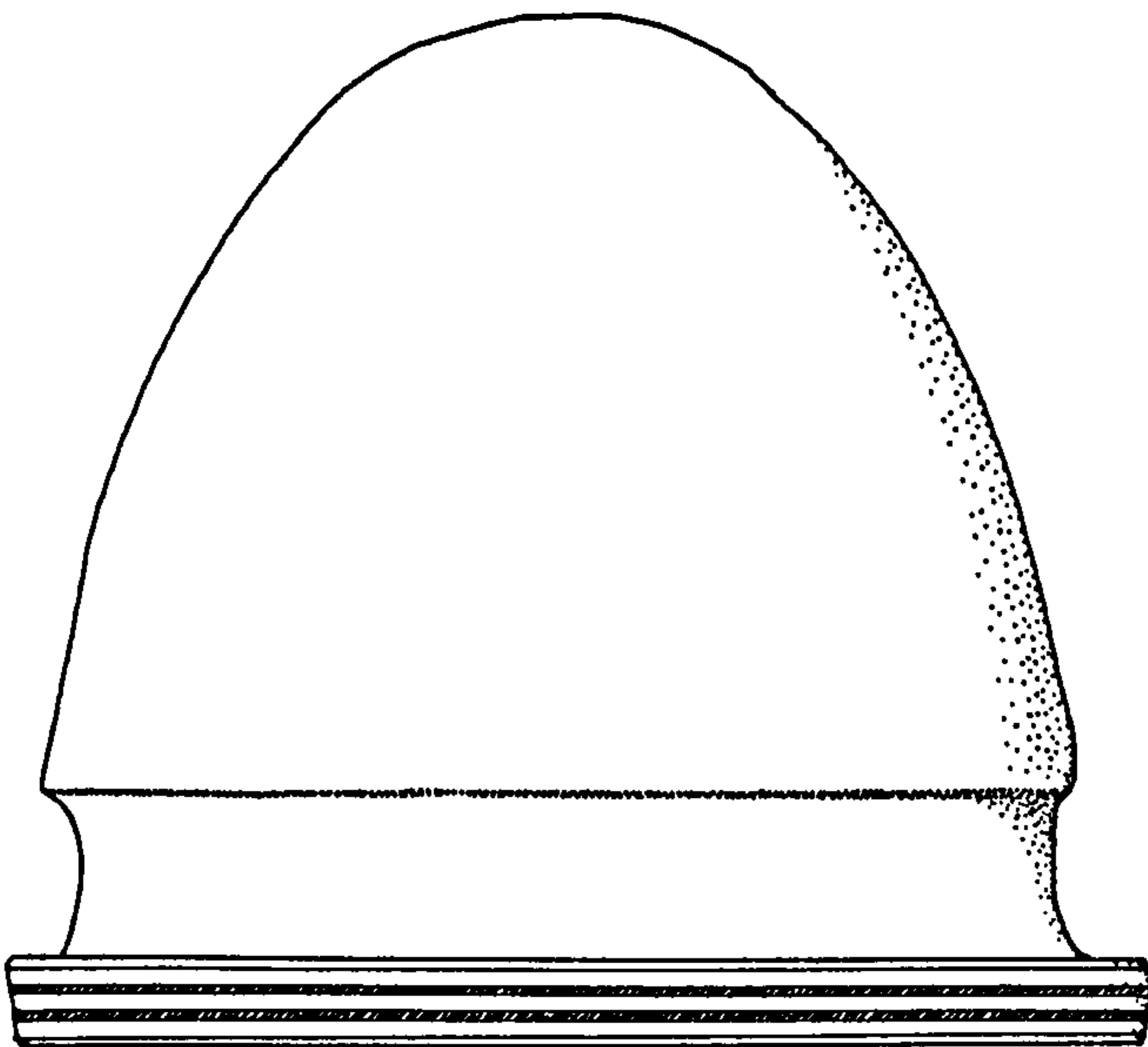
FIG. 52



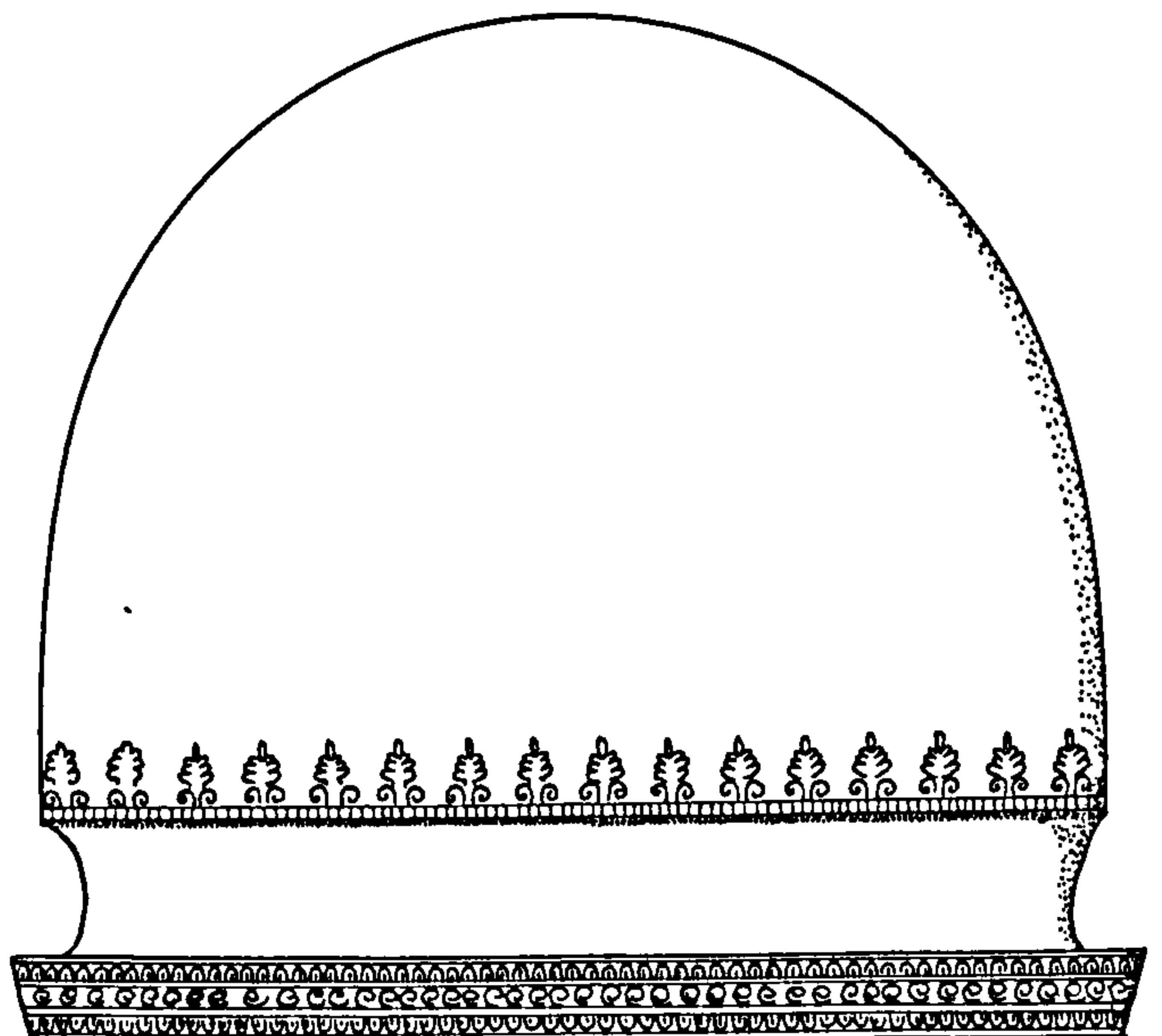
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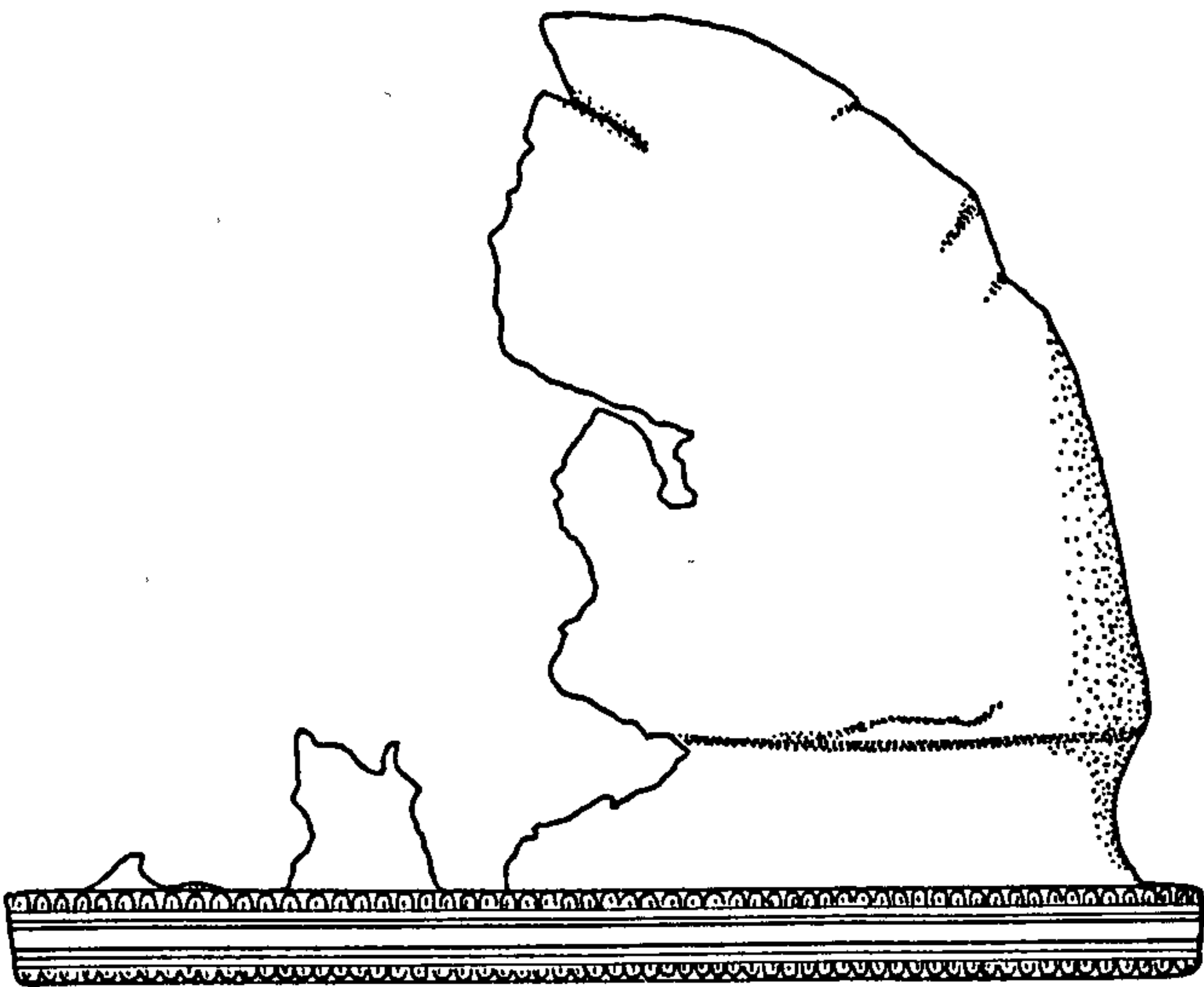
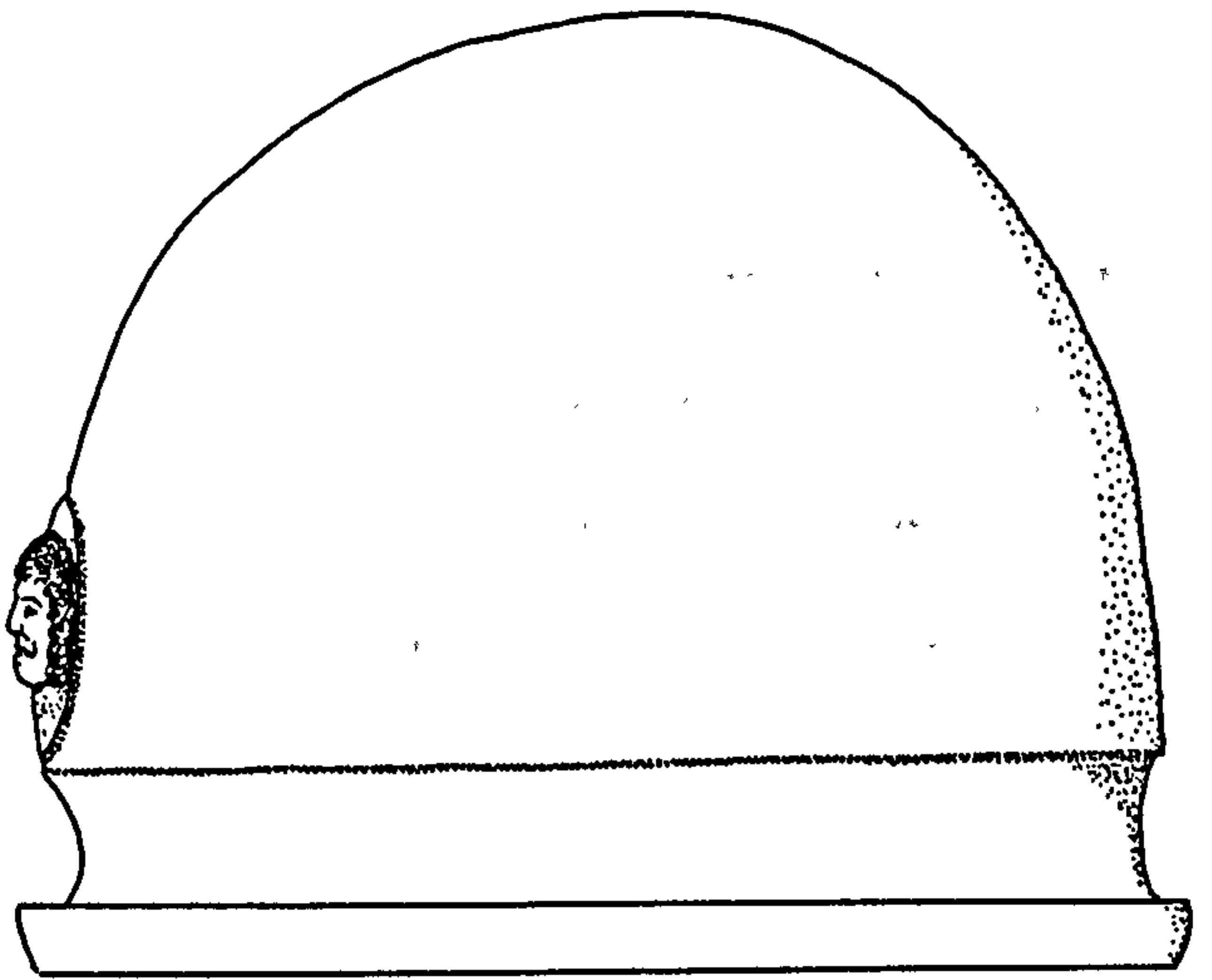


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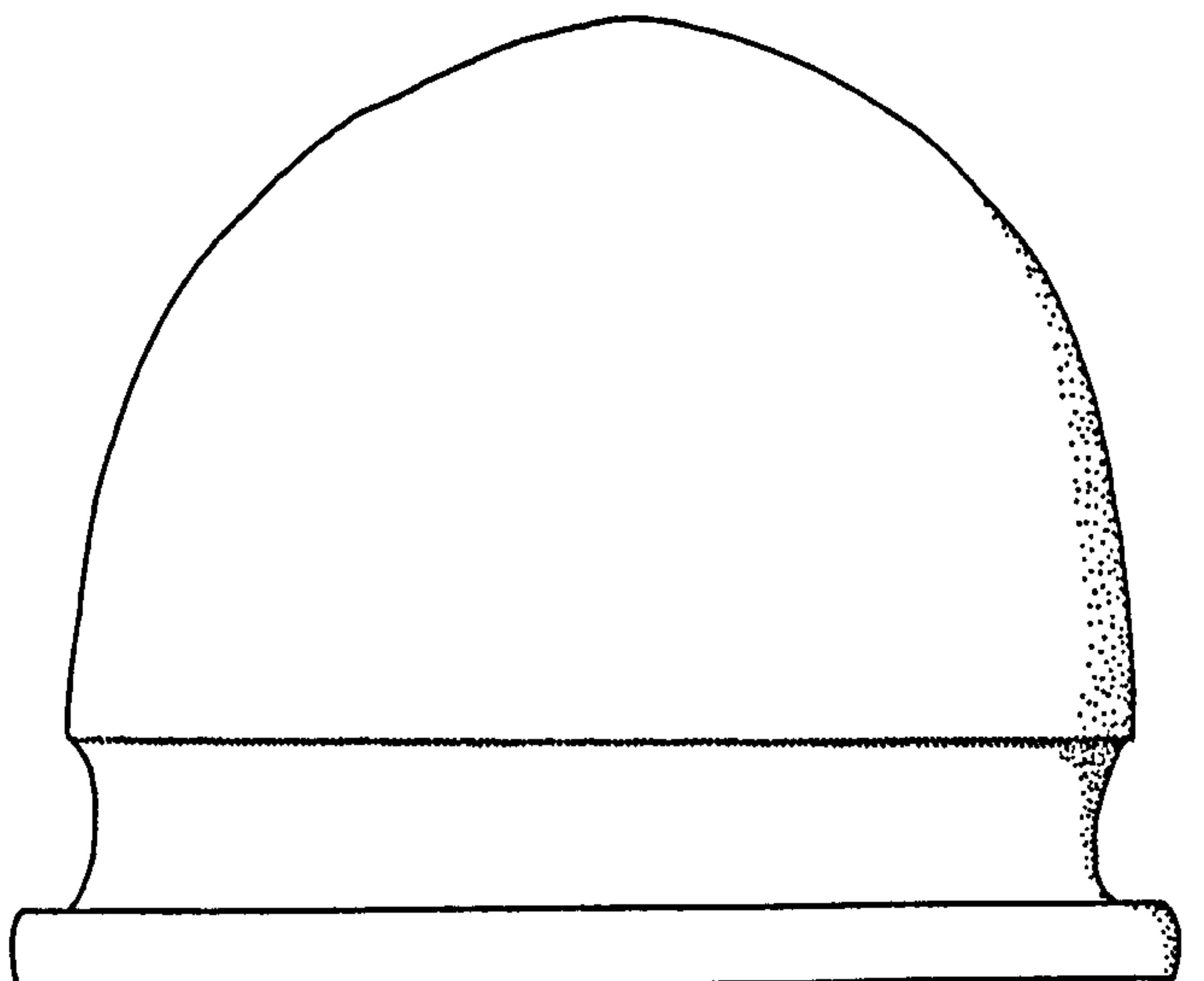
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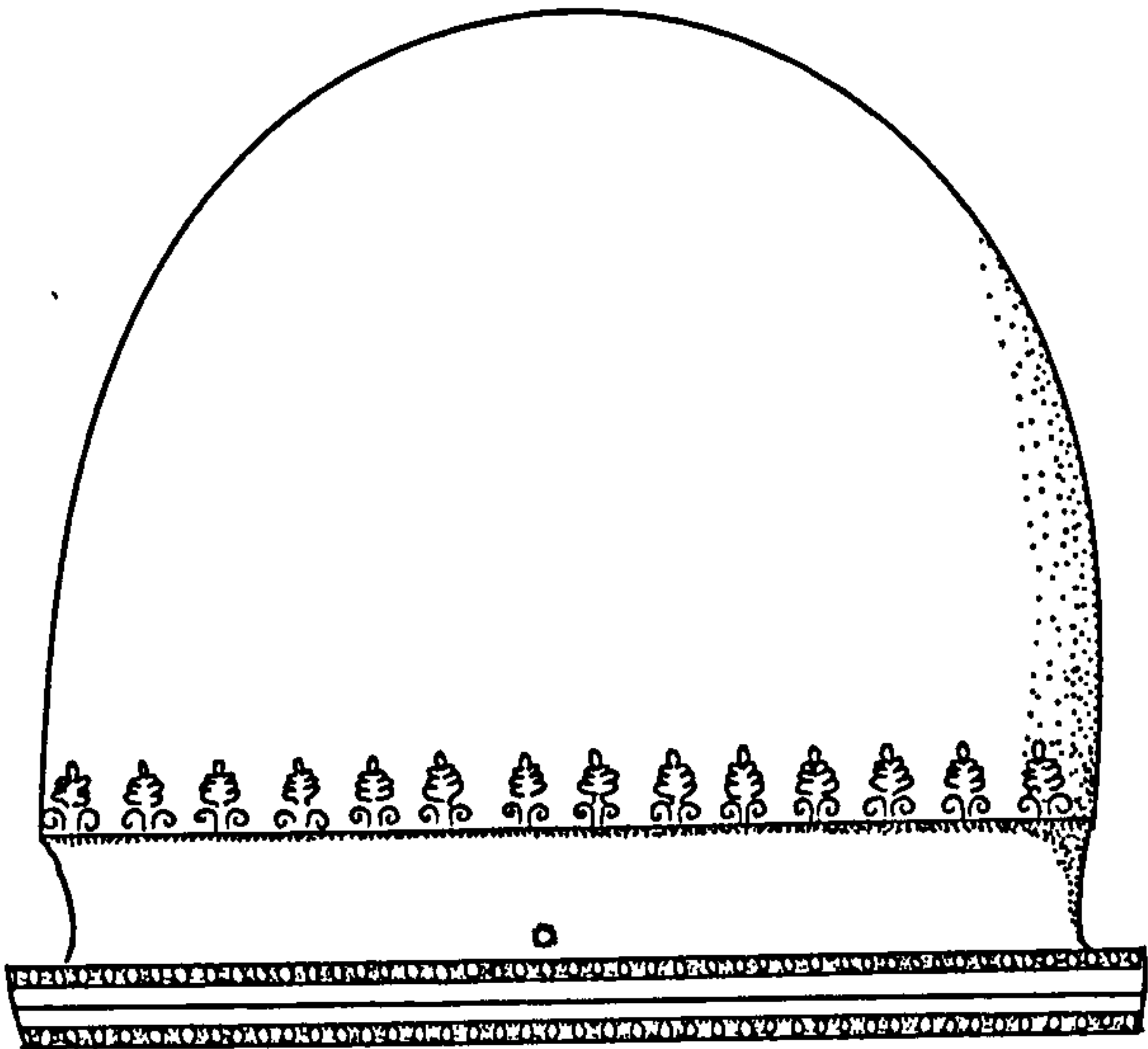
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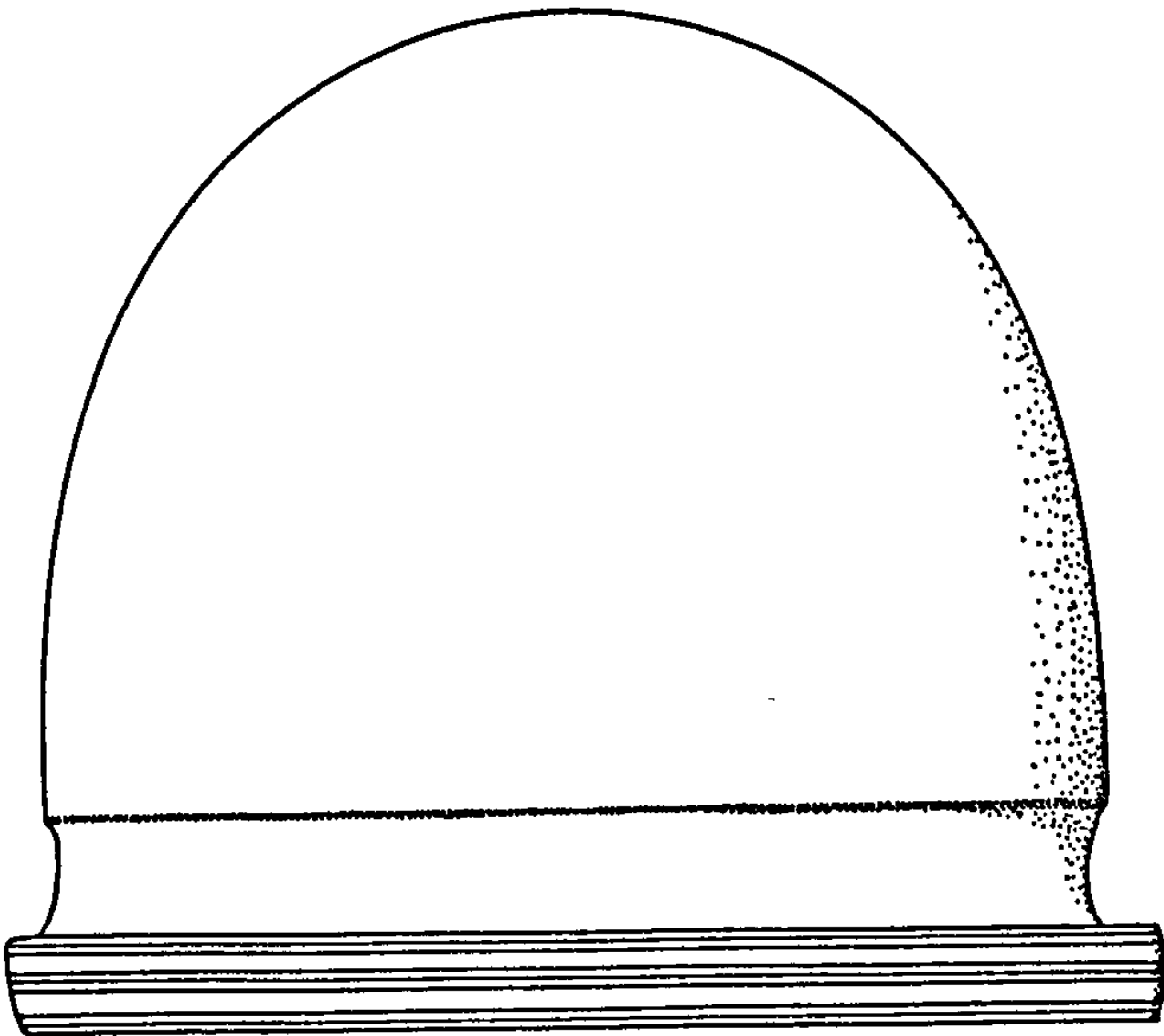
46. Italy. Museum of Fine Arts Boston. 1970.35. Decorated: Stamped on brim and bowl. The brim decoration consists of a band of egg and dart either side of a frieze of stamped volutes. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes. (fig. 52:46) Anon. 1968, 61. Comstock and Vermeule 1971, 495, pl.589c.
47. Italy. Burg Rheinstein bei Bingen. No Inv. No. Decorated: It consists of an appliqué in the form of a Gorgon's head. (fig. 53:47) Lipperheide, von 1896, 186.
48. Villamagna near Chieti, Abruzzi, Italy. Museo Nazionale Chieti. 5270. Decorated: Restricted to the brim. It consists of a band of egg and dart moulding surmounted by two incised lines either side of a plain band. (fig. 53:48) Egg 1986, 207.
49. Abruzzi, Italy. Museo Nazionale Chieti. 10781. Undecorated. (fig. 53:49) Egg 1986, 208.
50. Chieti, Abruzzi, Italy. Museo Nazionale Chieti. 10783. Decorated: Stamped on brim and bowl. The brim is decorated by a band of egg and dart moulding surmounted by two incised lines either side of a plain band. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes. (fig. 54:50) Cianfarani 1970, 204, pl.204. Franchi dell Orlo and Regina la 1978, 184.
51. Italy. National Museum Copenhagen. ABa 414. Decorated: Restricted to the brim. It consists of two pairs of incised lines one either side of a central group of four incised lines. (fig. 54:51) Egg 1986, 212.
52. Italy probably Tuscany. Museo Archeologico Florence. 1630. Undecorated. (fig. 54:52) Unpublished.

FIG. 54

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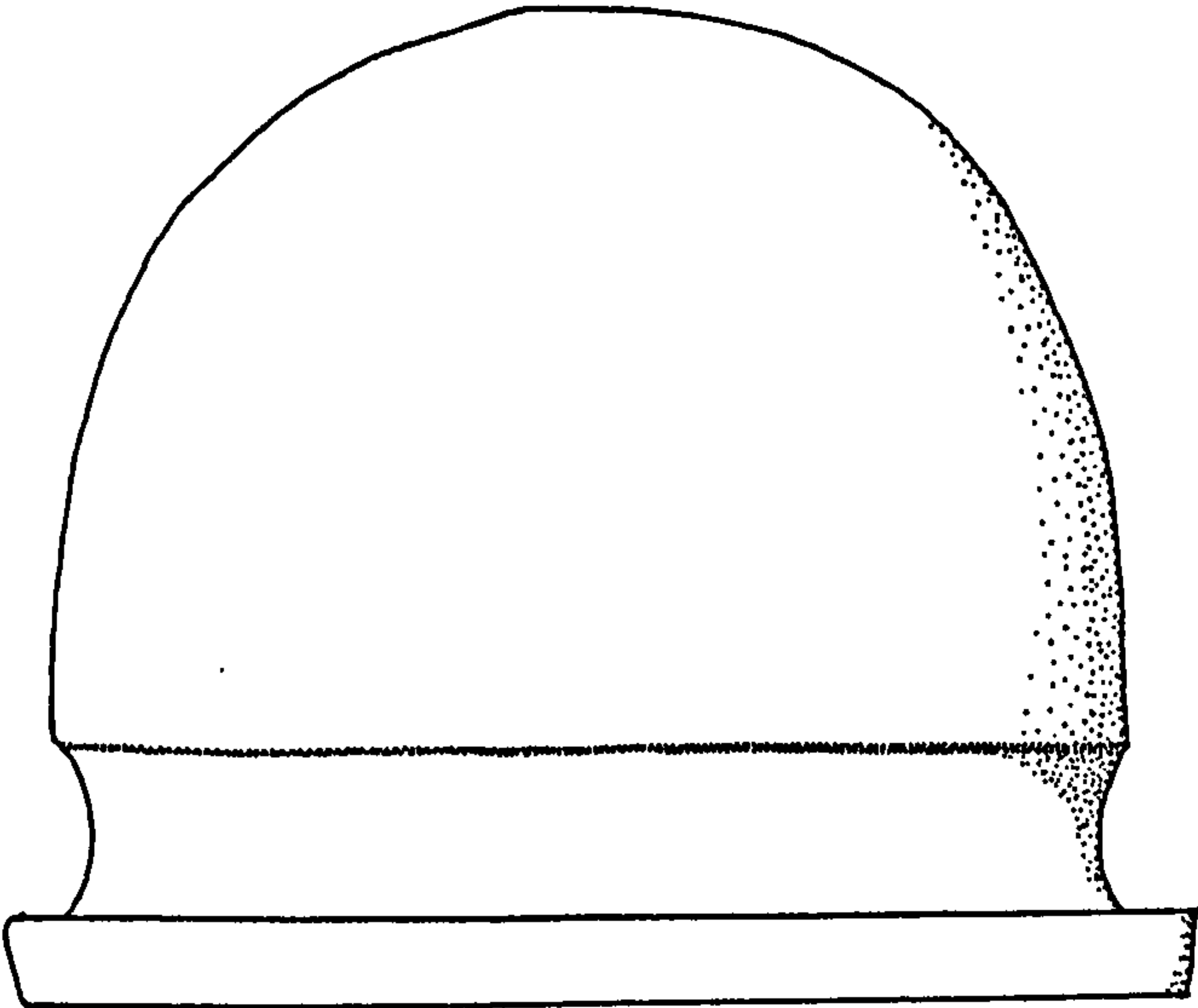
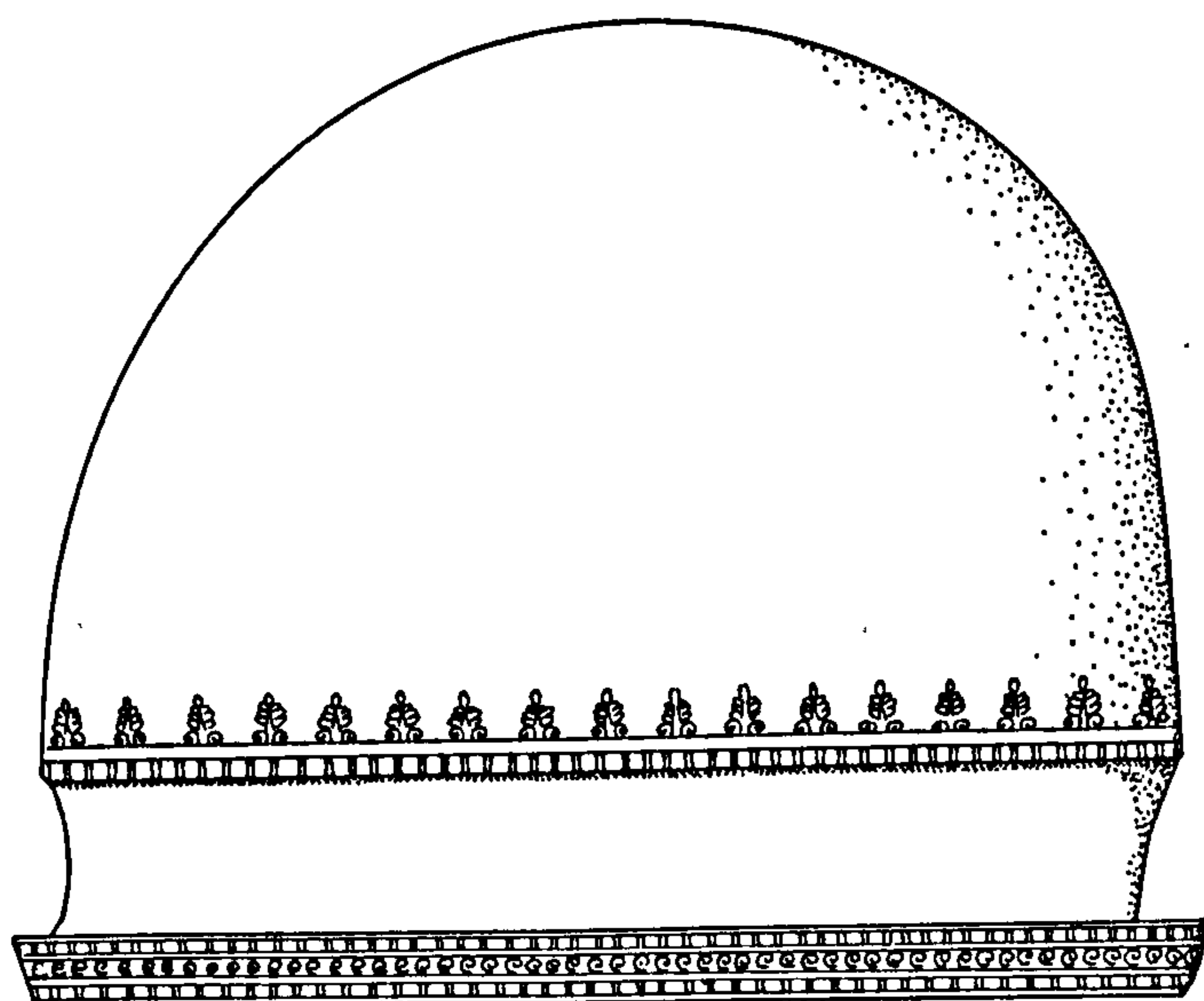
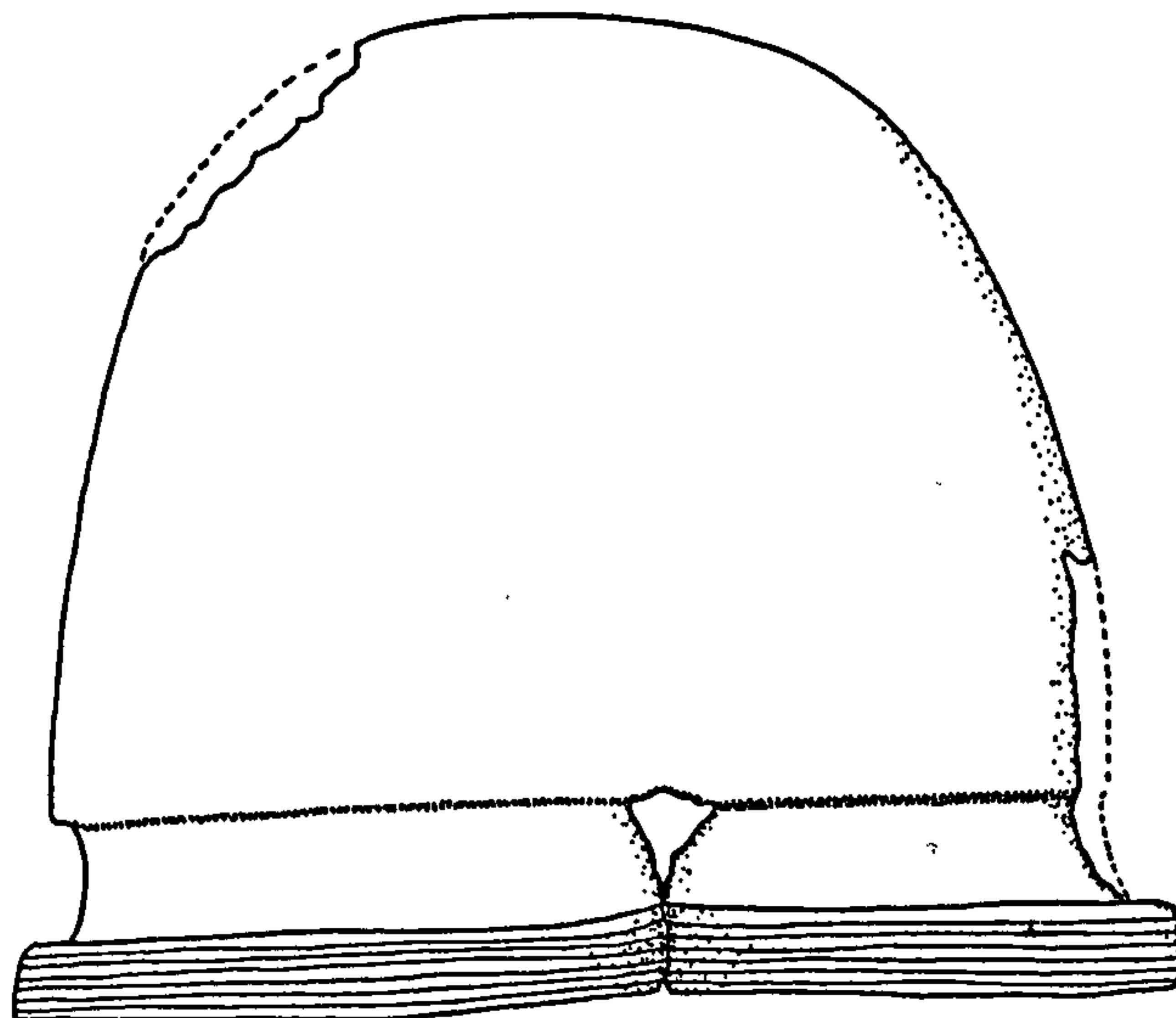


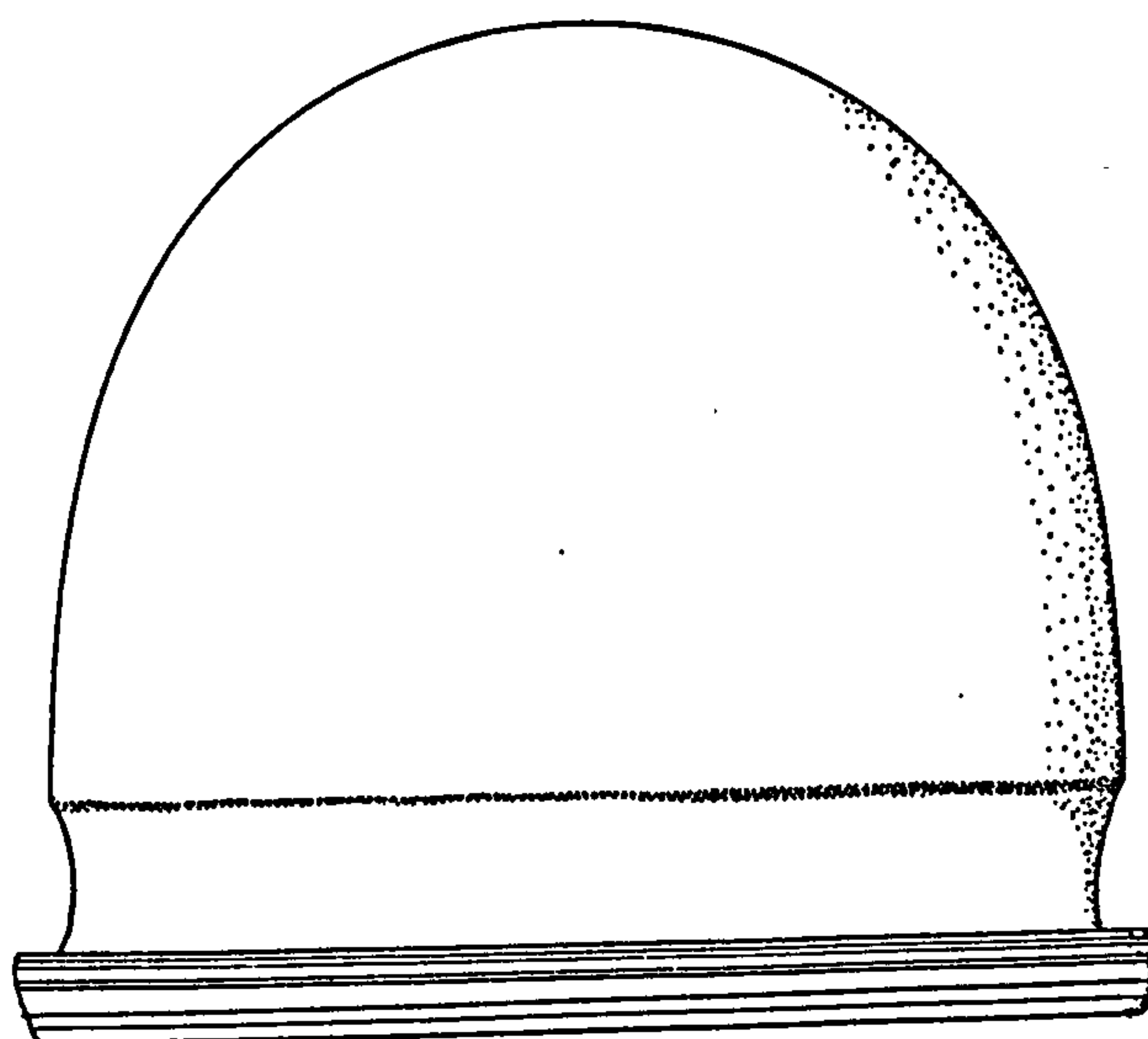
FIG. 55

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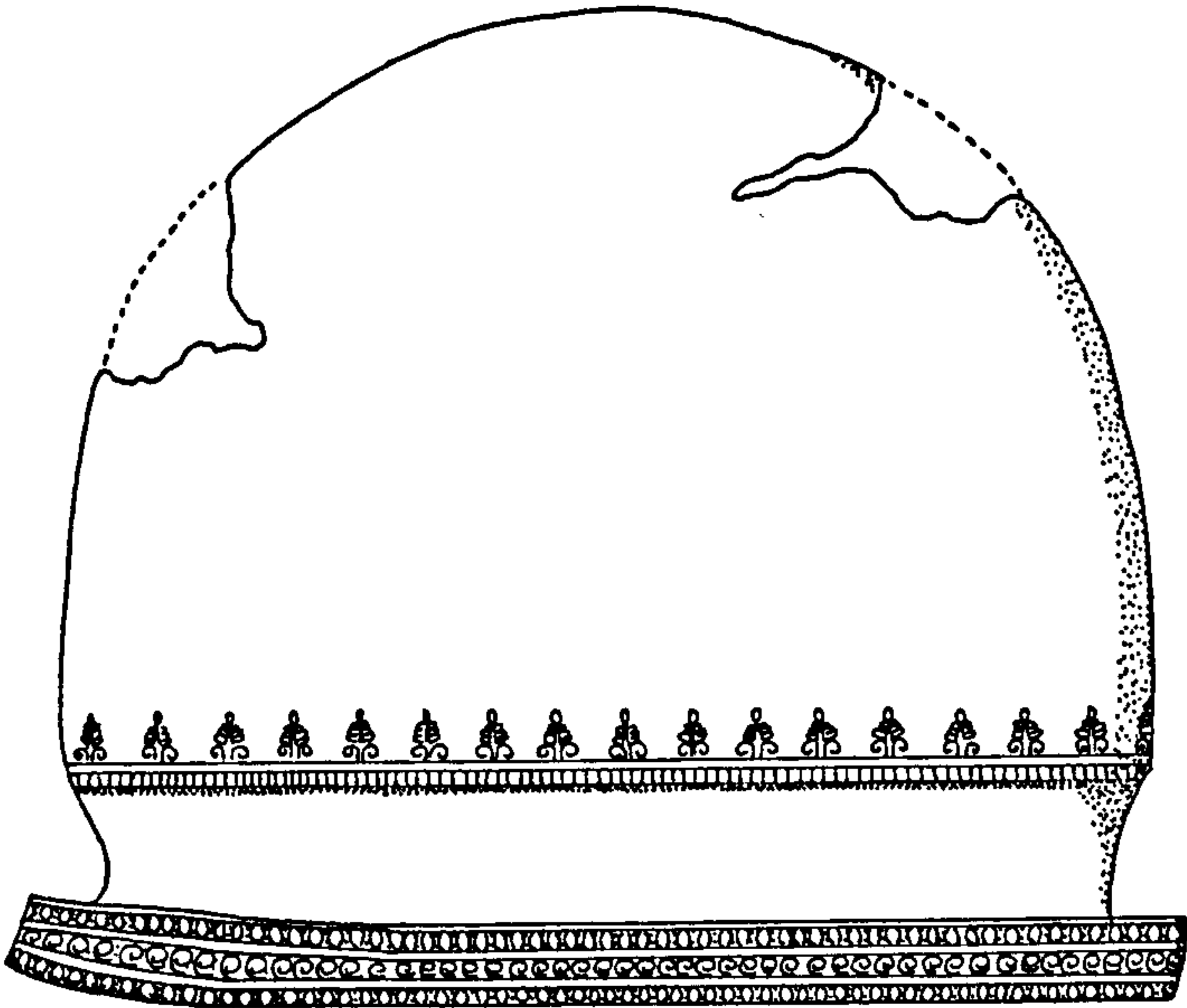
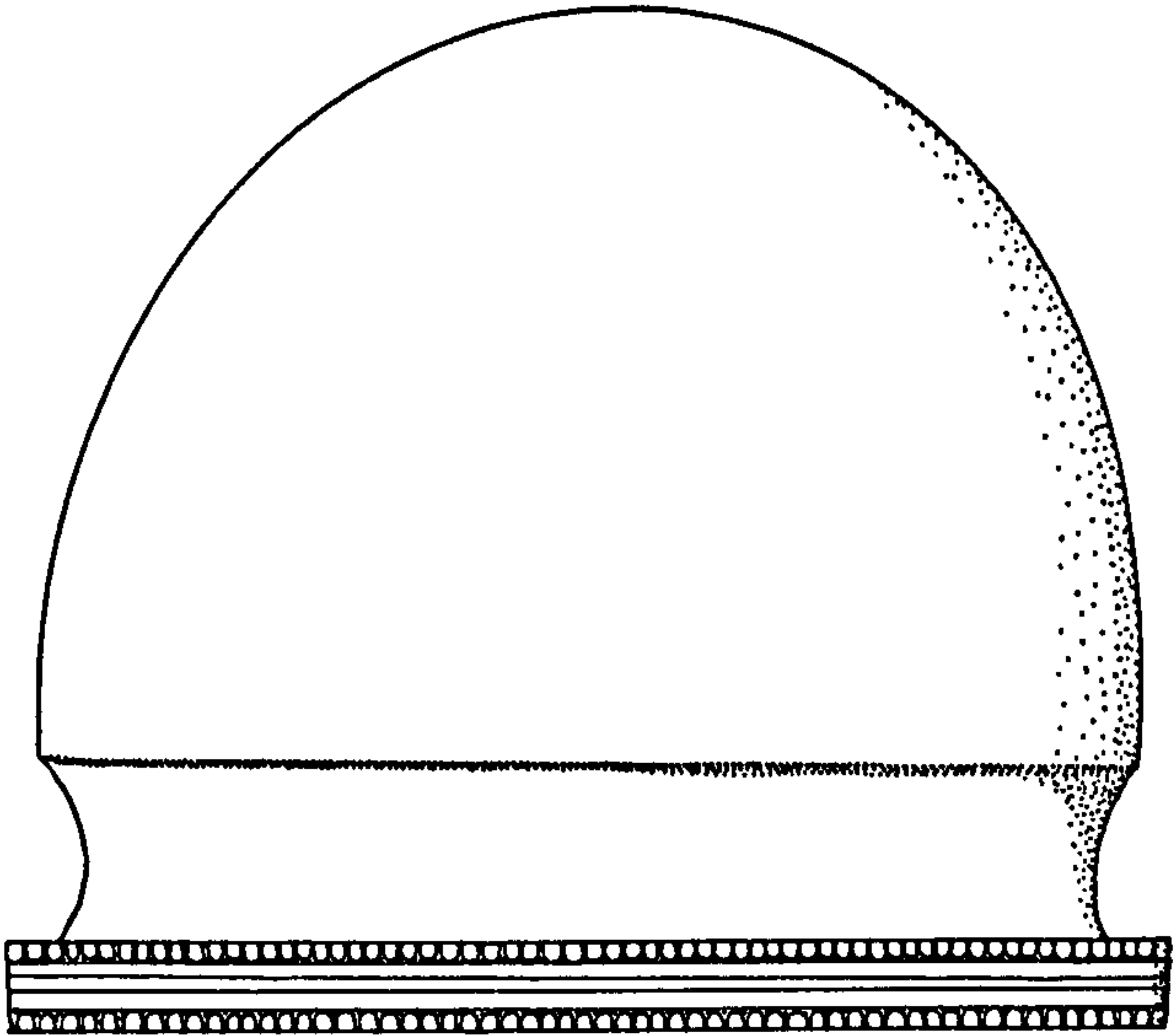


53. San Cerbone, Populonia, Toscana, Italy. Museo Archeologico Florence. 1239 Decorated: Restricted to the brim. It consists of two groups of three incised lines. (fig. 55:53) Talocchini 1942, 67. Egg 1986, 204.
54. Dovadola S. Ruffillo near Forlì, Emilia Romagna, Italy. Museo Archeologico di Forlì. 27163. Decorated: Stamped on brim and bowl. It consists of a band of dental pattern either side of a plain band stamped with running volutes. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes resting on a dental pattern. (fig. 55:54) Negrolì. 1926, 31.
55. Talamone, Toscana, Italy. Museo Nazionale Maremma Grosseto. 70842. Decorated: Restricted to the brim. It consists of three pairs of double incised lines. (fig. 55:55) Pernier 1919, 18.
56. Morine di Sotto Imola, Emilia Romagna, Italy. Museo Civico Imola. 336A. Decorated: Restricted to the brim. It consists of a band of egg and dart moulding surmounted by four incised lines which in its turn is surmounted by a band of egg and dart moulding. (fig. 56:56) Mansuelli 1957, 17.
57. Casola Valsenio Monteroni, Emilia Romagna, Italy. Museo Civico Imola. 338A. Decorated: Stamped on brim and bowl. It consists of a band of egg and dart moulding surmounting two incised lines either side of a plain band stamped with ring and dot motifs. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes over a band of dental pattern. (fig. 56:57) Arias 1953, 218.
58. Etruria, Italy. Badisches Landesmuseum Karlsruhe. F435. Undecorated. (fig. 56:58) Schumacher 1890, 135.

59. Etruria, Italy. Badisches Landesmuseum Karlsruhe. F436.
Undecorated. (fig. 57:59) Schumacher 1890, 134.
60. Paestum, Campania, Italy. Badisches Landesmuseum Karlsruhe. F438.
Undecorated. (fig. 57:60) Schumacher 1890, 134. Lipperheide, von
1896. 200.
61. Etruria, Italy. Badisches Landesmuseum Karlsruhe. F439.
Undecorated. Inscribed: *HASPANA* (fig. 57:61) Schumacher 1890, 135
62. Canino, Toscana, Italy. British Museum. 2717. 1878.10-19.302.
Decorated: Restricted to the brim. It consists of a band of egg and
dart moulding, surmounting two incised lines, either side of a band of
stamped volutes (fig. 58:62) Walters 1899, 341.
63. Italy. British Museum. 2718. 1975. 6-3.5. Decorated: Restricted
to the brim. It consists of four pairs of double incised lines.
(fig. 58:63) Walters, 1899, 341.
64. Italy. British Museum. 2719. 1856. 12-26. Decorated: Restricted
to the brim. It consists of three pairs of double incised lines.
(fig. 58:64) Walters, 1899, 341.
65. Italy. British Museum. 2720. 1975. 6-3.4. Decorated: Restricted
to the brim. It consists of a band of egg and dart moulding,
surmounting two incised lines, either side of a band of stamped
volute. (fig. 59:65) Walters, 1899, 342.
66. Italy. Royal Armouries, H. M. Tower of London. IV. 542.
Undecorated. (fig. 59:66) Unpublished.
67. Italy. Royal Armouries, H. M. Tower of London. IV. 543.
Undecorated. (fig. 59:67) Unpublished
68. Italy. Staatliche Antikensammlung Munich. 70. Undecorated.
(fig. 60:68) Egg. 1986, 209.

FIG. 56

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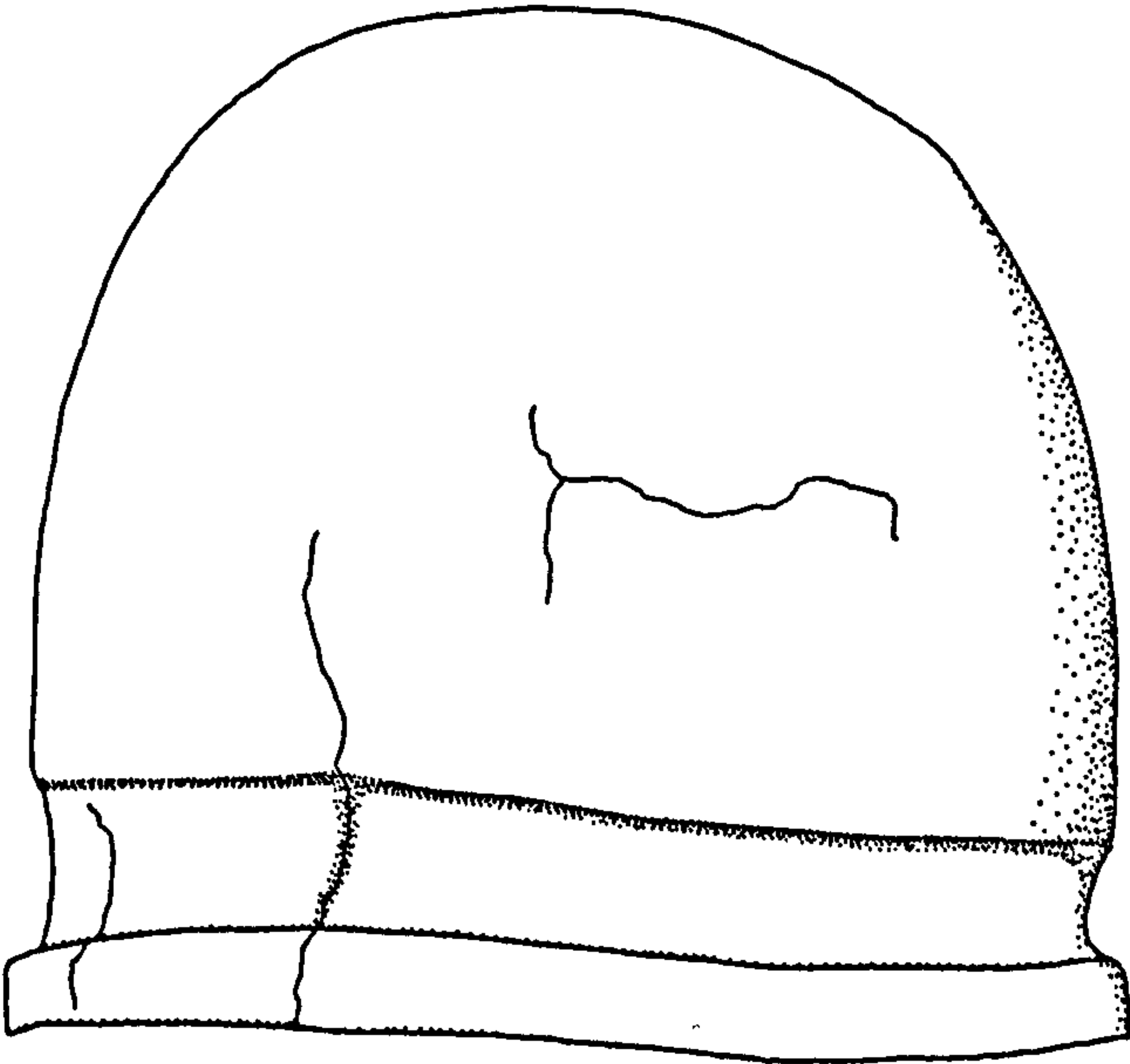
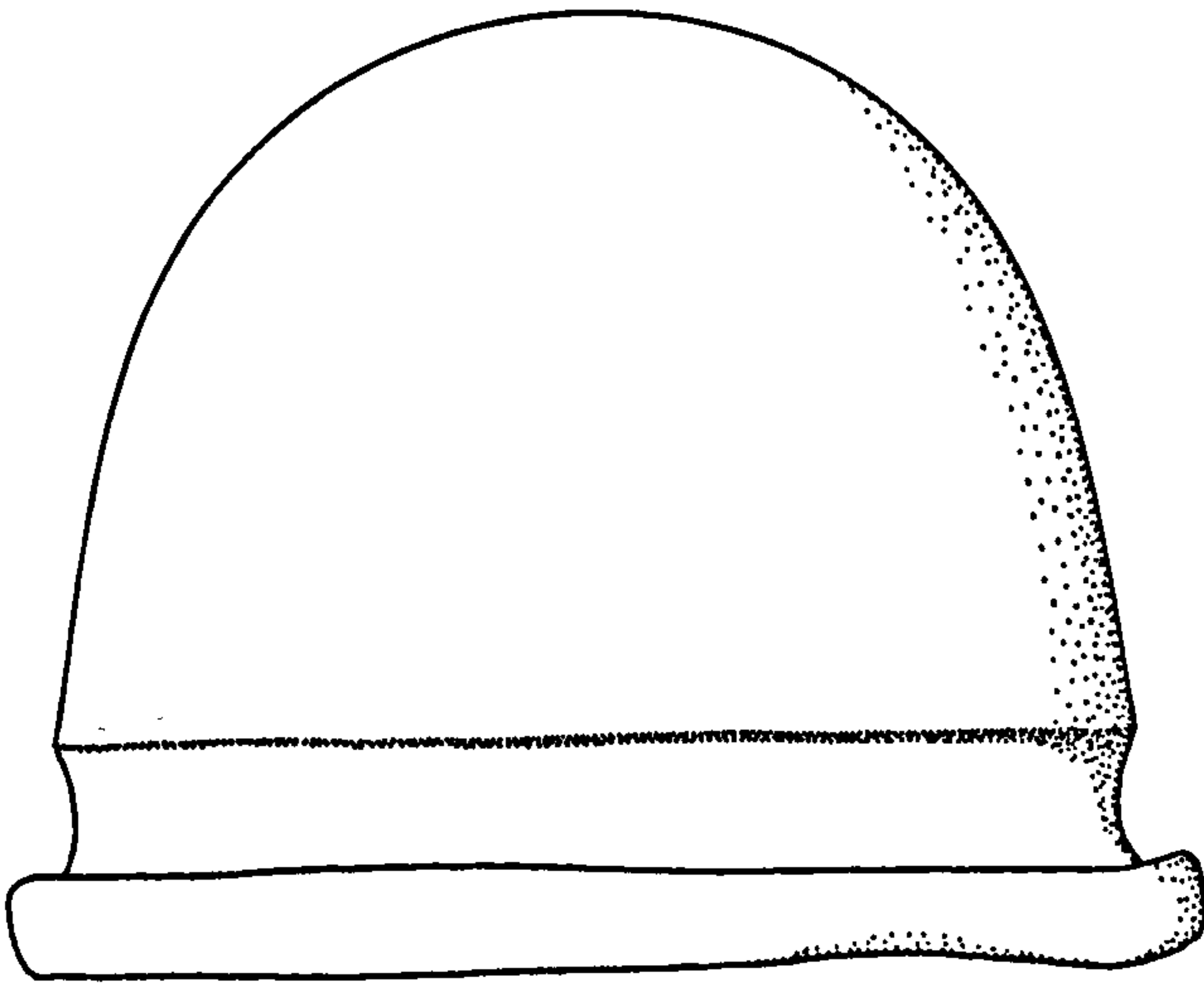
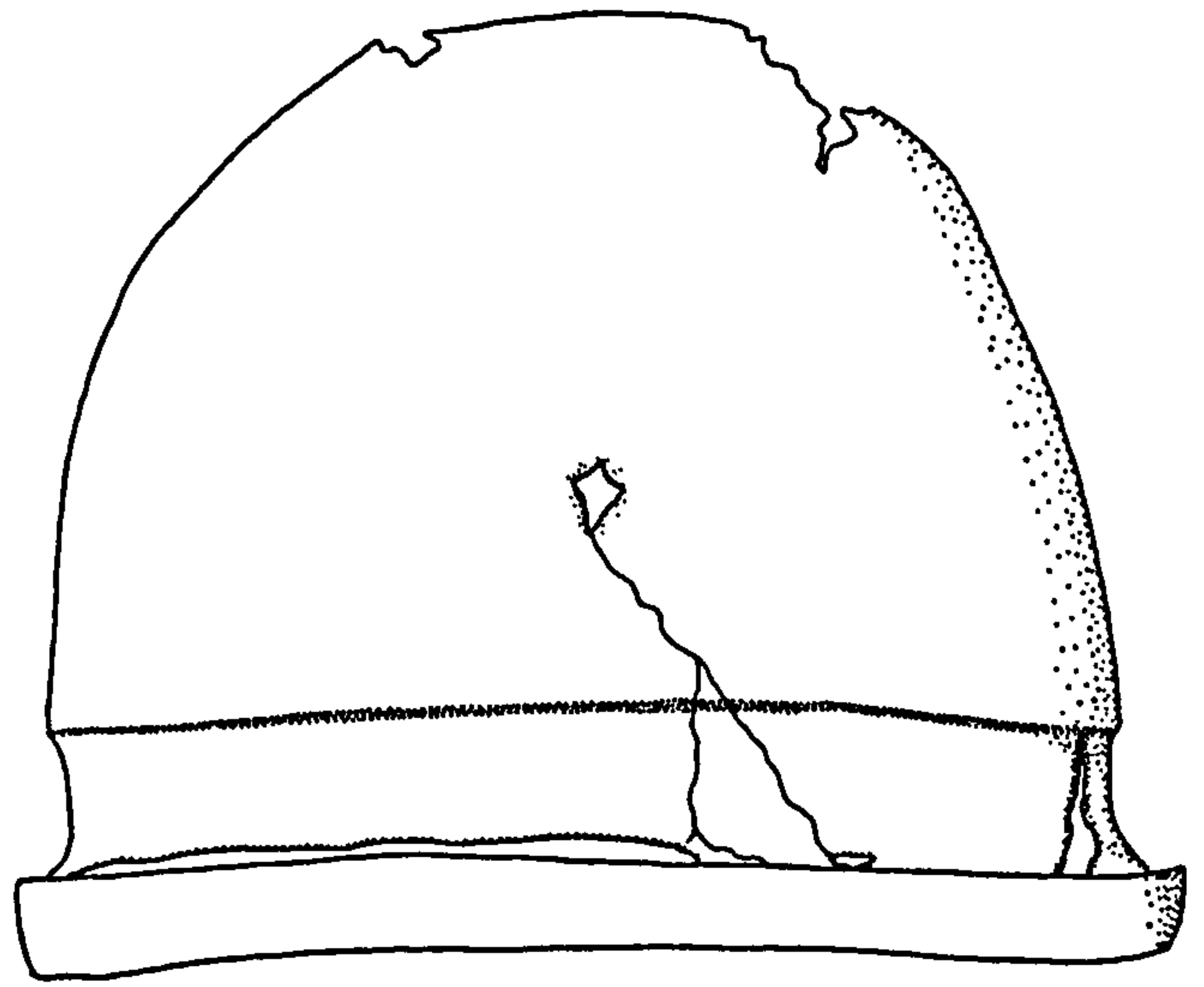


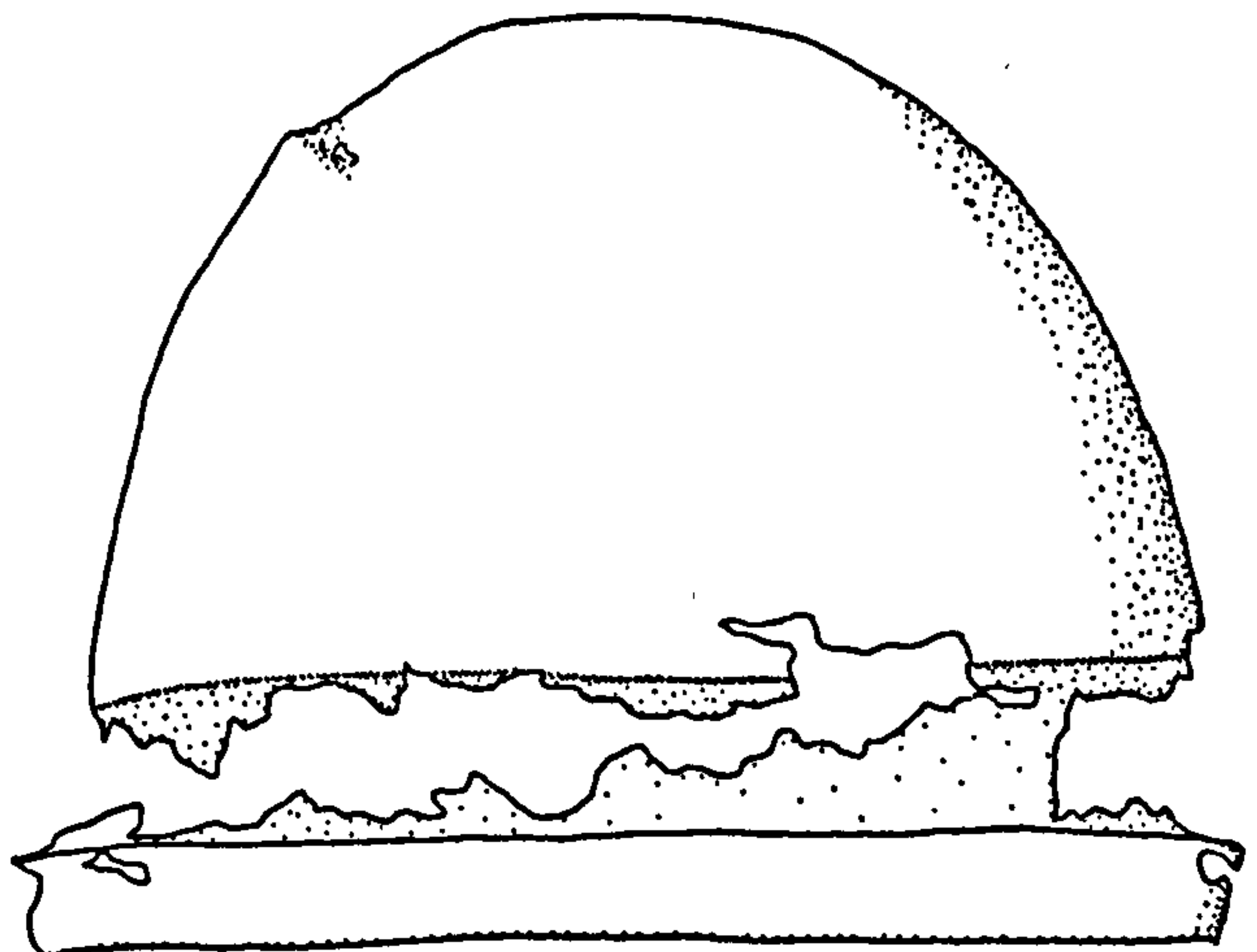
FIG. 57

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69. Italy. J. Paul Getty Museum Malibu. 73 AC 33. Decorated: Consists of an appliqué cast bronze crest-fixture in the form of a palmette. (fig. 60:69) Egg 1986, 215.
70. Italy. J. Paul Getty Museum Malibu. 73 AC 34. Undecorated. (fig. 60:70) Egg 1986, 215.
71. Italy. Römische Germanisches Zentral Museum Mainz. 039819. Undecorated. (fig. 61:71) Anon 1975, 99. Egg 1986, 216.
72. Egnazia, Apulia, Italy. Museo Nazionale Naples. No Inv. No. Decorated: Restricted to the brim. It consists of five equally spaced incised lines. (fig. 61:72) Lipperheide, von 1896, 197.
73. Italy. Germanisches National-museum Nuremberg. R388. Undecorated. (fig. 61:73) Lipperheide, von 1896, 185.
74. Olympia, Greece. Archaeological Museum Olympia. Undecorated. Inscribed: 'Ιερών ο Δεινομένης καὶ τοὶ Συρακοῖοι τῷ Δι' ὑπὸν ἀπὸ Κυμας' "Hieron son of Deinomenes and the Syracusans, to Zeus: Etruscan spoils from Cumae". (fig. 62:74) Touchais. 1980, 611.
75. Orvieto, Toscana, Italy. Museo Civico Orvieto. 105. Decorated: Restricted to the brim. It consists of a line of dental pattern either side of two pairs of incised lines. (fig. 62:75) Unpublished
76. Orvieto, Toscana, Italy. Museo Civico Orvieto. 1057. Undecorated. (fig. 62:76) Unpublished
77. Italy. Ashmolean Museum Oxford. 1874.489. Decorated: Restricted to the brim. It consists of a band of egg and dart moulding either side of a three equally spaced incised lines. (fig. 63:77) Egg 1986, 209.
78. Italy. Musée de l'Armée Paris. E10. Decorated: Stamped on brim and bowl. It consists of a band of dental pattern on either side of

- two incised lines. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes. (fig. 63:78) Mohen, 1970, 223.
79. Italy. Musée du Louvre Paris. 1110 (1373 NS796.) Undecorated. (fig. 63:79) Ridder, de 1915, 3.
80. Italy. Musée du Louvre Paris. 1111 (C6969.) Decorated: Restricted to the brim. It consists of two bands of egg and dart mouldings separated by four equally spaced incised lines. Inscribed *ANI*. (fig. 64:80) Ridder, de 1915, 3.
81. Italy. Musée du Louvre Paris. 1112 (C6683). Undecorated. (fig. 64:81) Ridder, de 1915, 3.
82. Italy. Musée du Louvre Paris. 1113 (C6721). Undecorated. (fig. 64:82) Ridder, de 1915, 3.
83. Italy. Musée du Louvre Paris. 1115. Decorated: Restricted to the brim. It consists of two bands of egg and dart moulding separated by two incised lines either side of a band of stamped volutes. (fig. 65:83) Ridder, de 1915, 3.
84. Italy. Musée du Louvre Paris. 1116. Decorated: Stamped on the bowl only, the brim is missing. The decoration consists of a frieze of palmettes each resting on a pair of volutes. (fig. 65:84) Ridder, de 1915, 3.
85. Italy. Musée du Louvre Paris. 1117. (C6978.) Decorated: An appliqué in the form of a classical lion's head. (fig. 65:85) Ridder, de 1915, 4.
86. Martino in Gattara near Ravenna. Museo Archeologico Ravenna. Undecorated. (fig. 66:86) Bermond-Montanari 1969, 20.
87. Italy. Castel S. Angelo Rome. No Inv. No. Undecorated. (fig. 66:87) Unpublished.

FIG. 58

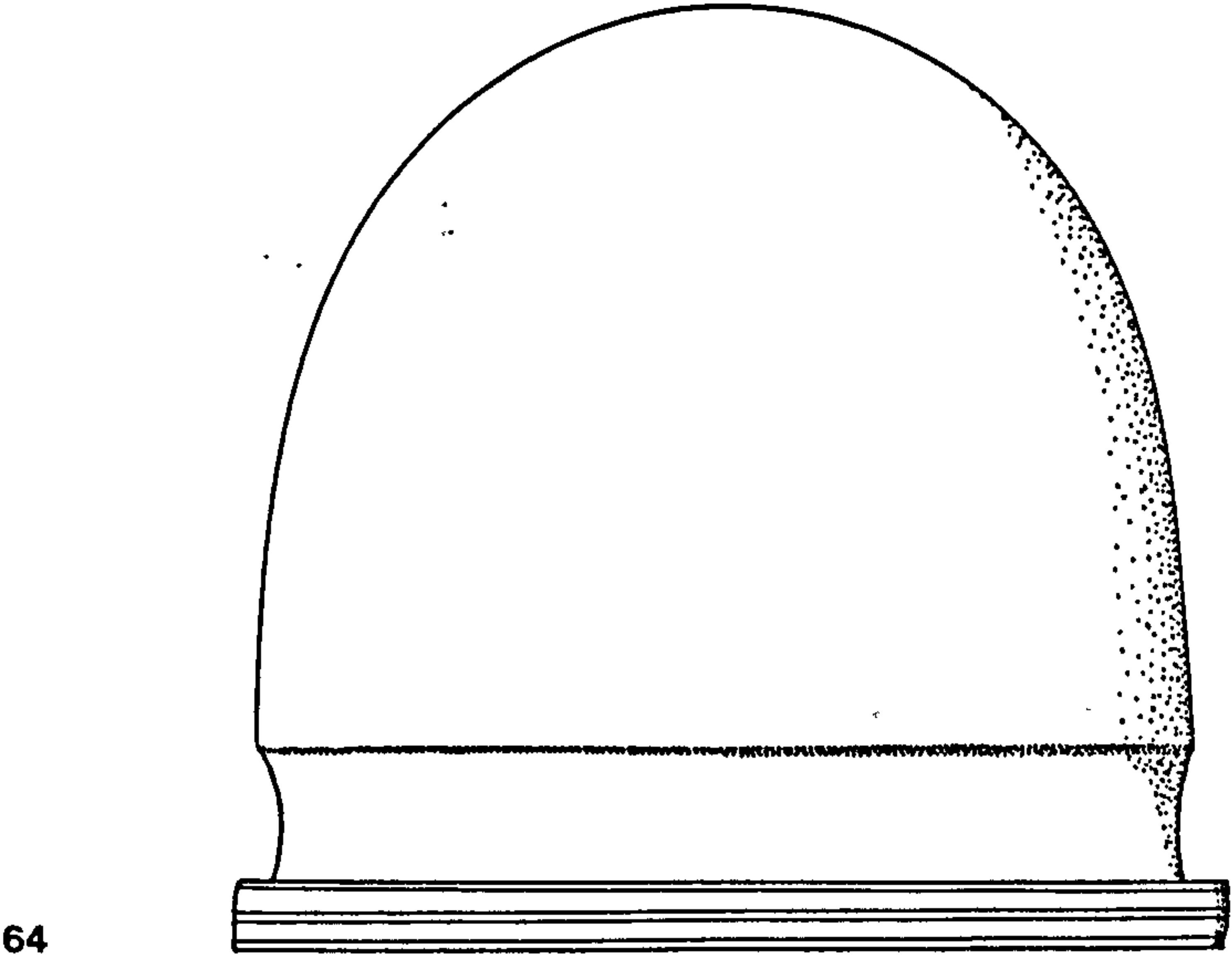
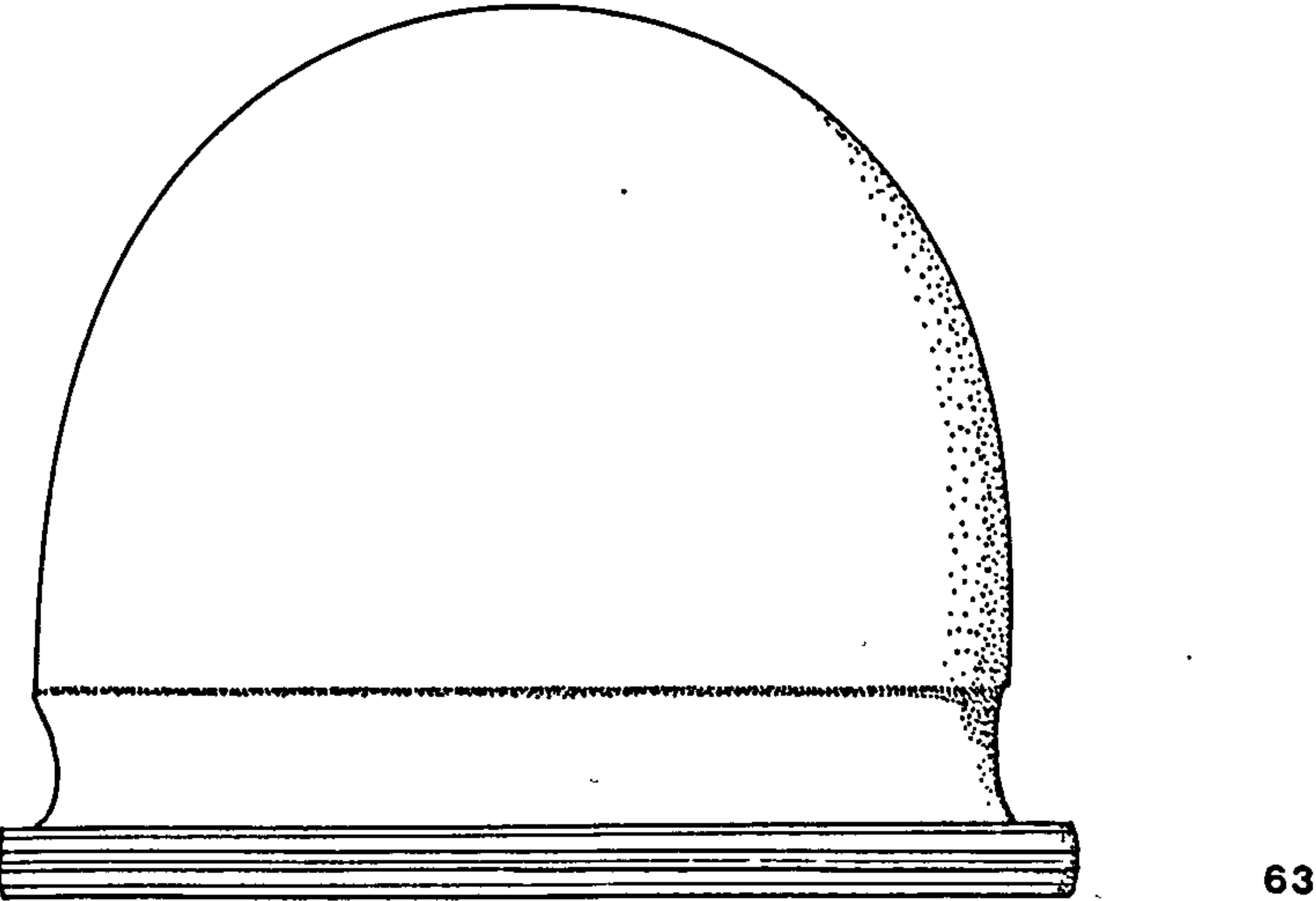
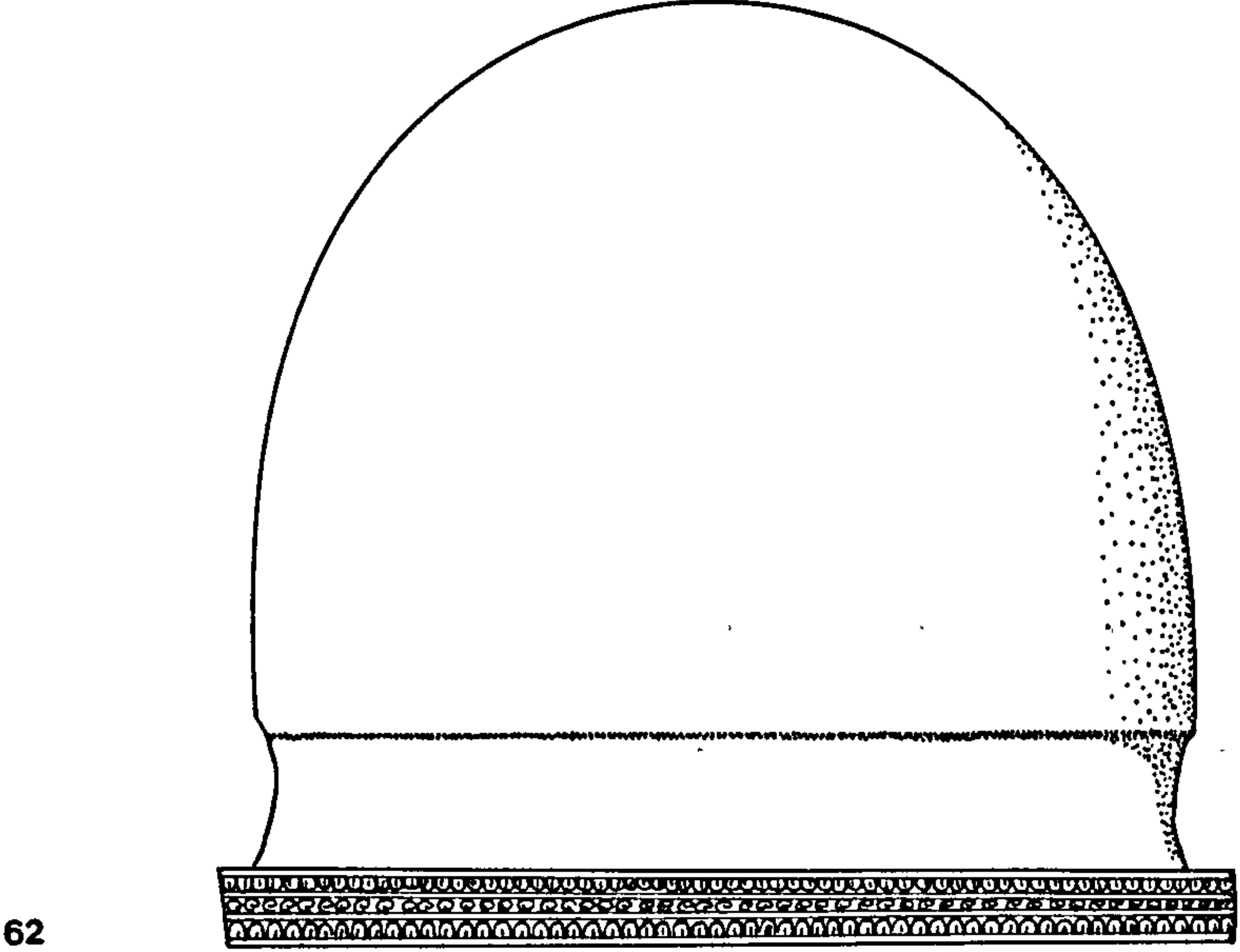
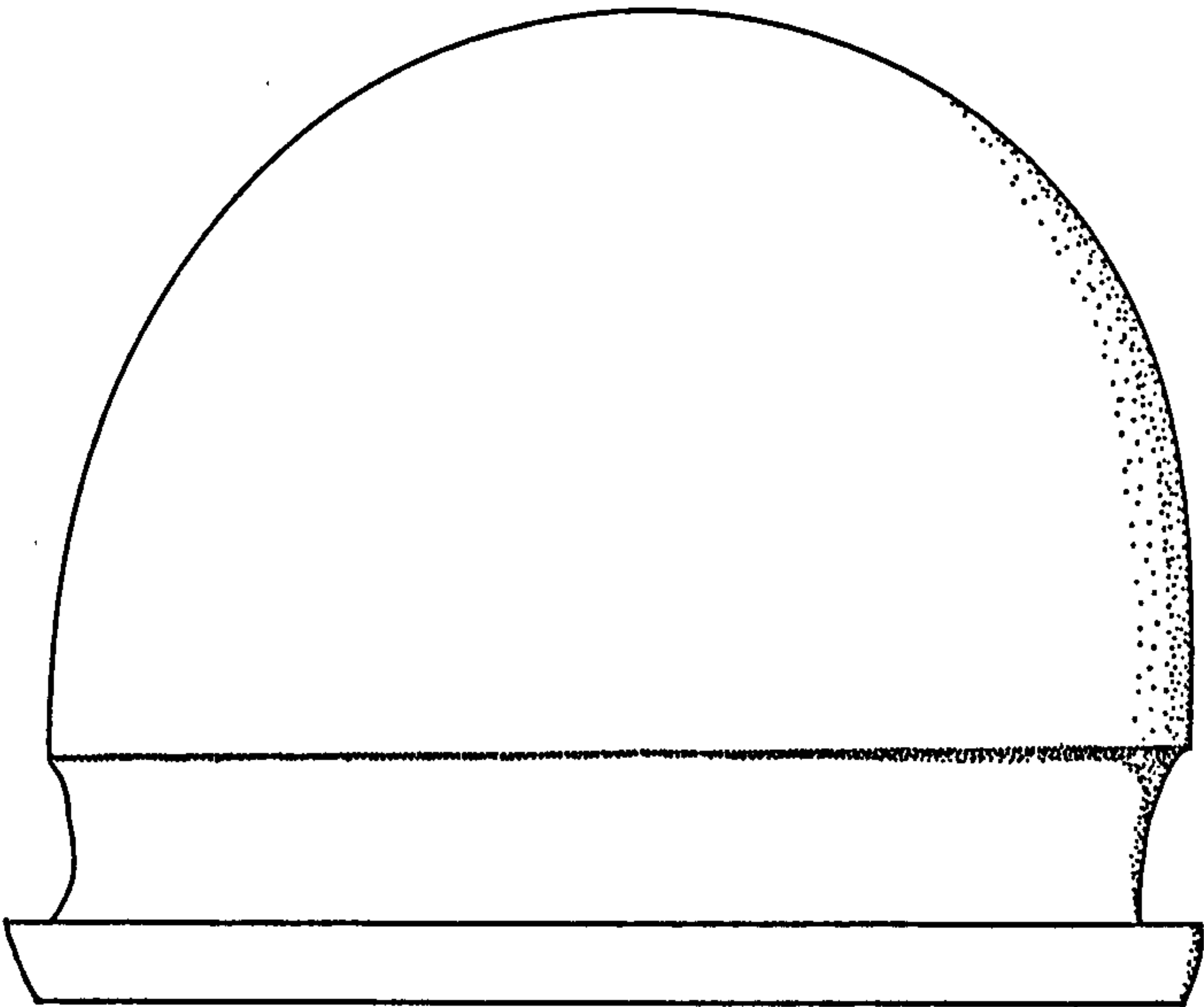
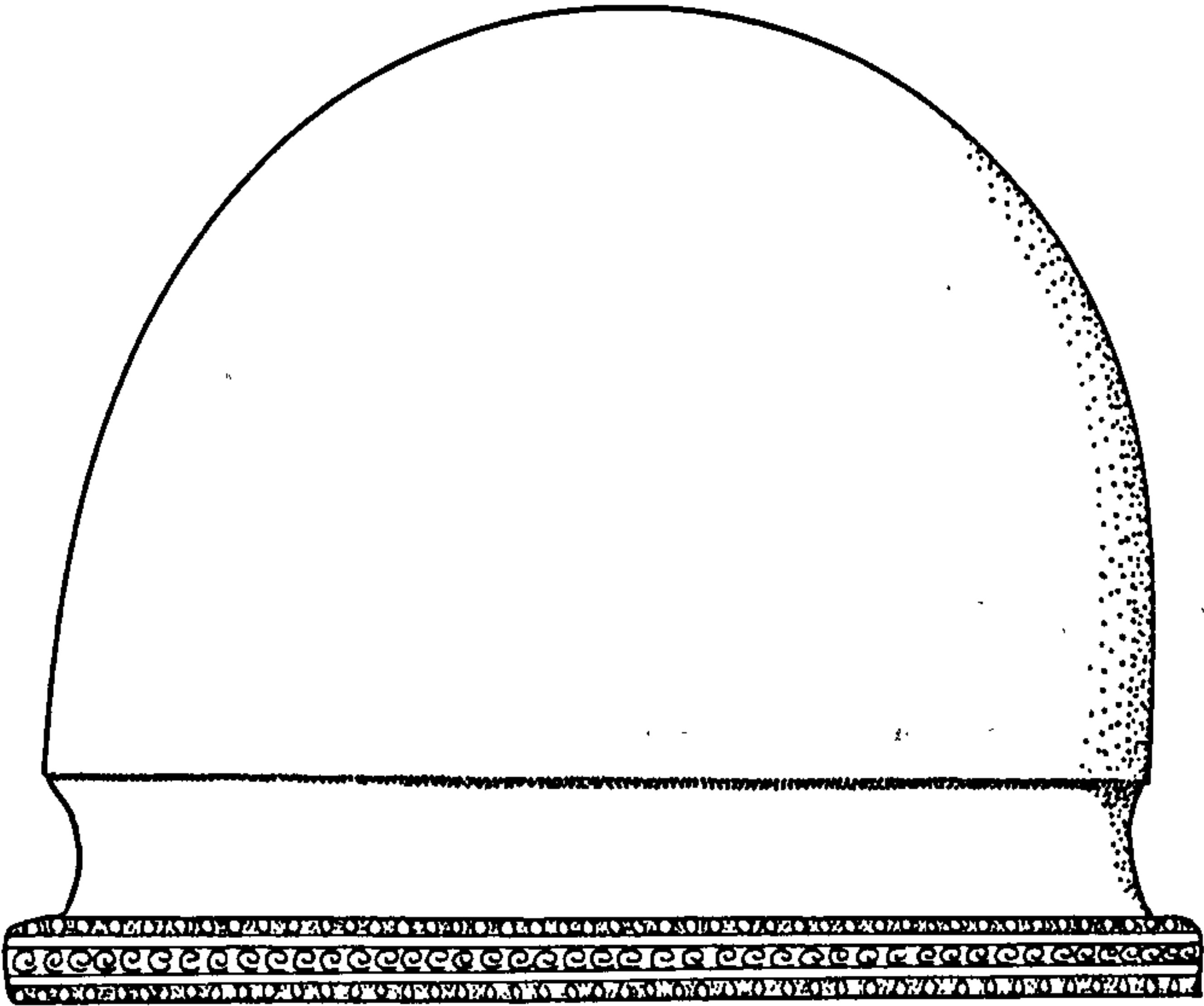


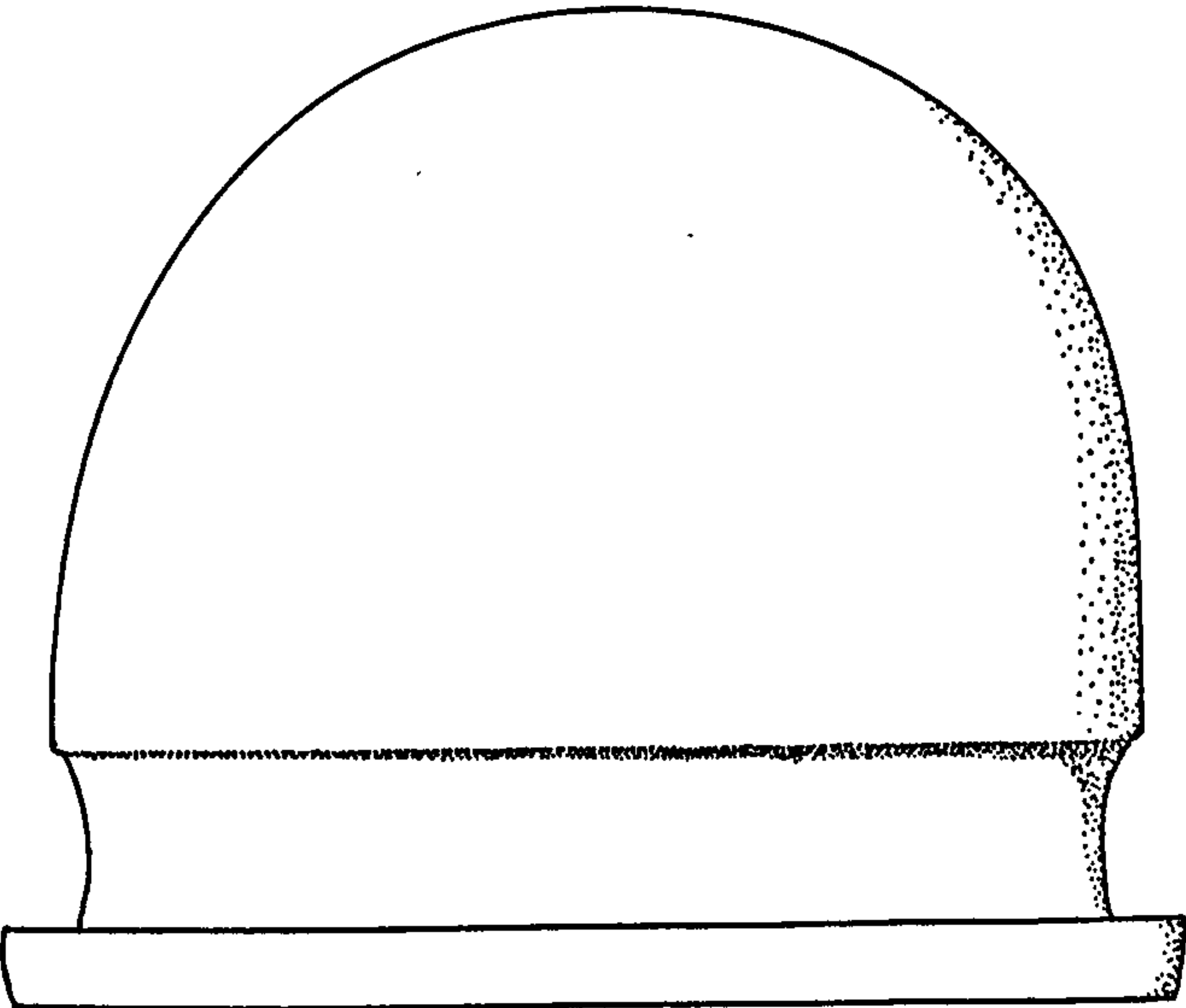
FIG. 59

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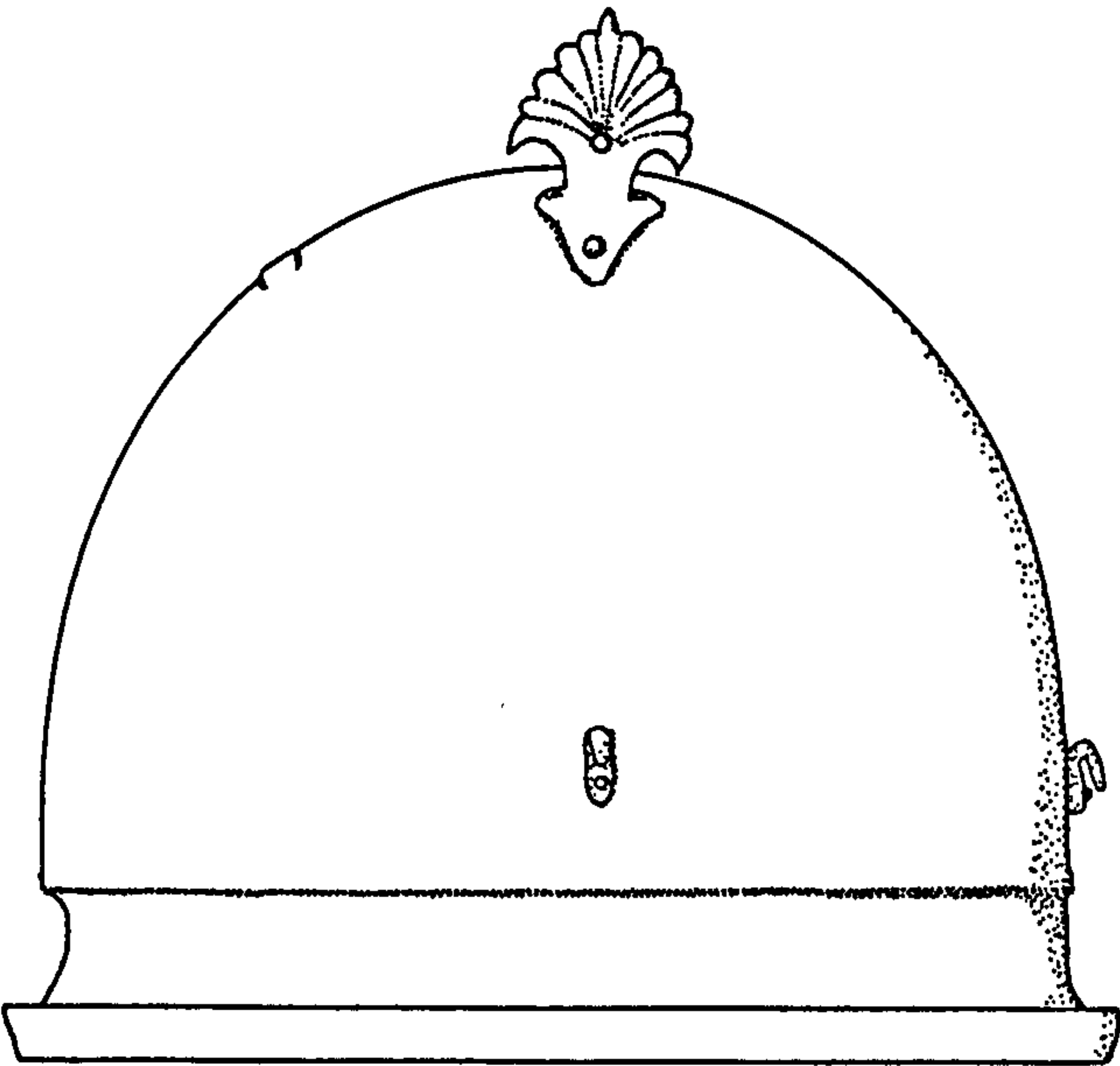
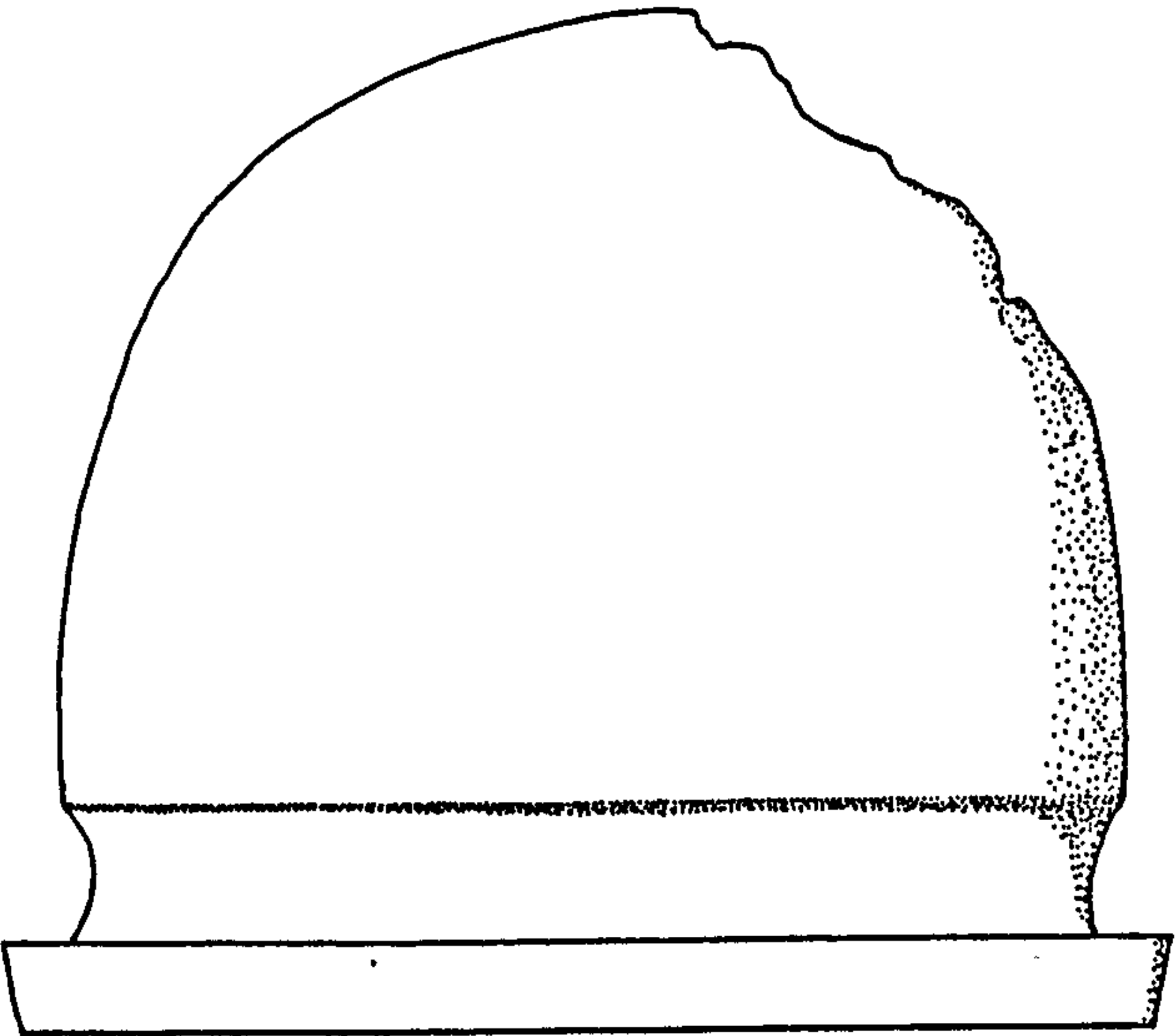
67



88. Italy. Museo Preistorico Etnografico Rome. 5530. Undecorated. (fig. 66:88) Egg 1986, 210.
89. Cavlupo, Vulci, Toscana, Italy. Museo di Villa Giulia Rome. It has no Inventory number. Decorated: It consists of two bands of egg and dart moulding separated by two incised lines either side of a band of stamped volutes. The bowl is decorated by applied crest-fixtures in the form of cast bronze archaic lion's heads and Harpies leading horses. (fig. 67:89) Ferraguti 1937, 107-20. Moretti 1975, 40. Egg 1986, 207.
90. Gualdo Tadino, Marche, Italy. Museo di Villa Giulia Rome. 43577. Undecorated. (fig. 67:90) Unpublished.
91. Montellane di Spoleto, Campo di Villa, Umbria, Italy. Museo di Villa Giulia Rome. 44399. Decorated: Stamped on brim and bowl. It consists of two bands of dental pattern separated by three equally spaced incised lines. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes. (fig. 67:91) Egg 1986, 203.
92. Gualdo Tadino, Marche, Italy. Museo di Villa Giulia Rome. 44429. Decorated: Stamped on brim and bowl. It consists of two bands of egg and dart moulding separated by four equally spaced incised lines. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes. (fig. 68:92) Moretti 1975, 336. Egg 1986, 202.
93. Gualdo Tadino, Marche, Italy. Museo di Villa Giulia Rome. 44430. Undecorated. (fig. 68:93) Moretti 1975, 336. Egg 1986, 203.
94. Italy. Musée des Antiquités Nationales. St. Germain en Laye. 35577. Undecorated. (fig. 69:94) Unpublished.
95. Italy. Armeria Reale Turin. A11. Undecorated. (fig. 69:95) Angelucci, 1890. 13. Lipperheide, von 1896, 199.

FIG. 60

68



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70

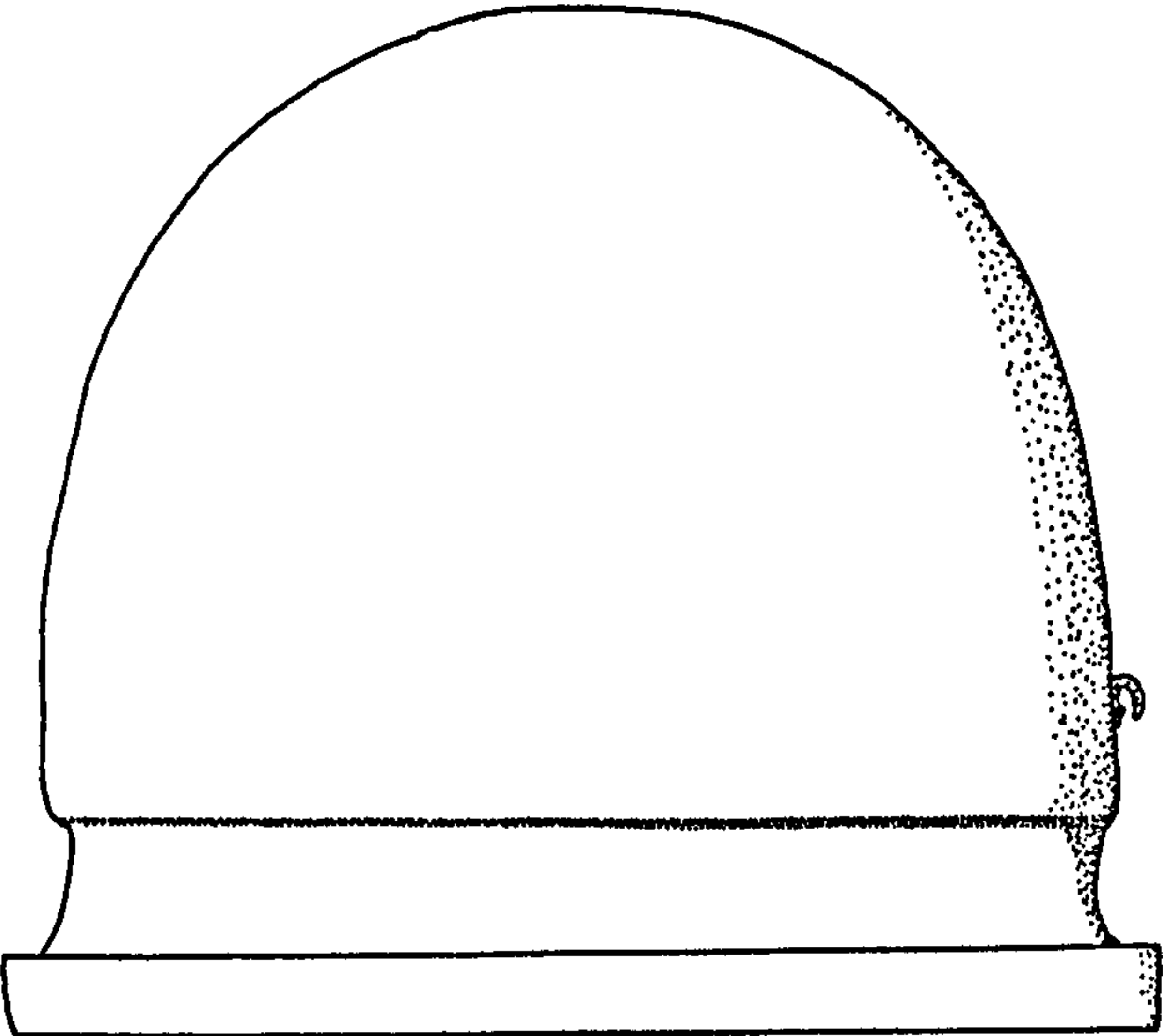
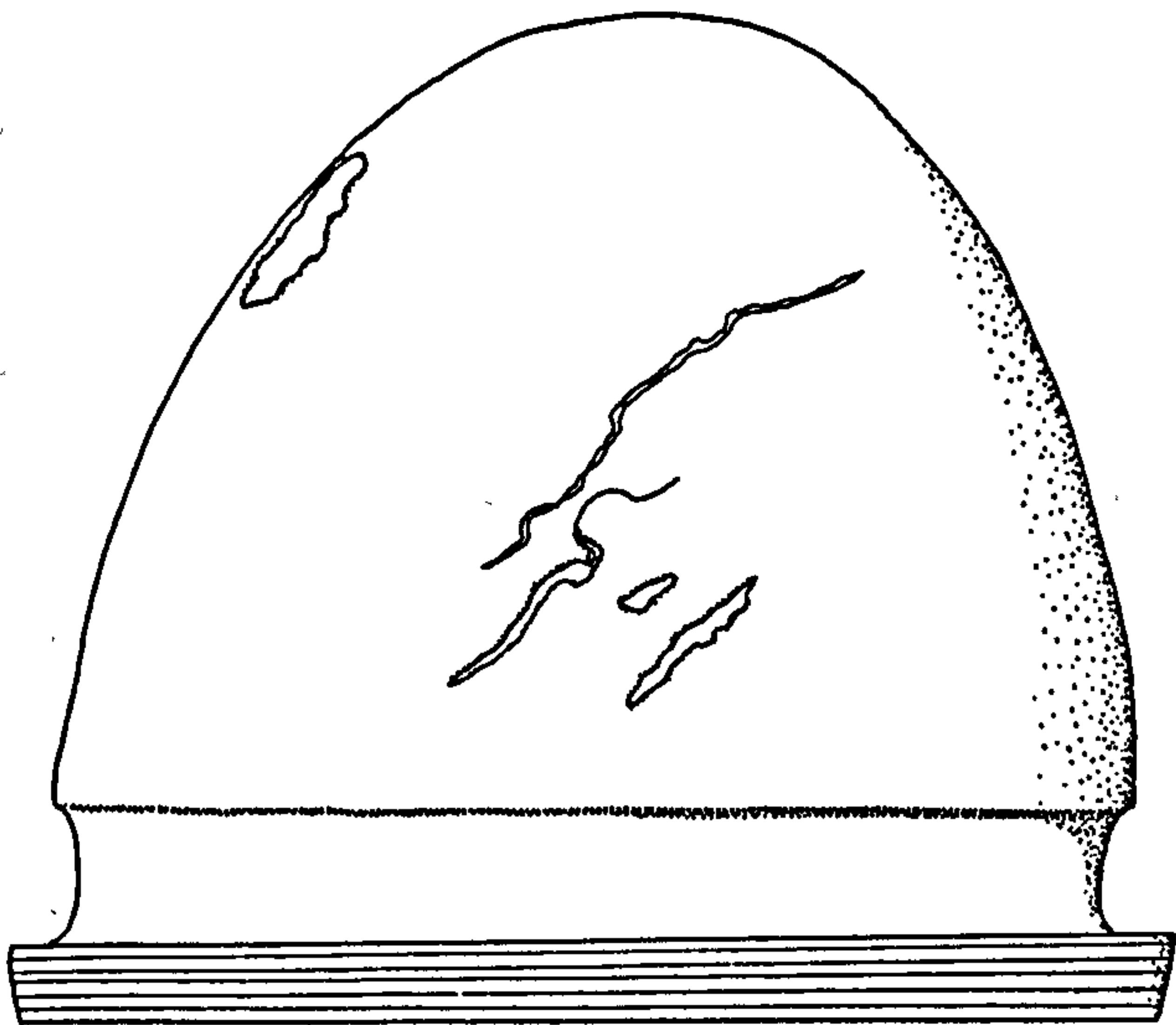
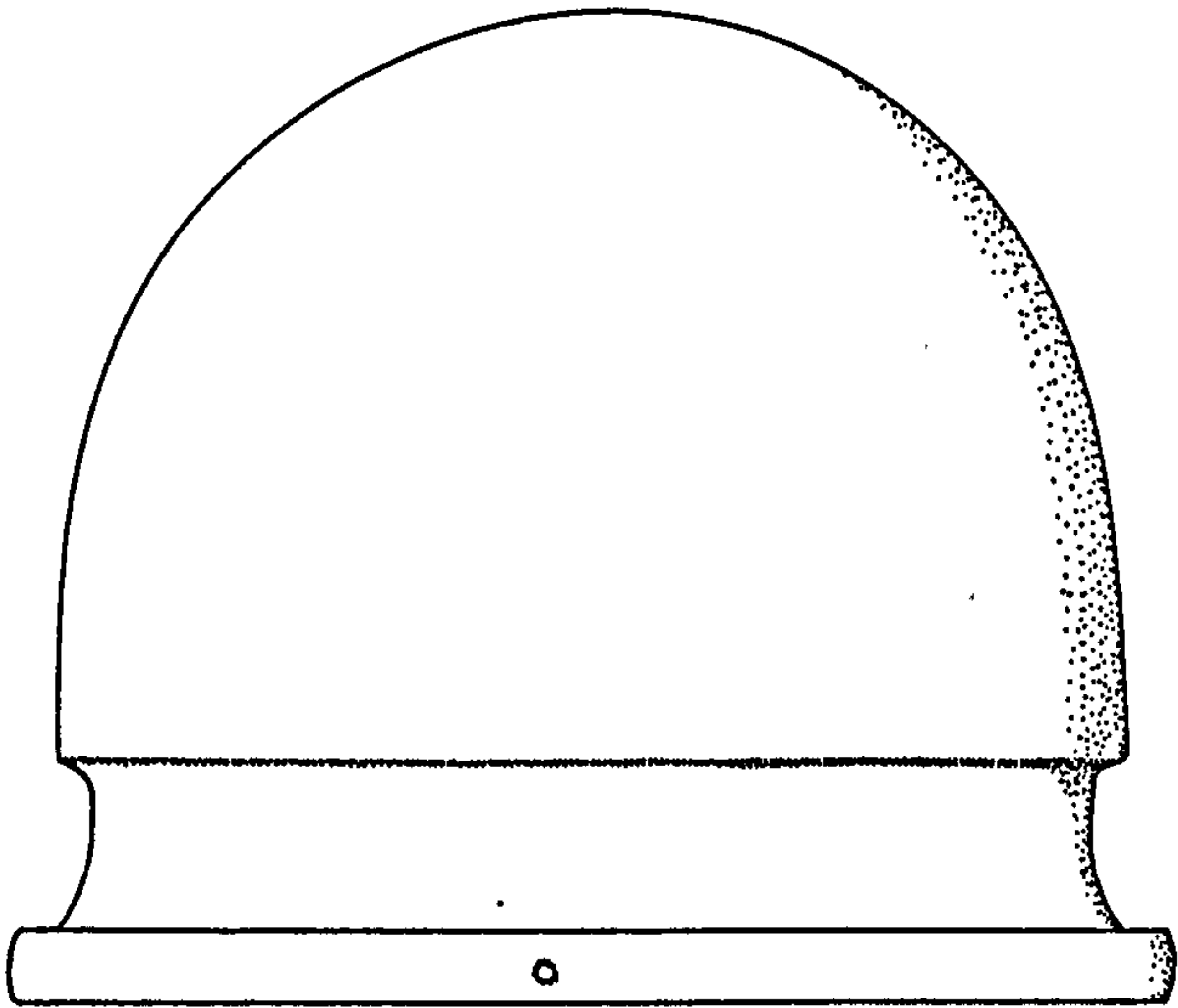


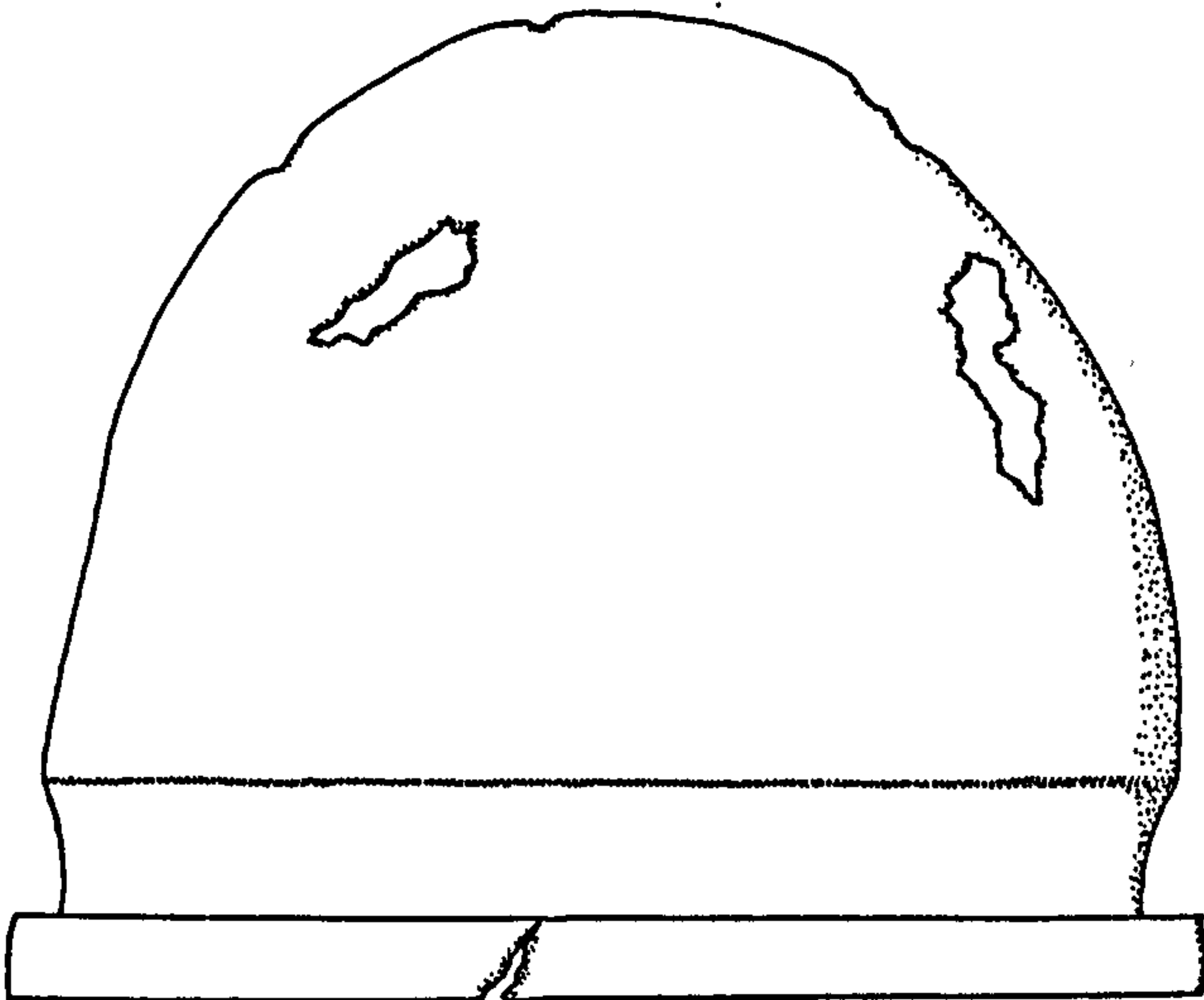
FIG 61

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73



96. Italy. Museo Gregoriano Etrusco, Vatican. 12300. Undecorated.
(fig. 69:96) Egg 1986, 210.
97. Italy. Museo Gregoriano Etrusco, Vatican. 12301. Undecorated.
(fig. 70:97) Egg 1986, 210.
98. Italy. Museo Gregoriano Etrusco, Vatican. 12302. Decorated:
decoration restricted to the brim. It consists of a narrow band of
diagonal hatching at each edge with a central band of incised herring-
bone pattern. (fig. 70:98) Egg 1986, 210.
99. Italy. Museo Gregoriano Etrusco, Vatican. 12308. Undecorated.
(fig. 70:99) Egg 1986, 210.
100. Italy. Museo Gregoriano Etrusco, Vatican. 12309. Undecorated.
(fig. 71:100) Egg 1986, 210.
101. Pianmaiano Bomarzo near Viterbo, Lazio, Italy. Museo Gregoriano
Etrusco, Vatican. 12310. Decorated: Stamped on brim and bowl. It
consists of two bands of egg and dart moulding separated by two
incised lines either side of a band of stamped volutes. The bowl is
decorated with a frieze of egg and dart pattern. (fig. 71:101)
Baglione. 1976, 145.
102. Italy. Naturhistorisches Museum Vienna. No Inv. No. Undecorated.
(fig. 71:102) Egg 1986, 208.
103. Vetulonia near Grosseto, Toscana, Italy. Naturhistorisches Museum
Vienna. 46705. Undecorated. (fig. 72:103) Talocchini, 1942, 66.
104. Italy. Whereabouts unknown. Sold Christies London. 10.7.1974.
Lot. 23. Undecorated. (fig. 72:104) Anon, 1974, Lot No. 23.
105. Italy. Whereabouts unknown. Sold Christies London. 27.4.1976.
Lot. 189. Undecorated. (fig. 72:105) Anon, 1976, Lot No. 189.

106. Italy. Whereabouts unknown. Sold Sothebys London 10.7.1979.

Lot. 301. Undecorated. (fig. 73:106) Anon, 1979, Lot No. 310.

107. Italy. Whereabouts unknown. Sold Sothebys London 10.12.1984.

Lot. 346. Undecorated. Inscribed: *CLO*. (fig. 73:107) Anon, 1984, Lot No. 346.

108. Italy. Whereabouts unknown. Sold Summa Galleries California, U.S.A. 18.9.1981. Lot. 44. Undecorated. (fig. 73:108) Anon 1981, 44.

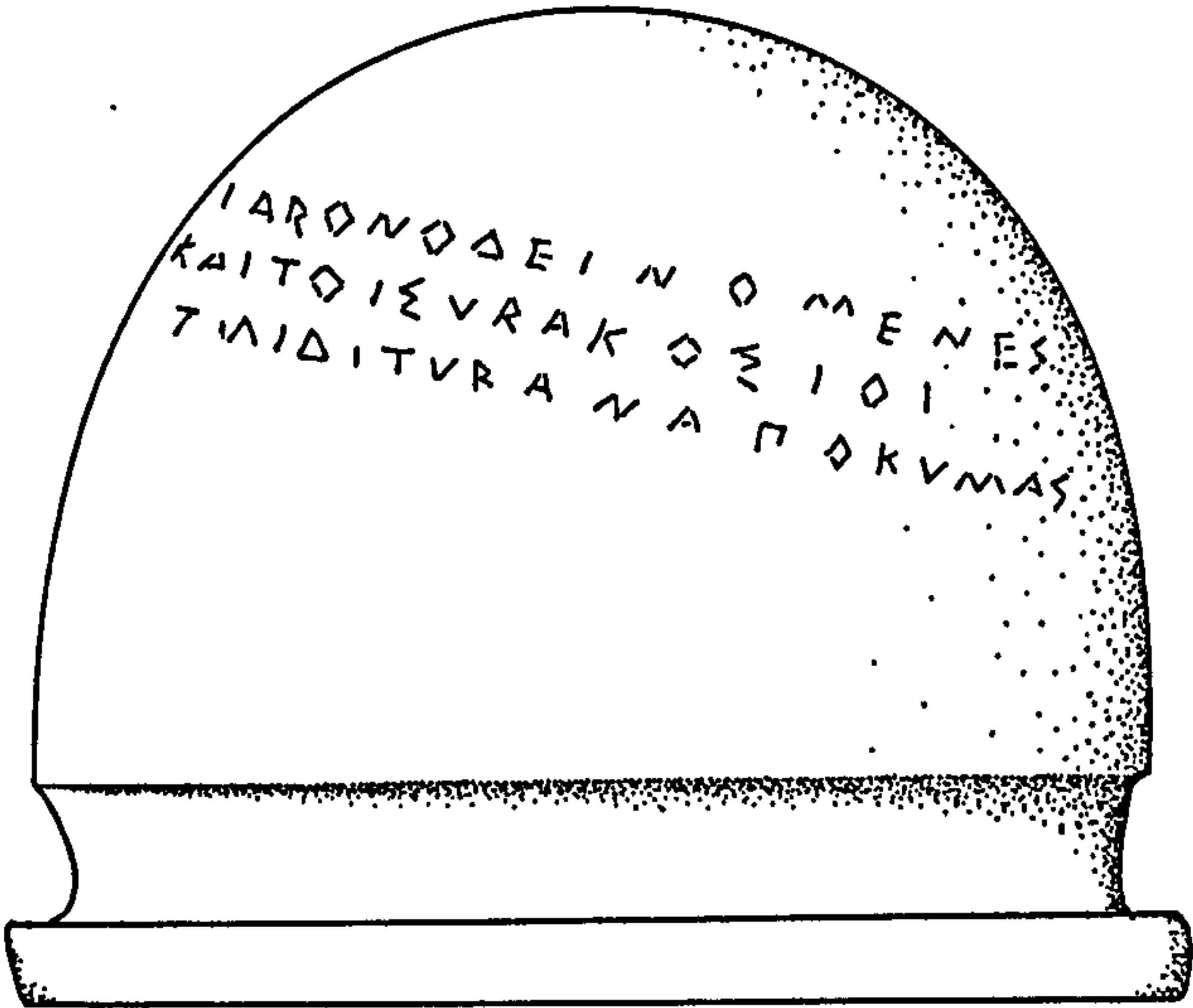
Type III.

109. Italy. Antiken Museum Berlin. Fr 1014. Undecorated. (fig. 74:109) Antike helme 1988, 438.

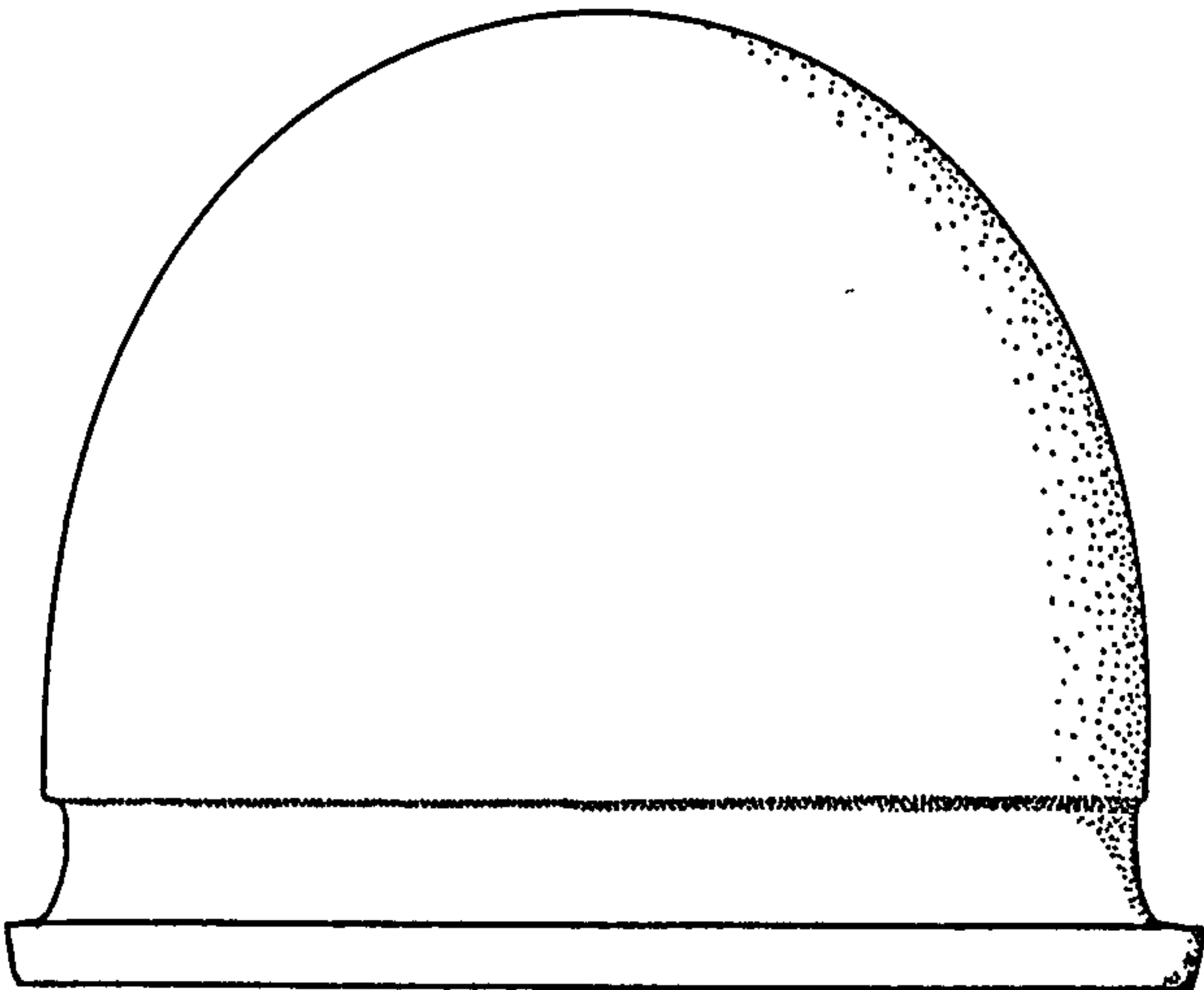
110. Canosa di Puglia, Puglia, Italy. Museo Nazionale Naples. 5693. Decorated: decoration restricted to the brim. It consists of two pairs of double incised lines. (fig. 74:110) Lipperheide, von 1896, 207.

111. Cairano, near Salerno, Campania, Italy. Museo Nazionale Pontecagnano. 35888. (fig. 74:111) Baillo-Modesti. 1980, 172.

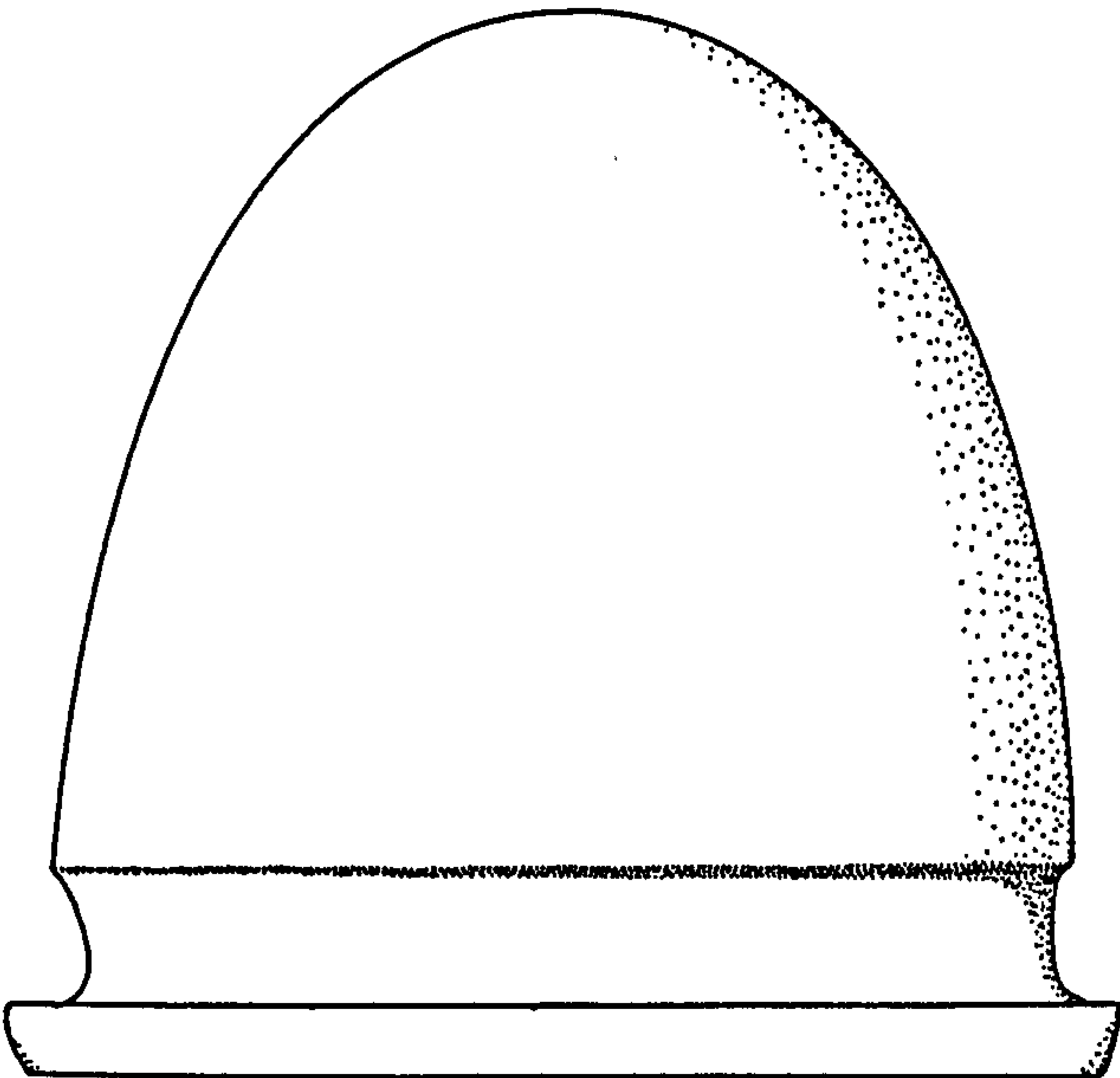
112. Italy. Present whereabouts unknown. Sold Christies London 31.10.1984 Lot No 295. Decorated: Restricted to the brim. It consists of three equally spaced incised lines. (fig. 75:112) Anon 1984, 109.



74

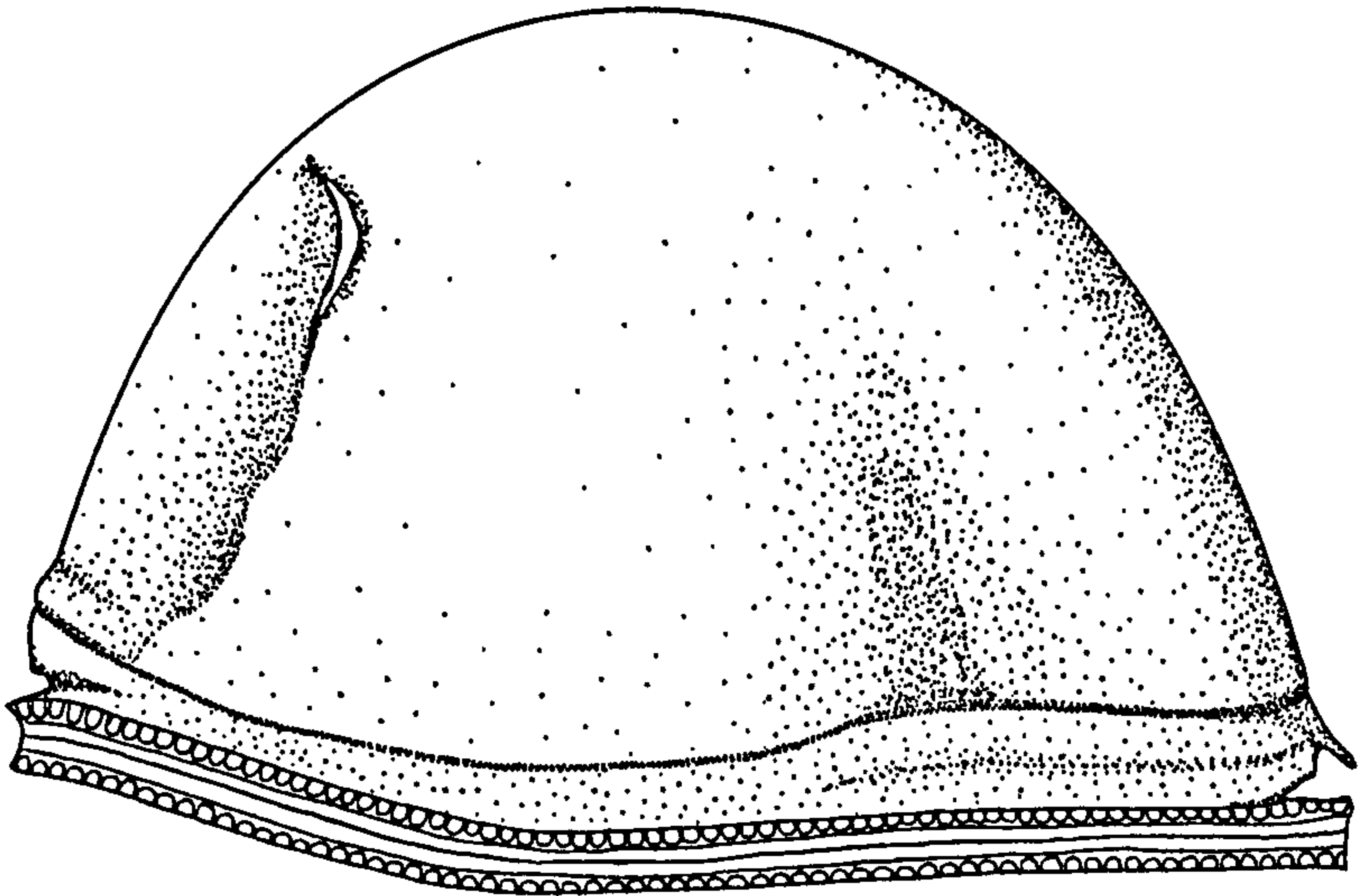


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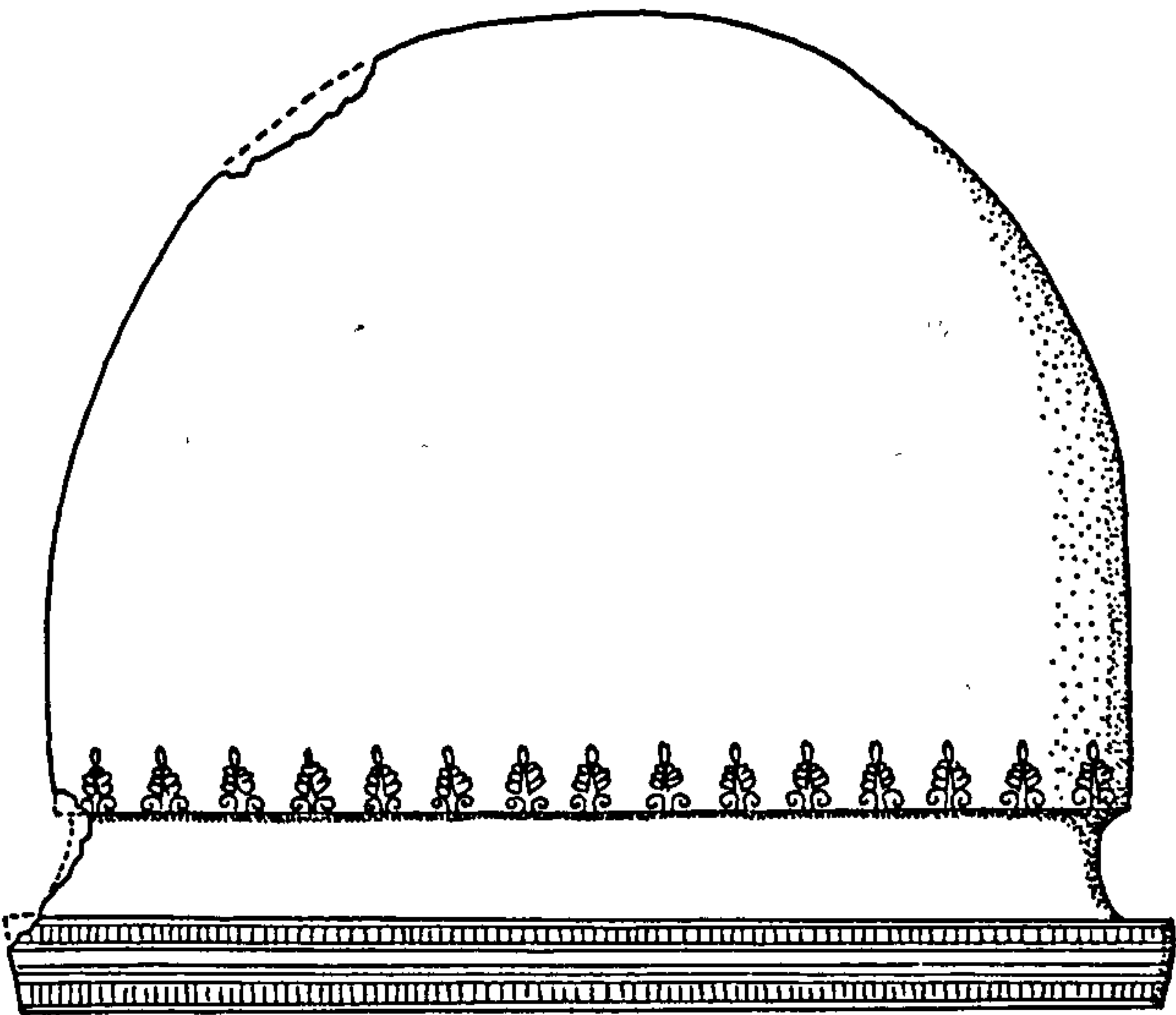


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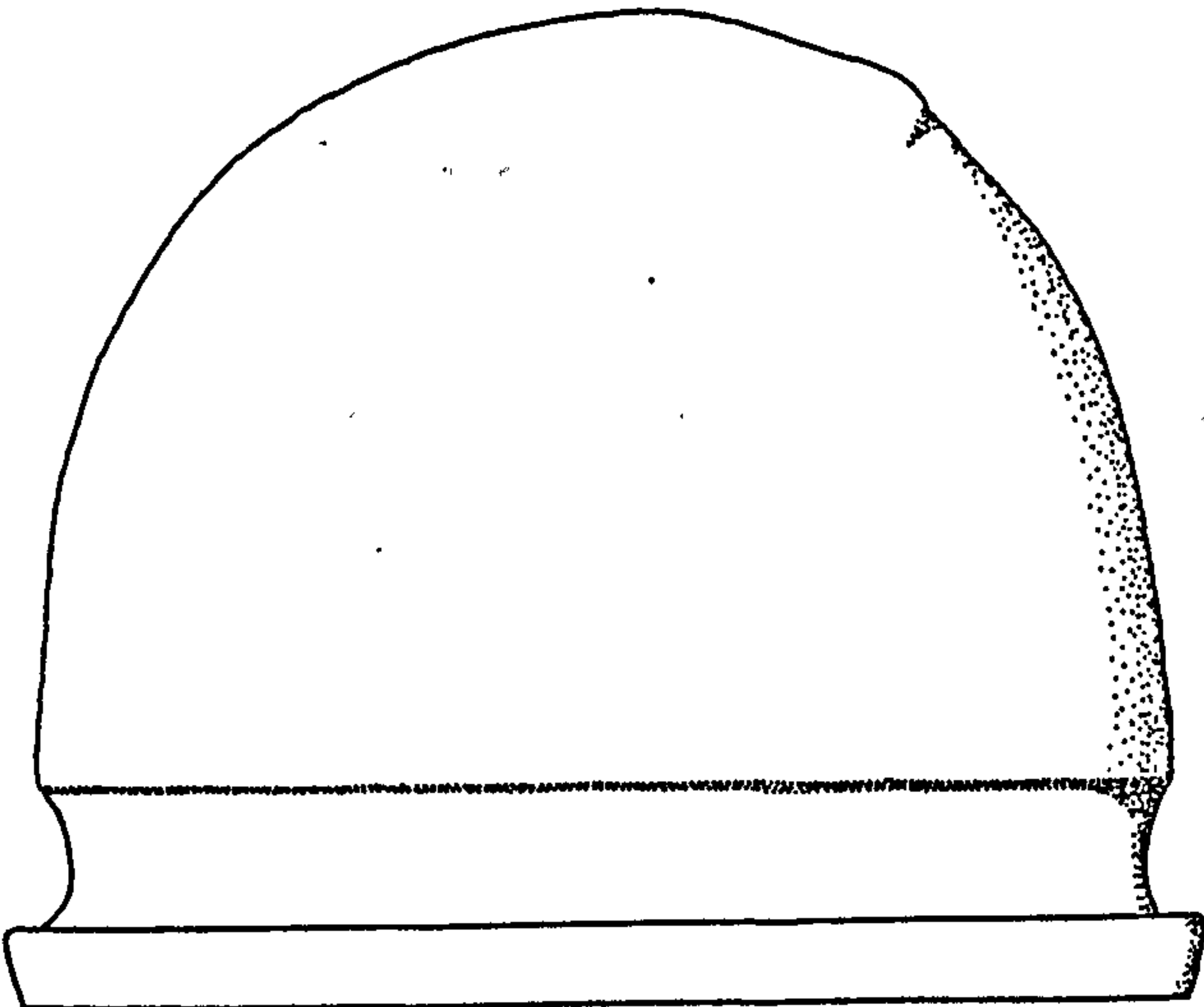
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Crest-features

Although often depicted with crests, for example on the famous "Certosa Situla", now in the Museo Civico Bologna and on a late 6th or early 5th century B.C. bronze circular breastplate from Rapagnano, now in the Museo Nazionale Ancona, only twenty percent of the surviving Negau helmets bear any traces of a crest-fixture. When each type is examined in closer detail a greater disparity appears in that approximately fifty percent of helmets of type I are equipped with crest-fixtures, whereas only ten percent of type II are so equipped. Where they do occur, the crest features associated with the Negau helmet take a number of very specific forms.

The crest-fixtures of helmets of type I are characterised by the presence of either one or two anchorage points, for a longitudinally mounted crest-box. These features are fitted at the front and rear of the helmet, at the centre point of the junction between the brow-band and the bowl and take a number of different forms. On helmets Nos. 2-5, 12 and 19 they take the form of cast bronze, archaic, lion's heads. These have a projecting lug at the rear which passes through the helmet bowl and is riveted over on the inside. On helmets Nos. 7 and 21 these anchorage points, although attached in the same manner, are formed by simple rectangular-shaped pierced lugs. The lugs on helmet No. 1, instead of being pierced, have a square notch cut out of their lower edge. Finally the anchorage points on helmet No. 6, now in the Antikemuseum Berlin Inv. No. L.56, are of a similar form although they are shaped to represent the head and neck of a swan.

In addition to these anchorage points helmets 5 and 6 have a pair of cast bronze volutes mounted either side of the medial ridge, along the longitudinal axis, on the apex of the helmet to support the crest-box.

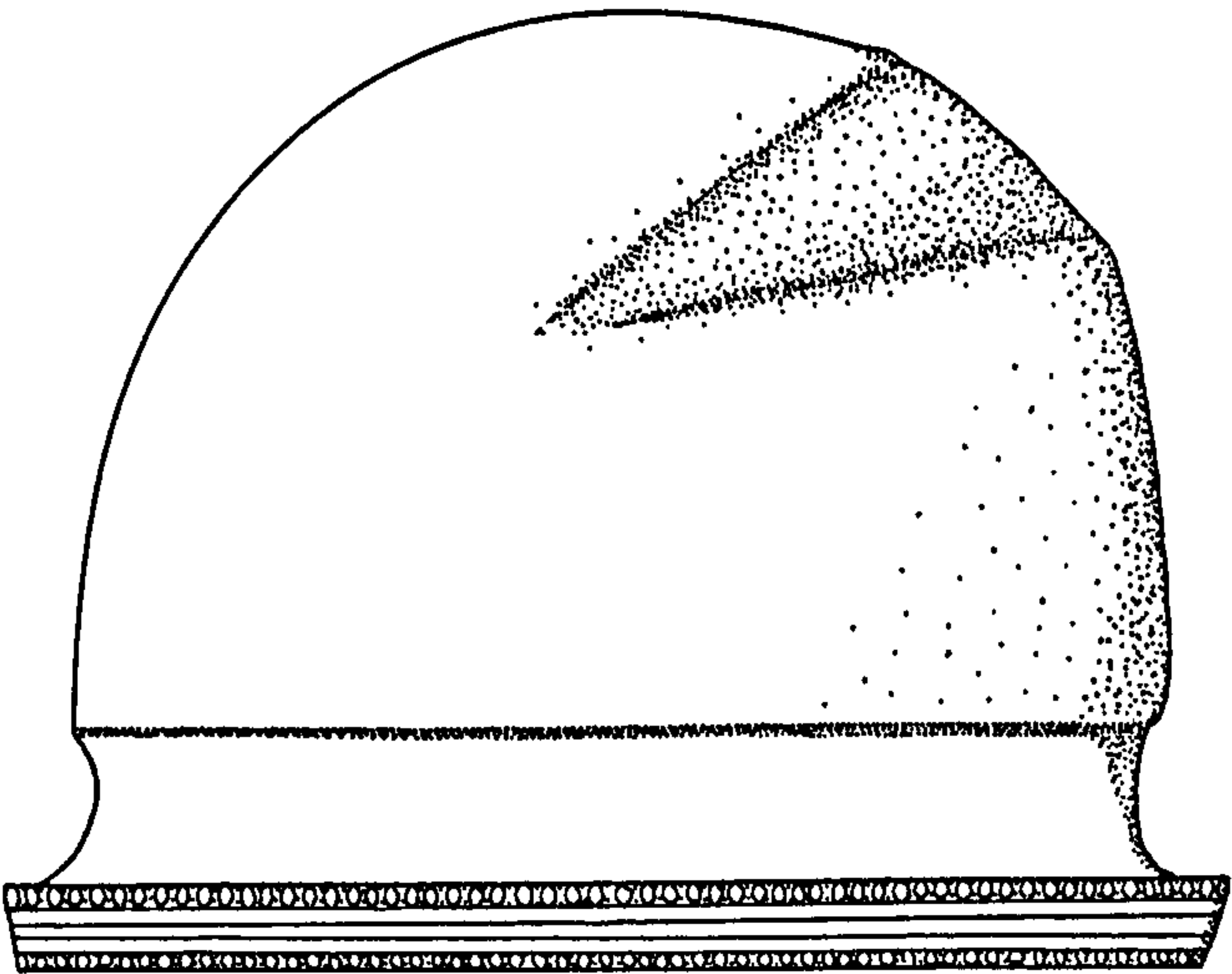
The final form of crest-fixture to be found on a Negau helmet of type I are those found on helmet No.14, now in the Musée des Beaux Arts Lyons Inv. No. X924. These consist of two, transversely mounted, hollow, rectangular-section tubes. These project from circular flanges soldered to the helmet bowl, one on either side of the medial ridge. They are pierced towards their upper edge to receive a crest pin.

As with helmets of Type I, a considerable number of helmets of type II seem never to have been equipped with crest-fixtures. Indeed the majority of this form, eighty percent, have no crest-fixture of any kind whatsoever.

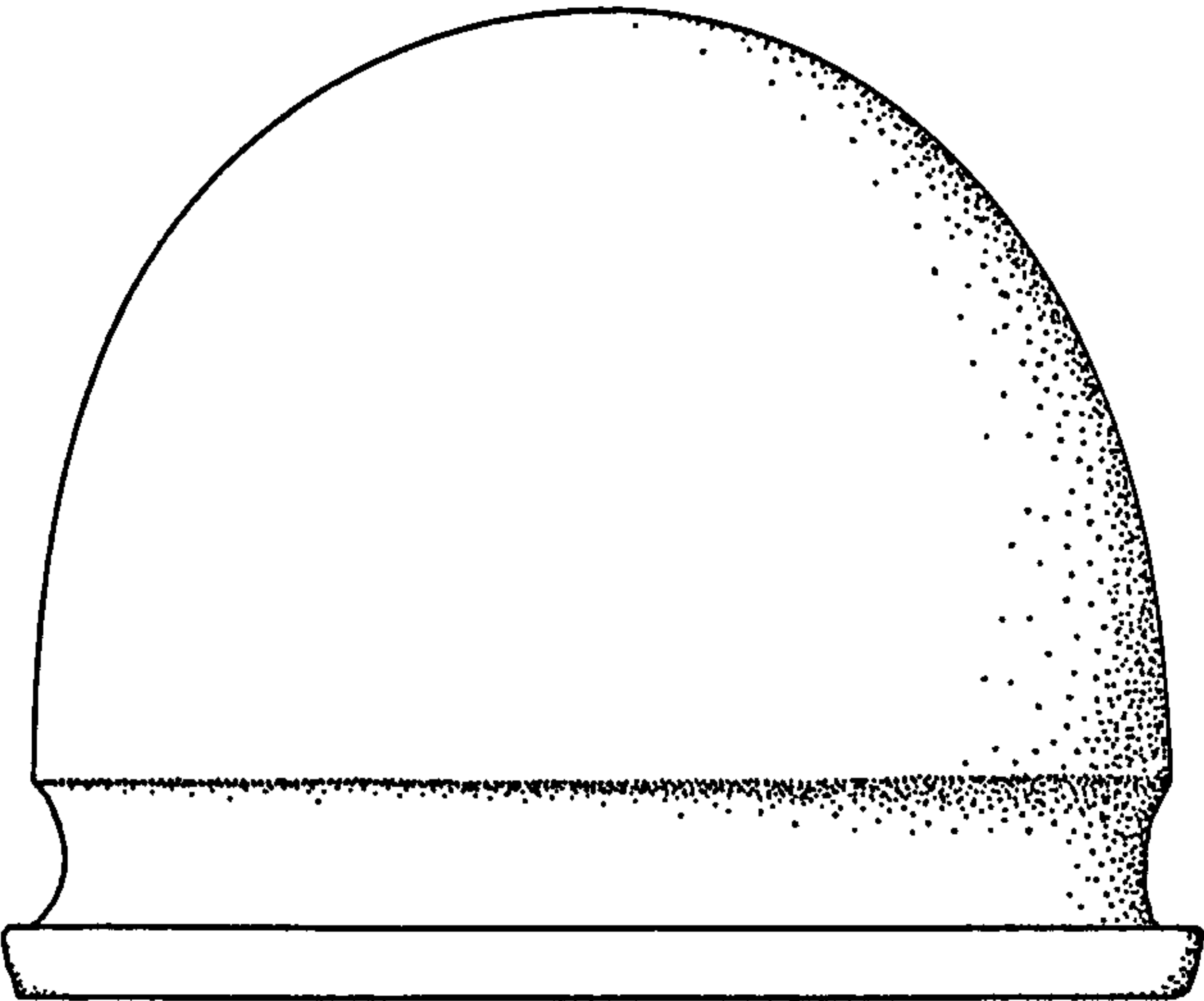
Of the minority of helmets which are fitted with crest-fixtures, some retain the earlier forms of crest-features found on helmets of type I, e.g.; Helmet No.69 which has front and rear mounted hooks and cast bronze volutes mounted longitudinally on either side of the medial ridge. Helmet No 89, from the Warrior's grave at Vulci, now in the Villa Giulia Museum, Rome retains the lion's heads common on helmets of type I but instead of the volutes has cast bronze crest-supports in the form of a winged "harpy" leading a horse. This crest-support can be paralleled on a Chalkidian helmet of similar date from Perugia (Chapter 4, table I, No. 7.).

FIG 64

80



81



82

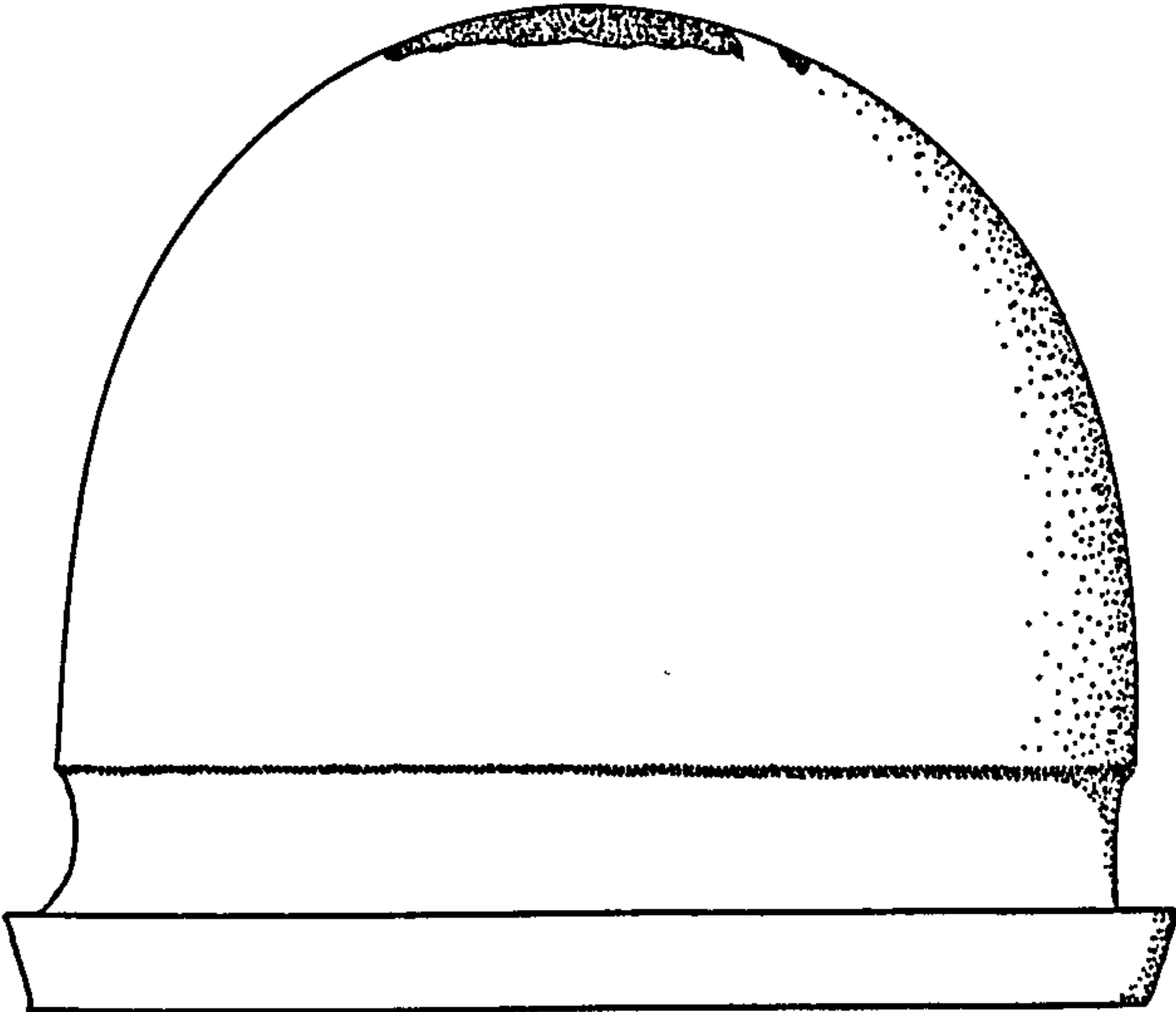
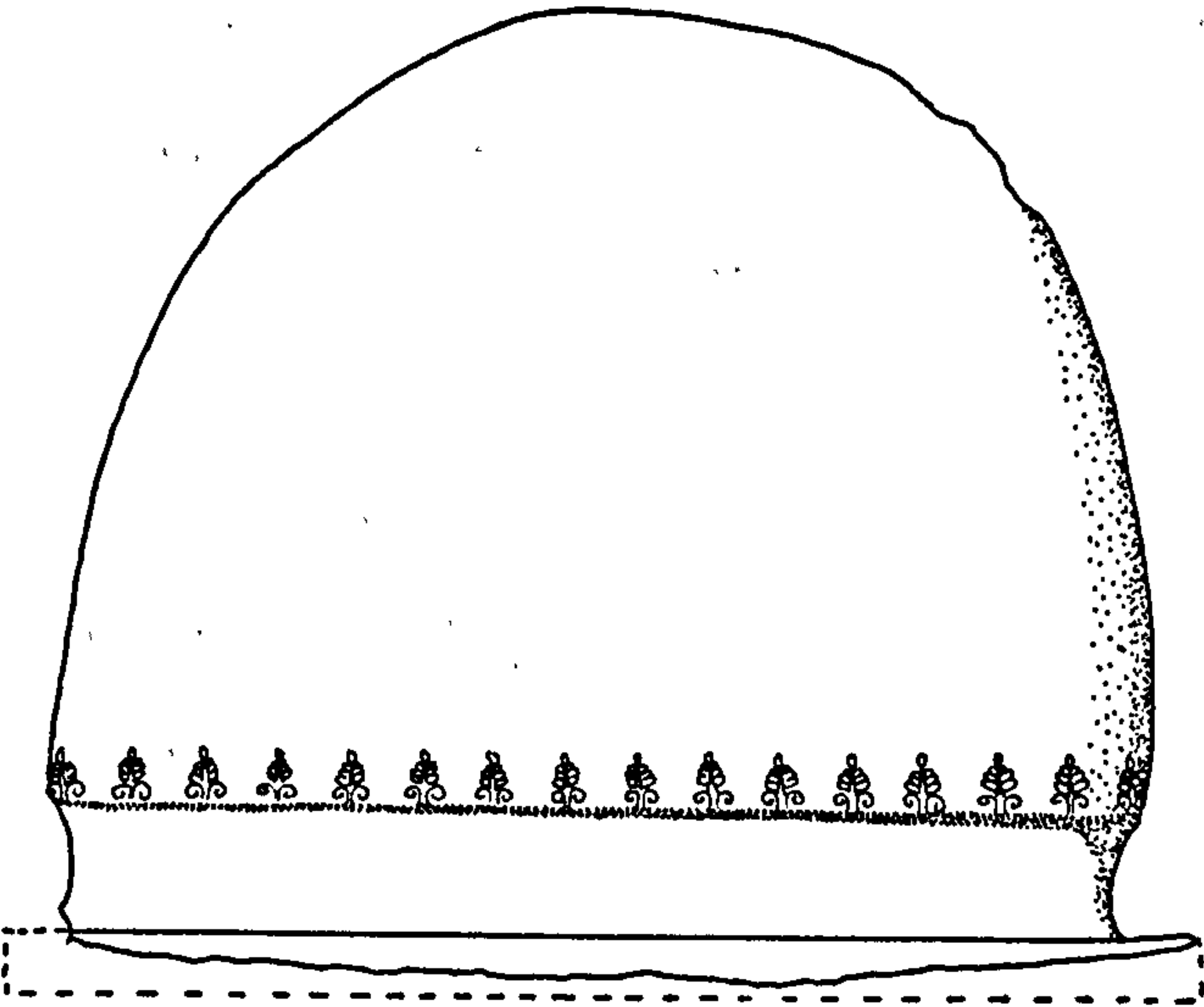
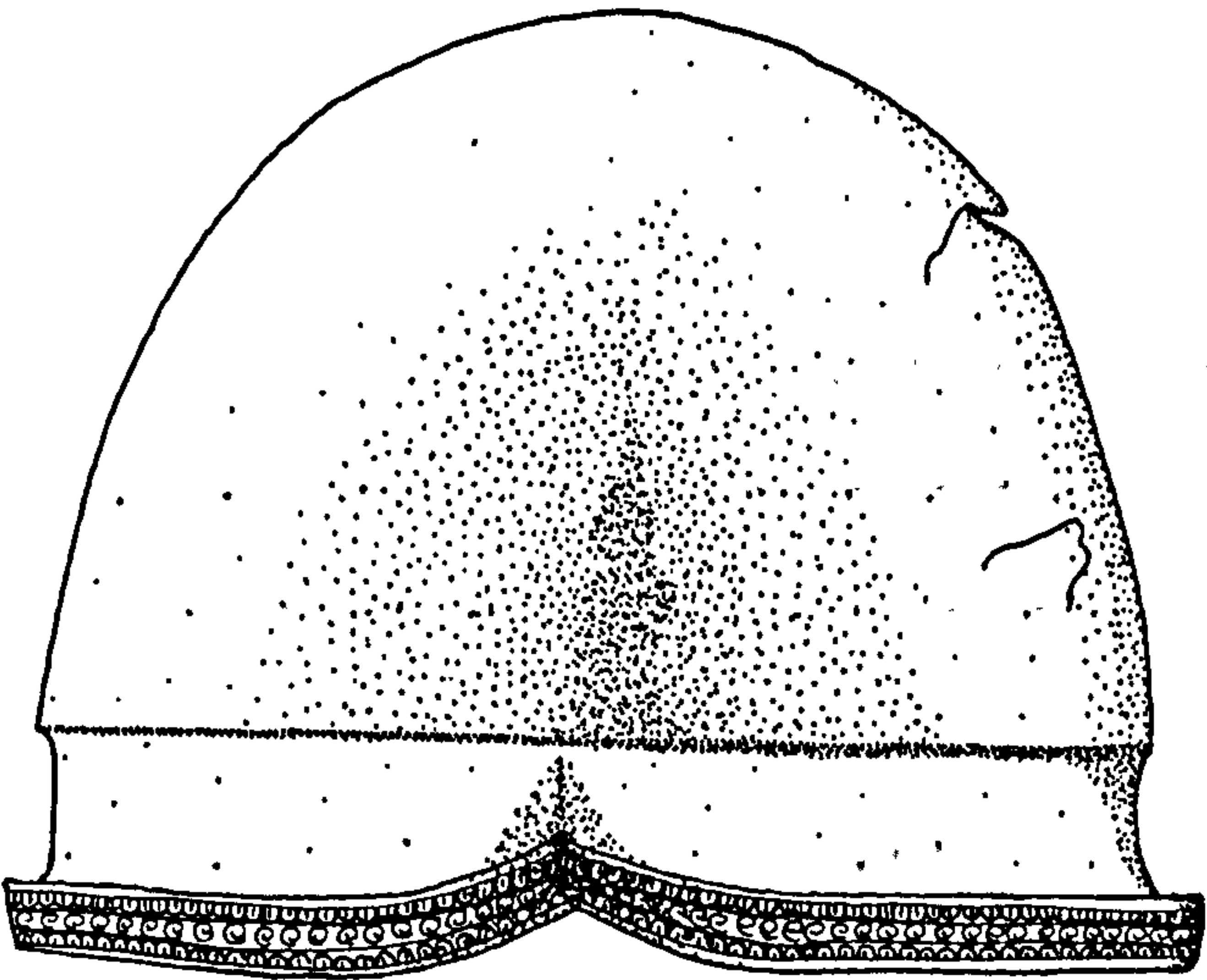


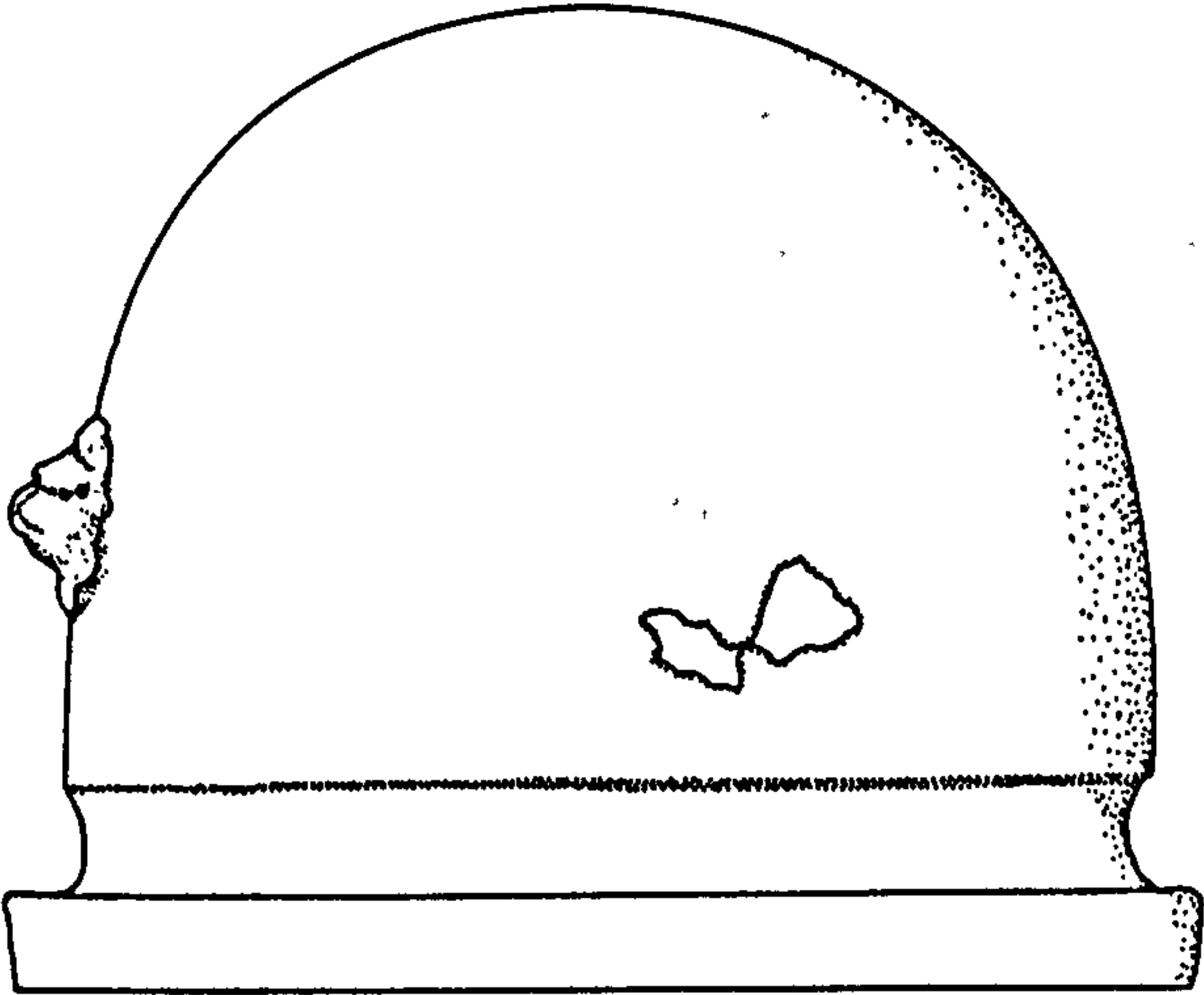
FIG 65

83



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Helmets 90, 91, 92, 93 and 108 are equipped with entirely different crest-fixtures, which are a variant of a form more commonly found on Apulo-Corinthian or Samnite-Attic helmets produced in southern Italy from the 6th to the 4th centuries B.C. These five Negau helmets are all fitted with a 'U' shaped, stemmed crest-bracket which consists of a long stem usually some 80 millimetres in length which supports a "U" sectioned gutter-shaped crest-support. This is often accompanied, as on helmets Nos. 90, 92 and 93, by two side-mounted anchorage points or hooks riveted to the sides of the helmet bowl, just above the junction between brow-band and bowl. These additional fixtures are necessary in order to secure the ends of the transversely mounted crest. They consist of small diamond or leaf-shaped plates of bronze which have a hook projecting from their upper edge. Alternatively as on helmet No. 108 these additional anchorage points take the form of a leaf-shaped plate of bronze folded over at its top edge to retain a bronze ring, and riveted to the side of the bowl.

These 'U' shaped crest-holders are made in a manner unique to the Etruscan armourers and in an entirely different way to those produced by the armourers of southern Italy. Instead of being constructed from two bars of bronze riveted together and shaped to form the crest-holder at the top and a flange at the base which is then pierced for riveting to the helmet bowl, the Etruscans chose to make their crest supports in three sections. These consisted of; the 'U'-sectioned gutter-shaped crest-holder itself, from the base of which projects a lug which fits into a narrow tube, made of bronze in the case of helmets 91 and 92 but of iron on helmet 93. The mounting plate which

consists of a double leaf-shaped piece of bronze, from the centre of which projects an upwardly pointing lug which fitted into the base of the stem. The fixing plate is pierced by two holes and riveted through these to the apex of the helmet.

Helmets of type III would appear to have carried on this tradition as the remains of such a "U" -shaped bracket appear on helmet No. 111, from Cairano. However helmet 109, now in the Antiken Museum Berlin Inv. Fr.1014, has fixing lugs for a longitudinally mounted crest-box similar to those found on helmets of type I.

Cheek-pieces.

Only one surviving Negau helmet is equipped with cheek-pieces, i.e. helmet No.85, now in the Musée du Louvre (Inv. No. 1117.) These cheek-pieces measure 135 millimetres and are not attached in the usual manner by hinges but each pivots on a single rivet which passes through the brow-band of the helmet. The cheek-pieces themselves are also of an extraordinary form and consist of a circular boss decorated with concentric circles from which projects a cheek-piece of a weak and sinuous bicuspid form. The cheek-pieces are fitted with a loop of bronze at their lower edge which are joined by a bronze chain. These facts taken in conjunction with the slightly different patina inevitably lead the writer to the conclusion that the cheek-pieces are not original and are probably nineteenth century additions. This being the case it is fair to assume that in antiquity no Negau helmet was fitted with cheek-pieces.

Chin-strap Fixtures.

Although it is unlikely that any Negau helmet was ever equipped with cheek-pieces, all Negau helmets of whatever type were provided

with some form of chin-strap fitting. These took one of three forms. They were either simply single holes pierced laterally through either side of the brow-band just in front of the wearer's ears; holes pierced vertically through the brim flange which seem to have all been fitted with a pierced lug (pl. 13a.); or holes drilled into a separate lining ring which was soldered to the inside of the brim of the helmet (pl. 13b.).

The first option, which made use of a single hole pierced laterally through the brow-band on each side of the helmet, would appear to be the earliest as it is derived from the chin-strap fixtures found on the 6th century bossed "Pot" helmets which originated in Picenum. This type of fitting is numerically the smallest type and is far from common, being found on only seven helmets (Nos. 1, 8, 20, 50, 71, 78, 85, 91 and 108.) and, as perhaps is to be expected, more popular on helmets found in eastern Italy along the Adriatic coast.

The other two forms of chin-strap fitting seem either to have been used independently or in conjunction.

Thirty-two helmets of types I, II and III have two holes vertically pierced through the brim flange over the wearer's temples (Nos. 17, 18, 28, 33, 35, 38, 39, 40, 42, 45, 52, 53, 54, 58, 64, 75, 79-84, 87, 90, 95, 105, and 112.). On seven of these helmets (Nos. 18, 28, 33, 35, 52, 53 and 57.) these holes are filled by a pierced lug. Each lug has a stud projecting from its upper edge which is passed through the hole drilled in the helmet brim and are riveted over. It is clear upon close examination of the holes in the other twenty-five helmets that the majority if not all of them were

originally fitted with similar pierced lugs. On helmets Nos. 28, 33 and 57, these lugs are fitted in conjunction with a pierced lining ring.

Of the remaining fifty-nine helmets, a third (Nos. 15, 26, 30, 31, 34, 46, 54, 55, 56, 59, 62, 65, 69, 77, 88, 89, 96, 98 and 101.) still have a separately manufactured and pierced lining ring. This was manufactured from a narrow strip of bronze, approximately 20 millimetres wide and 1 to 2 millimetres thick, forged into a ring, of truncated conical shape, with the ends soldered together. Along its upper edge was worked a downward facing flange which is pierced with stitching holes. The ring was made to be exactly the same size as the internal measurement of the helmet brim and soldered to the base of the brim and to the base of the brow-band. The intervening space was then filled with lead.

The remaining forty Negau helmets now have no trace of a chin-strap fitting although some bear the traces of a tin/lead solder on the inside of their brim flanges (Nos. 20, 48, 64, 94 and 96.). From this evidence and the relative ease with which these lining rings could be detached during use, excavation or whilst in museum collections and lacking an other visible form of chin-strap fitting it would seem probable that the remaining helmets were also fitted with similar lining rings. If this were the case then at least sixty percent of all Negau helmets were fitted with such lining rings. It is of course possible that the majority of the remaining forty percent may also have been fitted with them. What is certain however is that, the chin-strap of the Negau helmet had only two anchorage points and not three commonly found on other Italian helmet forms. It

presumably relied on the fit of the brow-band and the lining to give it stability in wear.

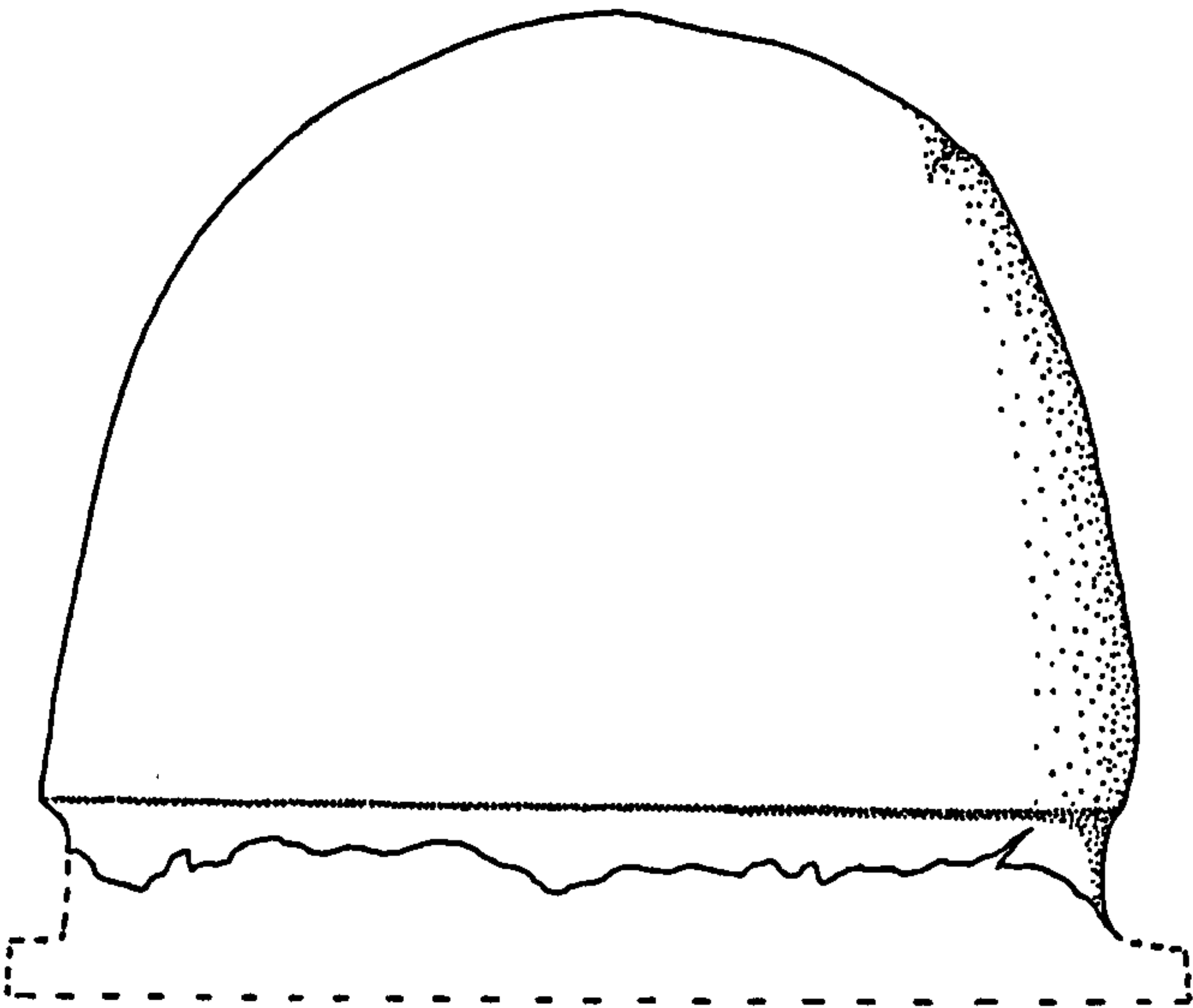
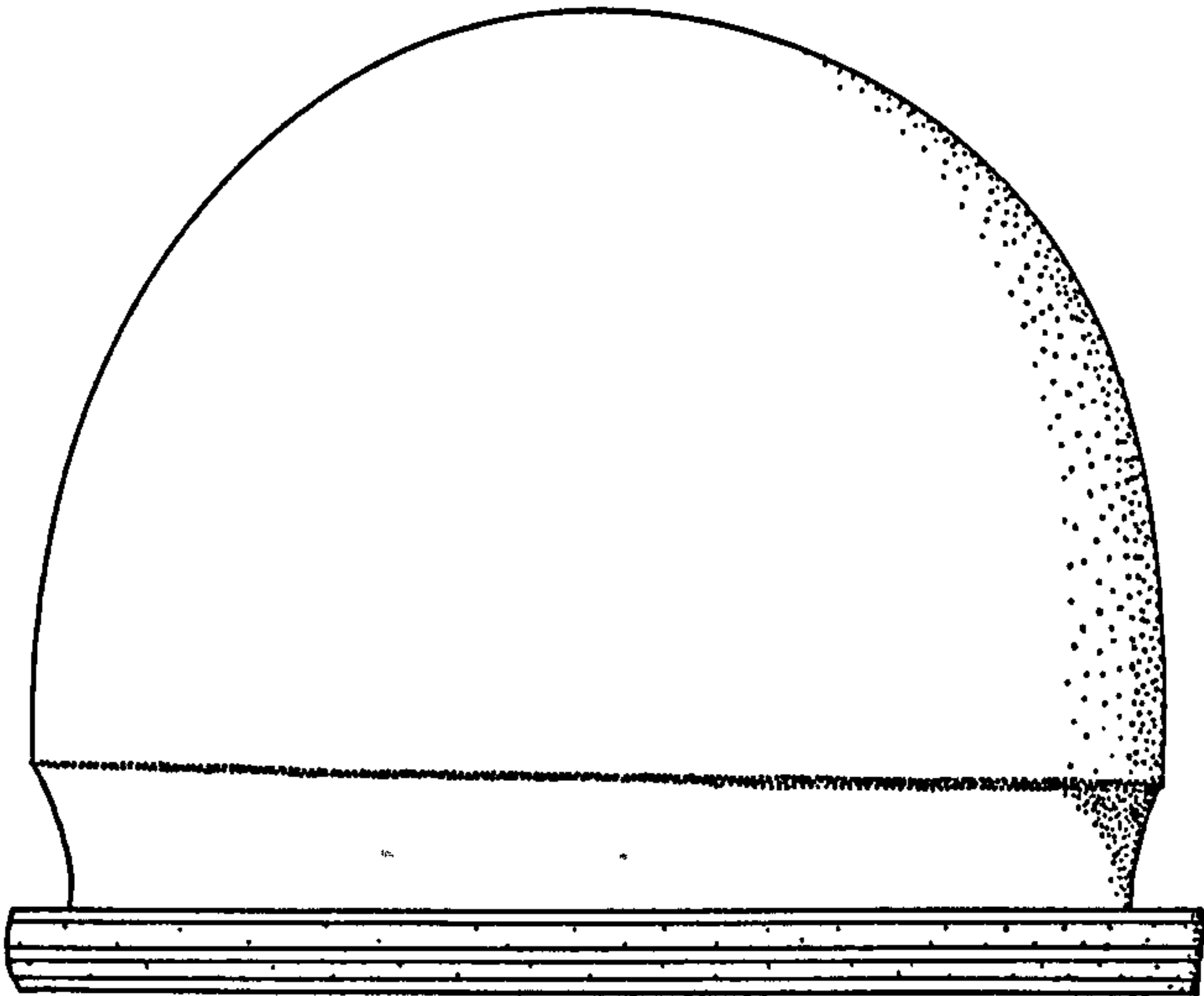
Decoration.

The overwhelming majority, in fact sixty-two percent of all Negau helmets are undecorated. Only a third of helmets of type I are decorated, whereas forty percent of helmets of type II bear some decoration but it is only on helmets of type III that decoration even extended to fifty percent of the surviving helmets and on these it is confined to the brim. The decoration on Negau helmets takes one of three forms; it is either applied, in the form of cast bronze appliquéés, incised, usually confined to the brim, or stamped, on both the brim and bowl.

Of the twenty-one surviving helmets of type I, thirteen are undecorated, of the remaining eight, seven (Nos. 3, 4, 5, 6, 9, 12 and 19.) are all decorated with cast bronze appliquéés of one form or another. For the most part these appliquéés serve a dual function, partly practical, as anchorage points for the helmet crest, and partly decorative. On helmets 3, 4, 5, 9, 12 and 19 these take the form of an archaic, cast bronze, lion's head mounted at the front of the helmet immediately below the junction of the brow-band and the bowl. On helmet 5 the decorative lion's heads are supplemented by cast bronze volutes, mounted on the apex of the helmet at either side of the medial ridge whereas on helmet 6 they are replaced with a pair of swan's head mounts supplemented by volutes. On helmet 9, from Casalfuimanse in addition to the cast lion is a cast horse's head mounted at the rear of the helmet bowl.

FIG 66

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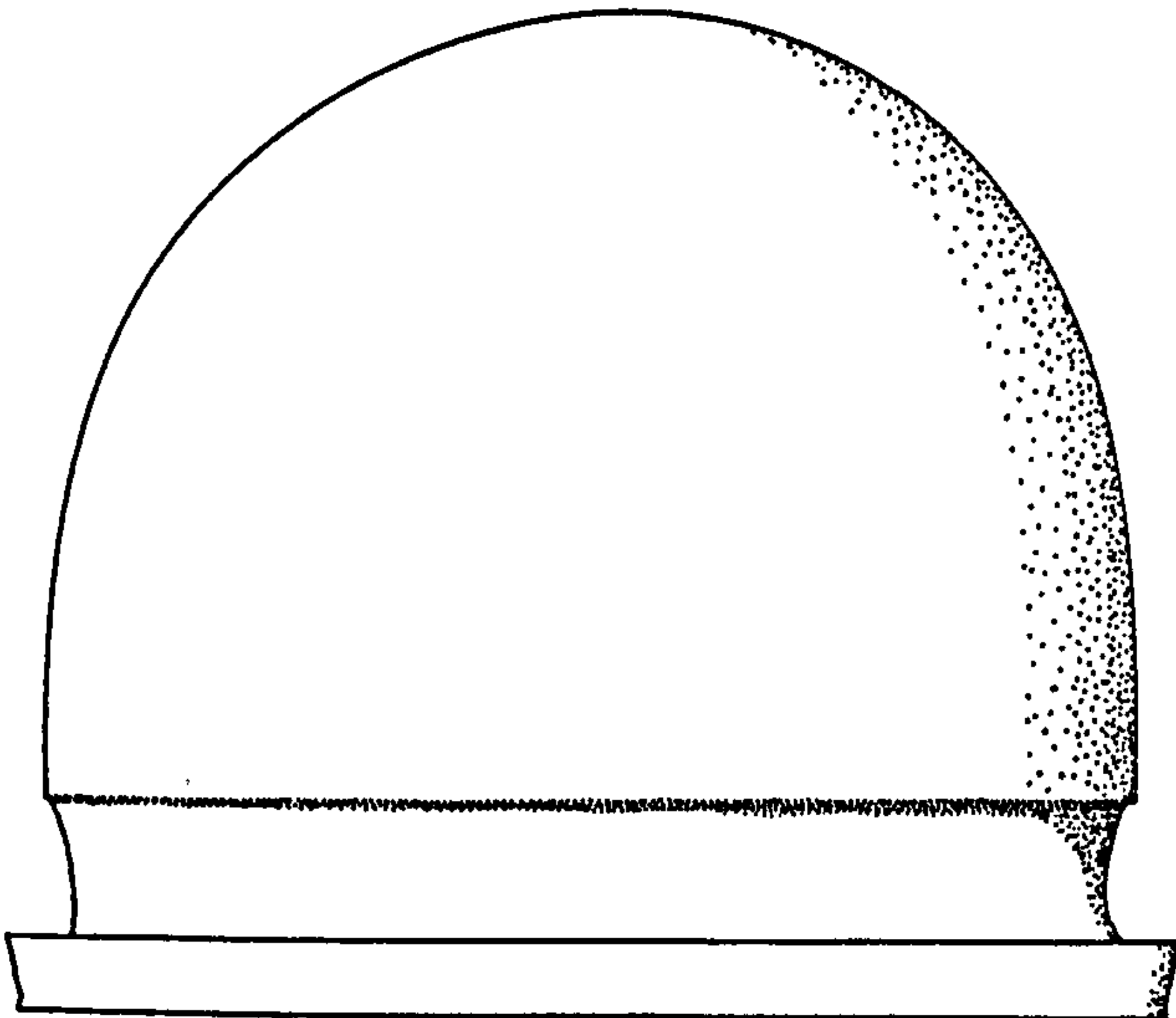
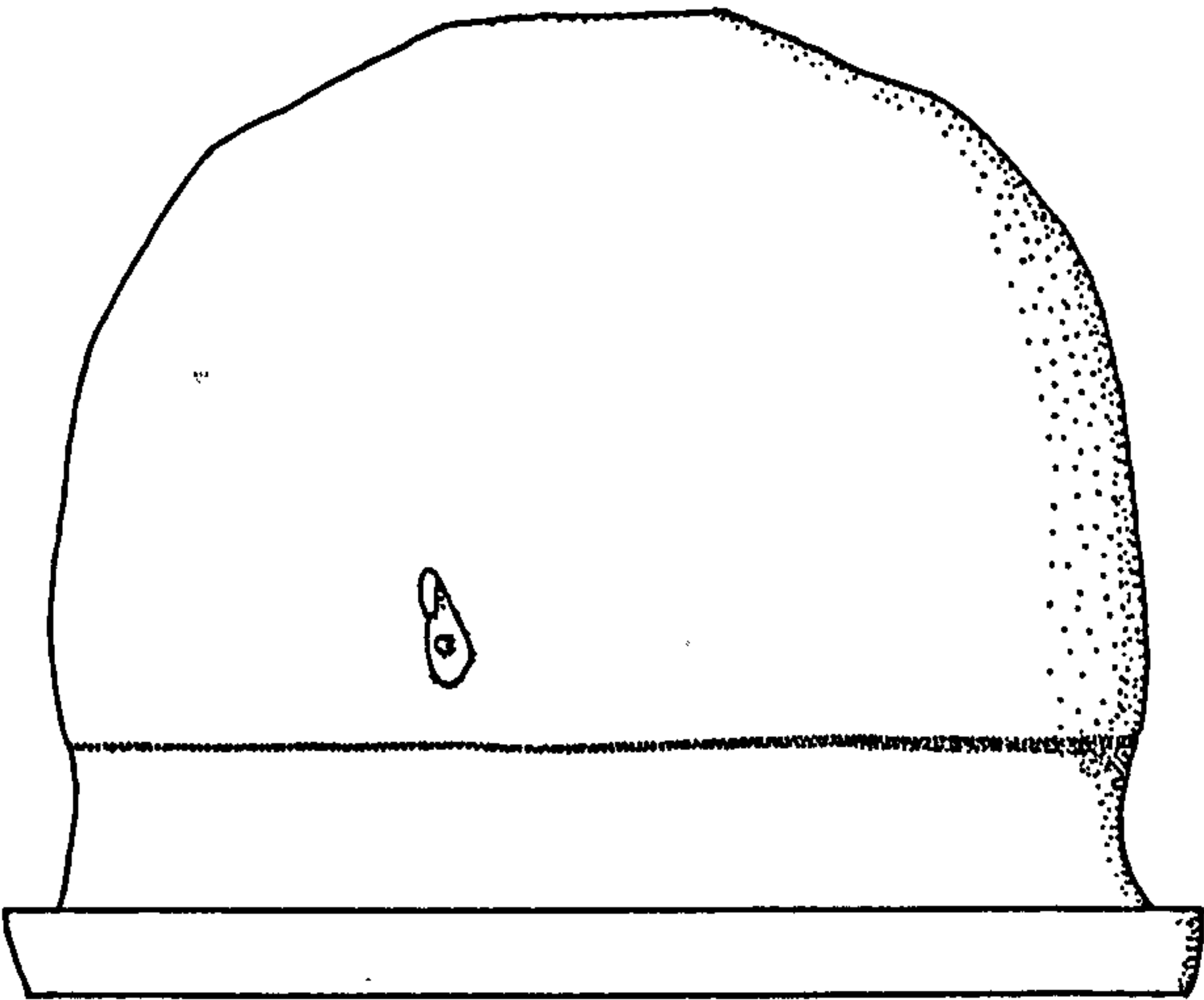
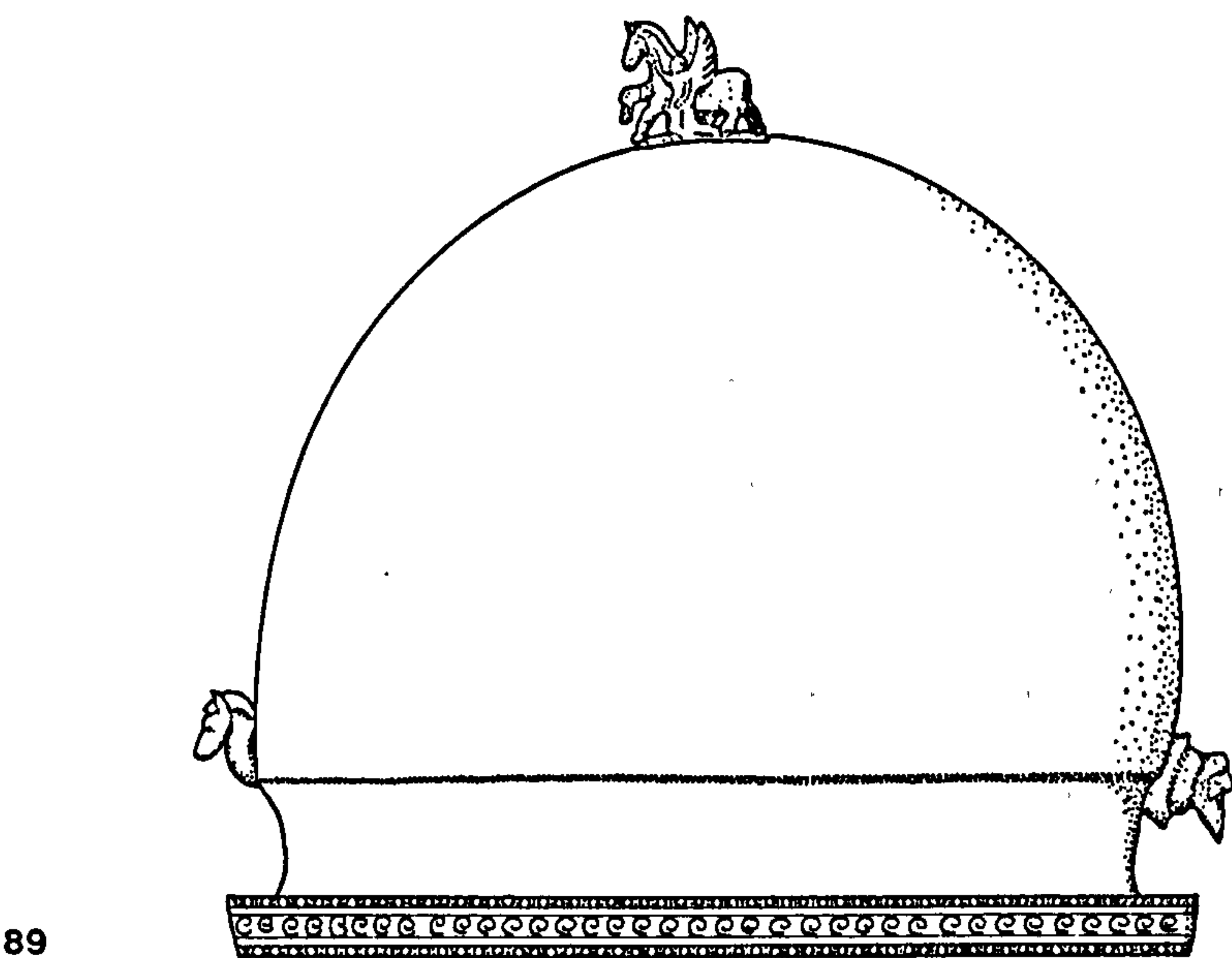
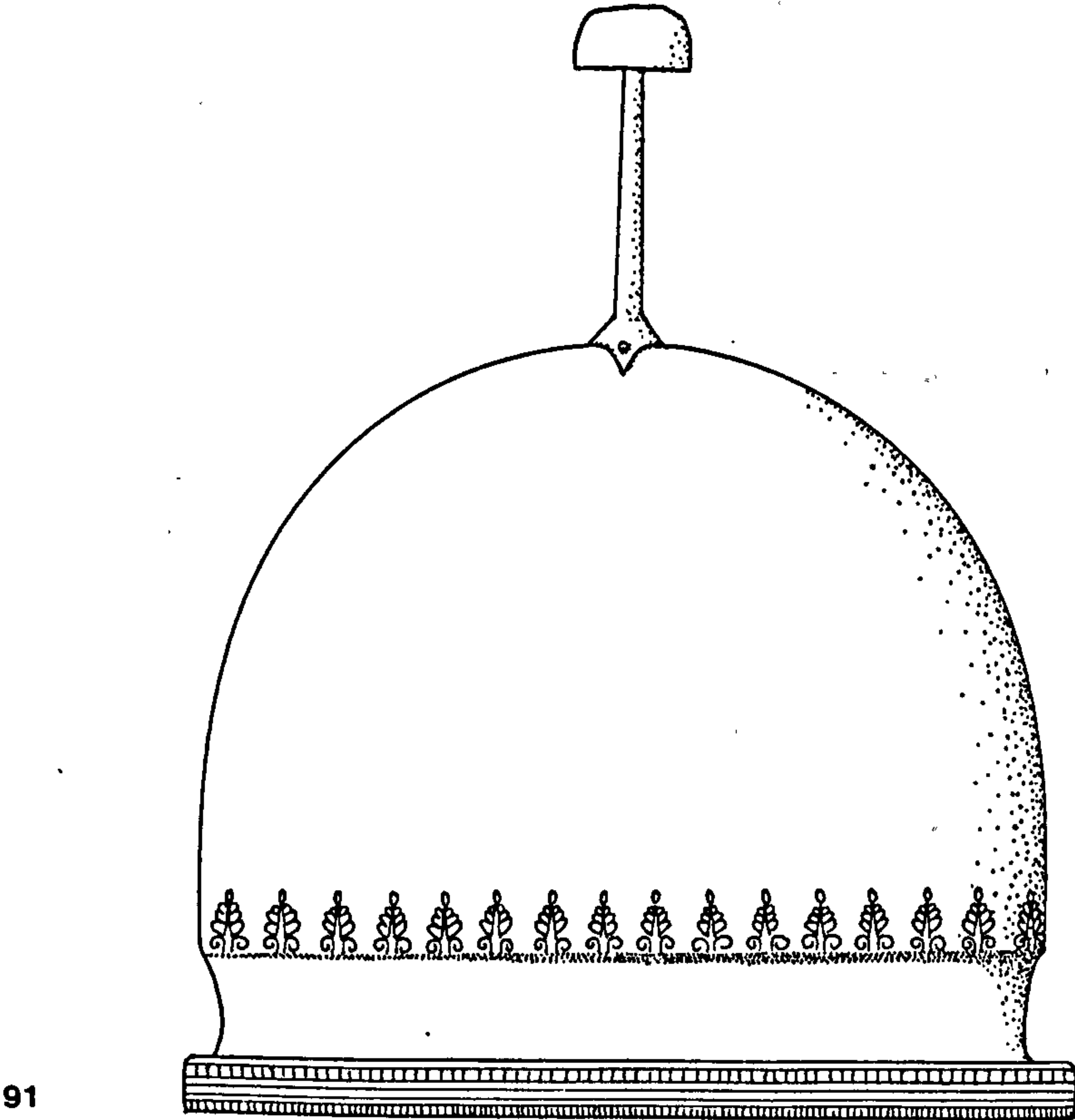


FIG 67



90



In addition to the appliqué work, some helmets of type I are decorated with incised or engraved work. The most elaborate of these is helmet No.3, from Volterra. This helmet is unique amongst the existing examples of this type in that its bowl is decorated. The decoration consists of a pair of engraved lionesses at the front of the helmet bowl, facing each other on either side of a pair of converging volutes surmounted by a palmette. In addition the brim is decorated with three, beaded, horizontal mouldings.

On helmets 12 and 15 the incised work is restricted to the brim of the helmets themselves. On helmet No.12 it consists of two plain narrow mouldings delineated by incised lines above a band of hatched work in turn above two narrow mouldings separated by incised lines and on helmet 15 of two groups of three incised lines.

Of the eighty-seven surviving helmets of type II forty-nine are undecorated. The majority of the remaining thirty-eight, in fact thirty-six, are embellished with stamped decoration. This is either confined to the brim or is also extended to a frieze along the junction between the brow-band and the bowl. In addition to, or instead of this stamped decoration three helmets are decorated with bronze appliqués. Helmet No 89, from Cavalupo, carries appliqués similar to those found on helmets of Type I, i.e archaic figurative heads. The other two helmets, Nos. 47 and 85, are decorated with appliqués of a Greek representational form, and bear medallions depicting a gorgon's and a lion's heads respectively mounted on the front of their bowls.

The helmets with stamped decoration can be divided into two broad categories; those with decoration solely around the brim and those

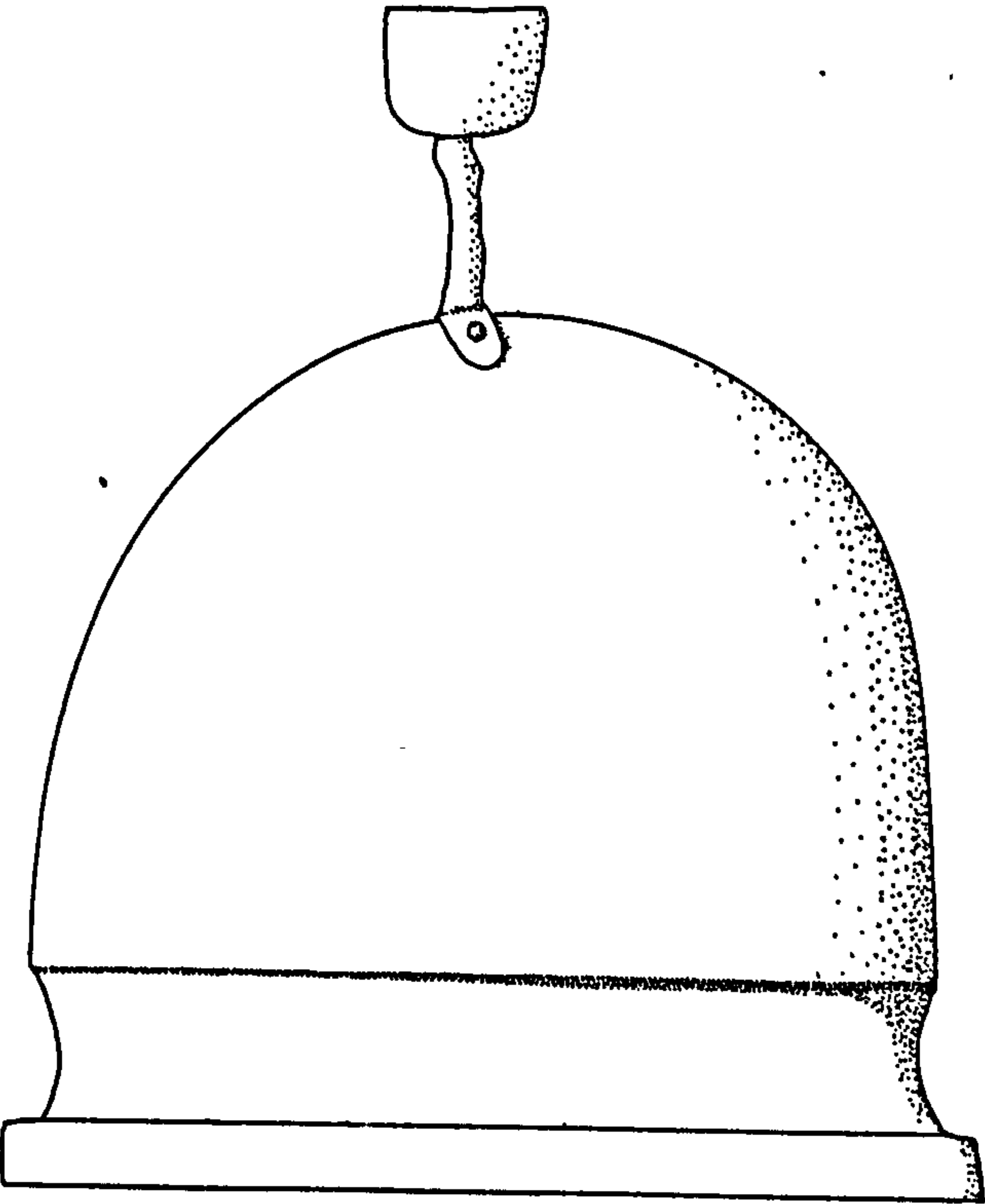
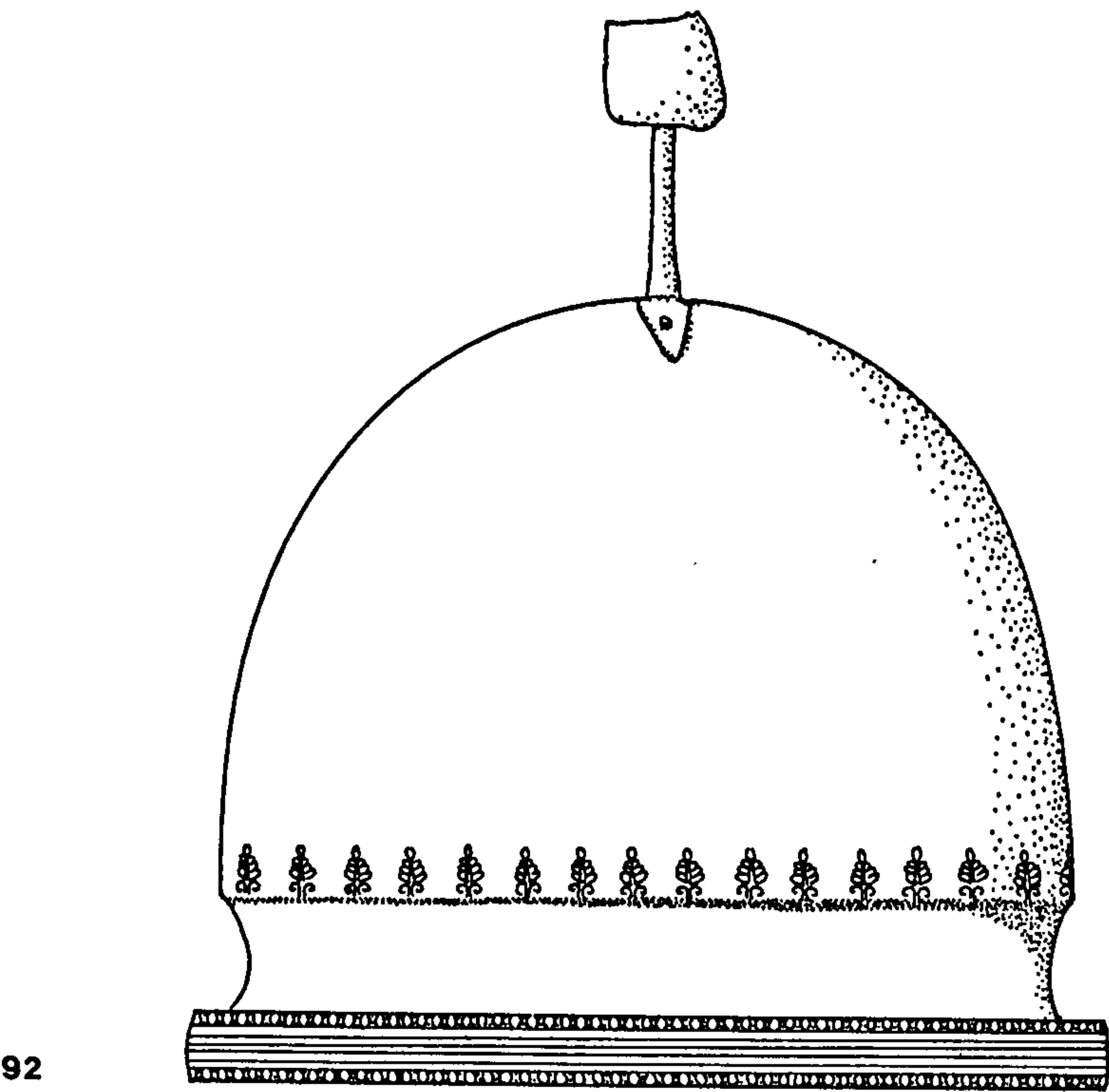
where the brim and the bowl are both decorated. Within these two broad groupings, Egg (1986) has postulated that two workshops are identifiable, however by studying the stamp types and the combinations in which they are used, five possible workshop groups can be discerned.

Those with stamped decoration which is restricted to the brim can be divided into three workshop groups (A, B and C).

Group A consists of six helmets (Nos. 26, 62, 65, 83, 89 and 101). The decoration consists of a band of egg and dart moulding, surmounting two incised lines, either side of a band of stamped volutes. This group has a wide distribution from Tuscany (62 and 89) to Numana in the east, (26) and Bomarzo in Lazio (101). As a group, therefore, it has no obvious centre although Etruria is a likely possibility.

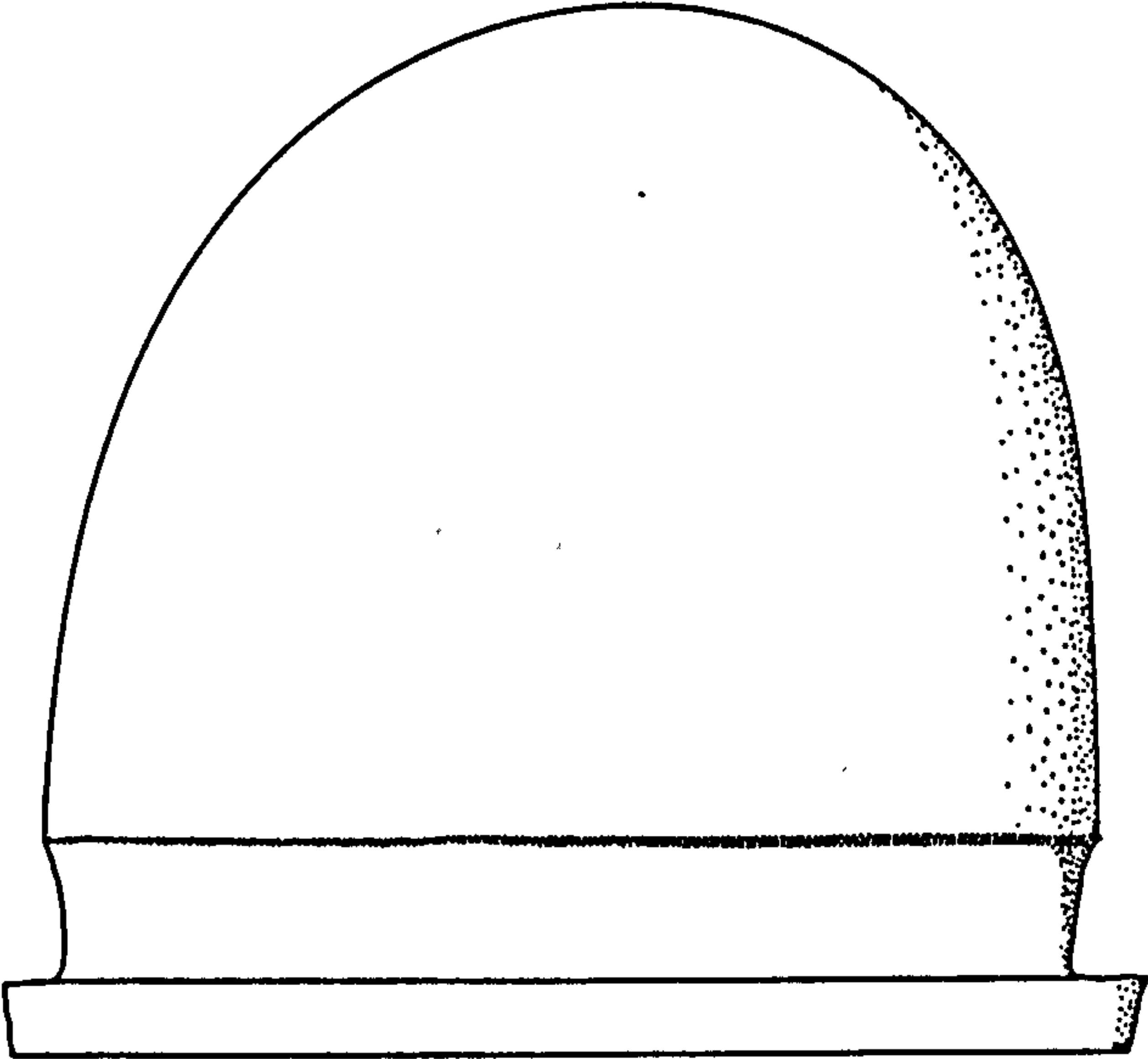
Likewise group B consists of five helmets (Nos. 28, 30, 48, 77 and 80). In this group the brim decoration consists of a band of egg and dart moulding either side of a plain band delineated by pairs of incised lines. Here the distribution is concentrated on the eastern Italian seaboard, with helmets 28, 30 and 48 coming from Castelbellino, Numana and Villamagna respectively.

The final group of this category, group C, consists of nine helmets (Nos. 31, 39, 51, 53, 55, 63, 64, 72 and 75). Here the decoration consists of two pairs of incised lines, one either side of a central group of incised lines up to four in number. This group has a marked concentration of helmets in Etruria with helmets 53, 55, and 75 coming from Populonia, Talamone and Orvieto respectively, and it is perhaps in Tuscany that the home of this group should be sought.

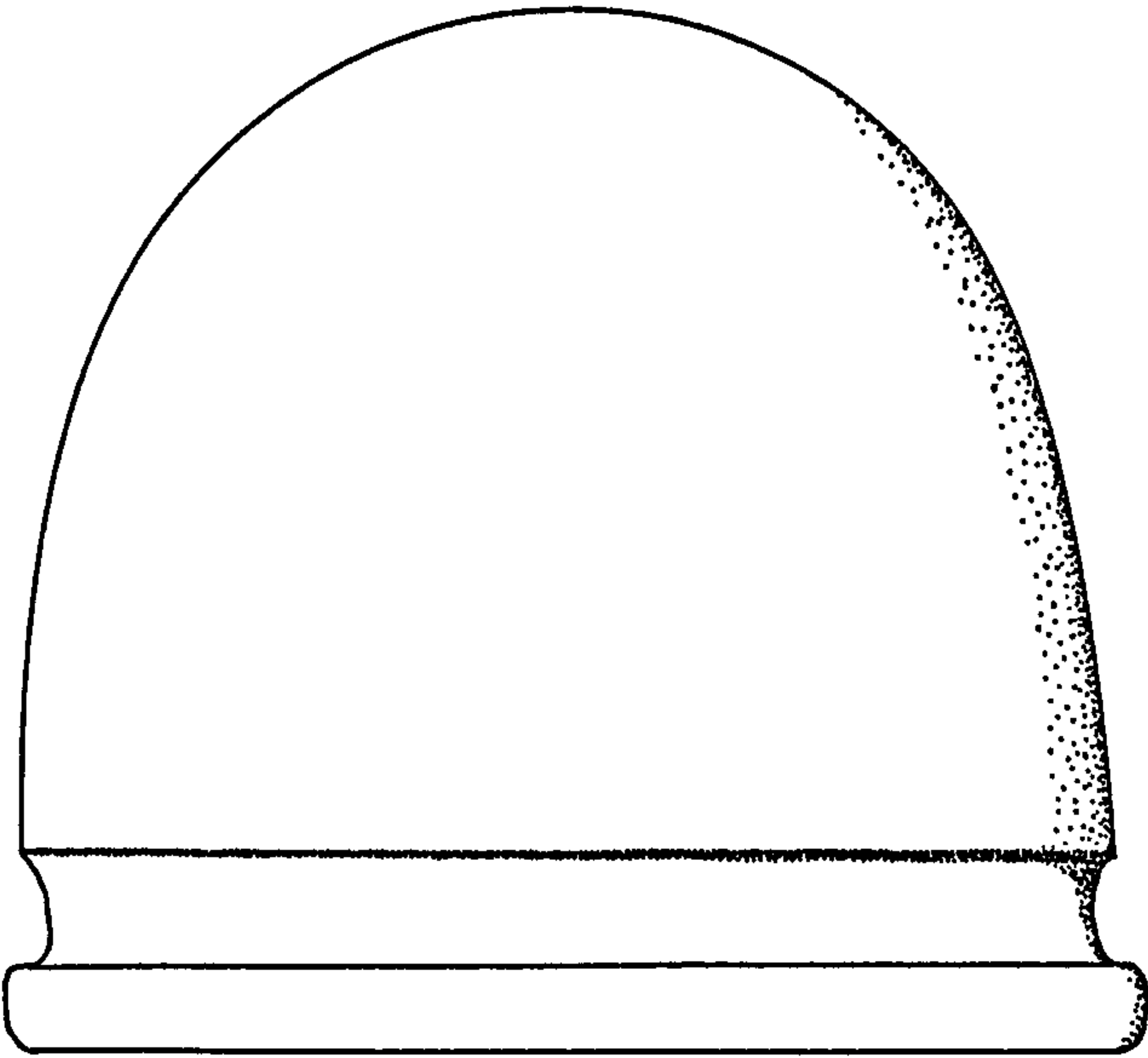


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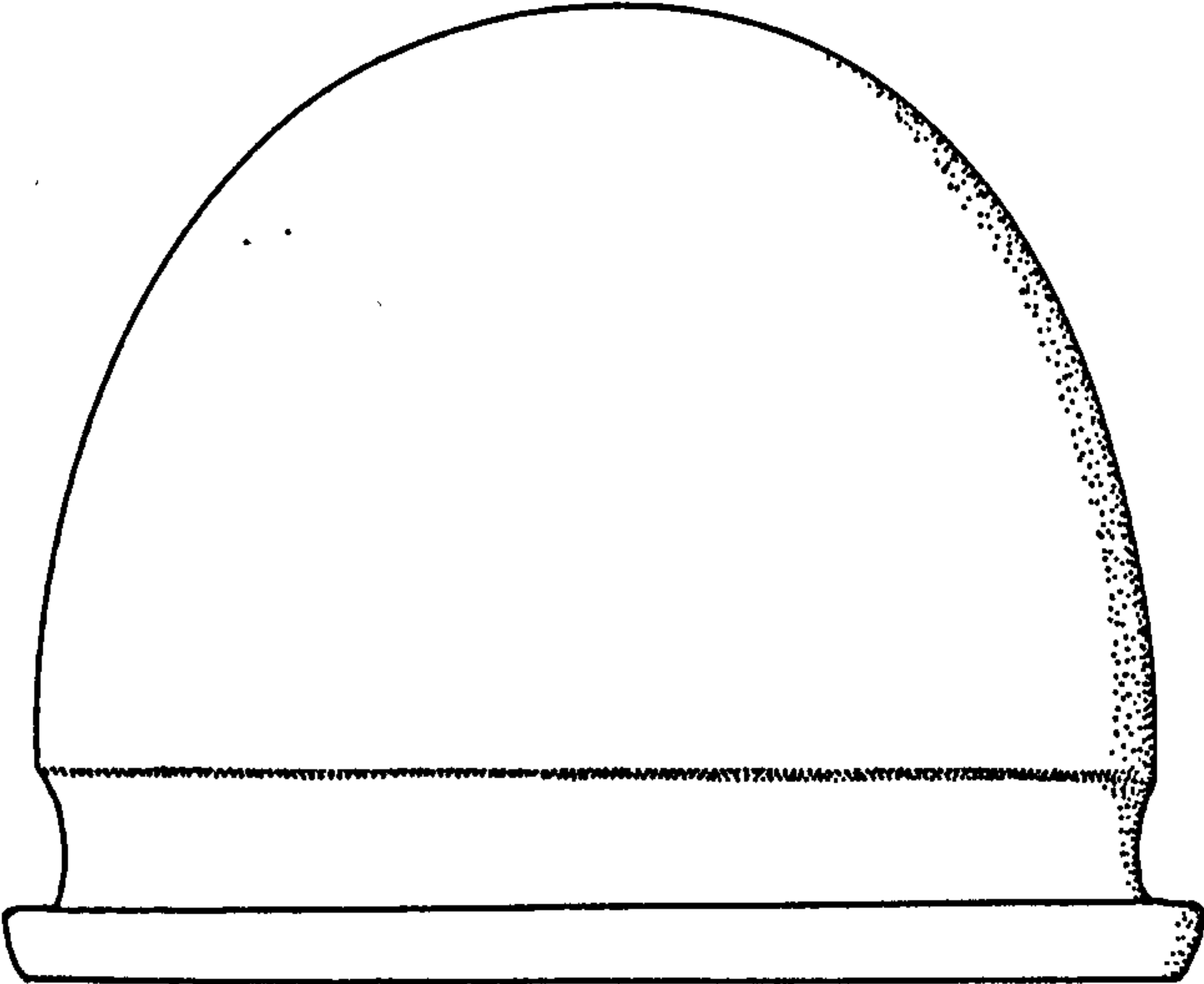
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96



Of those helmets where the stamped decoration is extended to form a frieze at the base of the bowl, there appears to be two workshop groupings; groups D and E.

Group D is composed of seven helmets (nos. 27, 50, 78*, 84, 91, 92 and 93). On these helmets the brim is decorated by two bands of egg and dart or dental pattern separated by three equally spaced incised lines. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes. Like group B, group D has a concentration in the Marche and the Abruzzi with all the provenanced examples coming from these regions. Likewise the comparison of the stamps used on helmets of groups B and D suggests some connection.

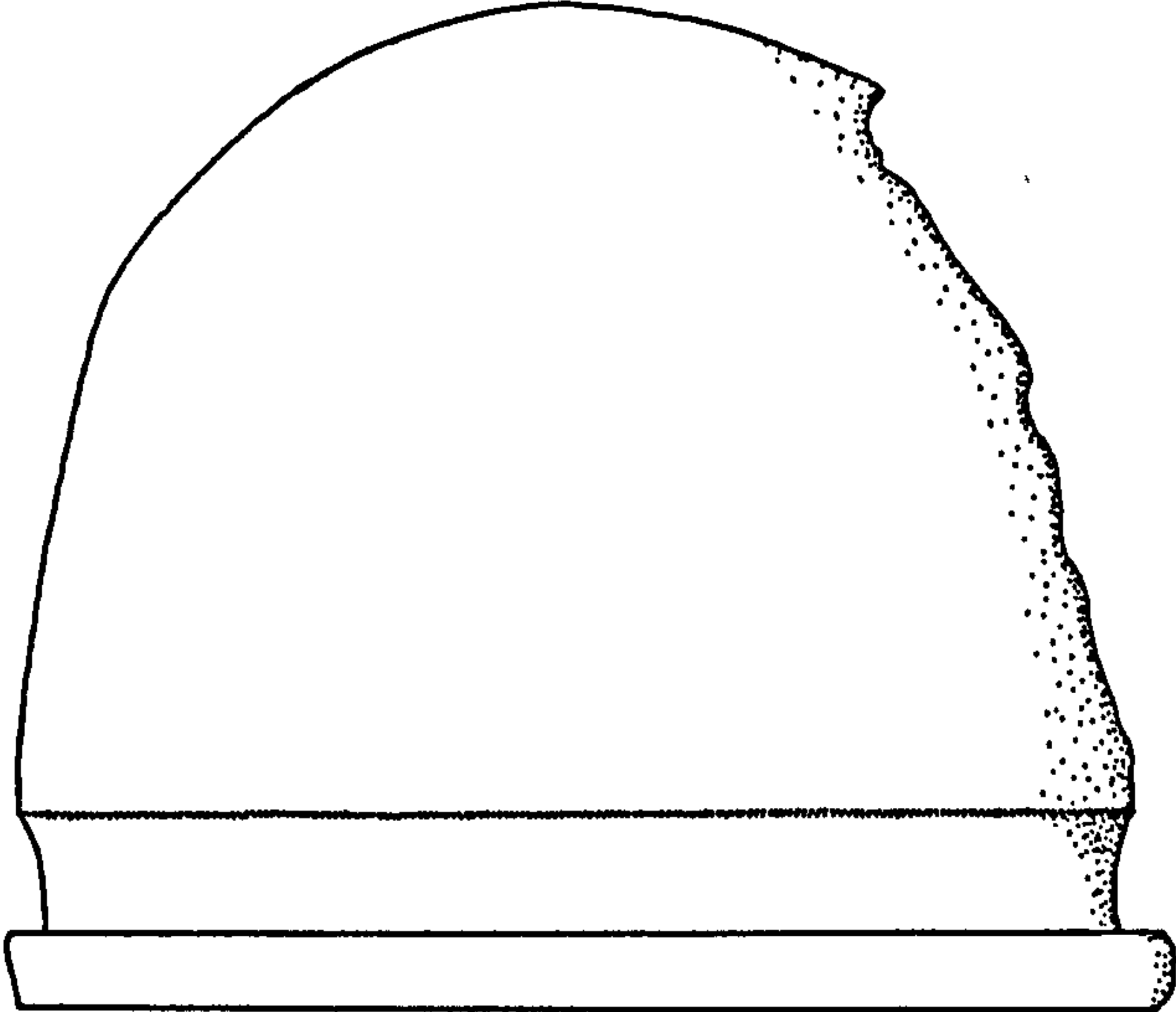
The final workshop group is the smallest and consists of only four helmets (Nos. 37, 46, 54, and 57). Here the brim decoration consists of a band of dental pattern either side of a plain band stamped with running volutes. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes resting on a dental pattern. These helmets have a very scattered distribution with no obvious centre and stretch from Caserta (37) to Forli (54).

The remaining decorated helmets of type II (Nos. 38, 45, 56 and 98) do not form a coherent workshop group but are only decorated on the brim with varying numbers of incised lines and hatching.

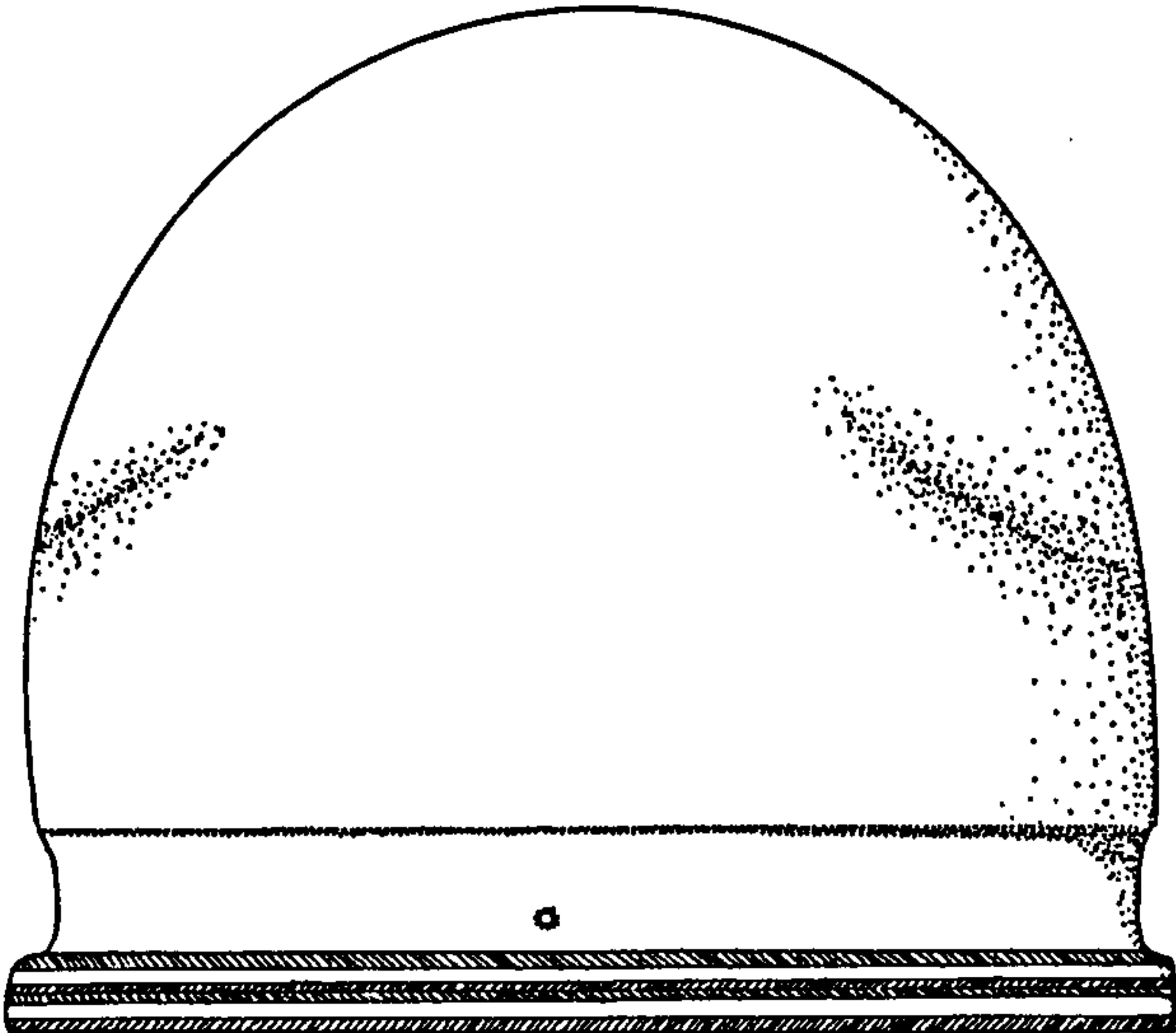
Only two helmets (but half the surviving examples of type III (Nos. 110 and 112.) are decorated and on these the decoration is once more restricted to the brim of the helmet and consists simply of a number of incised horizontal lines.

FIG 70

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98



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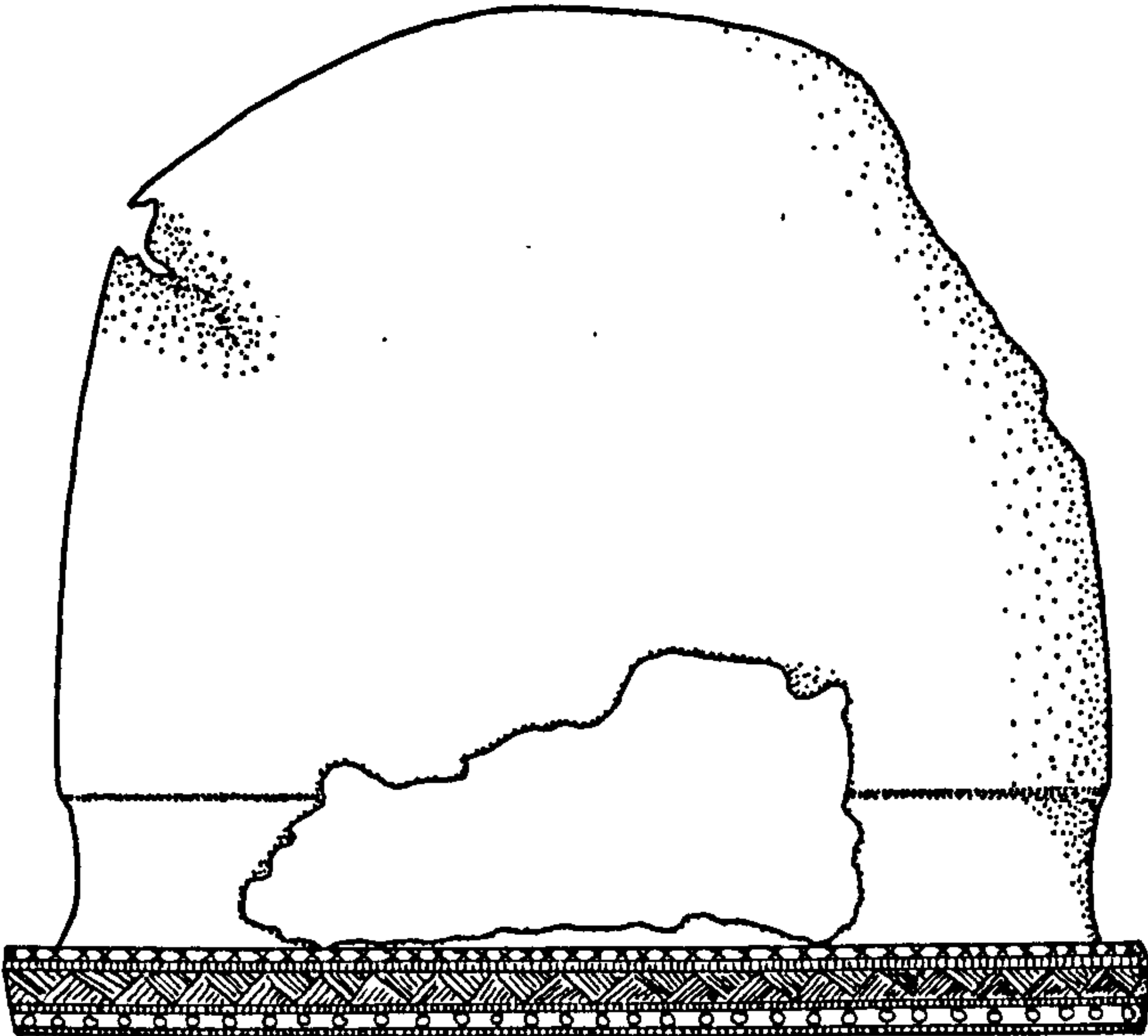
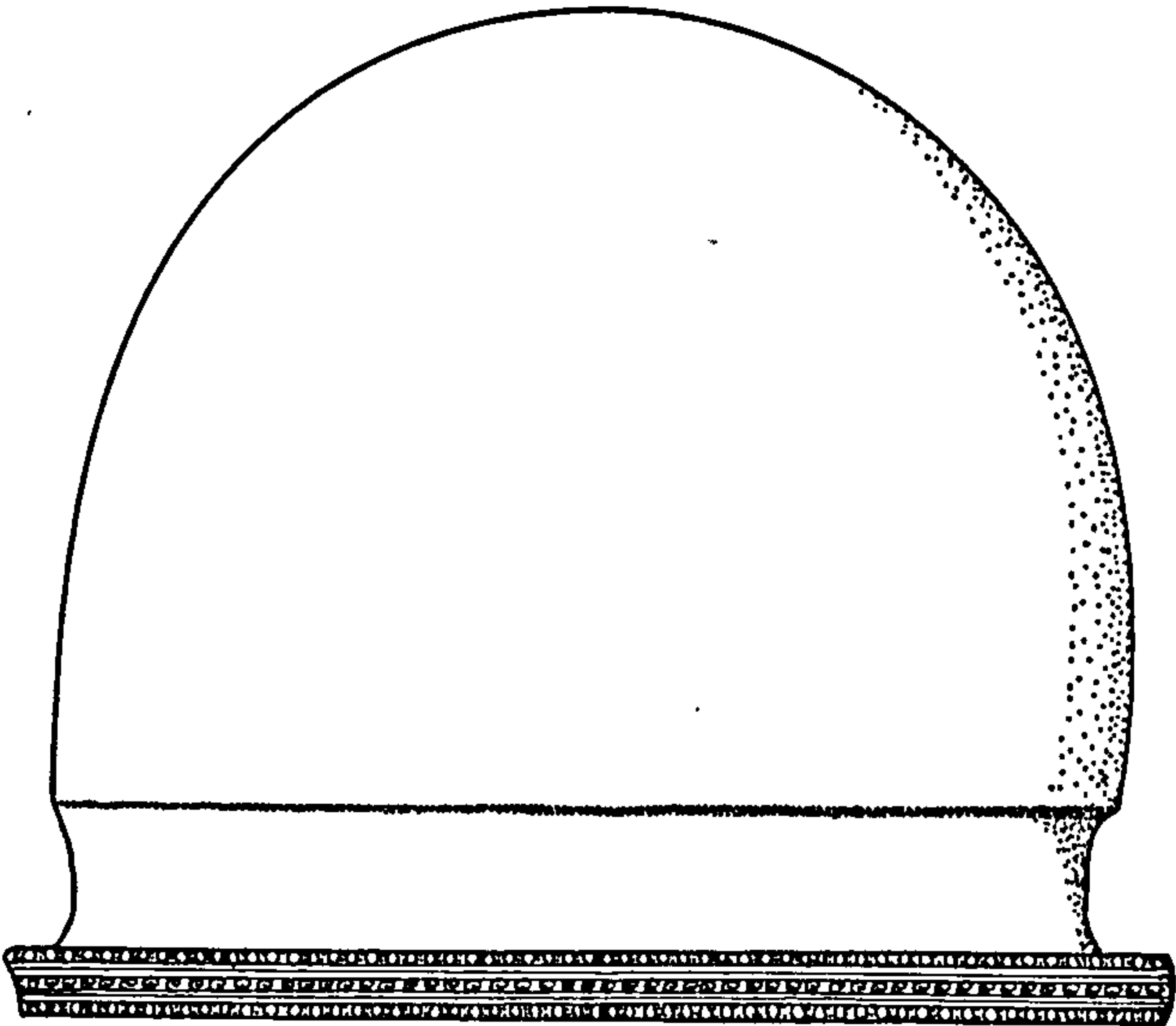
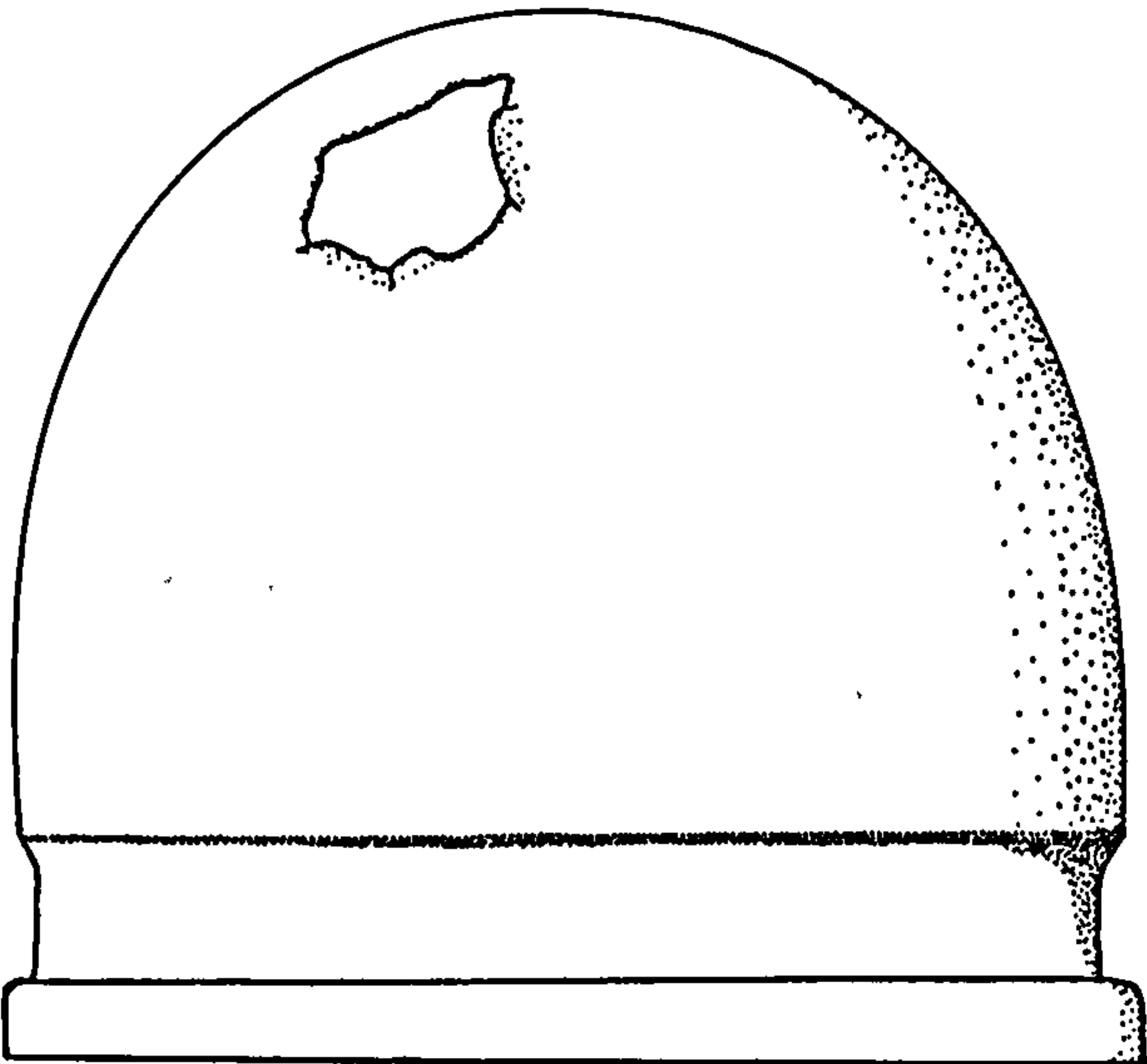


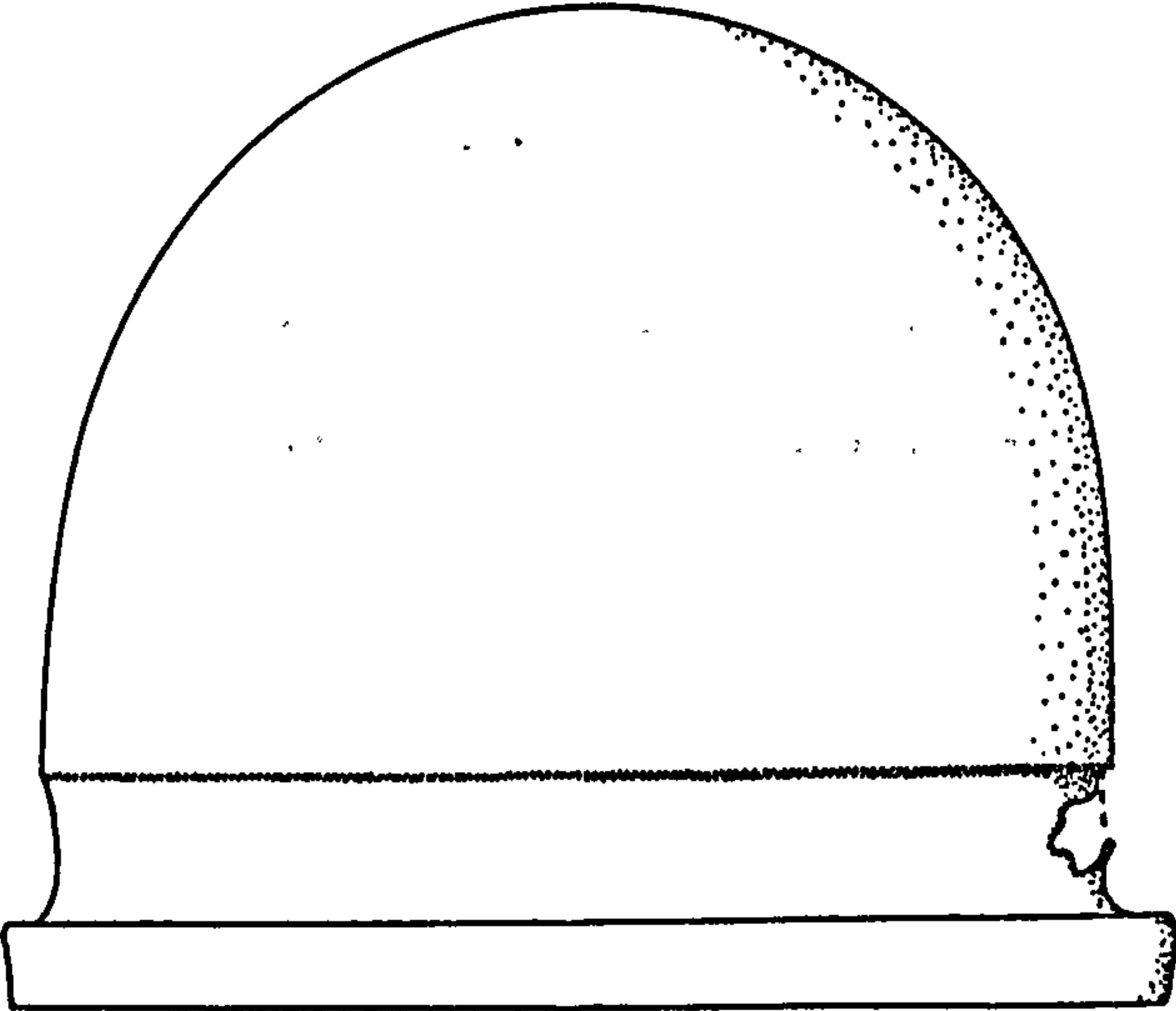
FIG 71

100



101

102



A Detailed study of an example of each type:

Helmet No. 10

Type:	I.	
Location:	Museo Civico Bologna. .	
Inventory No.	20696.	
Provenance:	Grave 72 Imola near Bologna, Emilia Romagna, Italy.	
Context:	Early 5th century B.C.	
Suggested date:	-	
Material:	Bronze.	
Dimensions:	Height.	187 mm.
	Overall Width	265 mm.
	Width	259 mm.
	Overall Breadth	220 mm.
	Internal Breadth	214 mm.
Thickness:	Brim	3 mm.
	Bowl	1.8 mm.

Chin-strap fixtures: The chin-strap fixture was presumably integral with the lining ring, as no traces of another sort now survive.

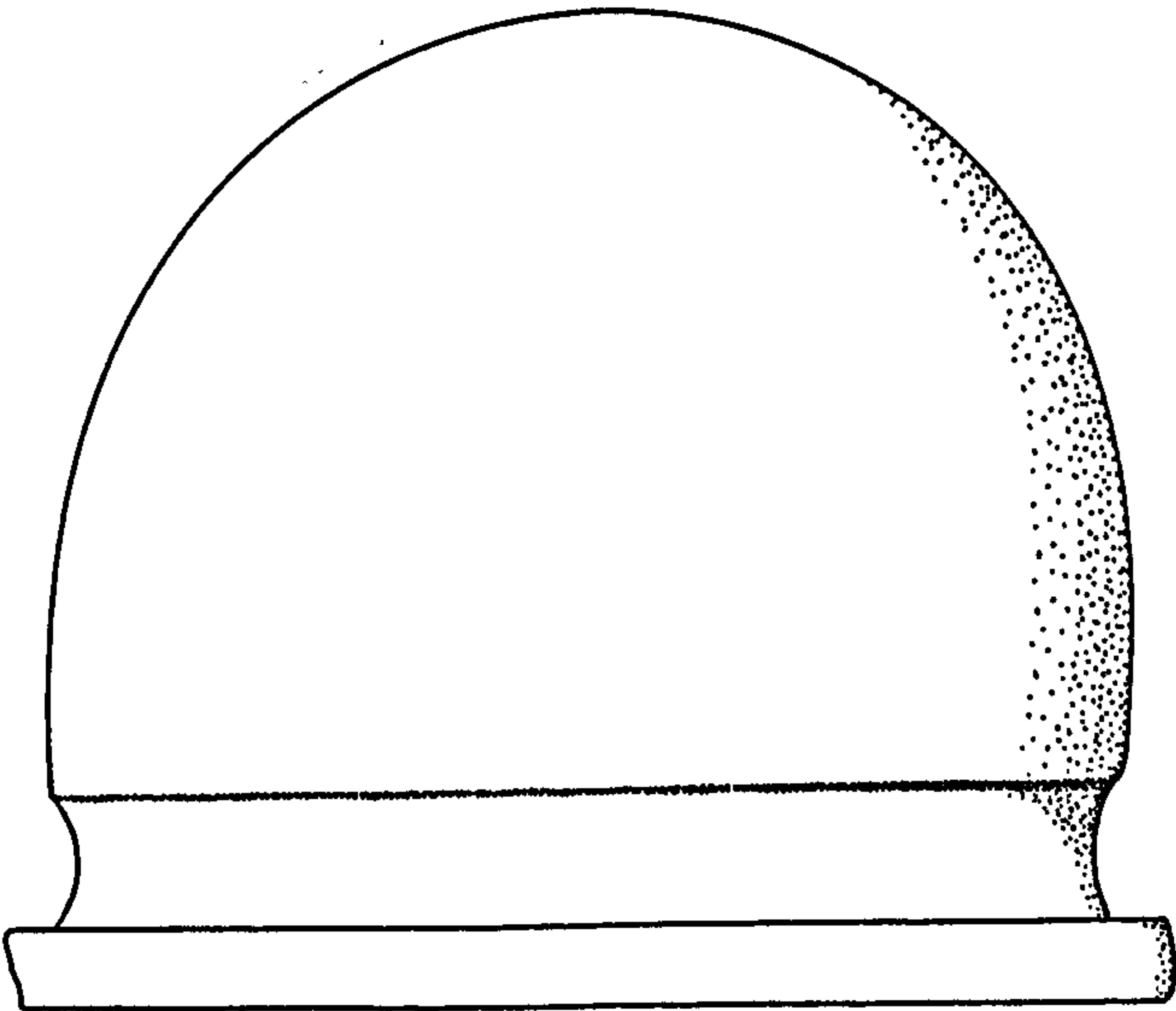
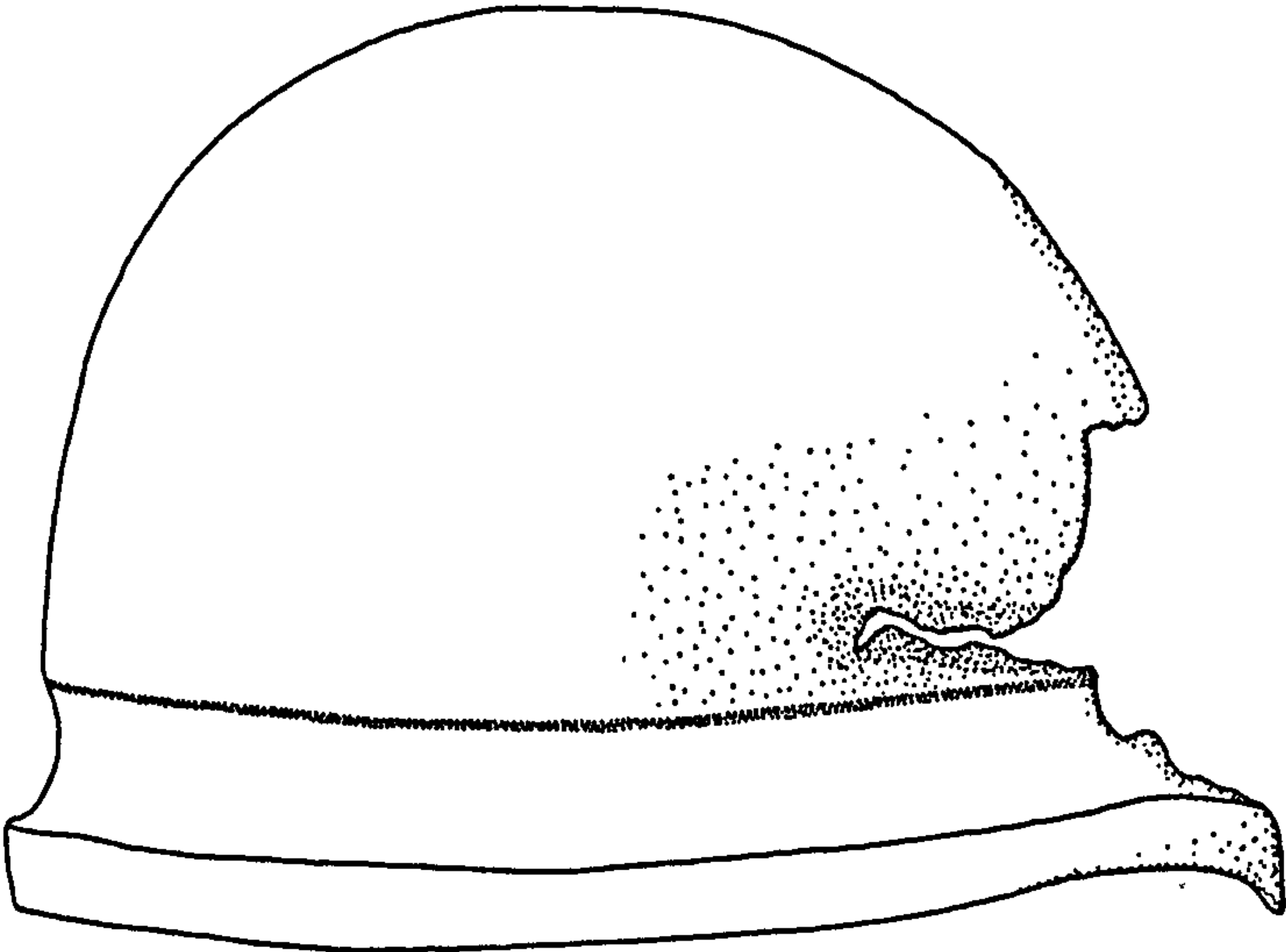
Crest-fixture: None.

Decoration: None.

Internal Fixtures: There are traces of solder on the inside of the brim indicating that this helmet was originally fitted with a separately made and pierced internal lining ring.

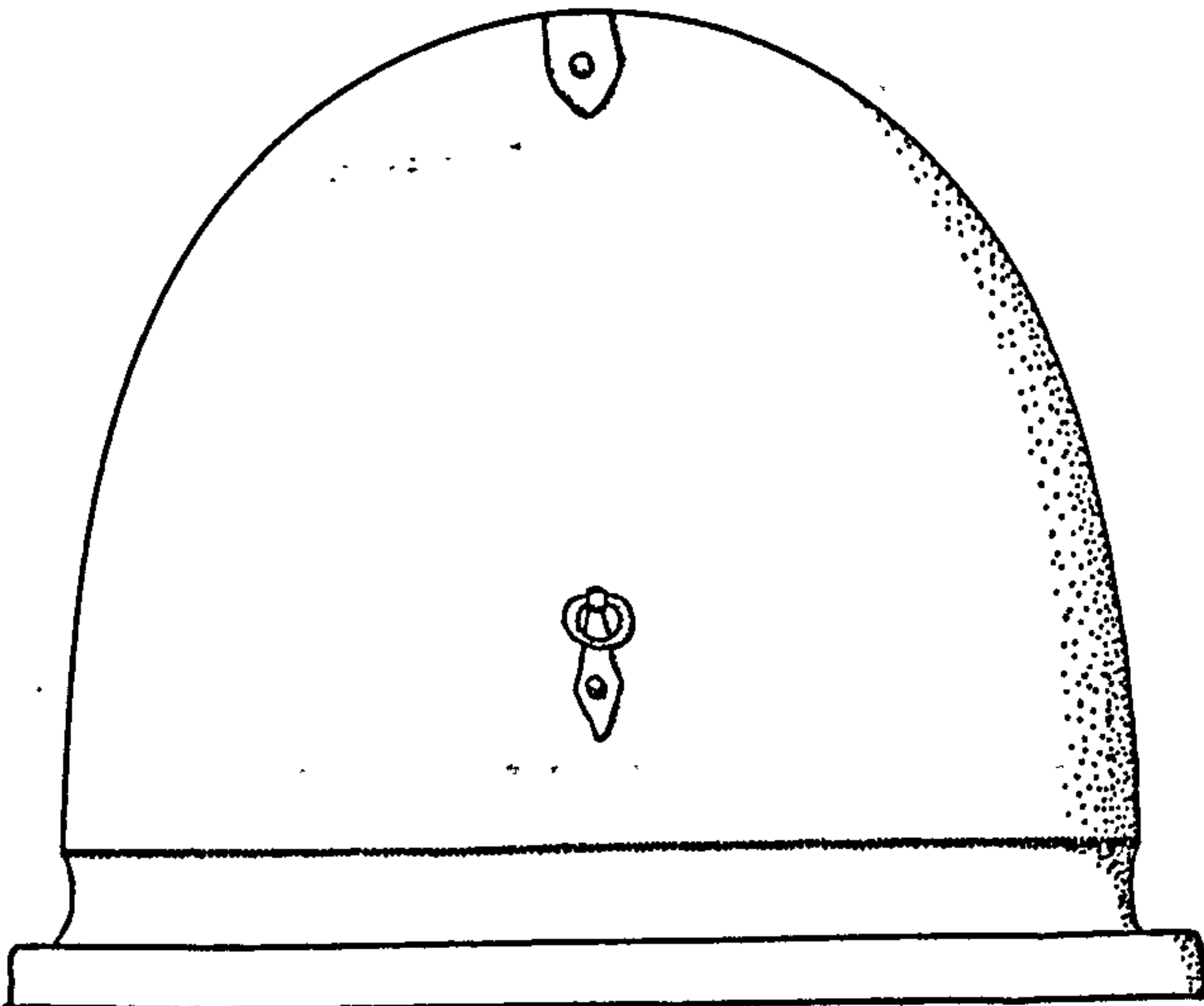
FIG 72

103

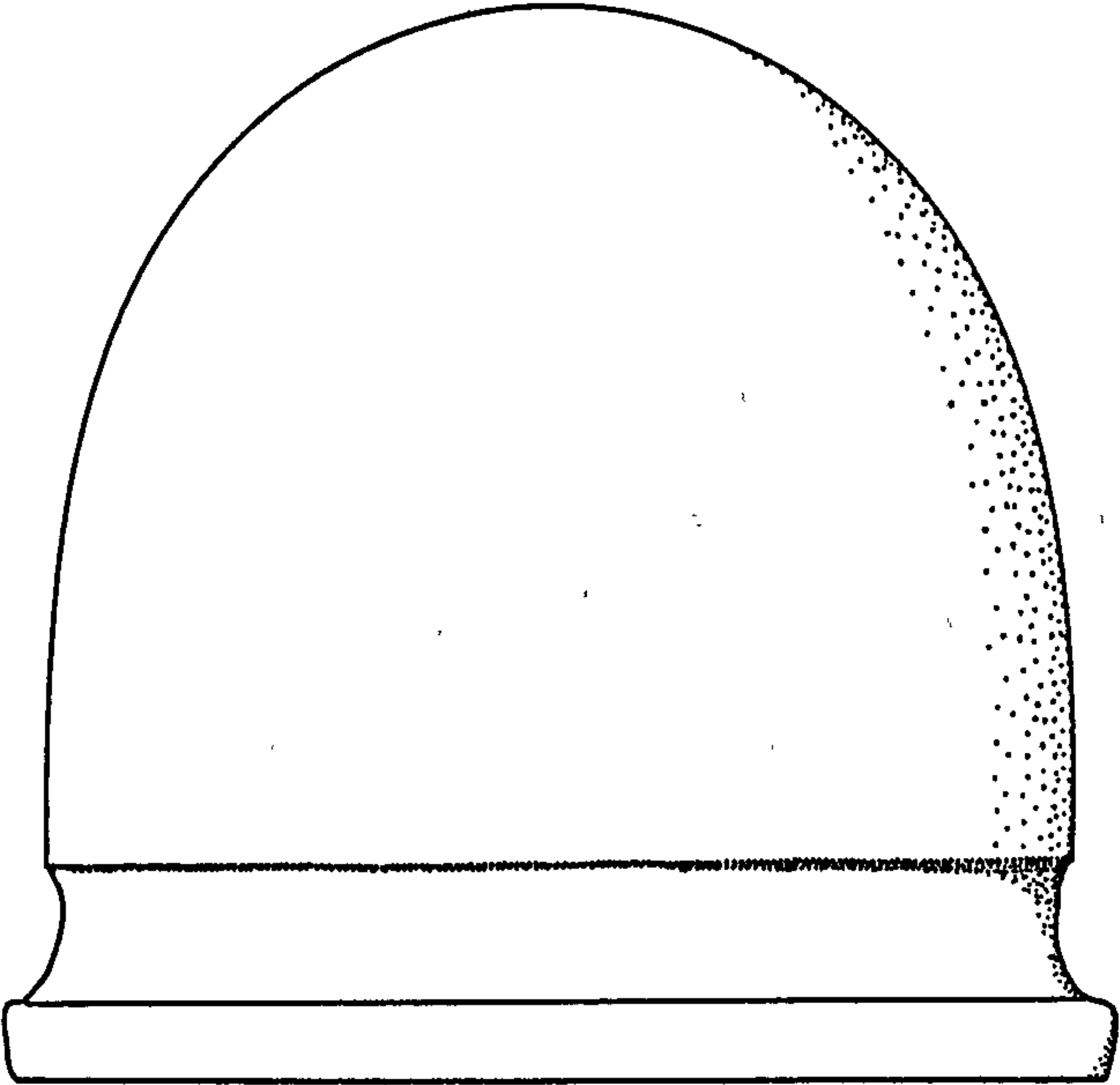


104

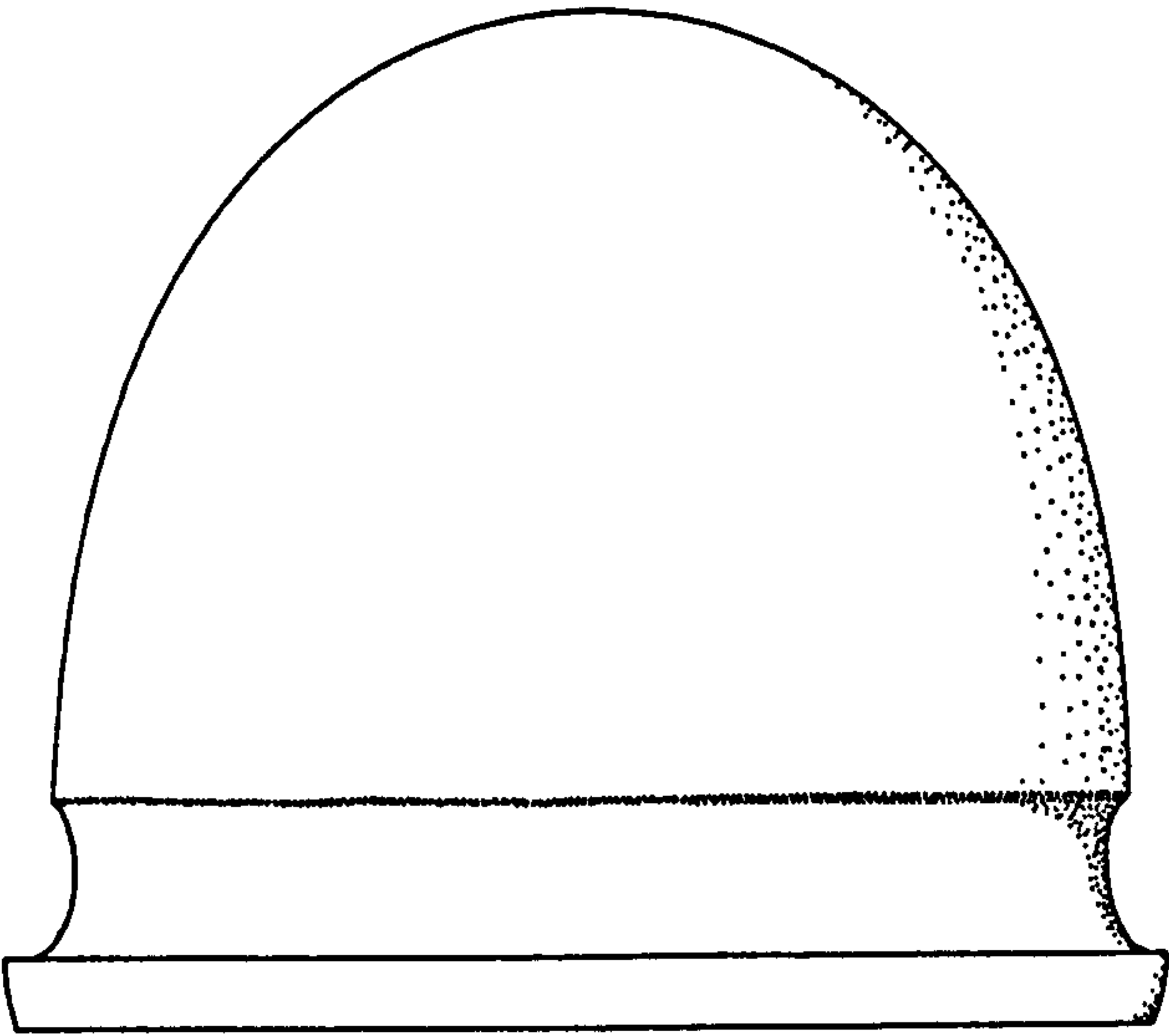
105



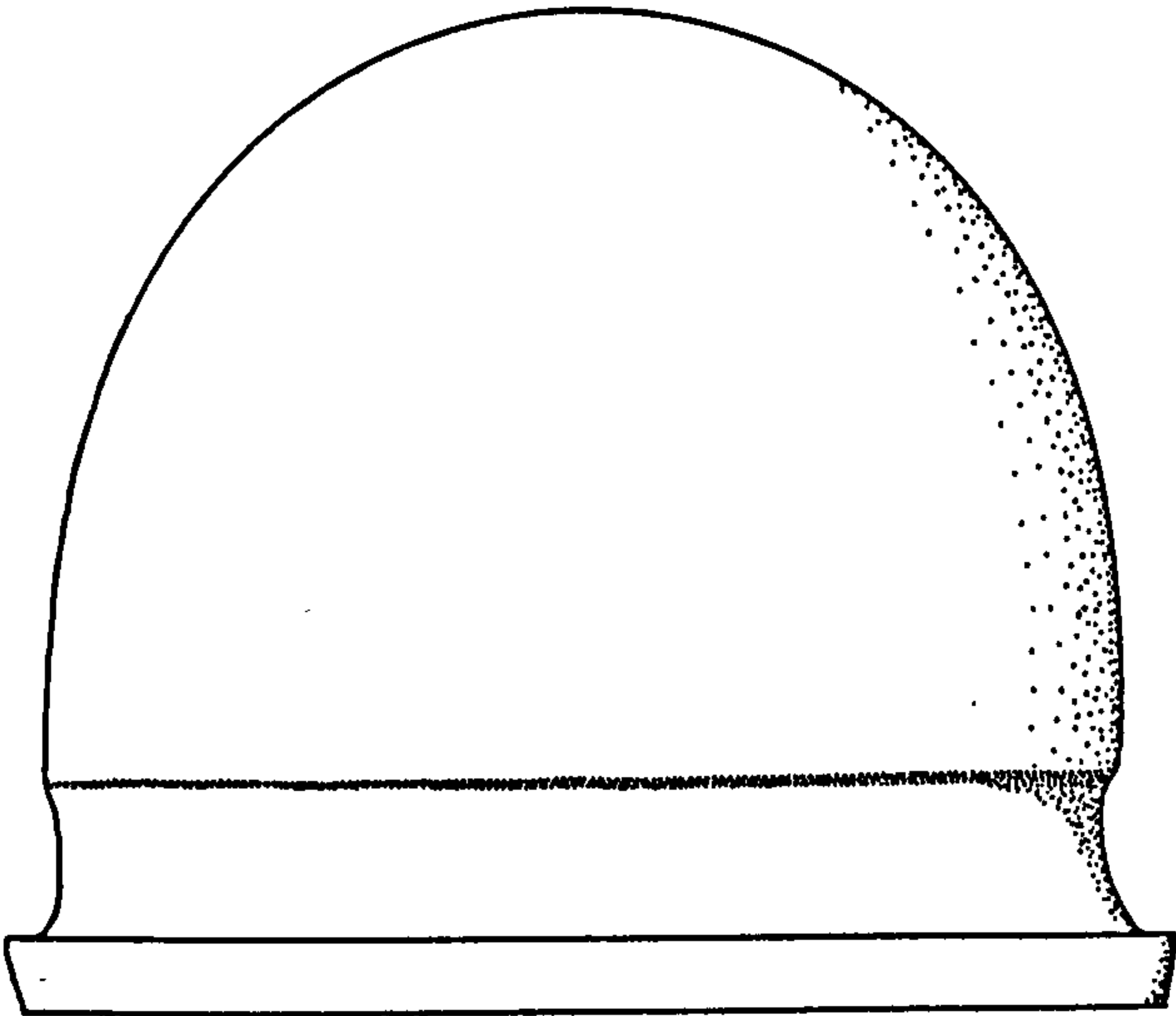
106



107



108



Manufacture: "Raised" from a single piece of bronze. The lining ring was manufactured separately from a strip of bronze which was bent to shape and soldered together. This was then pierced and the whole assemblage soldered into the rim of the helmet.

Description: This helmet is characterised by a high domed bowl which has a weak medial ridge. The bowl is asymmetrical being higher at the rear than at the front. It swells above a slightly concave, fitted, brow-band. This is deep (12 mm.) and also rises at the rear echoing the shape of the bowl. The brow-band flares at its base to form a wide flanged brim (18 mm.).

Other details: None.

Published: Egg 1986, 192.

Helmet No. 54.

Type: II.

Location: Museo Archeologico di Forlì.

Inventory No. 27163

Provenance: Tomb III Davadola S. Ruffillo, near Forlì, Emilia Romagna.

Context: Mid 5th century B.C.

Suggested date: Mid 5th century B.C.

Material: Bronze.

Dimensions: Height. 220 mm.

Overall Width 256 mm.

	Width	248 mm.
	Overall Breadth	227 mm.
	Internal Breadth	219 mm.
Thickness:	Brim	4 mm.
	Bowl	2 mm.

Chin-strap fixtures: The chin-strap fixture is integral with the lining ring.

Crest-fixture: None

Decoration: The decoration is stamped on both the brim and the bowl. The brim is decorated with a band of dental pattern either side of a plain band stamped with running volutes. The bowl is decorated by a frieze of palmettes each resting on a pair of volutes resting on a dental pattern.

Internal Fixtures: This helmet is fitted with a separately manufactured and pierced internal lining ring.

The cavity between the rim and the lining ring is filled with lead.

Manufacture: "Raised" from a single piece of bronze. The lining ring however was manufactured separately from a strip of bronze which was forged to shape and soldered together, then pierced and the whole assemblage soldered into the rim of the helmet.

Description: This helmet is characterised by a steep angular bowl with a very prominent medial ridge, the bowl is symmetrical but its longitudinal axis is significantly greater than its lateral one, which gives the bowl an almond-shape. The bowl is defined along its base by a

right-angled step which marks the junction with the deeply concave but narrow brow-band. The depth of the brow-band is consistent and it flares at its base to form a narrow flanged brim.

Other details: None.

Published: Negrolì. 1926, 31.

Helmet No. 111.

Type:	III.		
Location:	Museo Nazionale Pontecagnano.		
Inventory No.	35888		
Provenance:	Grave 7, Cairano near Salerno		
Context:	Late 5th century B.C.		
Suggested date:	5th Century B.C.		
Material:	Bronze.		
Dimensions:	Height.	220	mm.
	Overall Width	232	mm.
	Width	228	mm.
	Overall Breadth	208	mm.
	Internal Breadth	204	mm.
Thickness:	Brim	2	mm.
	Bowl	1	mm.

Chin-strap fixtures: The chin-strap fixture is integral with the lining ring.

Crest-fixture: At either side of the apex of the bowl are the remains of a transversely mounted crest support of

the stemmed "U" bracket type.

Decoration: None.

Internal Fixtures: Pierced lining ring soldered to the inner face of the rim. The cavity between the rim and the lining ring is filled with lead.

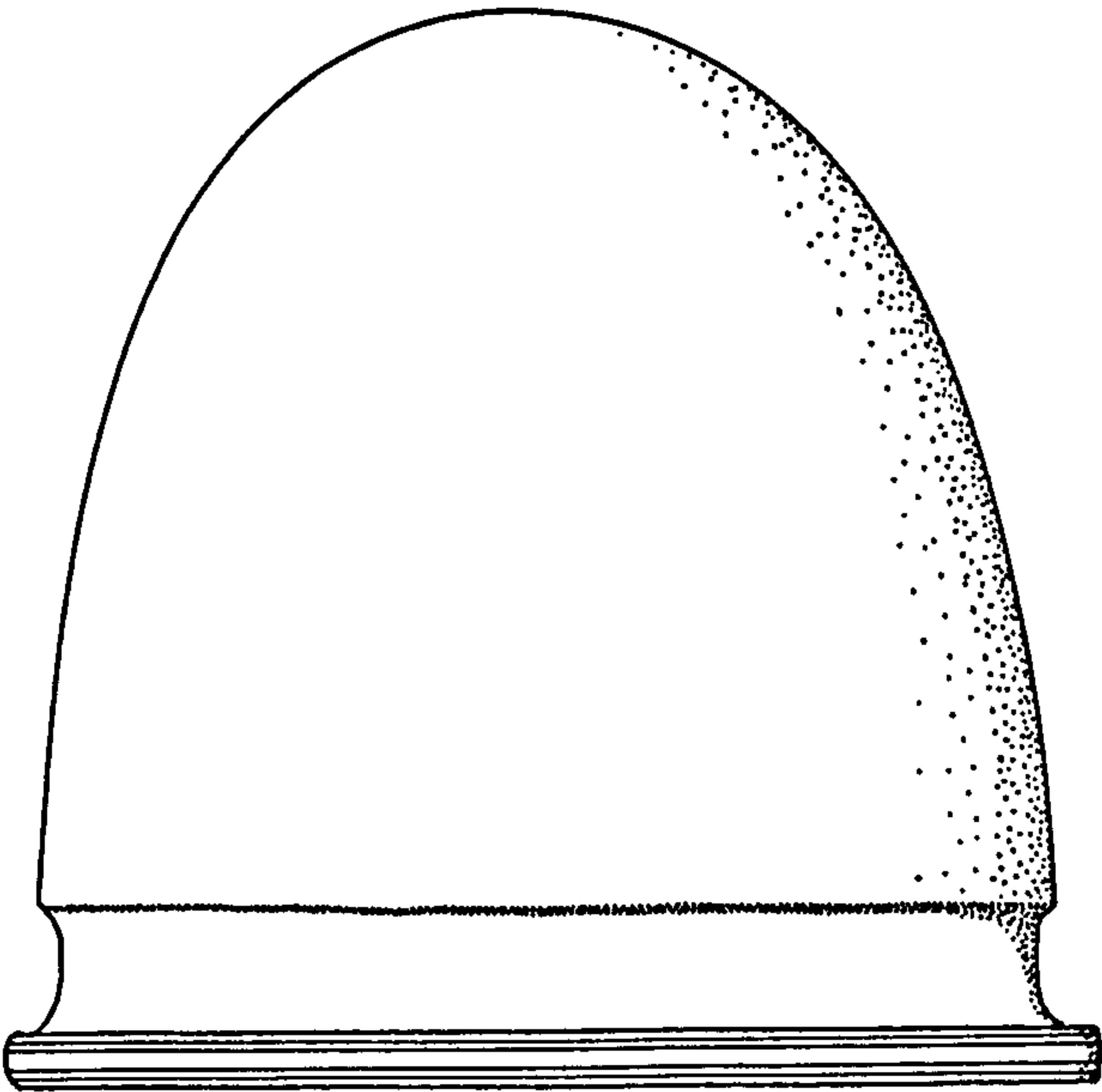
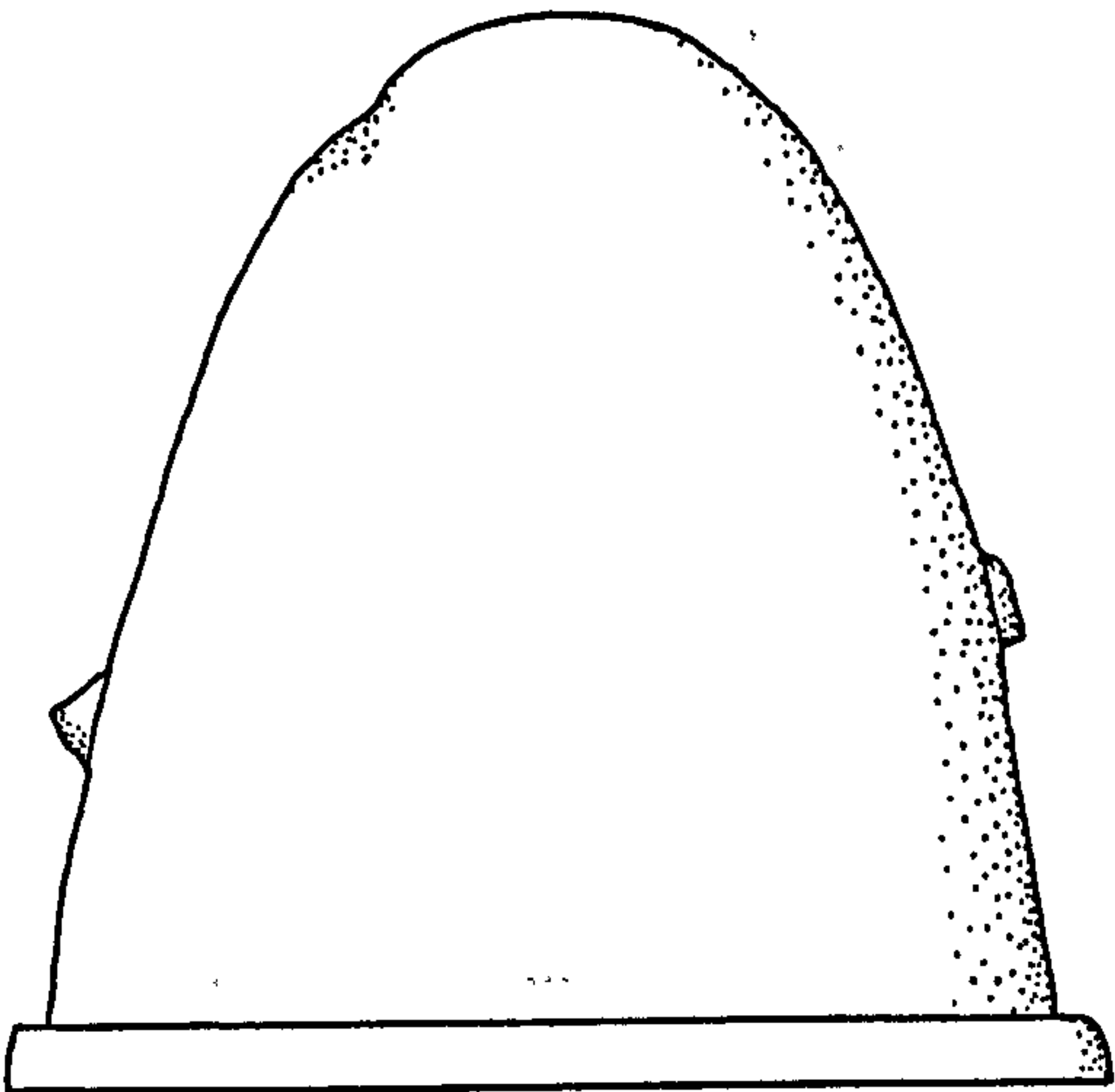
Manufacture: Raised from a single piece of bronze. The lining ring was manufactured separately and soldered into place. The crest fixture was probably made in three pieces as described above and riveted in place.

Description: This helmet is characterised by a tall angular bowl with a very prominent medial ridge. The lower edge of the bowl is straight and its longitudinal axis is significantly greater than its lateral one. The height of the bowl is equivalent to its longitudinal depth thus imparting to it an attenuated appearance. The bowl is defined along its base by a right-angled step which marks the junction with the deeply concave but narrow brow-band. This is flared at its base to form a narrow flanged brim.

Other details: None.

Published: Bailo-Modesti. 1980. 172.

109



110

111

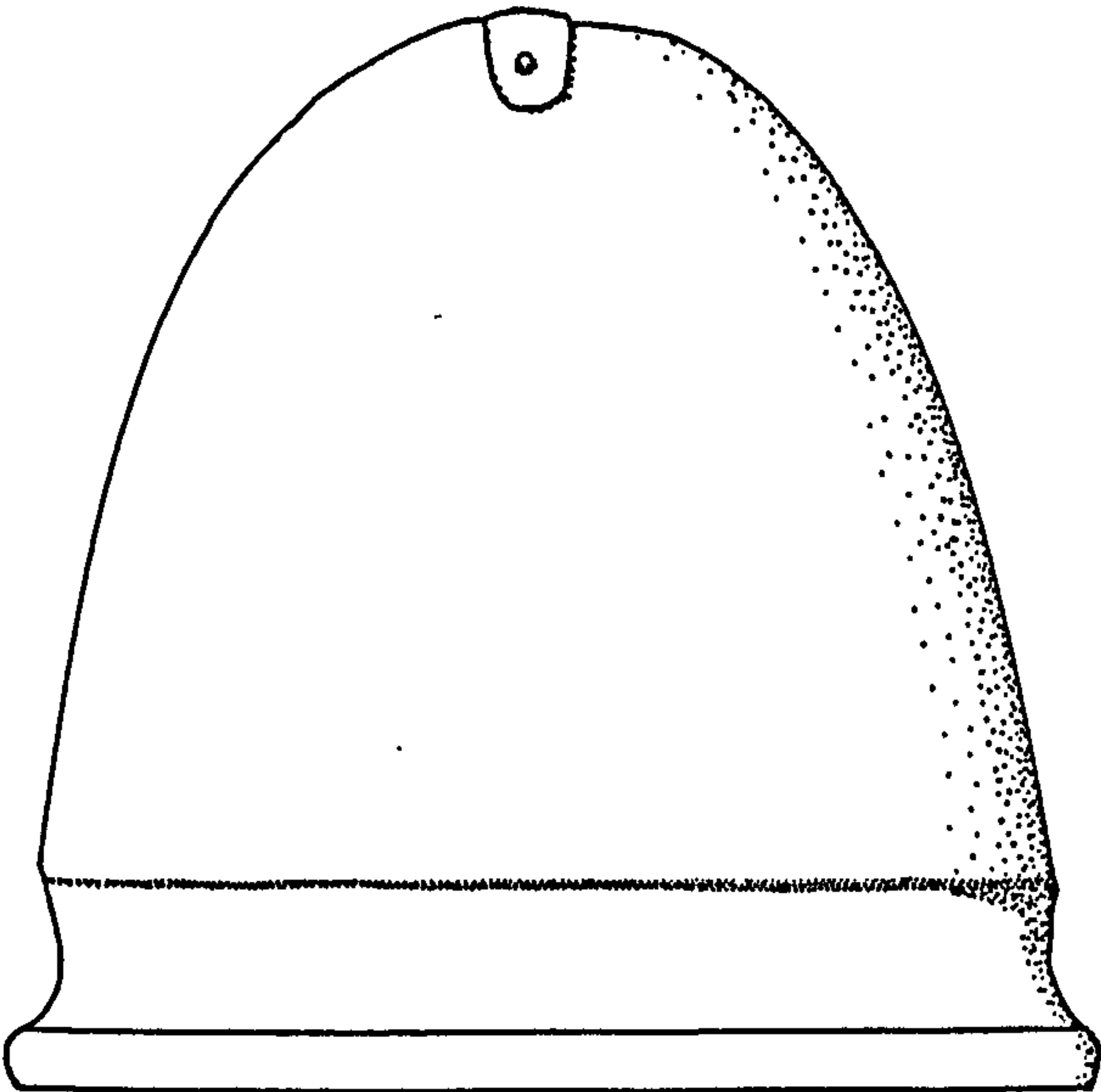
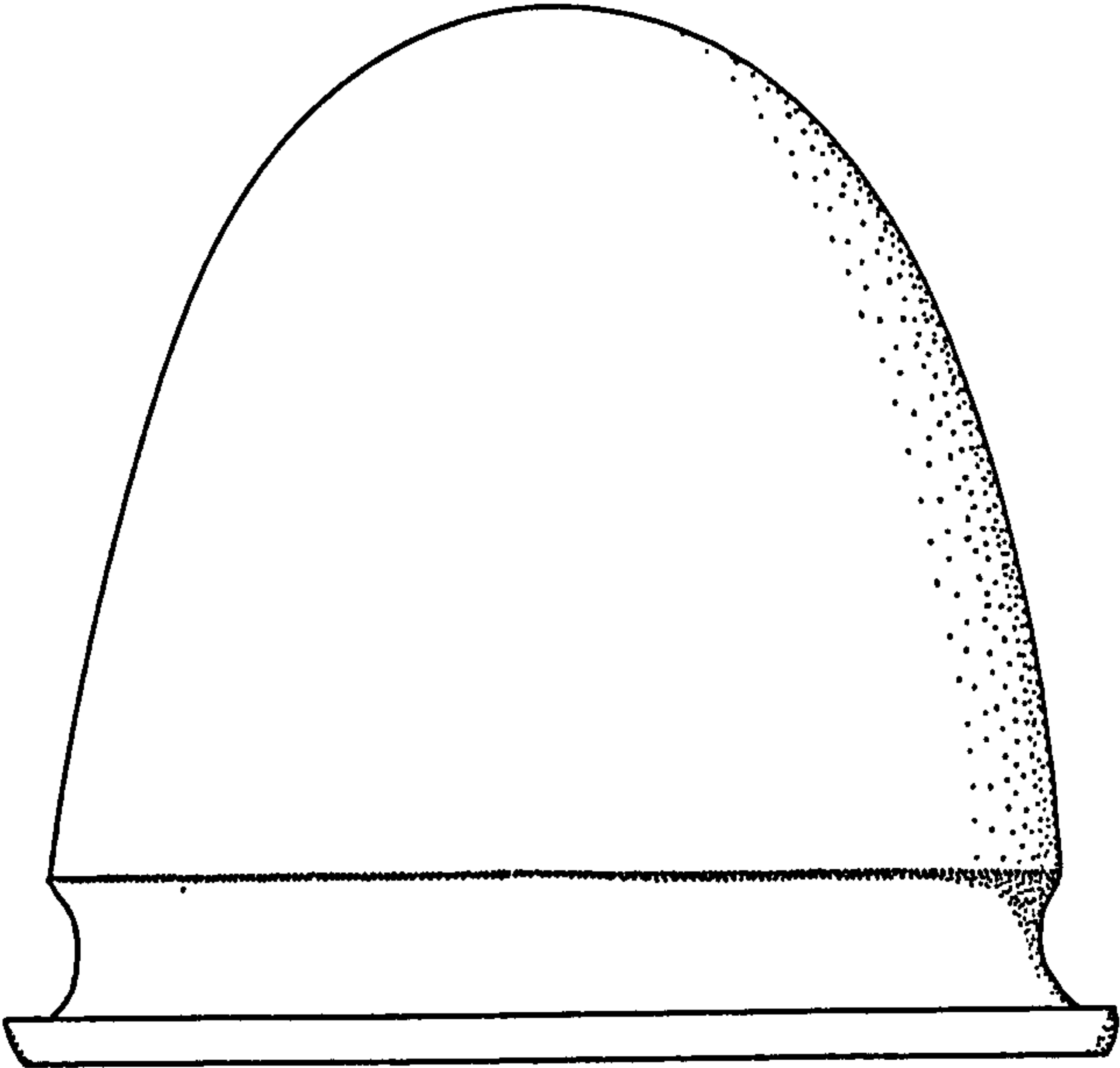


FIG 75

112



The Italo-Chalkidian Helmet.

Introduction.

Over the last century considerable time and energy has been expended by scholars in trying to define and differentiate between the Chalkidian and the Attic helmets. Even so, today, there is little or no consensus. The term "Chalkidian" is a conventional one applied to certain helmet types derived from the Corinthian form. The term was first coined when it was believed that these helmets originated from the Greek City of Chalcis in Euboea a city renowned for its bronze working.

This identification with the city of Chalcis was first made by Furtwängler (1890, 170) apparently upon the basis of its regular depiction on black figured pottery assigned to the production of that city. On these vessels the helmet depicted is similar in general shape to the Corinthian helmet, but it has cut-outs for the wearers ears and larger face openings which provide a lighter helmet.

The Chalkidian helmet is clearly derived from the Corinthian tradition and the attempts made by Greek armourers in the 6th Century B.C. to overcome the disadvantages inherent in the design of that helmet. Whilst providing excellent protection, the Corinthian helmet severely limited the wearer's hearing and vision, consequently the design of the Chalkidian helmet was an attempt to overcome these problems.

Kunze (1967, 135-7.) has demonstrated that the Chalkidian helmet first appeared on the Greek mainland early in the 6th Century B.C. The earliest dated example comes from a well deposit, of this date, at Olympia. He divides it, in its purely Greek form, into five types according to the shape of their cheek-pieces. He follows Furtwängler in maintaining that this helmet has characteristically Ionic elements in its design and originated either in Chalcis or one of its colonies.

The Chalkidian helmet is well established in southern Italy by the late 6th Century, with a wide distribution stretching from the Basilicata to Campania. At this time however it only appears as a minority type, being by far outnumbered by imported and indigenously produced Corinthian types. Snodgrass (Snodgrass 1967, 69-70.) concurs with Kunze's suggestion that this helmet type may have originated in a southern Italian workshop. More and more it seems likely that this is the case. Ferrari's (Ferrari 1978; 83ff.) recent work on the Chalkidian vases has shown that they also in all probability originated there.

Contemporaneously a variant of the Chalkidian helmet appears in an indigenous form in Etruria. Surprisingly, in contrast to the contemporary Corinthian helmets, there are no Greek prototypes of the Chalkidian found in Etruscan tombs. This local Etruscan variant is similar in some respects to Kunze's Greek type V, especially in the shape of its cheek-pieces, but it differs in the shape of the bowl.

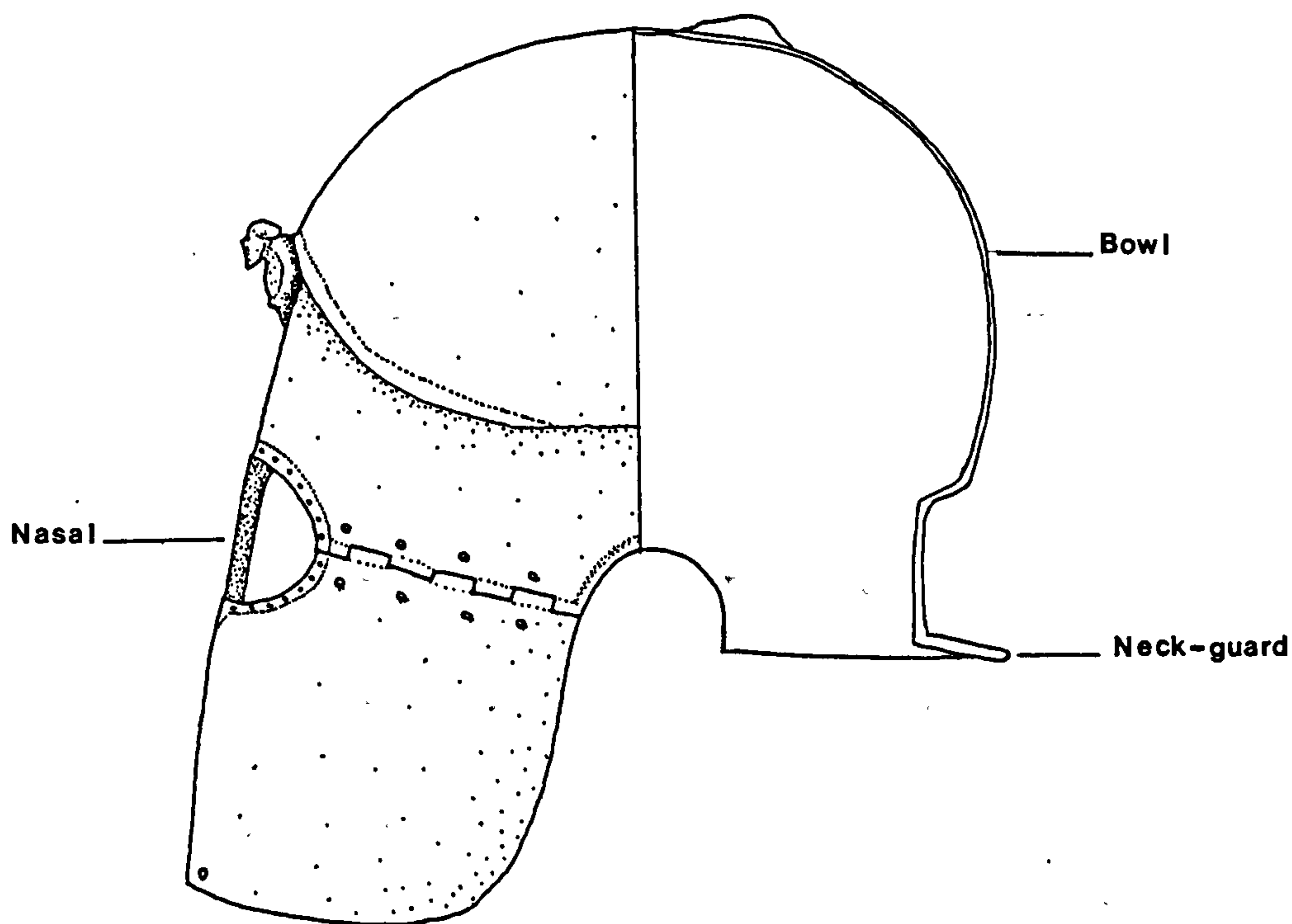
It is from these two sources then that the true Italian Chalkidian helmet evolves.

Definition.

Lacking a definition and established typology which is universally endorsed by all scholars, the author defines the Chalkidian helmet as one which incorporates a marked, angled, junction between the bowl and the brow-band, and which is equipped with a nasal or vestigial nasal guard and whose cheek-pieces are usually made in one with the bowl but may be made separately and hinged to the helmet bowl. The definition excludes those helmets of a similar form with hinged cheek-pieces of a bicuspid type which lack the nasal which the author defines as Samno-Attic helmets.

Chalkidian helmets are derived from the Corinthian tradition and evolved as a result of experiments carried out on this helmet in the 6th Century B.C. In the past some of the above defined helmets have been described as Attic, by Furtwängler (1890, 170.) or Lucanian, by Stary (1982, 5.). The term Attic should perhaps more rightly be reserved for those types of helmet of this tradition which are depicted on Attic silver coinage of the 5th Century B.C. i.e. helmets with no nasal defence and hinged cheek-pieces of a bicuspid form. Stary's use of the geographical appellation Lucanian is therefore not only inaccurate but misleading in that helmets of this form occur widely throughout Italy and are by no means concentrated in Lucania.

FIG. 76



AN ITALO-CHALKIDIAN HELMET

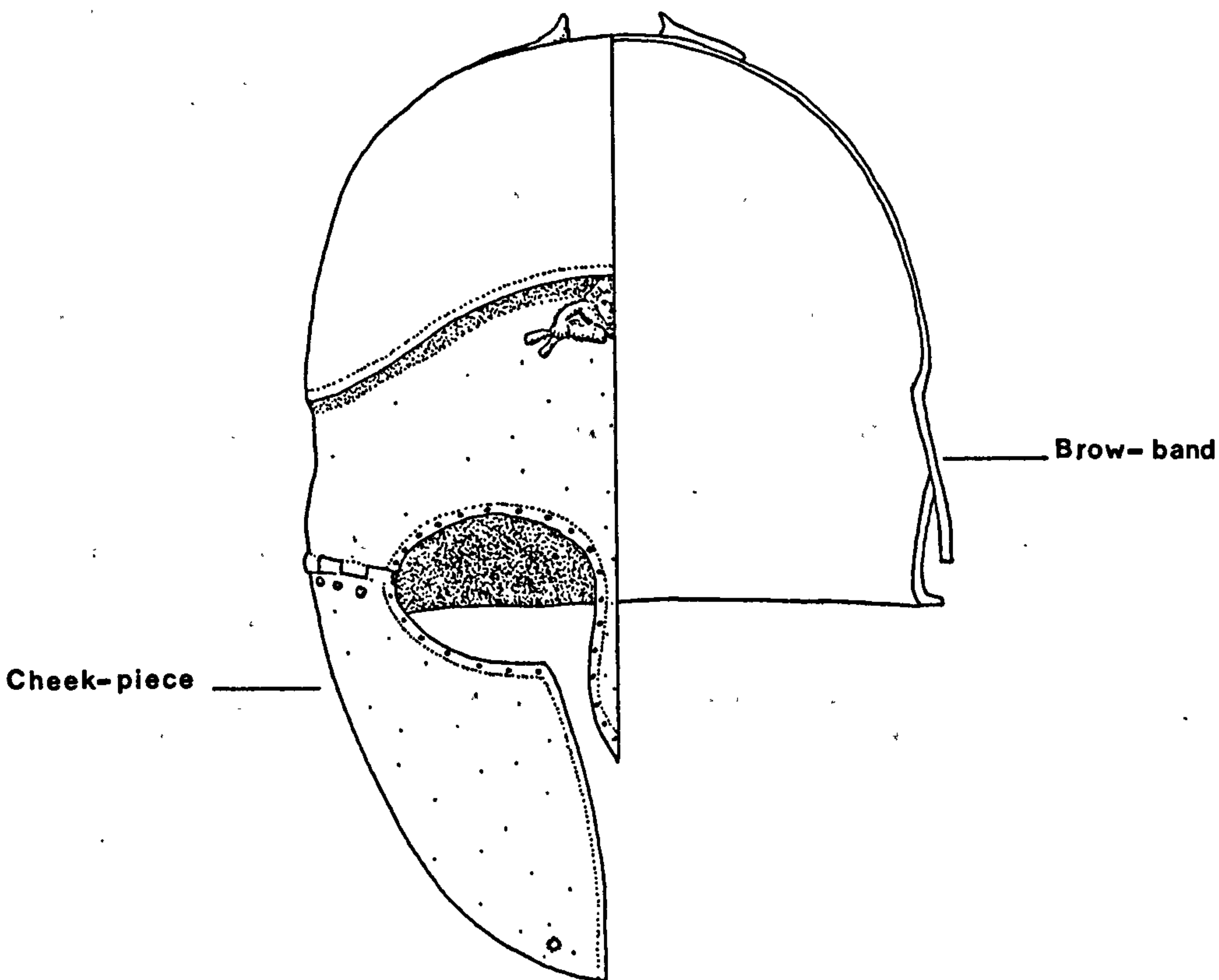


Table I.

No.;	Museum and Inv No.;	Cat.:	Dimensions:			Provenance.:
			No.	H	W	
1.	Museo Nazionale Naples.	(261)	265	240	205	Paestum, Campania, Italy.
2.	Bibliothèque Nationalé 2013.	(312)	240	250	215	Vulci, Toscana, Italy
3.	Villa Giulia Rome 27186.	(376)	225	250	204	Todi, Toscana, Italy.
4.	Musée du Louvre 1104 (C6698).	(327)	240	250	190	Perugia, Umbria, Italy.
5.	Museo Nazionale Perugia 1101.	(341)	220	250	180	Santa Giuliana, Umbria, Italy
6.	Museo Nazionale Perugia 361.	(342)	216	254	162	Frontone, Perugia, Umbria, Italy
7.	Museo Nazionale Perugia .	(343)	216	254	162	Frontone, Perugia, Umbria, Italy
8.	Museo Archeologico Florence 1238.	(130)	170	245	195	Marche, Italy
9.	Collection Leopardi Penne, Italy.	(338)	274	205	169	Abruzzo, Italy
10.	Museo Nazionale Naples 5737.	(262)	260	200	175	Locri, Reggio Calabria, Italy
11.	British Museum 2830, 12-26.616.	(183)	273	205	170	Ruvo di Puglia, Puglia, Italy
12.	Musée des Beaux Arts Lyons X228.	(205)	260	231	160	Cervetéri, Lazio, Italy
13.	British Museum 2822,8-20.225.	(184)	234	205	167	Apulia, Italy.
14.	Whereabouts unknown in 1896 in the Delhaes collection.	(443)	210	238	-	Italy.
15.	Museo Poldi Pezzoli Milan N872.	(240)	280	220	170	Metaponto, Basilicata, Italy.

No.;	Museum and Inv No.;	Cat.;	Dimensions:			Provenance.;
			No	H.	V. B.	
16.	Museo Nazionale Naples No Inv. No.	(263)	205	205	170	Locri, Reggio Calabria, Italy.
17.	Castel S. Angelo Rome, 2012.	(366)	210	210	170	South Italy.
18.	Greek Museum Newcastle University, 101	(278)	200	200	165	South Italy.
19.	Museo Gregoriano Vatican, 12303.	(414)	210	210	182	Italy.

Distribution.

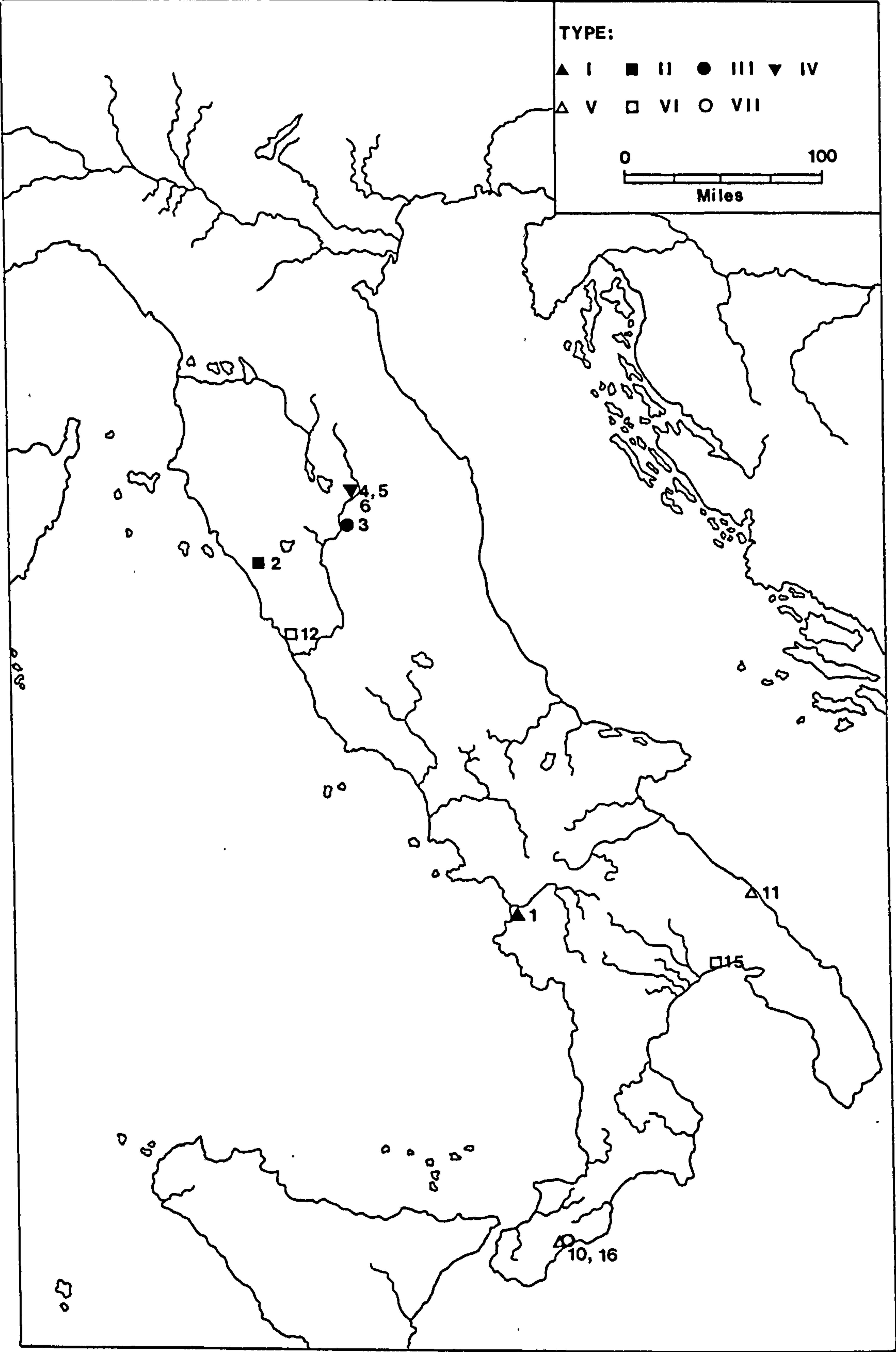
As stated above, typologically the Italian Chalkidian helmet can be divided into seven groups. The first of which appears only in southern Italy. The helmets of this type are either direct Greek imports or the products of the cities of Magna Graecia. These appear at the end of the 6th Century and the beginning of the 5th Century B.C. and are represented by only one securely provenanced example. This was excavated from a grave at Paestum in 1805 and its presence at the Greek colony of Posidonia comes as no surprise.

From the seven types into which the author has divided the Italo-Chalkidian helmet, it is possible to isolate three groups of typologically and temporally closely linked, Chalkidian helmet forms (types II, III and IV.) from northern and central Italy, in fact from the heartland of Etruria. These differ both temporally and typologically from the earlier Greek style products (type I). Their findspots are concentrated around the great Etruscan bronze working centres of Vulci, Todi and Perugia. Amongst these there is a significant group of four almost identical helmets (Table 1 Nos. 4, 5, 6 and 7), dating from the end of the 5th to the 4th century B.C., from the necropoleis around the great bronze producing city of Perugia (modern Perugia) and another very similar product helmet No. 8 from Marche, now in the Museo Etrusco Florence. These without doubt represent a local tradition in design if not the products of a single workshop.

Of the other three indigenous types (V, VI and VII) over sixty percent are located on sites stretching from the Abruzzi to Locri and clearly indicate the popularity of this helmet form in southern Italy. Indeed it is widely depicted in art throughout Lucania and the south. With such a small sample to work from, it is perhaps unwise to suggest that the concentration of twenty percent (two examples) of these helmets in Locri is significant. At least one helmet can be said to have come from Metapontum due to the inscription it bears in the Tarantine alphabet (No. 15).

There is a gap in the distribution between the Bay of Naples and Marche, this is perhaps significant, but it may only reflect the prevailing burial custom of the peoples of the Latin League i.e. cremation without grave goods. To date there are no known examples from Italy north of Etruria or in Sicily. Regardless of its popularity in Etruria and south Italy, the Chalkidian helmet was not long lived and disappears from the archaeological record at the end of the 4th century B.C.

FIG.77 Distribution of Italo-Chalkidian helmets



Key to Distribution Map (fig. 77).

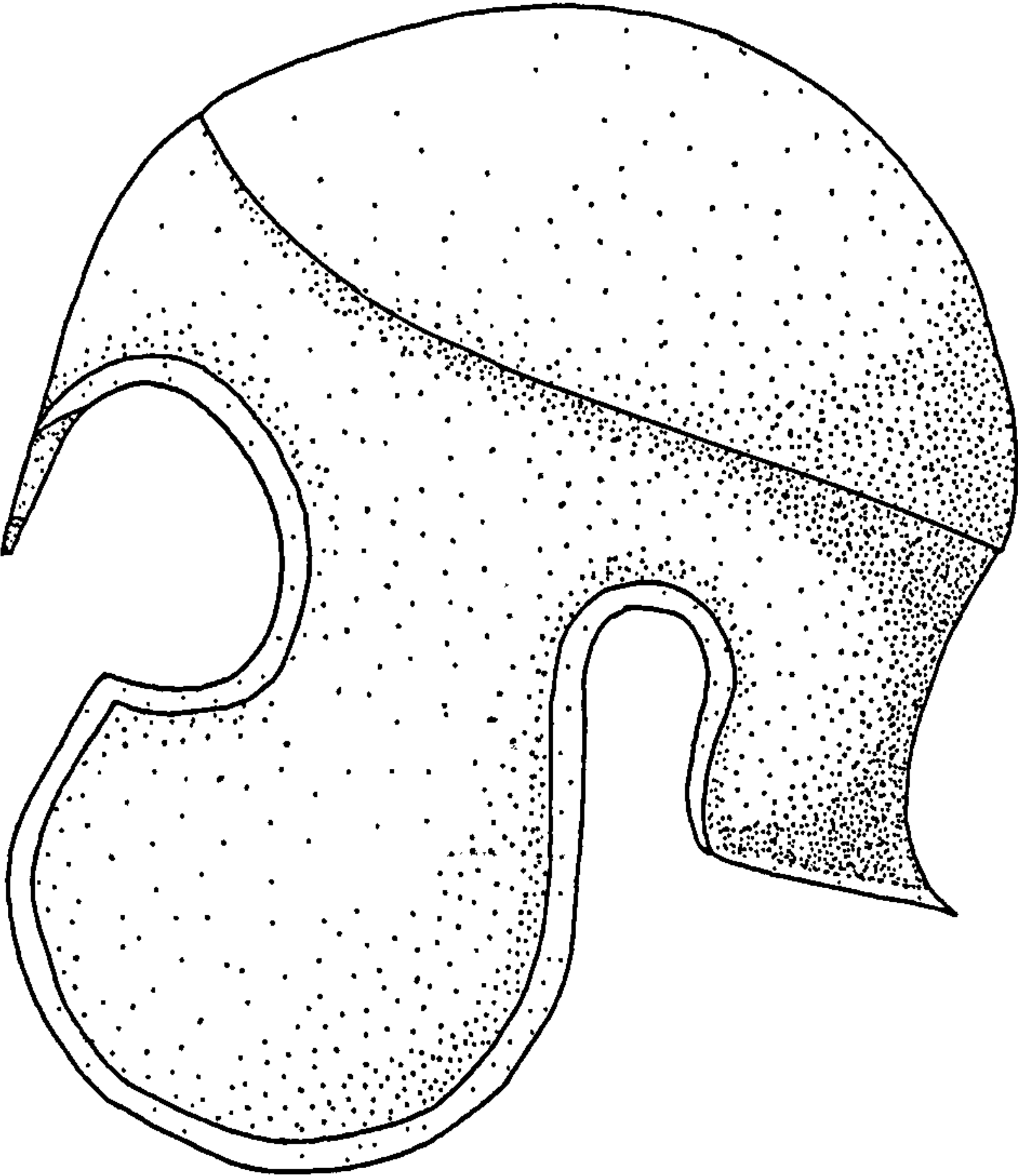
1. Paestum, Campania, Italy.
2. Vulci, Tuscany, Italy.
3. Todi, Tuscany, Italy.
4. Perugia, Umbria, Italy.
5. Santa Giuliana near Perugia, Umbria, Italy.
6. Necropolis del Frontone near Perugia, Umbria, Italy.
7. Necropolis del Frontone near Perugia, Umbria, Italy.
10. Locri, Reggio Calabria, Italy.
11. Ruvo, near Bari, Puglia, Italy.
12. Cervéteri, Lazio, Italy.
15. Metaponto, Basilicata, Italy.
16. Locri, Reggio Calabria, Italy.

Manufacture.

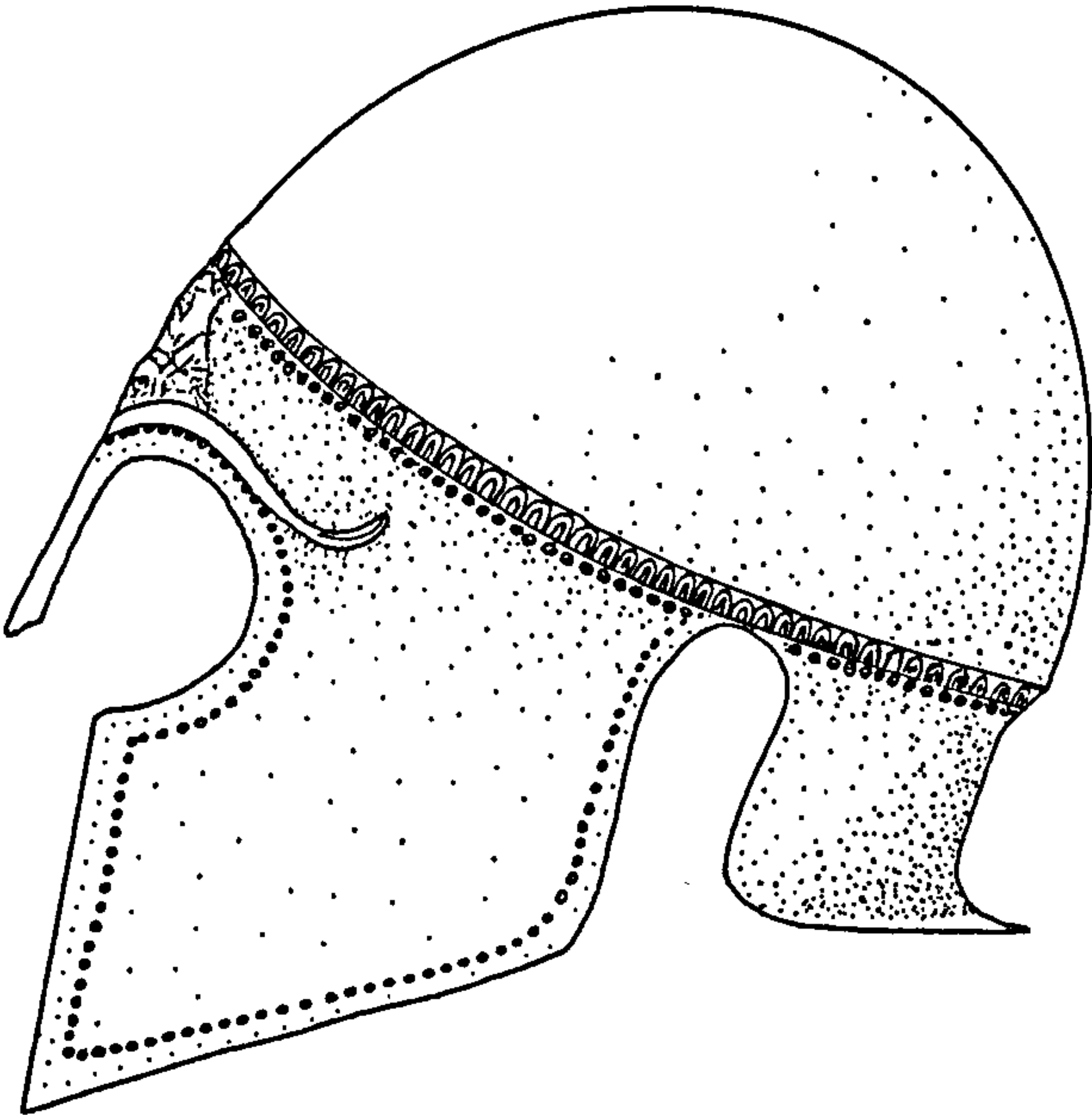
All the extant examples of Italian Chalkidian helmets are manufactured by "hollowing" and subsequent "raising" over stakes. Regardless of the elaboration of the design the helmets are all made in one piece. They divide into two basic traditions; those formed with integral cheek-pieces, and those with the separately made and hinged variety. All but two of the extant helmets are decorated by embossed eyebrows; these are either embossed in the metal of the helmet itself or from separate sheets of bronze and soldered to the helmet. By and large the decoration found on the majority of these helmets would appear to have been executed at the end of the main shaping processes in a pitch block, using the repoussé technique, shaping the metal of the helmet itself into the decorative design. The exceptions to this are helmets of type V, which, whilst the majority of the decoration on the helmet bowl itself is executed in this manner, have cheek-pieces which are decorated by applied, embossed, sheet bronze ram's heads, which are soldered on. A number of helmets found in Etruria, most especially No.7, are decorated with applied figurines, such as are found on contemporary Negau helmets. These are cast equipped with a lug on their rear face for riveting through the metal of the helmet.

FIG. 78

1



2



3

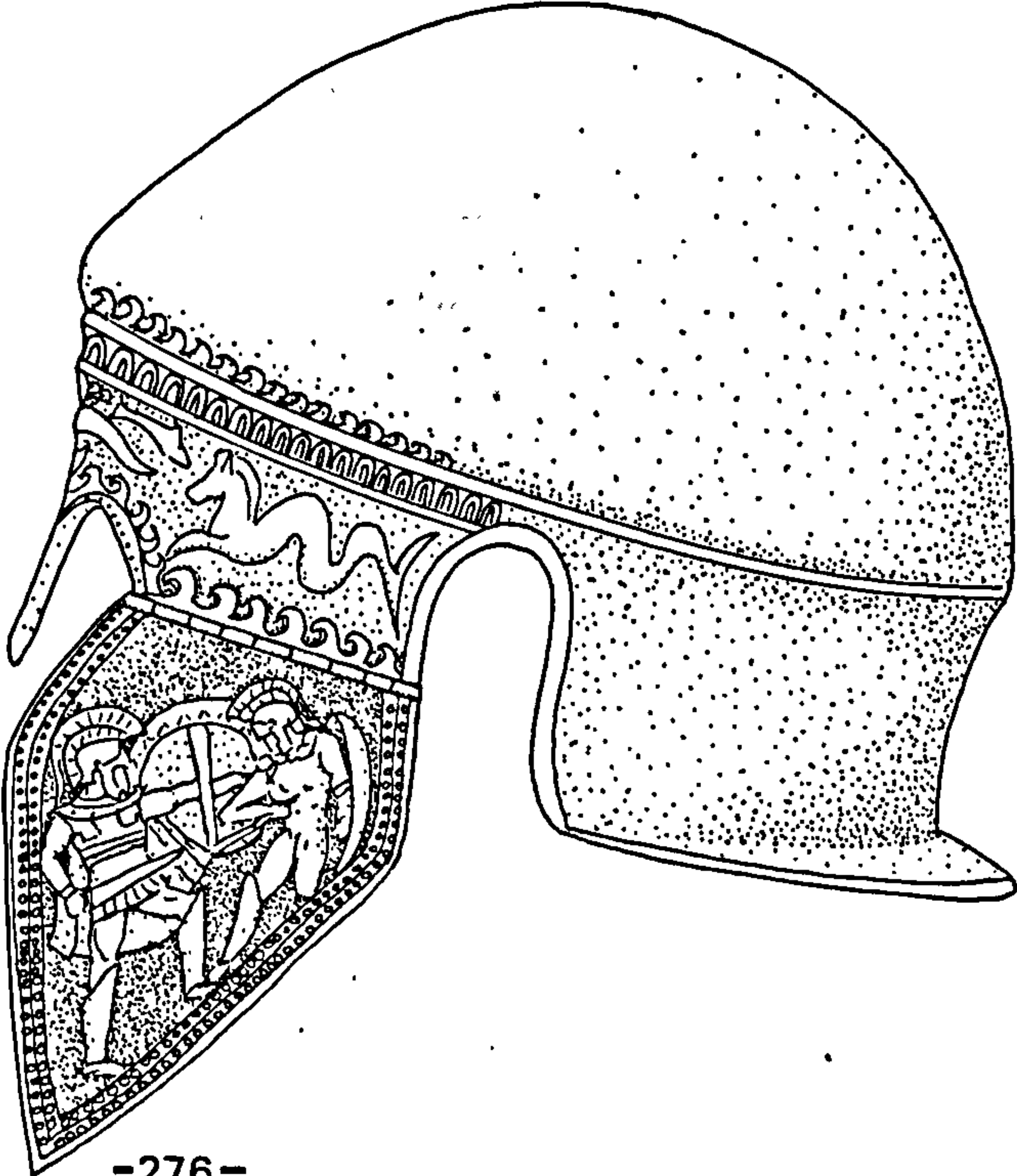


Table 2: Typology

No.:	Nasal:			Cheekpieces:					Neckguard:		Decoration:				Type:		
	Pr	No	M	S	Pr	H	F	RH	St	C	St	Ev	No	App		Em	App&Em
1.	*			*	*			*			*	*			*		I
2.	*		*		*			*			*		*	*			II
3.	*		*		*	*			*		*		*	*			III
4.	*			*		*					*					*	IV
5.	*			*	*	*					*					*	IV
6.	*			*	*	*			*		*					*	IV
7.	*			*	*	*			*		*					*	IV
8.	*			*	*	*			*		*		*	*			IV
9.	*			*	*		*	*			*		*	*		*	V
10.	*			*	*		*	*			*		*	*		*	V
11.	*			*	*		*	*			*		*	*		*	V
12.	*		*		*		*		*		*				*		VI
13.		*			*		*		*		*				*		VI
14.		*			*		*		*		*				*		VI
15.		*			*		*		*		*				*		VI
16.	*			*		*					*				*		VIIA
17.	*			*		*					*		*				VIIA
18.	*			*		*					*				*		VIIB
19.		*			*						*				*		VIIIR
Key: Nasal; Pr- Present, No- None, M- Moderate, S- Short, Cheekpieces; Pr- Present, H- Hinged, F- Fixed, RH- Ram's Head, St- Straight forward and rear edges, C- Curved rear edge, Decoration; No- None, App- Applied, Em- Embossed, App & Em- Applied and Embossed.																	

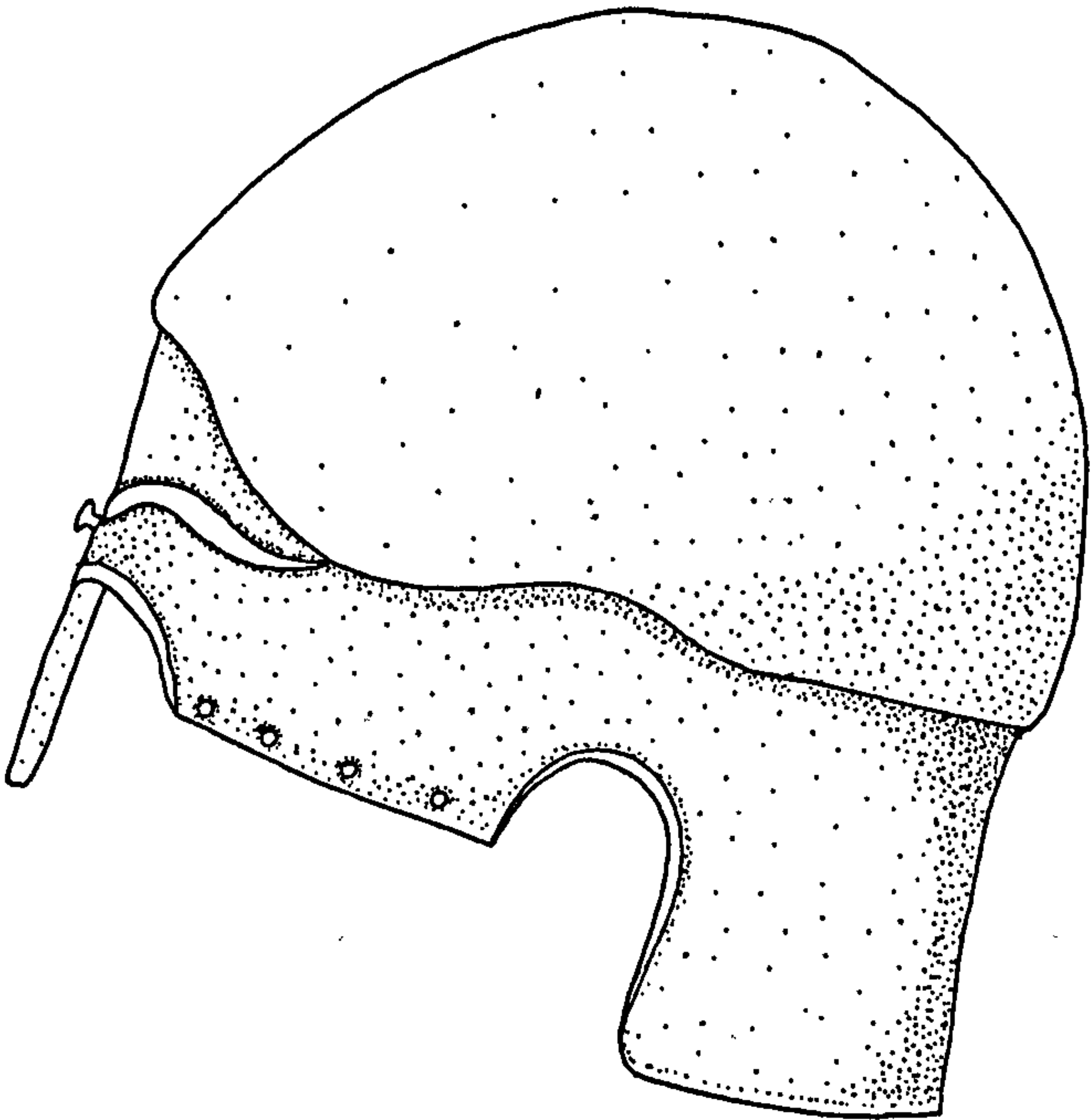
Table 3: Dating Evidence.

No.:	Context	Provenance.:	Suggested date
1.	Tomb Find. Dated by associated finds to the late 6th or early 5th centuries B.C.	Paestum, Campania, Italy.	
2.	Tomb Find. Dated by associated finds to the late 6th or early 5th centuries B.C.	Vulci, Toscana, Italy.	480 B.C.
3.	Tomb Find. Dated by associated finds to the early 5th century B.C.	Todi, Toscana, Italy	
4.	Unknown. Probably a tomb find. Date assigned because of its close similarity to helmets Nos. 5 and 6.	Perugia, Umbria, Italy.	c.450 - 400 B.C.
5.	Tomb Find. Dated by associated finds including red-figure wares to the mid to late 5th century B.C	Santa Giuliana, Perugia, Umbria, Italy.	
6.	Tomb Find. Dated by associated ceramics to the mid to late 5th century B.C.	Frontone, Perugia, Umbria, Italy	
7.	Unknown.	Frontone, Perugia, Umbria, Italy.	Early 5th - B.C.
8.	Unknown.	Marche, Italy.	Early - mid 5th B.C.
9.	Unknown	Abruzzo, Italy.	Mid 5th B.C.
10.	Tomb find; dated by red figure wares to the end of the 5th century B.C.	Locri, Reggio Calabria, Italy.	

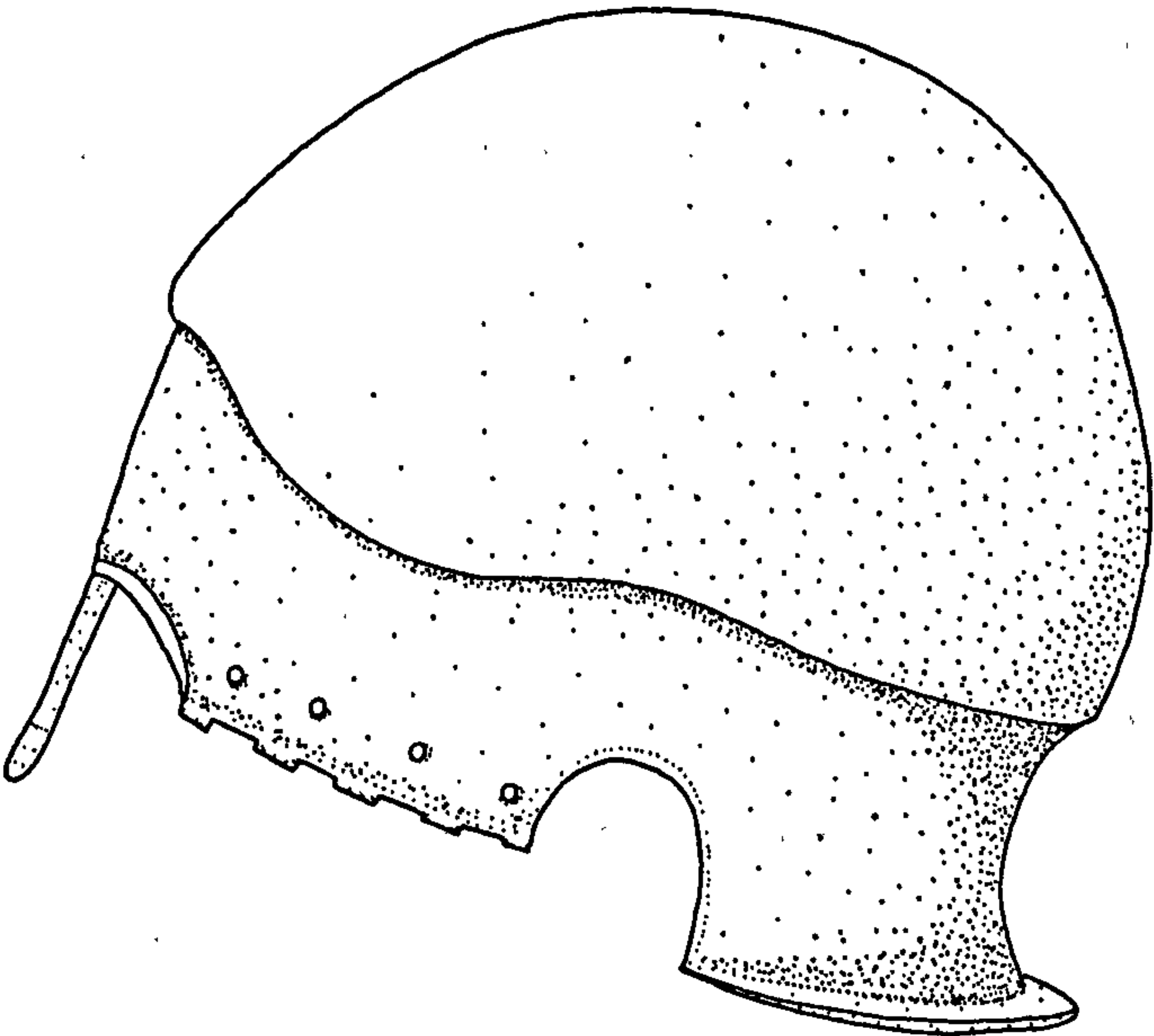
No.:	Context	Provenance.:	Suggested date
11.	Unknown. However the decorative motifs used would suggest a late 5th or early 4th century B.C. date.	Ruvo di Puglia, Puglia, Italy.	4th B.C.
12.	Unknown	Cervetéri, Lazio, Italy	5th B.C
13.	Unknown. The form and decorative motifs are similar to those of Samno-Attic helmets found in 4th century B.C. contexts.	Apulia, Italy.	4th B.C.
14.	Unknown. The form and decorative motifs are similar to those of Samno-Attic helmets found in 4th century B.C. contexts.	Italy.	4th B.C.
15.	Unknown but dated by style of the Tarantine alphabet used in the inscription to the early 4th B.C.	Metaponto, Basilicata, Italy.	4th B.C.
16.	Unknown	Locri, Reggio Calabria, Italy.	
17.	Unknown.	South Italy.	Late 5th B.C.
18.	Unknown. However the decorative motifs used would suggest a date from the late 5th to the early 4th century B.C.	South Italy.	Early to mid 4th B.C.
19.	Unknown. However the decorative motifs used would suggest a date from the late 5th to the early 4th century B.C.	Italy.	Mid 4th B.C.

FIG. 79

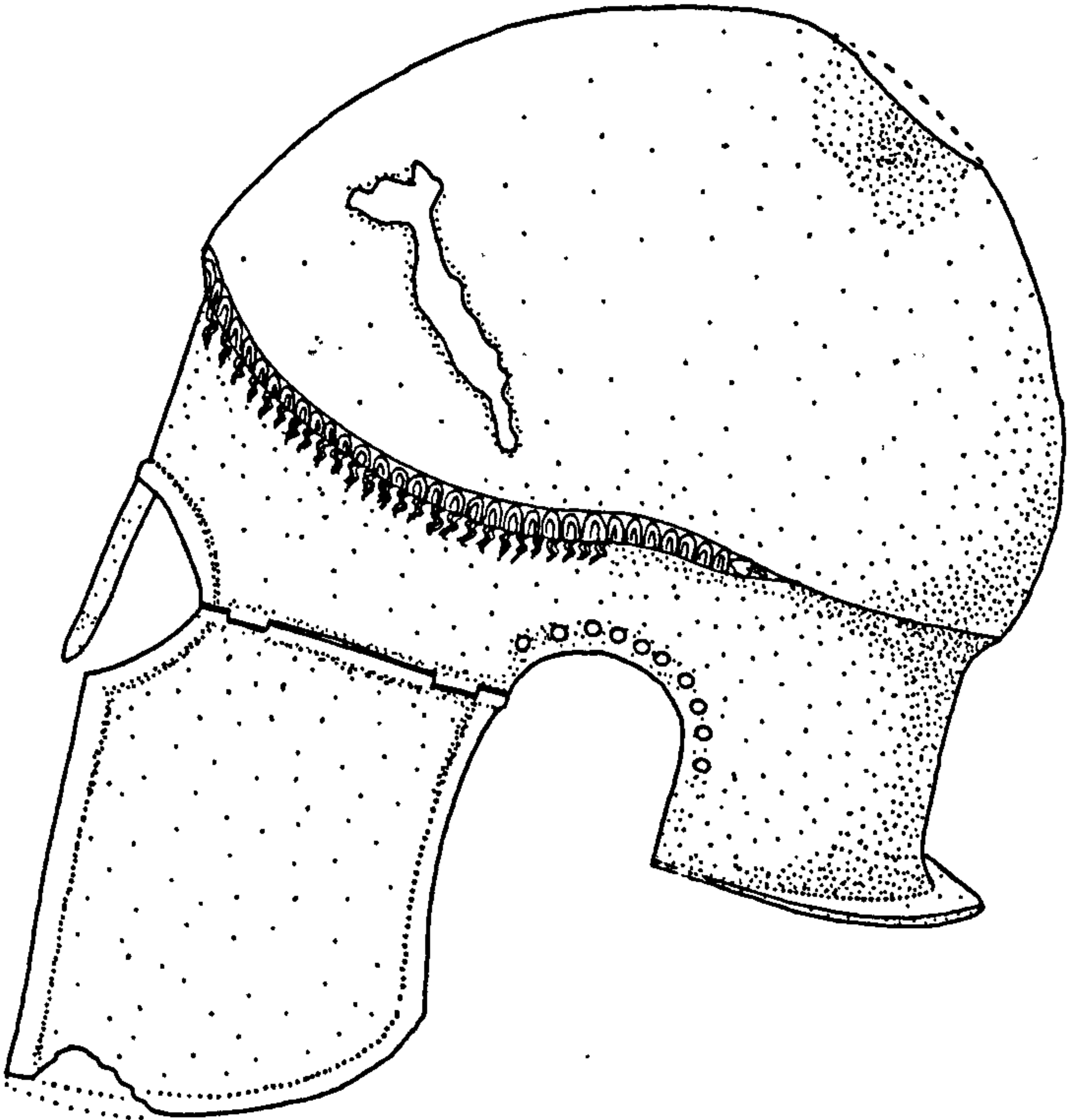
4



5



6



Typology.

Whilst acknowledging the pioneering work of Kunze (1967) who divided the Greek Chalkidian form into five main types, it is clear, upon the detailed examination of those examples which are of undoubted Italian manufacture, that his typology is too simple and not flexible enough to account for the variety of forms to be found in the Italian peninsula. Therefore it has been necessary to modify his original typology to provide a parallel typology for the Italian Chalkidian.

Typologically this helmet can be divided into seven distinct groups, which exhibit some sequential development starting with forms almost indistinguishable from their Greek prototypes. A number of the following types of Italian Chalkidian are of purely regional significance and probably represent the products of individual workshops or groups of workshops.

A significant proportion of Chalkidian helmets come from Etruria and can be dated from the early 5th to the early 4th Century B.C. Although presumably originally inspired by south Italian prototypes and disseminated from the Etruscan colonies in Campania and their contacts with the Western Greek colonies of southern Italy, these helmets can be shown to represent a strong regional tradition, with close links to other Etruscan helmet forms, very different from those Chalkidian helmets produced in southern Italy. It is probable therefore that this tradition does in fact represent a local workshop in the upper Tiber valley around Perugia, the area from where two thirds of the finds were recovered. These Etruscan products can

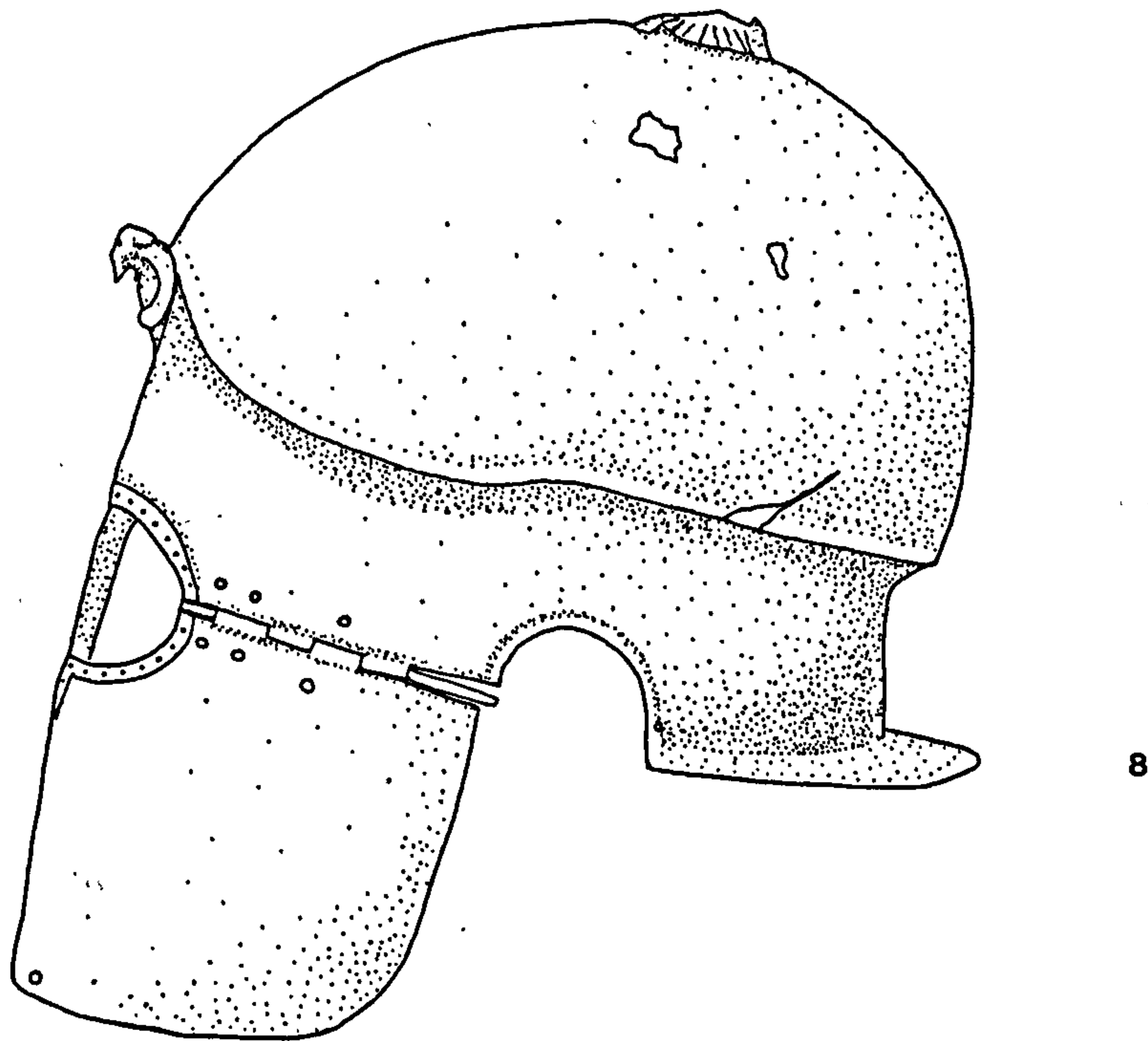
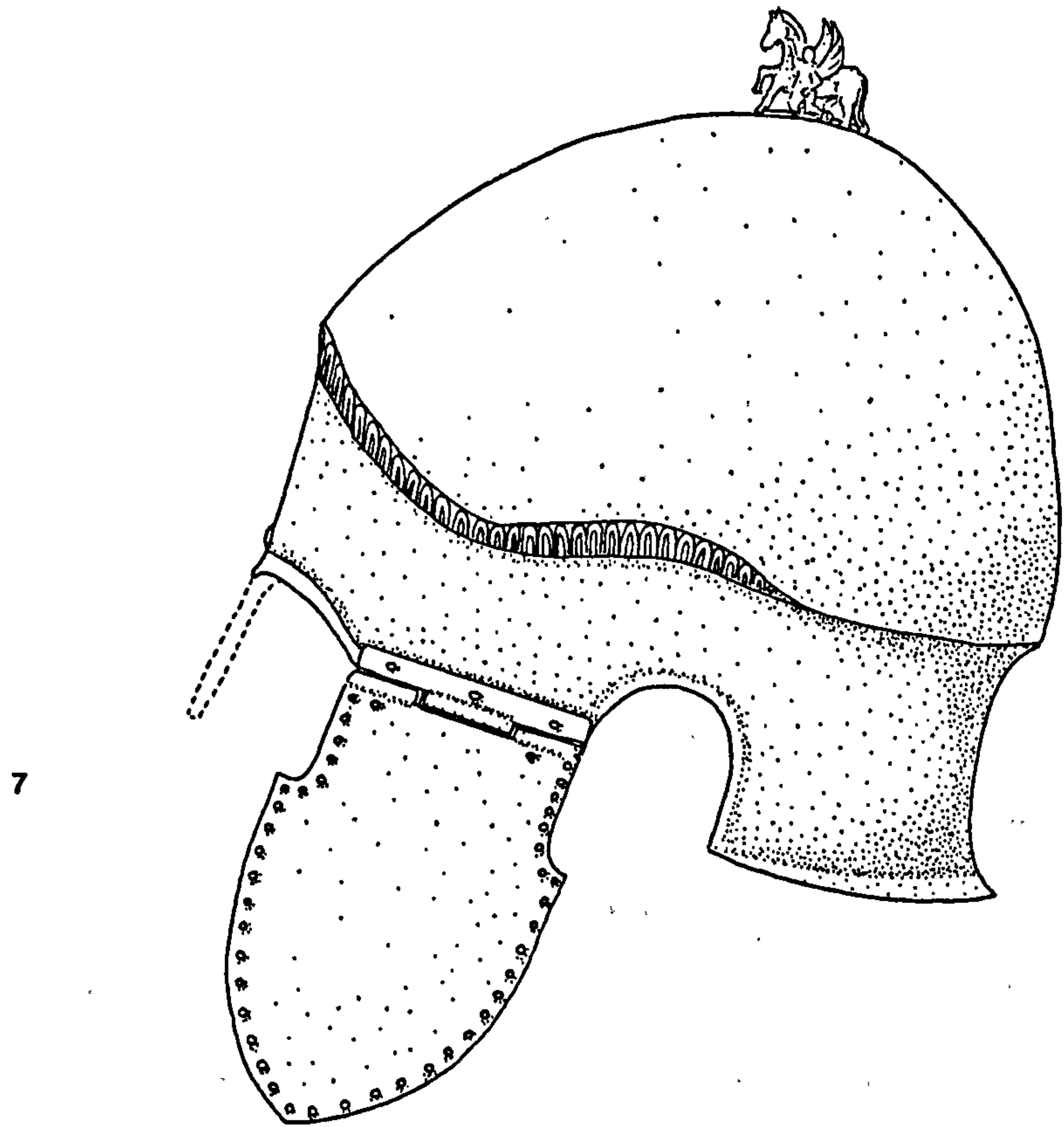
themselves be divided into three types, although the first two are only represented by a single example each.

In general terms the development of the Italian Chalkidian helmet can be divided into two main traditions, those with hinged cheek-pieces or those with fixed. The other diagnostic features, which have been judged to have both temporal and geographical significance both for the production and in the use of the Italian Chalkidian helmet, are the presence or absence of a nasal defence, its length, and the form and shape of the helmet bowl itself and the decorative techniques employed, as well as the form of the decoration itself applied to each helmet. All these factors have been taken into account in constructing the following typology.

Type I. (No. 1)

This type is represented by only one example being a helmet excavated at Paestum in 1805 and dating to the closing years of the 6th century B.C. It conforms to Kunze's Greek type I/II and is characterised by a low hemispherical skull with a medial keel swelling from a fitted brow-band which rises at the front to an apex and is drawn down to form a short nasal guard. At the sides the brow-band is drawn down to form rounded cheek-pieces with oval cut-outs for the eyes and is provided with cut-outs for the ears. At the rear it is drawn down to form a straight neck-guard with a basal flange. This is a purely Greek product probably produced in the Greek colonies of lower Italy.

FIG. 80



Type II. (No. 2)

This type is again represented by only one example, the well known Vulci helmet, now in the Bibliothèque Nationale (Inv. No. 2013). It is dated to the late 6th century B.C. and is closely related to the Corinthian helmet in form. It owes little or nothing to the preceding type, it has a high domed bulbous bowl swelling from a fitted brow-band. The junction between the bowl and the brow-band is clearly defined by a marked ridge decorated by an embossed band of tongue pattern. At the front the brow-band sweeps upwards in a curve and is drawn down to form a nasal. The cheek-guards are made in one with the brow-band, and are of a form very reminiscent to those of the Corinthian helmet, although the eye openings are considerably larger. They have straight front and rear edges, although the rear edge is only straight for half its length and then is angled to meet the forward edge. At the sides are cut-outs for the ear and at the rear the brow-band forms a short straight neck-guard with a sharply everted flange at its base.

Type III. (No.3.)

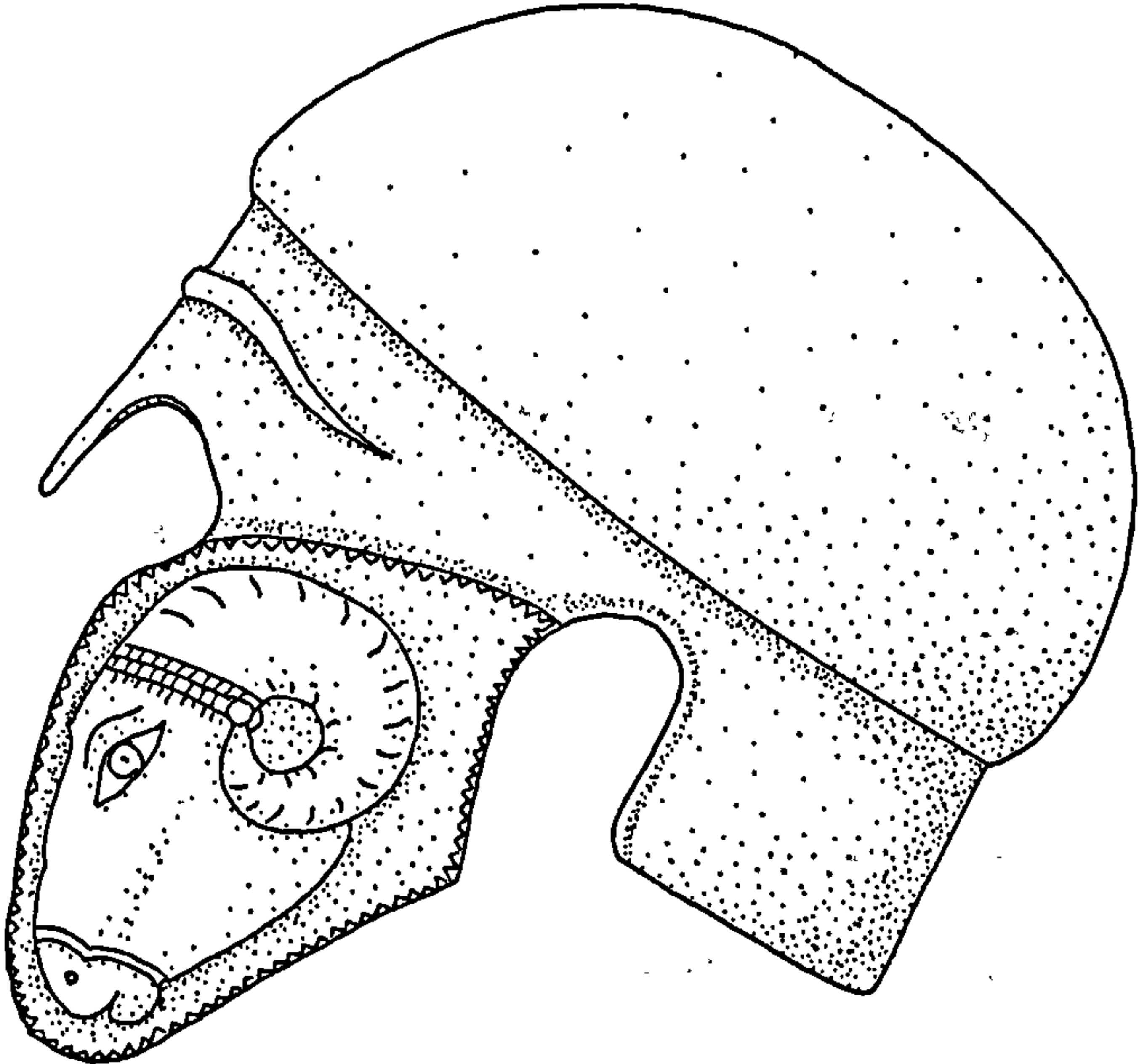
There is only one extant helmet of type III, a fine example from Todi, now in the Museo Nazionale Villa Giulia. It has a rounded moderate slightly bulbous skull swelling over a fitted brow-band. The junction between the two is marked by a pronounced angle. The brow-band rises at the front to an apex, forming a forehead gable. At its base it is drawn down to form a nasal guard of moderate length. The brow-band has cut-outs for the ears and is extended at the rear to form a straight neck-guard. This is given a right angled flange at its base. It has hinged cheek-pieces similar to those of type II in

form. These have a straight forward edge to which the rear edge runs parallel for half its length, it then turns to meet the forward edge at about 45 degrees. The hinges are multi-hasped and are held to the bowl and cheek-pieces by three rivets. There is no provision for a crest. The helmet is elaborately decorated but this decoration is restricted to the forehead area and the cheek-pieces. This consists of a pair of embossed and applied silver eyebrows on a ground decorated with repoussé and chased palm leaves and a series of waves. The ridge between the brow-band and skull is decorated with repoussé and chased inverted tongue pattern. The cheek-pieces are embossed with scenes of warriors fighting. The helmet is of the highest quality and forged in one piece.

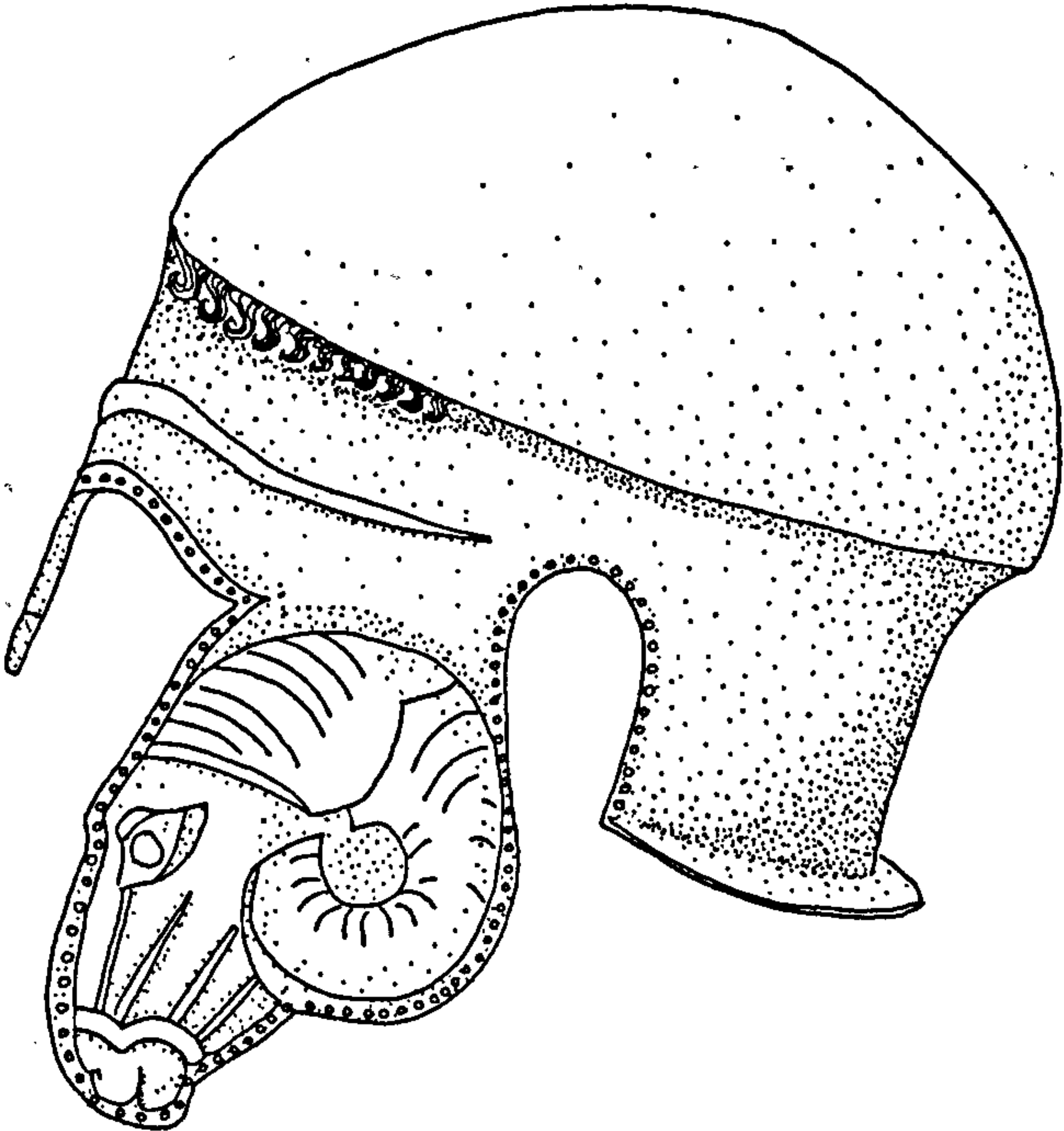
Type IV. (Nos. 4, 5, 6, 7 and 8)

These helmets are manufactured in one piece but have hinged cheek-pieces. They are typified by a high domed bulbous bowl which swells from a fitted brow-band, the junction is sharply angled and decorated. The brow-band sweeps up at the front to form a gable, it has cut-outs for the wearer's ears and is drawn down at the rear to form a fitted but slightly everted neck-guard. At the front the base of the brow-band is decorated by embossed eyebrows below which projects a short thick nasal. The cheek-pieces are of type I and clearly derived from those of helmet no.2. They have a straight front edge with a cut-out for the wearer's eyes. The rear edge is curved round to meet the forward edge.

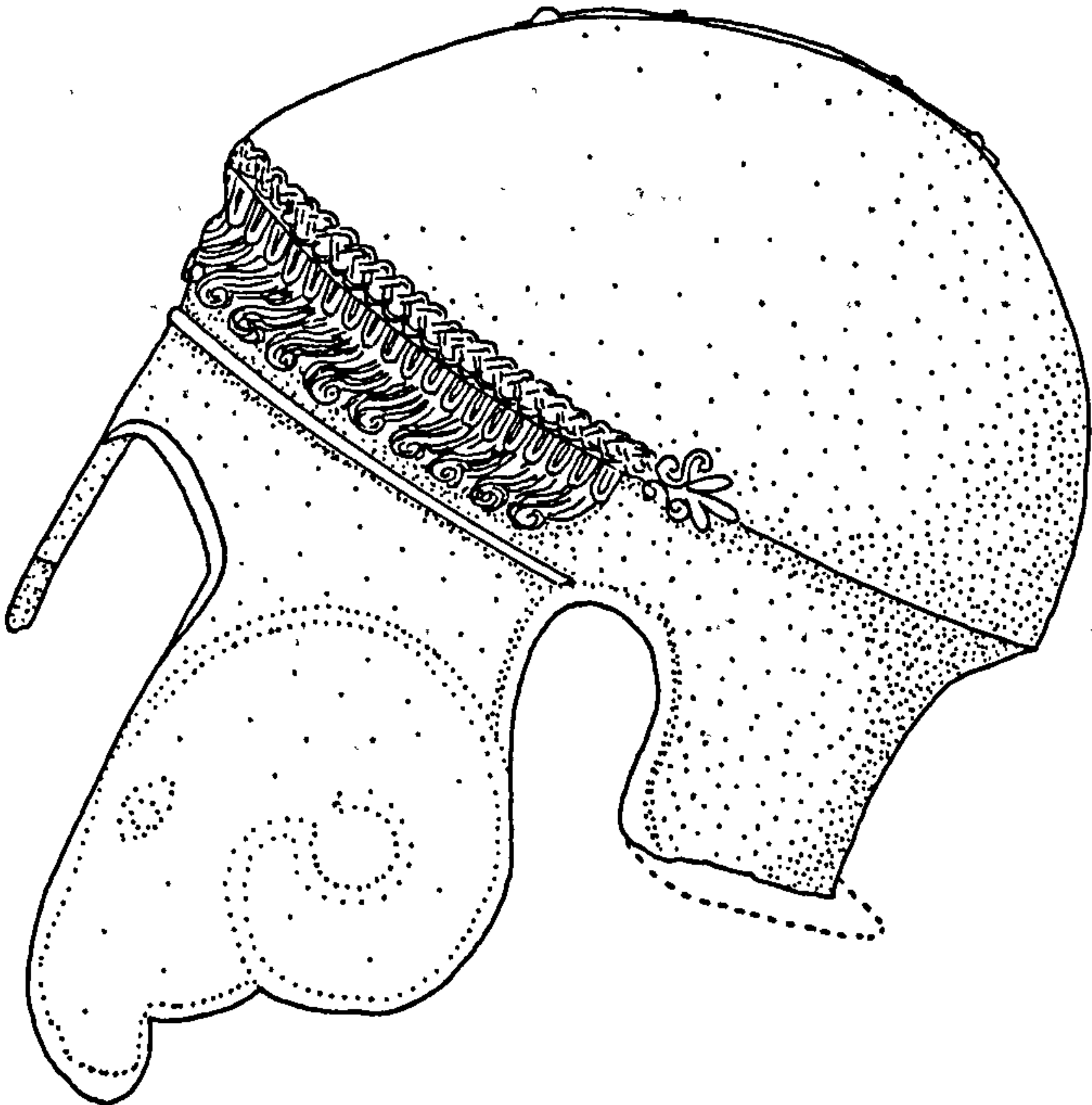
9



10



11



Type V. (Nos. 9, 10 and 11.)

These helmets are characterised by a low fitted bowl swelling from a fitted brow-band. The bowl has a marked medial ridge and the junction between it and the brow-band is marked by a well defined step. At the front the brow-band sweeps up to a central apex producing a gable and is drawn down at its base to form a nasal guard. The brow-band is extended at the sides to form cheek-pieces, forged in one with the bowl and cut into the outline shape of ram's heads. These are overlaid with repoussé sheet bronze rams' heads, the eyes being inlaid in enamel. Behind the cheek-pieces are cut-outs for the wearer's ears. At the rear the brow-band is drawn down to form a straight but flanged neck-guard.

These helmets are all highly decorated in the same manner with applied and engraved work and are of the very highest quality. Helmets Nos. 10 and 11 are almost identical, the ridge forming the junction between the brow-band and bowl being decorated with finely embossed, stylised locks of hair, above which is an engraved tongue pattern which is surmounted with a guilloche pattern. The conjunction of all these factors and the distribution of the group as a whole suggests that they may reflect the products of a single workshop, probably in the area around Locri. The majority of this helmet type have no crest-fixtures, however helmet No. 11, from Ruvo has a typical southern Italian, detachable feather holder riveted longitudinally to the apex of the bowl.

Type VI. (Nos. 12, 13, 14 and 15.)

This group of helmets are well made and each is forged from a single sheet of bronze. They are characterised by a high bowl with a

pronounced medial ridge which swells out over a well defined brow-band. This is itself extended downwards at the sides and rear to form the cheek-pieces and the neck-guard. At the front the brow-band rises to form an inverted "V" shaped gable. A shallow cusp has been cut out over each eye to provide a vestigial nasal. The helmet is closely tailored to the back of the skull. It has a well fitted neck-guard which has a right-angled flange at its base. The main edges of the brow-band and cheek-pieces in front of the ear cut-outs are considerably thickened for strength. The cheek-pieces are almost triangular in form and are of the fixed variety made in one with the bowl. Below the cut-out for the eye, the front edge of the cheek-piece is straight. The rear edge of the cheek-piece runs parallel to this for about half its length and then turns sharply to meet the forward edge at an angle of about forty-five degrees.

The decoration of this group of helmets is internally consistent and takes the form of embossed eyebrows on the brow-band, which extend back almost to the ear cut-outs. Above this is an inverted "V" shaped fluted ridge echoing the brow-band which rises to an apex at the centre.

Type VII. (Nos. 16, 17, 18 and 19.)

Unlike the foregoing types, helmets of type VII exhibit considerable variation in their form and decoration. Indeed, some helmets, Nos. 16 and 17, are undecorated (Type VIIA) whereas 18 and 19 (Type VIIB) are highly embellished. However they share a number of important characteristics. Like all the other Chalkidian helmets, they are forged from a single sheet of bronze. They have moderate or high slightly bulbous bowls with very pronounced medial ridges.

These surmount fitted brow-bands and the junction is marked by an angular ridge. The brow-band curves up at the front to an apex and is shaped like an inverted "V". They all have hinged cheek-pieces, unfortunately now missing and therefore it is not possible to say exactly what form these took. These were supported by multi-hasped hinges attached with three rivets to the bowl. At the sides are cut-outs for the ears and slight cusps have been cut out at the front over the wearer's eyes from which projects a short nasal. At the rear the brow-band is extended to form a deep neck-guard which flares at its base to form a small flange. The helmets are pierced by numerous small holes around the ear cut-outs and down the neck-guard, presumably for sewing in the lining.

Type I.

1. A grave at Paestum, Campania, Italy. The Museo Nazionale Naples. Undecorated. (fig. 78:1) Lipperheide, von. 1896, 99, No.325.

Type II.

2. A grave at Vulci, Tuscany, Italy. The Bibliothèque Nationale, Paris. (Inv. 2013, 5650). Decorated: The decoration consists of a leaf stem on the edge of the bowl, silver encrustation around the main edges and an appliqué on the forehead depicting Hercules and Apollo fighting over a doe. (fig. 78:2) Lipperheide von. 1896, 82, No.516, Bandon and Blanchet. 1895, 659. Adam. 1984, 108-10.

Type III.

3. A grave at Todi, Umbria, Italy. The Museo Nazionale di Villa Giulia, Rome. (Inv. 27,184-86). Decorated: The decoration consists of embossed eyebrows on a ground consisting of engraved and chased palm leaves, sea creatures and a series of waves under a band of

filligree pattern. The cheek-pieces are embossed and show scenes of warriors fighting. (fig. 78:3) Pioletti. 1980, 308.

Type IV.

4. Perugia, Umbria, Italy. The Musée de Louvre, Paris. (Inv. 1104, C6698). Decorated: The decoration consists of a narrow band encircling the main edges of the helmet and applied, embossed stylised eyebrows. (fig. 79:4) Ridder, de. 1915, 2.

5. The necropolis of Santa Giuliana near Perugia, Umbria, Italy. The Museo Nazionale, Perugia. (Inv. 1101.). Decorated: The decoration consists of applied embossed eyebrows now missing, and surface tinning. (fig. 79:5) Unpublished.

6. The Frontone Necropolis near Perugia, Umbria Italy. The Museo Nazionale, Perugia. (Inv. 361.). Decorated: The decoration consists of embossed stylised eyebrows and a band of engraved and embossed tongue pattern over a plain narrow band from the front of the eye cut-outs along the ridge between the helmet bowl and the brow-band. (fig. 79:6) Unpublished.

7. The Frontone Necropolis near Perugia, Umbria Italy. The Museo Nazionale, Perugia. (Inv. 354 B1654.). Decorated: The decoration consists of embossed stylised eyebrows and a band of engraved and embossed tongue pattern over a plain narrow band from the front of the eye cut-outs along the ridge between the helmet bowl and the brow-band. (fig. 80:7) Unpublished.

8. Unprovenanced from the Marche, Italy. The Museo Archeologico, Florence. (Inv. 1238.). Decorated: The decoration consists of an applied cast bronze Triton killing a Hoplite and a band of engraved and embossed tongue pattern along the ridge between the bowl and the

brow-band in front of the ear cut-outs. (fig. 80:8) Lipperheide, von. 1896, 83-4, Nos.19 and 20. Connolly. 1981, 98, fig.1.

Type V.

9. From the Abruzzo, Italy. Now in the Collection Leopardi in Penne, Italy. Decorated: The decoration consists of applied repoussé and engraved ram's heads on the cheek-pieces these are accompanied by an incised herring bone pattern around the main edges. On the forehead are embossed eyebrows joined over the nasal. (fig. 81:9) Cianfarani. 1970, 198.

10. Locri, Reggio Calabria, Italy. Museo Nazionale, Naples. (Inv. 5737.). Decorated: The decoration consists of embossed and applied sheet bronze ram's heads on the cheek-pieces. The junction between the bowl and the brow-band is decorated with embossed and engraved stylised locks of hair. It has embossed eyebrows which meet over the nasal. (fig. 81:10) Lipperheide, von. 1896, 104. No.328.

11. A grave at Ruvo near Bari, Puglia, Italy. The British Museum. (Inv. 2830,1856,12-26.616.). Decorated: As above but the hair finishes at each end in an engraved palmette and snakes. Above this is an engraved guilloché pattern. (fig 81:11) Walters. 1899, 348.

Type VI.

12. From Cerveteri, Lazio, Italy. Now in the Musée des Beaux Arts, Lyons. (Inv. X228.). Decorated: The decoration consists of an embossed line around the cheek-pieces and nasal, embossed eyebrows and embossed moulding which follows the line of the browridge. (fig 82:12) Boucher. 1964, 101, fig.3.

13. Apulia, Italy. The British Museum. (Inv 2822,1873-8-20.225.). Decorated: The decoration consists of an embossed inverted V moulding

on the forehead and underneath a pair of eyebrows which meet over the nasal. (fig. 82:13) Walters. 1899, 348., Stary, 1982, 5, fig. 16.

14. Unprovenanced from Italy. Its present whereabouts unknown, in 1896 it was in the Collection of S. Delhaes in Vienna. Decorated: The decoration consists of embossed eyebrows, a thickened edge to the cheek-pieces and eye opening. Around the cheek-pieces and eyebrows are double incised lines. (fig 82:14) Lipperheide, von. 1896, 100, No. 436.

15. Metaponto, Italy. Museo Poldi Pezzoli, Milan. (Inv. N872). Decorated: The decoration consists of embossed eyebrows which meet over the nose. Above this are two embossed inverted "V" shaped mouldings echoing the form of the brow-band. Inscribed: .ερεvis χαμ
αανας μεταποντινας τυπμεδixiai αουδεieiα. "Vettenius Cam. - Athenae
Metapontinae sub medicae Audii." (fig 83:15) Lipperheide, von. 1896,
102, No. 35., Borrelli. 1957, 234-42; pl. 101-3., Cavalieri Manasse.
1985, 36, No.32A.

Type VII.

16. Locri, Reggio Calabria, Italy. Now in the Museo Nazionale, Naples. Decorated: The decoration consists of embossed eyebrows. Inscribed: K E M E X < N. (fig. 83:16) Lipperheide, von. 1896. 112, No. 327.

17. Unprovenanced, Southern Italy. Museo Castel S. Angelo. (Inv. 2010.). Undecorated. (fig. 83:17) Unpublished.

18. Unprovenanced from Southern Italy. Now in the Greek Museum, University of Newcastle upon Tyne (Inv. 101.). Decorated: The decoration consists of embossed eyebrows which meet over the nasal in a volute. At the top of the nasal is chiselled a scallop shell.

Above the eyebrows is an inverted V shaped moulding decorated with embossed and engraved tongue pattern. Above the junction between the bowl and brow-band is an engraved guilloche pattern, above this are embossed snakes. (fig. 84:18) Foster. 1978, 7-9.

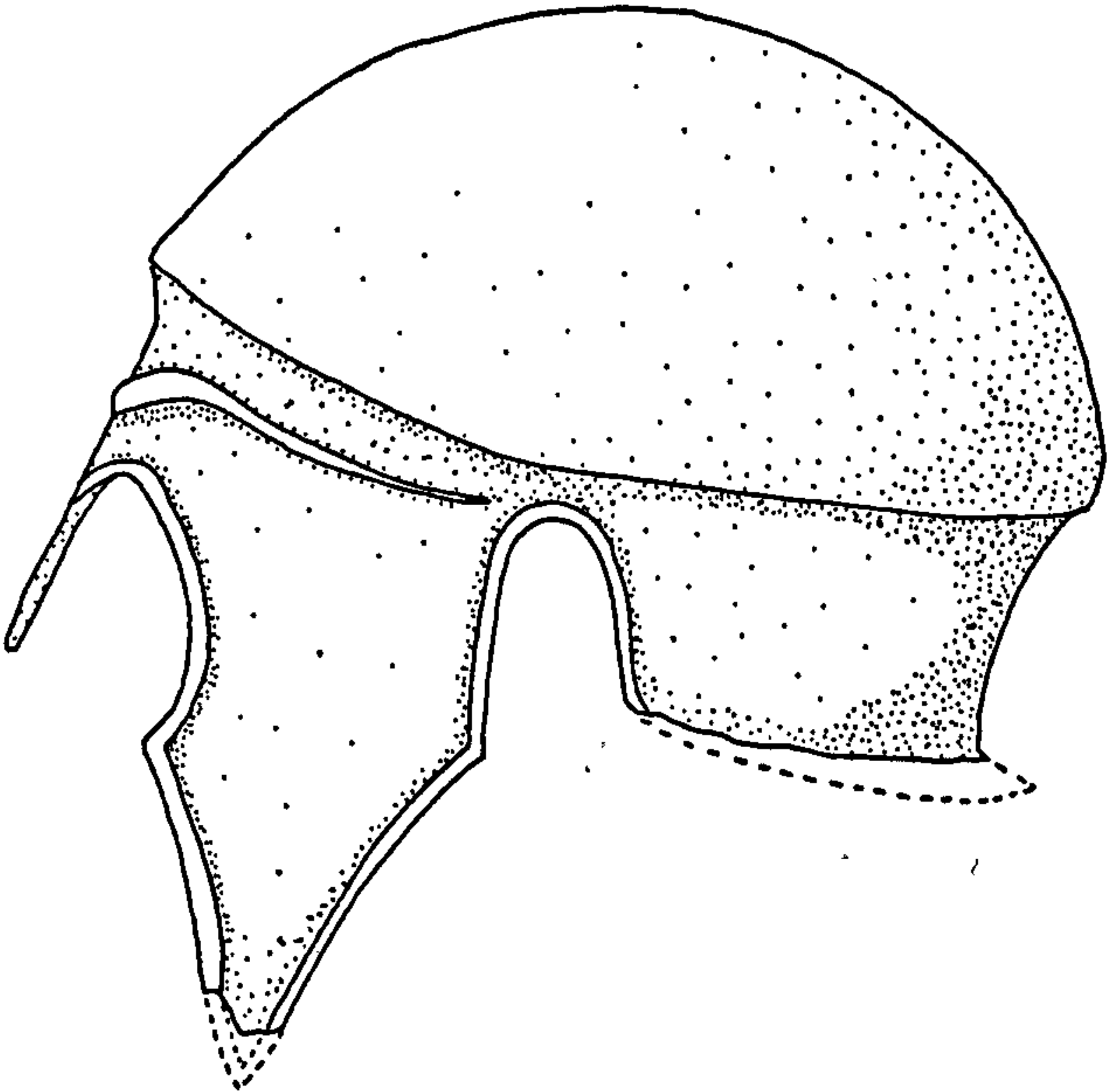
19. Unprovenanced from southern Italy. Now in the Museo Gregoriano Etrusco in the Vatican Rome (Inv. 12303.). Decorated: The decoration consists of embossed eyebrows which meet over the nose. Above this are three plain inverted "V" shaped mouldings. Mirroring these and forming the junction between bowl and brow-band is a line of embossed and chased tongue pattern. (fig. 84:19) Unpublished.

Crest-fixtures.

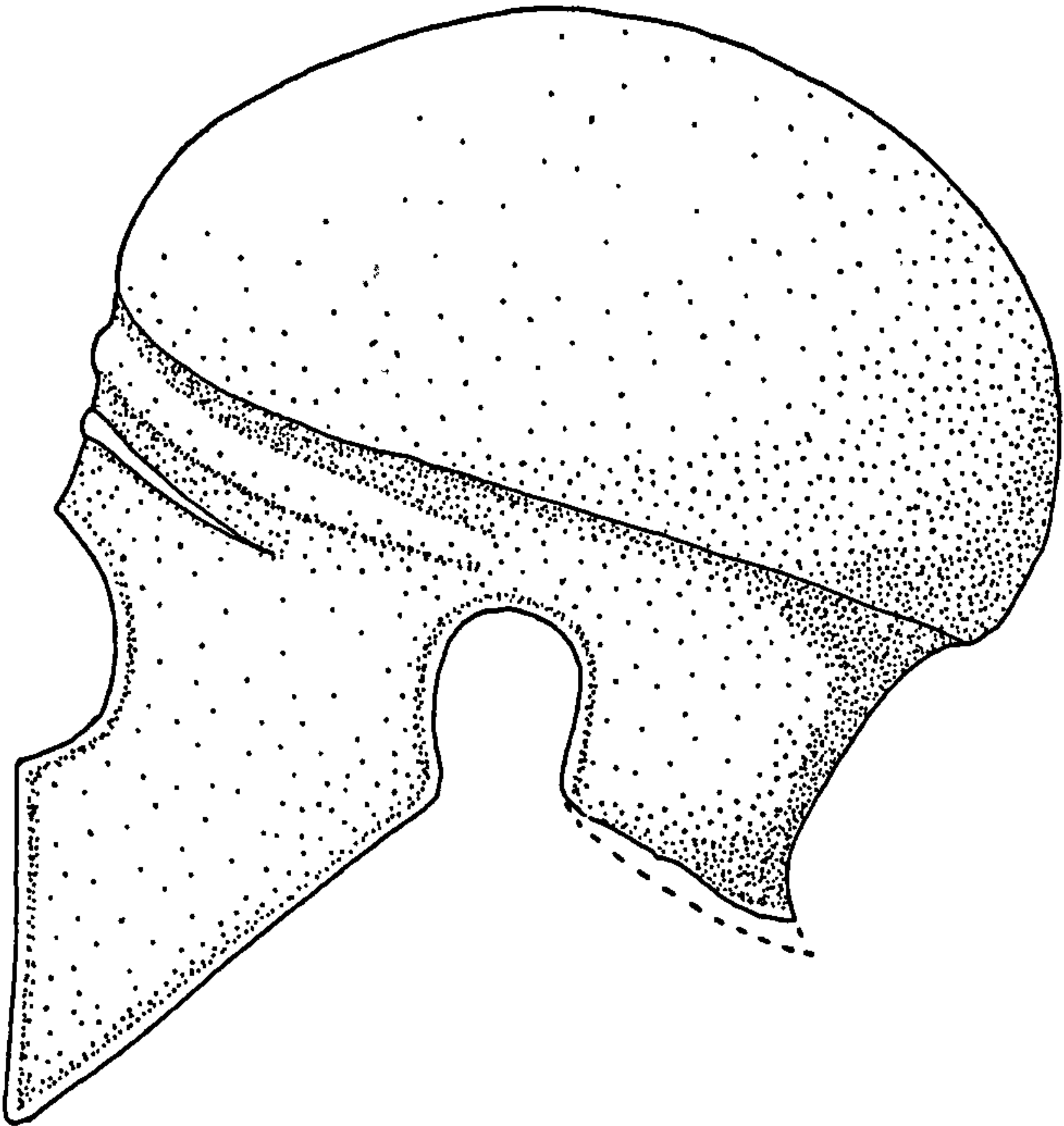
Only a small minority, under a sixth, of Chalkidian helmets have any form of crest-fixture. When they occur, they are usually permanently attached to the helmet bowl. There seems to be no regional bias in the fitting of crest-fixtures neither does there seem to be any typological implication in regard to the forms fitted to any given helmet. Crest-fixtures survive on helmets 7, 8 and 11 and there are traces of the fixtures for one on helmets Nos. 13 and 18. No traces of crest-fixtures survive on any of the helmets of types I-III nor indeed on the majority of type IV, although Etruscan frescoes show them to be universally worn on this type of helmet. This may of course be only artistic convention, but considering their accuracy in other respects this seems unlikely; therefore the crest-box must have been made of an organic material mounted directly to the helmet bowl, presumably with animal glue, and not recognised when these helmets were excavated.

FIG. 82

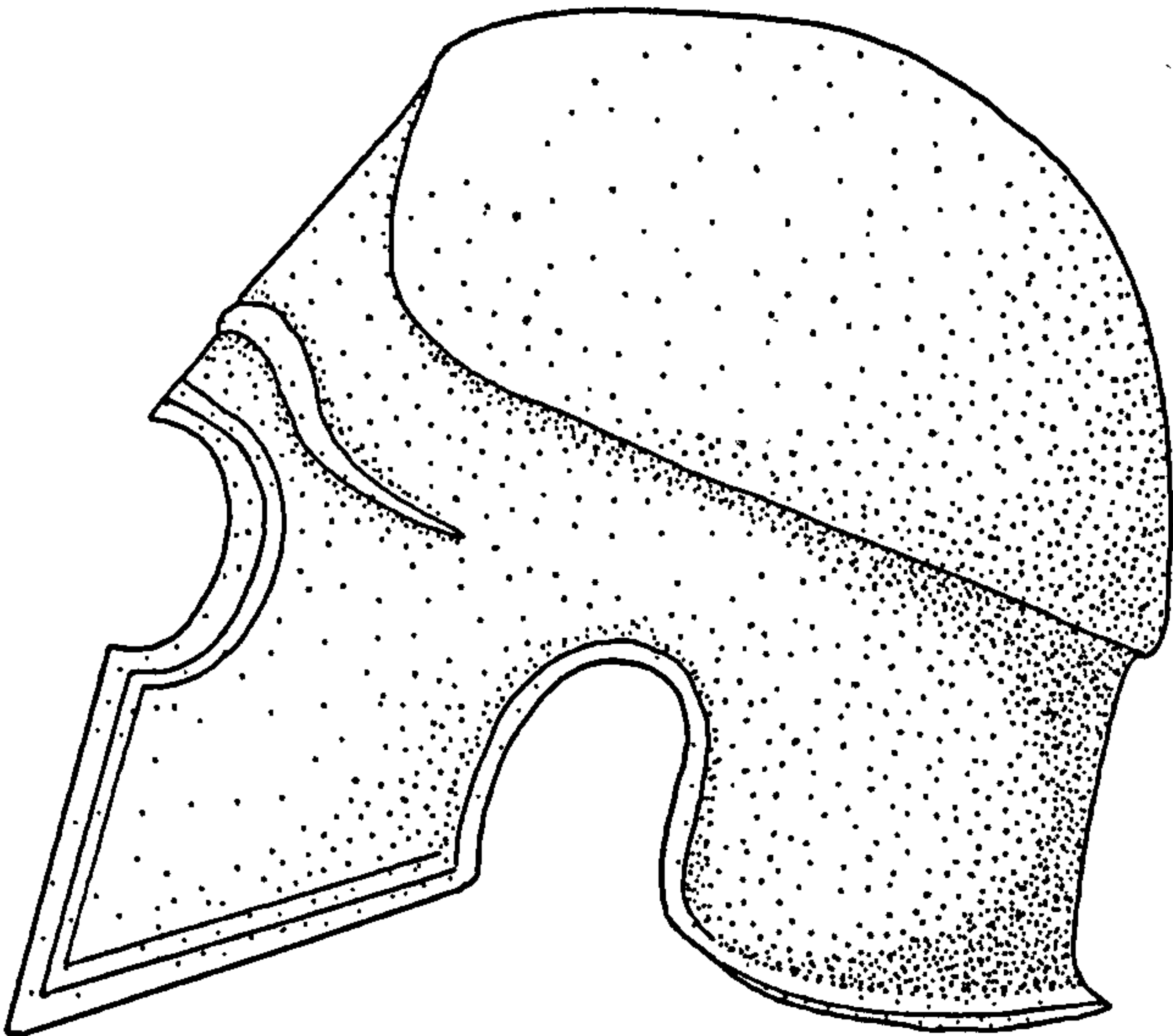
12



13



14



Crest-fixtures survive on two Etruscan products, helmet No. 7 from Frontone and helmet No. 8 from the Marche (figs. 80;7 and 8). On the former these consist of a cast bronze winged demon or god leading a horse soldered to either side of the apex of the skull to act as a holder for the crest-box. On the latter they take the form of two cast bronze palmettes similarly disposed and attached. The nearest parallel to this type of fixture is to be found on the Negau helmet, whilst an exact parallel for the crest-fixture on helmet No.7 occurs on a Negau helmet from the "Tomb of the Warrior" at Vulci dated to around 525 B.C. It cannot be purely coincidental that this type of crest-fixture appears on two near contemporary products of central Etruria. Helmet No. 18 bears solder marks on either side of the apex of its bowl and quite probably had a similar form of crest-holder.

Helmet No. 13, from Apulia has a circular solder mark on either side of the apex of its skull which may have been for feather tubes like those found on contemporary Samno-Attic helmets (see Chapter 7.).

Finally helmet No. 11 from Ruvo has the base portion of a crest-fixture, of a typical south Italian form, riveted longitudinally to the apex of its bowl (fig. 84:19). It consists of a narrow strip of bronze riveted at the centre and either end. Between these rivets the strip has been shaped over a rod to produce two loops. Originally another strip of bronze, carrying the crest-fixture itself and pierced to receive the loops, would have fitted over the original strip. The whole assemblage would have been held together by pins inserted through the loops which projected through the upper plate. This type of crest-fixture is more commonly associated with Samno-Attic and Apulo-Corinthian helmets where it is usually riveted transversely.

There is however no evidence that this crest-fixture is a modern addition and there is no difference in the patination or condition of the two pieces, to suggest that they do not belong together.

Cheek-pieces.

The cheek-pieces on Chalkidian helmets fall into two main groups, those that are forged in one with the helmet bowl and are therefore of a fixed type, and those that are manufactured separately and hinged to the helmet.

The fixed varieties are either of a roughly triangular form or shaped into the profile of a ram's heads. Both of these varieties occur on helmets found, if not manufactured, in southern Italy and not on those helmets of Etruscan origin which, with the exception of 6th century helmet (No. 2) from Vulci, have hinged cheek-pieces.

The cheek-pieces can be divided typologically into five forms (figs. 85:1 - 5), Type I; which are of a purely mainland Greek variety occur only on helmet No. 1 from Paestum. These are fixed and made in one with the bowl. They are rounded and lobate in form and are provided with a deep oval cut-out for the eye.

Those of Type II are made in one with the bowl and have a straight front edge with a deep cut-out for the eye. The rear edge runs roughly parallel to the front for approximately half its length and then sweeps forward to meet it at an angle of approximately 45 degrees. This form of cheek-piece is found on helmets of type II and VI.

The next form, Type III, are similar in shape to type II, and are clearly derived from them, but are hinged. The hinges are multi-hasped and are held to the bowl and cheek-pieces by three rivets.

This form of cheek-piece occurs on helmets of type III and is commonly depicted in Etruscan art e.g. a painting of a warrior from Chiusi dating to the 5th century B.C. (fig. 86:1)

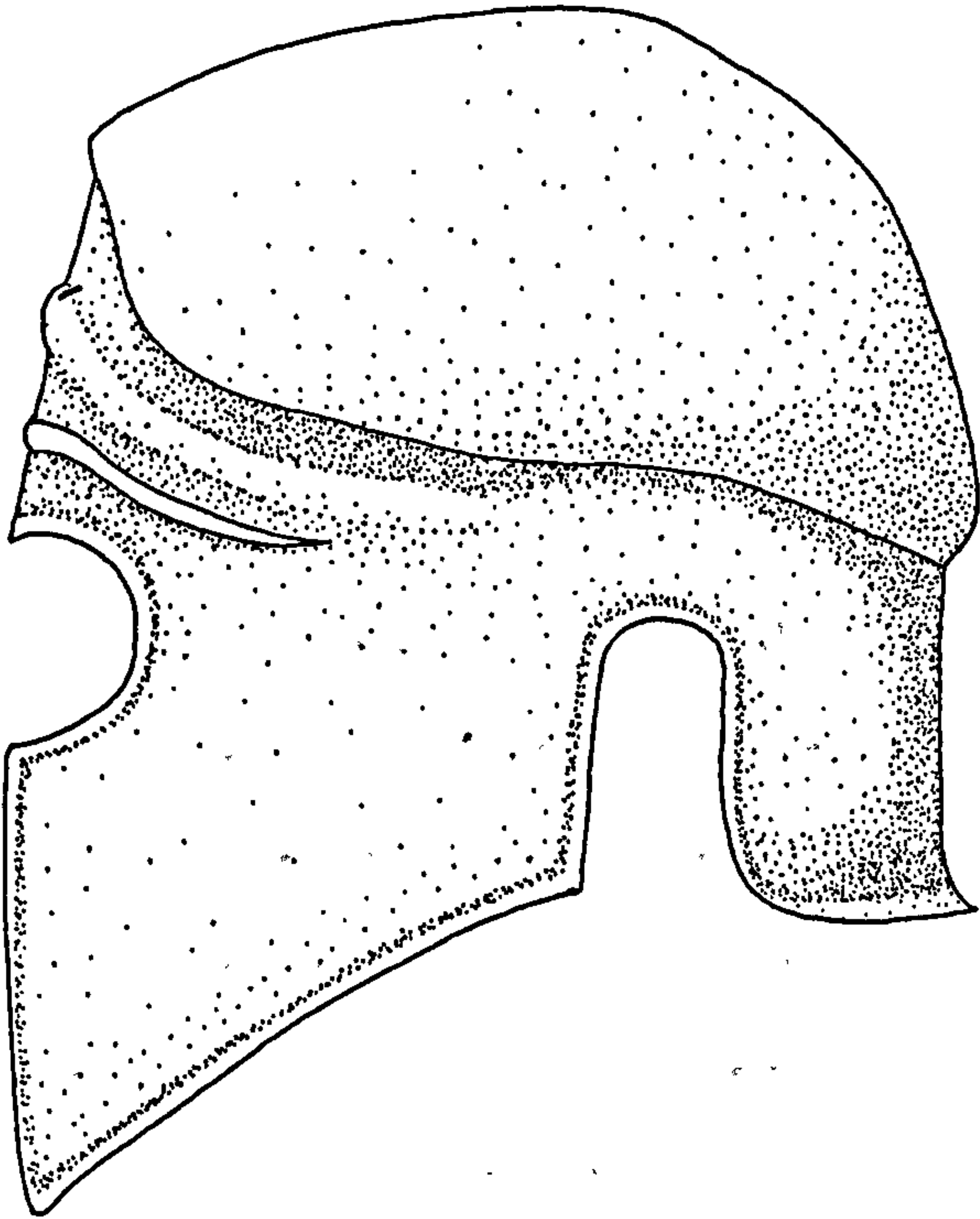
Like the preceding variety, cheek-pieces of Type IV are hinged. They are a purely Etruscan form and occur only on helmets of type IV. They are depicted in Etruscan art from the 6th century onwards e.g. in a tomb painting of an Etruscan warrior from Ceri (Stary 1979, 188 pl. 21b and Connolly 1981, 98, fig. 14.) (fig. 86:2). The cheek-pieces have a straight forward edge, equipped with a deep cut out for the eye. The rear edge is strongly curved to meet this, forming almost a quarter circle. In all cases the hinges are multi-hasped and are held to the bowl and cheek-pieces by two rivets.

The final form of cheek-piece associated with the Italian Chalkidian helmet is Type V. These are of the fixed variety formed in one with the helmet bowl. They are cut into the form of rams' heads. These are then decorated with applied, repoussé, sheet bronze rams' heads, with enamelled eyes, which are soldered onto each cheek-piece.

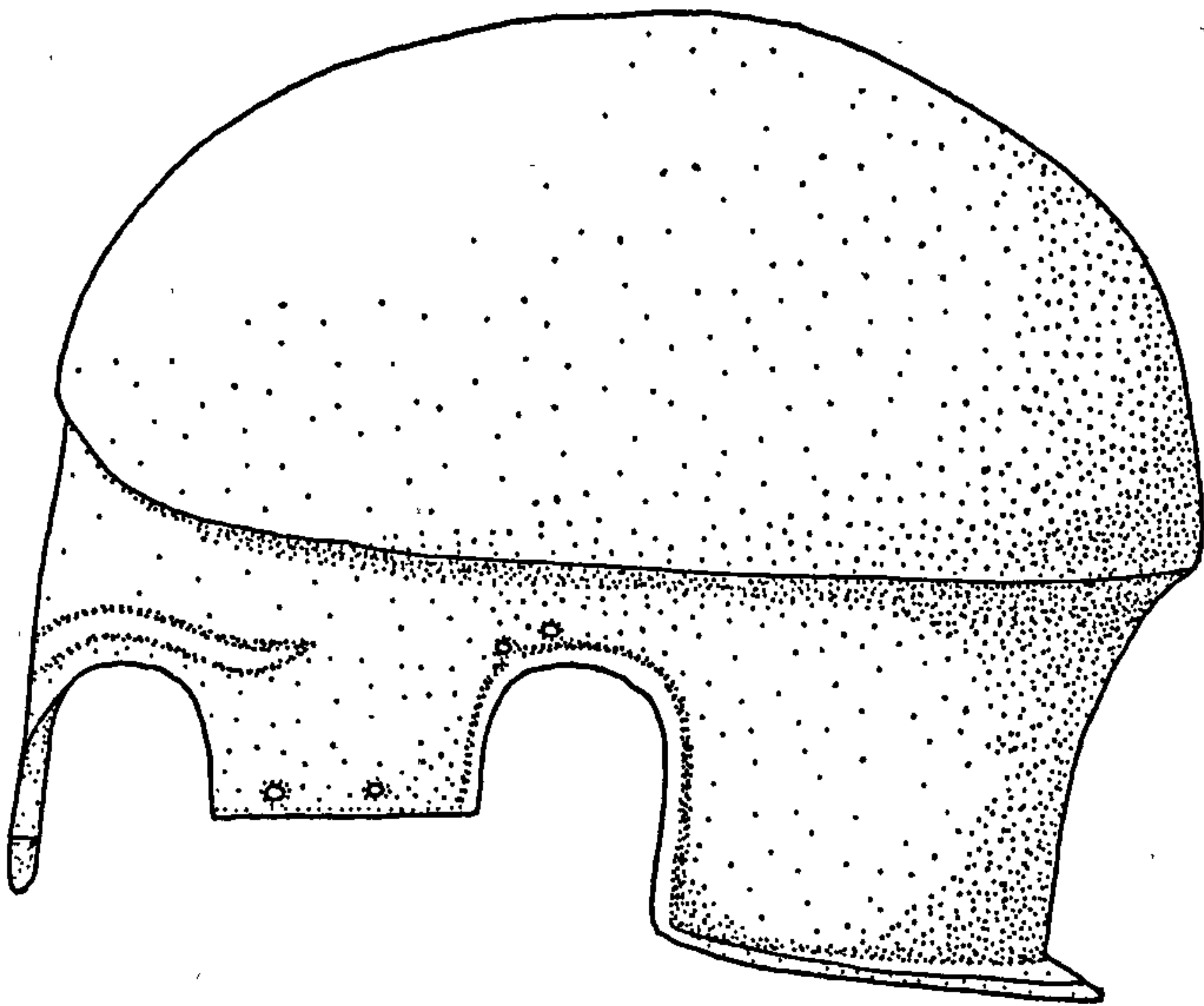
It is unfortunate that no cheek-pieces survive in association with a helmet of Type VII and therefore it is impossible to state whether these took the form of any of the preceding types, or indeed were completely different. However the weight of the pictorial evidence would imply that they were probably of one of the types described above as no other forms are ever depicted.

FIG. 83

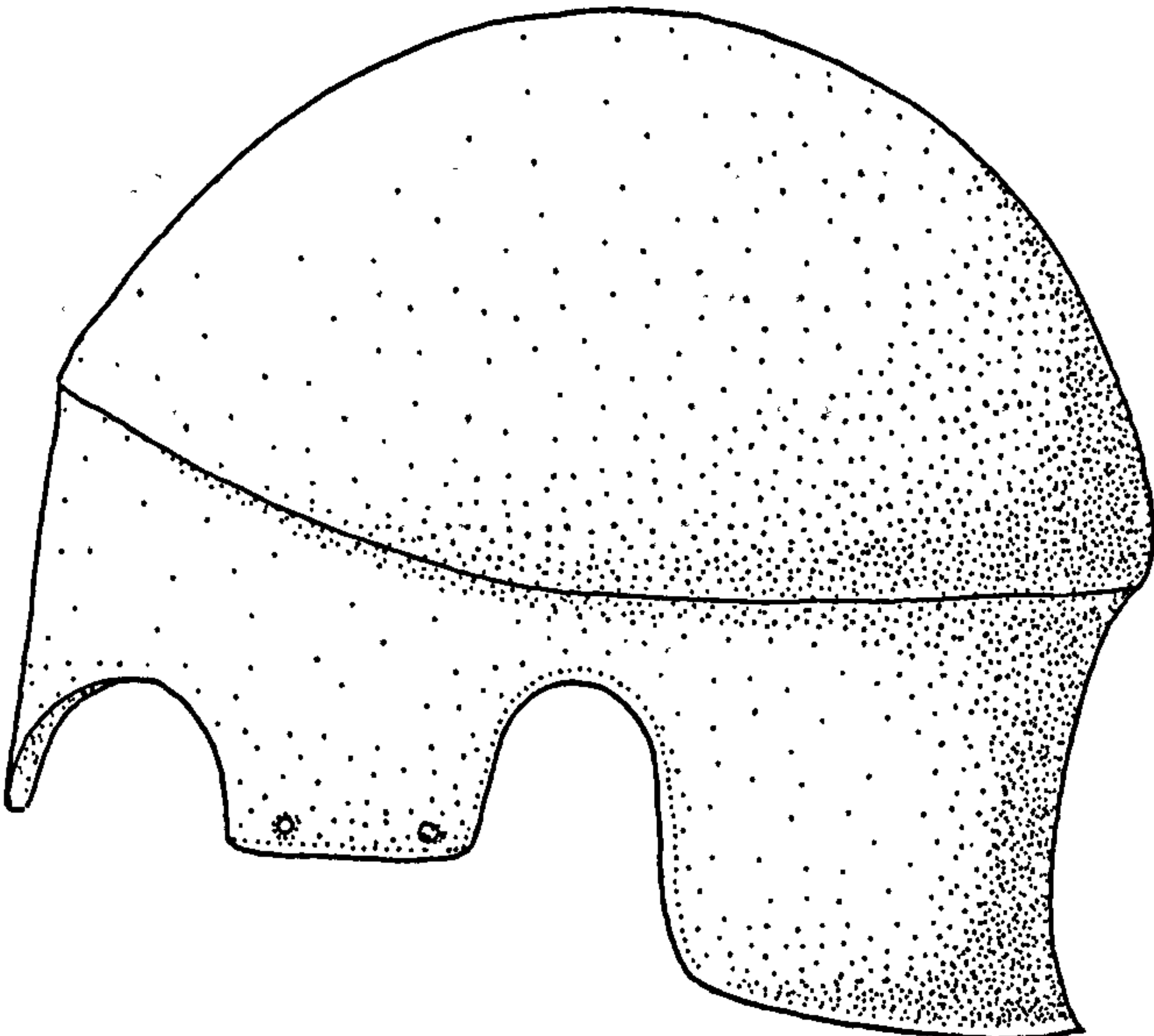
15



16



17



Decoration.

The majority of Chalkidian helmets are elaborately decorated. Helmets Nos. 1, 16 and 17 are exceptions and are undecorated. Like the majority of Italian helmet types the decoration on the Chalkidian helmet is restricted to the cheek-pieces and forehead area. One decorative feature common to all types, with the exception of type I, are embossed stylised eyebrows. In addition the junction between the brow-band and helmet bowl is decorated with embossed and chased tongue pattern on the majority of types II, II, IV, V and VII .

The late 6th and early 5th century B.C. Etruscan products, represented by types II and III, are highly decorated examples of the armourer's art. They are enriched with applied silver decoration. Helmet no. 2 is encrusted with silver dots around the main edges of its cheek-pieces and face opening, whereas helmet no.3 has embossed and applied silver eyebrows soldered to a chased and embossed forehead gable decorated with palm leaves, sea creatures and a series of waves under a band of filligree pattern. Both types of helmet incorporate repoussé figurative scenes in their decoration. Helmet No.2 carries a scene of Apollo and Hercules fighting over a deer on its frontal gable and helmet No. 3 scenes of warriors fighting on its cheek-pieces. These scenes are embossed in the metal of the helmet itself rather than being applied.

The other Etruscan produced Chalkidian helmets, those of Type IV, are also elaborately decorated although not to the same extent as the previous two forms which may perhaps be seen as one offs whereas type IV probably represent the products of a single workshop. In all cases the decoration incorporates embossed stylised eyebrows although in the

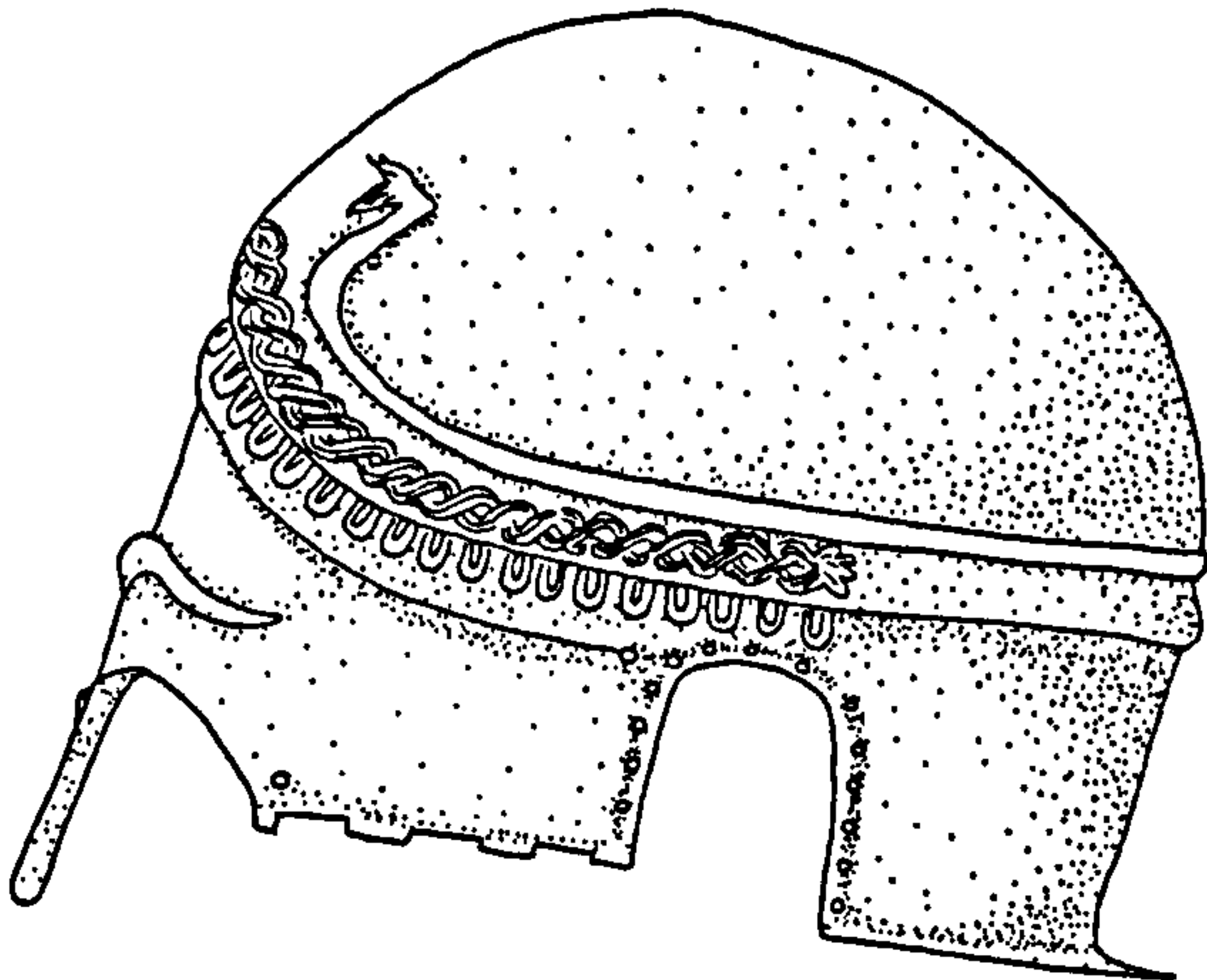
case of helmets Nos. 4 and 5 these were embossed from separate sheets of bronze and then soldered on. All the helmets of this group have a raised moulding around their main edge but this, with the exception that helmet No. 5 is tinned, is the only decoration borne by helmets Nos. 4 and 5. The other three helmets of this group (Nos. 6, 7 and 8.) however are decorated with a band of engraved and embossed tongue pattern over a plain narrow fillet which runs from the forward edge of the ear cut-outs along the ridge between the helmet bowl and the brow-band. In addition to this, helmet No. 8 has an applied cast bronze triton killing a hoplite riveted to the top of its brow-band at the front.

Perhaps the most elaborately decorated form of Chalkidian helmets are those of Type V. The most important elements of their decoration are the embossed and applied sheet bronze ram's heads, with enamelled eyes, soldered to each cheekpiece, which are themselves cut into the same profile. Like the majority of the Chalkidian helmets they are also decorated with embossed eyebrows which meet over the nasal. Helmet No. 9 from the Abruzzo has incised vandyking around the main edges of its cheek-pieces. This does not occur on Helmets No.10 and No. 11 which are not only almost identical in their form but also in their supplementary decoration. Here the junction between the bowl and the brow-band is decorated with embossed and engraved stylised locks of hair, above this a guilloche pattern is engraved encircling the front of the bowl.

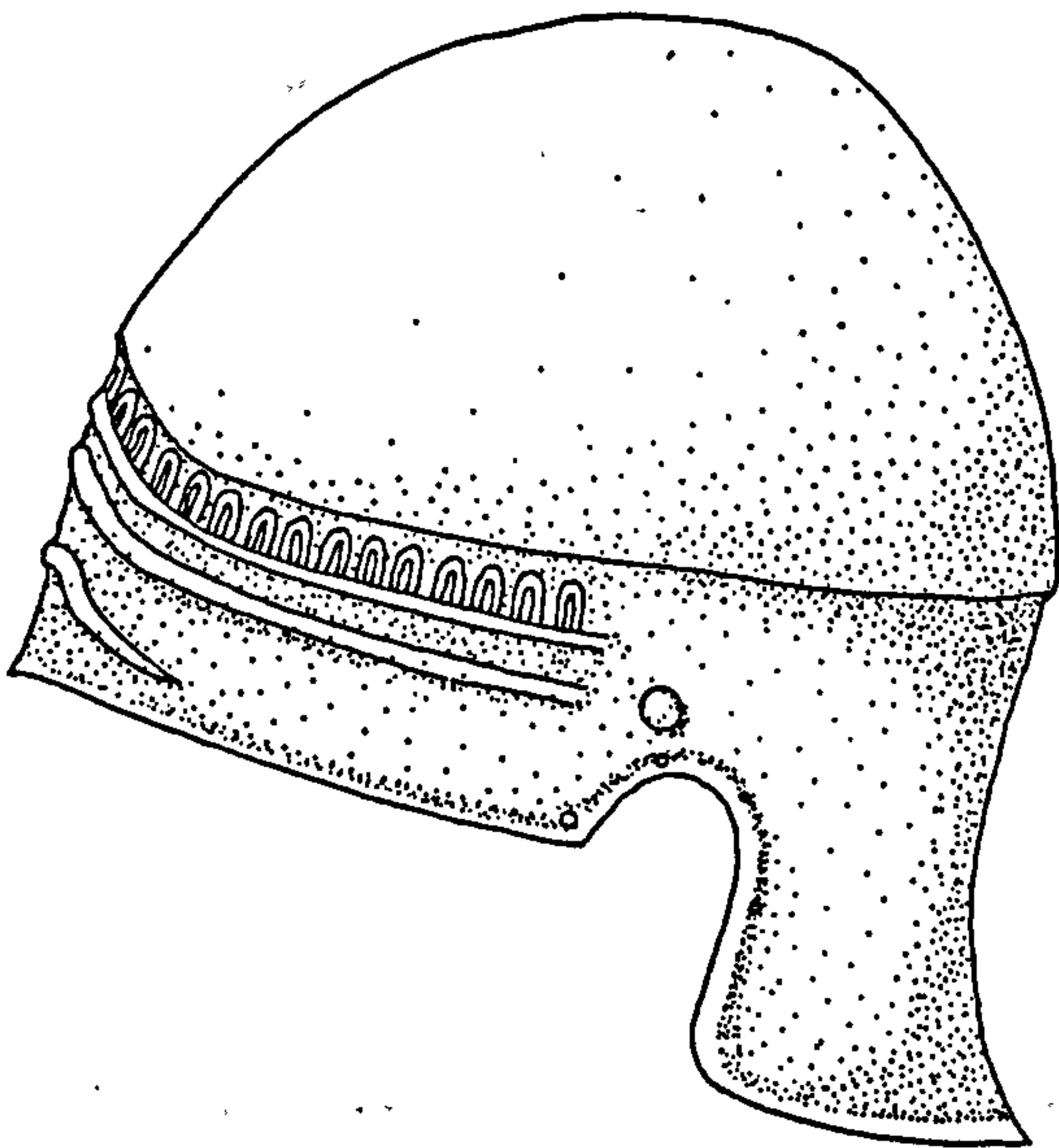
As with the helmets of type V those of Type VI all bear the same decorative motifs; these consist of embossed eyebrows on the brow-band

which extend back almost to the ear cut-outs. Above these is an inverted "V" shaped fluted ridge embossed into the brow-band.

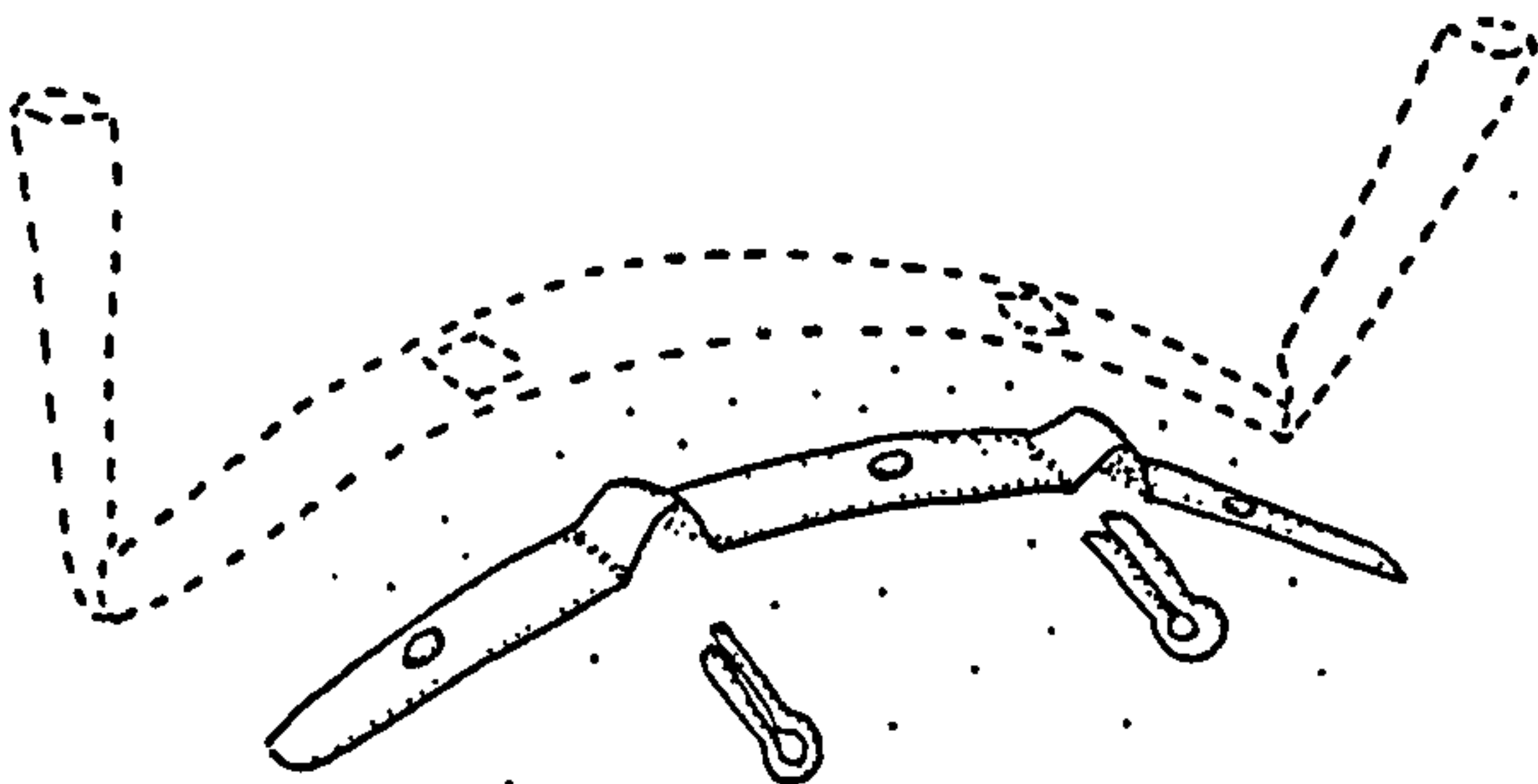
Helmets of type VIIA, like those of type I, are completely devoid of decoration, with the exception that helmet No. 15 from Locri has embossed eyebrows. Conversely helmets 18 and 19, Type VIIB, are highly decorated and borrow elements from both the Etruscan products, types II, III and IV, and the south Italian, type V. Both helmets have the usual embossed eyebrows which meet over the nose, and in addition both have the junction between the bowl and brow-band decorated by an embossed and chased tongue pattern. Above this on helmet 18 is an interlace pattern very similar to that found on helmets 10 and 11. This is further supplemented by an embossed snake which encircles the bowl and almost meets at the front in two heads. This motif, although not its execution and its positioning, is found on helmet 10. This blending of the two styles of decoration may perhaps suggest that these helmets originated in one of the southernmost Etruscan colonies.



18



19



1. Crest-fixture on helmet No. 11 from Ruvo di Puglia

A detailed study of a helmet of each type.

Helmet No.1.

Type: Type I.

Location: Museo Nazionale Naples.

Inventory No. .

Provenance: Paestum

Context: Tomb dating to the late 6th century B.C.

Assigned Date: 6th -5th Century B.C.

Material: Bronze.

Dimensions: Height: 265 mm.

Overall Width: 240 mm.

Internal Width: 215 mm.

Overall Breadth: 205 mm.

Internal Breadth: 200 mm.

Thickness: Rim: 1 mm.

Bowl: 2.5 mm.

Nasal: 4 mm.

Cheek-pieces: Present: These are fixed and made in one with the bowl. These are of a rounded lobate form and are provided with a deep oval cut out for the eye.

Hinge-plates: Not applicable.

Crest-fixture: None.

Decoration: None

Manufacture: The helmet is forged from one piece of bronze.

Description: The helmet is characterised by a low hemispherical bowl, with a slight medial keel, swelling from a fitted brow-band. This rises at the front to an

apex and is then drawn down at its base to form a short nasal guard. At the sides the brow-band is extended to form the cheek-pieces, which are equipped with oval cut-outs for the eyes. Behind each cheekpiece is a deep recess for the wearer's ears. At the rear the brow-band forms a straight neck-guard which is flanged at the base. The helmet is very well made and is possibly the product of a western Greek armourer. It is well preserved and has a smooth green patina

Other details: None.

Published: Lipperheide, von. 1896, 99, No. 325.

Helmet No.2 .

Type: Type II.

Location: Bibliothèque Nationale, Paris.

Inventory No.: 2013 S650.

Provenance: A grave at Vulci

Context: After 480 B.C.

Assigned Date: 5th Century B.C.

Material: Bronze.

Dimensions: Height: 240 mm.

Overall Width: 250 mm.

Internal Width: 220 mm.

Overall Breadth: 215 mm.

Internal Breadth: 210 mm.

Thickness: Rim: 3 mm.

Bowl: 1 mm.

Nasal: 4 mm.

Cheek-pieces: Present: These are fixed and have a straight forward edge with a deep cut out for the eye. The rear edge runs parallel to the front for approximately half its length and sweeps forward to meet it, at an angle of forty-five degrees.

Hinge-plates: Not applicable.

Crest-fixture: None.

Decoration: This helmet is elaborately decorated. Around the main edge of the face opening and the cheek-pieces are three parallel bands of decoration. These consist of an inner band of punched dots and an outer band of encrusted silver balls separated by a plain fillet. The ridge between the bowl and the brow-band is decorated with a band of embossed and chased tongue pattern over a running spiral pattern. On the forehead is an embossed relief, depicting Hercules fighting Apollo for the possession of a doe. Apollo carries a bow while Hercules is depicted with his lionskin and club. Below this are a pair of embossed eyebrows which meet over the nose in a silver palmette.

Manufacture: The helmet is forged in one piece and decorated with repoussé work which has been subsequently chased to refine the details. The silver studs are encrusted on the surface of the bronze.

Description: The helmet is closely related to the Corinthian in form. It has a high bulbous bowl swelling from a fitted brow-band. The junction between the bowl and the brow-band is clearly defined by a marked ridge decorated by an embossed band of tongue pattern. At the front the brow-band sweeps upwards in a curve and is drawn down at its base to form a nasal. The cheek-guards are made in one with the brow-band, and are of a form very reminiscent of developed Corinthian forms, although the eye openings are considerably larger. At the sides are cut-outs for the ears and at the rear the brow-band forms a short straight neck-guard with a sharply everted flange at the base. The helmet is superbly made and has a smooth green patina. It has suffered considerably since its excavation and the neck-guard shown in Lipperheide (1896, 82.) is now detached and missing.

Other details: None.

Published: Lipperheide, von. 1896, 82, no. 516. Bandon and Blanchet 1895, 659. Adam. 1984, 108-10.

Helmet No. 3.

Type: Type III.

Location: Museo Nazionale Villa Giulia, Rome.

Inventory No.: 27186.

Provenance: Tomb in the Necropolis S. Raffaele at Todi.

Context: 5th century B.C.

Suggested date: 5th century B.C.

Material: Bronze, with silver encrusting.

Dimensions: Height: 225 mm.

Overall Width: 250 mm.

Internal Width: 234 mm.

Overall Breadth: 204 mm.

Internal Breadth: 198 mm.

Thickness: Rim: 2-3mm.

Bowl: 1mm.

Nasal: 4mm.

Cheek-pieces: Present: These are hinged and have a straight front edge to which the rear edge runs parallel for half its length, it then turns to meet the forward edge at an angle of approximately forty-five degrees.

Hinge-plates: Present: The hinges are multi-hasped and are held to both the bowl and cheek-pieces by three rivets.

Crest-fixture: None.

Decoration: The decoration is restricted to the forehead area and the cheek-pieces. It consists of a pair of embossed and applied, silver, eyebrows on a ground decorated with repoussé and chased palm leaves, sea-creatures and a wave pattern. The ridge between the brow-band and the bowl is decorated with a band of repoussé and chased inverted tongue pattern. Likewise the cheek-pieces are embossed with scenes of hoplites fighting.

Manufacture: The helmet is forged in one piece and decorated with

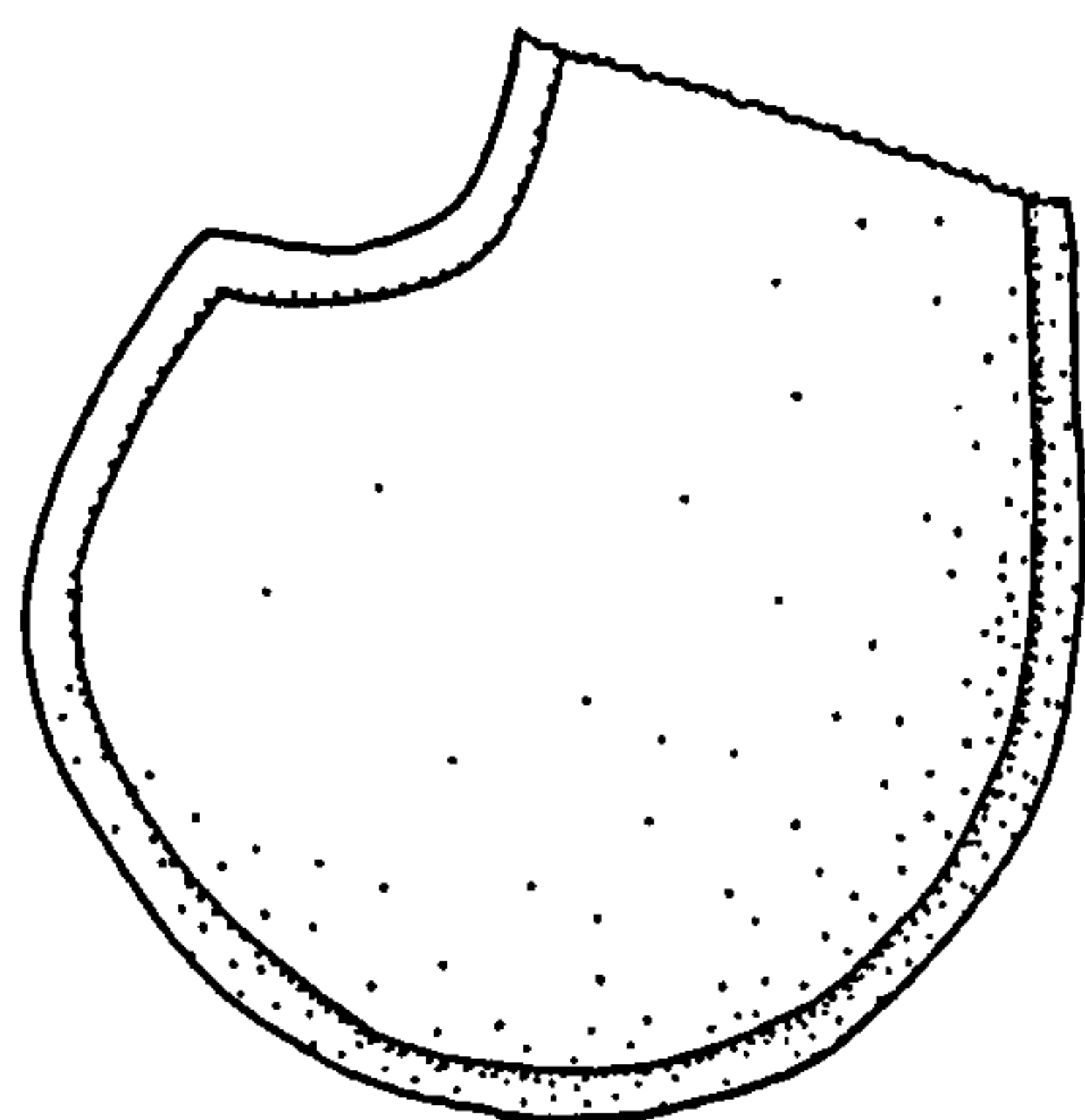
repoussé work which has been subsequently chased to refine the details.

Description: The helmet has a rounded, moderate, slightly bulbous bowl swelling over a fitted brow-band. The junction between the two is marked by a pronounced angle. The brow-band rises at the front to an apex, forming a forehead gable. At its base it is drawn down to form a moderate length nasal. At the sides the brow-band has cut-outs for the ears and is extended at the rear to form a straight neck-guard. This is given a right angled flange at its base. It has hinged cheek-pieces which are derived from late "Corinthian" forms. These have a straight forward edge to which the rear edge runs parallel for half its length, it then turns to meet the forward edge at about forty-five degrees. This helmet is an exquisite example of the Etruscan bronze-worker's artistic and technical achievement. It has a smooth green and brown patina and is in excellent condition

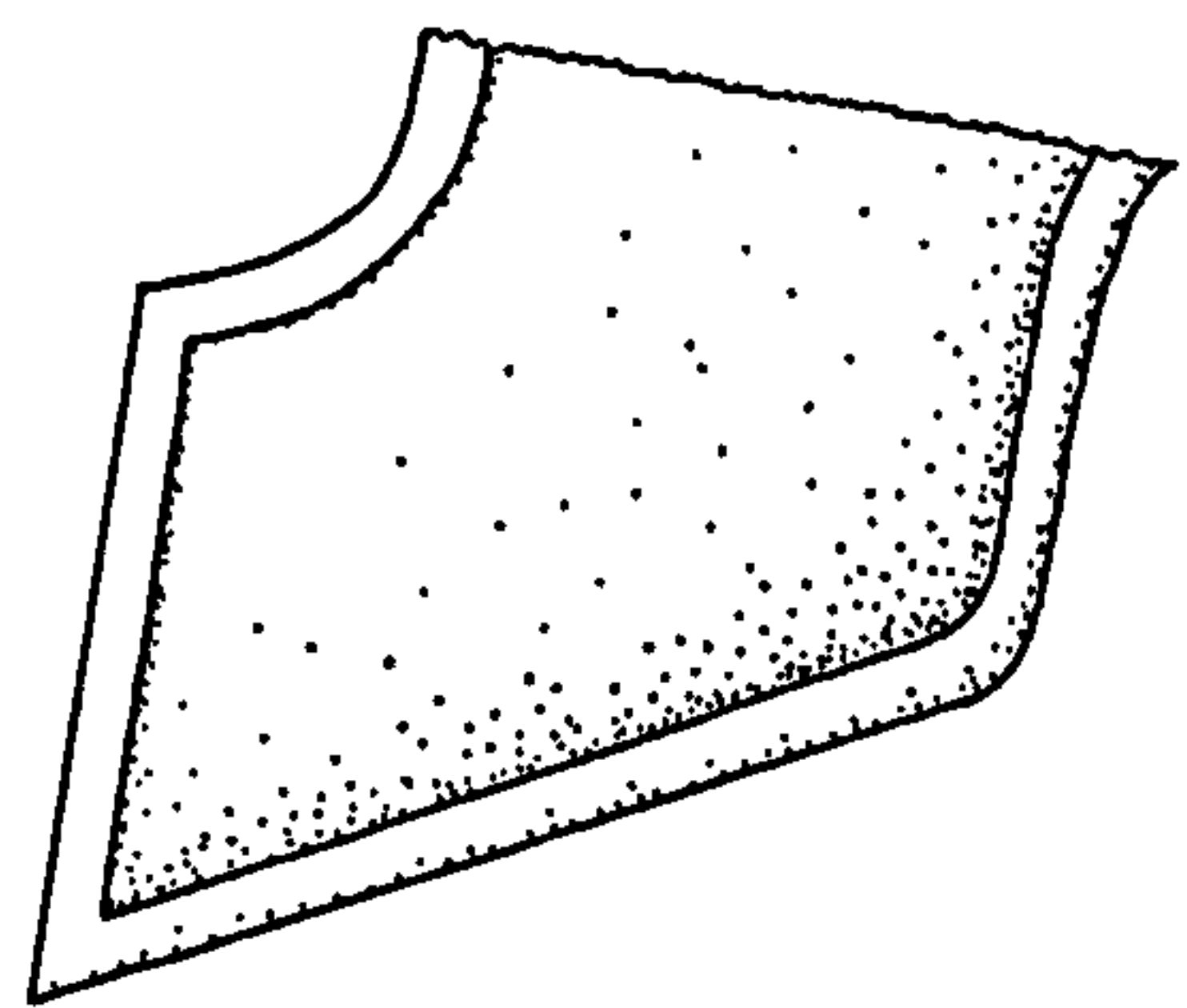
Other details: None.

Published: Bendinelli. 1916, 843. Proietti. 1980, 305, fig. 433.

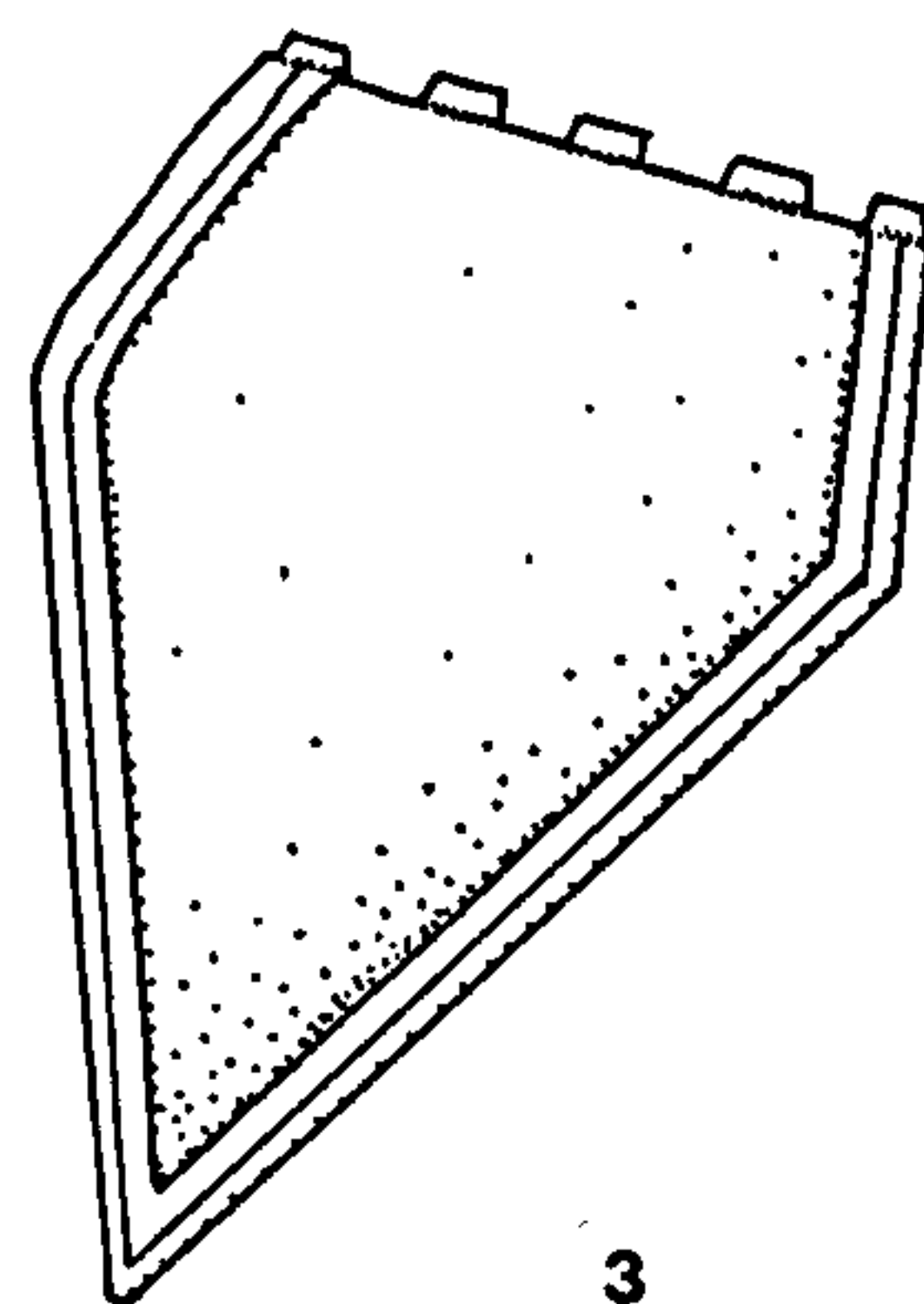
FIG. 85



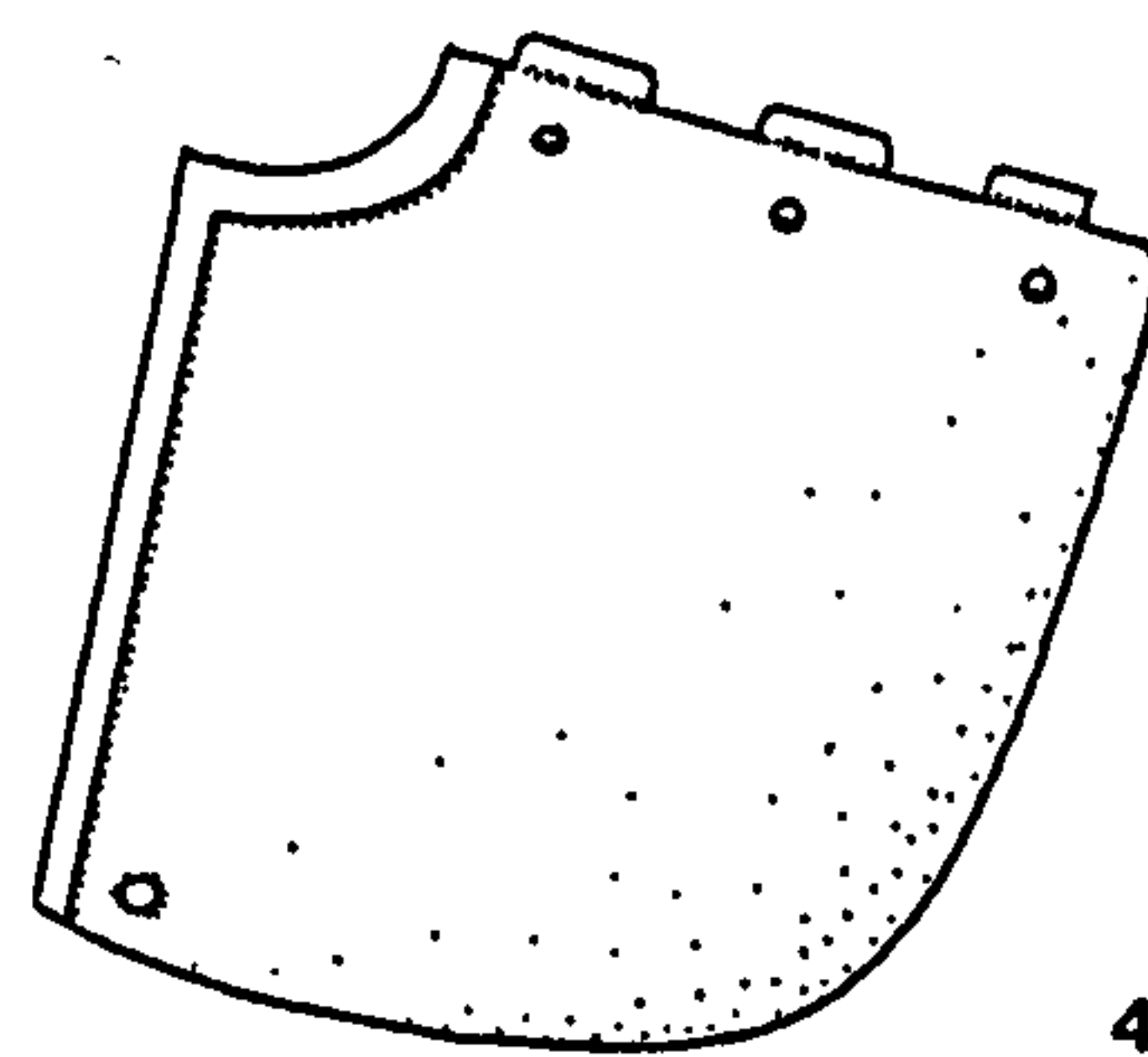
1



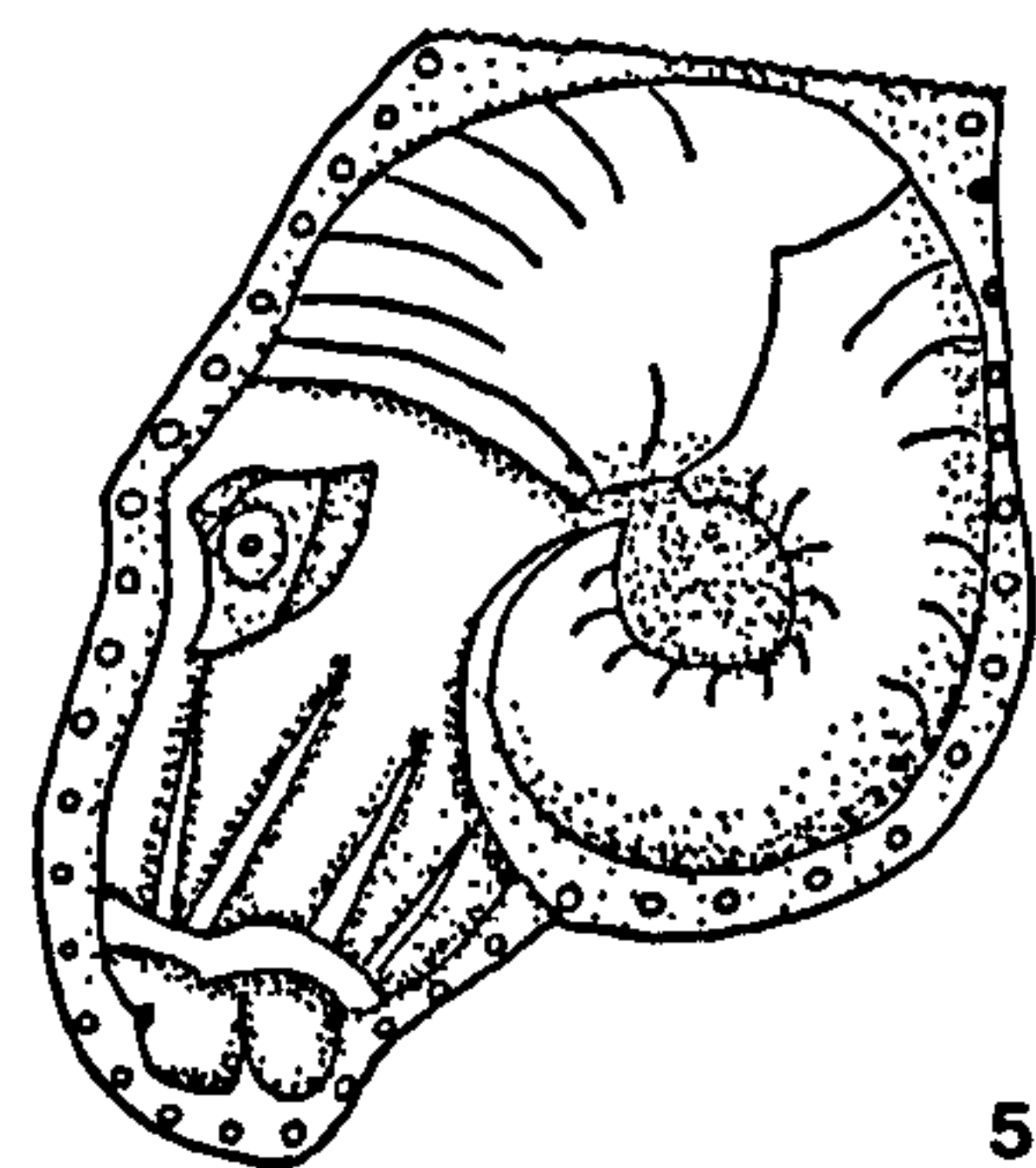
2



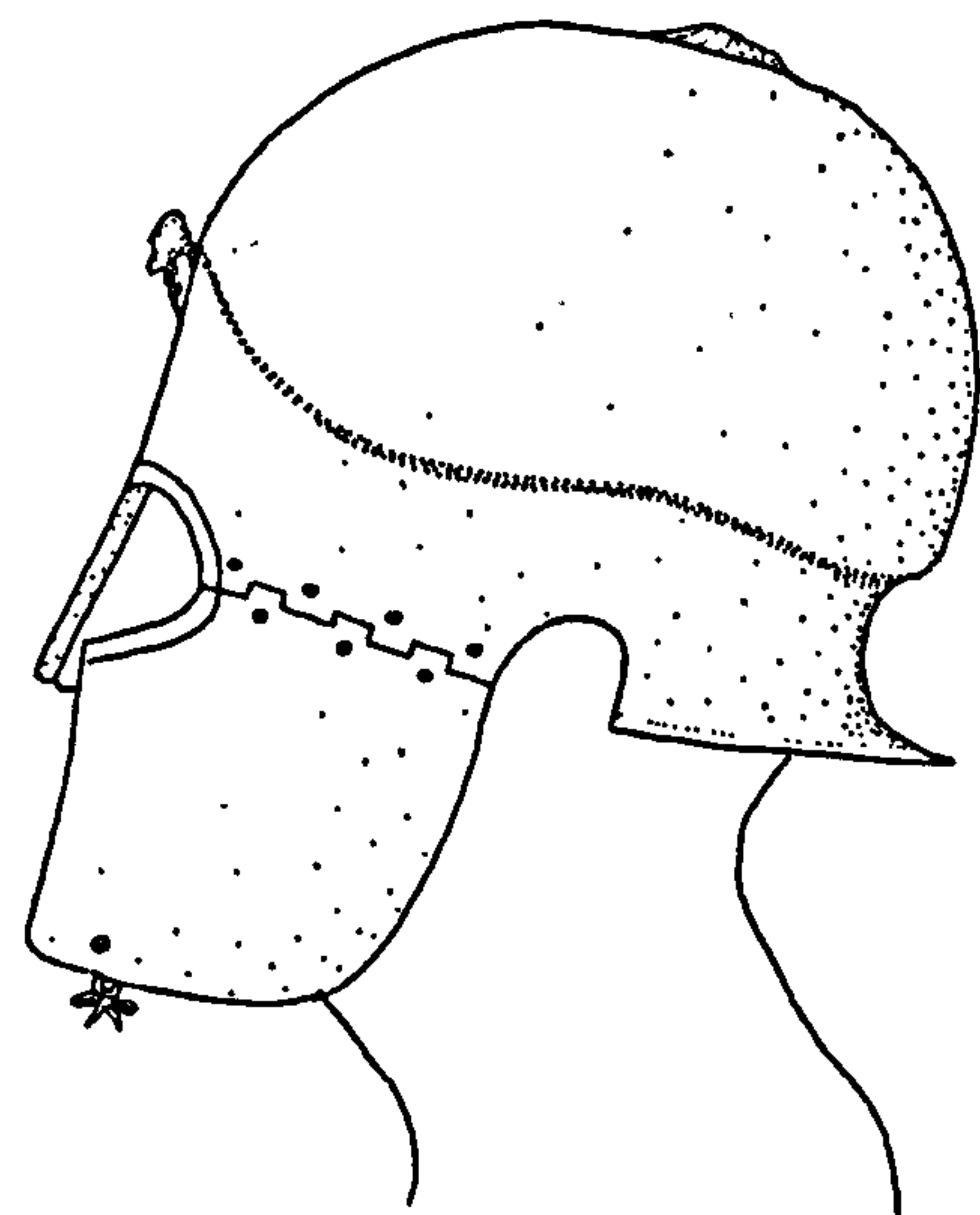
3



4



5



6

Helmet No. 5.

Type: Type IV

Location: Museo Nazionale , Perugia.

Inventory No.: 361.

Provenance: Excavated in 1840 in the Necropolis del Frontone
near Perugia.

Context: Unknown.

Suggested date: 5th century B.C.

Material: Bronze.

Dimensions: Height: 216mm.

Overall Width: 254mm.

Internal Width: 248mm.

Overall Breadth: 162mm.

Internal Breadth: 160mm.

Thickness: Rim: 2-3mm.

Bowl: 1mm.

Nasal: 4mm.

Cheek-pieces: Present: These are hinged and have a straight
forward edge with a deep cut out for the eye. The
rear edge is strongly curved to meet this, forming
almost a quarter of a circle. They are attached to
the hinges by two rivets.

Hinge-plates: Present: The hinges are multi-hasped and are held to
the helmet bowl by two rivets.

Crest-fixture: None.

Decoration: The decoration is confined to the forehead area.
The ridge between the bowl and the brow-band, which

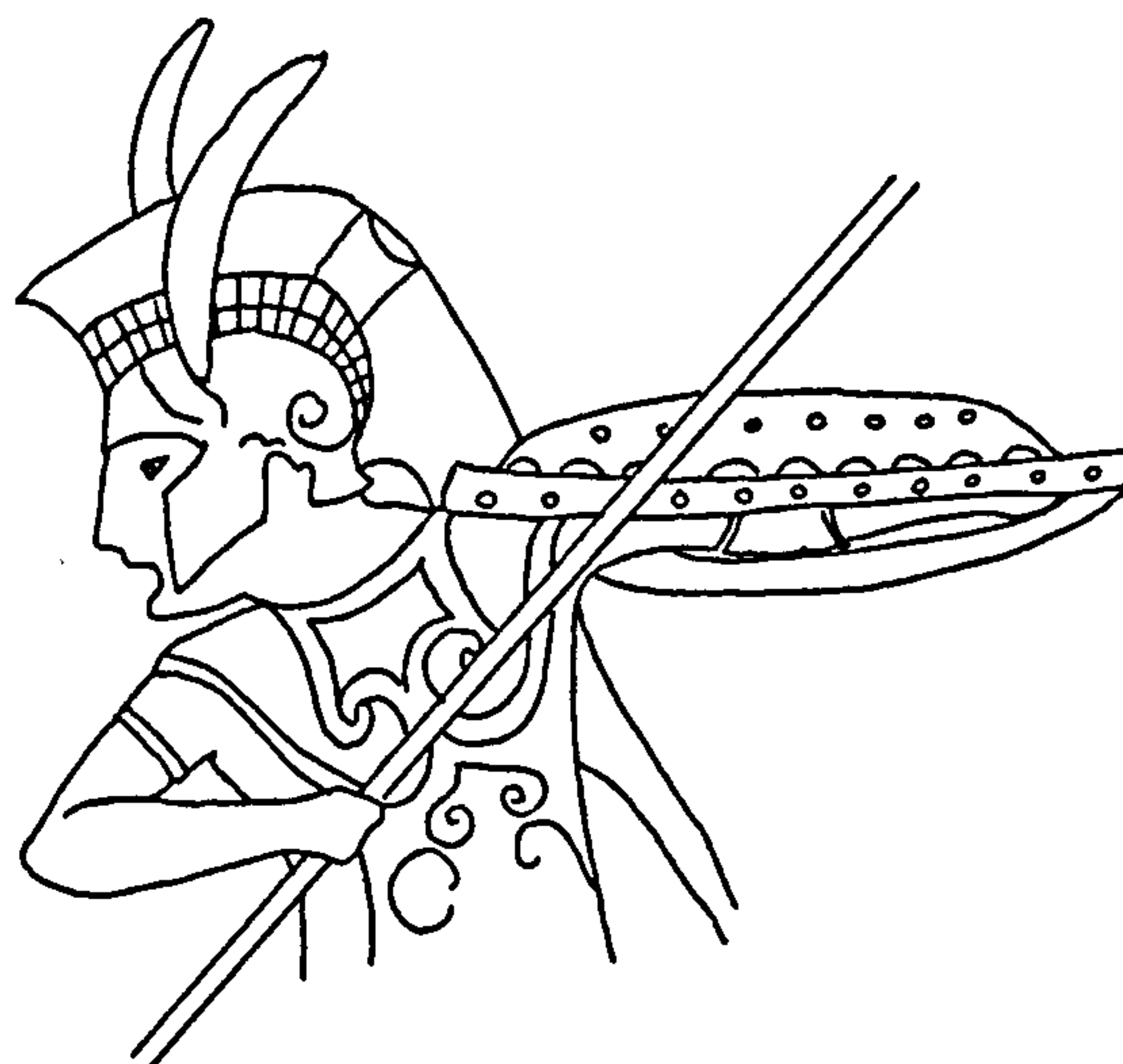
rises to an apex at the centre front, is decorated with a band of embossed and chased "tongue" pattern over a narrow plain moulding. The embossed eyebrows meet over the nasal. The main edges of the cheek-pieces are decorated and strengthened by a raised moulding.

Manufacture: The helmet is forged in one piece and decorated with repoussé work which has been refined by subsequent chasing.

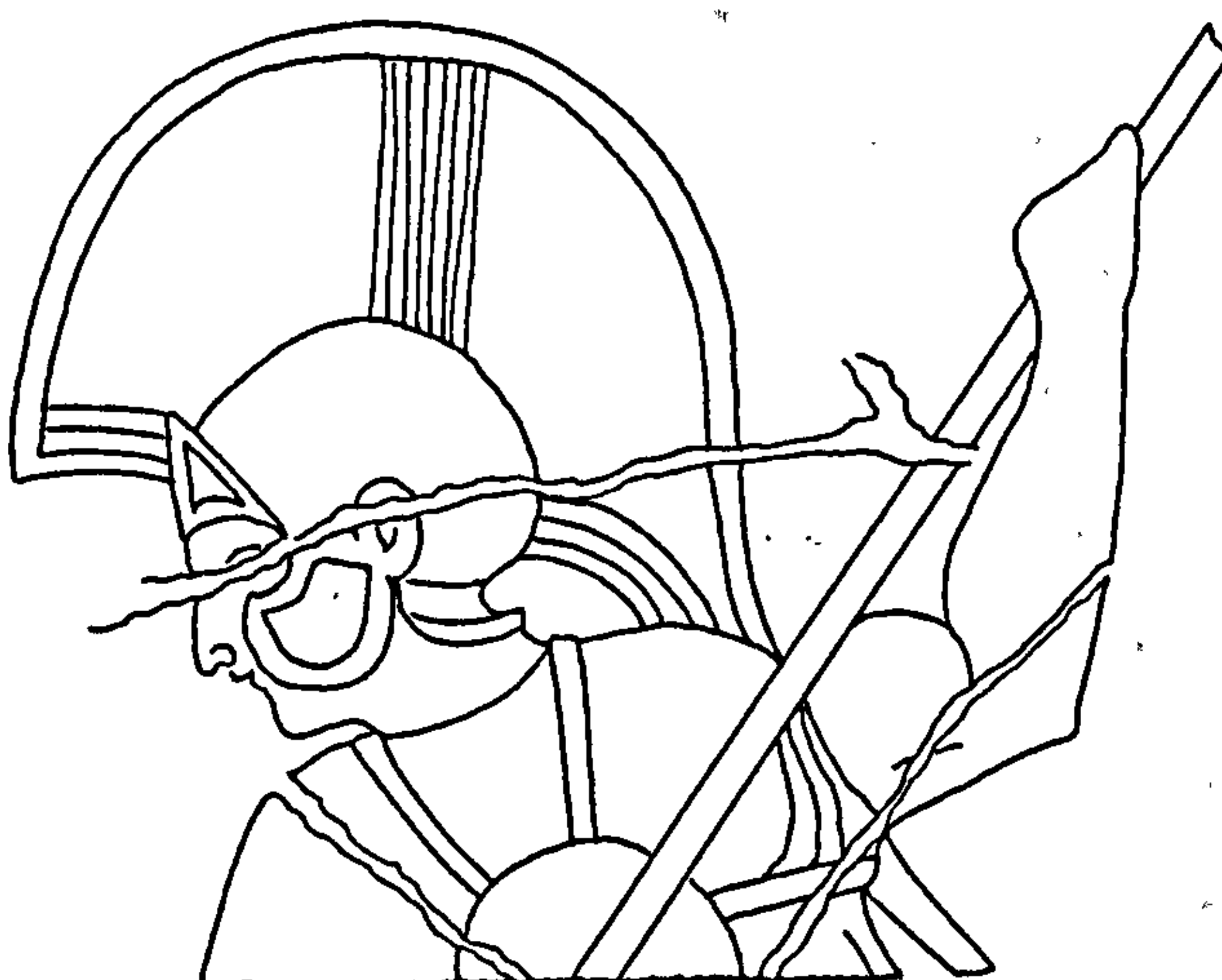
Description: The helmet has a high, bulbous bowl swelling over a well fitted brow-band. The junction is marked by a well defined ridge. The brow-band curves up at either side of the front to form an apex. At the side are cut-outs for the ears and at the rear the brow-band is drawn down to form a close fitting short neck-guard which is flanged at its base. The nasal is short and thick. The helmet is very well made and finished. It has a smooth green patina and two dents in the rear of the skull, there is a large fissure in the left hand side.

Other details: The ear cut-outs and the base of the neck-guard are pierced with small holes for sewing in the lining.

Published: Unpublished.



1 Detail: Fresco from Chiusi depicting a Chalkidian helmet



2 Detail: Fresco from Cere depicting a Chalkidian helmet

Helmet No. 11.

Type: Type V

Location: The British Museum.

Inventory No.: 2830, 12-26.616.

Provenance: A Grave at Ruvo near Bari, Puglia, Italy.

Context: Late 5th to early 4th Century B.C.

Material: Bronze.

Dimensions: Overall Height: 273mm.

Overall Width: 205mm.

Internal Width: 202mm.

Overall Breadth: 170mm.

Internal Breadth: 167mm.

Thickness: Rim: 1.5mm.

Bowl: 0.5mm.

Nasal: 4.5mm.

Cheek-pieces: Present: These are of the fixed variety formed in one with the helmet bowl. They are cut into the outline of a ram's head. On the cheek-pieces are traces of solder and fragments of the embossed decorative sheet which overlaid them.

Crest-fixture: The crest-fixture consists of a narrow strip of bronze (approximately 20mm. wide) riveted longitudinally to the apex of the bowl. There are rivets at the centre and either end. Between these rivets the strip has been shaped over a rod to produce two inverted "U"-shaped loops. This is the lower portion of a typical south Italian crest-

fixture. Originally another strip of bronze, pierced to receive the loops and supporting the crest itself, would have fitted over this strip. Pins would be passed through the loops to hold it in position

Decoration: The helmet is highly decorated with appliqué and repoussé work. The brow-band rises to an apex at the front and the resultant ridge is decorated with very finely embossed stylised locks of hair. Above this is an engraved tongue pattern which is surmounted with a guilloche pattern terminating in snakes' heads either side of a palmette.

Manufacture: The main body of the helmet is forged in one sheet of bronze. The nasal has been carefully blocked and thickened to 45mm. The repoussé hair decoration was probably worked in a pitch block and then chased. The decorative plaques for the cheek-pieces were embossed separately and applied with solder.

Description: The helmet is of the very highest quality. The low bowl swells from a fitted brow-band which rises to an apex at the front. It has a strong medial ridge. At the front the brow-band is drawn down to form a short nasal and at the sides it has cut-outs for the ears. The cheek-pieces are formed in one with the helmet and are of the "Ram's head" variety. At the rear the brow-band is drawn down to form a neck-guard which was originally strongly everted at its

base. The top left side of the bowl is now completely separated and the base of the neck-guard broken away. The embossed rams' heads on the cheek-pieces are now also missing. The helmet has a light green patina.

Other details: None.

Published: Walters. 1899, 348, No.2830. Stary. 1982, 5, fig.16.

Helmet No. 13.

Type: Type VI.

Location: The British Museum.

Inventory No.: 2822,1873.8-20.225.

Provenance: Apulia, Italy.

Context: Unknown.

Suggested date: 5th-4th Century B.C.

Material: Bronze.

Dimensions: Overall Height: 234mm.

Overall Width: 205mm.

Internal Width: 200mm.

Overall Breadth: 167mm.

Internal Breadth: 164mm.

Thickness: Rim: 3mm.

Bowl: 1mm.

Cheek-pieces: Present: These are of the fixed variety made in one with the bowl. Below the cut out for the eye at the top, the front edge is straight. At the rear is a cut-out for the ear and below this the line of the

cheek-piece is carried forward to meet the front edge at an angle of about forty-five degrees.

Crest-fixture: There is none extant but there are circular marks in the patination at either side of the apex of the bowl which are probably the remains of feather-tubes.

Decoration: The decoration consists of embossed eyebrows on the brow-band, which meet over the nose and extend backwards almost to the ear cut-outs. Above this is an inverted "V" shaped fluted ridge, echoing the shape of the brow-band, which rises to an apex at the centre.

Manufacture: The helmet is forged from a single sheet of bronze.

Description: The helmet has a high bowl with a pronounced medial ridge which swells out over a well defined brow-band. This is itself drawn down at the sides and rear to form the cheek-pieces and the neck-guard. At the front it rises to an apex to form an inverted "V" shaped gable. From its lower front edges a shallow cusp has been removed over each eye to produce a vestigial nasal. The helmet is well fitted over the rear of the skull to the nape of the neck. The neck-guard originally had a right-angled flange at its base but this is now broken away. The main edges of the brow-band and cheek-pieces in front of the ear cut-outs are considerably thickened for strength. The cheek-pieces are almost

triangular in shape and sharply pointed. Overall the helmet is very well made. It has a patchy medium green granular patina and a hole in the bowl to the left of the apex.

Other details: None.

Published: Walters. 1899, 348, No. 2822. Stary. 1982, 5, fig.17.

Helmet No. 19.

Type: Type VII.

Location: The Museo Gregoriano Etrusco in The Vatican, Rome.

Inventory No.: 12303.

Provenance: Italy.

Context: Unknown.

Suggested date: 4th Century B.C.

Material: Bronze.

Dimensions: Overall height: 210mm.

Overall Width: 210mm.

Internal Width: 206mm.

Overall Breadth: 182mm.

Internal Breadth: 180mm.

Thickness: Rim: 1-2mm.

Bowl: 0.8mm.

Cheek-pieces: Missing.

Hinge-plates: Missing, but they were originally of the multi-

hasped variety and were attached by three rivets.

Crest-fixture: None.

Decoration: The decoration consists of embossed eyebrows which meet over the nose, above this and echoing the shape of the brow-band, which rises to an apex at the front, is a plain, broad, embossed band bordered by two narrow bands. Above this and decorating the ridge between the brow-band and bowl is a band of embossed, chased, inverted tongue pattern.

Manufacture: The helmet has been forged from a single sheet of bronze. The embossing was probably executed using punches and hammers in a pitch block and was subsequently chased.

Description: The helmet has a high slightly bulbous bowl with a very pronounced medial ridge. The bowl surmounts a fitted brow-band and the junction is marked by an angular ridge. The brow-band curves up at the front to form an apex shaped like an inverted 'V'. At the sides are cut-outs for the ears and slight cusps have been removed at the front over the wearer's eyes. The nasal is broken away. At the rear the brow-band is drawn down to form a deep neck-guard which flares at its base. The front right side of the brow-band and neck-guard are now missing and there is a hole in the bowl to the right of the medial ridge. The helmet has a patchy smooth light green patina.

Other details: The helmet is pierced by numerous small holes around

the ear cut-outs and down the neck-guard, presumably
for sewing in the lining.

Published: Unpublished.

Etrusco-Thracian Helmets.

Introduction

Helmets of this particular form have been described and classified by scholars in many different ways. Lantier (1955, 228.) would have it that "they are part of the vast group of helmets known to scholars, of earlier this century, as 'jockey cap'". However, a close comparison of the features of these helmets and those of the Montefortino and Coolus types, shows any such similarity to be very slight with the exception of the presence of certain stylistic forms of incised decoration to be found on all these types. Conversely, Stary (1981, Map.2 and 1982, 6.) contends that these helmets are of Samnite or Lucanian origin. Upon what evidence this opinion is based is not made absolutely clear, but it would seem simply to be a misinterpretation of the surviving pictorial evidence from Samnite tombs such as the "Warrior's Return" Fresco from Paestum, now in the Museo Nazionale Naples (Weege. 1909, 154ff.). This contention totally disregards the provenances of the extant examples (see Distribution Map, fig. 88). Furthermore, Stary ignores the decorative motifs and crest-features common to all helmets of this type (see sections on decoration and crest-fixtures.) which are rarely, if at all, found on helmets of southern Italian origin but are more commonly associated with Etruscan and central Italian helmets.

Indeed, as early as 1896 Friedrich von Lipperheide, in his great work *Antike Helme*, postulated an Etruscan origin for these helmets. This is endorsed by Peter Connolly (1981, 99-100, fig No.3.) who

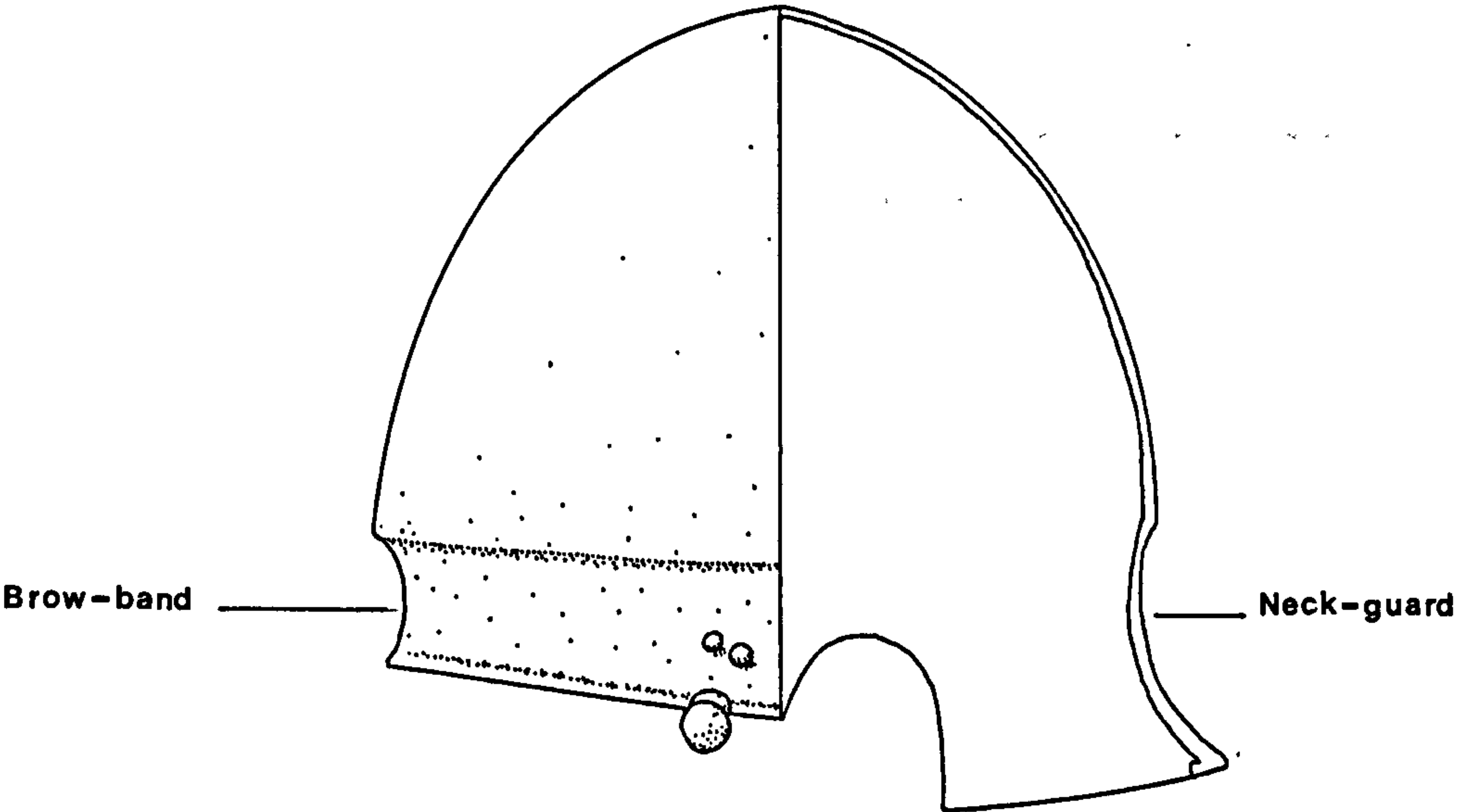
describes them as "Attic helmets commonly found in Etruria". A close examination and comparison of the diagnostic features of these helmets with those of 5th and early 4th century B.C. Hellenistic Thracian helmets of the variety without an integral Phrygian bonnet, for example the helmet from the Lipperheide collection, now in the Staatliche Museen, Berlin, L.50 (Schröder 1912, 327, fig nos. 9:3 and 4., Snodgrass 1967, 95 pl. 53. and Paddock 1981, 5 fig no.1.) indicates a different point of inspiration. In particular, both types have high, bulbous and slightly conical bowls swelling from a fitted brow-band which is drawn down at the rear to form a neck guard and is turned outwards at the front to form a peak-like projection. They differ in only two important respects: the ear-guards of the Greek variety are formed in one with the brow-band by simply drawing this out and over the ears whereas the Italian variety has simple cut-outs for the ears and applied cast ear-guards; secondly, whilst the Greek helmets invariably have cheek-pieces, the Italian ones do not.

Lipperheide's attribution of an Etruscan origin to these helmets is beyond doubt correct, especially when viewed in the light of the fact that all but three of the extant helmets were found in Etruria (see fig. 88) whilst Lantier was right in ascribing the decoration of the helmet he describes (table 1 No. 2) to an Italo-Celtic artist. However, the form is almost certainly an Italian variant of a Northern Greek original. Given these similarities, and for want of any contemporary nomenclature, it seems logical albeit somewhat incongruous to apply to them the term 'Etrusco-Thracian'.

Definition

The Etrusco-Thracian helmet is invariably forged in one piece and is characterised by a high, conical but somewhat bulbous bowl issuing from a well fitted but slightly concave brow-band which is everted at the front and drawn downwards at the rear to form a neck-guard. There is no provision for the attachment of cheek guards, but there are usually cut-outs to accommodate the wearer's ears (see fig. 87).

FIG. 87



AN ETRUSCO-THRACIAN HELMET

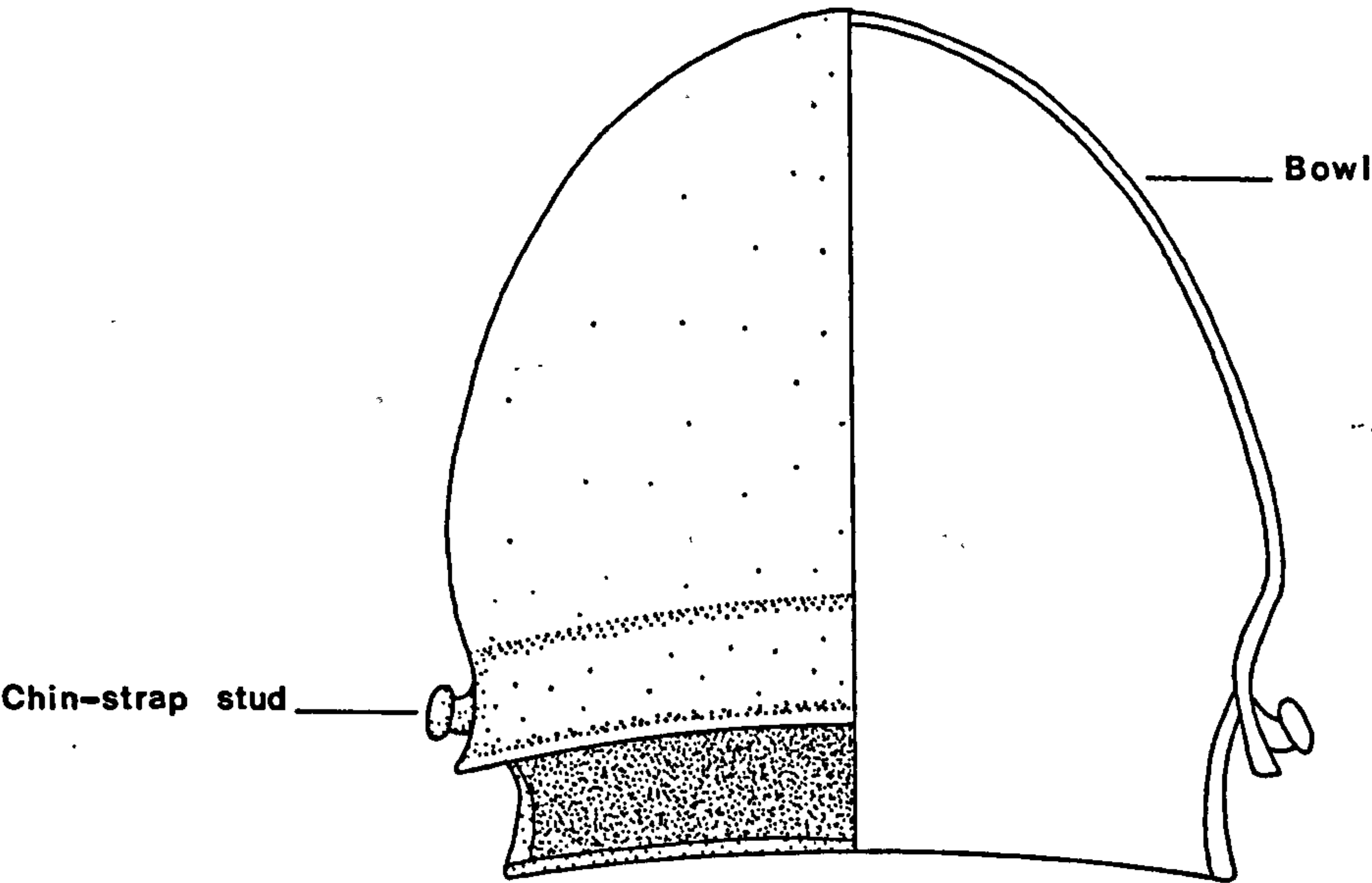


Table 1 Etrusco-Thracian Helmets.

No.	Museum and Inventory No.:	Cat.:	Dimensions:			Provenance.
			No.	H.	W.	
1	Musee St Pierre Lyons X 924	(206)	200	198	160	Italy.
2	Collection Le Marois No Inventory No.	(228)	180	280	180	Said to be from Cannae, Italy.
3	Museo Nazionale Chieti 4408	(110)	225	230	185	Orsogna near Chieti, Abruzzi, Italy.
4	Museo Nazionale Naples	(264)	230	240	190	Egnatia, Campania, Italy.
5	Musee St Pierre Lyons X 924	(207)	160	190	160	Italy
6	Museo Nazionale Perugia 358 B1251.	(344)	200	220	190	Frontone near Perugia, Umbria, Italy.
7	Museo Nazionale Perugia 328 B1323	(345)	190	200	170	Monteluce near Perugia, Umbria, Italy.
8	Museo Nazionale Perugia S.6./32/1.	(346)	191	Damaged		Santa Giuliana near Perugia, Umbria, Italy.
9	Antiken Museum Berlin L 37	(69)	202	240	187	Central Italy.
10	Antiken Museum Berlin L 36	(70)	201	219	185	Perugia, Umbria, Italy.
11	Museo Arqueologico Madrid MAN 7359	(208)	170	215	170	Unprovenanced.
12	Antiken Museum Berlin L 38	(71)	197	216	205	Italy.
13	Antiken Museum Berlin Misc 10395	(72)	193	210	207	Italy
14	Antiken Museum Berlin L 69.	(73)	163	207	189	Perugia, Umbria; Italy.
15	Museo Gregoriano Etrusco in the Vatican A 47	(415)	178	D	175	Central Italy.
16	Museo Gregoriano Etrusco in the Vatican A 43.	(416)	170	220	180	Central Italy.

No.	Museum and Inventory No.:	Cat.:	Dimensions:			Provenance,
			No.	H.	V.	
17	Badisches Landesmuseum Karlsruhe 433,	(154)	170	230	150	Toscana, Italy.
18	British Museum 2721 1837.6.9.91	(185)	178	243	166	Vulci, Toscana; Italy.
19	Museo Gregoriano Etrusco in the Vatican 12,307	(417)	175	D	D	Bomarzo Pianano, Italy.
20	Musee de l'Armée Paris E.9,	(302)	192	245	245	Near Naples, Campana; Italy.
21	Villa Giulia Rome 63,688,	(377)	195	231	-	Vulci, Toscana; Italy.
22	Antiken Museum Berlin Misc 10396	(74)	200	234	194	Italy.
23	Museo Nazionale Ancona,	(30)	222	236	-	Montefortino, Marche; Italy.
24	Antiken Museum Berlin L39	(75)	D	232	181	Toscana, Italy.
25	Naturhistorisches Museum S.65,	(424)	170	215	175	Talvon Hatzeg, Romania.
26	Museo Poldi Pezzoli, Milan, 2419	(241)	178	231	182	Central Italy.
27	Museo Archeologico Florence 82318,	(131)	170	225	195	Near Florence, Toscana; Italy.

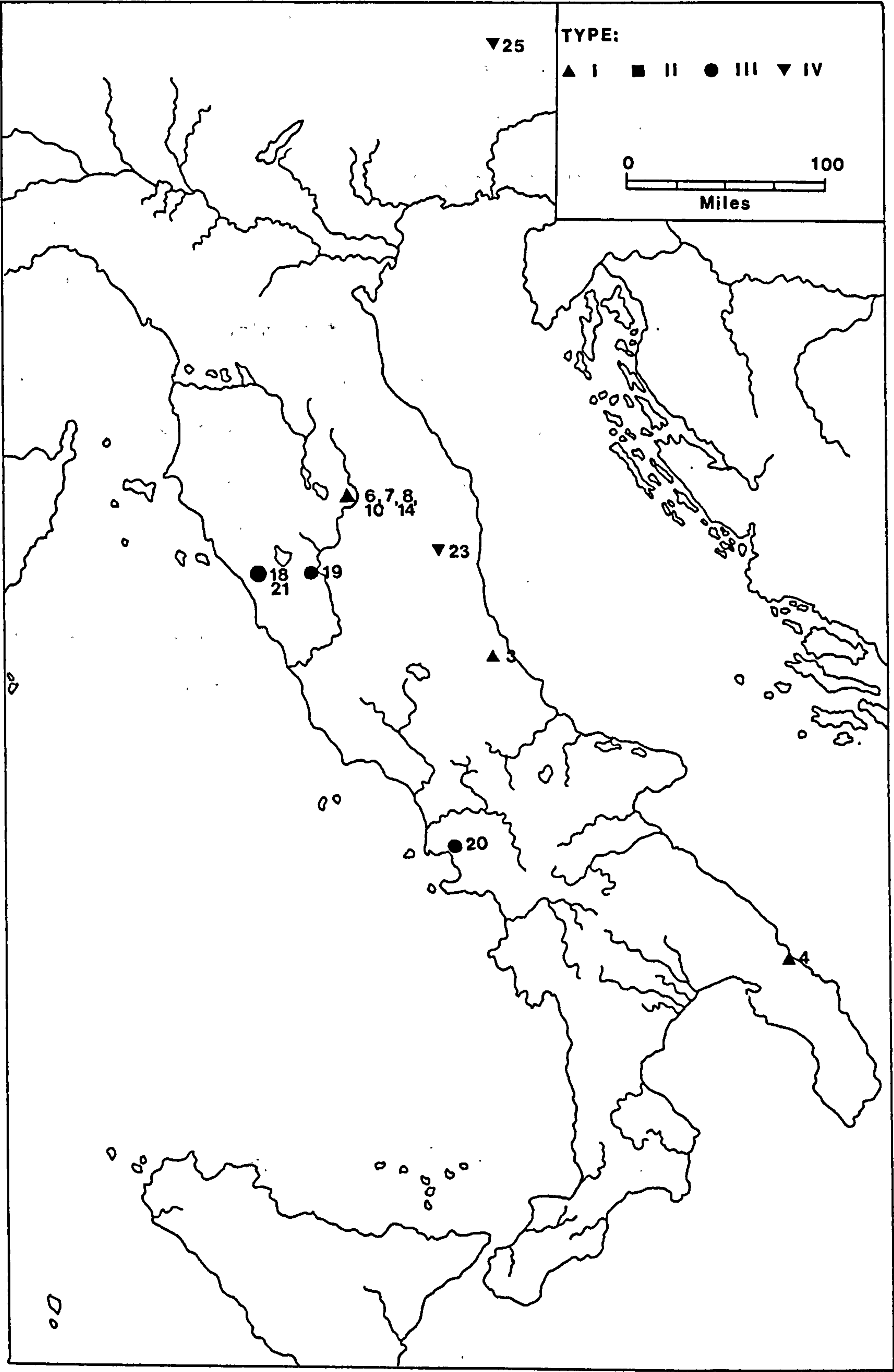
KEY: D- Damaged

Distribution

All but one of the Etrusco-Thracian helmets come from the Italian Peninsula, the only exception to this being the helmet from Talvon Hatzeg in Romania. Of the remaining fourteen, only three helmets have provenances outside Etruria; helmet No. 3, from Orsogna near Chieti helmet No.4, which was said to have come from somewhere within the Kingdom of Naples, and helmet No. 23 from the Gallic cemetery at Montefortino. Although only six of the remainder come from well dated contexts, the rest have find spots which place them firmly within the borders of Etruria. It is therefore logical to assume Etruria as their most likely place of origin. Where the exact provenance and context can be ascertained, the majority date from the 4th and 3rd centuries B.C. and were excavated from rich tombs in the vicinity of Perugia.

The helmets from Talvon Hatzeg and Montefortino are of undoubted Italian workmanship and must therefore have passed into Celtic hands through contact of one sort or another with the northern cities of Etruria. As with the Montefortino helmets of this date, the concentration of finds around Perugia is noteworthy and may indeed reflect a local school of armourers.

FIG. 88 Distribution of Etrusco-Thracian helmets

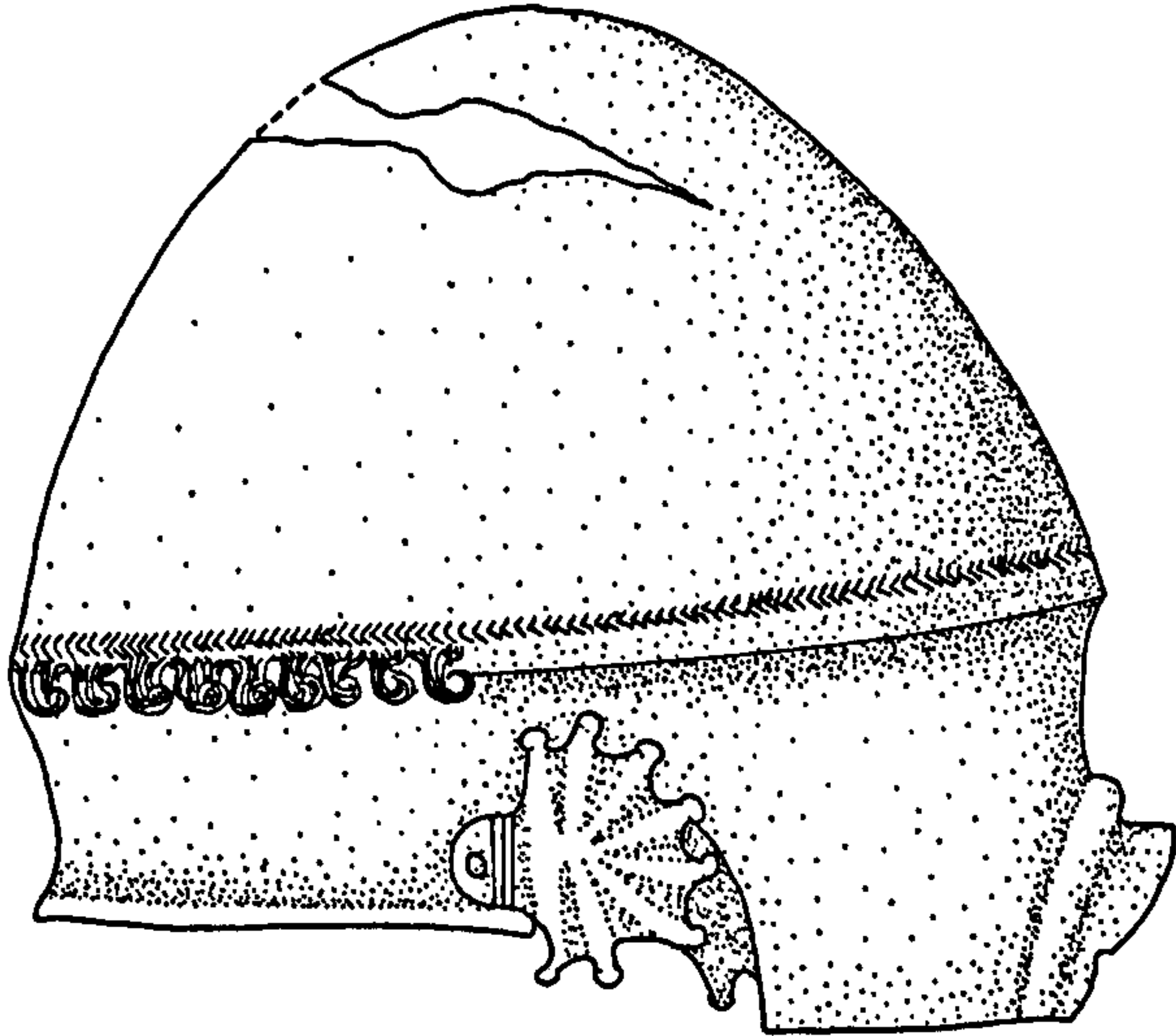


Key to distribution map. (fig. 88)

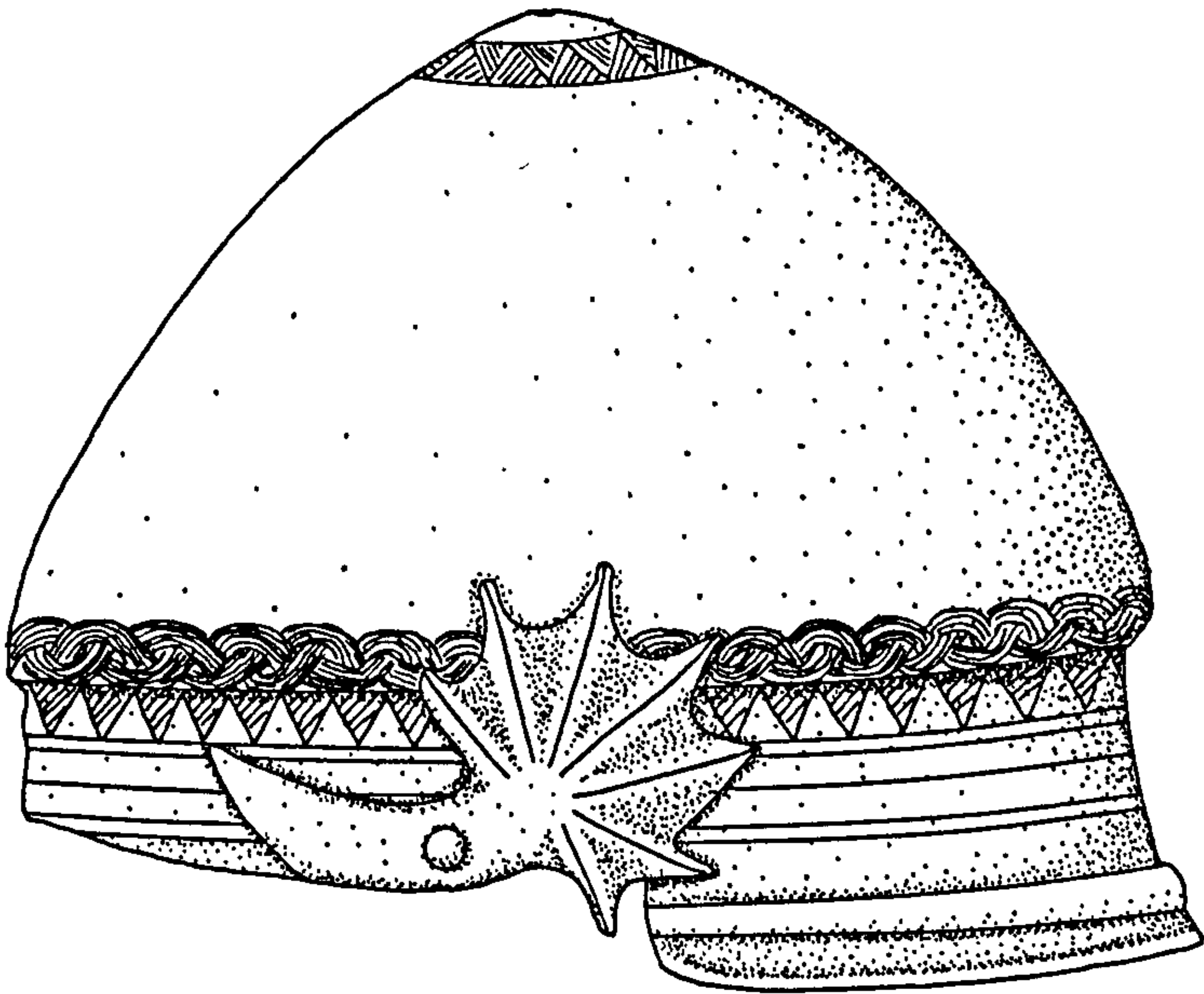
3. Orsogna Necropolis near Chieti, Abruzzi; Italy.
6. Frontone Necropolis near Perugia, Tuscany; Italy.
7. Monteluca Necropolis near Perugia, Tuscany; Italy.
8. Santa Giuliana Necropolis near Perugia, Umbria; Italy.
10. Near Perugia, Umbria; Italy.
14. A tomb at Perugia, Umbria; Italy.
18. A tomb at Vulci, Tuscany; Italy.
19. A tomb at Bomarzo Piamano, Lazio; Italy.
20. A tomb near Naples, Campania; Italy.
21. Grave 55 at Vulci, Tuscany; Italy.
23. A grave at Montefortino, Marche; Italy.
25. Talvon Hatzeg, Romania.
27. A tomb near Florence, Tuscany; Italy.

Manufacture.

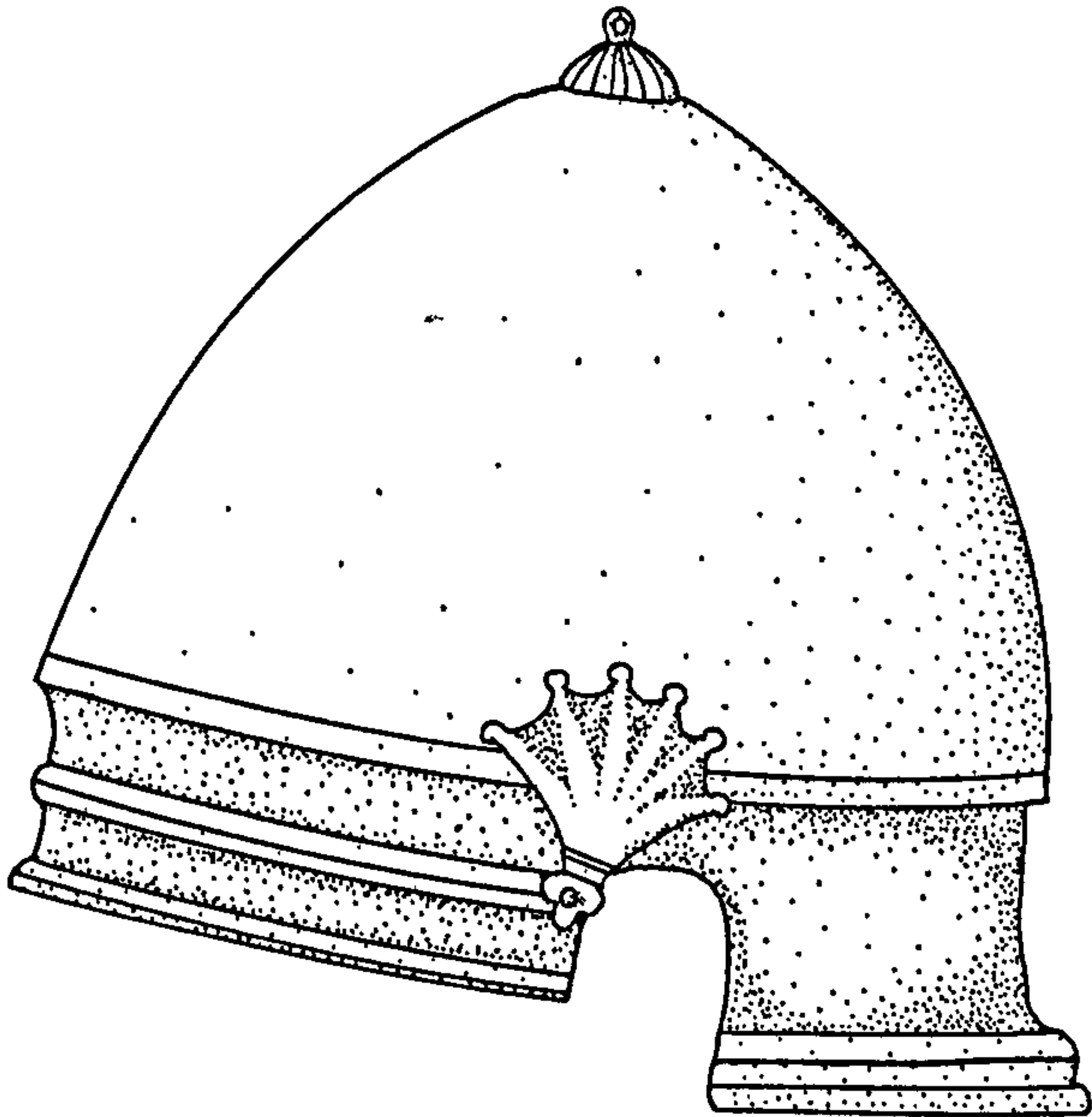
All the helmets of this form were made in the usual way, starting from a sheet or billet of bronze which was first "hollowed" or "blocked" into a hollow, then raised and planished over a variety of stakes, and finally ground and polished. However, some of these helmets have attached ear-guards, either in the form of seven-toed 'duck's feet' or discs decorated by a series of concentric circles. The zoomorphic ear-guards were, without doubt, made by the lost wax process and it is possible that the discoid type were also made in this way, although on a number the concentric circles which decorate them, most notably the ear-guards on helmet No. 21, were turned on a lathe. The ear-guards of both forms were attached by rivets to the helmet bowl. Most of the helmets have, in addition, a decorative washer and split pin crest assemblage (fig. 98:1), the washer being attached to the bowl by the split pin, the arms of which passed through a hole in the apex of the bowl and were then opened out on the inside of the helmet to stop it being withdrawn.



1



2



3

Table 2: Typology

No.	Ear-guards:				Cut-outs		Crest-fixture: Hole	No		Cheek-pieces: No	Tre		Decoration:				Neck-guard: E D	Type
	No	M	Df	Dc	Pr	No	W	&	P		O	No	Em	InL	InO	E	D	
1		*			*		*			*			*	*	*	*		IA.
2		*			*		*	*		*			*	*	*	*		IA.
3		*			*		*	*		*			*	*	*	*		IA.
4		*			*		*			*				*	*	*		IA.
5				*	*		*			*		*				*		IB.
6		*			*		*	*		*		*				*		IB.
7				*	*		*			*		*	*			*		IB.
8		*			*		*			*		*				*		IB.
9		*			*		*	*		*		*				*		IB.
10		*			*		*	*		*		*				*		IB.
11		*			*		*			*			*			M		IB.
12		*			*			*		*		*				*		IB.
13		*			*		*			*		*				*		IB.
14		*			*		*			*		*				*		IB.
15	*					*	*			*		*				*		II.
16	*					*	*			*		*				*		II.
17	*					*	*			*		*				*		III.
18		*			*		*			*		*				*		III.
19		*			*		*			*		*				*		III.
20		*			*		*			*		*				*		III.
21			*		*		*			*		*				*		III.
22		*			*		*			*		*				*		III.
23	*					*	*			*		*	*	*		*		IV.
24	*					*	*			*		*	*	*		*		IV.

No.	Ear-guards:				Cut-outs		Crest-fixture:			Cheek-pieces:			Decoration:				Neck-guard:		Type
	No	M	Df	Dc	Pr	No	Hole	W	& P	No	Tre	O	No	En	InL	InO	E	D	
25	*					*	*				*			*	*		*		IV.
26	*					*	*				*			*	*		*		IV.
27	*					*	*				*			*					V.

KEY: No- none M- missing Df- Ducks feet, Dc- Disc, Pr- present
W&P- Washer and pin, Tre- Trefoil, O- other, En- embossed,
Inl- Incised lines Ino- other incised decoration, E- everted,
D- deep

Dating Evidence

Whilst this typology forms a basis for classification it is not possible to date these helmets any closer than the beginning of the 4th century to the middle of the 3rd century B.C. and indeed, all five types would appear to be contemporaneous.

Table 3: Dating Evidence

No.	Context.	Provenance.	Suggested Date B.C.
1.	Unknown	Northern central Italy.	4th-3rd
2.	Unknown	Northern central Italy.	4th-3rd
3.	End 4th early 3rd B.C Dated by associated ceramics.	Tomb at Orsogna near Chieti, Marche, Italy.	
4.	Unknown	Egnatia, Campania, Italy.	4th-3rd
5.	Unknown	Northern central Italy.	4th-3rd
6.	4th B.C. Dated by the ceramics in the tomb.	Necropolis Frontone near Perugia, Umbria, Italy.	
7.	4th B.C. Dated by the ceramics in the tomb.	Necropolis Montelucre near Perugia, Umbria, Italy.	
8.	3rd B.C. Dated by the ceramics in the tomb.	Necropolis Santa Giuliana Perugia, Umbria, Italy.	

No.	Context.	Provenance.	Suggested Date B.C.
9.	Unknown.	North central Italy.	4th-3rd
10.	Unknown	Perugia, Umbria, Italy.	4th-3rd
11	Unknown	Italy.	4th-3rd
12.	Unknown	Italy.	4th-3rd
13.	Unknown	Italy.	4th-3rd
14	Unknown	Perugia, Umbria, Italy.	4th-3rd
15.	Unknown	Northern central Italy.	4th-3rd
16.	Unknown	Northern central Italy.	4th-3rd
17.	Unknown	Etruria, Italy.	4th-3rd
18.	4th-3rd B.C. dated by the ceramics in the tomb.	Vulci, Toscana, Italy.	
19.	Unknown	Bonarzo Pianmiano, Italy	4th-3rd
20.	Unknown	A tomb in Campania, Italy.	4th-3rd
21.	4th B.C. Dated by the ceramics in the tomb	Tomb 55, Vulci, Toscana Italy.	
22.	Unknown	North Italy.	4th-3rd
23.	Pre 283 B.C. when the Senones were driven out of Italy.	Grave at Senones cemetery at Montefortino, Marche, Italy.	
24.	Unknown	Toscana, Italy.	4th-3rd
25.	Unknown	Talvon Hatzeg, Romania.	4th-3rd
26.	Unknown	Northern central Italy.	4th-3rd
27.	Unknown	Toscana, Italy.	4th-3rd

Typology

Etrusco-Thracian helmets all demonstrate a consistently high level of skill in their manufacture. They have high, bulbous conical bowls which swell from an indented, concave brow-band. Their very close similarity to the Thracian helmets from the Greek mainland, which date to the 5th and 4th centuries B.C., a century before the earliest dated Etrusco-Thracian helmet, would indicate a probable Hellenistic prototype for these helmets. In this respect it seems surprising that the Etrusco-Thracian helmet did not evolve first in the cities of Magna Graecia where the tradition of Greek armour manufacture had been established for centuries. The answer may, however, lie in the Celtic incursions of the 4th century B.C. and the close proximity of the Celtic settlements of Northern Italy and the weapons and tactics that the Celts employed. Both the Etrusco-Thracian and the contemporary Montefortino helmets have high bowls to allow for a greater degree of padding to be inserted, and would, therefore, have given more protection from the Celtic slashing swords.

Based therefore on a comparison of their form, ear-guards, the presence or absence of ear cut-outs and the decoration and standard of the manufacture of the helmets as a whole, the Etrusco-Thracian forms may be divided into the following five types.

Type I (nos. 1 - 14.).

The overwhelming majority of this helmet form, in fact twelve, are of Type I. They are characterised by the usual brow-band and bowl form. The brow-band has cut-outs to accommodate the wearer's ears. It extends at the rear to form a slightly everted neck-guard. On helmets

of Type IA (Nos.1-4) an embossed ridge forms the junction between the brow-band and neck-guard whilst helmets of Type 1B (Nos. 5-14) have no such ridge. All type I helmets are centrally pierced at the apex of the bowl either to take a simple crest pin or a split pin finial and washer, similar to those found on Dutch '*potts*' of the 17th century.

Type II (nos. 15-16).

These helmets differ from the previous form in two important essentials; in that they have no cut-outs or provision for guards for the ears and no surviving example has an embossed ridge defining the neck-guard and brow-band. These helmets are also a good 20 mm. smaller in height than Type I.

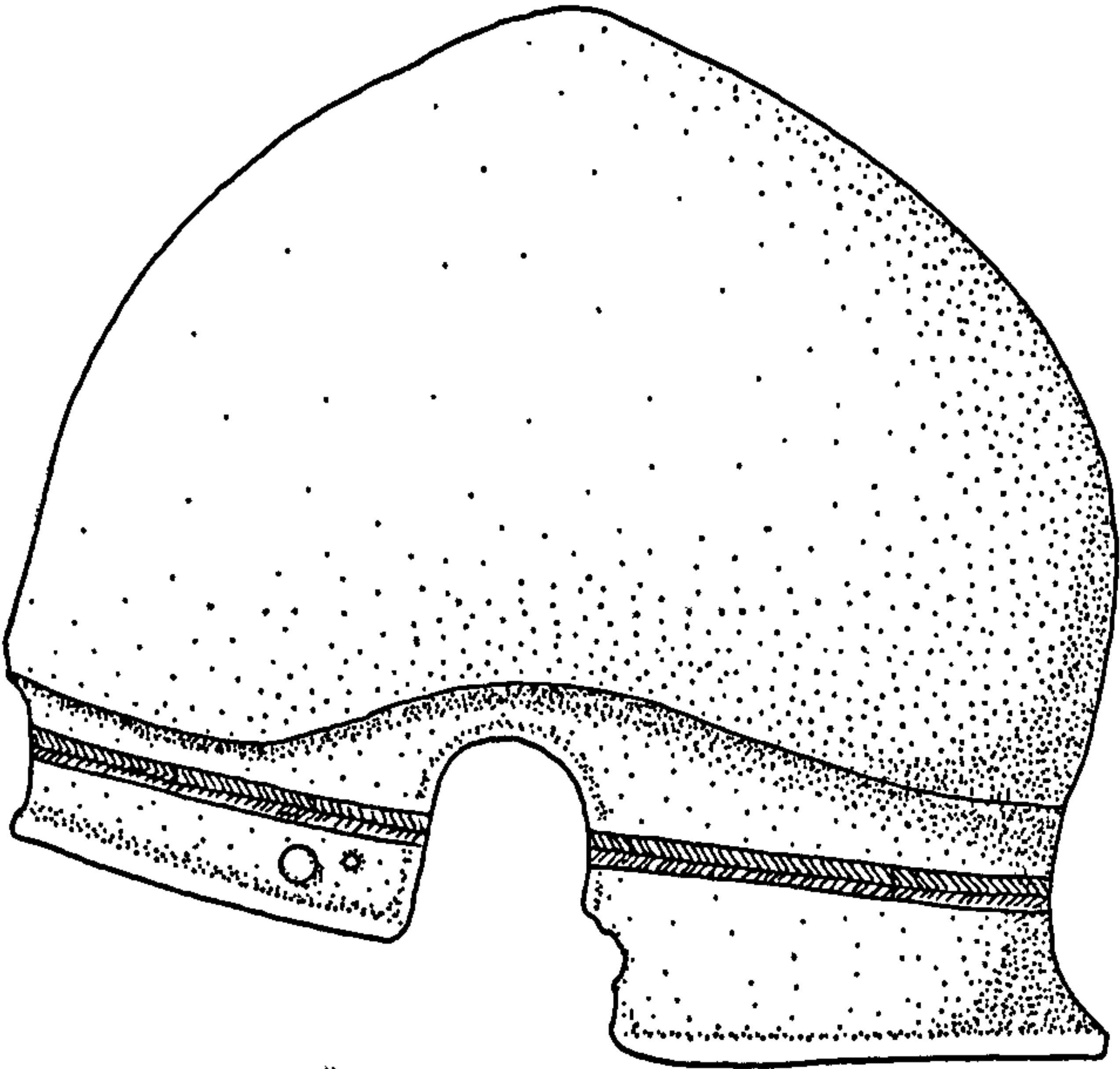
Type III (nos. 17-22).

Helmets of Type III have less bulbous bowls than the two preceding types. They have deep, plain, straight neck-guards which hug the wearer's neck and are totally devoid of decoration.

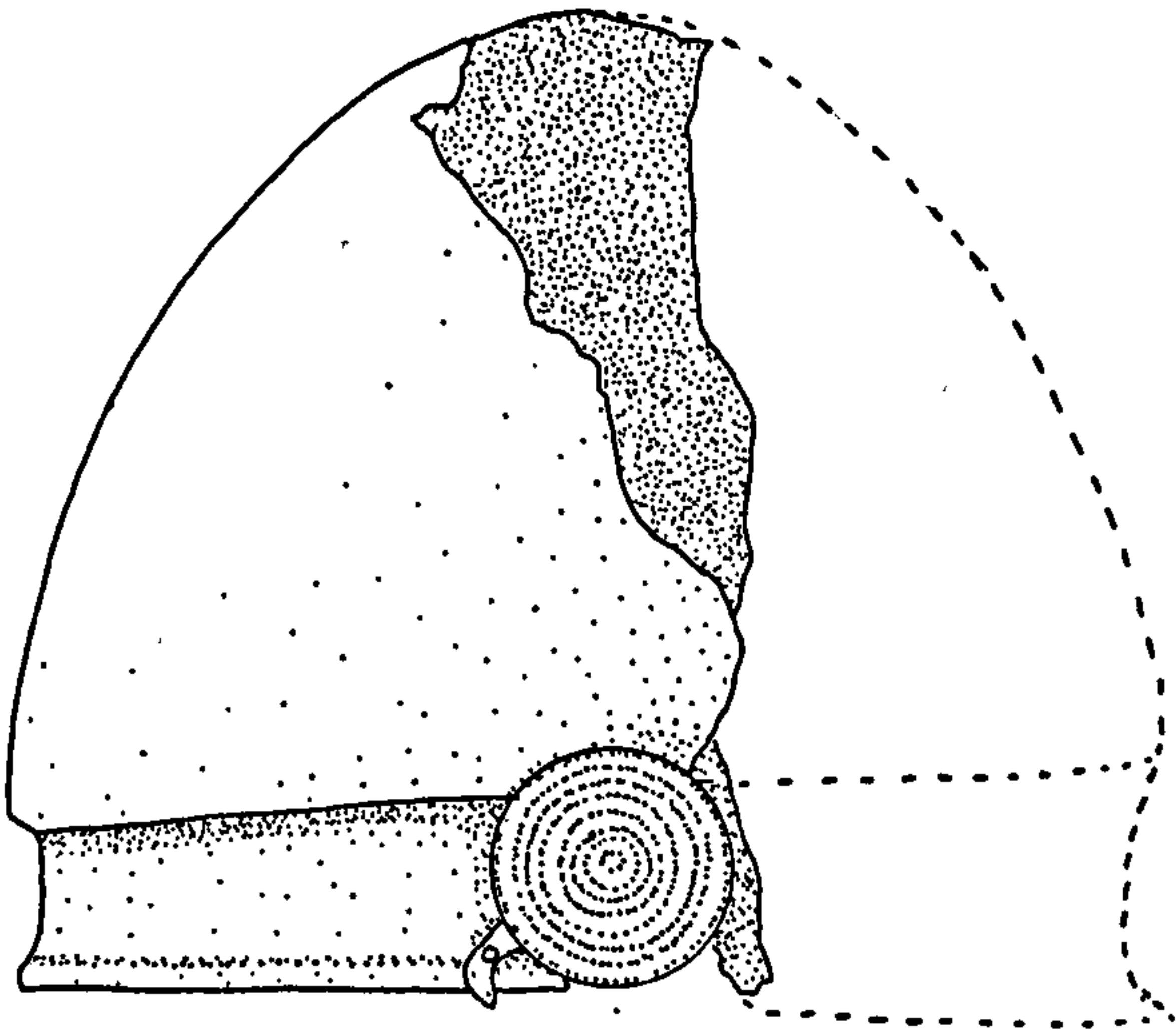
Type IV (nos. 23-6.)

These helmets are more conical and less bulbous than the preceding types. They have the usual fitted brow-band but in this case it has no cut-outs for the wearer's ears but a pronounced step downwards, just to the rear of them. The resultant slight deepening of the brow-band is strongly everted to form a short projecting neck-guard. Both helmets 23 and 25 have an embossed ridge which defines the junction between the brow-band and the neck-guard. Helmets 23, 25 and 26 are the only extant Etrusco-Thracian helmets to bear contemporary cheek-pieces.

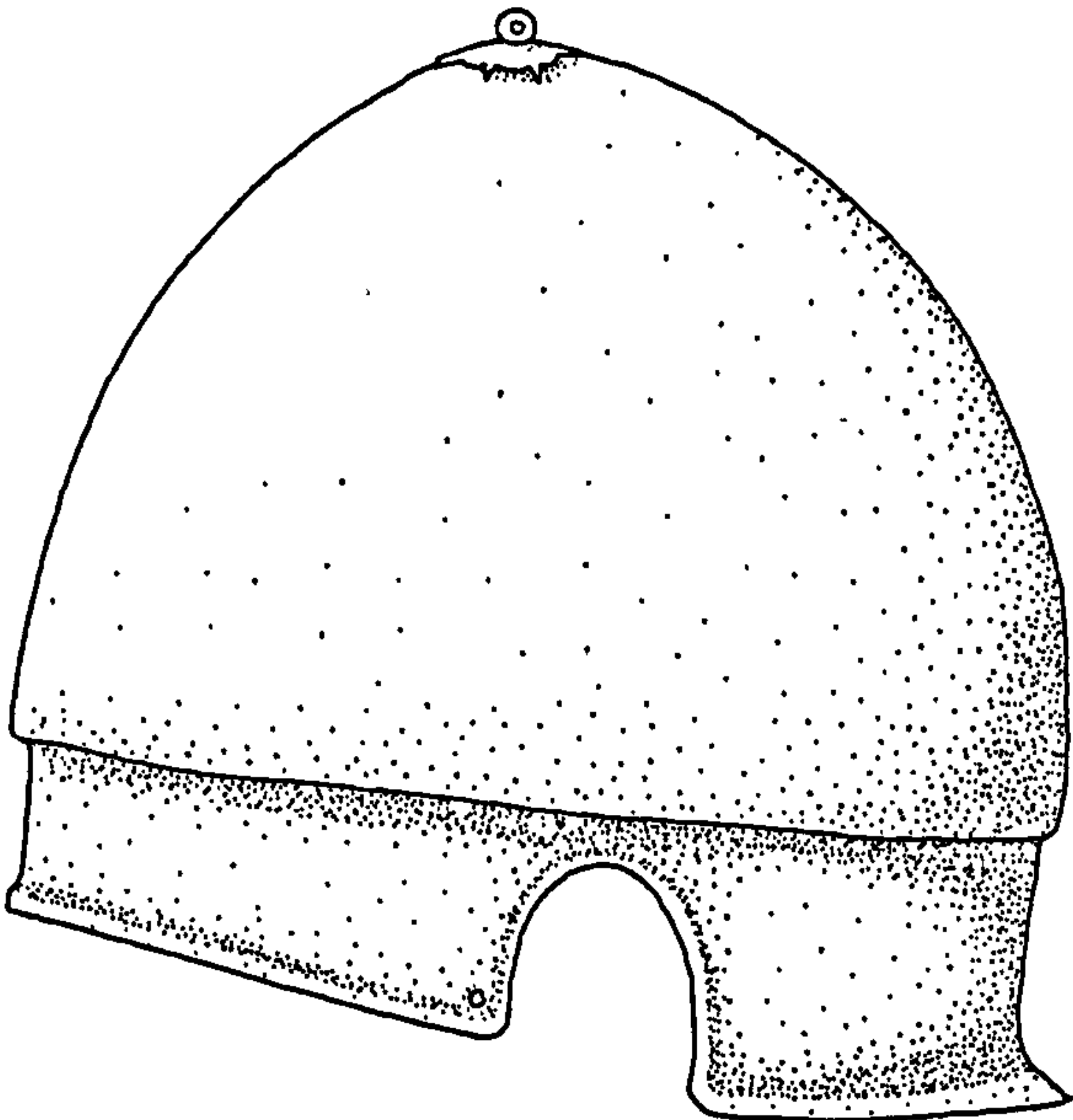
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5



6



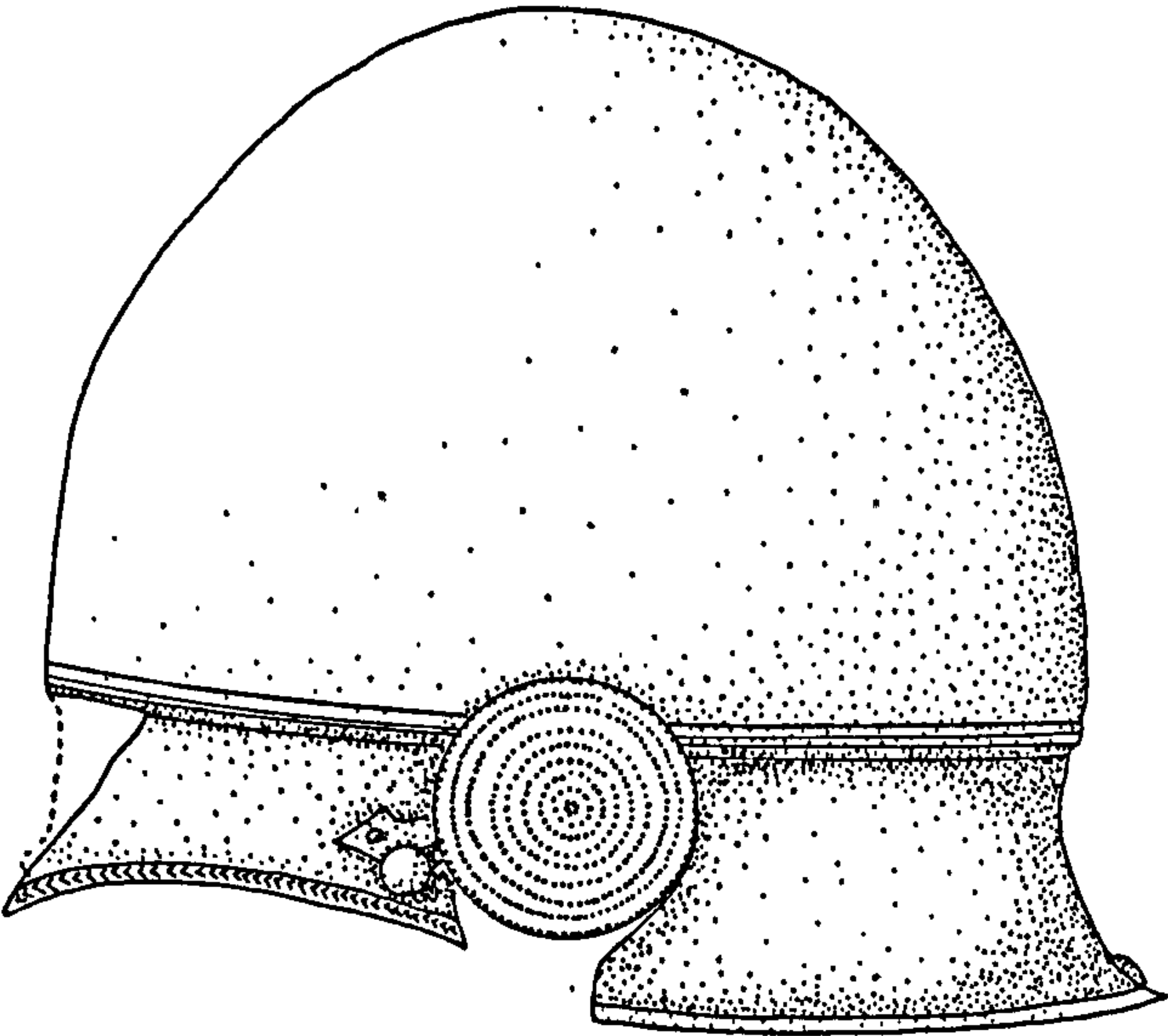
Type V (No. 27.)

Finally, Type V which is solely represented by helmet No. 27. This helmet has a low, bulbous bowl without a neck-guard or ear cut-outs. However, it is possible that this helmet, now in the Museo Archeologico in Florence, is a 19th century forgery, as it is a great deal thicker and heavier than the rest of the helmets of this form, and may in fact be a casting.

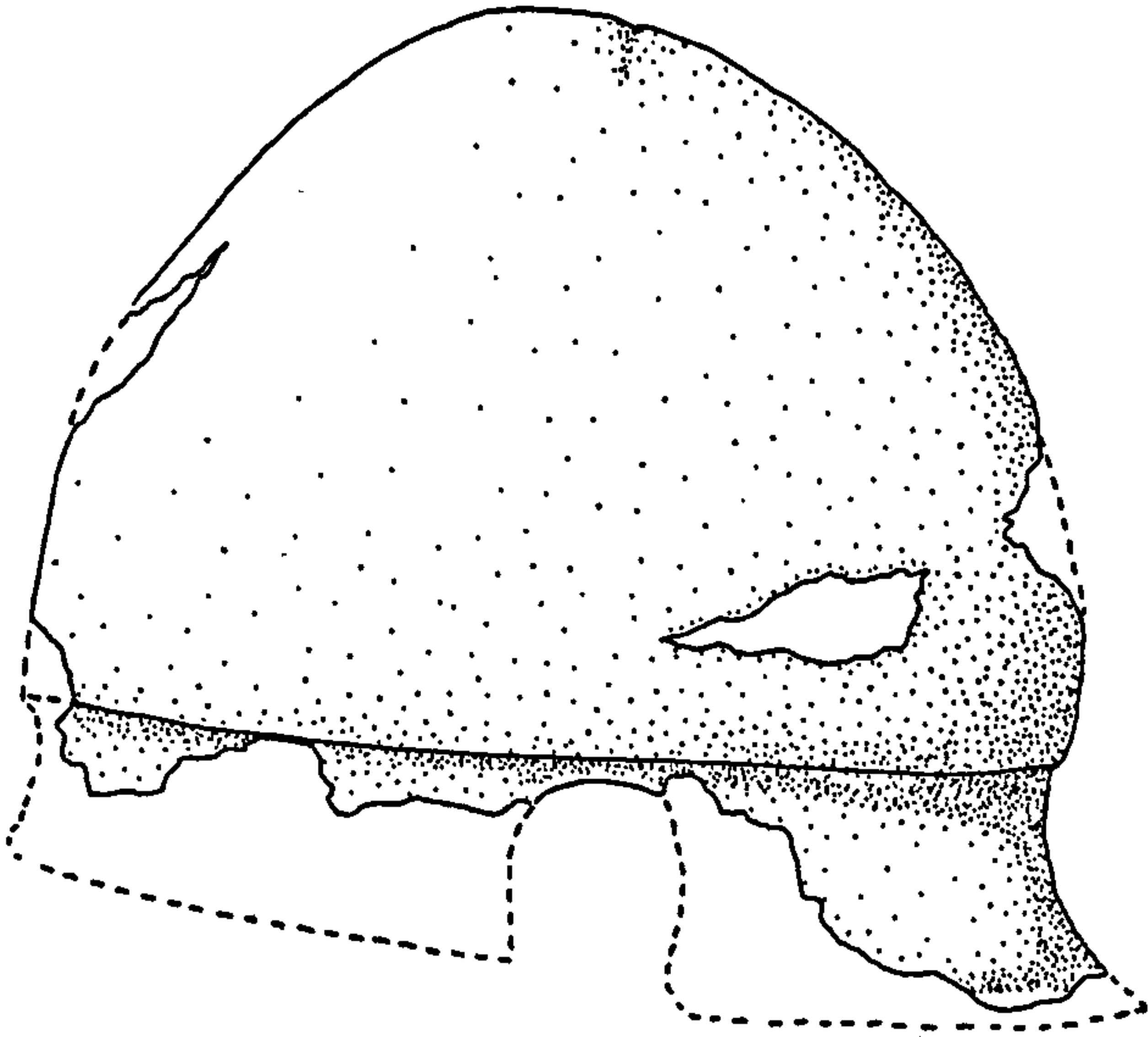
Type IA.

1. Italy. Musée des Beaux Arts Lyons (Inv. X924) Decorated: The decoration consists of applied ear-guards in the form of seven-toed ducks' feet and incised decoration around the bowl. This takes the form of a band of herring-bone decoration, from which issues stylised locks of hair. (fig. 89:1) Boucher. 1964, 105. Boucher. 1970, 111, no. 108, pl.108
2. Unprovenanced. It said to have come from Cannae. The collection of M. Le Marois. Decorated: The decoration consists of applied ear-guards in the form of seven-toed ducks' feet and incised decoration around the bowl. The incised decoration consists of a band of vandyking at the apex, a cable pattern and another band of vandyking at the junction of the brow-band and bowl. (fig. 89:2) Lantier. 1955, 228-30.
3. A tomb at Orsogna near Chieti, Marche, Italy. The Museo Nazionale Chieti (Inv. 4408.) Decorated: The decoration consists of applied ear-guards in the form of seven-toed ducks' feet and incised and fluted lines around the rim. (fig. 89:3) Cianfarani. 1970, 205.

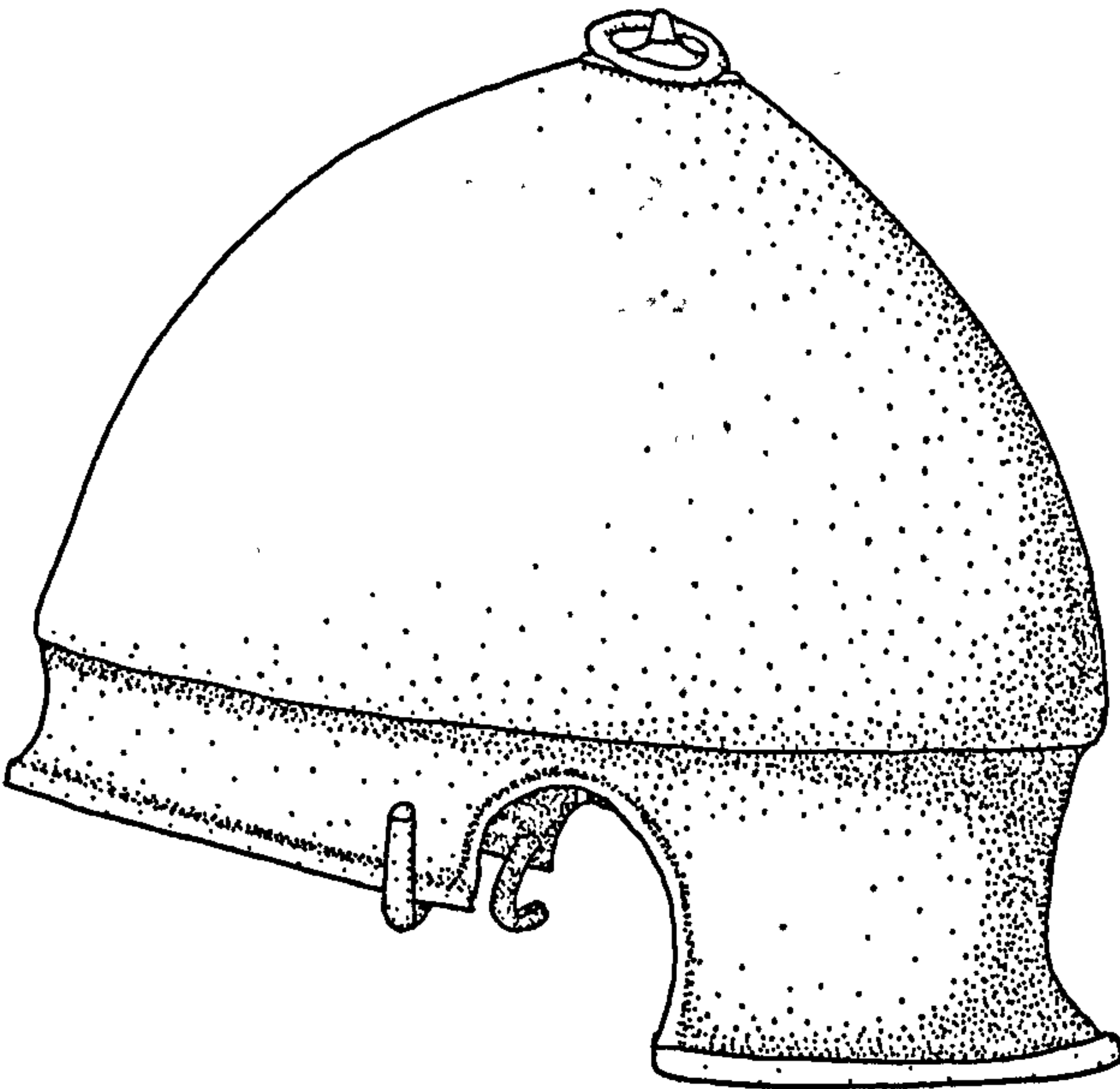
7



8



9



4. Egnatia, Campania, Italy. The Museo Nazionale Naples. Decorated: The decoration consists of a single band of incised herring-bone pattern at the junction of the brow-band and helmet bowl. (fig. 90:4) Lipperheide, von. 1896, 220, no. 331.

Type IB.

5. Unprovenanced but from Italy. Musée des Beaux Arts Lyons (Inv. X 924.) Decorated: The decoration consists of applied ear-guards in the form of discs embellished with incised concentric circles. (fig. 90:5) Boucher. 1964, 104. Boucher. 1970, 111, no. 107, pl.107.

6. The Necropolis del Frontone near Perugia, Umbria, Italy. Museo Nazionale Perugia (Inv. 358 B1251.) Undecorated. (fig. 90:6) Unpublished.

7. Monteluca near Perugia, Umbria, Italy. Museo Nazionale Perugia (Inv. 328 B1323.) Decorated: The decoration consists of applied ear-guards in the form of discs chiselled with concentric circle and double incised lines at the junction between the brow-band and bowl. (fig. 91:7) Unpublished.

8. The necropolis of Santa Giuliana near Perugia, Umbria, Italy. Museo Nazionale Perugia (Inv. SG./32/1.). Undecorated. (fig.91:8) Unpublished.

9. North Italy. The Antiken Museum Berlin. (Inv.L 37.). Undecorated. (fig. 91:9) Lipperheide, von. 1896, 223, 251.

10. Perugia, Umbria, Italy. The Antiken Museum Berlin (Inv. L 36.). Decorated: the decoration consists of double incised lines at the junction of the bowl and brow-band and a pair of double incised lines at the rim. (fig. 92:10) Lipperheide, von. 1896, 222, 252.

11. Unprovenanced. The Museo Arqueologico Madrid (Inv. MAN. 7359.).
Decorated: The decoration consists of a pair of double incised lines
at the junction of the brow-band and bowl. (fig. 92:11) Blazquez.
1957, 146.

12. Unprovenanced. The Antiken Museum Berlin (Inv. L 38.).
Undecorated. (fig. 92:12) Lipperheide, von. 1896, 224.

13. Unprovenanced. The Antiken Museum Berlin (Inv. Misc 10395.).
Undecorated. (fig. 93:13) Lipperheide, von. 1896, 502.

14. Perugia, Umbria, Italy. The Antiken Museum Berlin (Inv. L 69.).
Decorated: The decoration consists of an incised band of vandyking
surmounting a cable around the apex of the bowl. (fig. 93:14)
Lipperheide, von. 1896, 503.

Type II.

15. North Italy. The Museo Gregoriano Etrusco in the Vatican (Inv.
A47.). Undecorated. (fig. 93:15) Beazley and Magi. 1941, 222,
no.108, pl. 60..

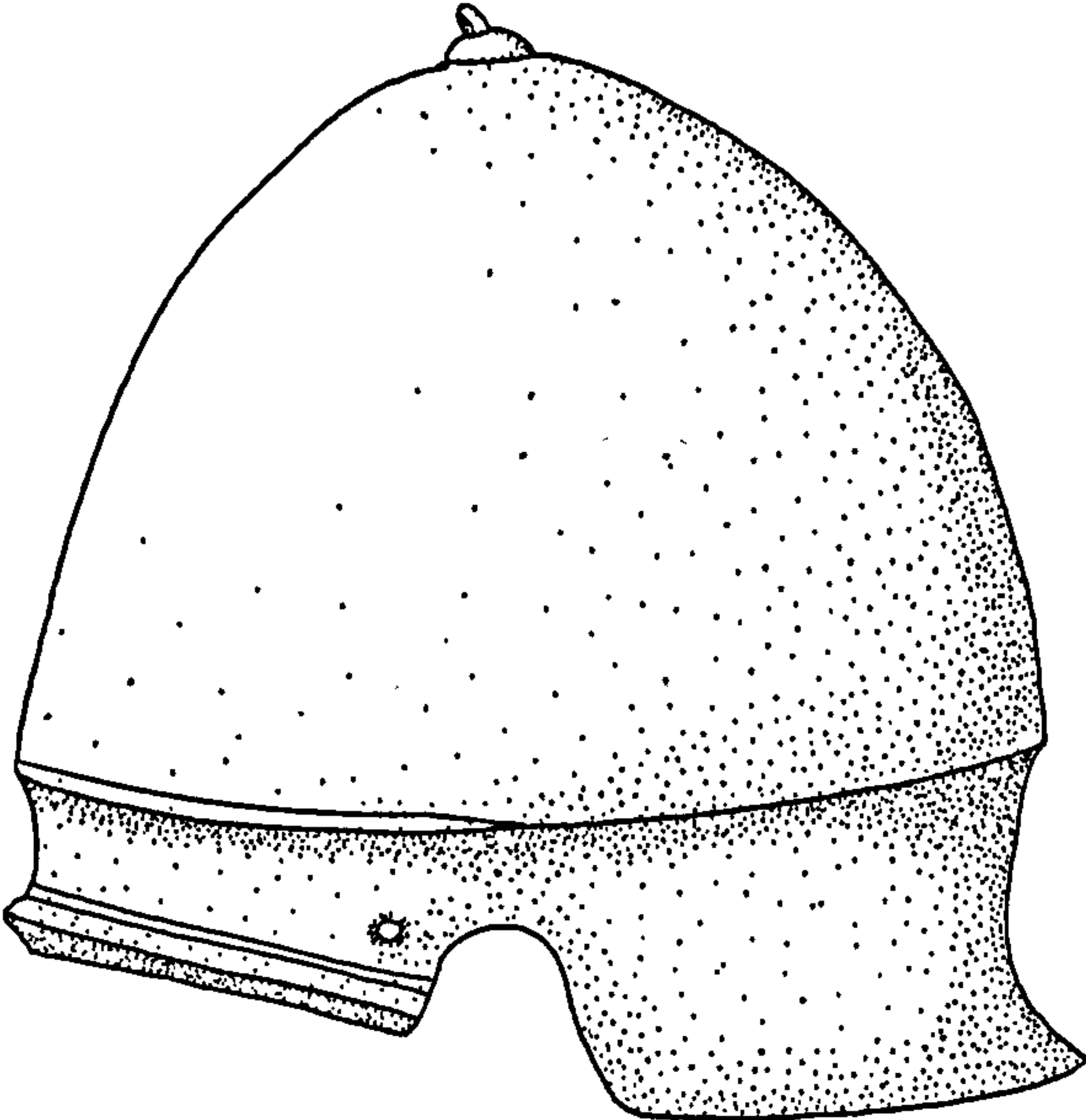
16. North Italy. The Museo Gregoriano Etrusco in the Vatican (Inv.
A43.). Undecorated. (fig. 94:16) Beazley and Magi. 1941, 222, no.
109, pl.60.

Type III.

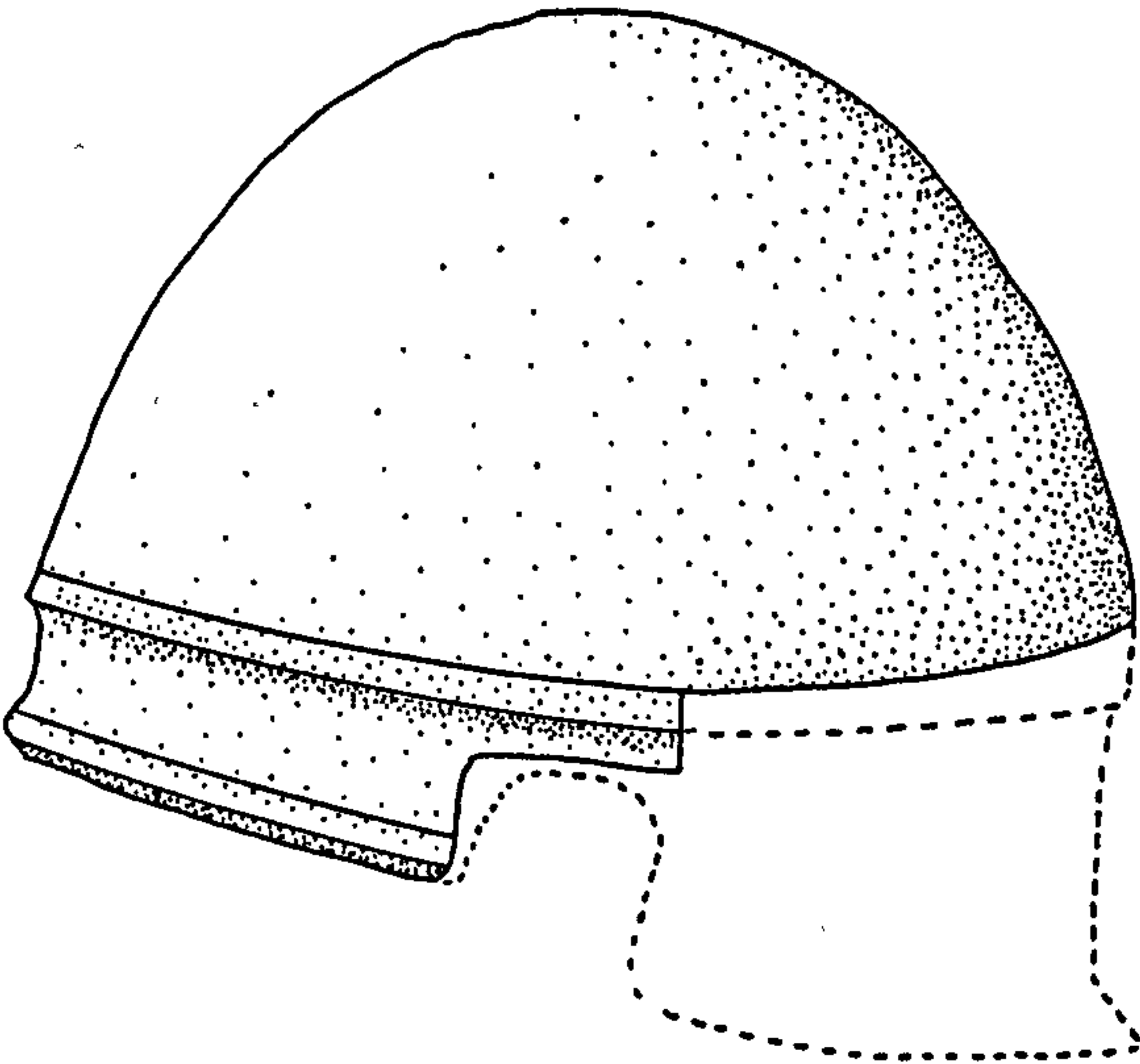
17. Toscana, Italy. The Badisches Landesmuseum Karlsruhe (Inv.
F433.). Undecorated. (fig. 94:17) Schumacher. 1890, 134-5, no. 701,
pl. XIII .9.

18. Vulci, Toscana, Italy. The British Museum (Inv. 2721
1837.6.9.91.). Undecorated. (fig.94:18) Walters. 1899, 342,
No.2721.

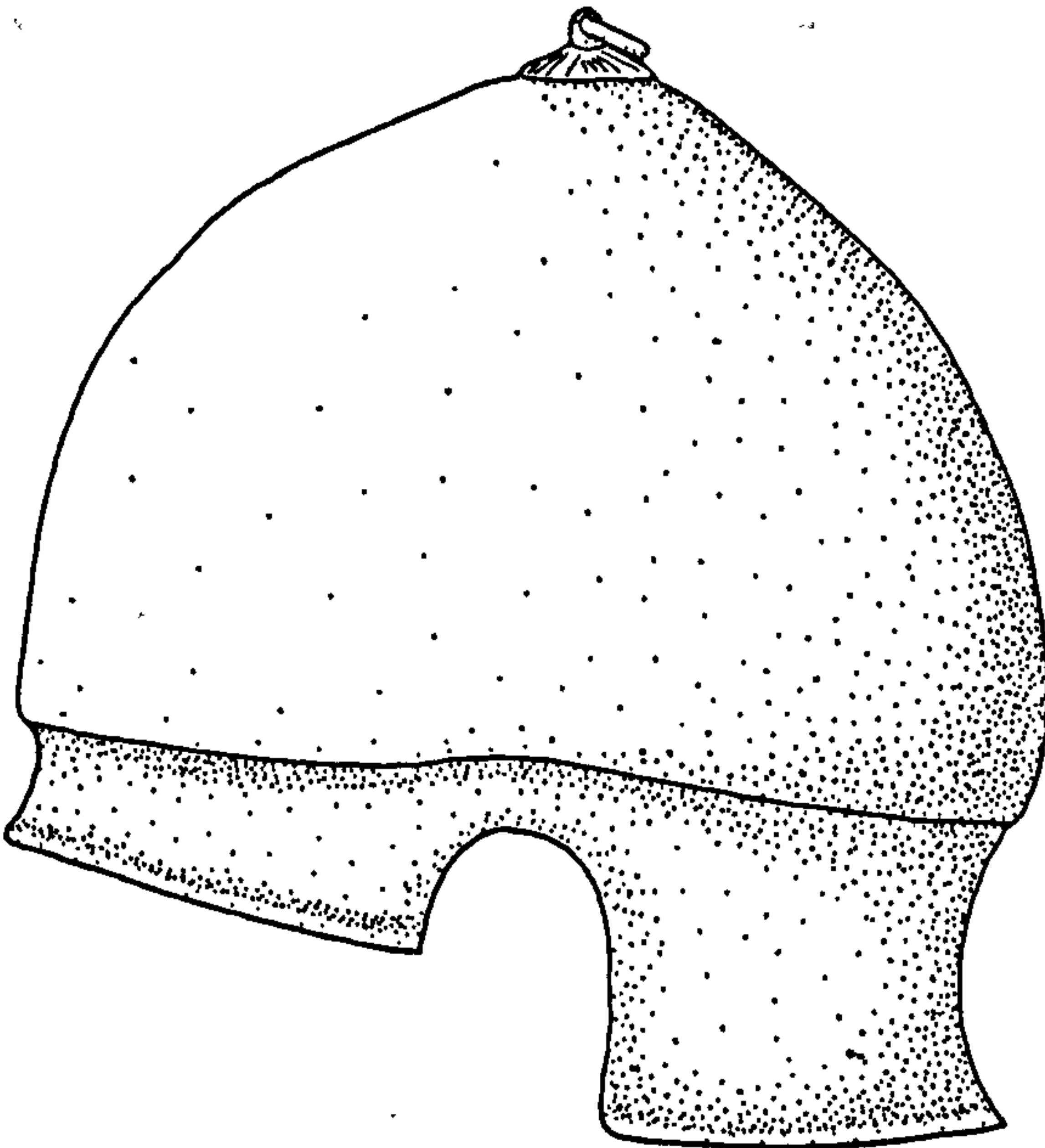
10



11



12



19. Bomarzo Piamiano, Lazio, Italy. The Museo Gregoriano Etrusco in the Vatican (Inv. 12.307.). Undecorated. (fig. 95:19) Unpublished.
20. Campania, Italy. The Musée de L'Armée Paris (Inv. E.9.). Undecorated. (fig.95:20) Lipperheide, von. 1896, 221, no.467. Mohen. 1970, 220-22, pl.9.
21. Grave 55 , Vulci, Toscana, Italy. The Villa Giulia Rome (Inv. 63-688.). Decorated: The decoration consists of applied circular ear-guards chiselled with concentric circles. (fig. 95:21) Unpublished.
22. Unprovenanced. The Antiken Museum Berlin (Inv. Misc 10396.). Undecorated. (fig. 96:22) Lipperheide, von. 1896, 505.

Type IV.

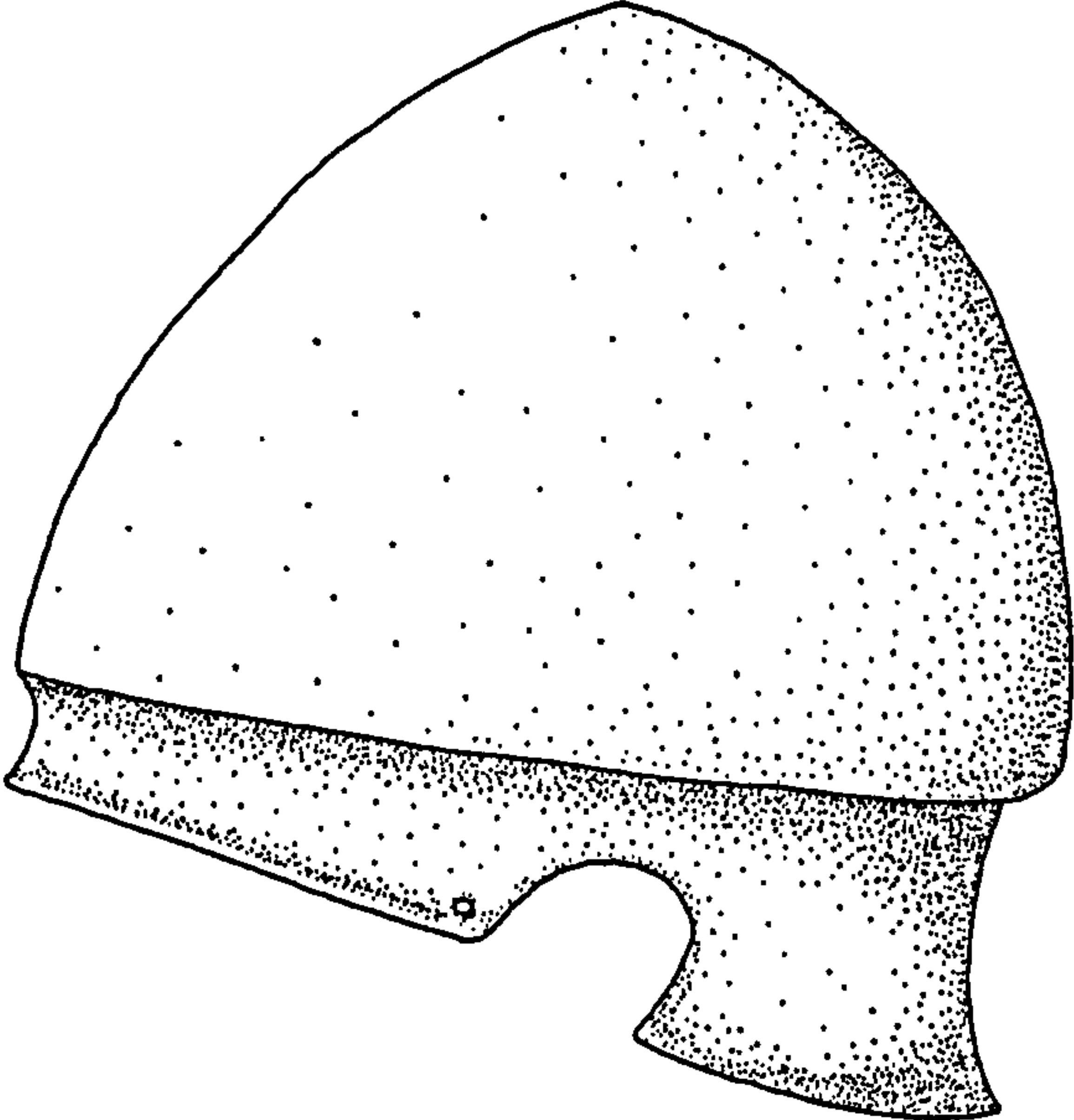
23. The Celtic cemetery at Montefortino, Marche, Italy. The Museo Nazionale Ancona. Undecorated. (fig. 96:23) Brizio. 1899, 673, pl. 6,3.
24. Toscana, Italy. The Antiken Museum Berlin (Inv. L 39.). Decorated: The decoration consists of a double band of incised herring-bone decoration around the base of the helmet. (fig.96:24) Neugebauer. 1924, 12.
25. Talvon Hatzeg (Siebenbürgen) Romania. The Naturhistorisches Museum Vienna (Inv. S.65.). Decorated: The decoration consists of an incised band of herring-bone pattern around the base and a pair of double incised lines at the junction of the bowl and brow-band. (fig. 97:25) Moreau. 1958, pl. 10.
26. Central Italy. Museo Poldi Pezzoli, Milan (Inv. 2419). Undecorated. (fig. 97:26) Cavalieri-Manasse 1985, 38.

Type V.

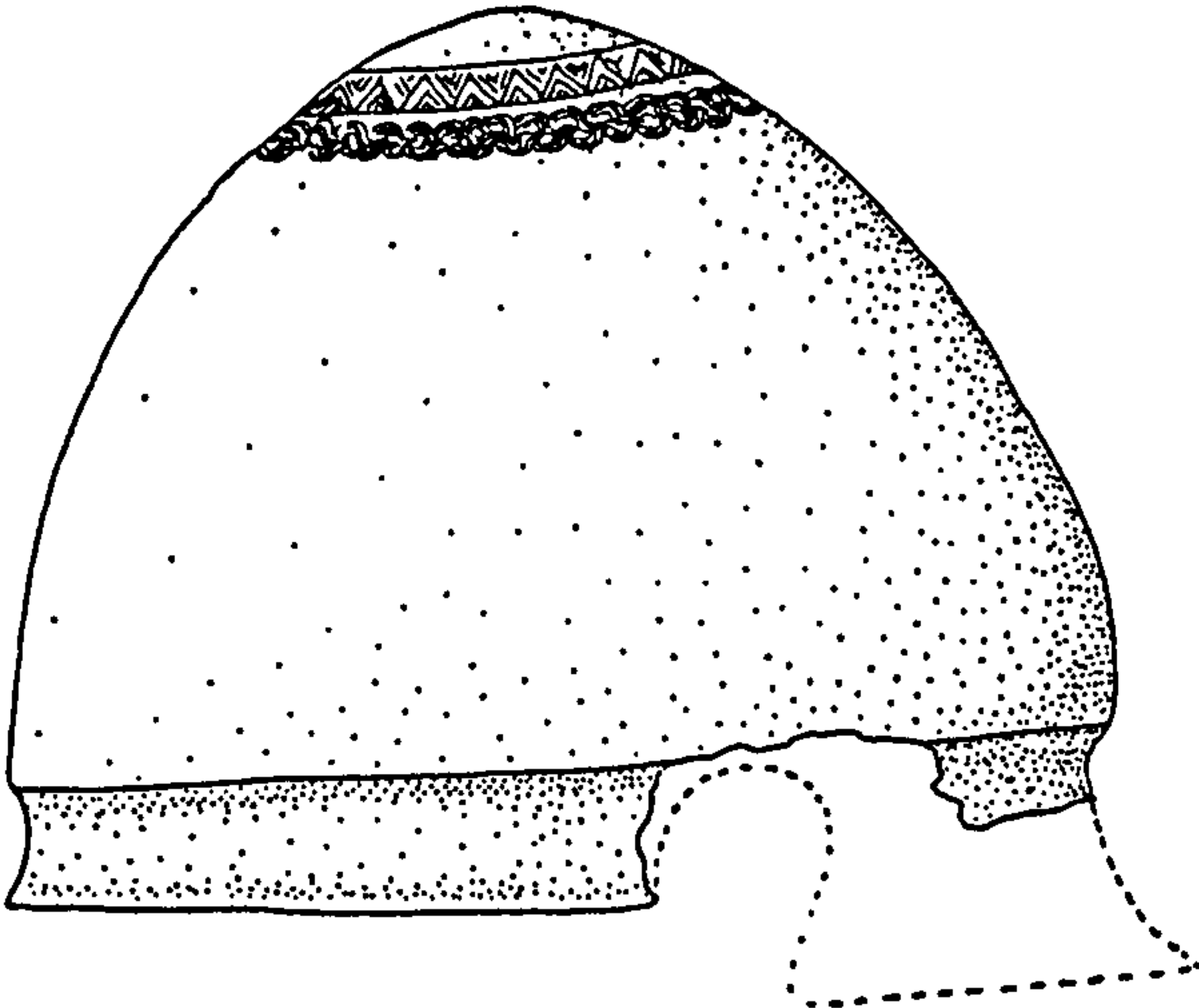
27. Toscana, Italy. The Museo Archeologico Florence (Inv. 82318.).
Undecorated. (fig. 97:27) Unpublished.

Crest-fixtures

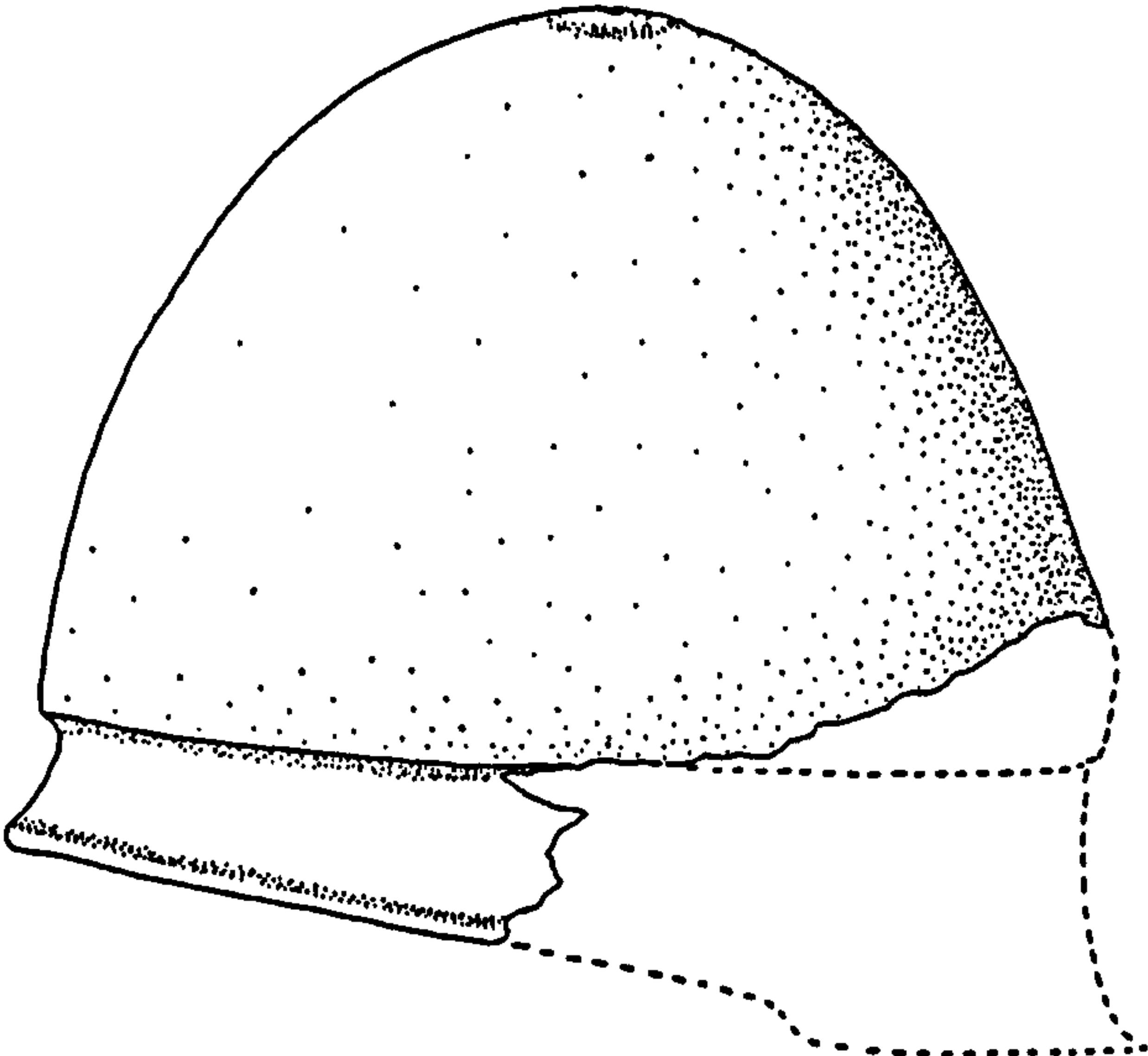
All the known Etrusco-Thracian helmets are pierced centrally at the apex of the bowl. Helmets Nos. 3 and 10, from the Necropoli at Orsogna and from Perugia respectively, No. 6 from the Necropolis at Frontone near Perugia and No. 9 and No. 12 all have circular washers at their apex, attached by a split and pierced pin, much like a modern cotter pin, which passes through the washer and the hole in the bowl. This pin is then splayed inside the helmet to stop it being withdrawn (fig. 98:1). These washers take three forms, two of which are hemispherical, either plain and undecorated as on helmets Nos. 9 and 10, or decorated as on helmet No. 3. The third type, represented by the helmet from Frontone (No. 6), is shaped like an eight-pointed star, the interstices of which are filled with a cusp. Helmets No. 9 and No. 12, which were found in northern central Italy in the 19th century and are now in the Staatliche Museen, Berlin, have a split bronze ring inserted through the pierced top of their crest pins; it may be that this was a common practice or that it is a 19th century addition. However, the practice of using a pierced pin and loop crest-fixture is shown on Greek vase paintings of the 5th and 4th centuries B.C. and coincidentally appears on helmets of the Thracian type (e.g. on a figure of a Greek hoplite depicted on a volute krater, by the Niobid painter, found at Gela and now in the Museo Nazionale Palermo, Inv. No. G.1283.) (fig. 98:2).



13



14



15

Whether a separate ring was used or not, the crest must have been of the 'flowing mane' variety (probably of dyed horsehair) as this is the crest commonly used on Montefortino helmets and indeed, the use of a pin in this manner is not greatly different to the crest-fixtures of the Montefortino helmet, but since the Etrusco-Thracian helmet lacks a lead-filled crest-knob, into which a straight split pin could be pushed, the splaying of the pin ends was a practical alternative. On the other helmets of Types 1 and 2, most especially Nos. 2, 4, 7 and 16, there are circular marks in the patination at the apex of the bowl around a central hole indicating that these, too, once had crest-washers. The only exception to this form of crest-fixture appears on helmet No. 19, now in the Museo Gregoriano Etrusco, which has a tubular feather holder which terminates in a circular flange by which it is riveted to the right hand side of the bowl. On the other side there is a circular mark in the patination and four rivet holes marking the position of the left hand tube. The helmet itself is much damaged and flattened so it is not altogether surprising that it is missing. This feature is unusual on northern and central Italian products but is by no means unique.

Cheek-pieces

Only three Etrusco-Thracian helmets have cheek-pieces that are contemporary with their use and manufacture. These are helmets; No.23 now in the Museo Nazionale, Ancona, No.25, now in the Naturhistorisches Museum, Vienna and No. 26; now in the Museo Poldi Pezzoli, Milan. The cheek-pieces, in all three cases, are of a trefoil form, most commonly found on Montefortino helmets of the 3rd century B.C. except that in this case the hinges of these Etrusco-

Thracian helmets are attached to the bowl by a single dome-headed rivet instead of the more customary two. The use of a single rivet was a common Celtic practice and can be seen on the Celtic bronze and iron Montefortino helmets from Filtrano and Montefortino (Brizio 1899 and Baumgärtel 1937 ; Schaaff 1974 *passim*). It may be that the cheek-pieces on these helmets are indeed a contemporary Celtic addition, most especially since helmet No. 23 was found in the Gallic cemetery at Montefortino and helmet No. 25 in the Celtic heartland in Romania.

The only other helmet that has cheek-pieces is helmet 27. These are of such an unlikely and impractical form (fig. 97:27) that, coupled with the difference in patina between them and the helmet, they may be modern restorations, probably dating to the 19th century. Indeed, this whole helmet is somewhat suspect as it is both thick and heavy, and has the appearance of a casting. However, only analysis would settle this question.

Chin-strap fixtures.

The majority of Etrusco-Thracian helmets have no provision for cheek-pieces and some have no provision for a chin-strap; in such cases the chin-strap was presumably attached to the helmet lining. However, most were provided with a single hole in front of each ear cut-out. On helmets 4 and 7 these holes are filled with large domed headed studs, these are presumably for the attachment of the chin-strap. The chin-strap would need to be split for part of its length towards each end, to accommodate these studs. In contrast helmets Nos. 9 and 22, both now in the Staatliche Museen Berlin have a bronze hook-like fixture riveted in front of their ear cut-outs, presumably for

the attachment of a chin-strap in a similar manner to helmets 4 and 7. This is borne out by the fact that the hooks on helmet 22 end in similar domed headed buttons. On the remaining helmets it is likely that the rivet holes were for one of these two forms of fitment or to take a simple ring fixing for the chin-strap.

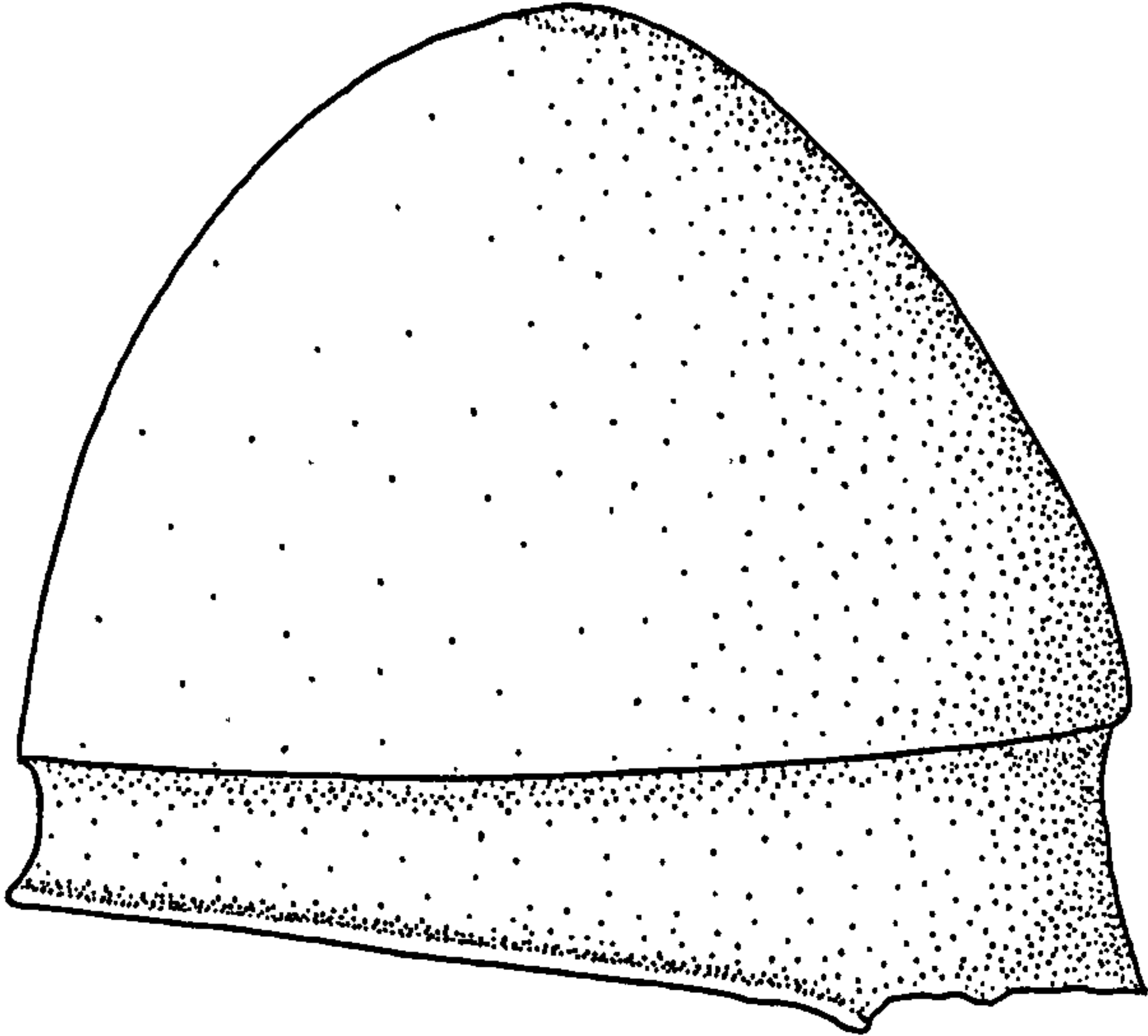
At the base of the neck-guards of a number of helmets (Nos. 7 and 22.) is a domed headed rivet. It is clear that this rivet must have served an important function with regard to the chin-strap. In this case the chin-strap would probably have consisted of a single length of leather riveted at its centre to the inside face of the neck-guard, each end then passing under the wearer's chin and fastening over either the domed headed stud or hook on the opposite side of the helmet (see fig. 98:3.)

Decoration

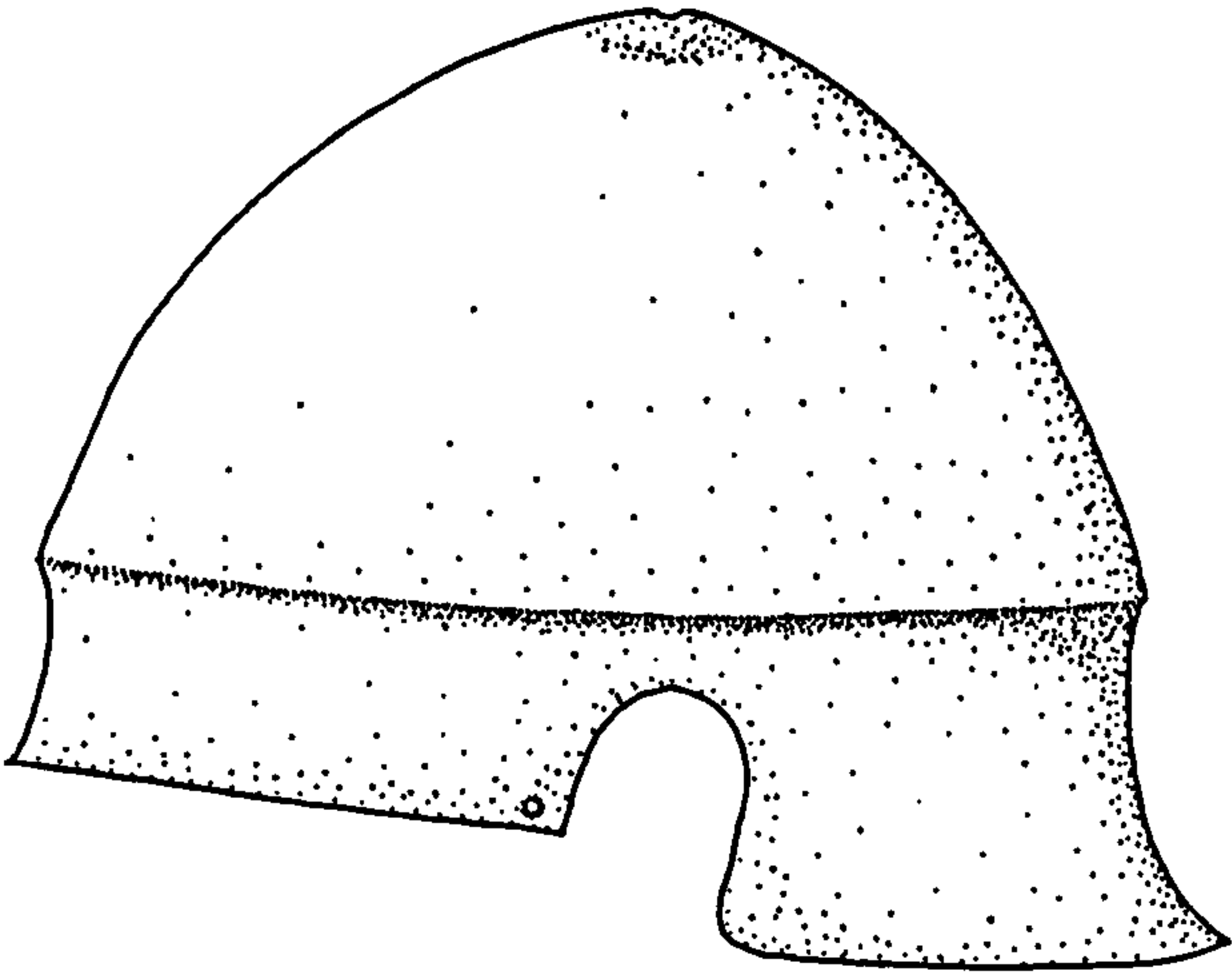
All the helmets of this form have or had decoration of one sort or another, either embossed, engraved, incised or applied. The decoration is limited to three distinct areas: the crest-washer, the ear-guards, and the rim and brow-band; and in two cases only, helmets No. 2 and No. 14, the decoration extends to the bowl of the helmet itself. Applied decoration occurs in two functional forms: either as ear-guards or crest-washers. The ear-guards are of two varieties, the first of which has all the appearance of a seven-toed duck's web (helmets Nos. 1, 2 and 3); the second variety are in the form of discs embellished with deeply incised concentric circles and are to be found on helmets Nos. 5, 7, 17 and 21. The applied crest-washers have been dealt with above (see sections on crest-fixtures) however, they take three forms two of which are hemispherical and the third in

the form of an eight-pointed star. The fluted washer that occurs on helmet No. 3 from Orsogna is cast, as are all the ear-guards.

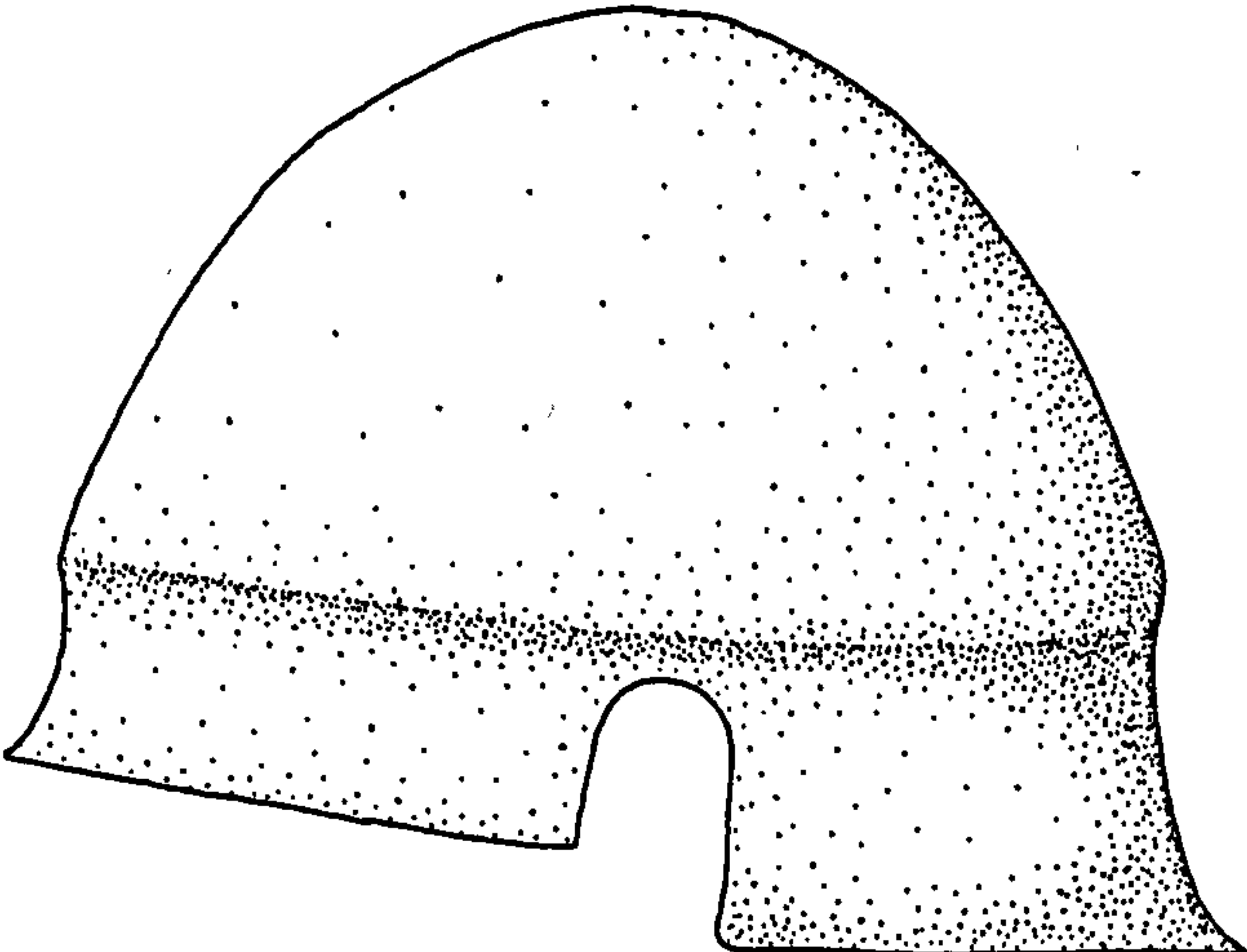
While just over a quarter of the Etrusco-Thracian helmets (Nos. 1, 2, 3, 5, 7, 17 and 21.) have ear-guards and a fifth have crest-washers and pins extant, all the helmets are pierced by a single hole at the apex of the bowl and on either side of the brow-band, so that it is probably that these fixtures were much more common. Only eleven helmets have decoration of another form (Helmets Nos. 1, 2, 3, 4, 7, 10, 11, 14, 22, 23, 24 and 25). This consists of embossed bands and incised decorative motifs of lesser or greater complexity. Helmets Nos. 1, 2, 3, 4, 23 and 25 all have an embossed ridge which forms the junction between the neck-guard and the brow-band; helmet No. 3, however, also has an embossed ridge around the front of the brow-band which mirrors the ridge at the rear. These ridges and the bottom edge of the brow-band, and the base of the helmet bowl itself, are decorated by simple chiselled lines. Helmet No. 4, from Egnatia, is decorated by a simple band of incised herring-bone pattern which encircles the brow-band. This form of decoration may, in fact, be derived from a stylised wreath motif. This decoration is also to be found on helmets Nos. 1, 7, 24 and 25. On helmet No. 1 it forms the junction between the brow-band and the bowl of the helmet. From this springs incised lines representing stylised hair. On helmet No. 7 it decorates the rim of the helmet in front of the ear cut-outs the neck-guard of this helmet is decorated by a single incised line and the junction between the bowl and the brow-band is decorated with three incised lines.



16



17

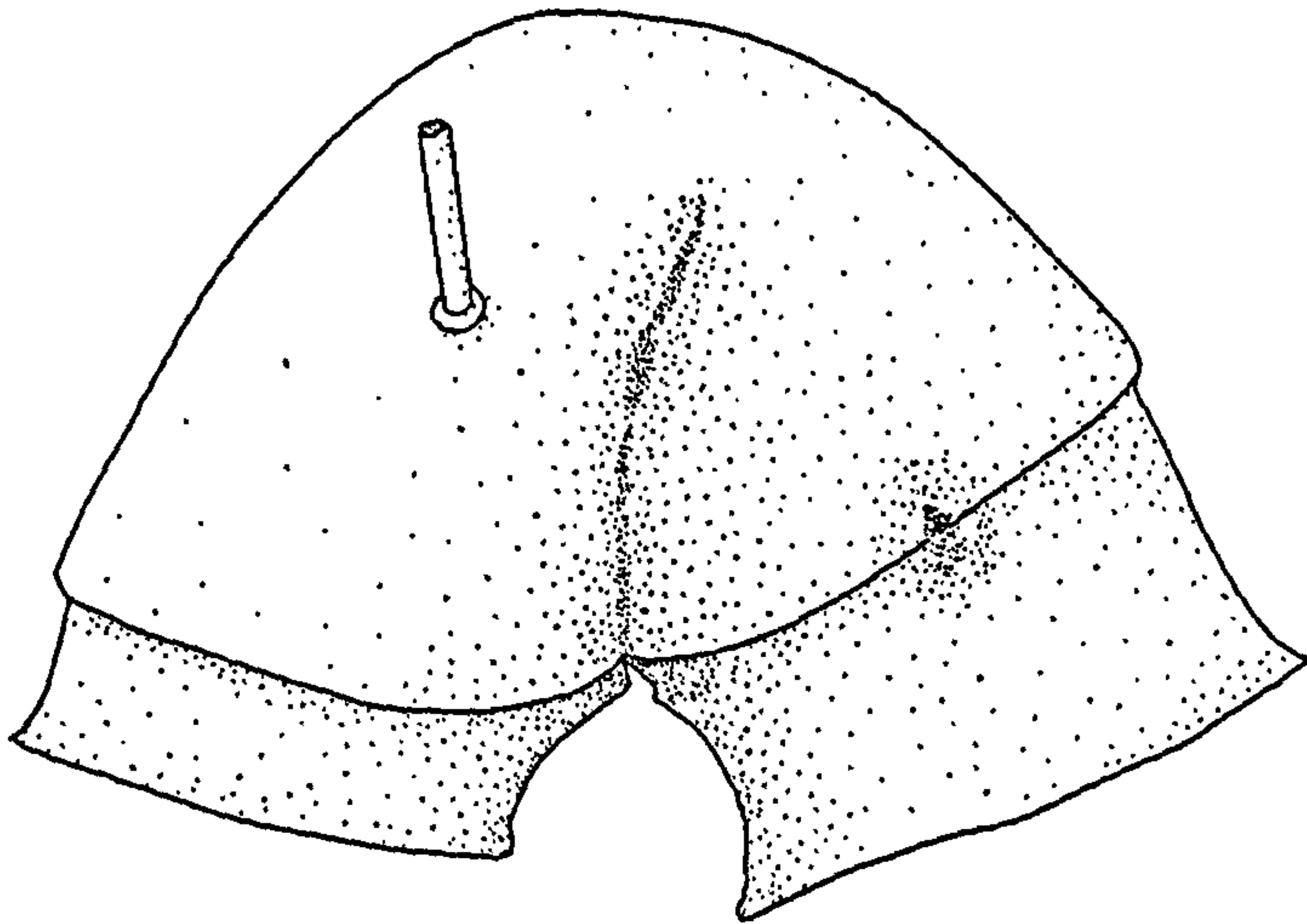


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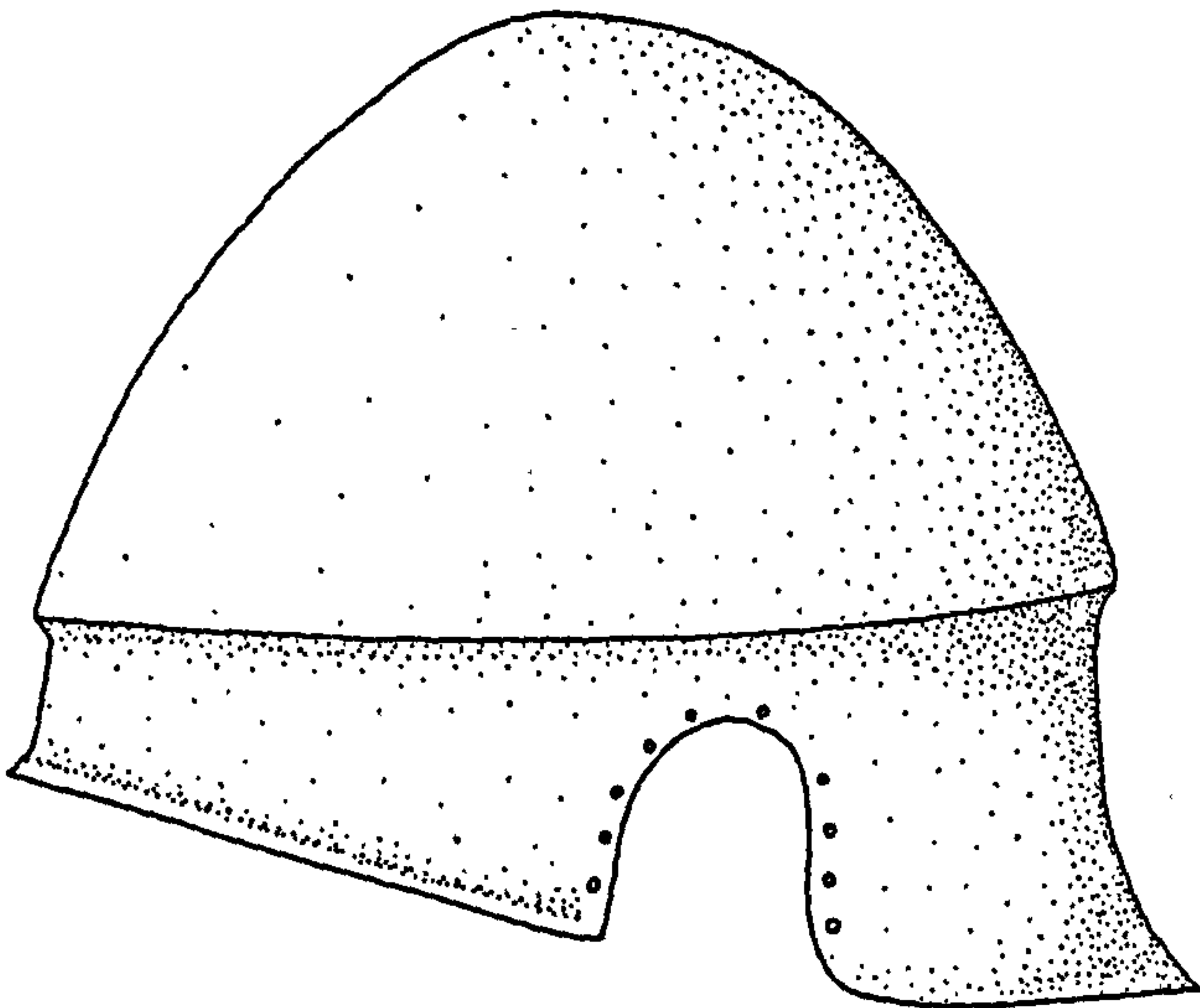
On helmet No. 25, however, the herring-bone decoration occurs at the base of the brim and the junction between bowl and brow-band. The brow-band itself is decorated by two groups of double incised lines.

Helmets Nos. 10 and 11 are simply decorated by groups of incised horizontal lines. In each case the decoration is limited to the brim and the junction between the brow-band and the bowl, forward of the ear cut-outs. On helmet 10, from Perugia, the decoration consists of double incised lines and in the case of helmet 11, now in the Museo Arqueologico, Madrid, it is decorated by two groups of three parallel incised lines.

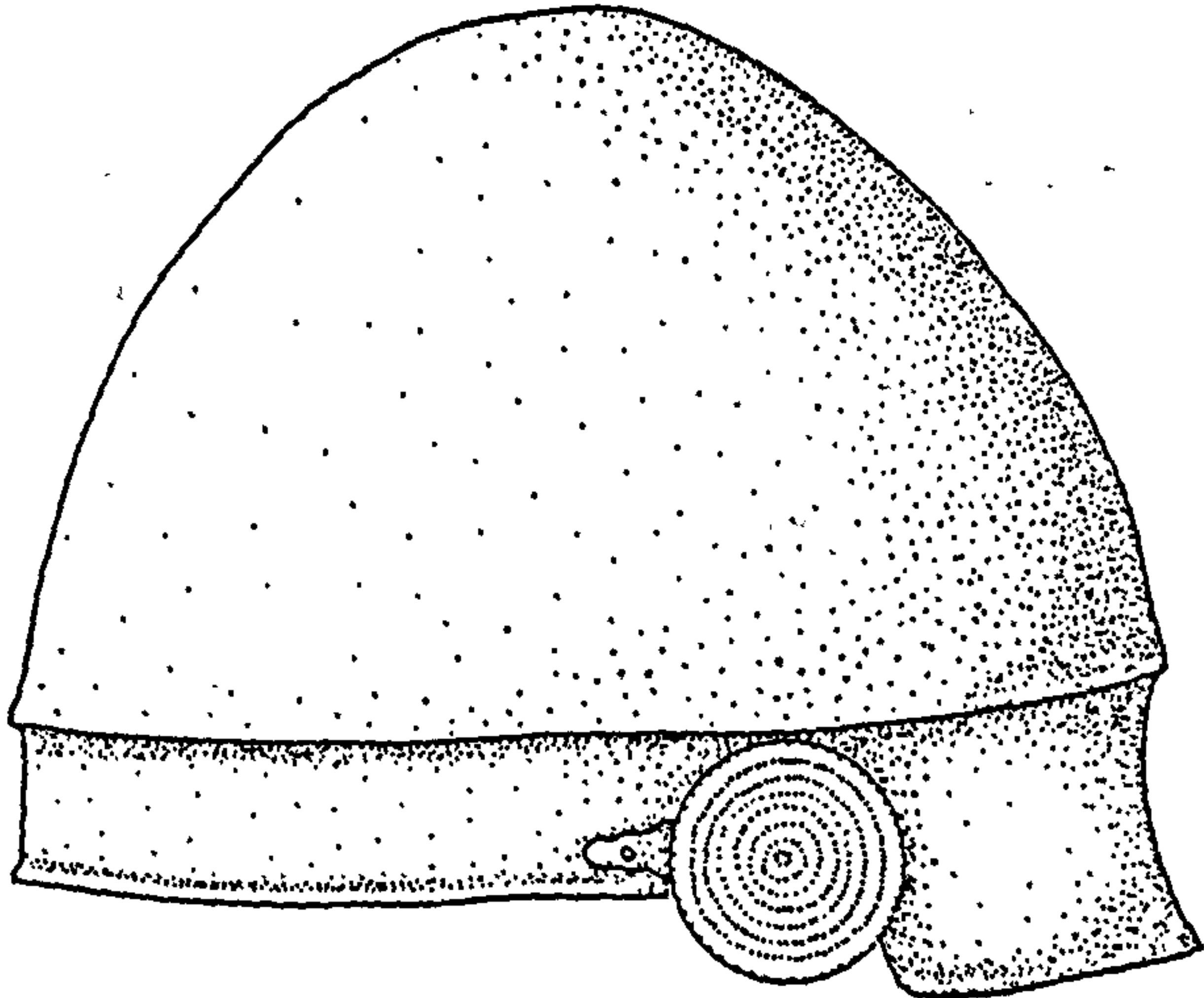
Finally, helmet No. 2, which unfortunately comes from an uncertain Northern Italian provenance, and helmet 14 have decorative motifs most commonly found on contemporary bronze Montefortino helmets, occurring in and around the Celtic Senones Cemeteries at Filtrano and Montefortino (Jacobsthal. 1944, Brizio. 1899, and Baumgärtel. 1937.). These motifs consist of an obliquely shaded band of vandyking encircling the apex of the bowl and a plait or cable also encircling the bowl beneath this (a similar decorative arrangement is to be found on the well known Celtic Montefortino helmet from Filtrano, now in the Museum Nazionale di Ancona (Inv. 4192) (Baumgärtel 1937, 245ff)). Below this on helmet 2 the brow-band is decorated by a line of chevrons set over six parallel incised lines. It perhaps serves as a confirmation of their Etruscan origin that all the decorative techniques, and indeed the motifs found on Etrusco-Thracian helmets also commonly appear on other products of central Italian and in particular Etruscan workshops.



19



20



21

A detailed study of an example of each Type.

Helmet No. 1

Type: IA.

Location: Musee St Pierre, Lyons.

Inventory No. X 924.

Provenance: Central Italy. Acquired by M. Fabré.

Context: Unknown.

Suggested date: 3rd century B.C.

Material: Bronze.

Dimensions: Height. 200 mm.

Overall width 198 mm.

Internal width 196 mm.

Overall breadth 160 mm.

Internal breadth 158 mm.

Thickness: Brim 1 mm.

Bowl 0.5 mm.

Chin-strap fixtures: None, it can only be assumed that the chin-strap
was attached to the inside of the helmet lining.

Crest-fixture: The apex of the bowl has sustained some considerable
damage but it would appear that there was the usual
central opening.

Decoration: Encircling the bowl of the helmet is a broad band of
engraved herring-bone pattern from which emerges stylised
curls of hair which implies that the herring-bone pattern
may have been intended to represent a stylised wreath or
fillet. In addition to the two-dimensional decoration, the

helmet has a pair of applied ear-guards in the form of cast bronze "ducks' feet" with seven toes.

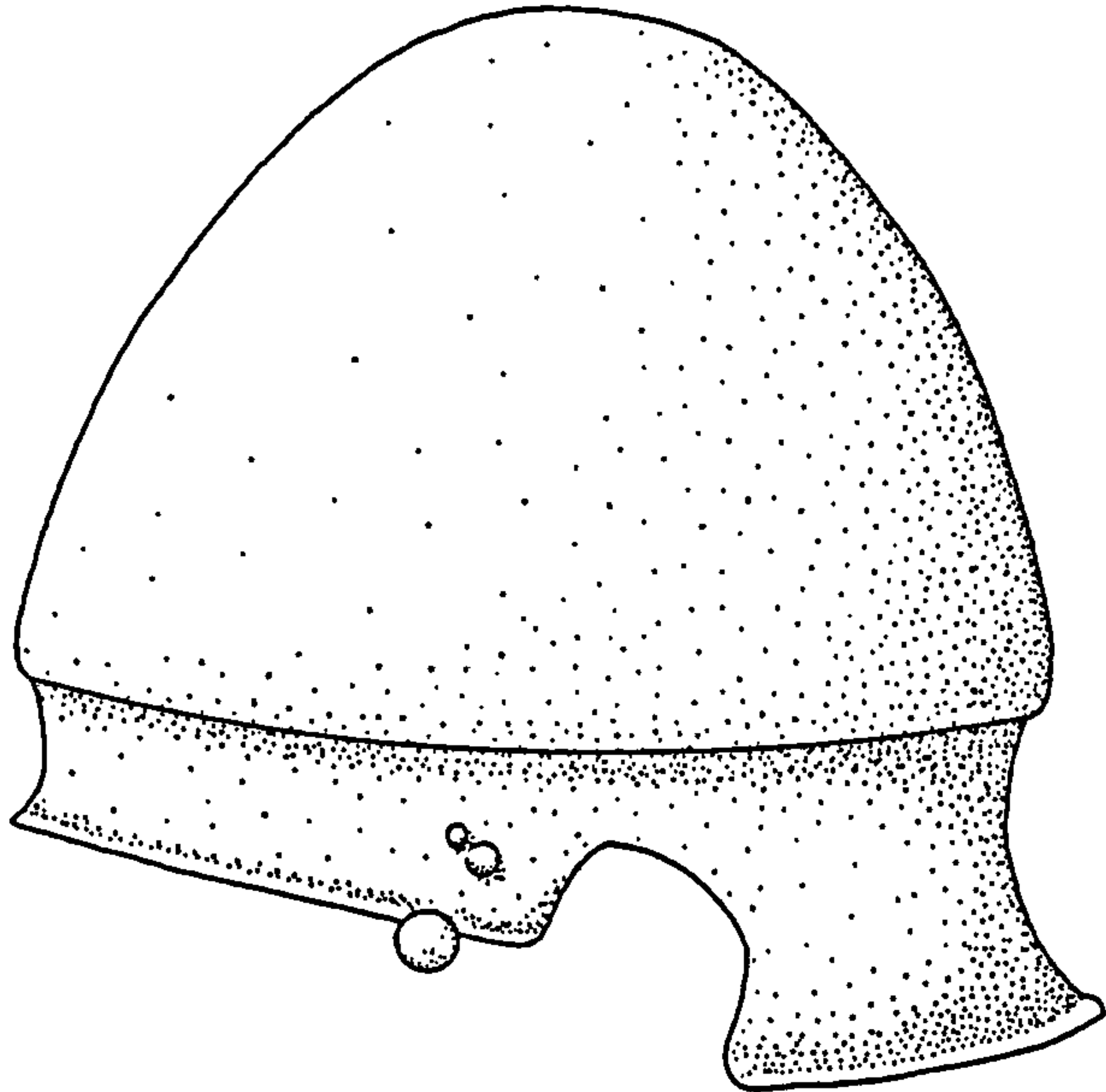
Internal Fixtures: None.

Manufacture: Raised from a single piece of bronze with "lost wax" cast bronze ear-guards riveted on.

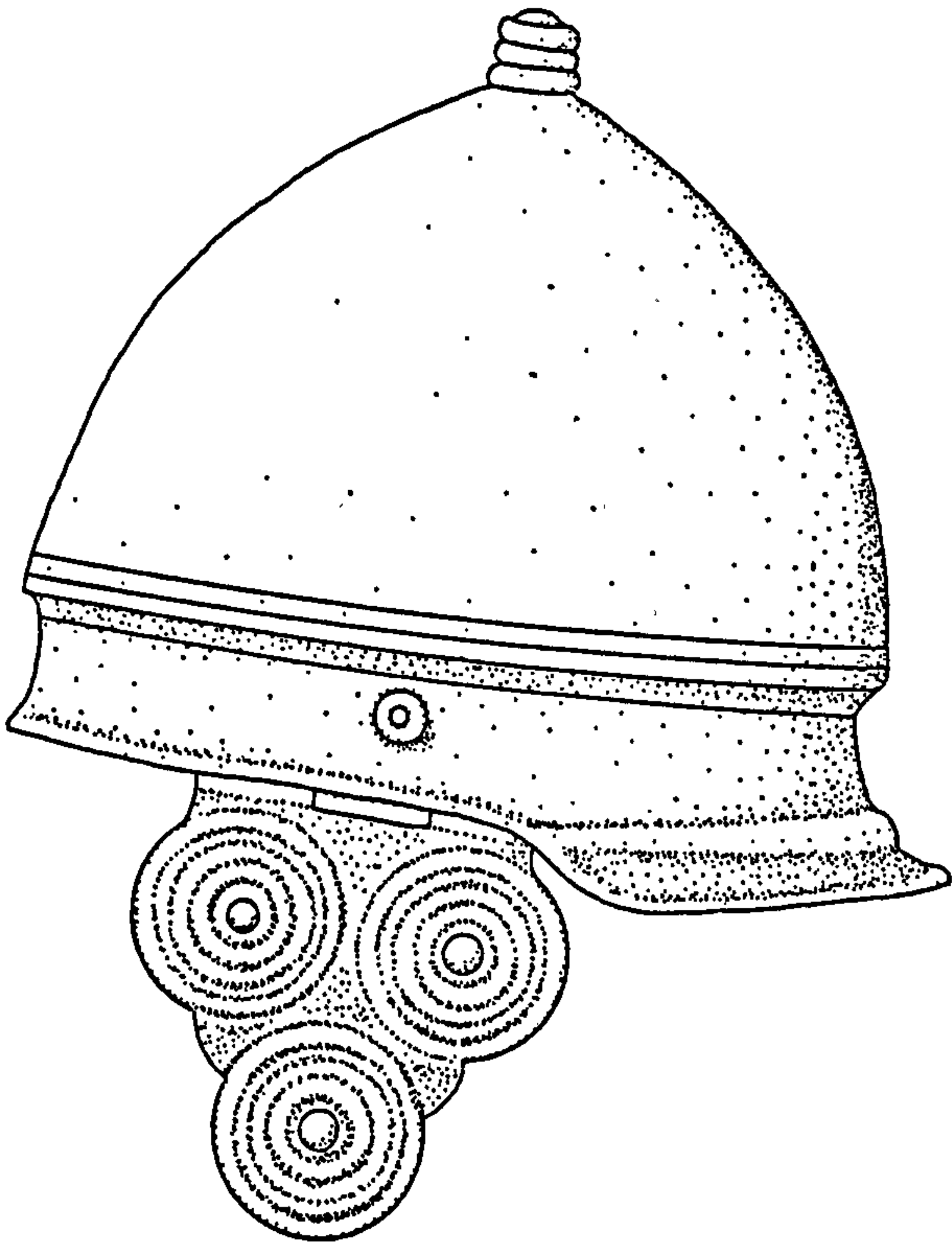
Description: High bulbous and slightly conical bowl swelling out over a fitted, concave brow-band, which is itself slightly everted at its base to form a peak. It has a closely fitted neck-guard, with a transverse ridge which delineates the the junction between it and the brow-band. The base of the neck-guard is strongly everted. The helmet is well made and decorated but has suffered considerable damage over the years especially to the apex of the bowl and now has a deep olive green and slightly granular patina.

Other details: None.

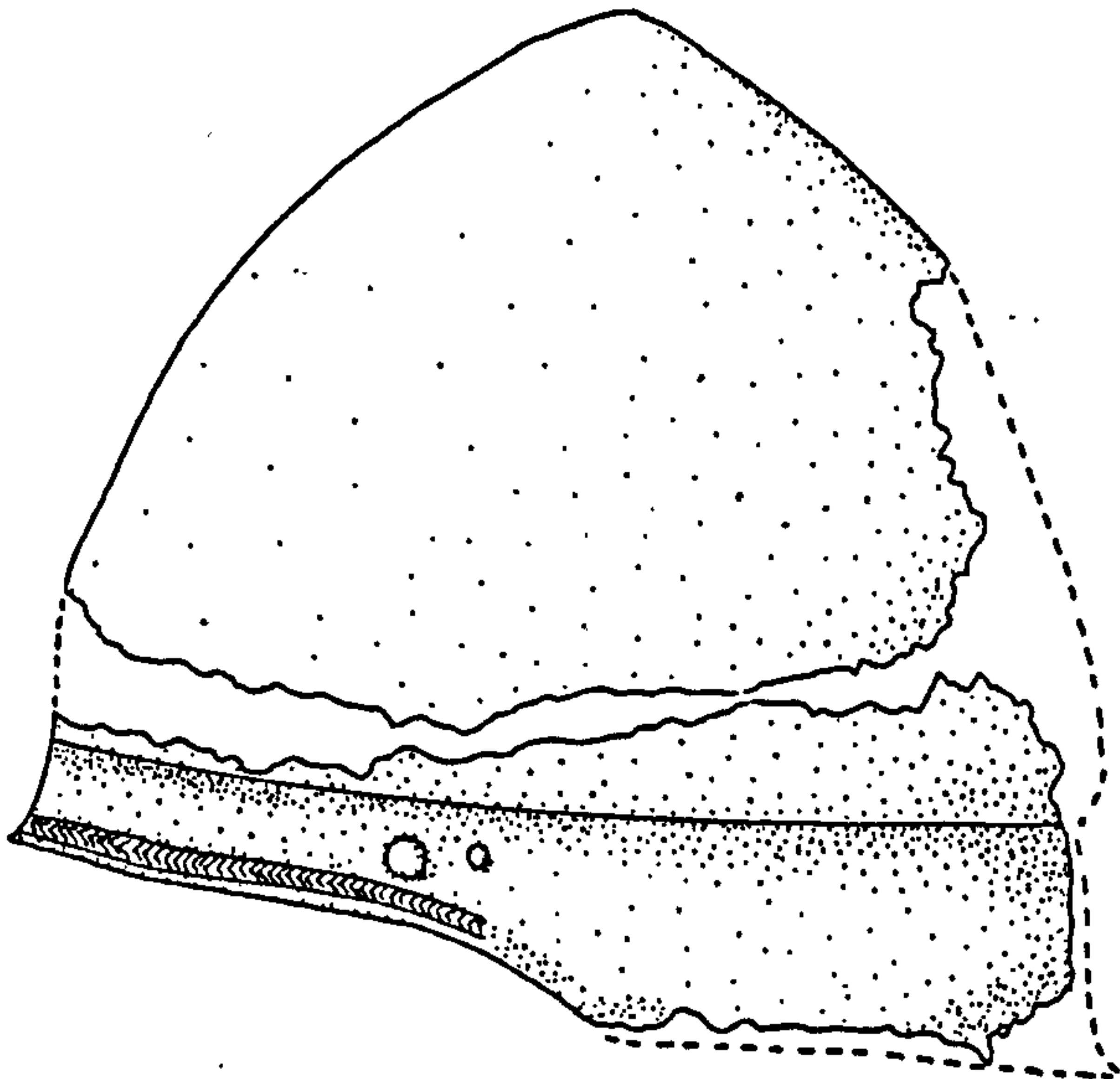
Published: Boucher. 1964 , 105.



22



23



24

Helmet No. 7.

Type: IB.

Location: Museo Nazionale d'Abruzzi Perugia, Italy.

Inventory No. 328 B1323.

Provenance: A tomb in the Necropolis of Monteluca near Perugia.

Context: 4th century B.C.

Material: Bronze.

Dimensions: Height	190 mm.
Overall width	200 mm.
Internal width	194 mm.
Overall breadth	170 mm.
Internal breadth	164 mm.
Thickness: Rim	3 mm.
Bowl	1 mm.

Chin-strap Fixture: The rim of the helmet has one large domed headed stud rivet in each side of the bowl adjacent to the front edge of the cut-out for the wearer's ear. The chin- strap itself was presumably split at each end to admit the stud. (fig. 98:3).

Crest-fixture: The crest-fixture itself is missing but the apex of the helmet bowl is pierced by a single central hole and around this is circular mark in the patina indicating that the helmet was originally equipped with a loop and washer crest-fixture.

Decoration: The base of the helmet is decorated by a border of engraved herring-bone pattern delineated by single incised lines, around the base of the brow-band in front of the

ear cut-outs. Around the base of the neck-guard is a single incised line. The junction between the bowl and the brow-band is decorated by a single and double incised lines. Just in front of each ear cut-out is riveted a bronze discoid earguard, probably cast, which is decorated with very deeply engraved concentric circles.

Internal Fittings: In the centre of the neck-guard is a domed headed rivet which probably held a loop for the attachment of the chin-strap as on Montefortino helmets (fig. 98:3).

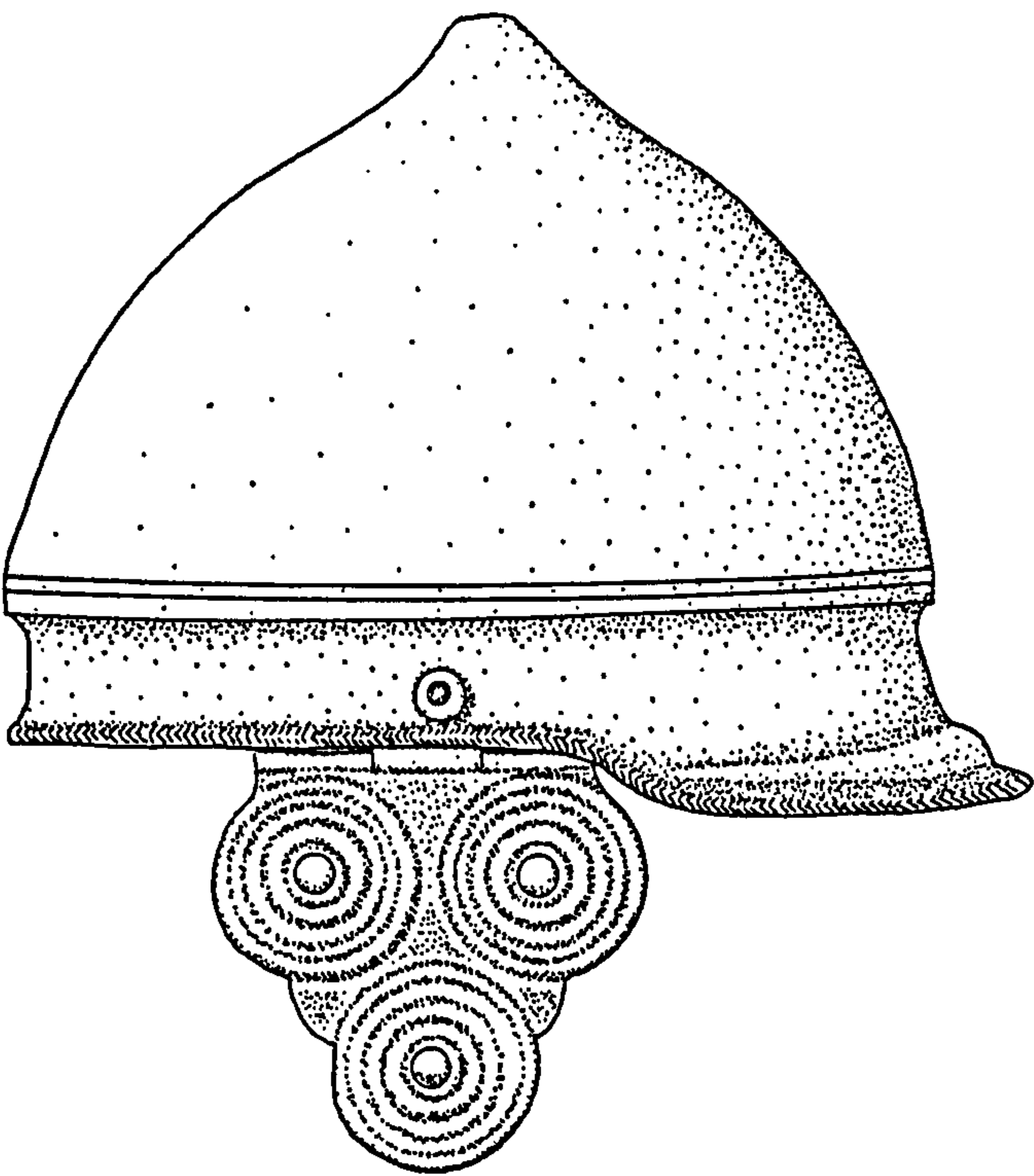
Manufacture: The helmet was blocked and raised from a single sheet of bronze with its crest-fixture and ear-guards being applied with rivets. The lower edge of the helmet has been knocked back to thicken it and give it strength. The ear-guards would appear to retain flash marks from the casting process.

Description: The helmet has a bulbous conical bowl which swells outwards above a fitted brow-band with integral neck-guard. The rim of the helmet is thickened and the brow-band contains cut-outs for the wearer's ears, in front of which are riveted discoid ear-guards. The neck-guard is deep and slightly everted. The helmet has been well and skillfully made, but has suffered considerable damage to its frontal section. The patina is smooth and brown.

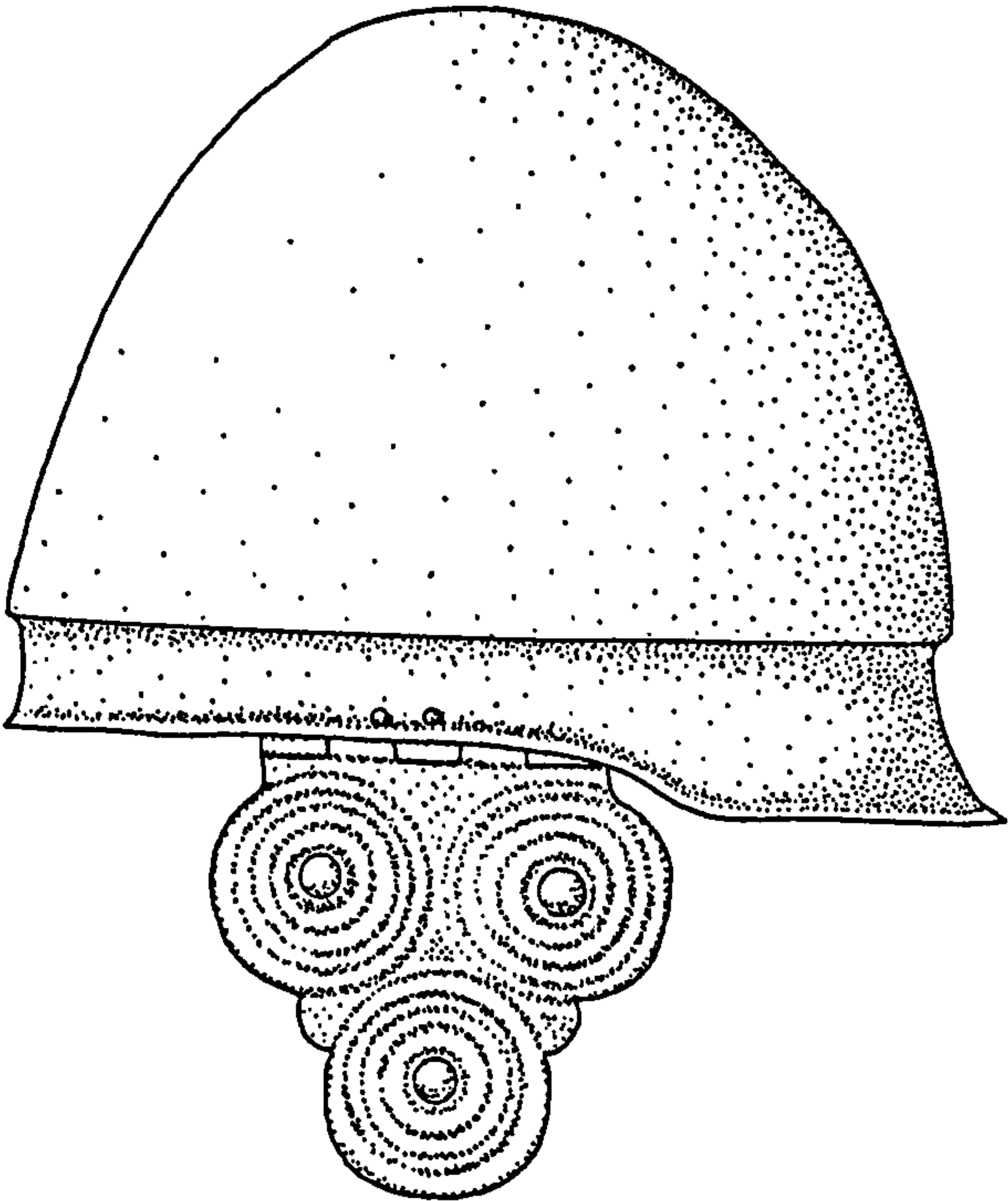
Other Information: The helmet has no provision for the attachment of a lining which must presumably have been glued in.

Published: Unpublished.

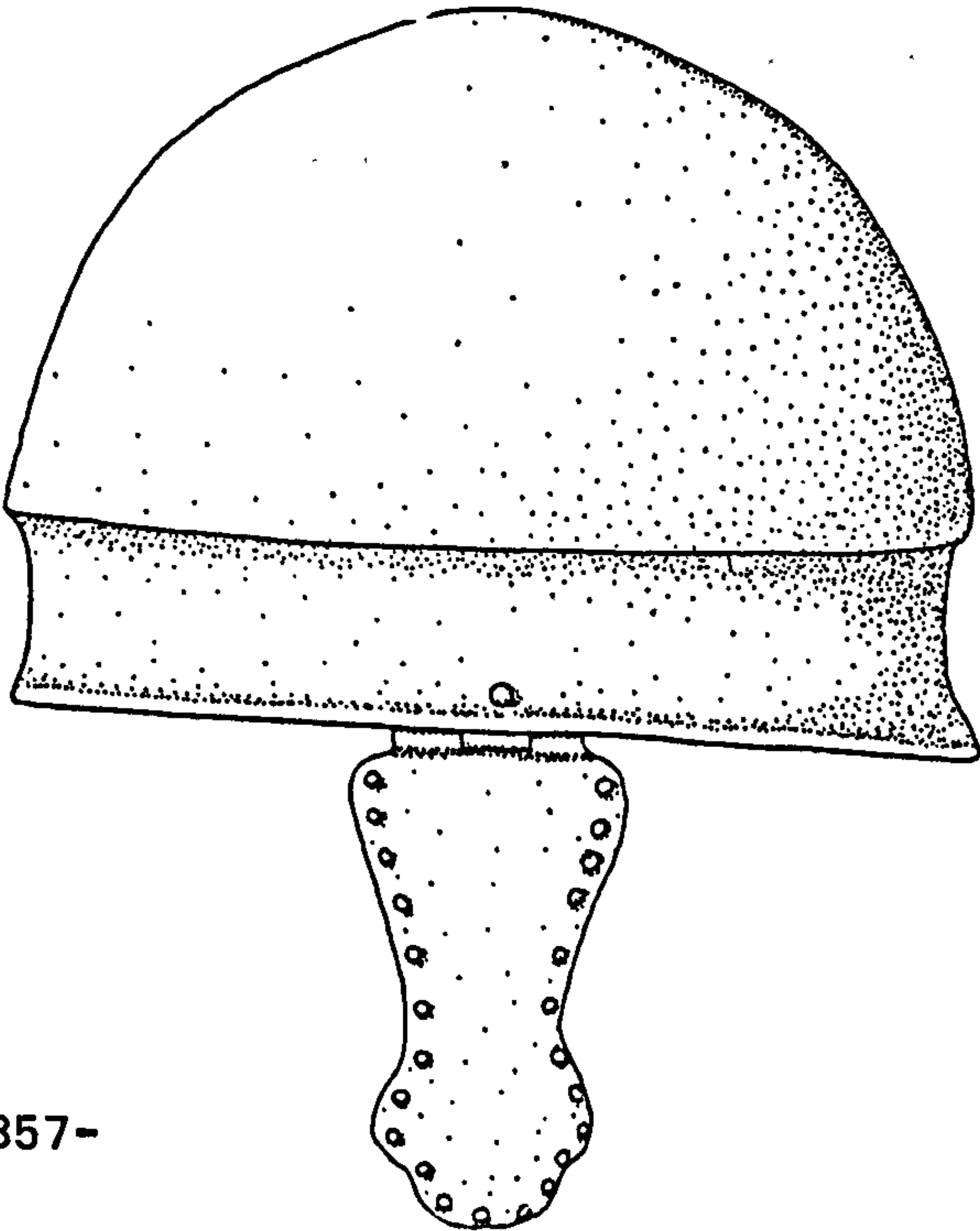
25



26



27



Helmet No. 16.

Type: II

Location: The Museo Gregoriano Etrusco in the Vatican.

Inventory No.: A43 (part of the Guglielmi Collection).

Provenance: Imprecise but from Central Italy.

Context: Unknown.

Suggested Date: 4th to 3rd Centuries B.C.

Material: Bronze.

Dimensions: Height	170 mm.
Overall width	220 mm.
Internal width	208 mm.
Overall breadth	180 mm.
Internal breadth	170 mm.
Thickness Rim	6 mm.
Bowl	2 mm.

Chin-strap fixture: A single hole pierced in each side of the bowl
30 mm. above the edge.

Crest-fixture: The apex of the bowl is pierced by a single hole 3 mm.
in diameter. Encircling this is an area of darker
patination which implies that the helmet was originally
fitted with a washer plate and loop crest-fixture.

Decoration: None.

Internal fixtures: None.

Manufacture: Made from a single piece of bronze.

Description: This helmet has a high bulbous bowl which swells from a
fitted brow-band. The brow-band however does not have any

provision for the wearer's ears. It is considerably deeper at the rear where it forms a straight neck-guard which fits closely to the wearer's neck. The front edge of the brow-band is strongly everted to form a slight peak. The helmet is well made but the neck-guard is now slightly damaged. The patina is light green and granular. Any other details: The thickening of the rim and the thickness of the bowl are exceptional

Published: Beazley. and Magi. 1941, 224, No 109.

Helmet No. 18.

Type: III.

Location: The British Museum, London.

Inventory No. 2721 1837. 6.9.91.

Provenance: Vulci, Toscana.

Context: Unknown.

Suggested date: 4th century B.C.

Material: Bronze.

Dimensions: Height	178 mm.
Overall width	243 mm.
Internal width	237 mm.
Overall breadth	166 mm.
Internal breadth	160 mm.
Thickness: Rim (front)	4.5 mm.
(rear)	1.5 mm.
Bowl	1 mm.

Chin-strap fixtures: This helmet is pierced by a single hole, in the

brow-band on either side in front of the wearer's temples. These holes may have been for the attachment of a chin-strap, but by analogy with the other helmets of this type were probably for the attachment of ear-guards.

Crest-fixtures: The apex of the bowl is pierced by a single hole.

Around this hole is a distinct circular mark in the patination

Decoration: None.

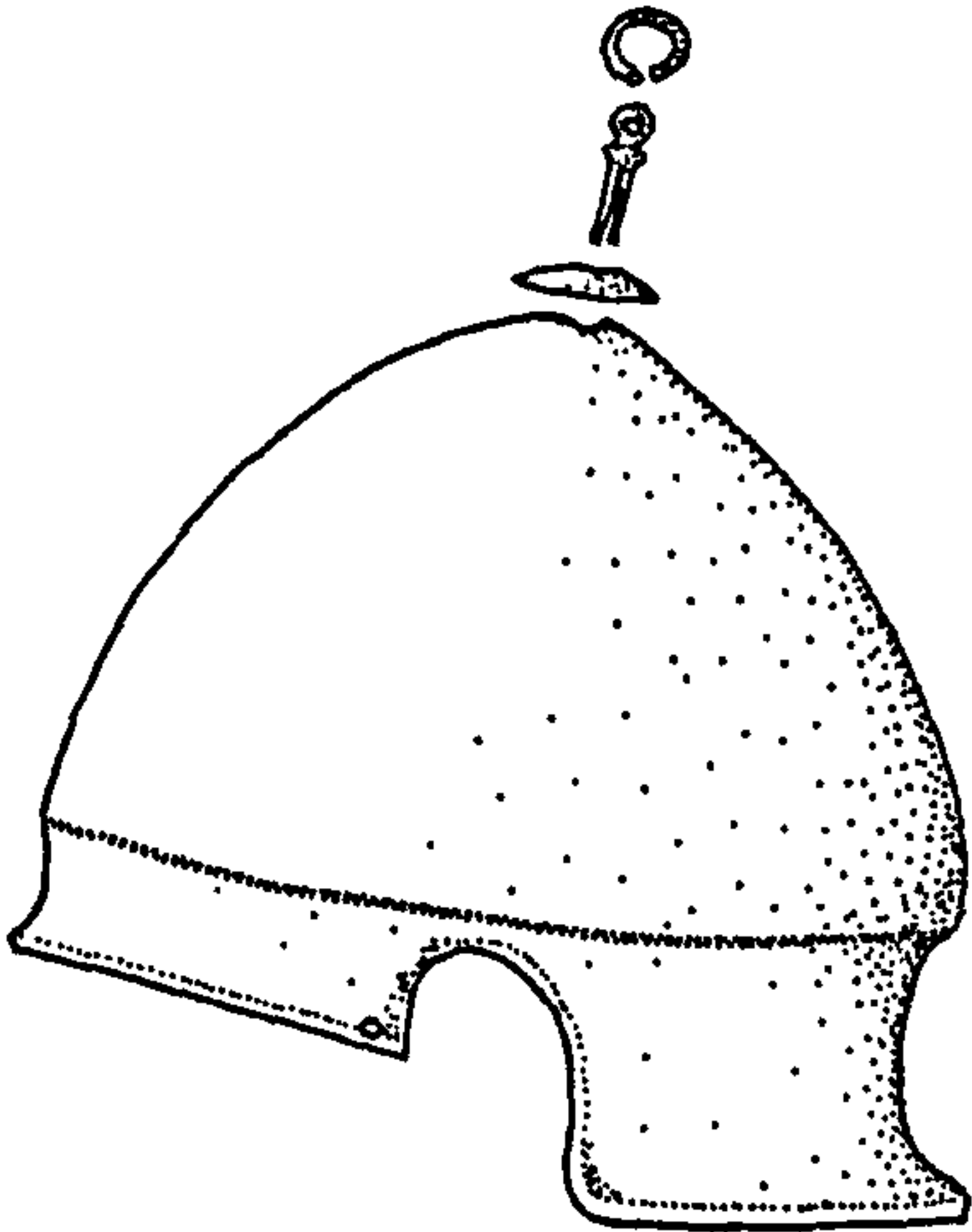
Internal Fittings: None.

Manufacture: Blocked and raised from a single piece of bronze.

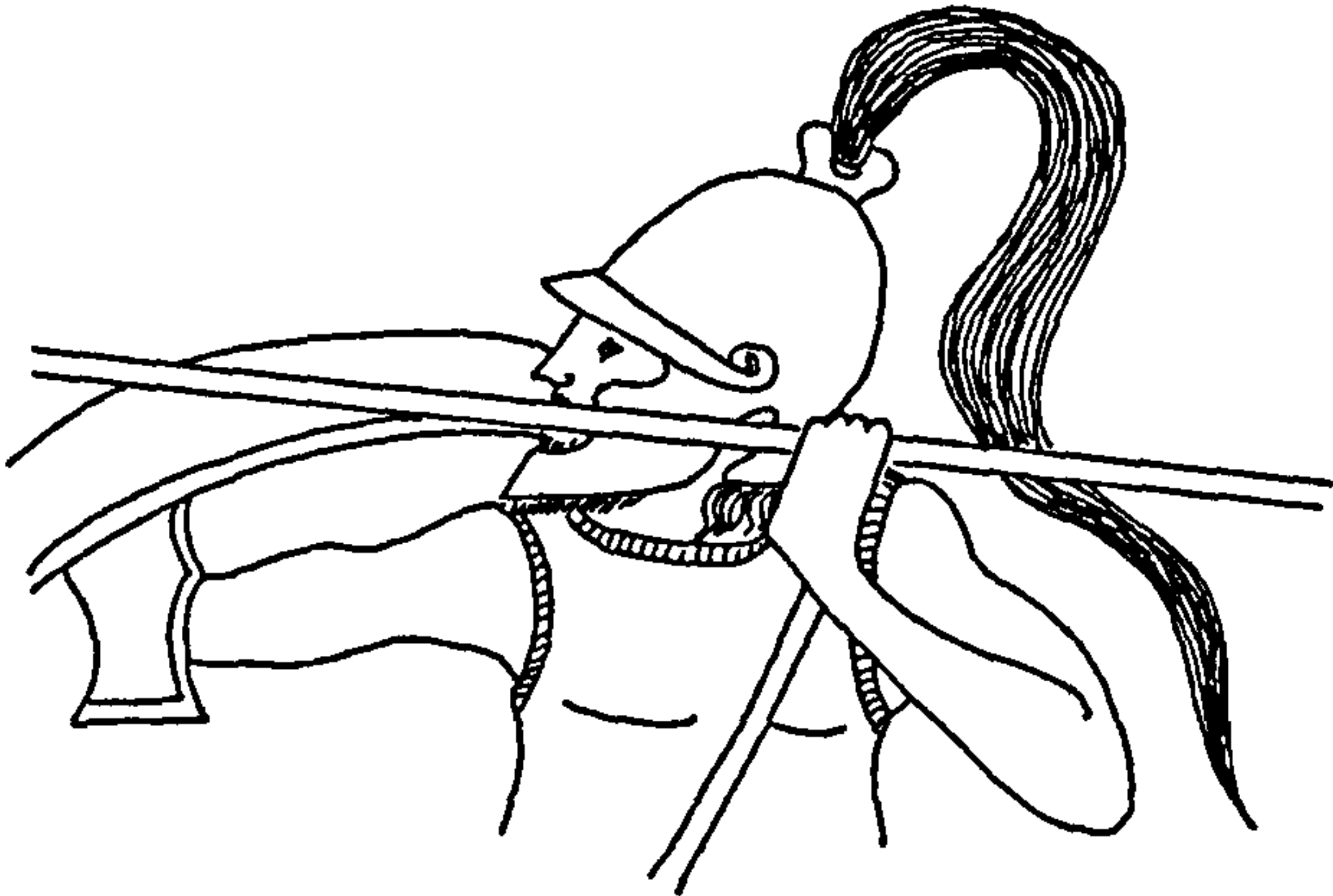
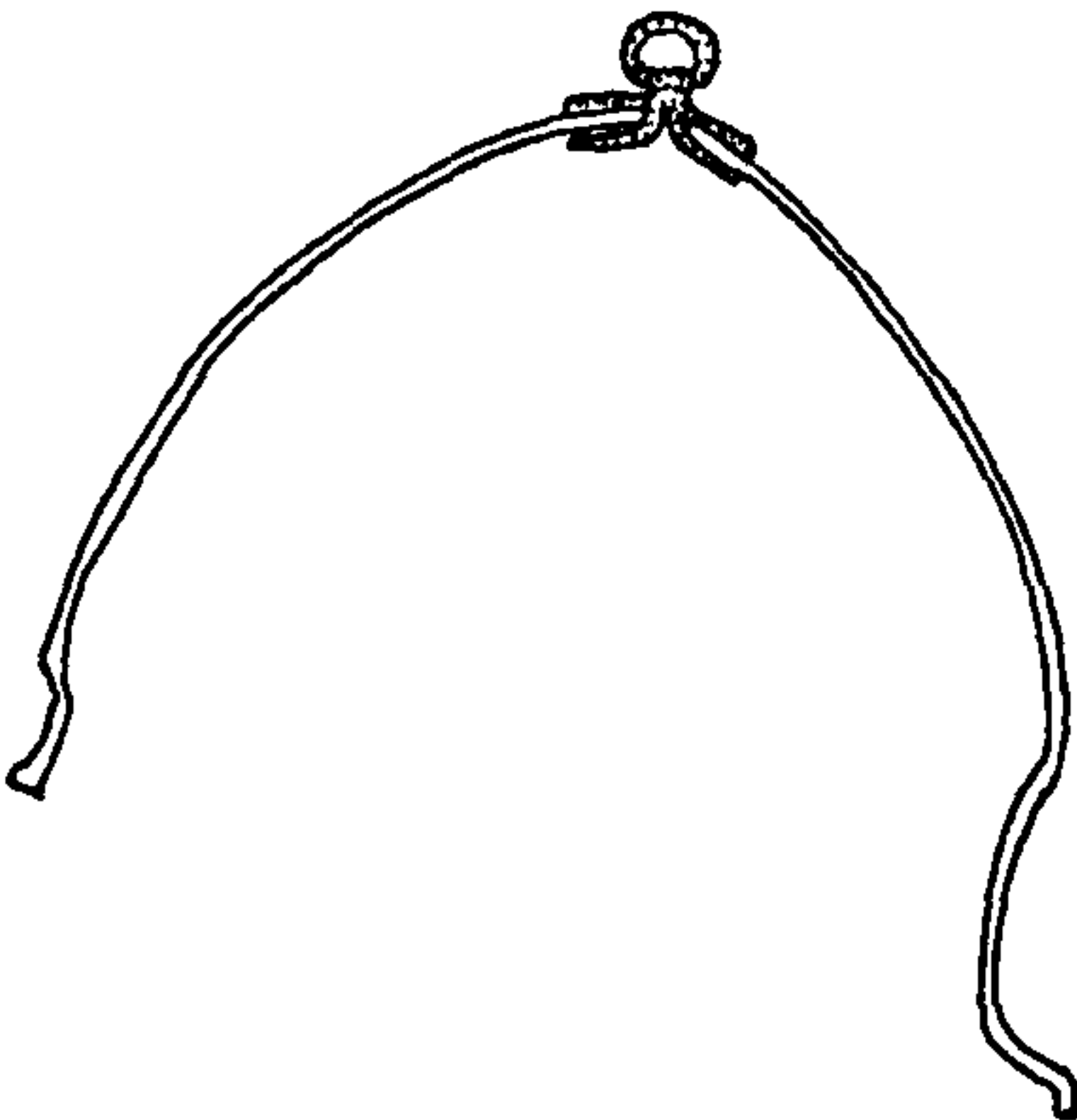
Description: The helmet has a bulbous conical bowl issuing from a fitted and concave brow-band which contains cut-outs for the ears and is everted at the front. At the rear the brow-band is deepened to form a neck-guard, which fits closely to the wearer's neck, but is slightly everted at its base. This helmet is more crudely manufactured than the foregoing types but has a confident and well formed shape. It is in good condition and has a smooth green and brown patina.

Any other details: None.

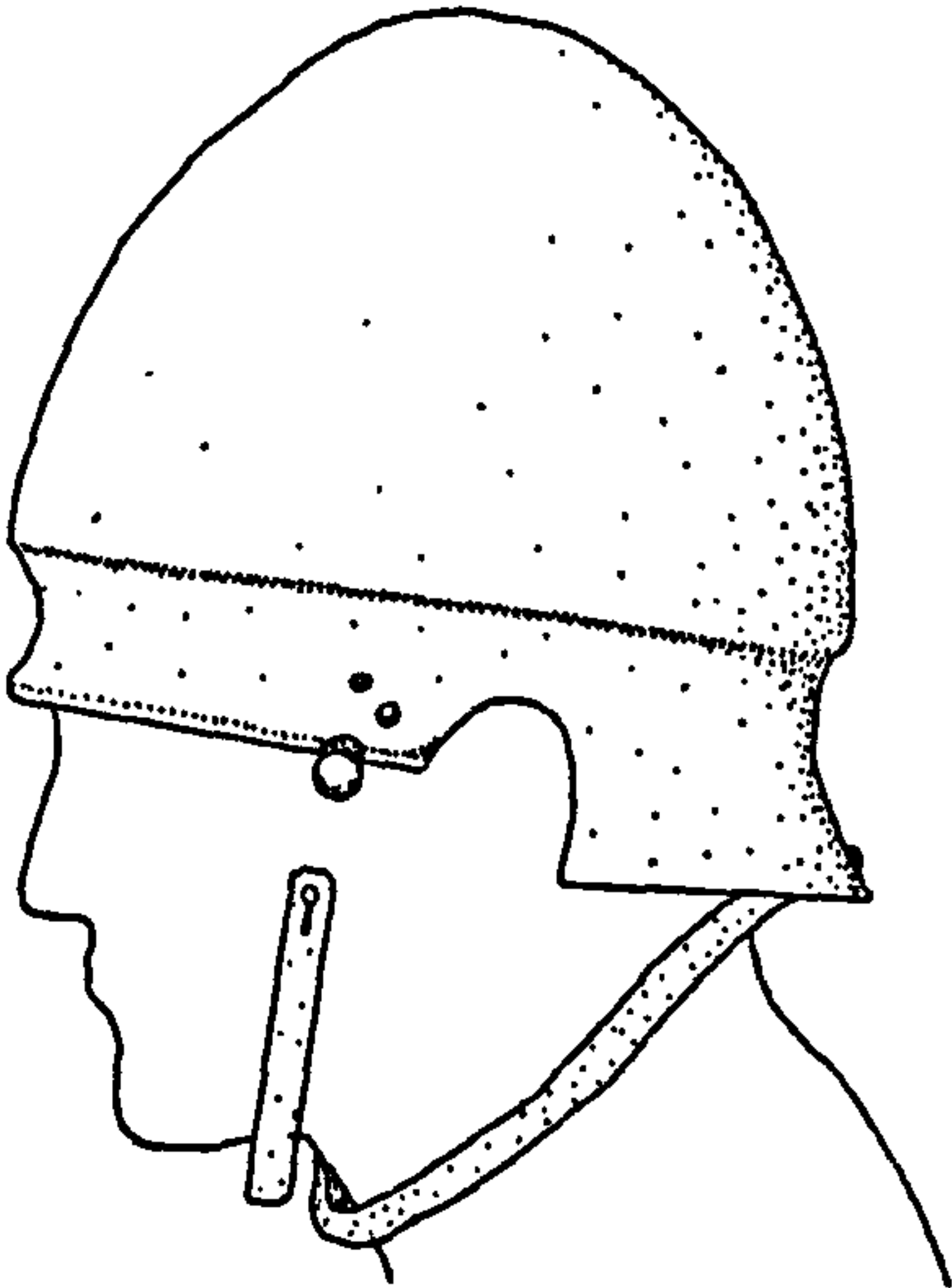
Published: Walters. 1899, 342, No. 2721.



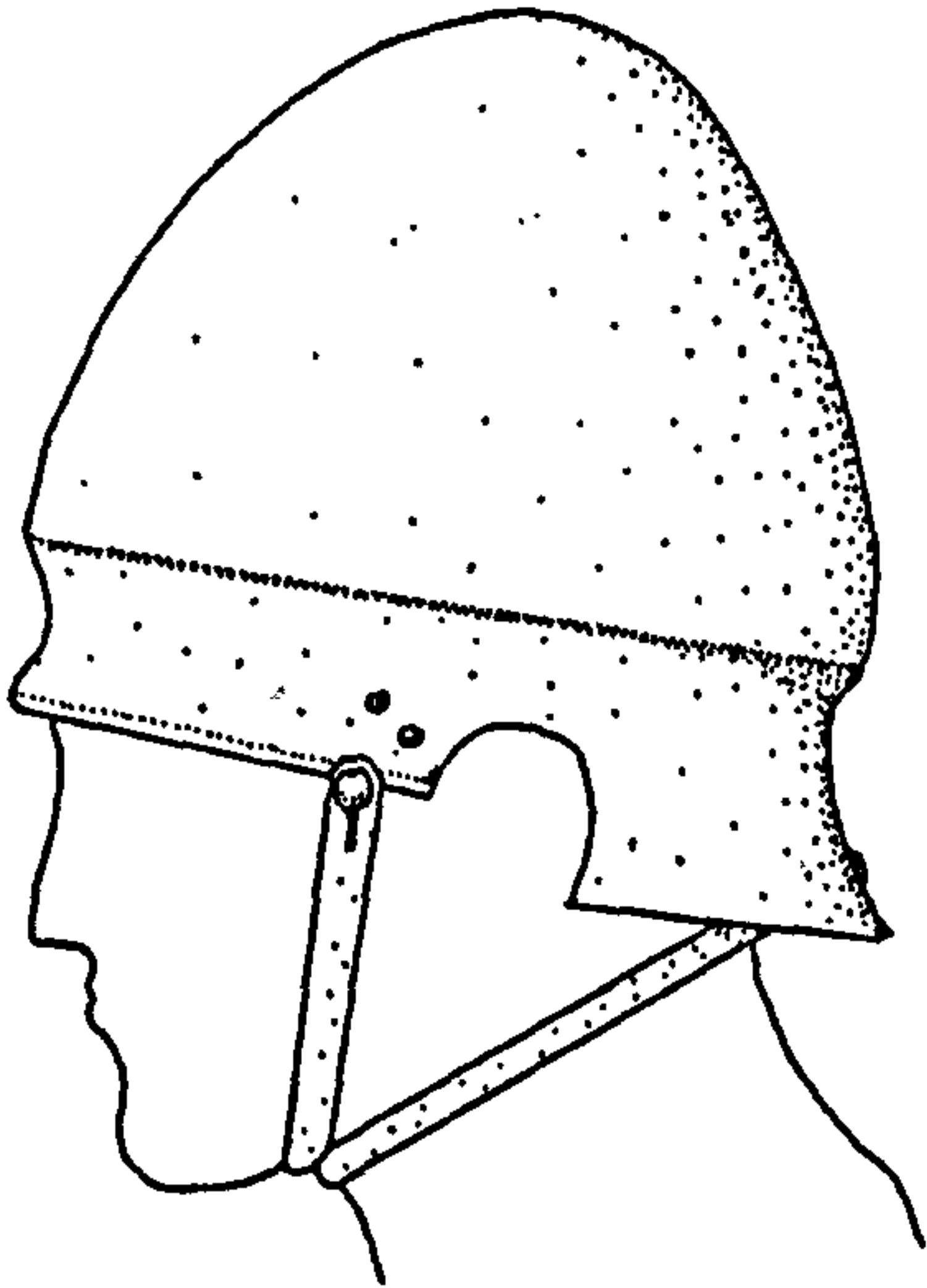
1



2 Detail: Gela Volute Krater



3



1

Helmet No. 25.

Type: IV

Location: The Naturhistorisches Museum, Vienna.

Inventory No.: S. 65.

Provenance: Talvon Hatzeg (Siebenbürgen) Romania.

Context: Unknown.

Suggested Date: 4th century B.C.

Material: Bronze.

Dimensions: Height 170 mm.

Overall width 215 mm.

Internal width 209 mm.

Overall breadth 175 mm.

Internal breadth 169 mm.

Thickness: Rim 3 mm.

Bowl 1 mm.

Cheek-pieces: These are of a "trefoil" or lobate form, commonly found on Montefortino helmets of the 4th and 3rd centuries B.C. They are constructed of two sheets of bronze sandwiching a sheet of iron. The outer face of bronze is embossed to form three groups of two concentric circles containing a raised central boss.

Hinge-plates: These are present and consist of hinges with single hasps attached by a single domed headed rivet, set near the top of the brow-band. The two parts of the hinge are joined by an iron rod.

Crest-fixture: The apex of the bowl is pierced by a single hole.

Decoration: The rim of the helmet is decorated with a band of

incised herring-bone pattern and the junction between the brow-band and the bowl is embellished with three incised lines. The neck-guard is defined by an embossed ridge. (For the decoration of the cheek-pieces see above.)

Internal fittings: None.

Manufacture: Made in one piece.

Description: The helmet has a low conical slightly bulbous bowl swelling from a fitted brow-band. There are no cut-outs for the ears, but there is a distinctive step downwards behind, which forms a short but strongly everted neck-guard. The rim is thickened throughout to form a lip and at the rear the neck-guard is strengthened by an embossed band.

Any other details: None

Published: Moreau. 1958, pl.10.

Helmet No. 27.

Type: V.

Location: Museo Archeologico, Florence.

Inventory No.: 82318.

Provenance: Toscana.

Context: Unknown

Material: Bronze.

Dimensions: Height	170 mm.
Overall width	226 mm.
Internal width	218 mm.
Overall breadth	194 mm.

Internal breadth	186 mm.
Thickness: Rim	4 mm.
Bowl	1 mm.

Cheek-pieces: These are of a unique form and would provide little or no protection and have a different patina to the helmet and are undoubtedly a modern addition.

Hinge-plates: These are present and have the same patination as the cheek-pieces. They are held by only one rivet and would appear to be contemporary with the cheek-pieces. This being the case it seems likely that these rivet holes were the original holes for the attachment of a chin-strap.

Crest-fixture: The apex of the bowl is pierced by a single hole.

Decoration: None.

Internal fittings: None.

Manufacture: From a single piece of bronze.

Description: The helmet has a low plain bulbous bowl swelling above a fitted brow-band which rises at the centre-front to an apex in a similar fashion to those of the "Chalkidian" or "Sammite Attic" helmets. The brow-band has no cut-outs for the ears. It is not equipped with a neck-guard, although the rim is thickened at the rear. The helmet is competently produced and finished and has a smooth light green patina.

Any other details: None.

Published: Unpublished.

The Italian Pilos Helmet.

Introduction.

There can be no doubt that the Pilos helmet is a development of a conical felt hat worn in Greece and also known as a "pilos". This hat first appeared in the 6th century B.C., however the earliest representation of a bronze helmet of this form, known to the author, dates to the period 460-450 B.C. and appears on a pelike by the Chicago painter, now in the Museo Provinciale Lecce, Inv No. 570.

From the mid 5th century B.C. onwards, Pilos helmets are commonly depicted on hoplite tombstones from Athens and Boeotia. Related forms of this helmet occur in the Celtic world and some scholars have suggested that the Pilos is of Celtic origin. This attribution is scarcely credible as they appear in Greece long before any large scale contact with the Celts.

The evidence from the "Nereid" and "Payava" tombs (c. 400-350 B.C.), both now in the British Museum, show that their use, by the Greeks, was widespread in the eastern Mediterranean, and had reached Asia Minor by the end of the 5th century B.C. where they are depicted on troops, probably Greek mercenaries, in the service of the satrap of Lycia.

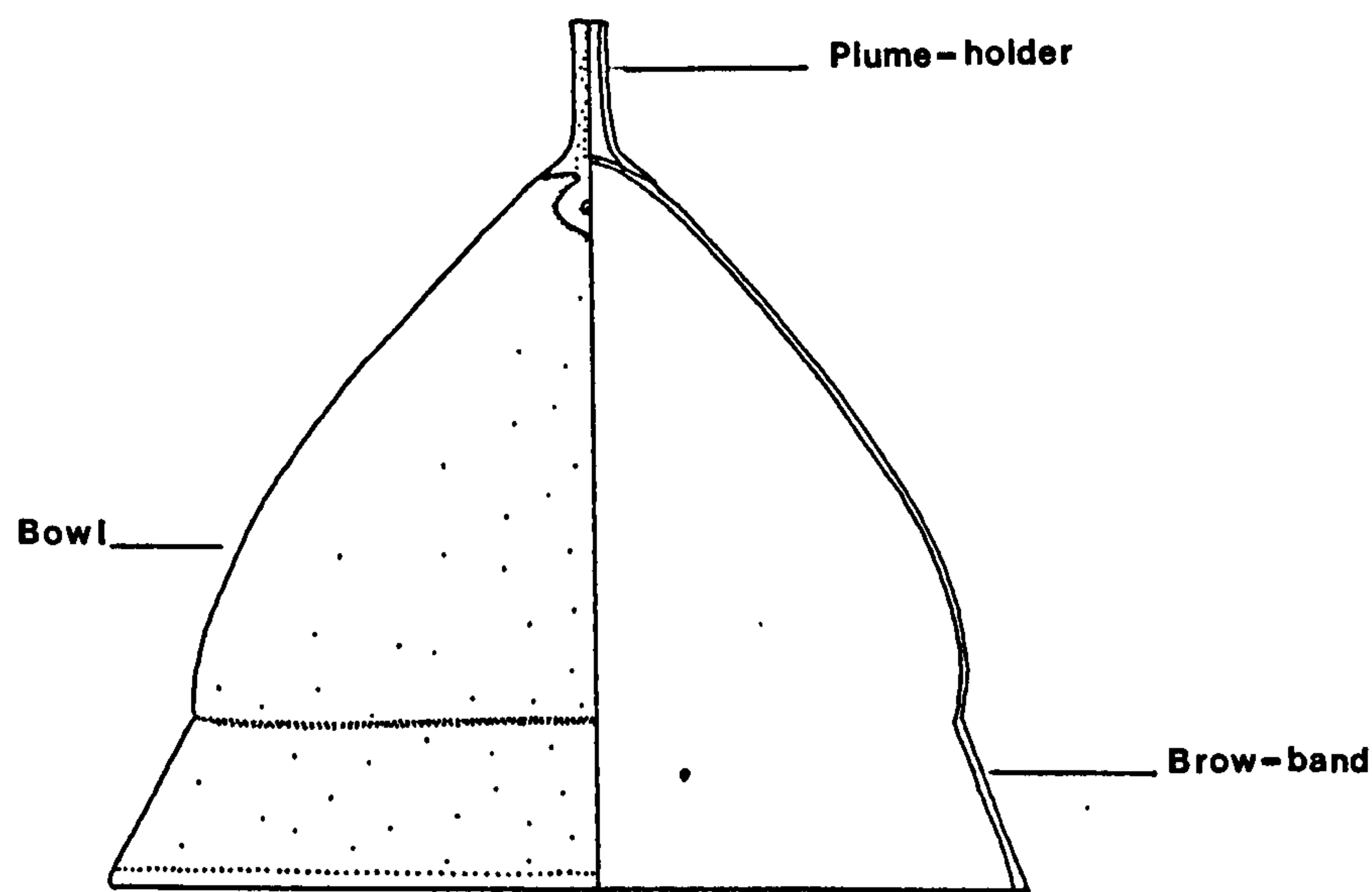
However when this helmet type spread to the Italian mainland is harder to assess, although they were certainly in use by the 4th century B.C. and had probably been so for some time, as at that time a purely Italian form of this helmet had already been developed.

Definition.

All forms of this helmet have, without exception, a conical bowl, issuing from a plain brim, the upper and lower edges of which are usually parallel. It almost invariably continues the profile contour of the bowl. The bowl and brim are separated by either an embossed band or a pronounced step. On a very few examples the brim is extended and drawn down at the rear to form a short fitted neck-guard.

On the helmets of purely Greek form and manufacture (Paddock. 1981, 34.) the diameter of the helmets is usually equal to the height, and their overall dimensions are remarkably similar to one another. Those helmets of native Italian inspiration on the other hand generally have a more attenuated bowl, with the height being greater than the diameter.

FIG. 99



AN ITALO-PILOS HELMET

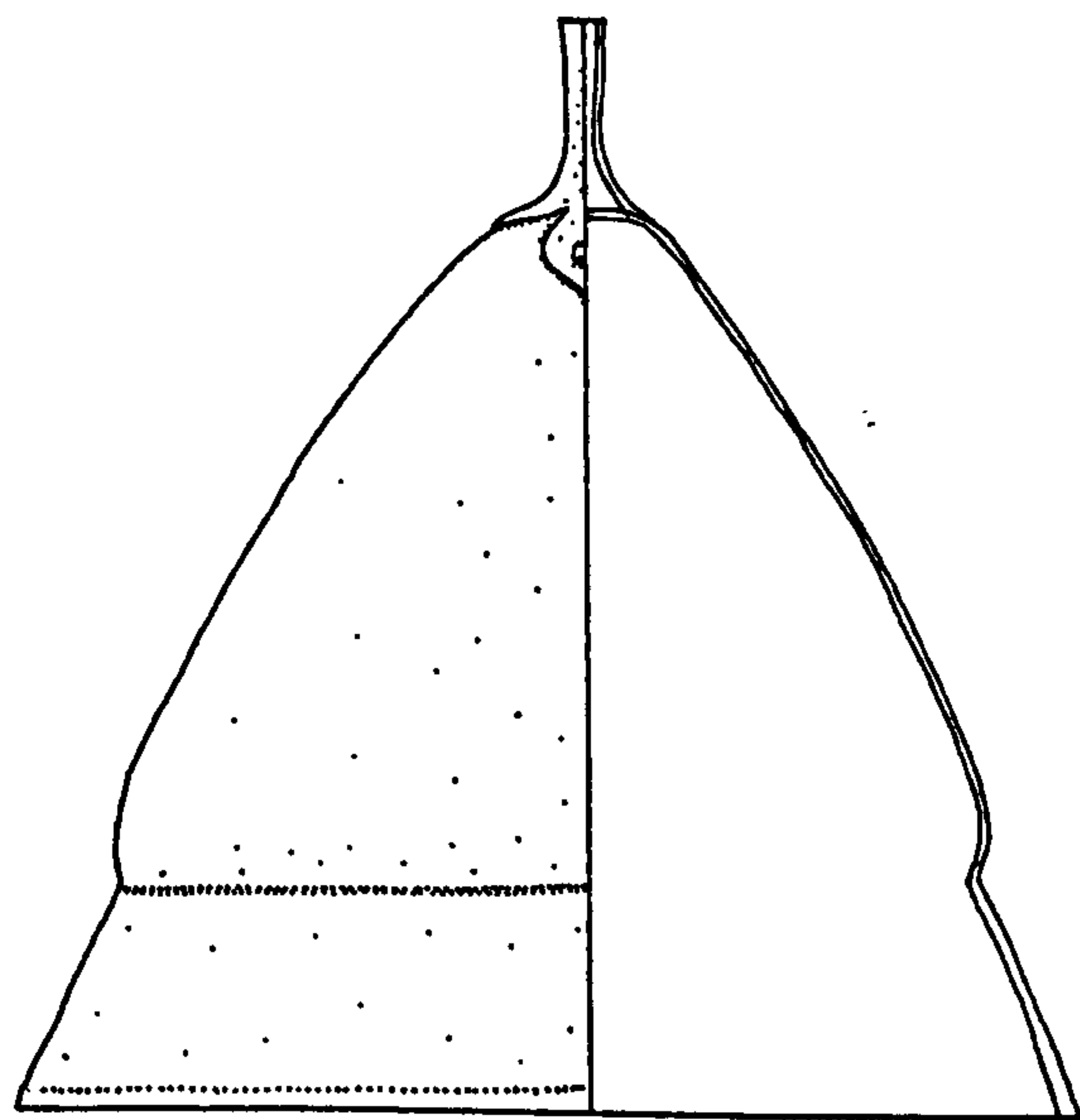


Table 1. Pilos Helmets.

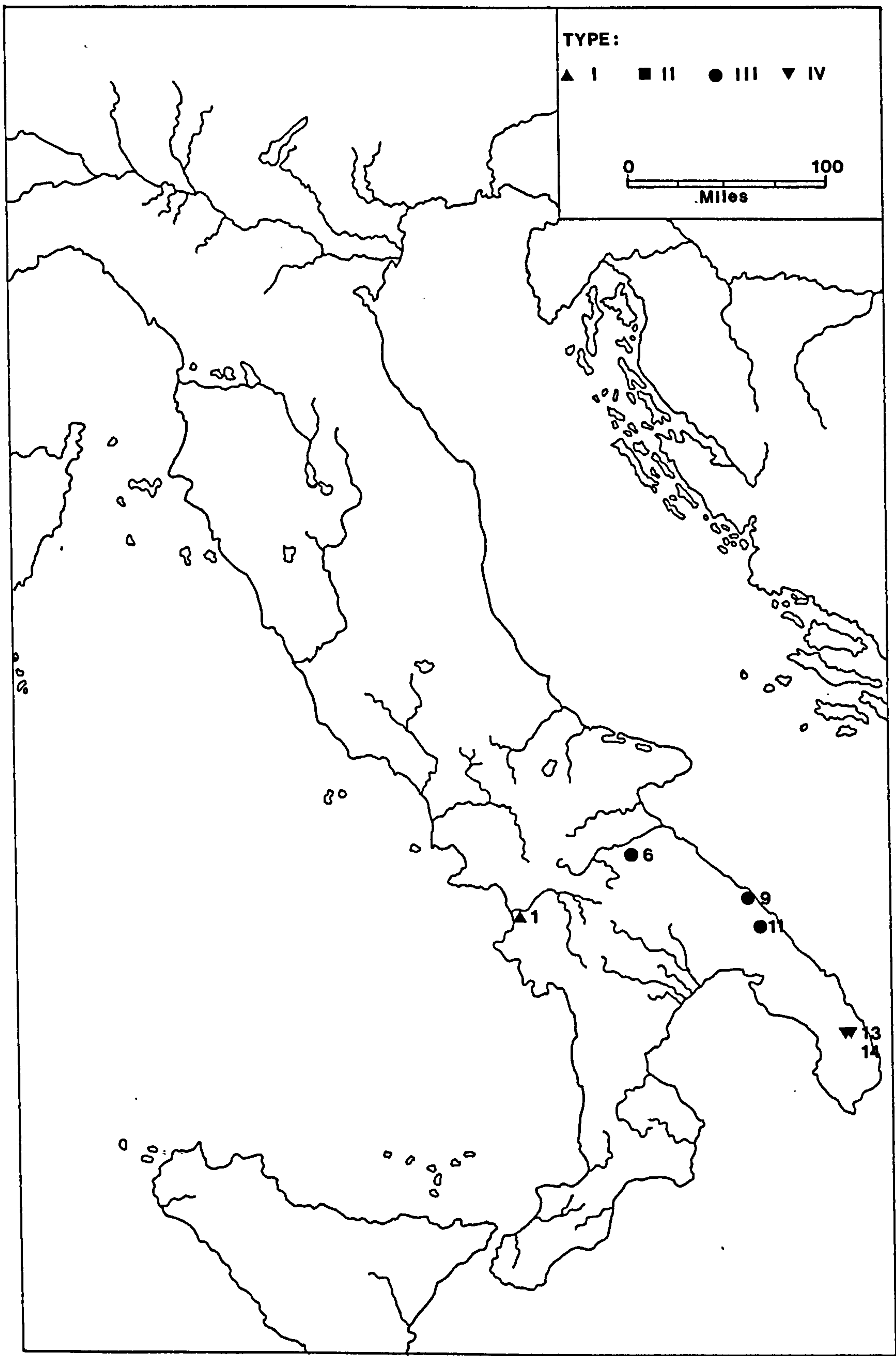
No;	Museum & Inventory No.:	Cat. No.	Dimensions:			Provenance:
			H	V	B	
1.	Museo Nazionale Naples	(265)	180	200	200	Paestum, Campania, Italy.
2.	Metropolitan Museum of Fine Arts, New York, 08 24.	(280)	205	200	200	Sicily.
3.	Kunsthistorisches Museum Vienna.	(425)	180	216	205	South Italy
4.	Whereabouts Unknown in Zschille Coll. 1896	(143)	180	210	190	South Italy.
5.	Bibliothèque Nationale, Paris, 1994.	(313)	200	175	175	Basilicata, Italy.
6.	Badisches Landesmuseum Karlsruhe F 434.	(155)	240	235	215	Canosa, Puglia, Italy.
7.	Musée du Louvre, Paris 1105 C6958.	(328)	250	235	190	South Italy.
8.	Musée du Louvre, Paris S1534.	(329)	240	210	210	South Italy.
9.	British Museum 2824 8-20.222.	(186)	419	217	179	Ruvo, Puglia, Italy.
10.	The Hermitage, St Petersburg. No Inv. No.	(389)	250	220	180	South Italy.
11.	Museo Nazionale Bari.	(38)	255	220	206	Conservano, Puglia, Italy.
12.	Historisches Museum Frankfurt.	(142)	200	200	-	South Italy.
13.	Museo Provinciale di Lecce	(163)	276	228	-	Rudiae near Lecce, Puglia, Italy.
14.	Museo Provinciale di Lecce, 85.	(164)	250	200	190	Rudiae near Lecce, Puglia, Italy.

Distribution.

Where the provenances of these helmets have been accurately recorded and are known with any degree of certainty, their distribution, on the Italian mainland, shows that their use and therefore almost certainly their manufacture is limited to Italy south of the bay of Naples with a marked concentration, over fifty percent in modern Puglia. the southern-most example coming from Sicily (Helmet No. 2).

It is significant, but not surprising, that their distribution is concentrated around the main Greek colonies of Magna Graecia as this helmet form was almost certainly disseminated by their agency.

FIG. 100 Distribution of Italo- Pilos helmets



Key to Distribution Map fig. 100..

1. Paestum, Campania , Italy.
6. Canosa di Puglia, Italy.
9. Ruvo near Bari, Puglia, Italy.
11. Conservano near Bari, Puglia, Italy.
13. Rudiae near Lecce, Puglia, Italy.
14. Rudiae near Lecce, Puglia, Italy.

Manufacture.

All the extant examples of Italian Pilos helmets are manufactured in one piece and are made of bronze. Some were undoubtedly raised and blocked in the traditional way but others were possibly spun on a lathe. The circular section and overall conical shape of this form of helmet makes it an ideal candidate for spinning on a lathe, the shape is simple and without any difficult undercuts. The more attenuated native Italian varieties with their slightly bulbous conical bowl were probably raised with hammers. There is ample evidence from the helmets of Greek form to suggest that the use of spinning was widespread in their manufacture: Not least in that their external and internal dimensions are remarkably consistent at around 200 mm. (approximately 10 dactyls.) (Paddock. 1981, 65.) suggesting that they were produced to one standard size and probably therefore spun over a similar shape and size of former.

FIG. 101

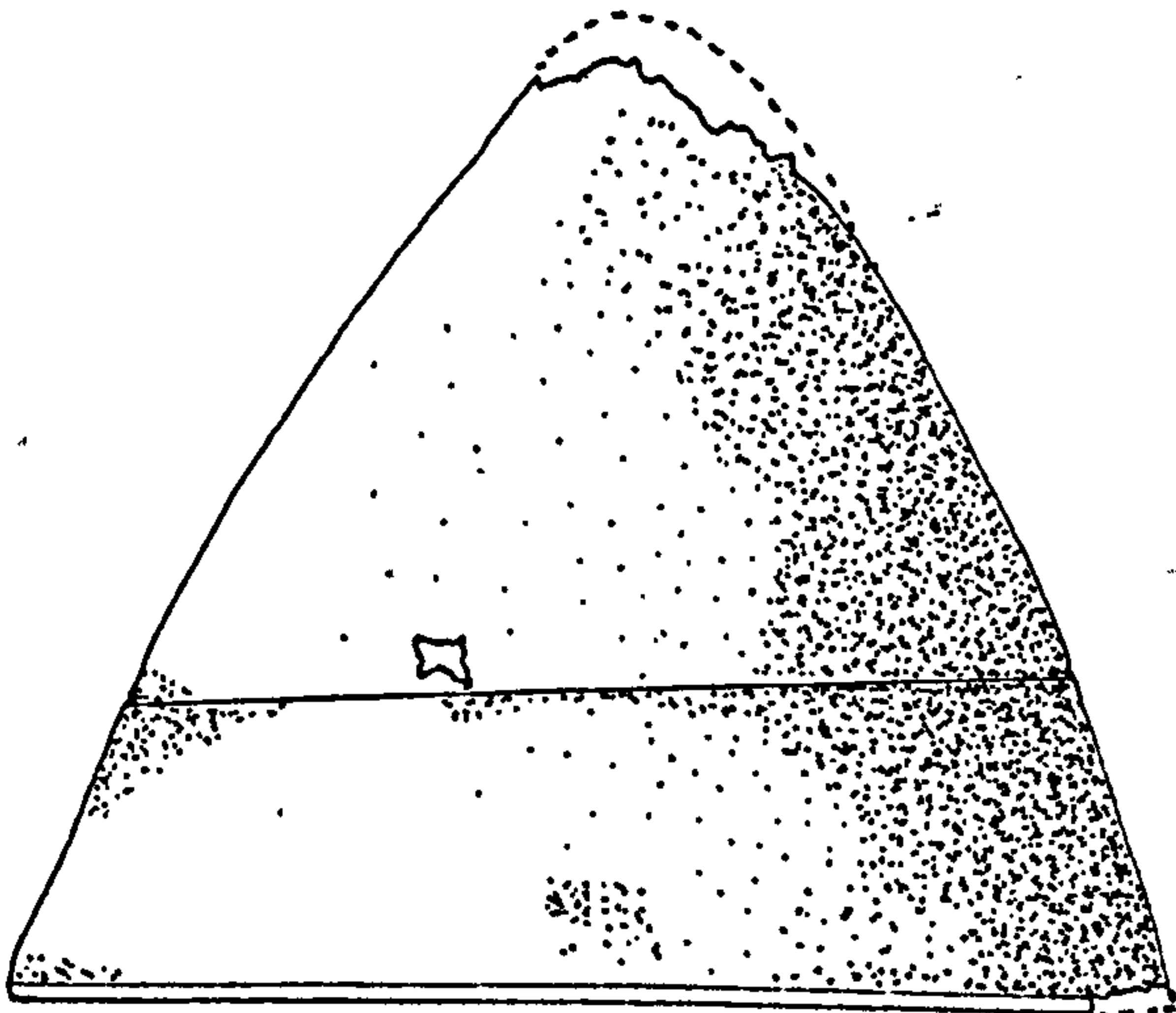
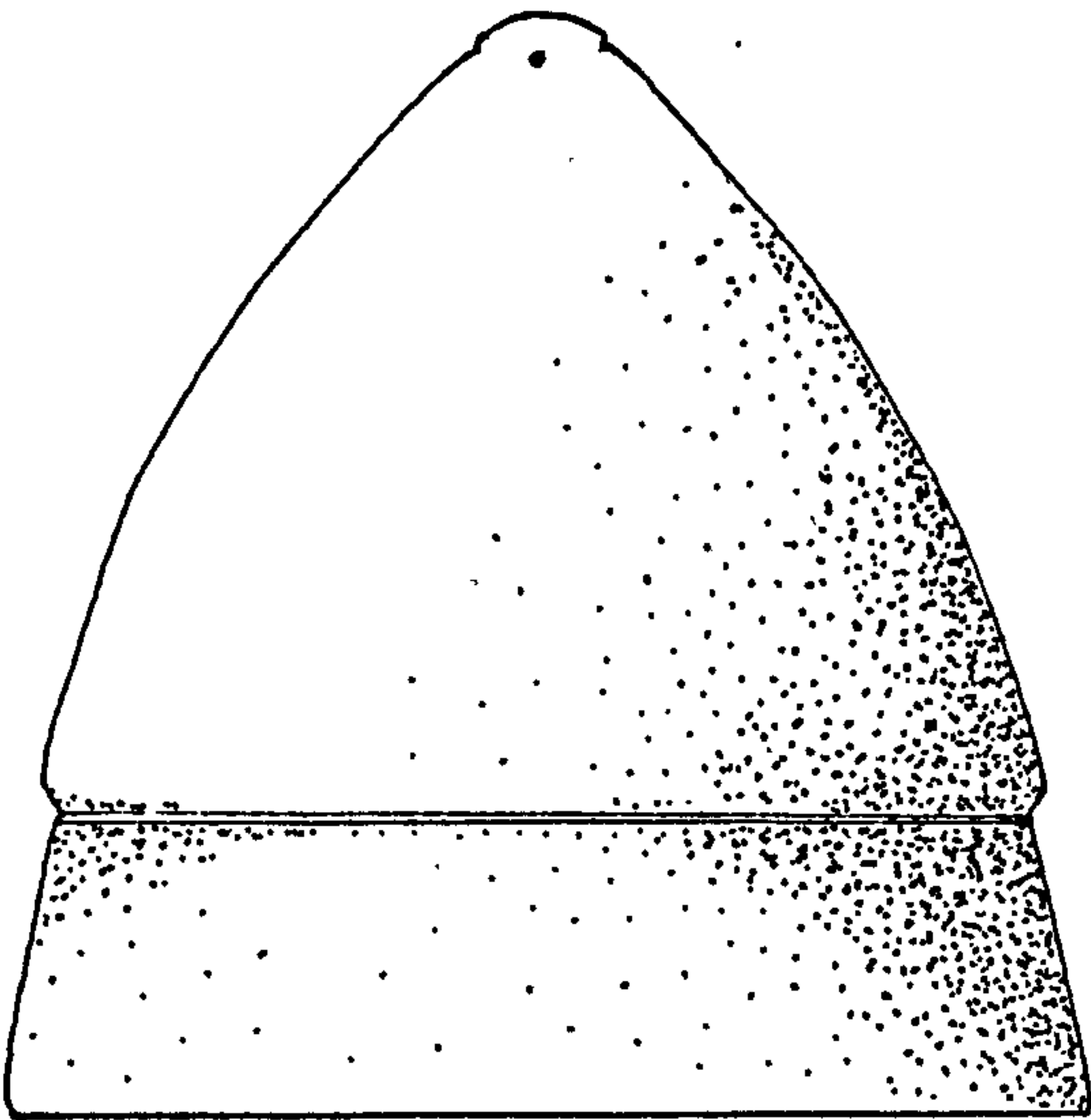
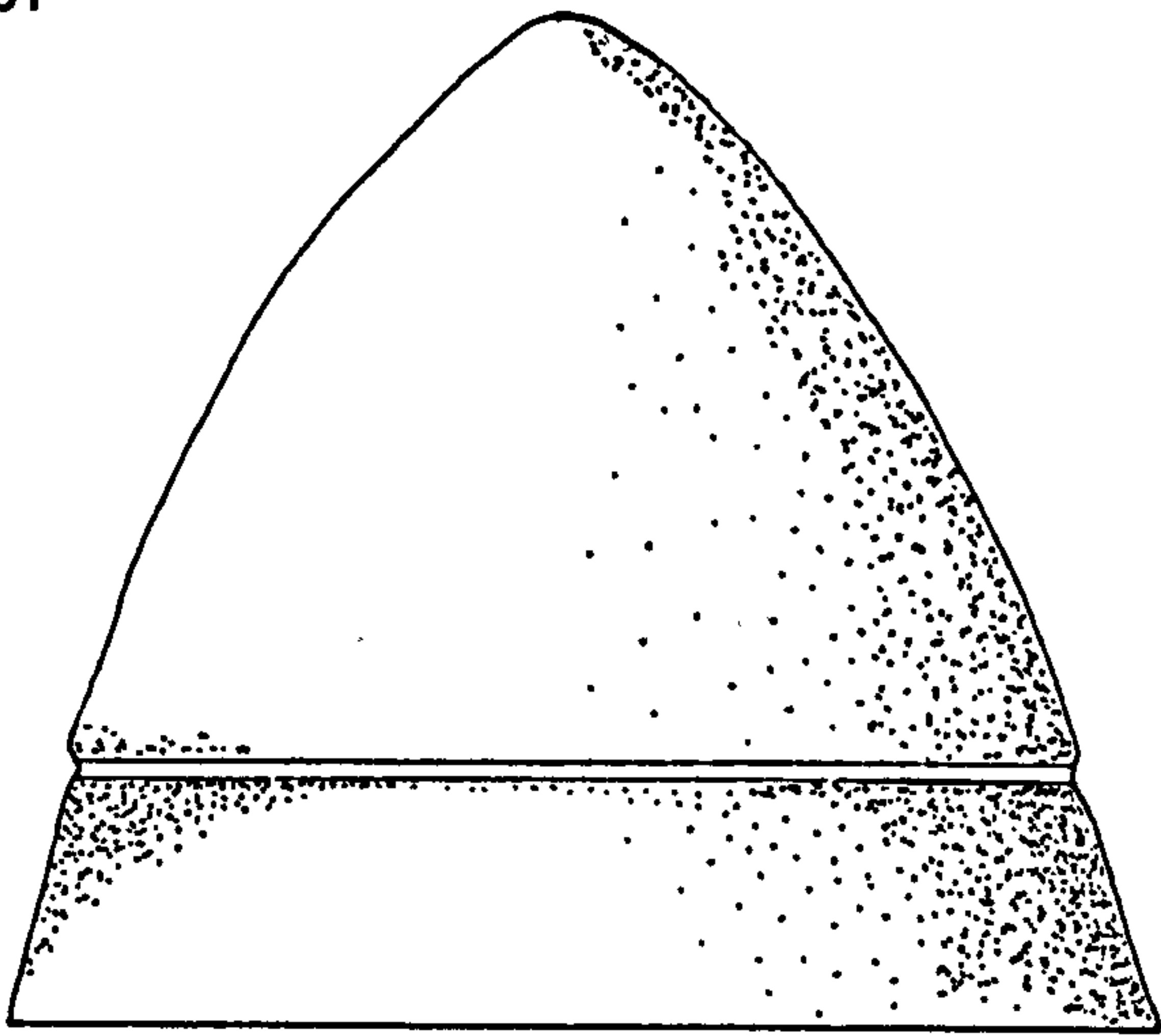


Table 2: Typology.

No.:	Bowl Form:			Neck-:	Decoration:	Crest-fixtures:			Height:	Type
	St.	S	C.S	ER	El guard	App.	App.H.	Tube	"U" O N	>21 <24
1.	*			*					*	I
2.	*			*				*		I
3.	*			*					*	I
4.		*	*					*		I
5.		*	*			*			*	II
6.		*		*		*		*		III
7.		*		*		*		*		III
8.		*		*		*	*	*		III
9.		*		*		*		*	*	III
10.		*		*		*	*	*		III
11.		*		*		*	*	*		III
12.	*			*	*				*	IV
13.	*			*	*				*	IV
14.	*			*	*				*	IV

Bowl: St,S- Straight sided, C,S- Curved Sided, ER- Embossed ridge, El- Embossed line, Decoration: App,- Applied, App.H,- Applied Horns, Crest-fixtures: Tube- tubular feather holder, "U"- "U"- shaped crest-bracket, O- Other N- None.

Table 3: Dating evidence.

No:	Context	Provenance:	Suggested date
1.	Grave find Mid 5th century B.C. Dated by associated red figure vares,	Paestum, Campania, Italy,	
2.	Unknown	Sicily,	5th-4th B.C.
3.	Unknown, But dated by Oscan inscription to the 4th century B.C.	South Italy	4th B.C

No: Context	Provenance:	Suggested date
4. Unknown	South Italy.	5th-4th B.C
5. Unknown	Basilicata, Italy.	4th B.C.
6. Grave find, Said to 4th century B.C.	Canosa, Puglia, Italy.	4th B.C
7. Unknown	South Italy.	4th B.C
8. Unknown	South Italy.	4th B.C
9. Unknown	Ruvo, Puglia, Italy.	4th B.C.
10. Unknown	South Italy.	4th B.C
11. Grave find, 4th century B.C. Dated by Apulian red-figure wares from the tomb.	Conservano, Puglia, Italy	
12. Unknown	South Italy.	4th B.C
13. Grave find, 4th century B.C. Dated by Apulian red-figure wares from the tomb.	Rudiae near Lecce, Puglia, Italy.	
14. Grave find, 4th century B.C. Dated ceramics found in the tomb.	Rudiae near Lecce, Puglia, Italy.	

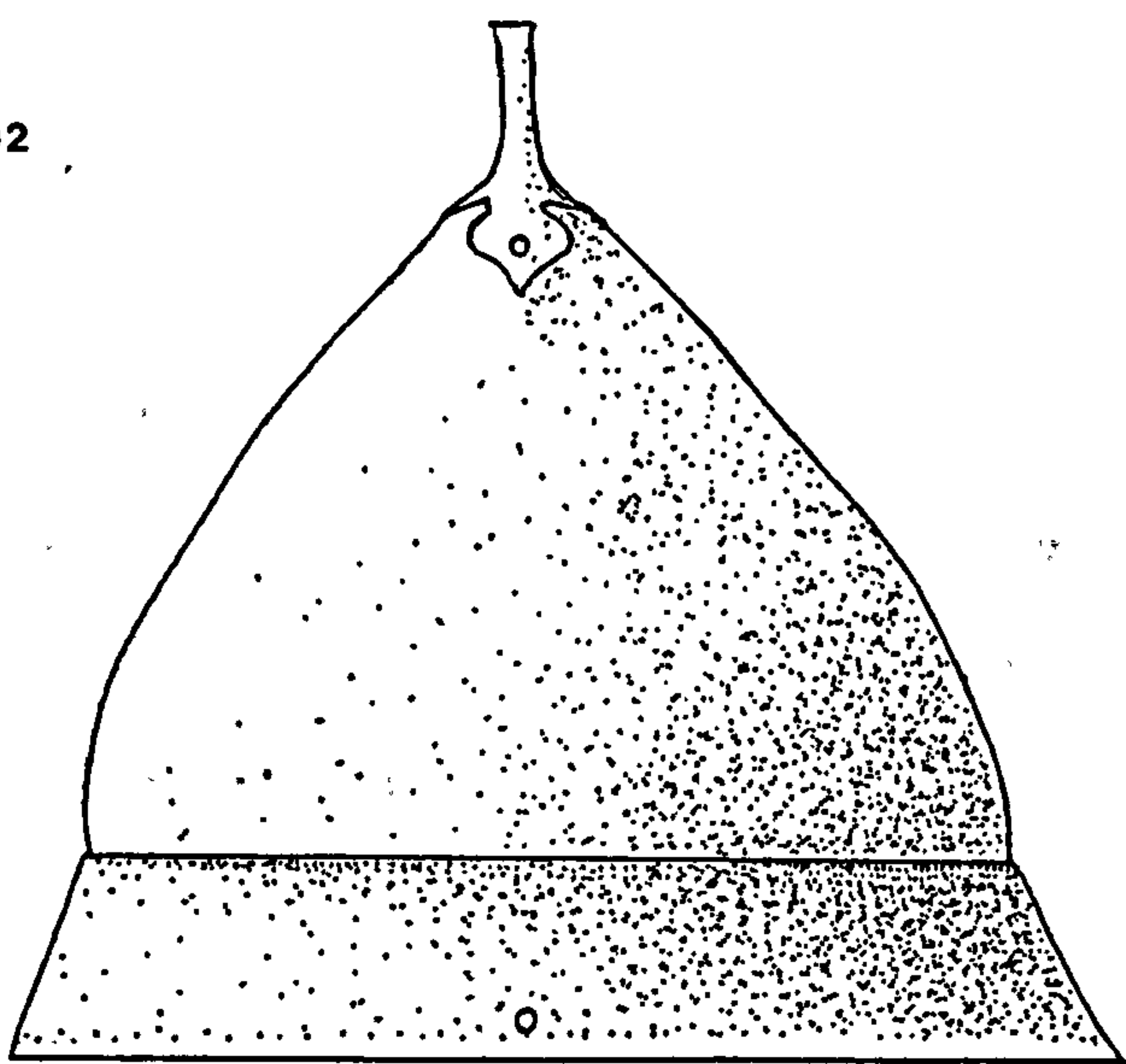
Typology.

As has been previously stated (Snodgrass. 1967, 94. and Paddock. 1981, 35.) there can be no doubt that the bronze Pilos helmet originates in Greece in the 5th century B.C. and is derived from the felt cap also known as a *Pilos*. Its development must therefore be seen against the background of the general tendency from the beginning of the 5th century B.C. onwards to lighten the defensive equipment of the Greek hoplite and in Italy as part of the movement towards more flexible tactics and the lightening of equipment in general following the Gallic Incursions and the rise and expansion of Samnite confederacy.

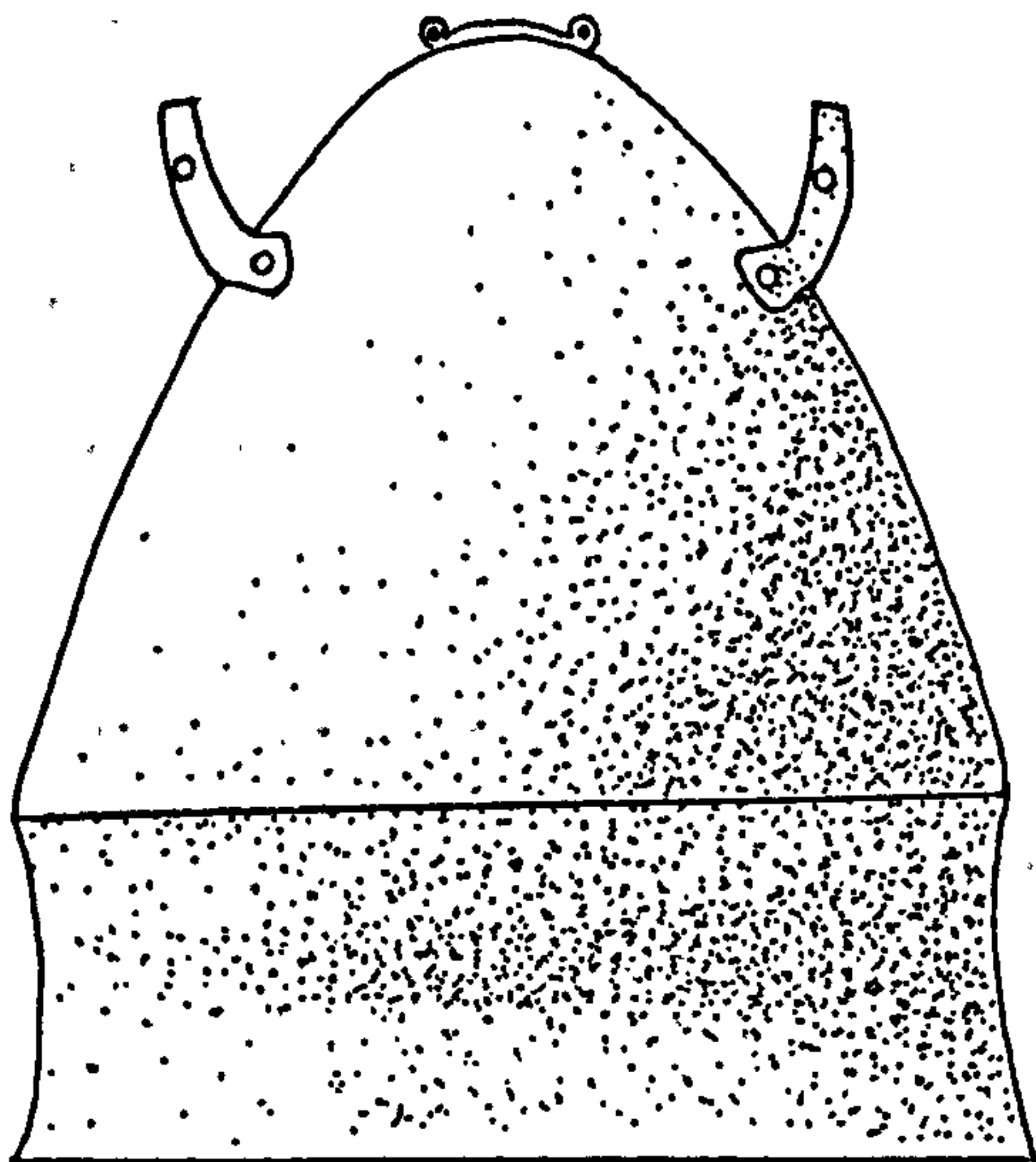
Based on the foregoing analysis (Table 2.) of bowl form, height, decoration and the provision and form of the crest-fixtures, the writer has divided the Pilos helmet used in Italy into four distinct types. Both the Greek and Italian variants are characterised by a level, fitted brow-band or brim from which swells a more or less conical bowl.

Although clearly derived from Greek prototypes the Italian varieties quickly develop characteristics of their own and differ in a number of distinct ways, most importantly in the form and curvature of the helmet bowl itself. As it develops these differences become more enhanced, the bowl of the helmet becoming higher and more bulbous. Indeed the addition of a neck-guard and cheek-pieces to helmets of type IV alter the whole character of the defensive qualities of the helmet and therefore its *raison d'être*, it no longer being a light open head defense designed primarily against a downward blow.

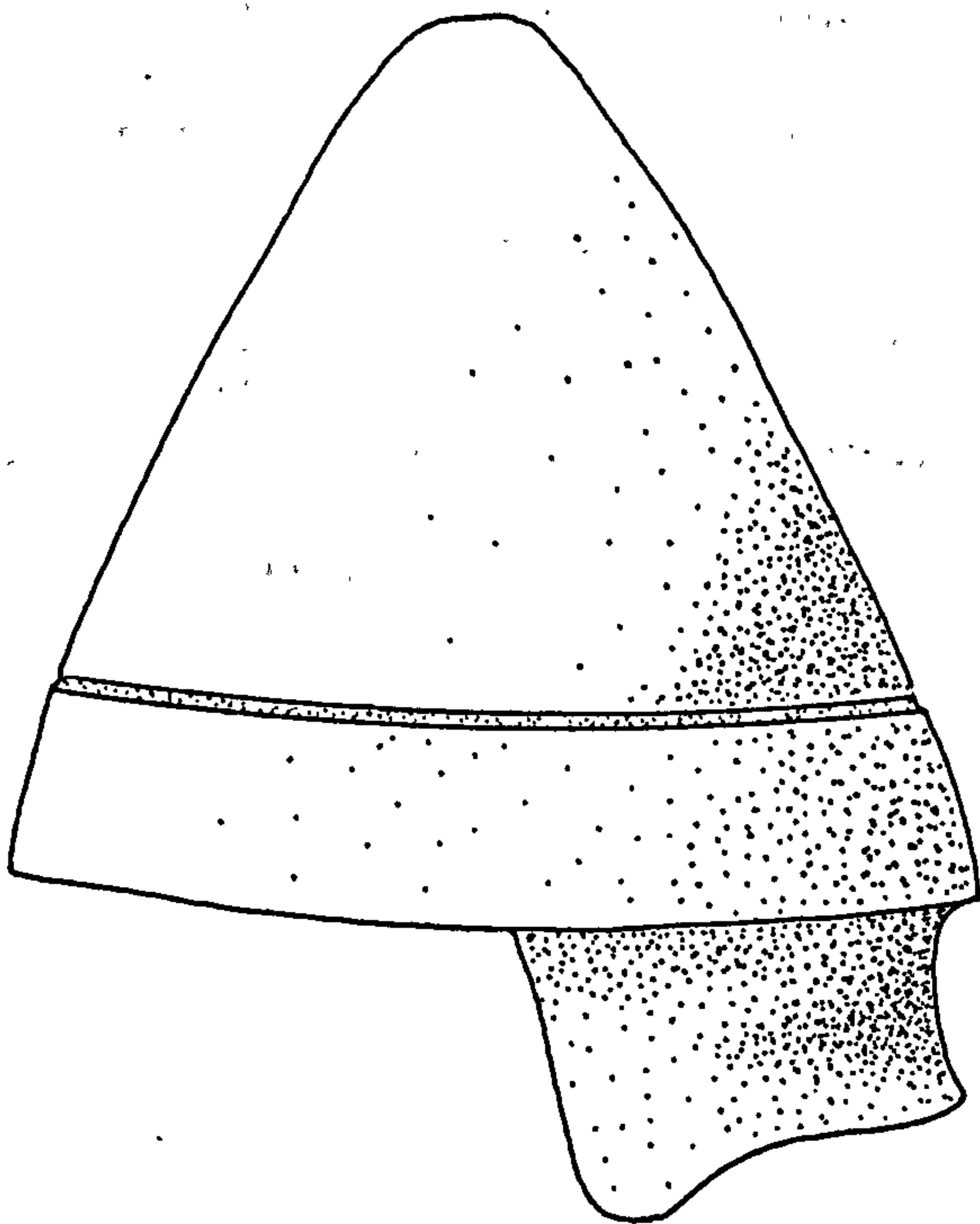
FIG. 102



4



5



14

Type I. (Nos. 1-4)

This type of helmet is typologically the earliest and exhibits the least development from the mainland Greek prototypes. Only one example of this type comes from a dated context, i.e. Helmet No.1 from a late 5th century grave at Paestum. This type is characterised by a straight sided conical bowl which swells very slightly from a fitted brow-band of moderate depth which follows the general profile of the bowl. The junction between the two is effected by either a pronounced step, as on helmets Nos.2, 3 and 4, or in an embossed ridge, as on helmet No.1. The other diagnostic feature of this group is that the width of the helmet is equal to or greater than its height which is incidentally also characteristic of contemporary Pilos helmets of undoubtedly Greek manufacture found on the Greek mainland and throughout the Hellenistic world e.g. a pilos helmet from a well in the Piraeus, now in the Metropolitan Museum of Fine Arts New York Inv. No. 08, 258. 14. Helmets of type I have no provision for cheek-pieces and are not equipped with a neck-guard. However at either side of the brow-band is pierced a single hole for the attachment of a chin-strap.

Helmet No.4 (from the Zschille collection) is equipped with a bronze tubular plume-holder. This is flanged at its base to facilitate its attachment to the apex of the helmet. The flange is divided into four leaf-shapes through each of which passes a rivet. Helmet No.2 from Sicily has four similarly disposed rivet holes and was presumably equipped with a similar fitting.

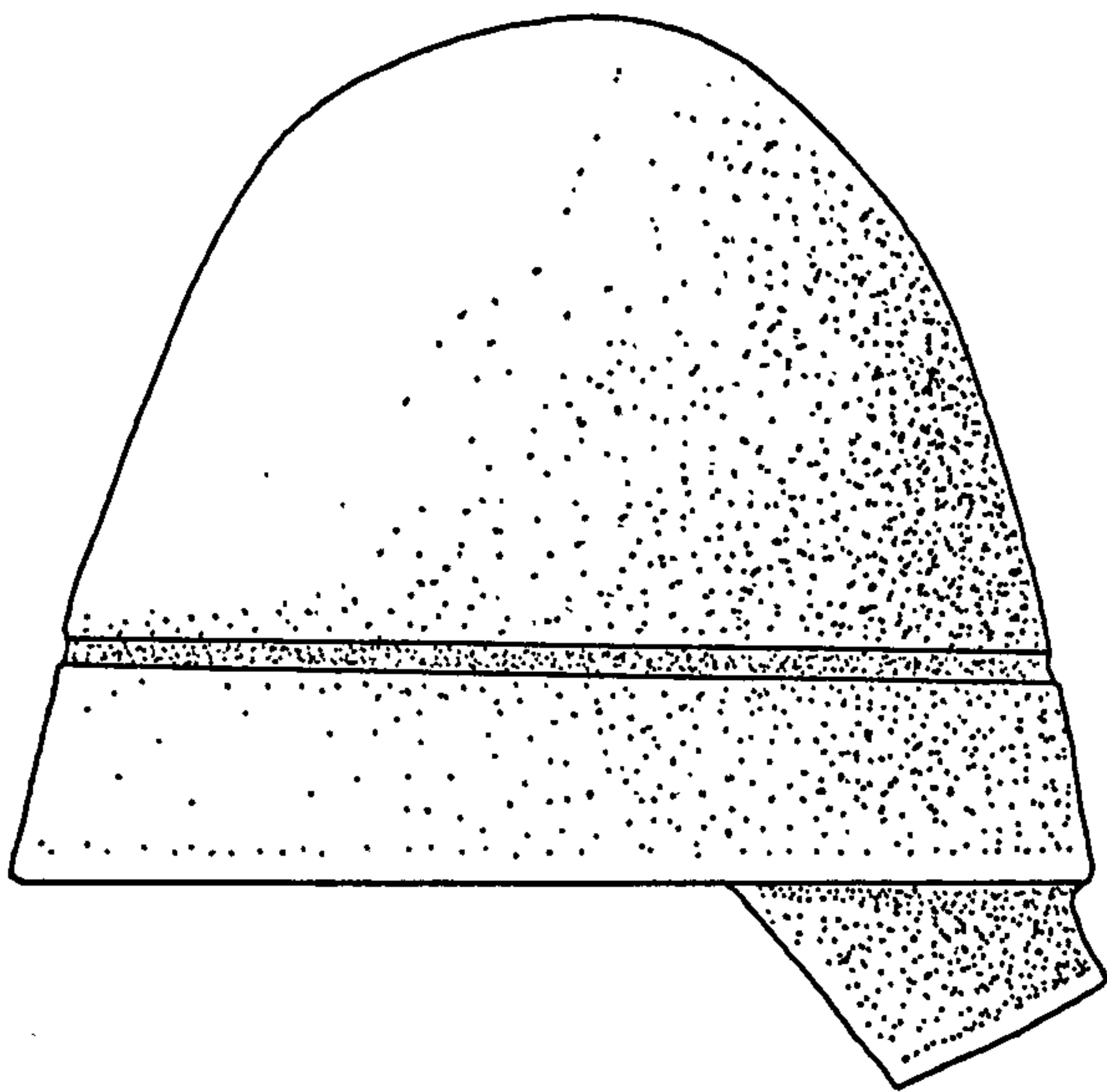
Type II. (No. 5.)

Helmets of type II are represented by only a single example, from a grave in the Basilicata and now in the Bibliothèque Nationale, Inv. No. 1994. This type represents an intermediary form halfway between the strongly Greek influenced Type I and the fully developed native Italian Type III.

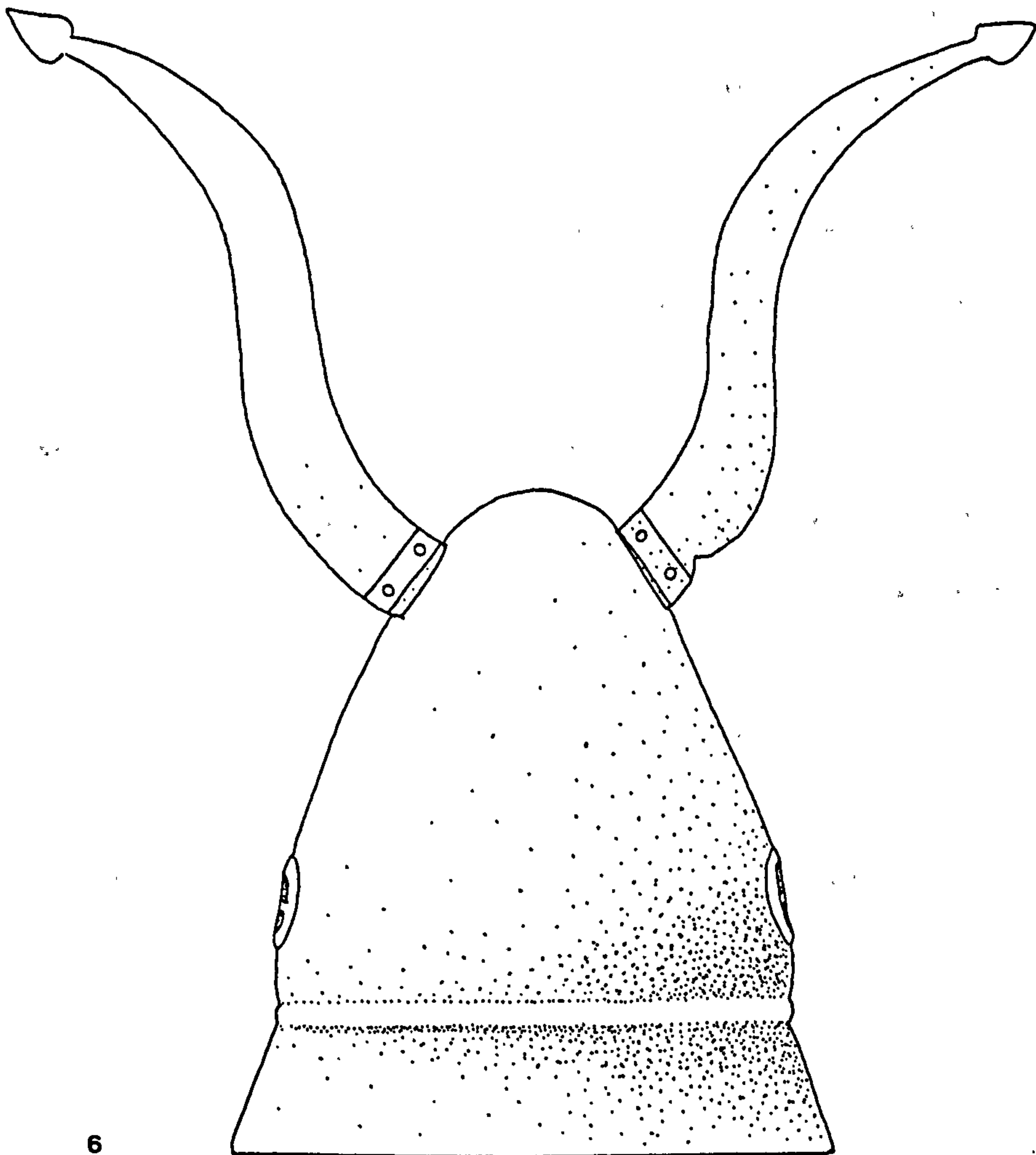
It has a moderately high and slightly bulbous conical bowl. This swells from a vertical brow-band the lower edge of which has been caulked back to thicken it. The junction between the two is marked by a shallow indented line. The overall height of the helmet (200 mm.) is greater than the width (175 mm.) and once again this feature heralds the transition from the Greek inspired form to the purely Italian types where the height to width ratio is increased even further and the bowl is elongated and attenuated. Like the previous type the width and breadth measurements are the same giving the helmet a circular section.

Another feature common to this type of helmet and the more developed type III is the presence of two short horns, in this case curved, which project from a base plate, one is riveted on each side high up the helmet bowl. These are pierced by a single hole and were intended to support large detachable sheet bronze horns which fit over the smaller ones and were held in place by a pin passing through both. The large horns are now missing in the case of helmet No.5, but they would certainly have been similar to those found on helmets 6, 8, 9 and 11.

FIG. 103



12



6

Type III. (Nos. 6-11.)

This type is numerically the largest and is a purely Italian derivative of the Pilos helmet. The helmets where precise contexts are known date to the end of the 4th and beginning of the 3rd centuries B.C. It exhibits very strong local influences on the imported Greek helmet type which has been modified and adapted to the changing face of Italian warfare.

These helmets are well made and are characterised by high attenuated conical bowls. They have strongly curved sides which impart a "waisted" appearance to them. The junction between the bowl and the brow-band is marked by a shallow embossed ridge. The brow-bands themselves are strongly flared and their lower edges are caulked to thicken and strengthen them. They are considerably deeper than on the other forms of this helmet. The overall heights of this type of Pilos helmet are far greater than their widths, which are in turn greater than their depth. One form of crest-fixture is intimately associated with this type. This consists of a bronze "U" shaped bracket the majority being mounted on a vertical stem riveted either directly to the apex of the helmet or to a fluted, hemispherical cup which is soldered to the helmet. There are two exceptions to this form of crest-fixture and they occur on helmets Nos. 7 and 11. Helmet No. 7, now in the Louvre, is adorned with a cast bronze griffon mounted on the apex of the helmet and helmet No. 11 has a "U" bracket terminating in chariot wheels mounted directly to the fluted cup.

All the helmets of this type have applied decoration of one form or another. Helmet No. 7 in addition to the cast bronze griffon crest-fixture is decorated by an applied bronze medallion portraying a

galloping Pegasus. Likewise helmet No. 10, from the Hermitage, bears an appliqué in the form of a Medusa's head. Helmets Nos. 6 and 11 from Canosa and Conservano respectively are both decorated by applied chariot wheel motifs.

Finally the majority of helmets of this type share a single decorative motif. This consists of applied sheet bronze horns, in the case of helmets No. 9 and 11 in the form of "dragons" heads. These horns slot over two short trapezoid-shaped supports which project from a base plate riveted one on either side of the helmet bowl. Each support is pierced by a single hole in order to receive a pin with which to retain the sheet bronze horns.

Type IV. (Nos. 12-14.)

All three helmets of Type IV apparently date from the 4th century B.C. and differ from all the previous types in one important respect, in that they are all equipped with a neck-guard.

These helmets are markedly conical in form and the shape of the bowls are very similar to those of Type I, except that their width is invariably greater than their depth. They are straight sided with a domed apex. The bowl swells from a shallow fitted brow-band. The junction between these is formed by a narrow indented line. At the rear beneath the rim of the brow-band projects a slightly everted neck-guard. Helmets 12 and 14 are equipped with chin-strap fixtures consisting of a single hole pierced in either side of the brow-band which implies that they were not equipped with cheek-pieces as these are rarely supported by single rivets at this date. However helmet No. 13, from Rudiae, is equipped with simple bicuspid cheek-pieces, similar in form to those of helmet No. 10, now in the Hermitage.

These are supported by multi-hasped hinges riveted to the helmet bowl by two rivets.

As a group these three helmets are well made, but have very little in the way of decorative features simply having an indented line dividing the brow-band from the helmet bowl and they are not equipped with crest-fixtures.

Type I.

1. Paestum, Campania ,Italy. Museo Nazionale Naples. Undecorated. Lipperheide, von. 1896, 129, No. 382. (fig. 101:1) Connolly, 1981, 110.
2. Sicily. Metropolitan Museum of Fine Arts New York (Inv. No. 08, 24.). Undecorated. (fig. 101:2) Richter. 1905, 420.
3. Unprovenanced but from Italy. Kunsthistorisches Museum Vienna. Undecorated. (fig. 101:3) Lipperheide, von. 1896, 130, no.112.
4. Unprovenanced but from Italy. Present whereabouts unknown but was recorded in the Collection of R. Zschille of Grossenhain in Saxony in 1896. Undecorated. (fig 102:4) Lipperheide, von. 1896, 131, No. 269.

Type II.

5. The Basilicata, Italy. Bibliothèque Nationale Paris (Inv. No. 1994.). Decorated: The decoration consists of short applied curved horns, which may be the supports for larger horns. (fig. 102:5) Lipperheide, von. 1896, 133, No.340. Adam. 1984, 120, No. 152.

Type III.

6. Canosa, Puglia, Italy. Badisches Landesmuseum Karlsruhe (Inv. No. F434.). Decorated: The decoration consists of applied miniature

bronze chariot wheels and applied sheet bronze horns. (fig.103:6)

Schumacher. 1890, 132 No. 697. Lipperheide, von. 1896, 136, No.26.

7. Unprovenanced from Italy. The Musée du Louvre, Paris (Inv. No. 1105, C6958.). Decorated: The decoration consists of an applied crest-fixture in the form of a griffon and a medallion portraying a galloping Pegasus. (fig. 104:7) Ridder de. 1915, 2.

8. Unprovenanced, Italy. The Musée du Louvre Paris (Inv. No. S 1534). Decorated: the decoration consists of an applied and fluted crest-fixture, applied curling sheet bronze horns and an applied gilded wreath. (fig. 104:8) Lipperheide, von. 1896, 137, No.362.

9. Ruvo, Puglia, Italy. The British Museum (Inv. No. 2824. 8-20. 22.). Decorated: The decoration consists of applied sheet bronze horns in the form of dragons' heads. (fig. 105:9) Lipperheide, von. 1896, 140, No.245. Walters. 1899, 348, No. 2824. Stary, 1982, 6, pl. 23.

10. Unprovenanced, Italy. The Hermitage, St Petersburg. Decorated: The decoration consists of an applied cast bronze Gorgon's head. (fig. 105:10) Lipperheide, von. 1896, 138.

11. Conservano, Apulia, Italy. Museo Nazionale Bari. Decorated: The decoration consists of an embossed youth's head on the bowl and embossed dogs on the brow. It has a fluted dish-shaped crest-fixture surmounted by a pair of miniature bronze chariot wheels. (fig. 106:11) Connolly. 1981, 122, fig no. 1.

Type IV.

12. Unprovenanced from Italy. Frankfurt am Main Museum. Undecorated. (fig. 103:12) Lipperheide, von. 1896, 135, No. 221.

13. Rudiae near Lecce, Puglia, Italy. Museo Provinciale di Lecce. Undecorated. (fig.106:13) Ponti. 1973, 52, pl.187.

14. Rudiae near Lecce, Puglia, Italy. Museo Provinciale di Lecce. Undecorated. (fig. 102:14) Ponti. 1973, 51, No.85.

Crest-fixtures.

Just under a third of the extant Pilos helmets, Nos 1, 3, 12, 13 and 14, have no provision for a crest-fixture of any kind. The crest-fixture on the majority are composed of two types, those with feather tubes, helmets Nos 2, 4 and those with some form of "U"-shaped bracket, Nos; 5, 6, 7, 8, 9, 10 and 11.

As has been discussed above, helmet No.4 is equipped with a tubular bronze plume-holder, which is flanged at its base to form four separate leaf-shaped flanges, by which it is riveted to the apex of the helmet. Helmet No.2 has a similar arrangement of rivet holes and so can be presumed to have had a similar crest-fixture.

On those helmets equipped with "U"-shaped crest-brackets the vast majority are supported by rod-like stems mounted on the apex of the bowl. They are attached in one of three different ways. They are either riveted directly through the helmet bowl, as on helmet No.9 and possibly helmet No.6, although the base of the stemmed crest support on this helmet, from Canosa, has been altered in modern times and has been threaded to receive a nut which fastens inside the helmet, or riveted to fluted bronze cup-like features which are soldered to the helmet as is the case on helmets Nos.8, 10 and 11, or finally they are detachable as in the case of helmet No.5 where they use a similar system to that found on Samno-Attic and Apulo-Corinthian Helmets. The actual "U" brackets on helmets 9 and 11 terminate in ivy

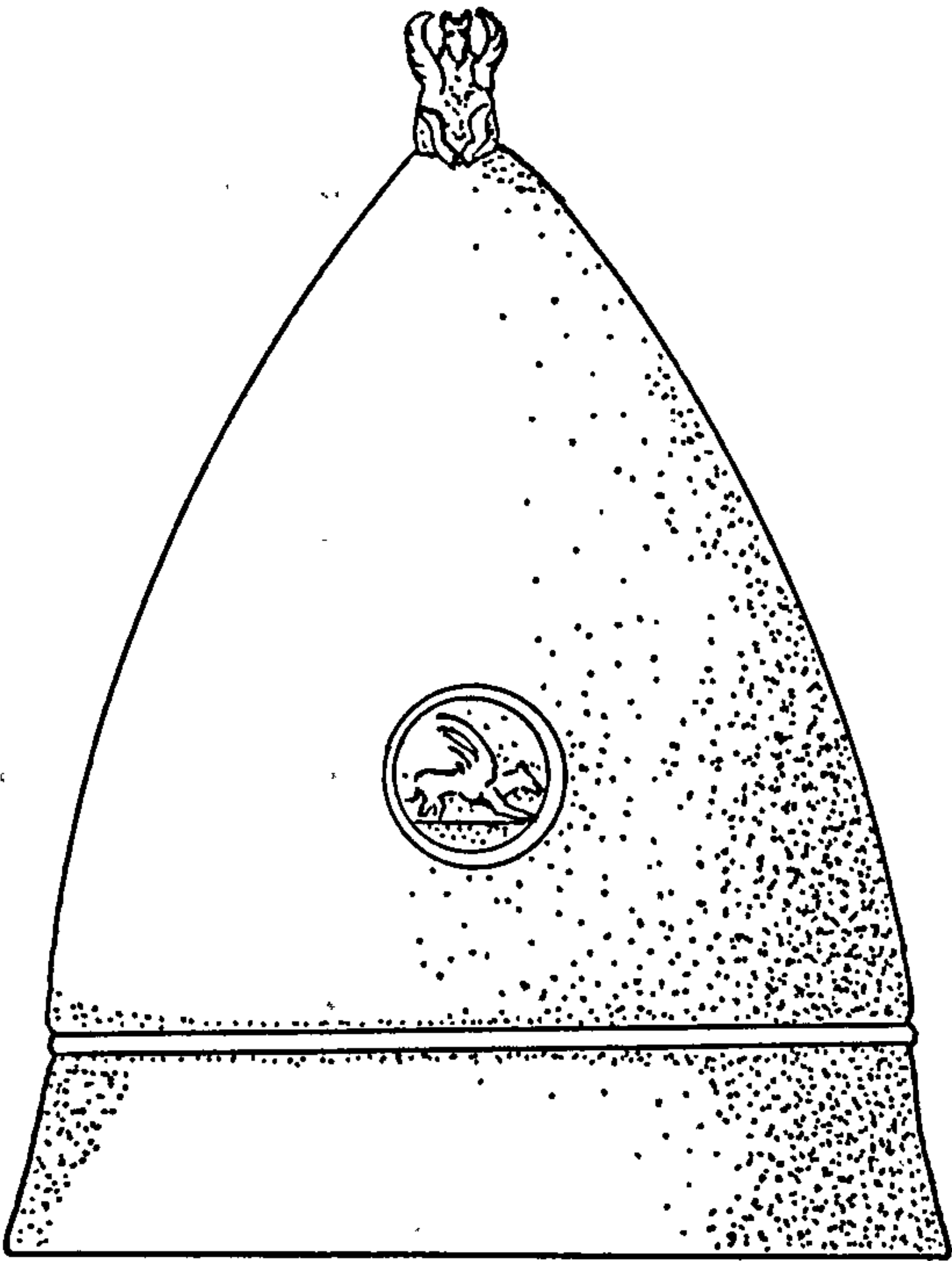
leaf motifs. The exceptions to the stemmed bracket variety of crest-holder are helmets 7 and 11 and to a lesser extent helmet No.9. On helmet 11 from Conservano the "U" bracket is mounted directly to the fluted cup and each arm terminates in a chariot wheel motif. In the case of helmet No. 7 the "U"-shaped bracket takes the form of a cast bronze griffon attached directly to the helmet bowl and finally helmet 9 instead of the "U" bracket being supported by a straight stem its is borne by a scrolling tendril of bronze. In addition to the stem mounted crest-brackets helmets Nos. 9 and 10 have small bronze loops attached to the bowl and set at right angles to the brackets to provide anchorage points in order to tie down the crest-box and make it more stable. This last feature is also commonly to be found on Negau helmets (see Chapter 3).

Cheek-pieces.

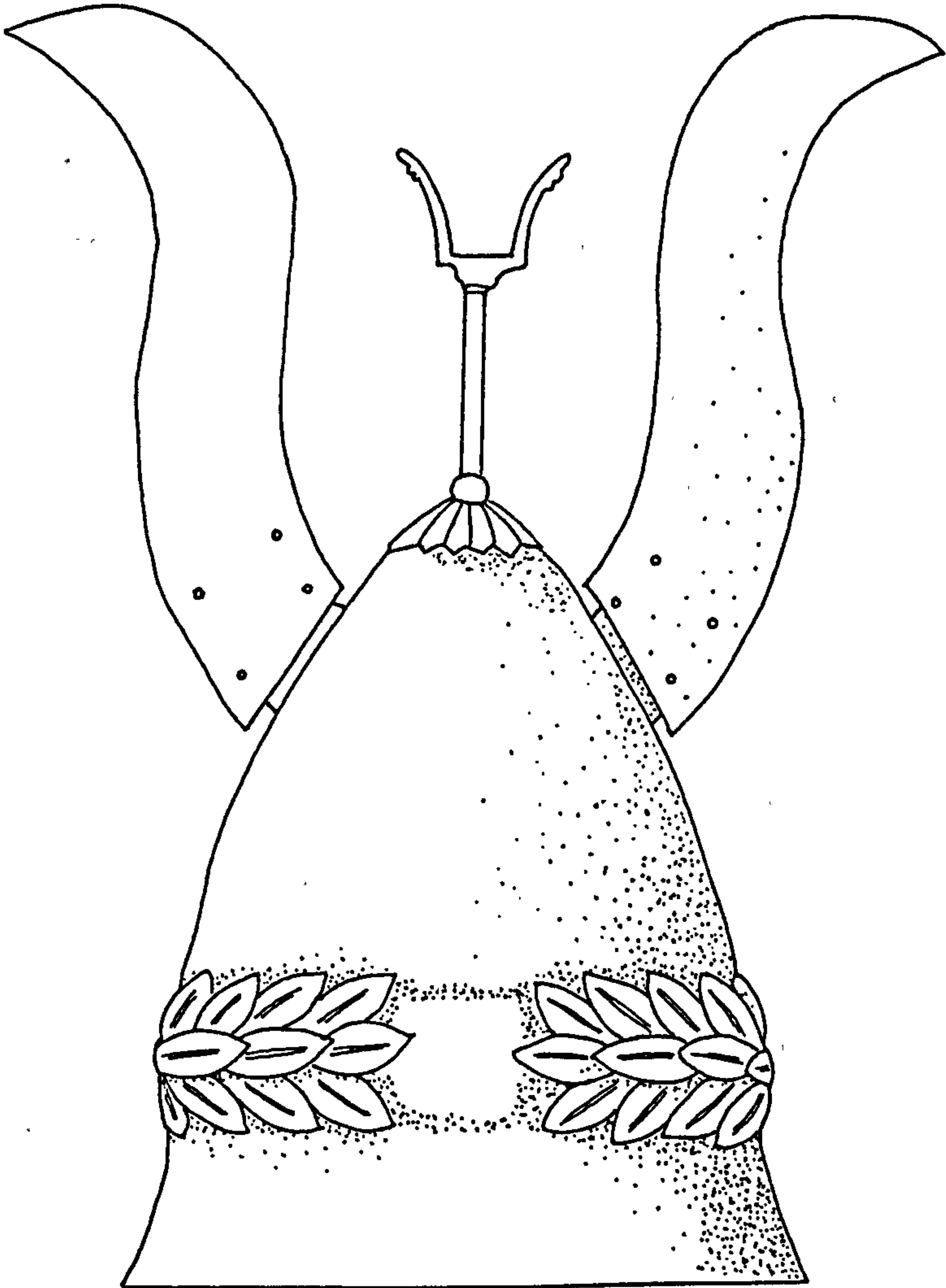
The majority of Pilos helmets have no cheek-pieces and are simply equipped with chin-strap fixtures which usually take the form of a single hole pierced in opposing sides of the brow-band. In the case of helmet 9 from Ruvo, now in the British Museum, there are two holes each side, whereas on helmet No. 6 from Canosa, now in the Badisches Landesmuseum Karlsruhe, and helmet 11 from Conservano these fixtures are provided by the chariot wheels which are riveted to either side of the helmet.

Only two pilos helmets bear any traces of ever having been fitted with cheek-pieces, these are helmets No. 13, from Lecce, and No. 10, now in the Hermitage. In both cases the cheek-pieces are of a simple bicuspid form (fig. 106:13) and are supported by multi-hasped hinges which are attached high in the brow-band by two rivets.

FIG. 104



7



8

Decoration.

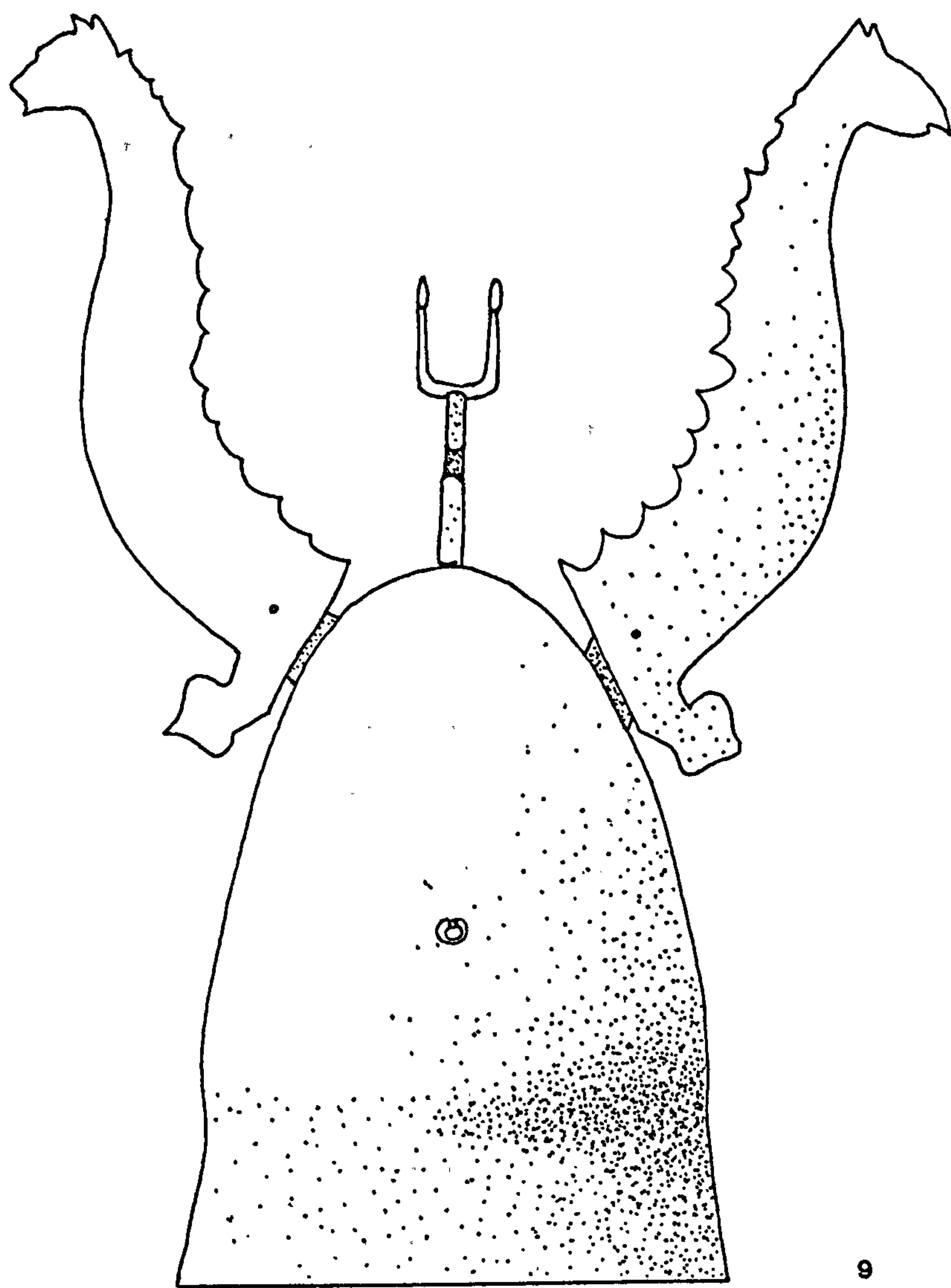
Nearly a half of the extant Pilos helmets, in fact those of Types I and IV which are derived directly from Greek prototypes, are devoid of decoration. The remaining helmets, those of types II and III have applied decoration of one form or another. The majority, helmets Nos. 5, 6, 8, 9 and 11, have detachable sheet bronze wings which take one of several different forms. Helmet no. 5, from the Basilicata, no longer retains its wings and only has two short horn-shaped mounts riveted to the bowl which are pierced to accept the retaining pins for the larger sheet bronze wings which would have fitted over them. Helmets 6 and 8 sport simple curved wings which end in leaf motifs fixed to mounts similar to those found on helmet No. 5. The wings on helmet No. 9 differ in two respects, first they take the form of dragons' heads facing outwards from the bowl and secondly they fit over trapezoid-shaped mounts riveted to the bowl of the helmet. Helmet No. 11 from Conservano has damaged wings and their overall form is not distinguishable except in that they are curved in a similar manner to those of helmet No. 9. They are also constructed to fit over similar trapezoid mounts riveted to the helmet bowl.

In addition to the wings all the helmets of type III have other applied decoration. Helmets 6 and 11 have two bronze four-spoked wheel motifs riveted to the sides of their bowls just above their brow-bands. Helmet No. 8 is adorned with a wreath constructed of sheet gold leaves which is soldered to the bowl and covers the junction between the bowl and the brow-band. Helmets 7 and 10, on the other hand have applied, cast bronze medallions fixed to the front of their bowls. On helmet 7 this takes the form of a rondel depicting

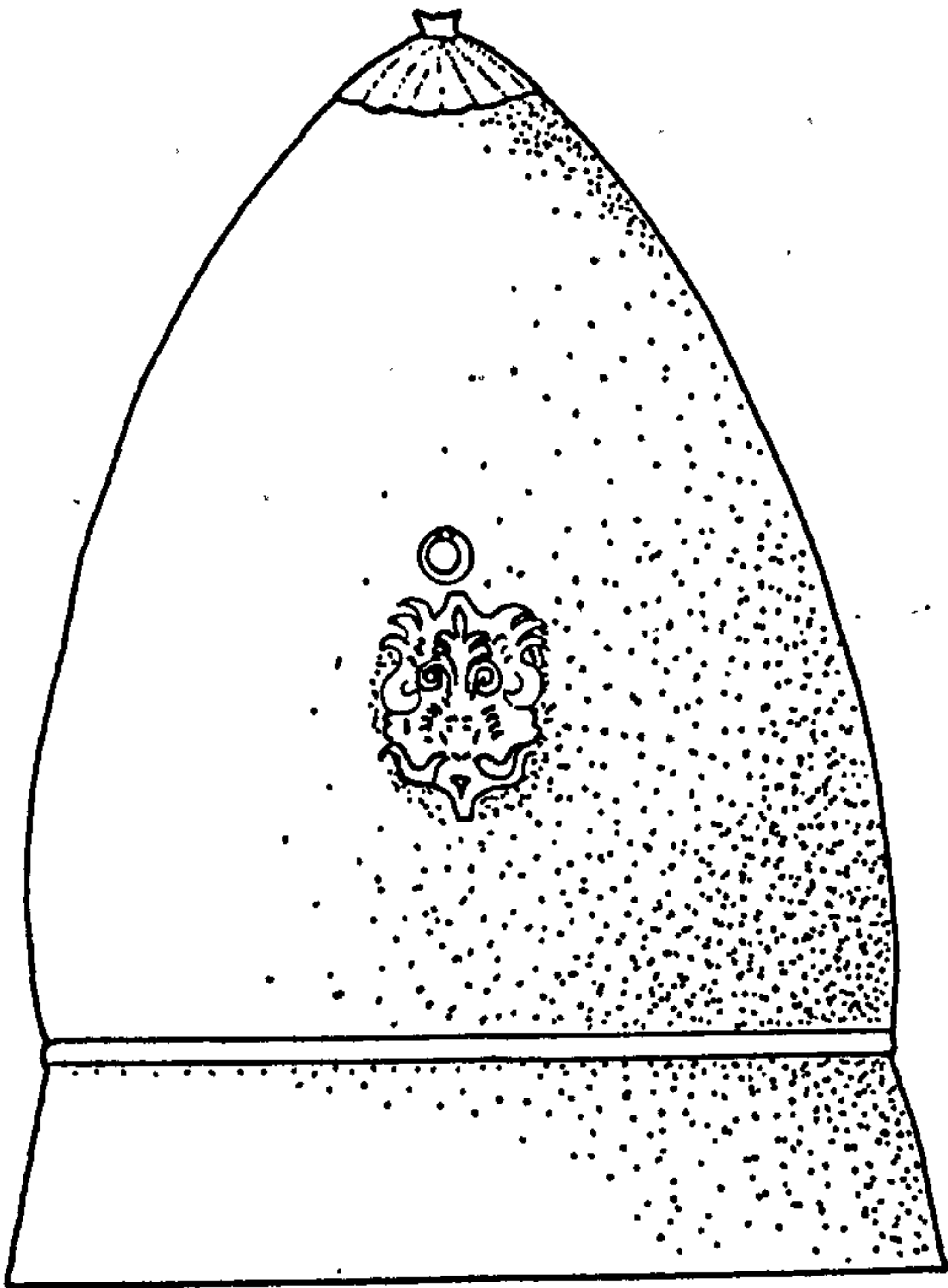
Pegasus which is soldered on, whilst on helmet No. 10 this appliqué consists of a Medusa's head pinned onto the bowl.

Decoration is also extended to the crest-fixtures of some Pilos helmets and fluted crest-cups are to be found on helmets 8, 10 and 11 and probably originally on helmet No. 6, from Canosa. This helmet has a circular mark in the patination at its apex and its crest-fixture is now held to the helmet by a modern nut.

Finally only one pilos helmet, No. 11, has repoussé decoration. This takes the form of a youth's head embossed at the centre of the front of the bowl and attenuated hunting hounds running around the brow-band. Connolly (1981, 122.) has suggested that the decoration of this helmet is of purely Celtic nature and origin. This however seems unlikely since the style of the embossed youth's head is purely Italic in inspiration and execution.



9



10

A Detailed Study of a helmet of each Type:

Helmet No. 2.

Type: Type I.
Location: Metropolitan Museum of Fine Arts New York.
Inventory No.: 08 24.
Provenance: Sicily.
Material: Bronze.
Context: Unknown.

Suggested date: 5th-4th centuries B.C.

Dimensions: Overall height: 205 mm.
Overall width: 200 mm.
Internal width: 196 mm.
Overall breadth: 200 mm.
Internal breadth: 197 mm.

Thickness: Brim: 2 mm.
Bowl: 0.8-1 mm.

Chin-strap Fixture: At either side towards the base of the brow-band is pierced a single hole which either held a loop for the attachment of the chin-strap or into which was riveted the chin-strap.

Crest-fixture: Missing. There are four rivet holes disposed radially around the apex of the bowl. This arrangement is similar to that found on helmet No.4, from the Zschille collection, where the crest-fixture consists of a tubular feather-holder, made of sheet bronze, which has four right-angled

flanges at its base shaped like vine leaves. The fixture is held in place by four rivets one through each leaf. It is probable therefore that this helmet was fitted with a similar crest-fixture to that of helmet No.4.

Decoration: None.

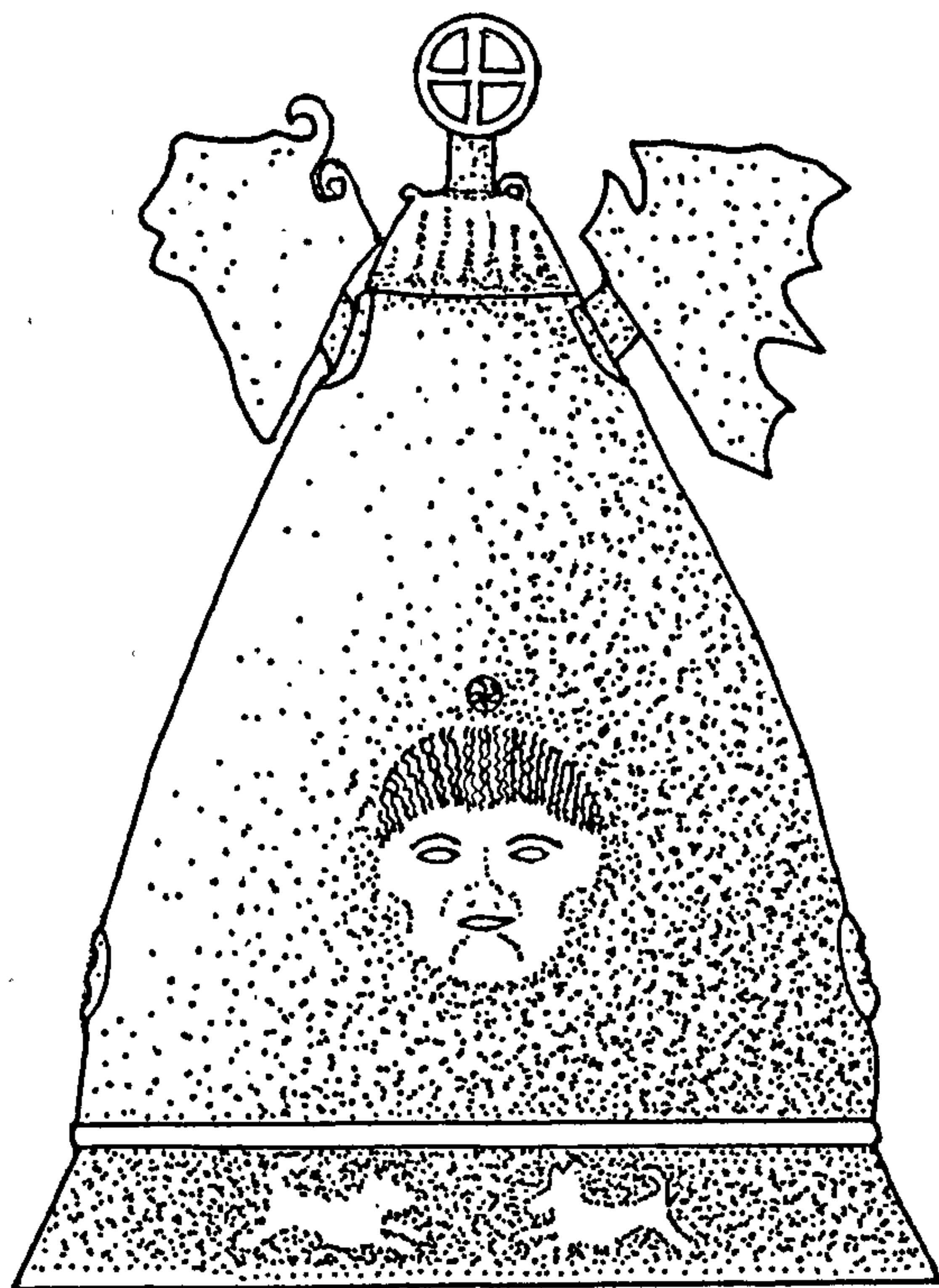
Manufacture: The helmet is formed from a single sheet of bronze and was probably "blocked" and "raised", there is however a possibility that due to its shape and totally round section that it was spun on a lathe. Unfortunately any traces of this technique have been removed when the helmet was polished.

Description: The helmet bowl is fairly conical with a slightly domed apex. The sides have a slight outward curve. The bowl swells from a straight, fitted brow-band and the junction between the two is marked by a pronounced step. The lower edge of the brow-band is caulked back to thicken it. The helmet has a battered appearance overall and has a number of slight cracks. It has a green/blue patina.

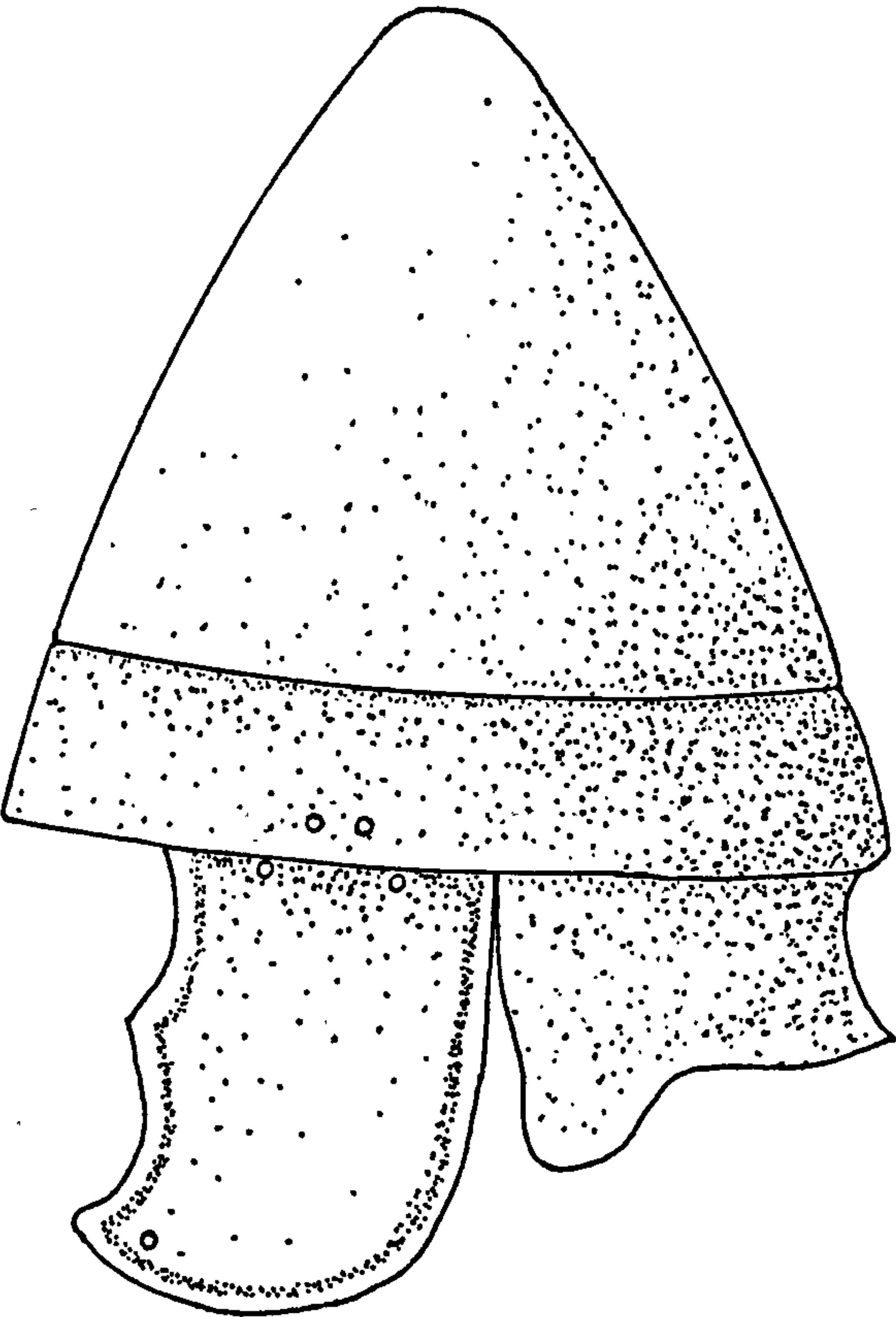
Other features: None.

Published: Richter. 1905, 420.

FIG. 106



11



13

Helmet No. 5.

Type: Type II.

Location: The Bibliothèque Nationale Paris.

Inventory No.: 1994.

Provenance: The Basilicata, Italy.

Context: Unknown.

Suggested date: 4th- 3rd centuries B.C.

Material: Bronze.

Dimensions: Overall height: 200 mm.

Overall width: 179 mm.

Internal width: 175 mm.

Overall breadth: 179 mm.

Internal breadth: 175 mm.

Thickness: Brim: 1.5 mm.

Bowl: 0.5 mm.

Chin-strap Fixture: None. The chin-strap must have been attached to
the helmet lining.

Crest-fixture: Remnants of the crest-fixture survive. They consist of a narrow strip of bronze riveted transversely across the apex of the helmet. This strip has been shaped over a rod to produce two raised loops and then folded underneath itself and riveted in place. It the same form of mount used for a detachable "U" bracket type of crest-holder that are found on contemporary Apulo-Corinthian and Samno-Attic helmets.

Decoration: The decoration consists of an indented line forming

the junction between the brow-band and the helmet bowl itself. At either side of the bowl is riveted a short curving horn projecting from a flat base plate. These horns are pierced by a single hole towards their upper edge probably for securing larger decorative sheet bronze horns similar to those found on helmets 6, 8, 9 and 11.

Manufacture: The helmet is "raised" from a single sheet of bronze.

Description: It has a high conical bowl with strongly curved sides which form a domed apex. The brow-band is virtually vertical and straight. It has been caulked back to thicken the rim. The junction between the bowl and brow-band is effected by an indented step. The section of the helmet is very nearly circular. It is very well made and in excellent condition. It has a smooth but granular green patina

Other features: None.

Published: Babelon and Blanchet. 1895, 657. Lipperheide, von. 1896, 133, 340. Adam. 1984, 120, No. 152.

Helmet No. 9.

Type: Type III.

Location: The British Museum.

Inventory No.: 2824. 1873 8-20.222.

Provenance: Ruvo near Bari, Puglia, Italy.

Context: Unknown.

Suggested date: Late 4th-3rd centuries B.C.

Material: Bronze

Dimensions: Overall height: 419 mm.

Height of Bowl: 256 mm

Overall width: 217 mm.

Internal width: 215 mm.

Overall breadth: 179 mm.

Internal breadth: 176 mm.

Thickness: Brim: 2.2 mm.

Bowl: 0.5 mm.

Chin-strap Fixture: These consist of two holes (3 mm apart and 2 mm. in diameter) pierced in either side of the helmet bowl just above the embossed ridge.

Crest-fixture: This consists of a bronze "U"-shaped bracket riveted to the top of a scrolling "S"-shaped support. This assemblage is attached to the apex of the helmet by a single rivet. The terminals of the "U" bracket are cut into the shape of "Ivy" leaves.

Decoration: This consists of applied sheet bronze horns in the form of "dragons'" heads facing outwards. The rear edge of the horns is scalloped to indicate the crest of the dragon and the bottom edge ends in heart-shaped terminals. These horns slot over two short trapezoid-shaped supports, which project from heart-shaped base plates. These are riveted one on either side of the

helmet bowl. Each support is pierced by a single hole, towards its upper edge, in order to receive a pin with which to retain the sheet bronze horns.

Manufacture: This helmet is raised from a single sheet of bronze.

Description: The helmet bowl is tall and conical. It has a slightly bulbous form with strongly curved sides which impart a "waisted" appearance to it. The lower rim of the helmet is caulked to thicken it. Approximately 42 mm. above the rim is an embossed moulding, 5 mm. wide. Below this is a shallow flaring brow-band. The helmet is well made and in good condition although it has a perforation in the top left side of the bowl. Overall it has a dark green granular patina.

Other features: At the front and rear of the bowl, in line with the crest-fixture and 115 mm. above the rim is mounted a single bronze ring attached by a looped rivet. This was presumably used to tie down the crest-box.

Published: Lipperheide, von. 1896, 140, No. 245. Walters. 1899, 348. Stary. 1982, 6, pl.23.

Helmet No. 14.

Type: Type IV.

Location: The Museo Provinciale di Lecce.

Inventory No.: 85.

Provenance: 4th century grave at Rudiae near Lecce, Puglia,

Italy.

Context: Second half of the 4th century B.C.

Suggested date: 4th century B.C.

Material: Bronze.

Dimensions: Overall height: 260 mm.

Overall width: 200 mm.

Internal width: 196 mm.

Overall breadth: 190 mm.

Internal breadth: 187 mm.

Thickness: Brim: 1-2 mm.

Bowl: 0.5-1 mm.

Chin-strap Fixture: This consists of a single hole (2 mm. in diameter) pierced in either side of the brow-band, in front of the neck-guard and towards the lower edge.

Crest-fixture: None.

Decoration: The decoration consists simply of an indented line demarcating the junction between the brow-band and the helmet bowl itself.

Manufacture: It is "raised" from a single sheet of bronze.

Description: The helmet is markedly conical in form. The bowl is straight-sided with a domed apex and swells from a shallow fitted brow-band. The junction between these is formed by a narrow indented line. At the rear beneath the rim of the brow-band projects a neck-guard. This is slightly everted and drawn down at the sides to form short lobate projections similar to

those found on some Samno-Attic helmets (see Nos. 31 and 32 and Hellenistic Greek helmets in general (Paddock 1981.)). The chin-strap fixtures consist of a single hole pierced in either side of the brow-band and this implies that this helmet was not equipped with cheek-pieces. The helmet is well made and in a good state of preservation. It has a smooth patchy green patina.

Other features: None.

Published: Pontl. 1973, 51, No.85.

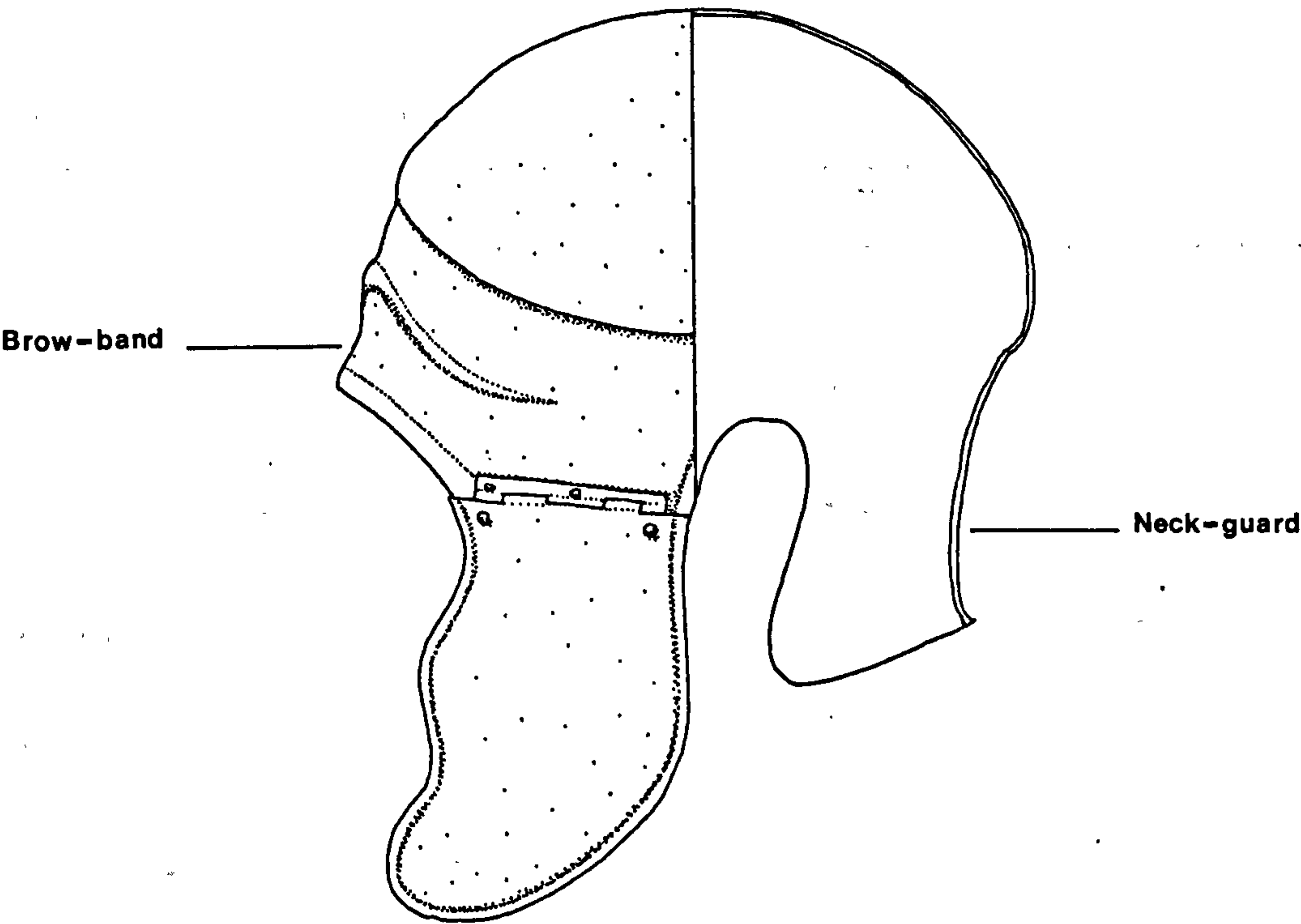
The Samno-Attic Helmet.

Introduction.

This form of helmet is a development of the Greek Chalkidian/Attic helmet of the 5th century B.C., as defined by Furtwängler (1890, 170.) Kunze (1967, 135ff) and Snodgrass (1967, 94.). The form, however modified or debased, occurs in Italy, in contexts dating from the 5th century B.C to the 1st century A.D. The majority however date from the end of the 5th to the early 3rd century B.C. It is found predominantly in southern Italy and occurs regularly in Samno-Lucanian warrior tombs of this period. They are closely associated with the Samnite panoply consisting of either a triple disc breastplate or muscled cuirass, a belt and greaves. Indeed at least five of these complete panoplies have been found, mostly in Campania but at least two come from near Ruvo in Puglia. It is the helmet depicted in conjunction with such equipment in the famous "Warriors' Return" fresco from Paestum. The Samno-Attic helmet is the most commonly depicted head gear in Samno-Lucanian tomb paintings and Campanian wares. The conjunction of these factors, its close association with the Samnite tribes and its derivation from the Greek Attic helmet would seem to suggest that the term Samno-Attic is the most logical way to describe them.

Definition.

Samno-Attic helmets are generally very well made and have low closely fitted bowls with a pronounced medial ridge. They are invariably made of one piece of bronze, are open faced and have hinged cheek-pieces. The bowl swells from a fitted brow-band. The junction is marked by a pronounced embossed ridge. The upper edge of the brow-band is either straight or rises up at the front to an apex to produce a gable. The base may be straight or drawn down to form a slight "V" shaped point over the wearer's nose, at the front. The brow-band is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a closely fitted neck-guard, which usually slopes forward under the wearer's ears. The neck-guard is sometimes slightly everted at the bottom. The majority are decorated with more or less complex embossed designs.



A SAMO-ATTIC HELMET

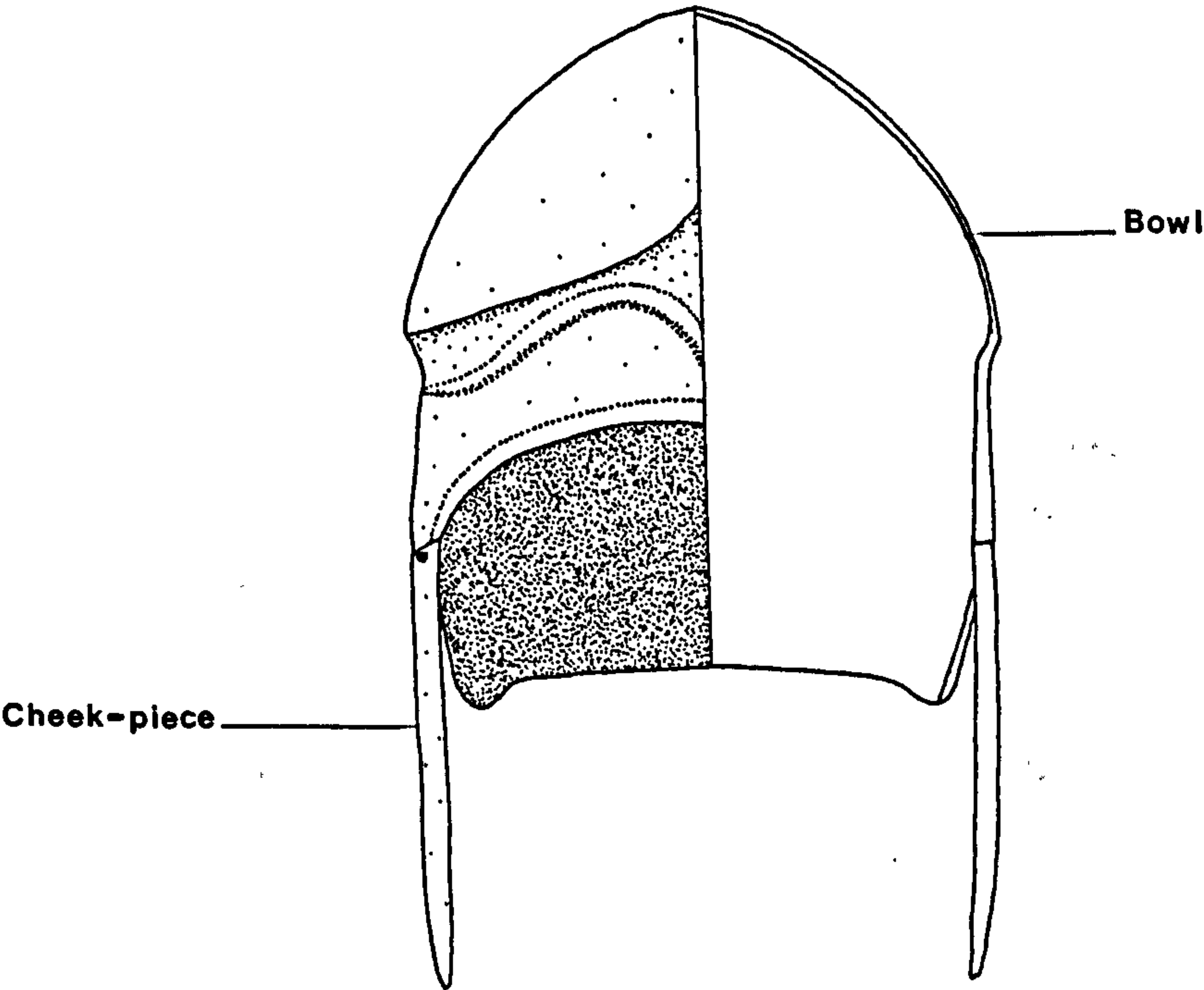


Table 1: Sanno-Attir Helmets.

No.	Museum & Inv. No.:	Cat No. :	Dimensions in mm:			Provenance
			H.	L.	B.	
1.	Agrigento Museum AG 1310	(1)	120	220	150	Agrigento, Sicily.
2.	Castel S. Angelo Rome, 3165.	(367)	210	230	175	South Italy.
3.	Museo Nazionale Naples, 5741.	(266)	220	249	170	Pietrabbondante, Lucania, Italy.
4.	Museo Nazionale Naples.	(267)	220	228	180	Paestum, Campania, Italy.
5.	Musée du Louvre Paris 1129 C6968	(330)	210	220	180	South Italy.
6.	The Hermitage St. Petersburg.	(390)	225	230	178	South Italy.
7.	Museo Poldi-Pezzoli Milan, 2427.	(242)	215	213	195	South Italy.
8.	Museo Arqueologico Madrid 7360.	(209)	265	202	160	South Italy.
9.	Museo Arqueologico Madrid 7364.	(210)	245	176	140	South Italy.
10.	Museo Arqueologico Madrid 7363.	(211)	170	170	140	South Italy.
11.	Whereabouts Unknown Sold London 21.5.84	(444)	225	216	163	South Italy.
12.	Bibliothèque Nat. Paris 2018.	(314)	200	220	164	South Italy.
13.	Museo Poldi-Pezzoli Milan, 2422.	(243)	240	225	183	South Italy.
14.	Yorkshire Museum No Inv. No.	(429)	146	195	185	River Tyne, Newcastle, Great Britain.
15.	Badisches Landes- Museum Karlsruhe F 431.	(156)	185	236	159	Ruvo, Puglia, Italy.
16.	Museo Nazionale Paestum, No Inv No.	(299)	138	210	150	Paestum, Campania, Italy.

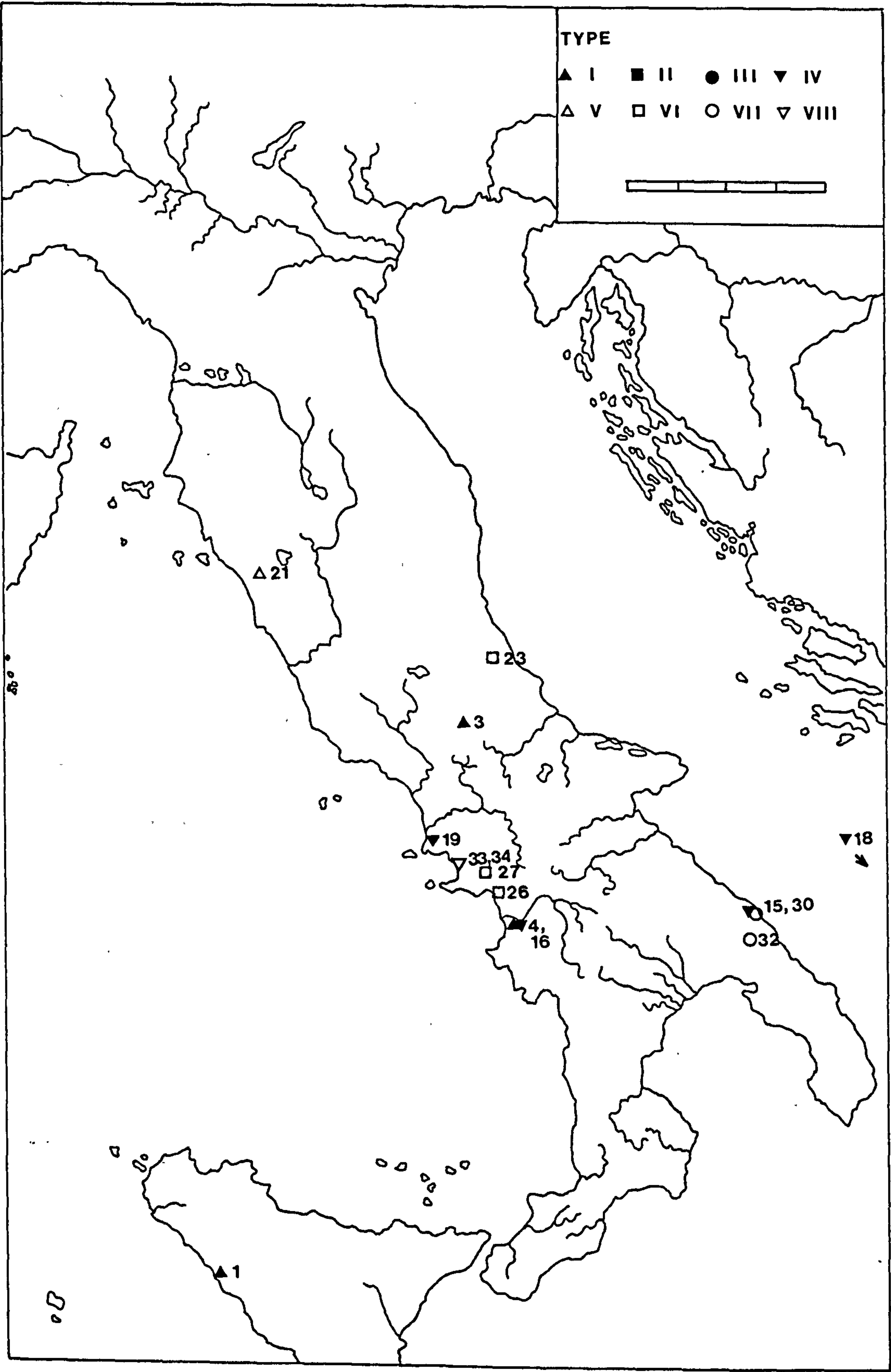
No.	Museum & Inv. No.:	Cat No.	Dimensions in mm:			Provenance
			H.	L.	B.	
17.	Whereabouts Unknown Sold London 10.12.84	(445)	279	205	145	South Italy.
18.	British Museum 2817 8.20-225	(187)	229	238	155	Athens, Greece.
19.	The Royal Armouries London, II 197	(200)	205	215	175	Cumae, Lucania, Italy.
20.	Musée de l' Armée Paris E 7	(303)	231	251	144	South Italy.
21.	British Museum 2724 .7-28.711.	(188)	200	212	170	Vulci, Tuscany, Italy.
22.	Levy Collection New York.	(279)	263	250	192	Apulia, Italy.
23.	Museo Nazionale Chieti 1103.	(111)	213	250	150	Petoro, Marche, Italy.
24.	Musée de l'Armée Paris E 5	(305)	190	214	173	South Italy.
25.	Musée de l'Armée Paris E 6	(305)	236	236	169	South Italy.
26.	Musée de l'Armée Paris E 4.	(306)	222	214	160	Capodignano, Campania, Italy
27.	Museo Nazionale Naples 119,920	(268)	220	210	170	Pertosa Salona, Campania, Italy.
28.	The Antiquarium Munich	(249)	231	237	-	South Italy.
29.	J.P. Getty Museum Malibu, 80 AC12	(226)	225	210	148	South Italy.
30.	Bibliothèque Nat. Paris 2002	(315)	210	212	180	Ruvo, Puglia, Italy.
31.	Bibliothèque Nat. Paris 1998.	(316)	240	209	118	South Italy.
32.	Museo Nazionale Bari, 20890	(39)	305	225	185	Conservano, Puglia, Italy.

No.	Museum & Inv. No.:	Cat No.	Dimensions in mm:			Provenance
			H.	L.	B.	
33	Museo Nazionale Naples	(269)	182	225	175	Herculaneum, Campania, Italy.
34	Museo Nazionale Naples	(270)	179	220	178	Herculaneum, Campania, Italy.

Distribution.

The strongly Greek influenced Samno-Attic helmet predominates in the Samnite controlled areas of central and Lower Italy most especially in Apulia, Lucania and Campania, only one example (helmet No. 21) being found in northern Italy at Vulci in Etruria and one outside the Italian peninsula at Athens (helmet No. 16.). Both of these helmets are now in the British Museum but were acquired in the early part of the last century and Stary (1982, 6.) has cast some doubt on the accuracy of their stated provenances. Indeed Lipperheide (1896, 119.) gives a provenance for helmet no.21 as a grave in the Basilicata, although Walters (1899, 342.) states categorically that it comes from Vulci. Of the remaining helmets where the provenance is accurately recorded seven come from Campania, two from Ruvo near Bari in Puglia and one from Agrigento in Sicily. Because of the paucity of firmly provenanced examples little can be ascertained from the distribution in terms of workshop groupings or temporal development.

FIG. 108 Distribution of Samno-Attic helmets



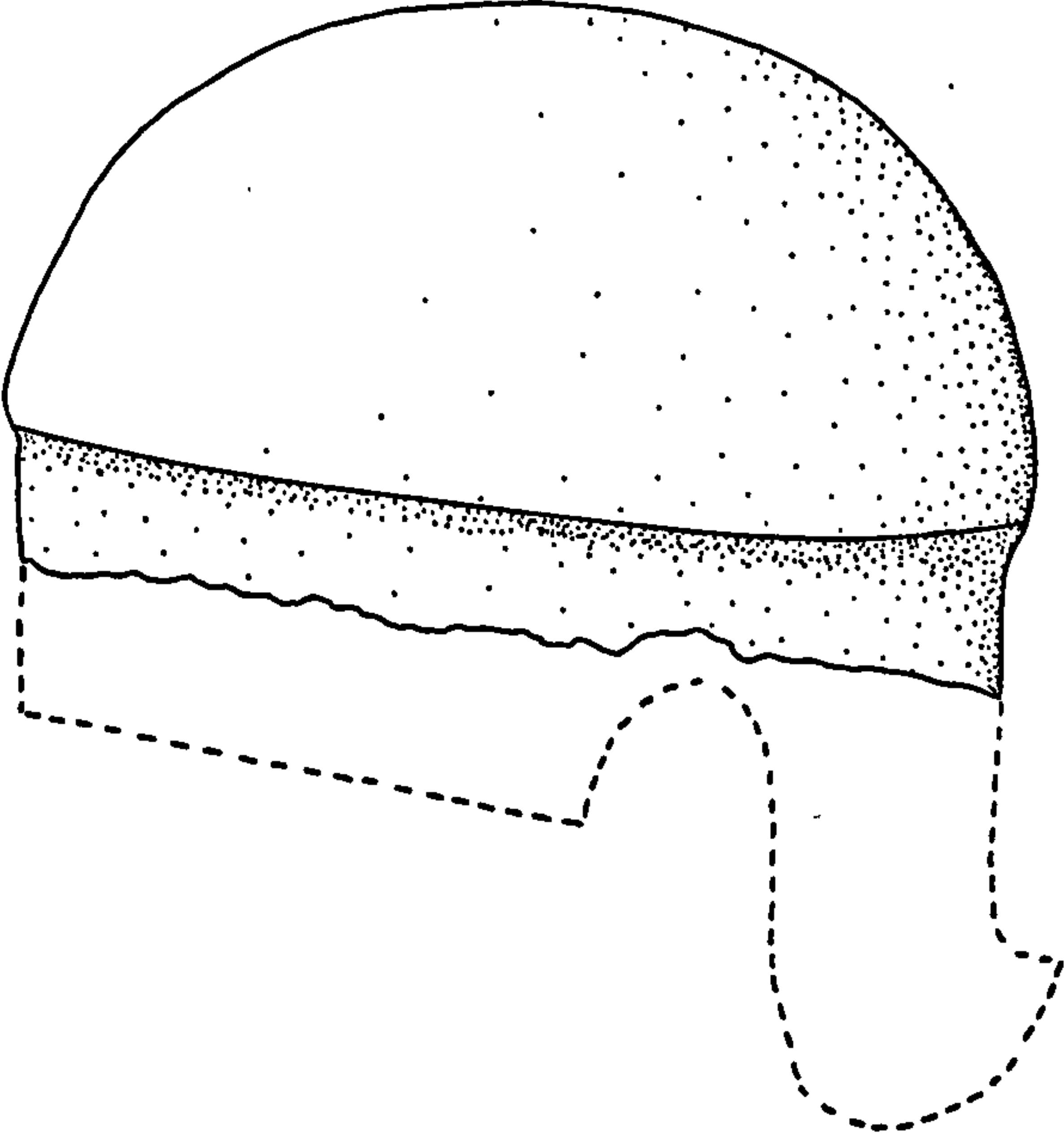
Key to Distribution map fig. 108.

1. Agrigento, Sicily, Italy.
3. Pietrabbondante, Lucania, Italy.
4. Paestum, Campania, Italy.
14. The River Tyne near Newcastle upon Tyne, Great Britain.
15. Ruvo near Bari, Puglia, Italy.
16. Paestum, Campania, Italy.
18. Athens, Greece.
19. Cumae, Campania, Italy.
21. Vulci, Tuscany, Italy.
23. Petoro near Chieti, Marche, Italy.
26. Capodigiano, Campania, Italy.
27. Pertosa Salona, Campania, Italy.
30. Ruvo near Bari, Puglia, Italy.
32. Conservano, Apulia, Italy.
33. Herculaneum, Campania, Italy.
34. Herculaneum, Campania, Italy.

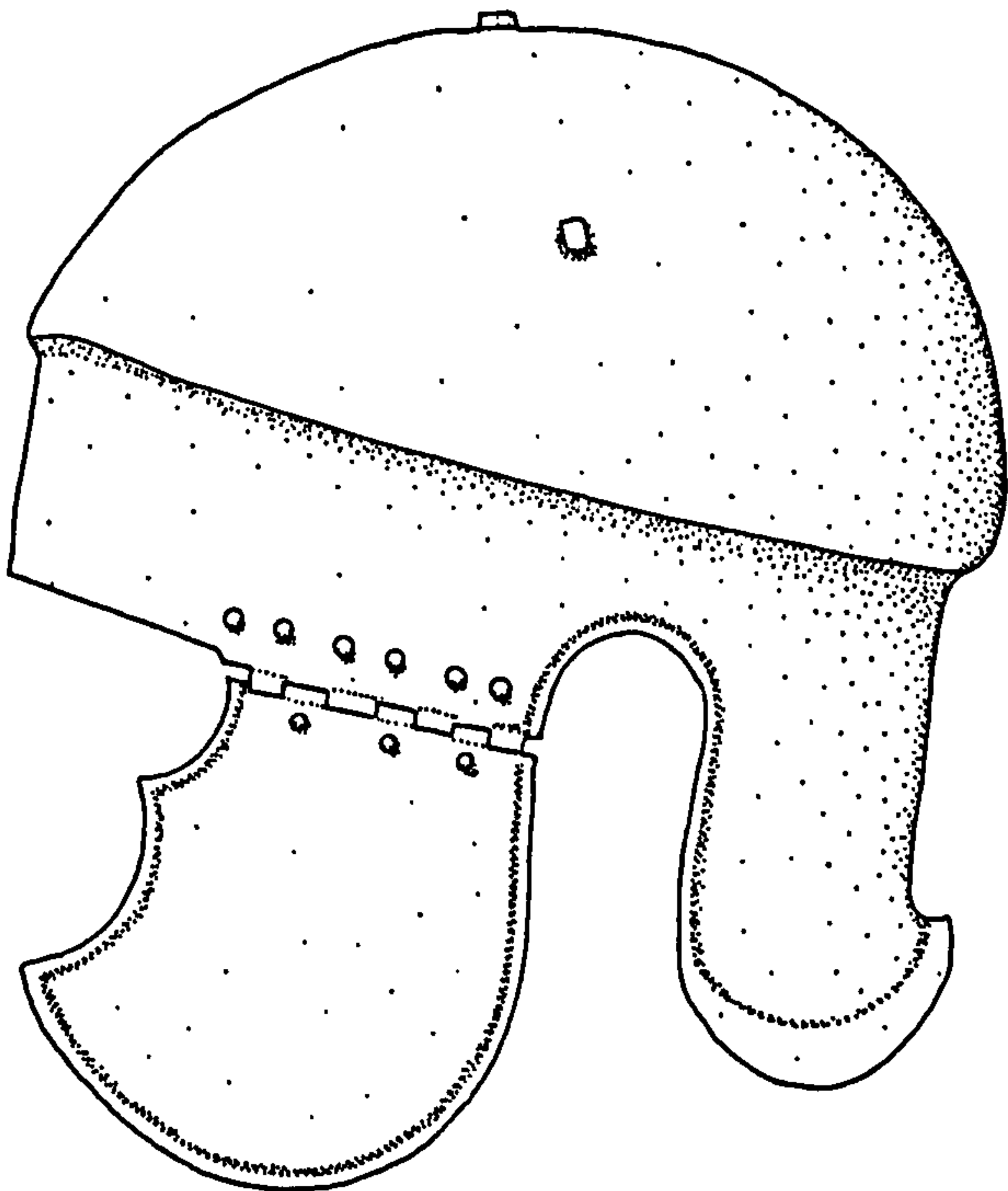
Manufacture.

These helmets have all been "blocked" and "raised" from a single sheet of bronze in the manner described above. (see Chapter 1). However, by analogy with most modern repoussé work, the embossed decoration was probably executed in a pitch block. The work is embossed from the inside using hammers and punches as can clearly be seen in a number of examples in particular helmet No.21 (see pl. 4b.). Then the outside is chased with gravers to enhance the forms and crisp up the lines. There are no integral cheek-pieces or crest-fixtures associated with the Samno-Attic form and therefore they were manufactured separately and either riveted or soldered on to the bowl at a latter stage presumably just before or in the case of cheek-pieces probably just after the preliminary polishing.

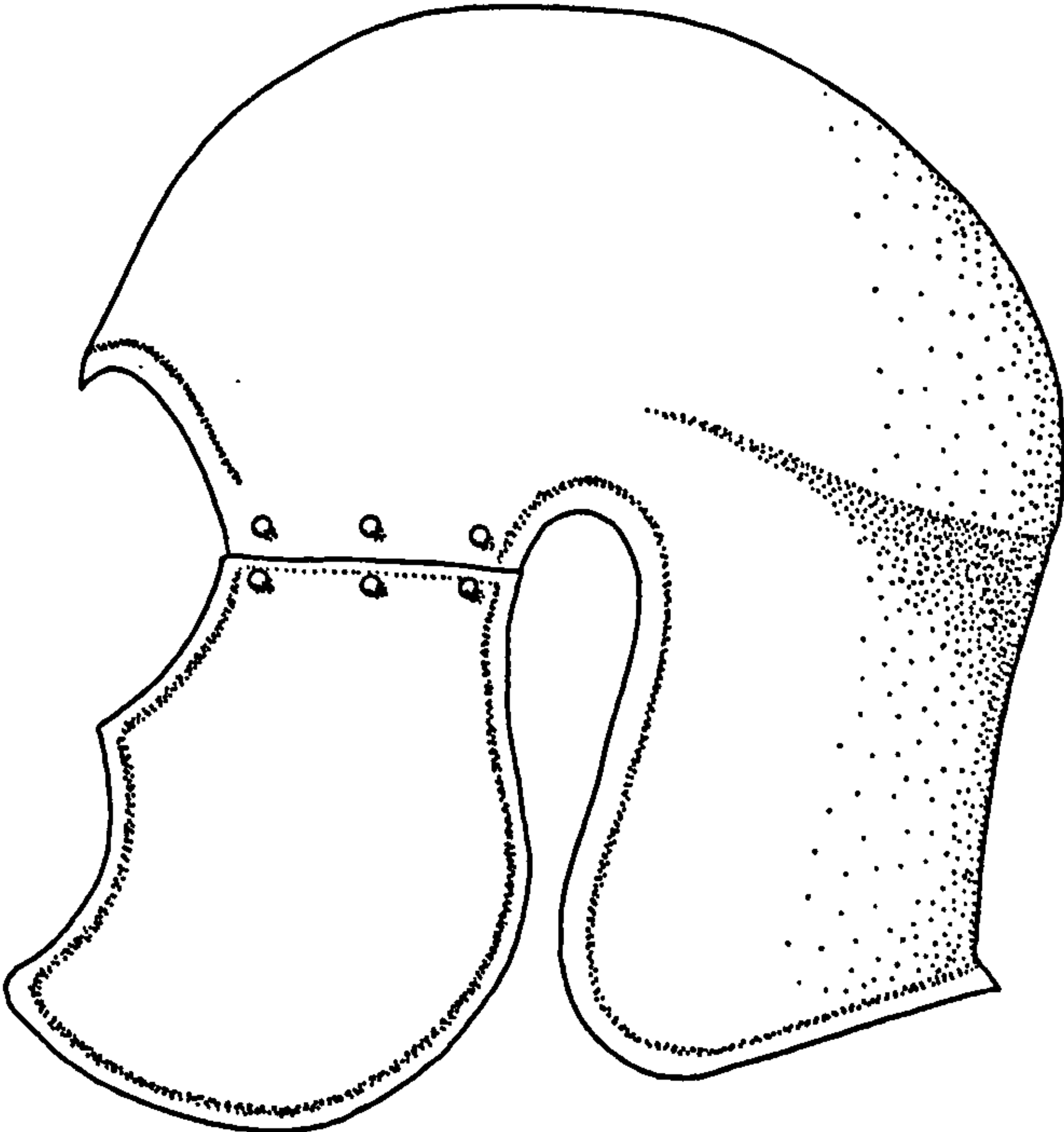
FIG. 109



1



2



3

Typology.

Typology: Table 2.

No.	Forehead:		Brow Embossing:			Neckguard:		Ed:	Cheek-pieces:				Type		
	St.	Dip.	St.	Apex.	Vol.	Sh.	L.		St.	Ev.	Pr.	Bi.		RE.	RCP.
1.	*		*			*		*							I.
2.	*		*			*		*		*	*	*			I.
3.	*		*			*		*		*	*	*			I.
4.	*		*			*		*	*						I.
5.	*		*			*		*		*	*	*			I.
6.	*		*			*		*							I.
7.	*		*			*		*							I.
8.		*	*			*		*	*					*	II.
9.		*	*			*		*	*					*	II.
10.	*			*		*		*	*	*	*	*			III.
11.	*			*		*		*	*	*	*	*			III.
12.	*			*		*		*							III.
13.	*			*		*		*							III.
14.		*		*		*		*	*	*	*	*			IV.
15.		*		*		*		*	*					*	IV.
16.		*		*		*		*	*	*	*	*			IV.
17.		*		*		*		*	*	*	*	*			IV.
18.		*		*		*		*	*	*	*	*			IV.
19.		*		*	*	*		*	*	*	*	*			IV B.
20.		*		*	*	*		*							V.
21.		*		*	*	*		*							V.
22.		*		*	*	*		*	*	*	*	*			V.
23.	*			*	*			*	*	*	*				VI.
24.	*			*	*			*	*						VI.

No.	Forehead:		Brow Embossing:			Neckguard:		Ed:	Cheek-pieces:				Type		
	St.	Dip.	St.	Apex.	Vol.	Sh.	L.		St.	Ev.	Pr.	Bi.		RE.	RCP.
25.*			*		*			*	*						VI.
26.*			*		*			*	*	*	*	*	*		VI.
27.*			*		*			*	*	*					VI.
28.*			*		*			*	*	*					VI.
29.*			*		*			*	*	*	*	*	*		VI.
30.*			*					*	*	*				*	VII.
31.*			*					*	*	*				*	VII.
32.*			*					*	*	*	*				VII B.
33.*			*	*	*	*	*	*		*	*		*		VIII
34.*			*	*	*	*	*	*		*	*		*		VIII

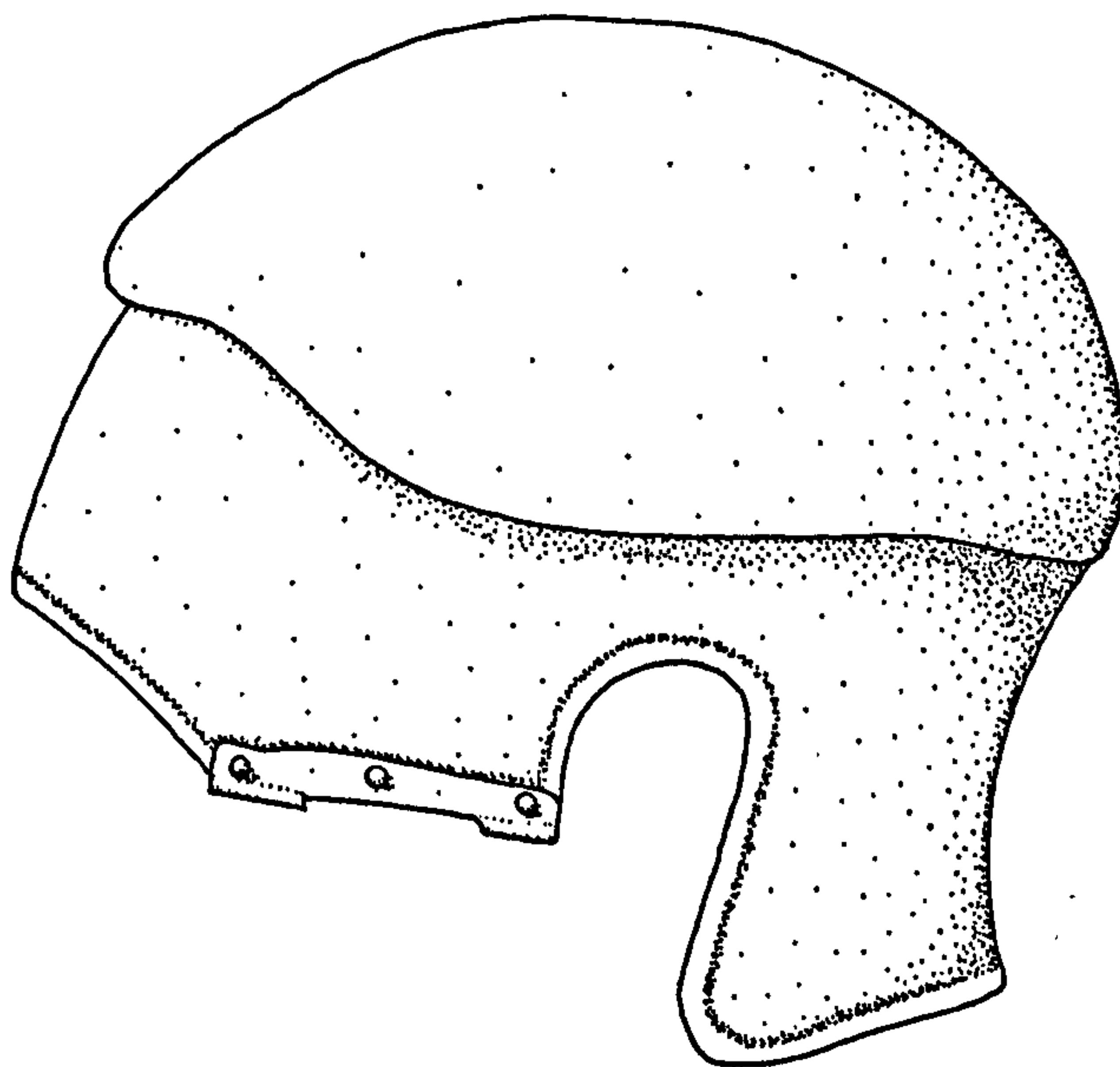
KEY: St- straight; Dip-Dipping to a point over the nose; Apex- Rising to a central apex; Vol- Terminating in Volutes; Sh- Short; L- Long; Ev- Everted; Ed- Edged by raised border; Pr- Present; Bi- Bicuspid; RE- Raised Edge; RCP- Raised central panel; D- Other:

Table 3: Dating Evidence.

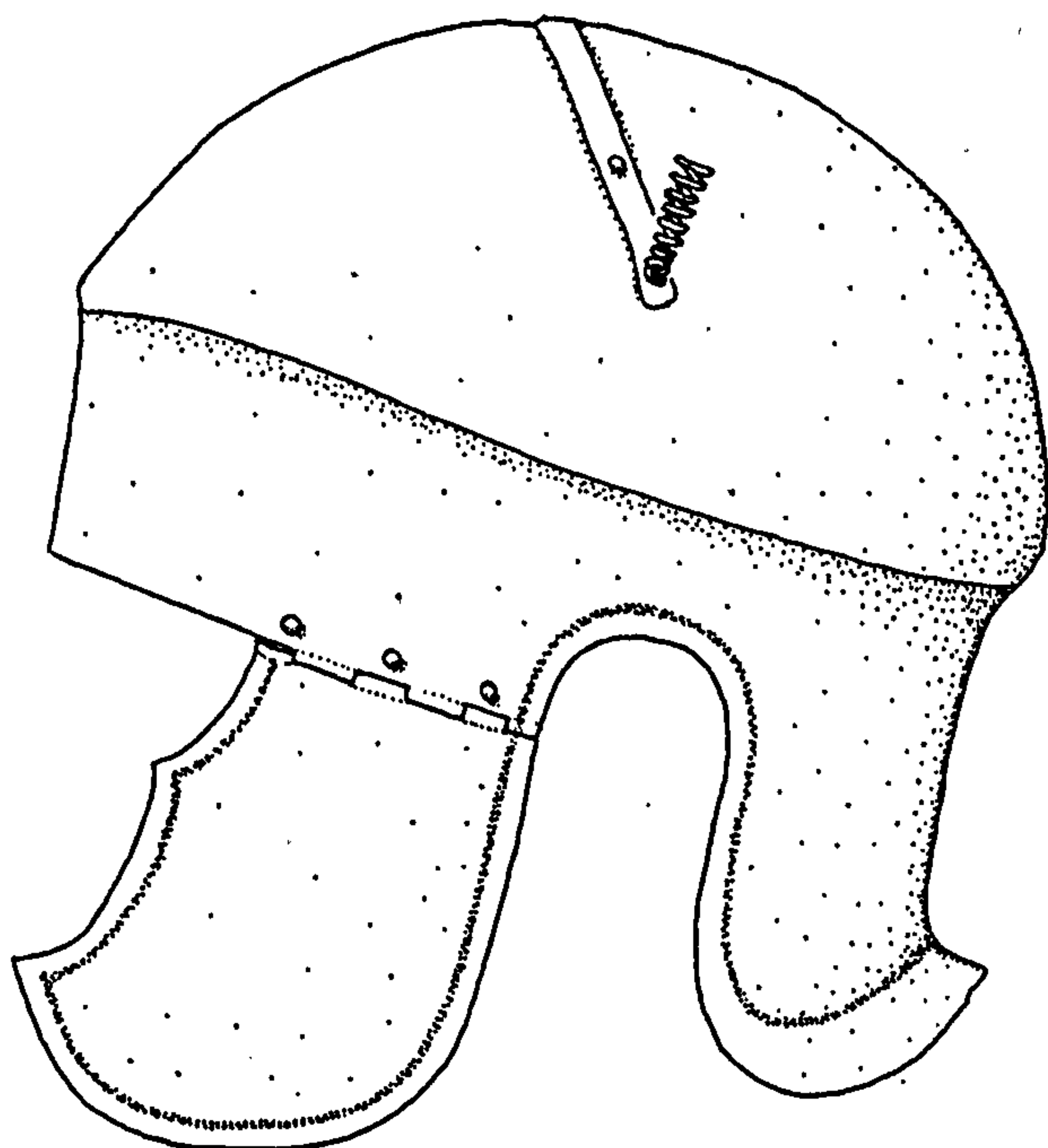
No.	Context	Provenance:	Assigned Date:
1.	First half of the 4th century B.C. Dated by associated ceramics.	A grave at Agrigento, Sicily.	-
2.	Unknown.	South Italy.	4th B.C.
3.	Sanctuary deposit dated before the end of the 4th century B.C.	Pietrabbondante, Campania Italy.	-
4.	Unknown.	Paestum, Campania, Italy.	4th B.C.
5.	Unknown.	South Italy.	4th B.C.
6.	Unknown.	South Italy.	4th B.C.
7.	Unknown.	South Italy.	4th B.C.
8.	Unknown.	Italy.	4th B.C.
9.	Unknown.	Italy.	4th B.C.
10.	Unknown.	Italy.	4th B.C.
11.	Unknown.	South Italy.	4th B.C.
12.	Unknown.	-South Italy.	4th B.C.
13.	Unknown.	South Italy.	4th B.C.
14.	The River Tyne near Newcastle upon Tyne, Great Britain. Probably part of an antiquarian collection.	South Italy.	4th B.C.
15.	Unknown.	A grave at Ruvo, Puglia, Italy.	4th B.C.
16.	c. 350-300 B.C. Dated by associated bronzes and Campanian red figure wares.	Tomb, Region III, Paestum - Campania, Italy	-
17.	Unknown.	South Italy;	4th B.C.
18.	Unknown.	Athens, Greece.	4th B.C.
19.	c. 375 B.C. Dated by associated ceramics.	Tomb near Cumae, Lucania Italy.	-
20.	Unknown.	South Italy.	4th B.C.

No. Context	Provenance:	Assigned Date:
21, Unknown,	Vulci, Toscana, Italy.	4th B.C.
22, Unknown,	Apulia, Italy	4th B.C.
23, c. 360-330 B.C. Dated by associated ceramics	A grave at Pretoro, Abruzzi, Italy.	-
24, Unknown,	South Italy.	4th B.C.
25, Unknown,	South Italy.	4th B.C.
26, c. 350-300 B.C. dated by associated red figure wares.	Capodignano, Campania, Italy	-
27, Unknown,	Pertosa Salona, Campania, Italy.	4th B.C.
28, Unknown,	South Italy.	4th B.C.
29, Unknown,	South Italy.	4th B.C.
30, Unknown,	Ruvo, Puglia, Italy.	4th B.C.
31, Unknown,	South Italy.	4th B.C.
32, c. 310 B.C. Dated by associated bronzes and ceramics.	Tomb 10, Conservano, Puglia, Italy.	-
33, Unknown. But must pre-date the eruption of Mount Vesuvius in 79 A.D.	Herculaneum, Campania Italy.	1st B.C. / A.D.
34, Unknown. But must pre-date the eruption of Mount Vesuvius in 79 A.D.	Herculaneum, Campania Italy.	1st B.C. / A.D.

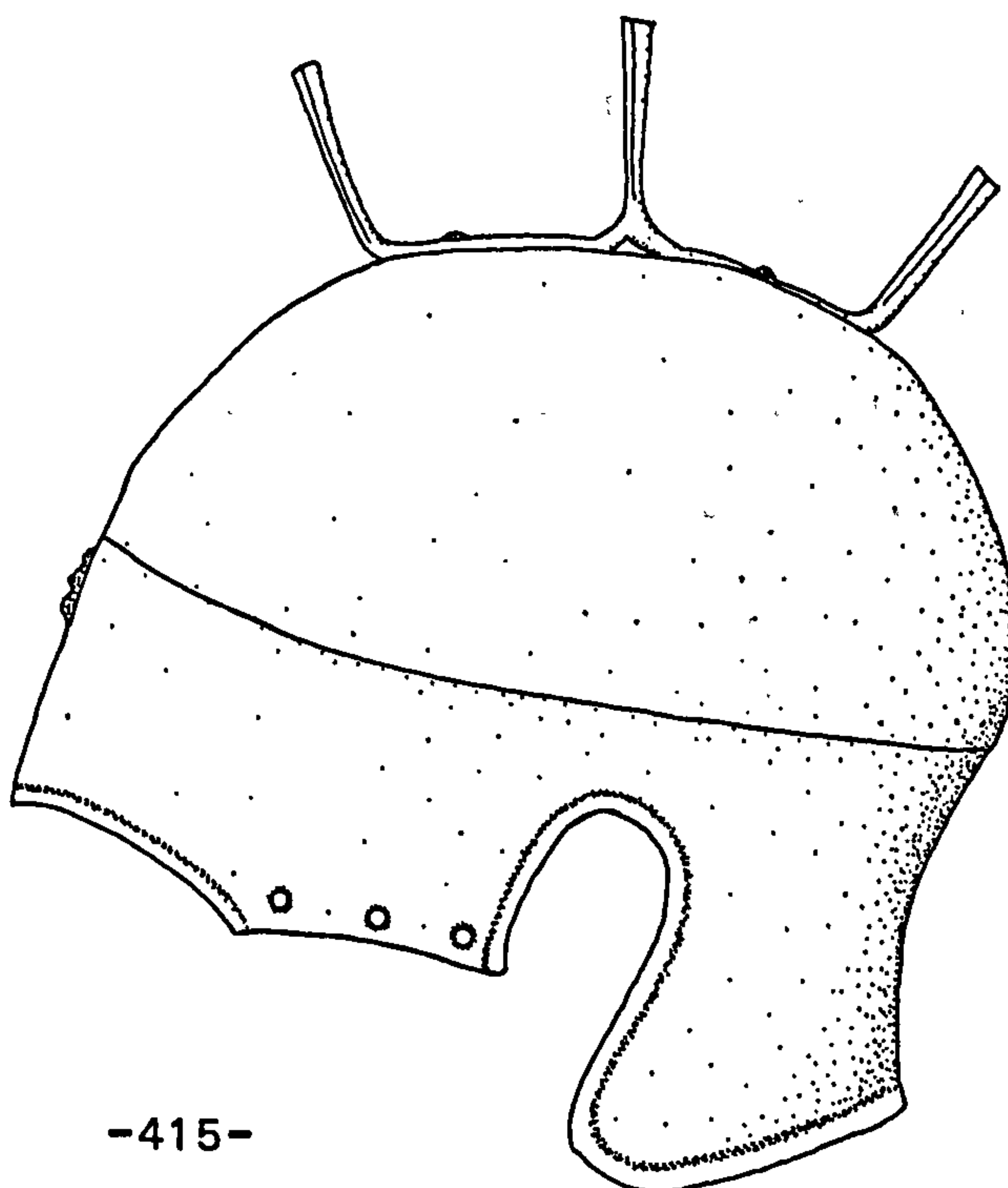
FIG. 110



4



5



6

Typology.

Type I. (Nos. 1-7.)

Helmets of type I are typologically and temporally the earliest Samno-Attic helmets and date from the end of the 5th to the early 4th centuries B.C. They are typified by a low slightly bulbous bowl with a pronounced medial ridge. The bowl swells from a fitted brow-band. The junction is marked by a pronounced embossed ridge. The upper edge of the brow-band is slightly undulating at the sides and back being higher over the ears than elsewhere. However at the front both its upper and lower edges are straight. The brow-band is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a very deep and closely fitted neck-guard, which slopes forward under the wearer's ears. The neck-guard is strongly everted at its base.

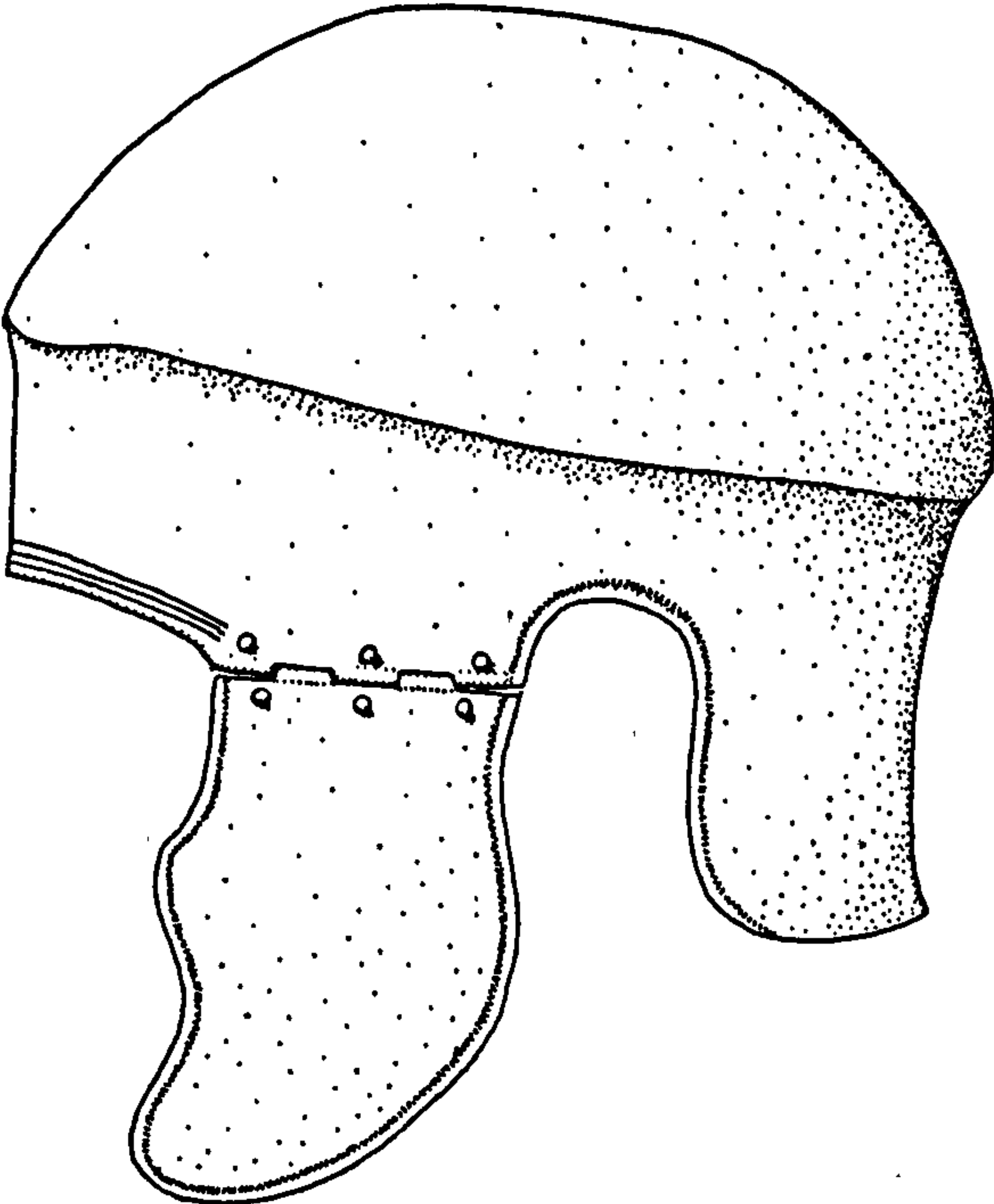
The helmets are competently made and finished. They are "blocked" and "raised from a single sheet of bronze. The cheek-pieces, which are of a slightly bicuspid form, and the crest-fixtures, where they are fitted, are manufactured separately. Helmets of type I are undecorated presumably relying on the intrinsic beauty and simplicity of their form alone for their aesthetic appeal. Approximately half of the surviving helmets (Nos. 2, 5 and 6.) were equipped with crest-fixtures. These take the form of two types of removeable feather holders. These are either in the form of a tapering conical tube or bronze spring-like structures which are mounted at each end of a thin bronze strip shaped to the profile of the bowl. The strip is pierced by two square holes cut into it so that it can pass over the pierced

lugs or loops attached to the bowl. The whole assemblage is secured by bronze split pins inserted into the loops or lugs.

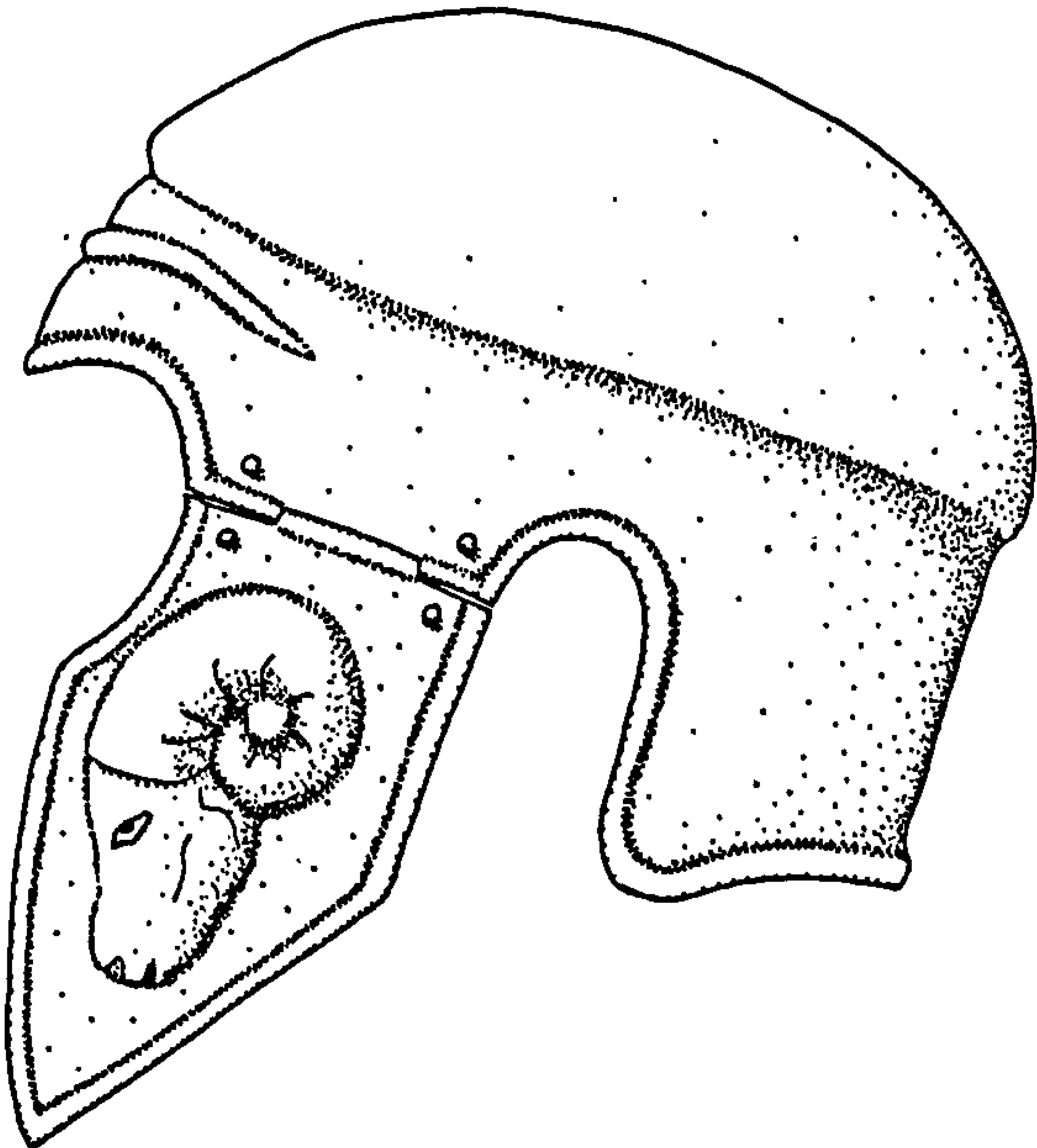
Type II. (Nos. 8 and 9).

Helmets of type II are represented by only two examples, both in the Museo Arqueologico Madrid, and although lacking a secure context exhibit a degree of development from the previous form towards the fully developed and therefore later Samno-Attic helmet. They are characterised by a low, hemispherical, slightly bulbous bowl. This swells from a fitted brow-band. The junction between the two is marked by a pronounced embossed ridge. The brow-band rises up slightly at the front to form a point and is equipped with cut-outs for the wearer's ears. It is drawn down at the rear to form a shallow straight neck-guard. At the front there are shallow cut-outs over the wearer's eyes producing a small, 'V' shaped point over the nose. Around the main edges of the helmet is an embossed rectilinear moulding. The helmets are decorated by a pair of embossed eyebrows on the forehead.

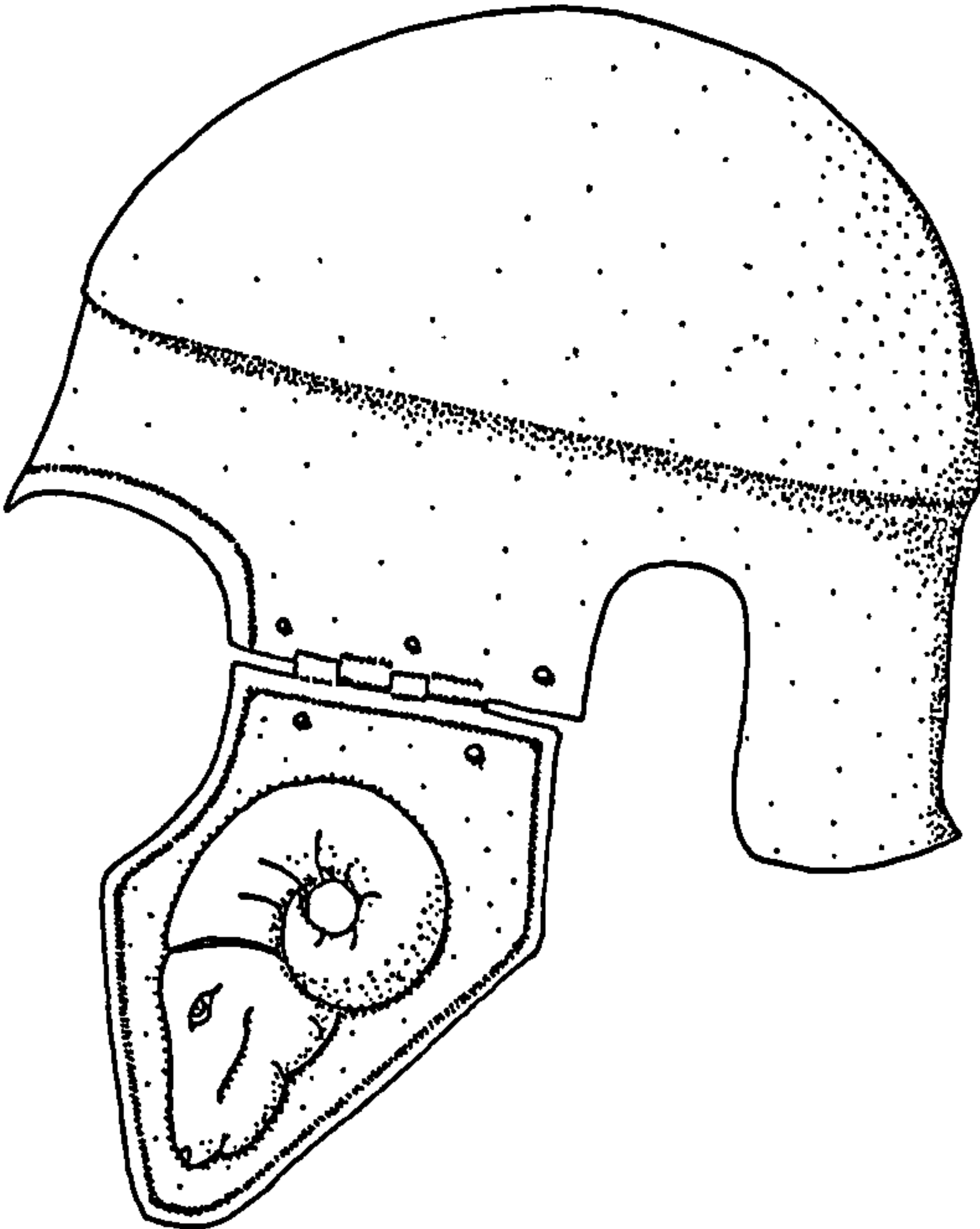
They are forged from a single piece of bronze and the cheek-pieces formed separately. The hinged cheek-pieces are of type III and are derived from Chalkidian originals of type VI. The cheek-pieces of helmet No.8 are embossed with rams' heads, also a Chalkidian decorative motif. However they differ from the Chalkidian prototypes in that the rams' heads are embossed in the metal of the cheek-piece itself and are not an applied sheet which has been soldered on and that they are not shaped to the outline of the ram's head. The helmets are competently made and finished.



7



8



9

Type III. (Nos 10-13)

Helmets of this type have a well shaped low bowl which swells from a fitted brow-band. The junction between the bowl and brow-band is marked by a pronounced angle. At the front the top edge of the brow-band rises to form a gable, while the lower edge is straight. It is equipped with cut-outs for the wearers ears and is drawn down at the rear to form a straight but fitted neck-guard. The helmets are well made and are forged in one piece. The cheek-pieces are hinged and of a moderately bicuspid form. These have a raised outer edge and have multi-hasped internal hinges

The decoration is embossed using the repoussé technique and invariably consists of a pair of embossed eyebrows on the brow and an embossed rectilinear moulding along the main edges, which is supplemented in the case of helmet No. 10 by an embossed inverted 'V' shaped brow-ridge. This decorative feature is common on the more developed of helmets of Type VI.

Type IV. (Nos. 14-19).

These helmets are a hybrid of the previous two forms. They have moderate hemispherical bowls with a pronounced medial ridge. The skulls are narrow and swell from fitted brow-bands. The junction between the two is defined by a pronounced angle. At the front, the brow-band rises to an apex and is decorated with embossed stylised eyebrows, which meet over the nose. The main edge of the face opening has two slight cut-outs over the wearer's eyes and is given an inward hemispherical roll forming a strengthening and decorative moulding. At the sides the brow-band has cut-outs to accomodate the ears. It is

drawn down at the rear to form a shallow straight neck-guard which is slightly everted at its base.

The helmets are very well made and finished and are raised from a single sheet of bronze and decorated with repoussé work. The cheek-pieces are of moderate bicuspid form with a raised outer edge. These are attached to the bowl by multi-hasped internal hinges.

Whilst having all the characteristics of a helmet of Type IV helmet 15, from Ruvo, is a highly decorative example. At the front, echoing the shape of the brow-band, are two inverted "V" shaped embossed and fluted mouldings. The cheek-pieces are also highly decorated with repoussé work in the form of eagles' heads. The rear edge being given a scalloped line to indicate the birds plumage. Helmet no. 19, from a tomb near Cumae, now in the Royal Armouries (Inv. II, 197) whilst exhibiting the characteristic attributes of helmets of type IV also has the decorative motifs of helmets of type V. and bears applied embossed sheet bronze wings common on helmets of type VII and crest-fixtures which are only paralleled on helmet no. 5, type I. Therefore it has been designated as type IV.B.

Type V. (Nos. 20, 21 and 22.)

Type V is represented by three examples but these are almost identical. There can be no doubt that helmets 20 and 21 are the product of the same workshop if not of the same individual. All three helmets have a well fitted low bowl with very deeply embossed and pronounced inverted "V" shaped crest-ridges. The brow-band has two shallow cut-outs over the wearer's eyes to produce a "V" shaped vestigial nasal. The brow-band is also equipped with cut-outs for the ears and is drawn down at the rear to form a straight and well fitted

neck-guard, which slopes in behind the ears. The helmet is very well made and finished and has been forged in one piece. Only helmet 22 retains its cheek-pieces and these are of the usual bicuspid form, but with a deeper cusp at the base.

The decoration is executed in repoussé work and consists of a narrow rectilinear raised moulding which encircles the whole of the base of the helmet. Above this at the front is one broad embossed band in the form of an inverted "V" shape which terminates in large embossed volutes over the temples. On either side of this band are narrow flutes. Below this is a pair of embossed eyebrows. The neck-guard is decorated and strengthened by a plain embossed band.

Type VI. (Nos. 23-29)

Type VI represents numerically the largest group of Samno-Attic helmets and arguably the most developed. They would appear to be a hybrid of Types III and V. They have a similar form to type III and similar decoration to type V. The helmet bowls are of the usual low hemispherical type which swell from a fitted brow-band. The junction between the two is defined by a pronounced angle. The brow-band is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a deep fitted straight neck-guard. At the front it rises up to an apex. The lower edge is straight or has very slight cut-outs over each eye. The helmets are extremely well made and finished. The bowl of the helmet is formed from one piece of bronze.

The majority of the cheek-pieces are of a broad, bicuspid form with raised edges, although the cut-outs for the eyes and mouth are only very slight. The cheek-pieces on helmet No. 24, however, are of a completely different form with a convex forward edge and a concave

rear edge. These are possibly derived from the Chalkidian forms decorated with embossed rams' heads which they closely resemble in outline. Both these types of cheek-piece are attached with external multi-hasped hinges, which are wrapped over the top edge of the cheek-pieces and the lower edge of the helmet bowl and then riveted in place with three rivets.

The decoration is executed in repoussé work, and is an integral part of this helmet design. It consists of two embossed inverted "V" shaped brow-ridges separated by a flute and rising to an apex at the centre. These terminate at either side in a single large volute. Over the eyes the base of the helmet is decorated by an embossed band forming stylised eyebrows. The neck-guards on helmets Nos. 26-28 are adorned with an embossed rectilinear moulding which follows the contour of its base. On helmet No. 26, from Capodigiano, these terminate in volutes. This helmet is exceptionally well made and elaborately decorated with an Athena's head embossed on its brow and horse's heads on its cheek-pieces.

Type VII. (Nos. 30-32)

Helmets of this type have a well shaped moderate bowl which swells from a fitted brow-band. The junction between the bowl and brow-band is marked by a pronounced angle. At the front the top edge of the brow-band rises to form a high gable, while the lower edge is very slightly concave. Across the face opening the lower edge is given a slight outward flange to strengthen it. It is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a deep fitted neck-guard. At its base two cuts were made in the bottom edge and the central portion was turned into a flange leaving a lobe

like projection down each side of the wearer's neck. This form of neck-guard provides excellent protection and is commonly found on Greek and Hellenistic helmets, most especially the Thracian helmet, from the 4th century onwards (Paddock. 1981, 9-11.). The helmets are very well made and finished, the bowl being raised from a single sheet of bronze.

The decoration is very simple and consists of an applied, embossed, sheet bronze wing riveted at each temple. Where the cheek-pieces survive those on helmets No. 30 and 31 are of the same form as those on helmet No. 24 with a convex forward edge and a concave rear edge. Helmet No. 32 on the other hand has moderate bicuspid cheek-pieces.

Although typologically part of type VII, helmet No. 32, from Conservano, differs from the majority of this type in a number of important ways. The bowl of the helmet, instead of being of the usual hemispherical shape, has an integral "Phrygian" bonnet with an embossed wave pattern, crest-fixture soldered along its length. The forehead is also decorated with embossed locks of hair.

Type VIII. (Nos. 33-34)

These two helmets represent the latest known examples of the Samno-Attic tradition and exhibit a very marked decline in all aspects. They are nearly identical both in form and decoration, so much so that there can be no doubt that they are the product of a single workshop. There are no definite contexts for these helmets which were found in the nineteenth century, but their provenance is given as Herculaneum in Campania. Both are very poorly made and finished in a yellow bronze. They resemble 2nd and early 1st century B.C. Montefortino helmets, in their general quality, execution and the lack

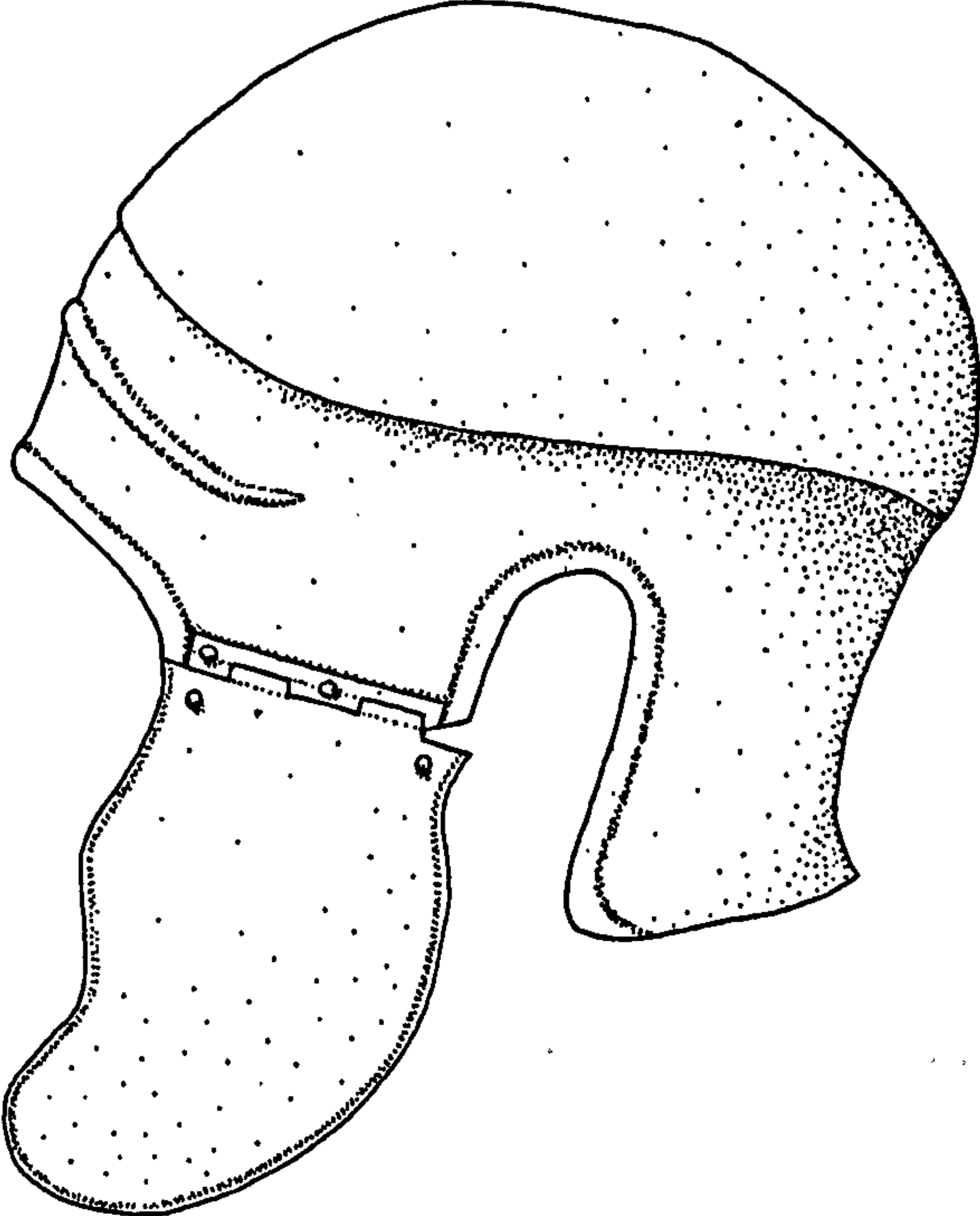
of care taken in their decoration and finish. They have a terminus ante quem of 79 A.D., but given the general trends in helmet design and manufacture during the 1st century A.D. it is unlikely that they represent a product of the second half of that century. However the crest-fixtures consist of a circular plate, with a raised and slotted centre, soldered to the crown and retaining hooks for the crest-box which are riveted at the front and rear. This arrangement first appears on Italian helmets of the first century A.D. and therefore it seems probable that helmets of Type VIII date to the end of the 1st century B.C. and the beginning of the 1st century A.D.

The helmets are raised from a single sheet, but are equipped with reinforcing bands wrapped around the neck-guard flange. The cheek-pieces are supported by hinges, attached to the bowl by a single rivet, and which have only a single hasp.

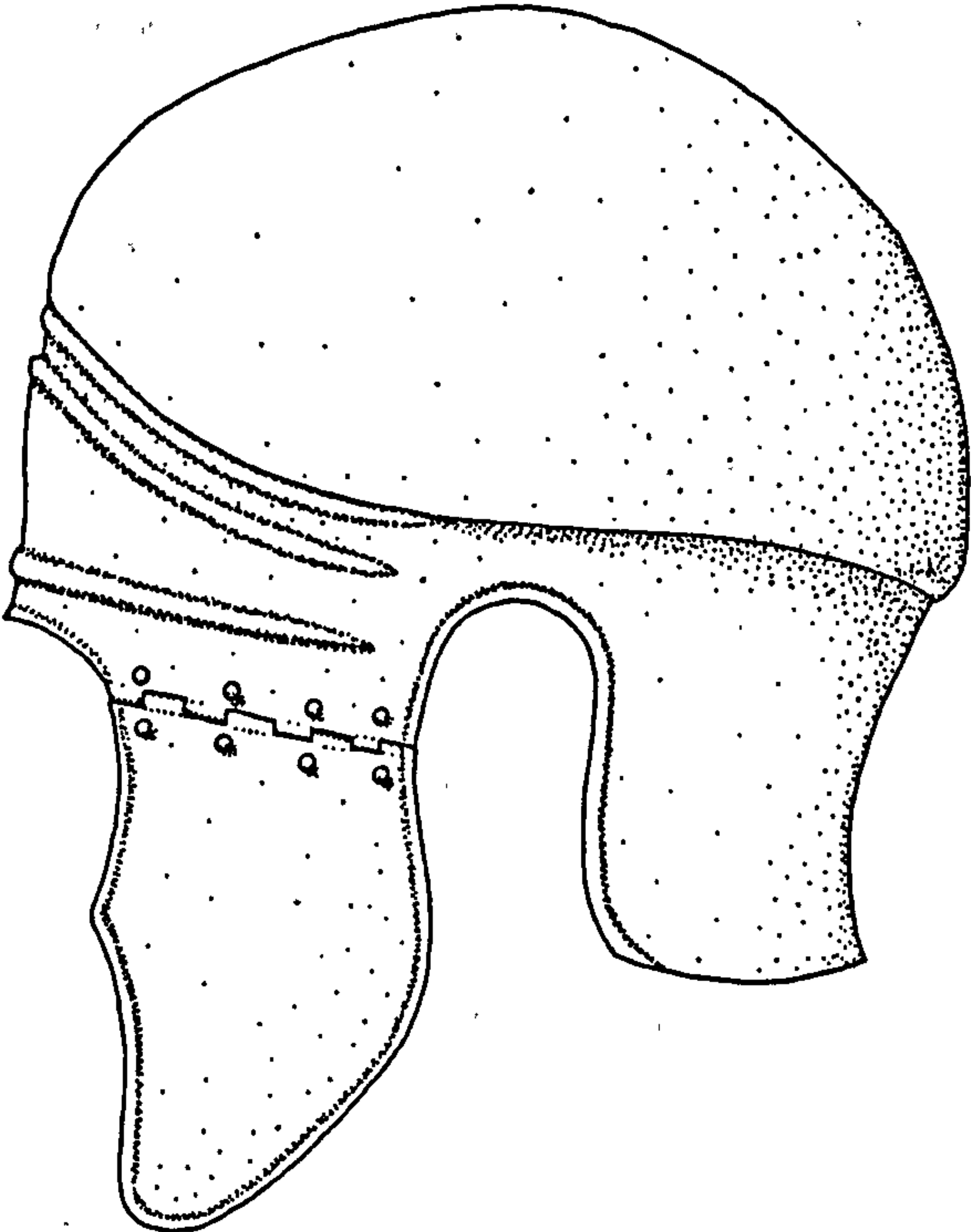
The helmets have rounded, slightly bulbous skulls with deep straight neck-guards, which are not fitted to the rear of the skull and neck, but form an almost straight line between the bowl and the neck-flange.

The decoration on both helmets is identical and consists of two narrow embossed brow-ridges, the upper one rising to an apex at its centre, the lower one passes straight across the brow. Both terminate in the same debased volute at each temple.

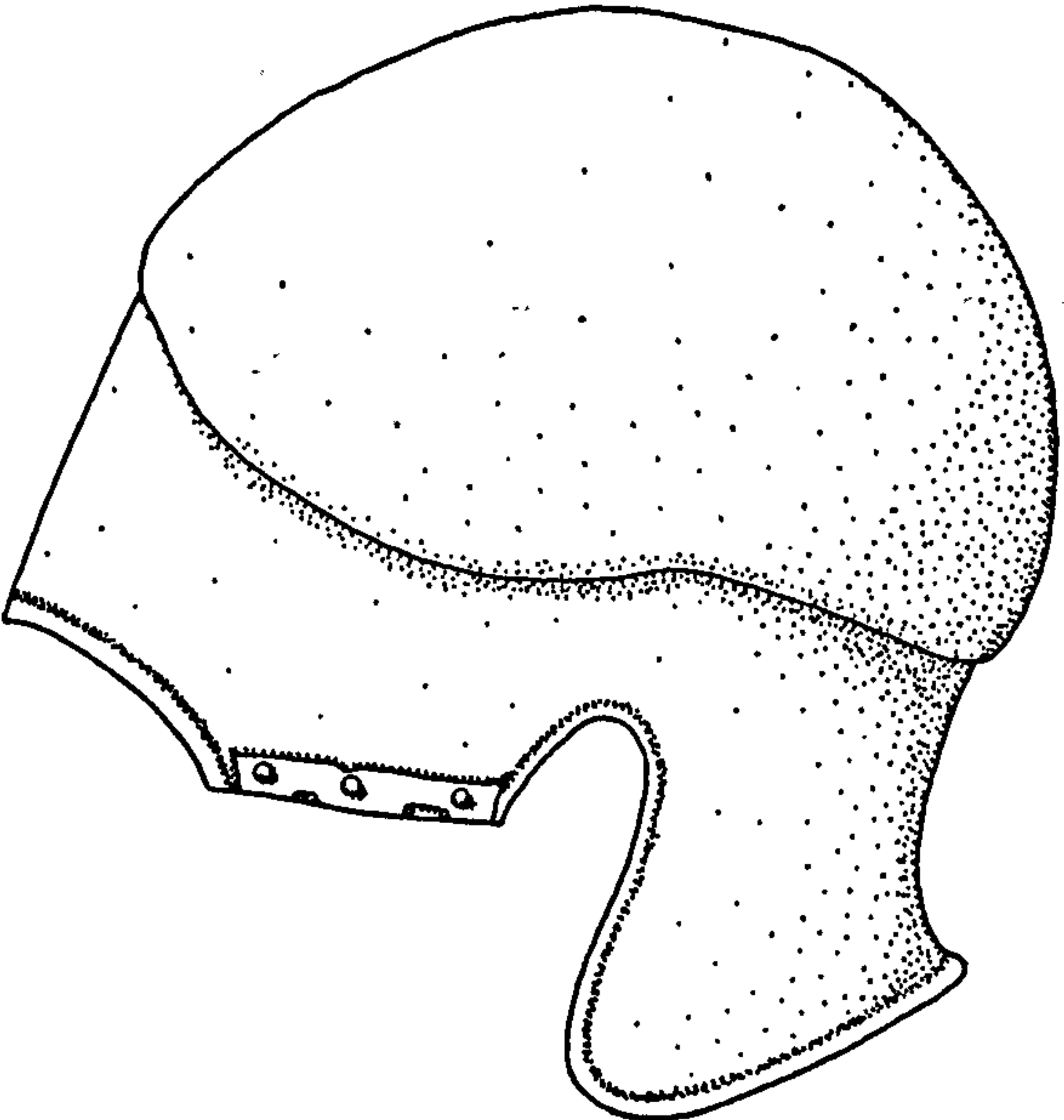
FIG. 112



10



11



12

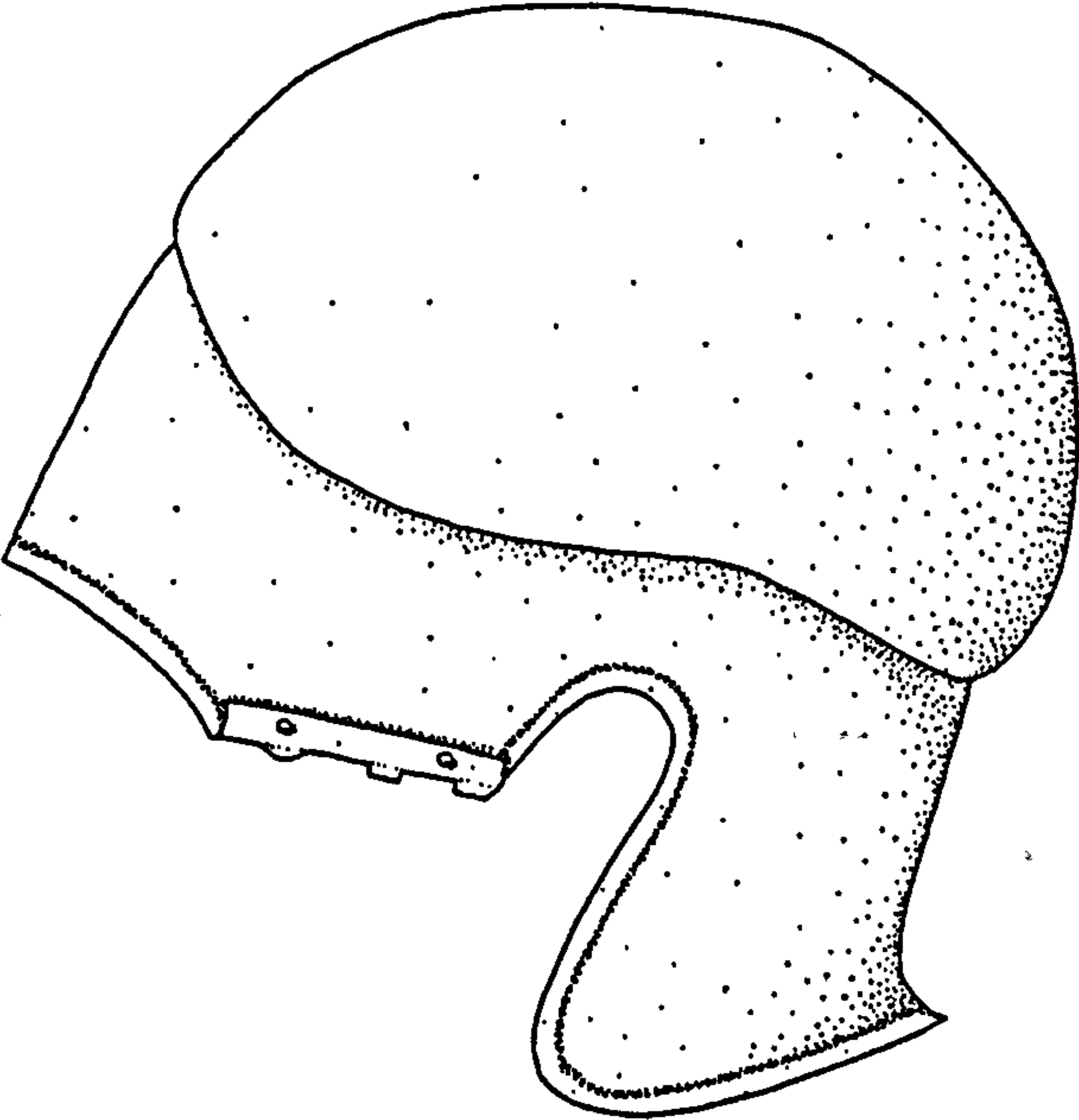
Type I.

1. Agrigento, Sicily. Museo Nazionale Agrigento (Inv. AG1310). Undecorated. (fig. 109:1) Unpublished.
2. South Italy. Museo di Castel Sant' Angelo, Rome (Inv. 3165). Undecorated. (fig. 109:2) Connolly, 1981, 107.
3. The sanctuary at Pietrabbondante, Lucania, Italy. Museo Nazionale, Naples (Inv. 5741). Undecorated. (fig. 109:3) Cianfarani, 1970, fig. 303. Lipperheide, von. 1896, 110, No. 303.
4. Paestum, Campania, Italy. Museo Nazionale, Naples. Undecorated. (fig. 110:4) Lipperheide, von. 1896, 106.
5. South Italy. Musée du Louvre, Paris (Inv. 1129 c6968). Undecorated. (fig. 110:5) Ridder, de. 1915, 4-5.
6. South Italy. The Hermitage, St. Petersburg. Decorated: The decoration consists of an applied medallion bearing a Gorgon's head mounted onto the forehead of the helmet. (fig. 110:6) Lipperheide, von. 1896, 117, No. 400.
7. South Italy. Museo Poldi-Pezzoli, Milan (Inv. 2427). Undecorated. (fig. 111:7) Cavaleri-Manasse. 1985, 38.

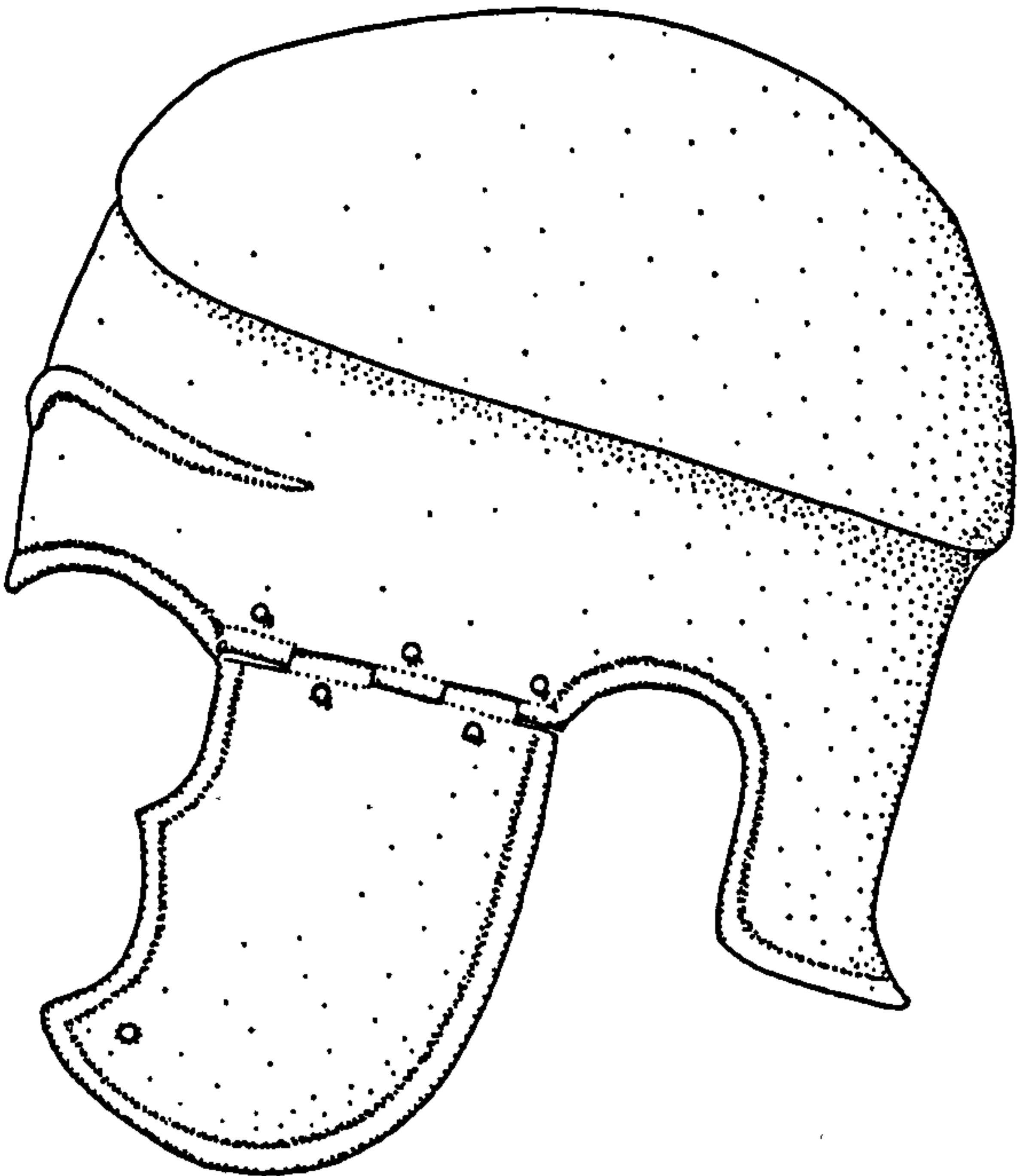
Type II.

8. Unprovenanced. Museo Arqueologico, Madrid (Inv. 7360). Decorated: The decoration consists of an embossed ram's head on each cheekpiece. (fig. 111:8) Blazquez. 1957, 150.
9. Unprovenanced. The Museo Arqueologico, Madrid (Inv. 7364). Decorated: The decoration consists of embossed eyebrows. (fig. 111:9) Blazquez. 1957, 154.

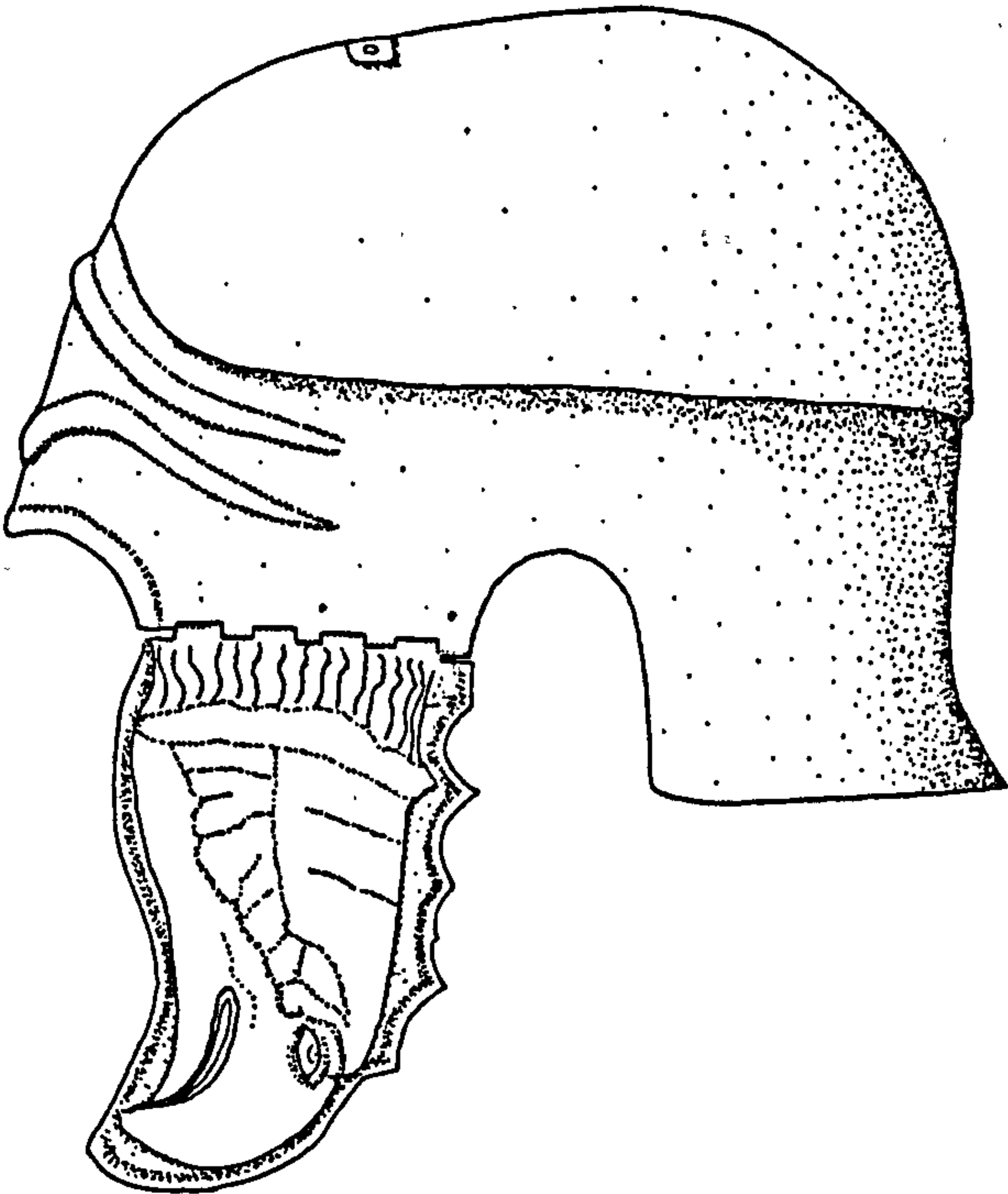
FIG. 113



13



14



15

Type III.

10. Unprovenanced from the collection of the Marqués of Salamanca. Museo Arqueológico, Madrid (7363). Decorated: the decoration consists of embossed eyebrows. (fig. 112:10) Blazquez. 1957, 153.

11. South Italy. Present whereabouts unknown, Sold at Sotheby's London 21.5.84 lot no. 341. Decorated: The decoration consists of embossed eyebrows and a double brow-ridge in the form of an inverted 'V'. (fig. 112:11) Anon. 1984(1). 66.

12. South Italy. Bibliothèque Nationale Paris (Inv. 2018) Undecorated. (fig. 112:12) Blanchet. and Bandon. 1895, 660. Lipperheide, von. 1896, 109, No.352. Adam, 1984, 126.

13. South Italy. Museo Poldi-Pezzoli, Milan (Inv. 2422). Undecorated. (fig. 113:13) Frova. 1972. 92. Cavaleri-Manasse. 1985. 36.

Type IV.

14. The River Tyne, Newcastle upon Tyne, Great Britain. The Yorkshire Museum. Decorated: The decoration consists of embossed eyebrows. (fig. 113:14) Paddock. 1981, 30-1.

15. A grave at Ruvo near Bari, Puglia, Italy. The Badisches Landesmuseum Karlsruhe (Inv. F 431). Decorated: the decoration consists of embossed eyebrows and a double brow-ridge rising to an apex at its centre. The cheekpieces are embossed to the shape of eagles heads. (fig. 113:15) Schumacher. 1890, 20, fig. XIII, 3. Lipperheide, von. 1896. 116, No.256.

16. A tomb in regione III at Paestum, Campania, Italy. The Museo Archeologico, Paestum. Decorated: the decoration consists of embossed eyebrows and applied embossed wings. (fig. 114:16) Sestieri. 1957, 171-180.

17. South Italy. Its present whereabouts are unknown, Sold at Sotheby's, London 10.12.84. Decorated: The decoration consists of embossed eyebrows. (fig.114:17) Anon. 1984(2) Lot No.303.

18. Athens, Greece. The British Museum (2817. 1873. 8.20-225). Decorated: The decoration consists of embossed and fluted brow-ridge and embossed eyebrows and an applied silver satyr's head. (fig. 114:18) Walters, 1899, 348. Lipperheide, von. 1896, 115, No. 249.

Type IV.B

19. A tomb at Cumae, Lucania, Italy in 1856. The Royal Armouries, H.M Tower of London (II, 197). Decorated: The decoration consists of an embossed brow-ridge rising to an apex at its centre and terminating in volutes. the brows of the helmet are engraved with stylised locks of hair and boars. At either temple are riveted embossed sheet bronze wings. (fig. 115:19) Lipperheide, von. 1896, 107. Connolly. 1981, 109.

Type V.

20. South Italy, The Musée de l'Armée, Paris (Inv. E7). Decorated: The decoration consists of an embossed and fluted brow-ridge rising to an apex and terminating in large volutes at the wearer's temples, over embossed eyebrows. (fig. 115:20) Mohen, 1970, 218.

21. Vulci, Tuscany, Italy. The British Museum (Inv. 2724 1842.7.28-711). Decorated: The decoration consists of an embossed and fluted brow-ridge rising to an apex and terminating in large volutes at the wearer's temples, over embossed eyebrows. (fig. 115:21) Lipperheide, von. 1896, 119, No. 241. Walters, 1899, 342.

22. Apulia, Italy. The Levy Collection, New York. Decorated: the decoration consists of an embossed and fluted brow-ridge rising to an apex and terminating in large volutes at the wearer's temples, over embossed eyebrows. In the middle of the gable formed by the brow-ridge is an engraved palmette with lateral tendrils. Below the browridge spring engraved locks of hair. The neck-guard is embellished with a palmette over a volute tendril. The cheek-pieces are decorated with embossed and chased horses' heads. (fig. 116:22) Cahn. 1990, 114-117.

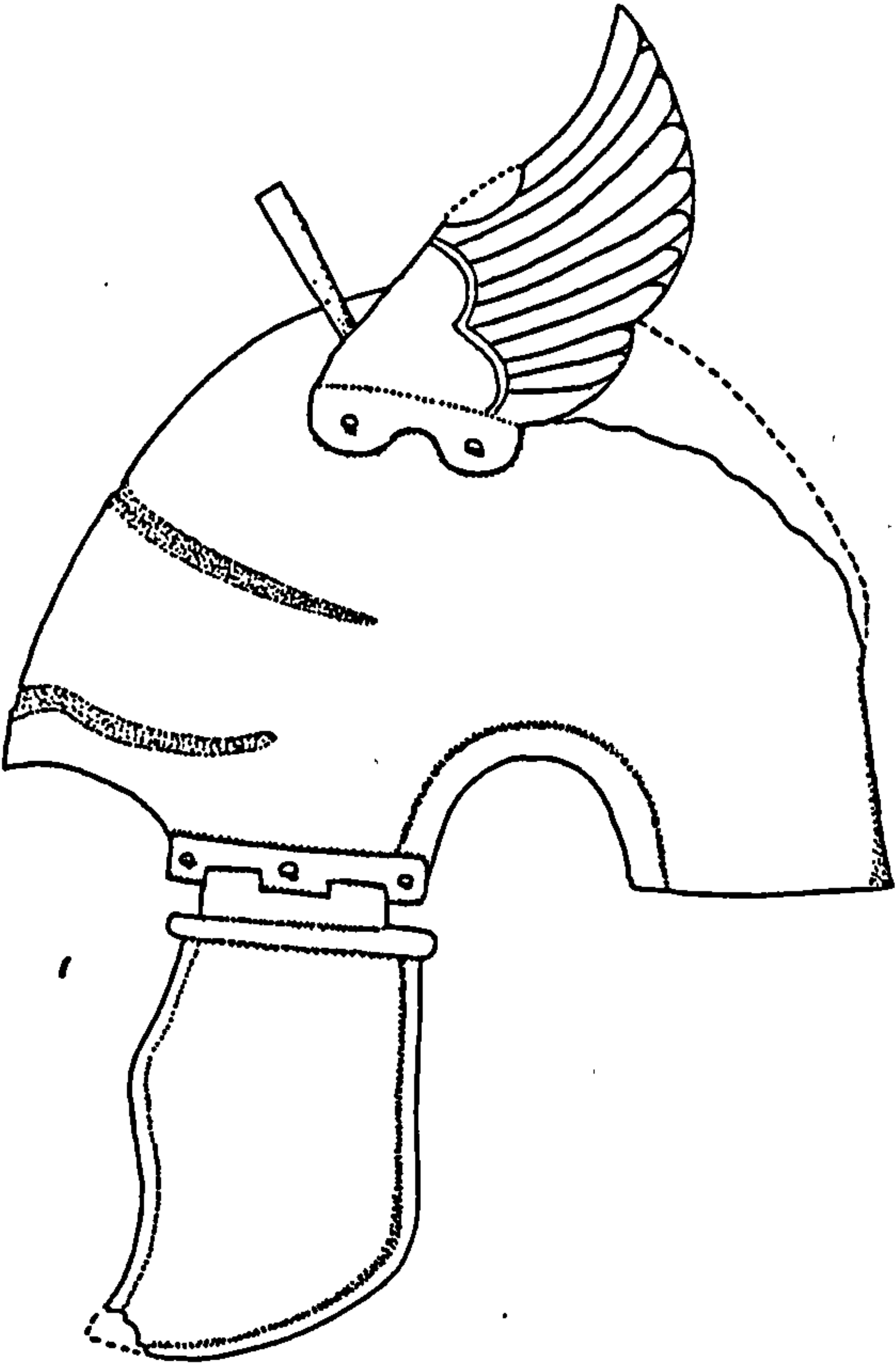
Type VI.

23. Pretoro near Chieti, Marche, Italy. The Museo Nazionale, Chieti (Inv. 1103). Decorated: The decoration consists of embossed eyebrows and two brow-ridges rising to an apex at their centre, all of which terminate in a single large volute at each side. (fig. 116:23) Cianfarani, 1970, 196. fig. 183.

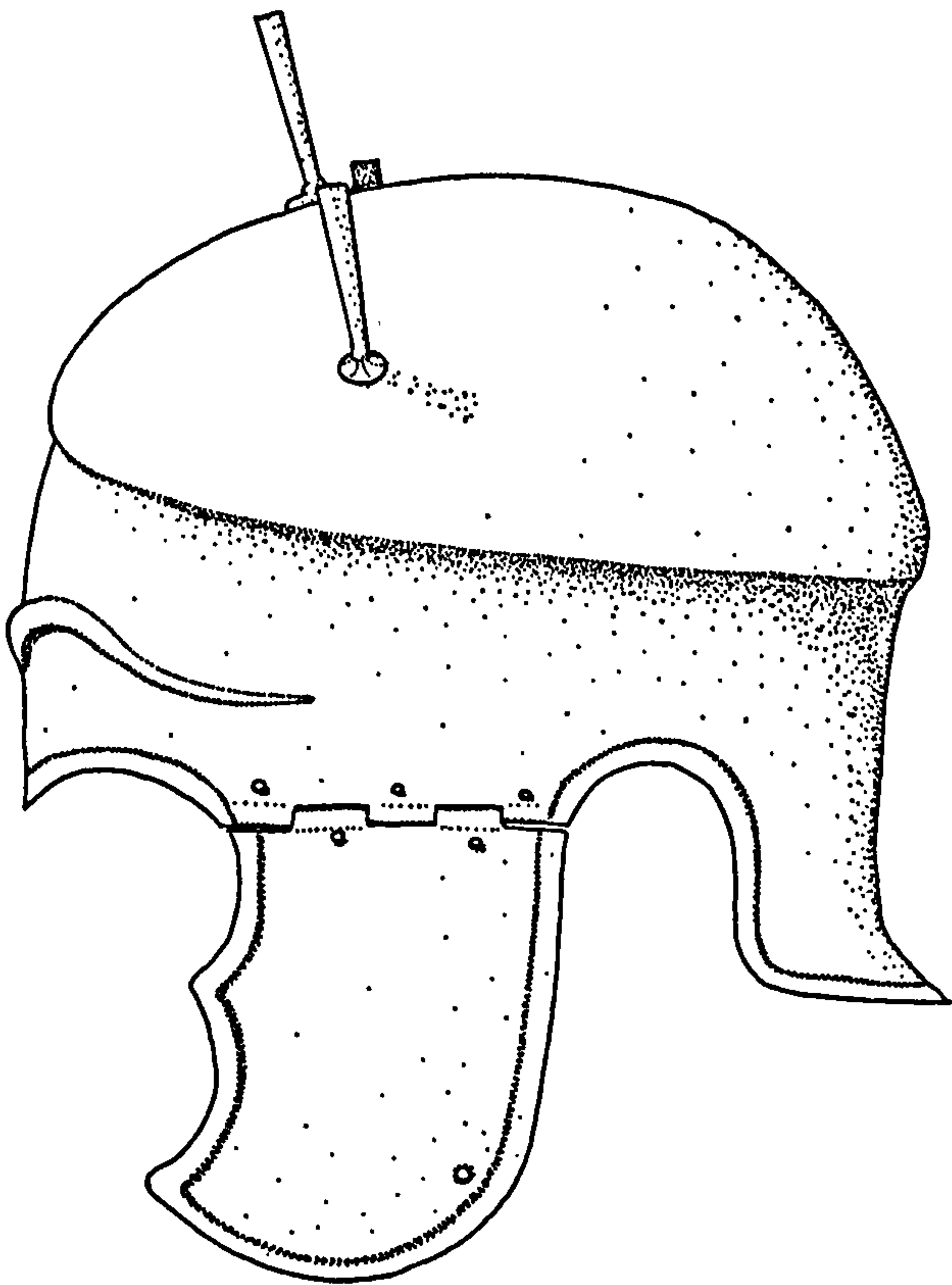
24. South Italy. The Musée de l'Armée, Paris (Inv. E5). Decorated: The decoration consists of embossed eyebrows and two brow-ridges rising to an apex at their centre, all of which terminate in a single large volute at each side. (fig. 116:24) Lipperheide, von. 1896, 121, No. 466. Mohen, 1970, 219-20.

25. South Italy. The Musée de l'Armée, Paris (Inv. E6). Decorated: The decoration consists of embossed eyebrows and two brow-ridged rising to an apex at their centre, all of which terminate in a single large volute at each side. (fig. 117:25) Mohen, 1970, 215-6

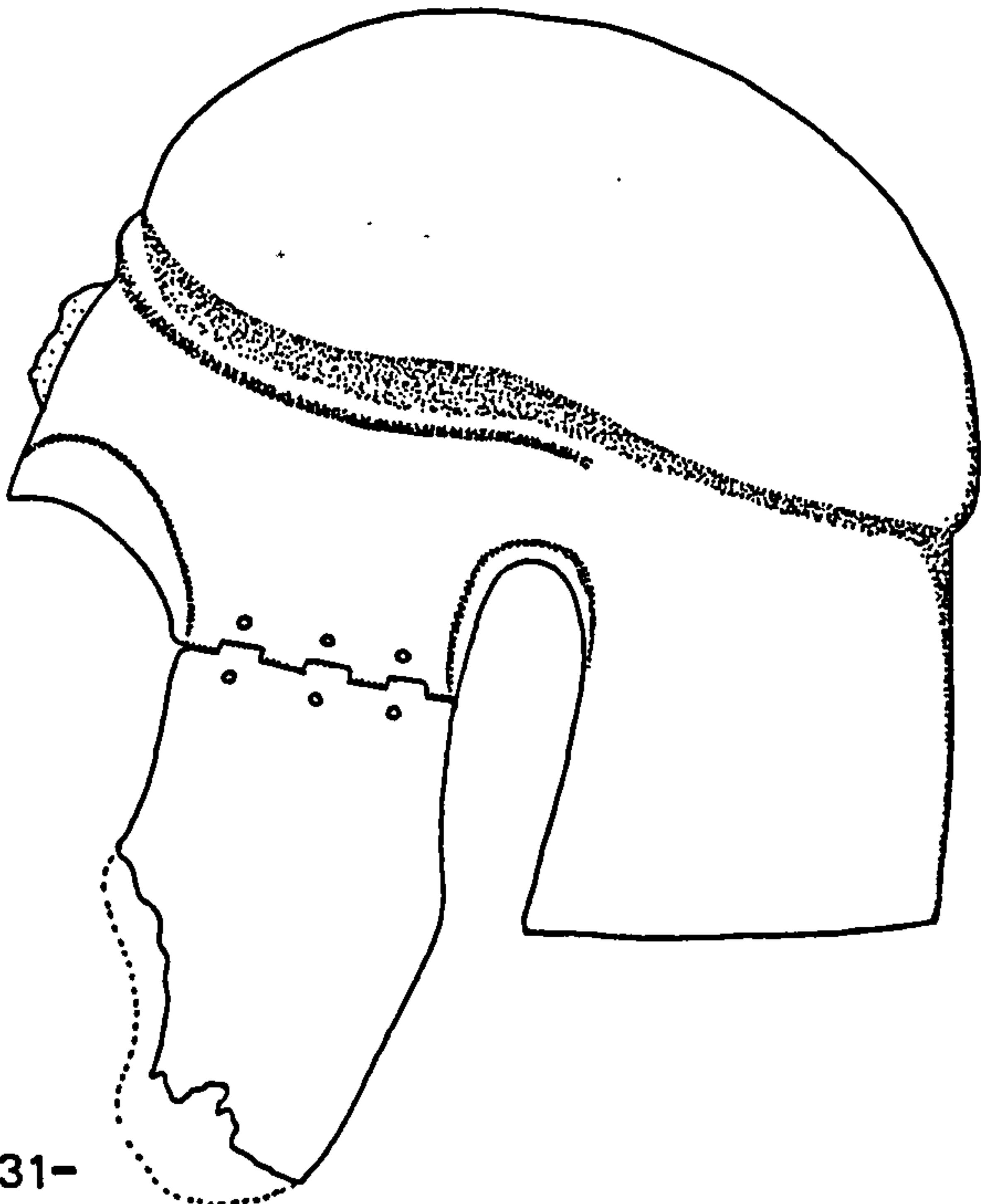
FIG. 114



16



17



18

26. Capodignano near Paestum, Campania, Italy. The Musée de l'Armée, Paris (Inv. E4). Decorated: The decoration consists of two embossed brow-ridges, separated by a deep flute, rising to an apex at the centre. At either side these terminate in a single large volute. Beneath the apex is a repoussé diademed head of a woman. At the base of the helmet is an embossed band forming stylised eyebrows. The neck-guard is adorned with a raised band following the contour of its base and terminating in volutes. Finally each cheek-piece bears the embossed head of a horse. (fig. 117:26) Mohen, 1970, 214-5. Lipperheide, von. 1896, 122.

27. Pertosa Salona, Campania, Italy. The Museo Nazionale, Naples. Decorated; The decoration consists of two embossed brow-ridges rising to an apex and terminating in a large volute at each side. At the base of the front of the helmet is an embossed rectilinear band forming stylised eyebrows. The neck-guard is adorned with a raised band at the nape of the wearer's neck. (fig. 117:27) Lipperheide, von. 1896, 118, No.336.

28. South Italy. The Antiquarium, Munich (destroyed in World War II). Decorated; The decoration consists of two embossed brow-ridges rising to an apex and terminating in a large volute at each side. At the base of the front of the helmet is an embossed rectilinear band forming stylised eyebrows. The neck-guard is adorned with a raised band at the nape of the wearer's neck. (fig. 118:28) Lipperheide, von. 1896, 120, No.37.

29. South Italy. The John Paul Getty Museum, Malibu. (Inv. 80AC12).
Decorated: The decoration consists of two embossed brow-ridges rising to an apex and terminating in a large volute at each side. At the base of the front of the helmet is an embossed rectilinear band forming stylised eyebrows. (fig. 118:29) Zimmerman, 1982, 113.

Type VII.

30. Ruvo, Puglia, Italy. The Bibliothèque Nationale, Paris (Inv.2002). Decorated: The decoration consists of an embossed triangular brow-ridge rising to an apex at the centre. The neck-guard is decorated with an incised wave pattern. At each temple is an applied embossed bronze wing. (fig. 118:30) Blanchet. and Bandon. 1895, 657-8. Lipperheide, von. 1896, 111, No. 342. Adam, 1984, 123-4.

31. Unprovenanced from Italy. The Bibliothèque Nationale, Paris (Inv.1998). Decorated: The decoration consists of an applied, embossed sheet bronze, wing at each temple. (fig. 119:31) Blanchet. and Bandon. 1895, 657. Lipperheide, von. 1896, 108, No. 341. Adam, 1984, 121-2.

Type VII.B.

32. Tomb 10 Conservano near Bari, Puglia, Italy. The Museo Nazionale, Bari (Inv. 20890). Decorated: The decoration consists of embossed stylised hair on the forehead and applied embossed, sheet bronze wings riveted on each side over the wearer's temple. Soldered down the crest-ridge is a crest-holder in the form of stylised waves. (fig. 119:32) Bianchi-Martini, 1964. 161-4. Connolly, 1981, 110.

Type VIII.

33. Herculaneum, Campania, Italy. The Museo Nazionale Naples.

Decoration: The decoration consists of two narrow embossed brow-ridges, the upper one rising to an apex at its centre, the lower one passing straight across the brow. Both terminate in the same debased volute at each temple. (fig. 120:33) Lipperheide, von. 1896, 256. Robinson. 1975, 65.

34. Herculaneum, Campania, Italy. The Museo Nazionale Naples.

Decoration: The decoration consists of two narrow embossed brow-ridges, the upper one rising to an apex at its centre, the lower one passing straight across the brow. Both terminate in the same debased volute at each temple. (fig. 120:34) Robinson. 1975, 65.

Crest-fixtures.

Over half of the extant Samno-Attic helmets have no provision for a crest, the remainder have a crest-fixture of one of six types. The overwhelming majority of these, borne by over thirty-three percent of the surviving helmets of this type, are feather tubes. These are of one of three different types. The first are independently mounted, inverted, conical feather tubes which are attached permanently to the helmet bowl either by rivets or solder. These occur on two helmets of type IV and one helmet of type VII, (Nos. 16, 17 and 32 respectively). In the case of both helmets 16 and 32 these are partially hidden by the applied sheet bronze wings. Those on helmet 16 are riveted to the helmet through small circular flanges at their base, whereas those on helmet no. 32 are soldered directly to the internal face of the bronze wings. Helmet no. 17 has three separate

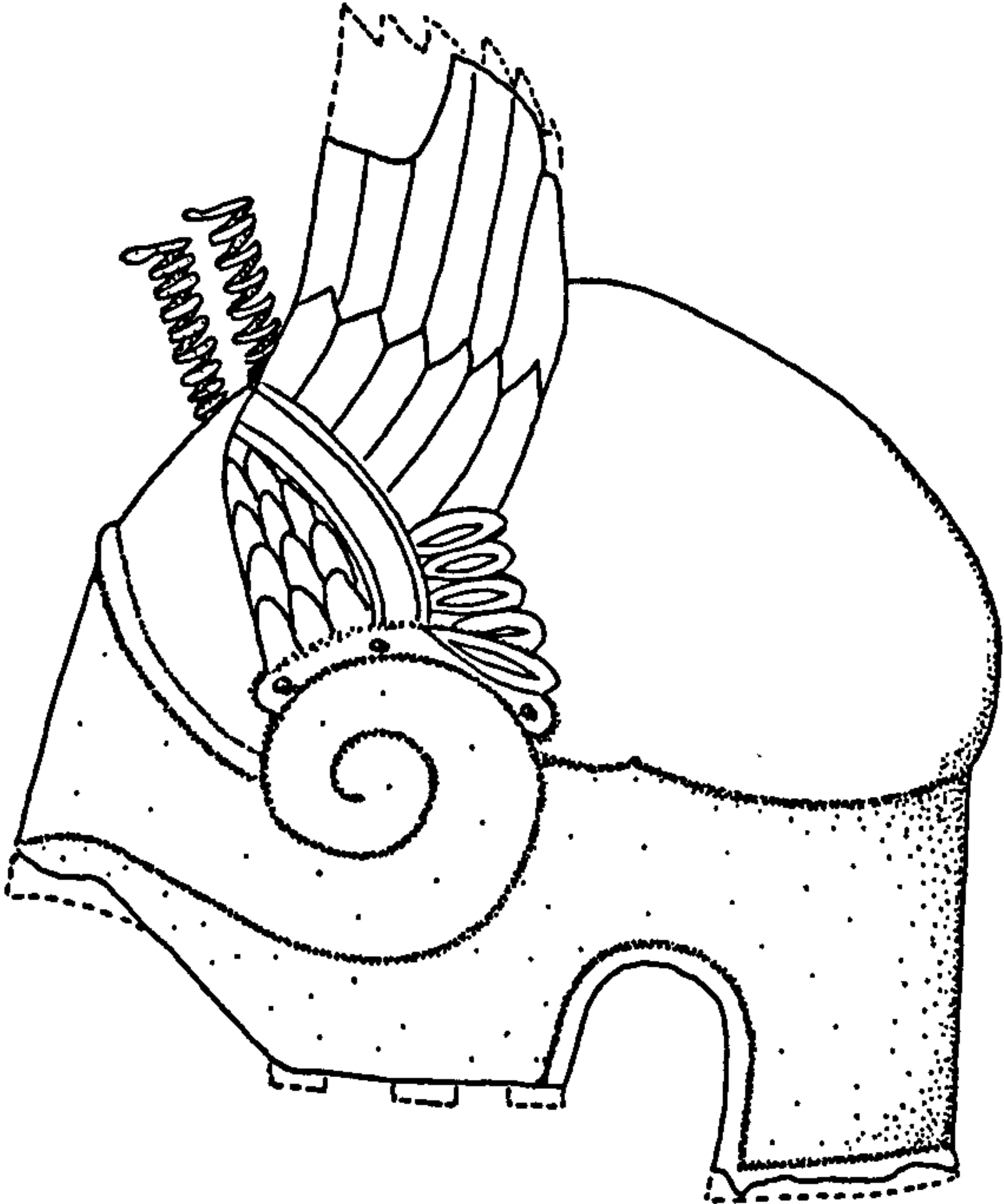
feather tubes which terminate in similar circular flanges but in this case these are embossed and soldered to the helmet bowl, one centrally and one to each side. Two circular solder marks, one on either side of the apex of helmet No. 14 are without doubt the remains of this type of fixture.

The two other forms of feather tube are closely related and are detachable. They consist of a single bronze strip usually mounted transversely across the helmet bowl. At each end is a feather tube. On helmet 6, 20 and 21 these are of inverted conical form (fig. 121:1), produced by hammering the sheet around a conical triblet. However on helmets 5 and 19 this plate terminates in bronze spring like feather tubes. On both types the crest-fixture is pierced by two rectangular holes to admit either pierced bronze lugs or loops, through which pins are passed to hold the crest-fixture in position. Helmet 2, now in the Castel S. Angelo, has three such pierced lugs arranged transversely across the apex of the helmet. Helmet no.6, now in the Hermitage, St Petersburg, is also equipped with this type of crest-fixture, although it is mounted longitudinally, and from its centre springs a third conical feather tube. It may be that this was common practice as both helmets 20 and 21 have a square central hole, which is now empty. This may have been for a third feather tube but alternatively it may have been intended to receive a stemmed "U" shaped bracket, like that on helmet No.19, now in the Royal Armouries in the Tower of London (Inv. II 197.) (fig. 121:1). This type of bracket is commonly associated with Apulo-Corinthian and Pilos helmets from Puglia and the Basilicata, but occurs in other Italian helmet forms most notably the Etruscan Negau. This type of crest-fixture

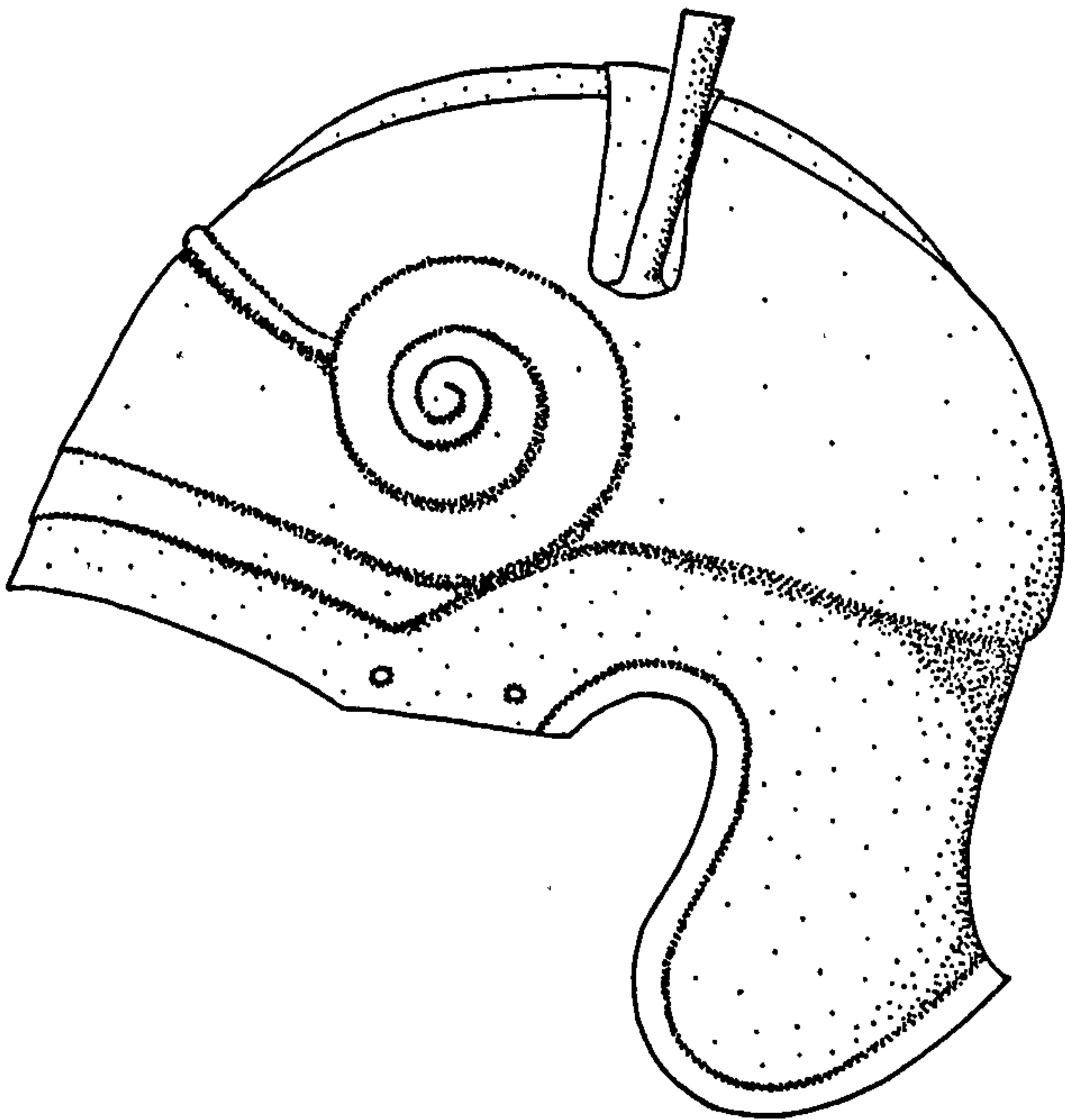
does occur on other Samno-Attic helmets but only ever as a minority type. It seems not to be confined to one typological group and remains of them occur on helmets 11, 15, 19, 22 and 30. In the case of helmets 11, 15 and 30 they are accompanied by pierced lugs set just above the junction between helmet bowl and neck-guard which were presumably used to fasten the rear of the crest-box. On helmet no. 22 there are small ring mounted in pierced lugs set at either end of the crest-ridge.

The remaining two types of crest-fixture associated with these helmets are completely different, the Phrygian bonnet of helmet no. 32 is equipped with an embossed sheet bronze crest-box soldered down either side of the apex; this is unique on a helmet of Italian manufacture although this form of crest-fixture is not unknown on helmets of Hellenistic origin, most notably a helmet now in the Greek Museum of Cyprus in Nicosia which was excavated in 1976 (Inv. XII 15/3).

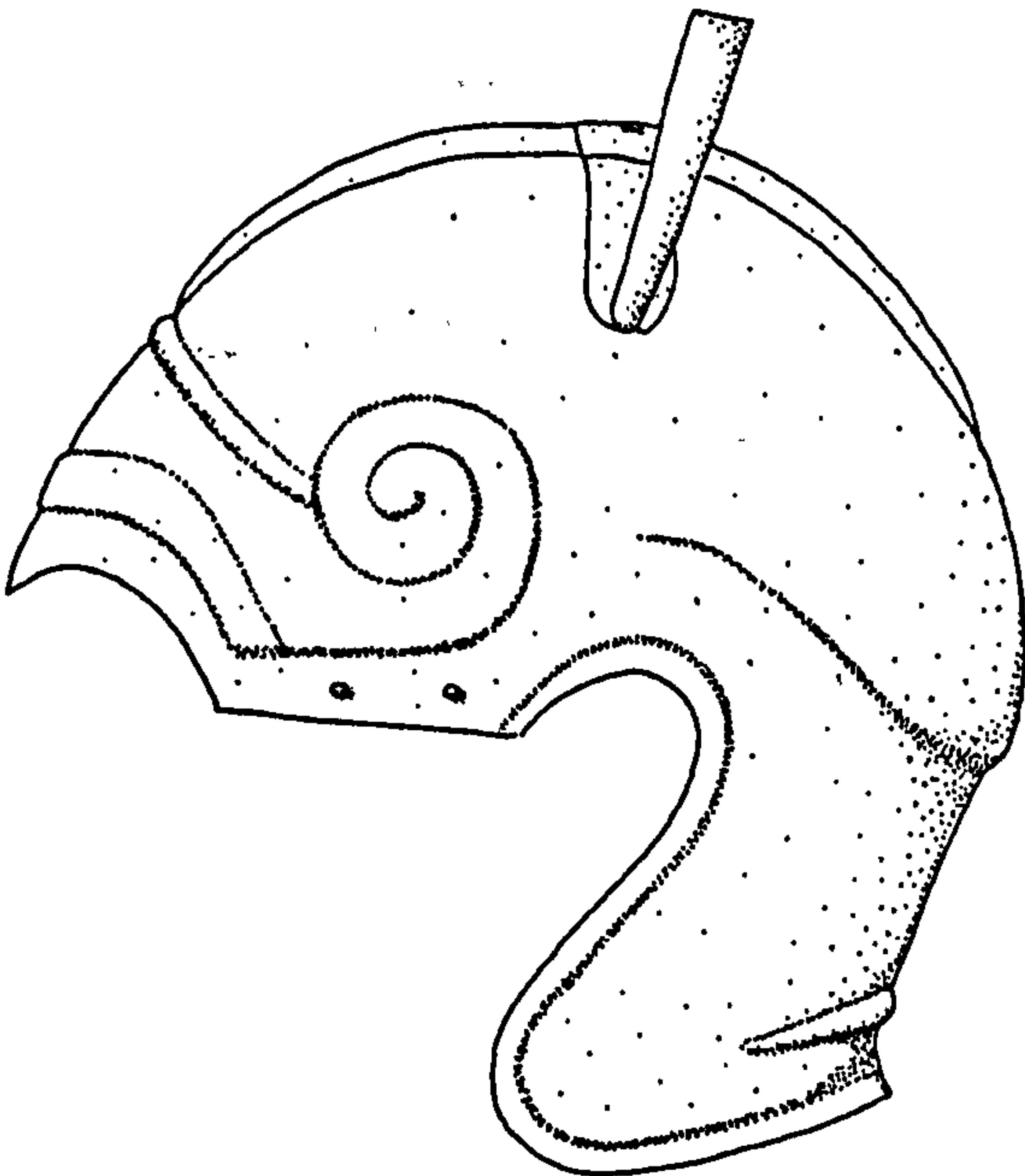
The final type of crest-fixture occurs on helmets Nos. 33 and 34 both of type VIII and probably dating to the early years of the first Century AD. These crest-fixtures consist of a circular plate, with a raised and slotted centre, soldered to the crown of the helmet and are accompanied by retaining hooks for the crest box, which are riveted at the front and rear. They owe nothing to the Samno-Attic tradition and are more commonly associated with bronze copies of Imperial Gallic helmets, for example one in the Museo Civico at Cremona and another in the Museo Stibbert in Florence.



19



20



21

Cheek-pieces. (fig. 122)

Approximately three quarters of the extant Samno-Attic helmets retain their cheek-pieces. They are missing on helmets nos. 1, 4, 6, 12, 20, 21, 25 and 27. There are six types of cheek-piece associated with this form, three are bicuspid in outline and represent types I, II and III. The most commonly found cheek-piece, type I (fig. 122:1), is a moderate bicuspid variety with a raised outer edge. On over half of the extant helmets the cheek-pieces are of this form and are fitted to all types with the exception of type II.

The other two types of bicuspid cheek-piece are far less common, these have a raised centre rather than edge. The cheek-pieces of type II (fig. 122:2) are moderately bicuspid and occur on helmets Nos. 3, 18, 33 and 34. The final bicuspid form, Type III (fig. 122:3), are represented by only one example, helmet no. 15 where they are zoomorphic and are shaped to in the form of eagles' heads facing to the rear.

Cheek-pieces of Types IV and V are clearly derived from Chalkidian prototypes. Type IV (fig. 122:4) are associated only with helmets of type II (nos. 8 and 9) and are derived from the cheek-pieces of the Italian Chalkidian helmet type V, they have a straight forward edge which is equipped with a cut-out for the wearers eye. The rear edge runs parallel to it for about half its length and then is brought forward at approximately forty-five degrees to meet the forward edge. The cheek-pieces of helmet no. 8 are decorated with a repoussé ram's head also derived from Chalkidian decorative motifs.

In this connection it is not surprising therefore that cheek-pieces of type V (fig. 122:5), which occur only on helmet types VI and VII,

should also apparently derive from this source. . . Like the previous four types these are very much of a minority form, however they are associated with the more developed types of Samno-Attic helmet. These cheek-pieces have a convex forward edge and sinuous rear edge which bulges out at the top and then curves inwards and round at the base to meet the forward edge. In outline this is very similar in shape to the fixed rams' head cheek-pieces which occur on Chalkidian helmets. . .

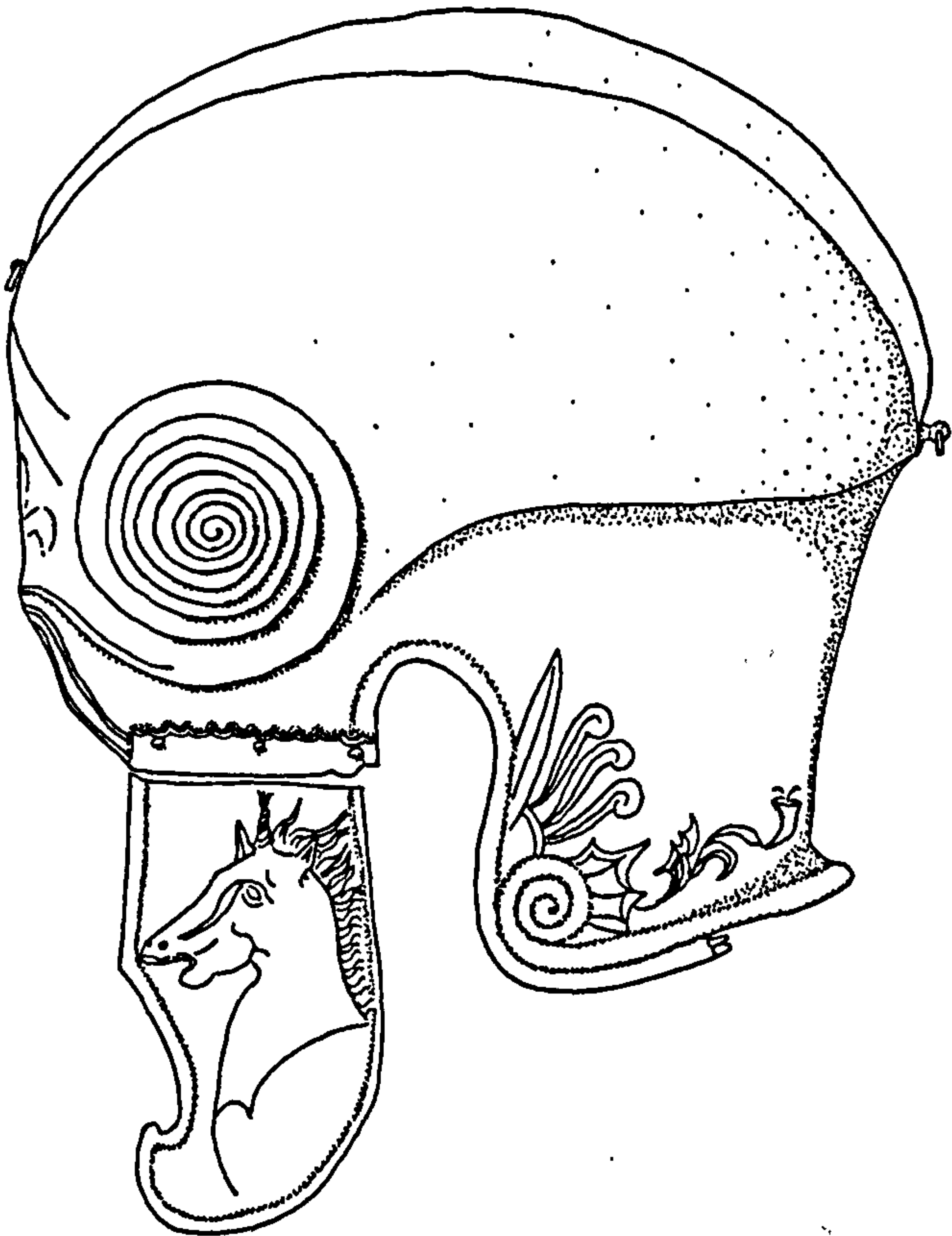
The final type of cheek-piece (fig. 122:6) is more commonly associated with Montefortino helmets and is of a trefoil or trilobate form, they are known from Bovianum and the shrine at Pietrabbondante. The association of this type of cheek-piece with the Samno-Attic helmet was first postulated by Connolly (1981, 111.). . They are similar in design to the Samnite triple disk breastplate. Connolly reasons that as this cheek-piece has a five loop hinge it must come from an Attic helmet rather than Montefortino one which only ever have 3 looped hinges. Whilst his assertion about Montefortino helmets is perfectly correct, without further corroborative evidence it would perhaps be rash to concur wholeheartedly with this assumption.

An integral part of the cheek-pieces are their hinges. Hinges survive on over three quarters of the extant Samno-Attic helmets and of these all but two, Nos. 8 and 24, are multi-hasped. The Samno-Attic helmet is unique amongst Italian helmets in that a considerable proportion of them are equipped with external hinges for their cheek-pieces; the upper half of the hinge being wrapped around the lower edge of the helmet bowl, this is then riveted in place by three or more domed headed rivets. These external hinges occur on helmets 1, 16, 22, 23, 24, 25, 26, 27, 28 and 29. They are therefore closely

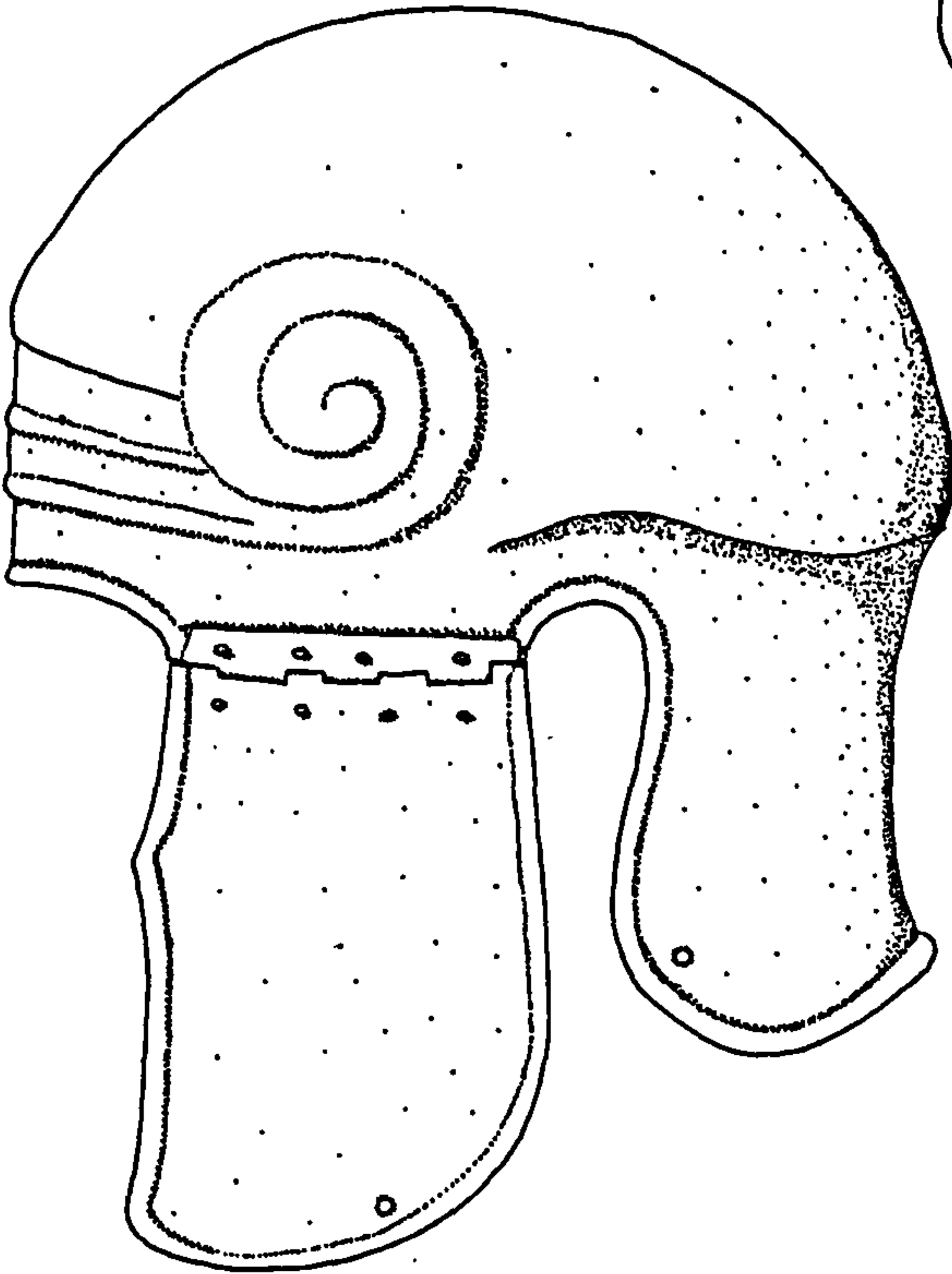
associated with helmets of type VI. The remaining two thirds are of the usual internally mounted multi hasp type.

Very few of the extant cheek-pieces have any form of chin-strap fixture. Where these do occur they consist simply of a hole either in the rear or the forward edge of the cheek-piece. As none of these holes retain any type of fixture it is impossible to say quite how these worked; however it is probable that they contained a simple loop through which could be threaded a thong for securing the helmet. No Samno-Attic helmet has any additional form of chin strap fixture, such as the double loop fittings commonly found on Montefortino helmets. Where no chin-strap fittings occur on the cheek-piece it can only be assumed that these were sewn to the lining. The closely fitting nature of the neck-guard, common to nearly all types of Samno-Attic helmet which hugs the wearer's skull and neck, would render a third point of attachment in the neck-guard unnecessary, not least in that the closely fitted skull and brow-band would be unlikely to be dislodged from the wearer's head by a blow.

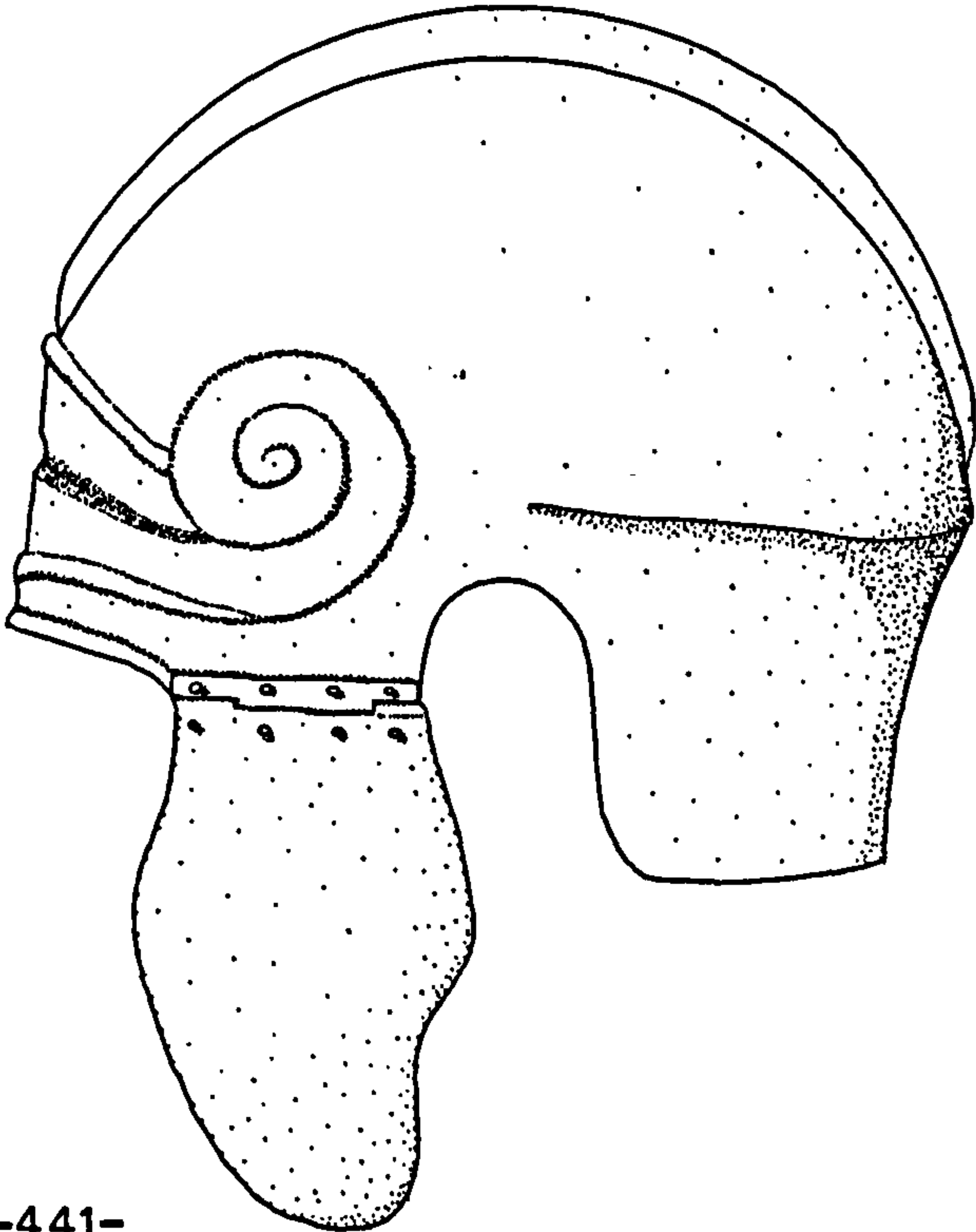
22



23



24



Decoration.

The overwhelming majority, approximately ninety percent, of Samno-Attic helmets are decorated in one form or another; the only exception to this are helmets of type I. In fact in some cases the decoration is an integral part of the helmets design and serves a functional role of strengthening portions of the helmet. The decorative work varies in the degree of elaboration and in the style and manner of its execution. The armourer employed one of, or a combination of three techniques i.e. repoussé, applique or engraving. The decoration is without exception restricted to the front of the helmet and the cheek-pieces. The vast majority of helmets, ie. all except type I and type VII, share one decorative feature, that is, repousse eyebrows which meet over the wearers nose.

On the helmets of types V, VI and VIII these embossed eyebrows are invariably accompanied by embossed brow-ridges which rise to an apex at the front and terminate in volutes at the temples. On helmets of type V this takes the form of a broad embossed band of inverted "V" shape which terminates in a large embossed volute over each temple. On either side of this band are narrow flutes. Whereas on helmets of type VI it consists of two embossed brow-ridges rising to an apex and terminating in a large volute at each side. Finally on helmets of type VIII, it take the form of two narrow embossed brow-ridges, the upper one rising to an apex at its centre, the lower one passing straight across the brow. Both terminate in a debased volute at each temple. These decorative schemes are very similar and obviously derive from a common source. However helmets of type VIII show a

considerable decline both in the design and execution of the decoration.

Although this form of decoration is universal on the foregoing types, examples of brow-ridges do occur on helmets of types III and IV, i.e. helmets Nos. 11 and 15. On helmet No. 11 this takes the form of a double inverted "V" shaped brow-ridge while on helmet No. 15 are two inverted "V" shaped embossed and fluted mouldings echoing the shape of the brow-band. However neither helmet has volutes at the temples.

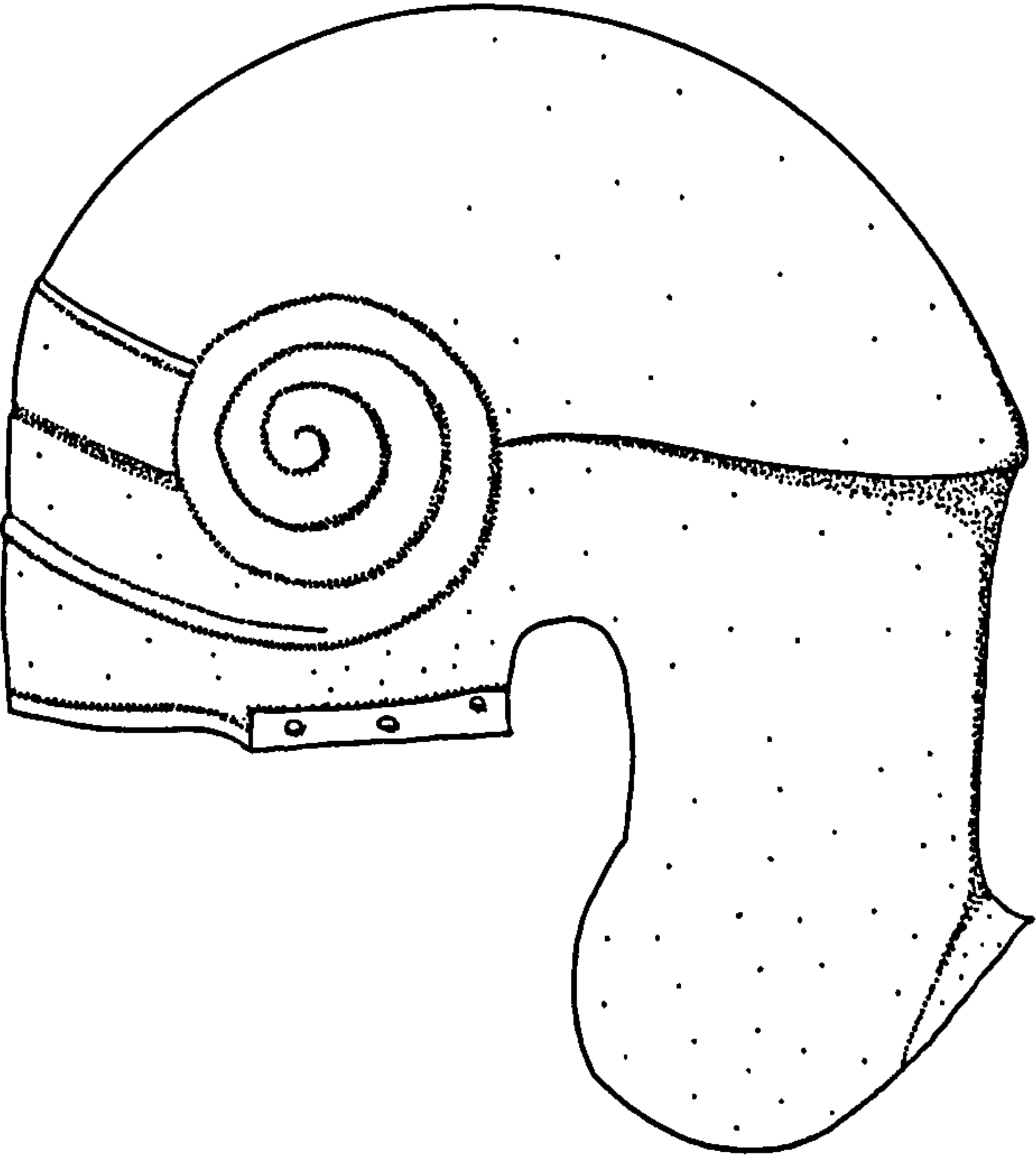
Embossed eyebrows are a common feature on many types of Italian helmet and occur universally on Italo-Corinthian, Apulo-Corinthian and Chalkidian helmets. In addition to the eyebrows an embossed brow-ridge is found on many Chalkidian helmets. This further emphasises the links between these two forms of helmet. Conversely the embossed volutes would appear to be a unique feature of the Italian made Attic helmet. The repoussé technique is also used to embellish the cheek-pieces of helmet No. 8, which are decorated with rams' heads, helmet No. 15, which take the form of eagles' heads, and helmets Nos. 22 and 26 which are embellished with horses' heads. It has also been used to produce the "Athena's head" just below the apex of the brow-band of helmet No. 26 and the stylised locks of hair decorating the forehead of helmet no. 32.

To supplement the repoussé work, certain helmets have bronze appliqué decoration. These are only a small minority and by and large this form of decoration only occurs on helmets of type IV and VII. On helmets 16, 19, 30, 31 and 32 this decoration consists of applied, embossed and engraved sheet bronze wings which are riveted to either

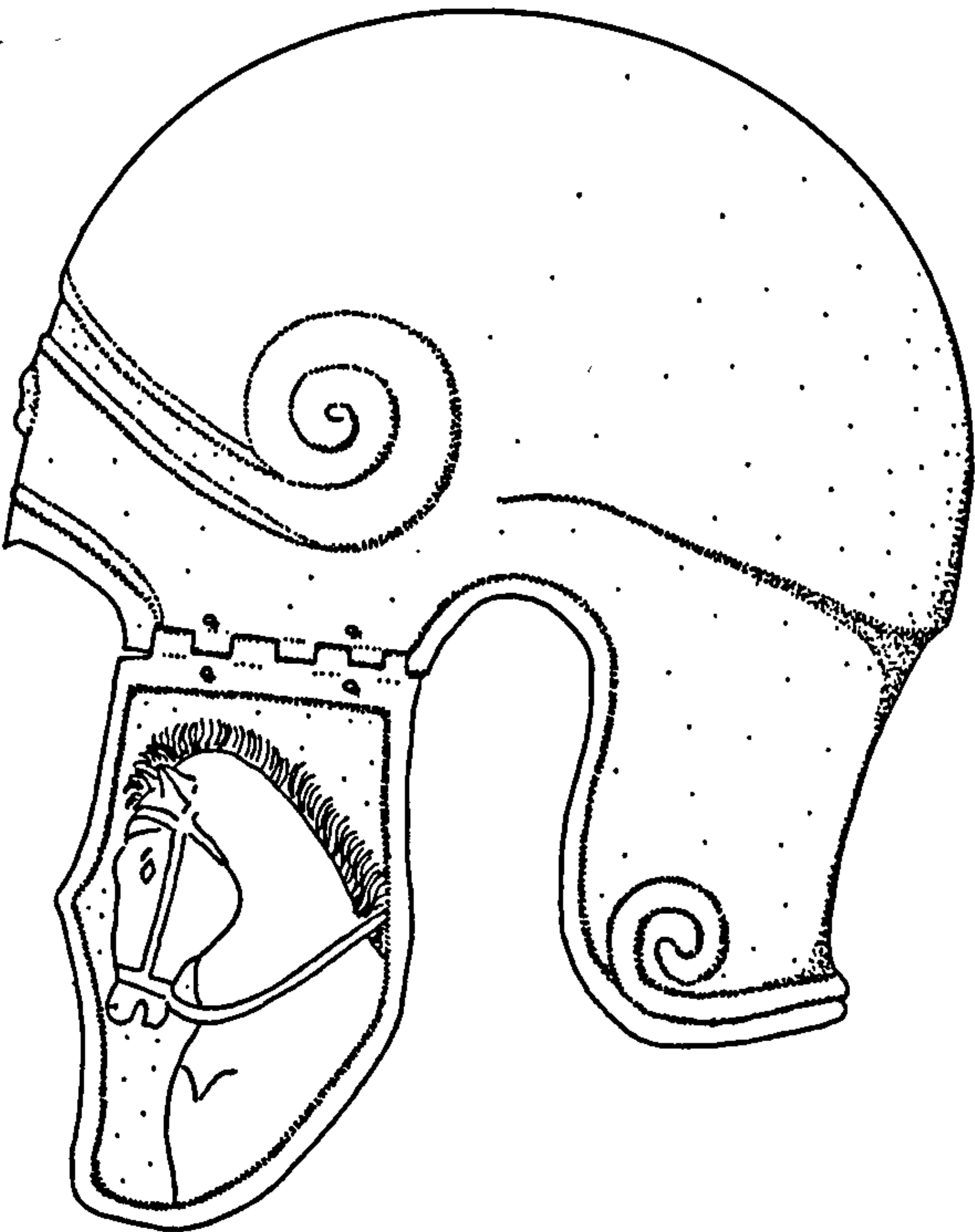
side of the helmet bowl and in some cases are used to disguise the feather tubes. Connolly (1981, 111.) has suggested that this type of decoration can be used to identify Samnite helmets. Certainly helmets of this type can be seen on Samno-Lucanian wall paintings from Campania, now in the Museo Nazionale in Naples, but they do not appear on the "Warriors' Return" fresco from Paestum, and so the evidence is far from conclusive. Although these bronze wings are the most common form of applied decoration, helmet No.18 has an applied silver satyr's head, and helmet No. 6 a medallion engraved with a "Medusa's head" soldered to their foreheads.

Supplementary decoration, especially on the most elaborate helmets ie. Nos. 19, 22, 25, 26 and 32 is added by engraving. This takes the form of either scrolling tendrils and palmettes as on helmets Nos. 22 and 26 or wave pattern as on helmet No. 25. In all cases this decoration is restricted to the forehead area and is used in conjunction with repoussé work. Helmet No. 17, now in the Royal Armouries in the Tower of London, exhibits all three forms of decoration. It has applied sheet bronze wings embossed and brow-ridges, which terminate in volutes. This in turn is embellished with engraved scrolling locks of hair from which issue charging wild boars.

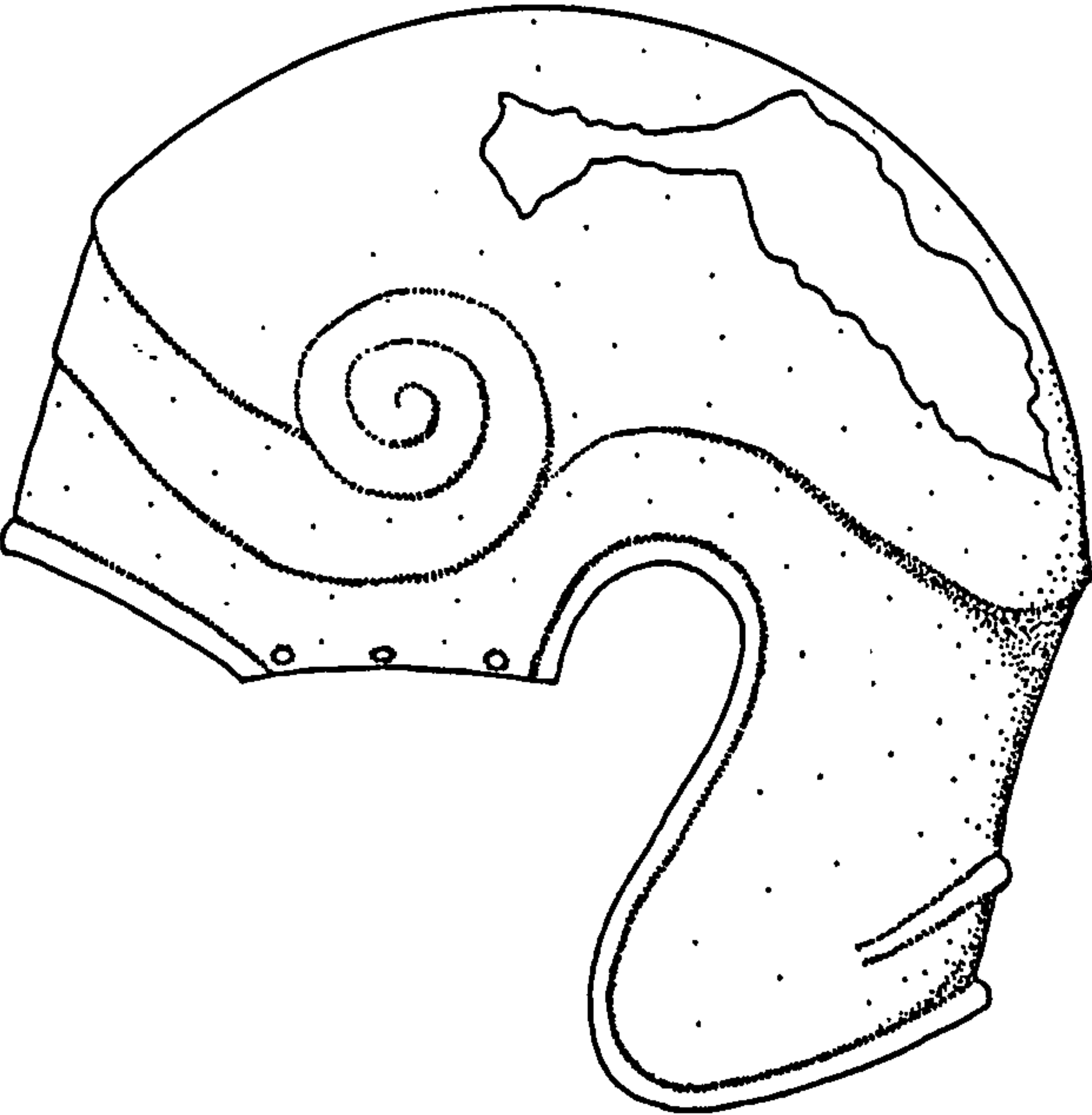
FIG. 117



25



26



27

Detailed study of an example of each type.

Helmet No. 5.

Type: Type I.

Location: The Musée du Louvre, Paris.

Inventory No. 1129 (C6968).

Provenance: South Italy.

Context: Unknown.

Suggested date: 4th-3rd centuries B.C.

Material: Bronze.

Dimensions: Height: 210 mm.
Overall width 220 mm.
Internal width 214 mm.
Overall breadth 180 mm.
Internal breadth 173 mm.

Thickness: Rim: 3 mm.
Bowl: 0.7-1 mm.

Cheek-pieces: Present. These are of a bicuspid form. The forward edge has two shallow cusps removed, corresponding with the wearers eyes and mouth, the rear edge curves forward to meet it. The cheek-pieces have a raised central panel and a thickened outer edge.

Hinge-plates: Present. These are internal and have three hasps at the top and bottom. They are attached to the bowl by five rivets and the cheek-pieces by four.

Crest-fixture: This consists of a strip of bronze, 20 mm. wide. At either end is riveted a bronze feather holder

which takes the form of a loosely coiled bronze spring. The crest-fixture is attached to the bowl of the helmet by two bronze loops, these project through the helmet bowl, and are flanged outwards on the inside to secure them. Each loop passes through a rectangular opening in either end of the crest-fixture. This is secured by passing iron pins, similar to modern cotter pins, through the projecting loops but over the bronze strip

Decoration: None.

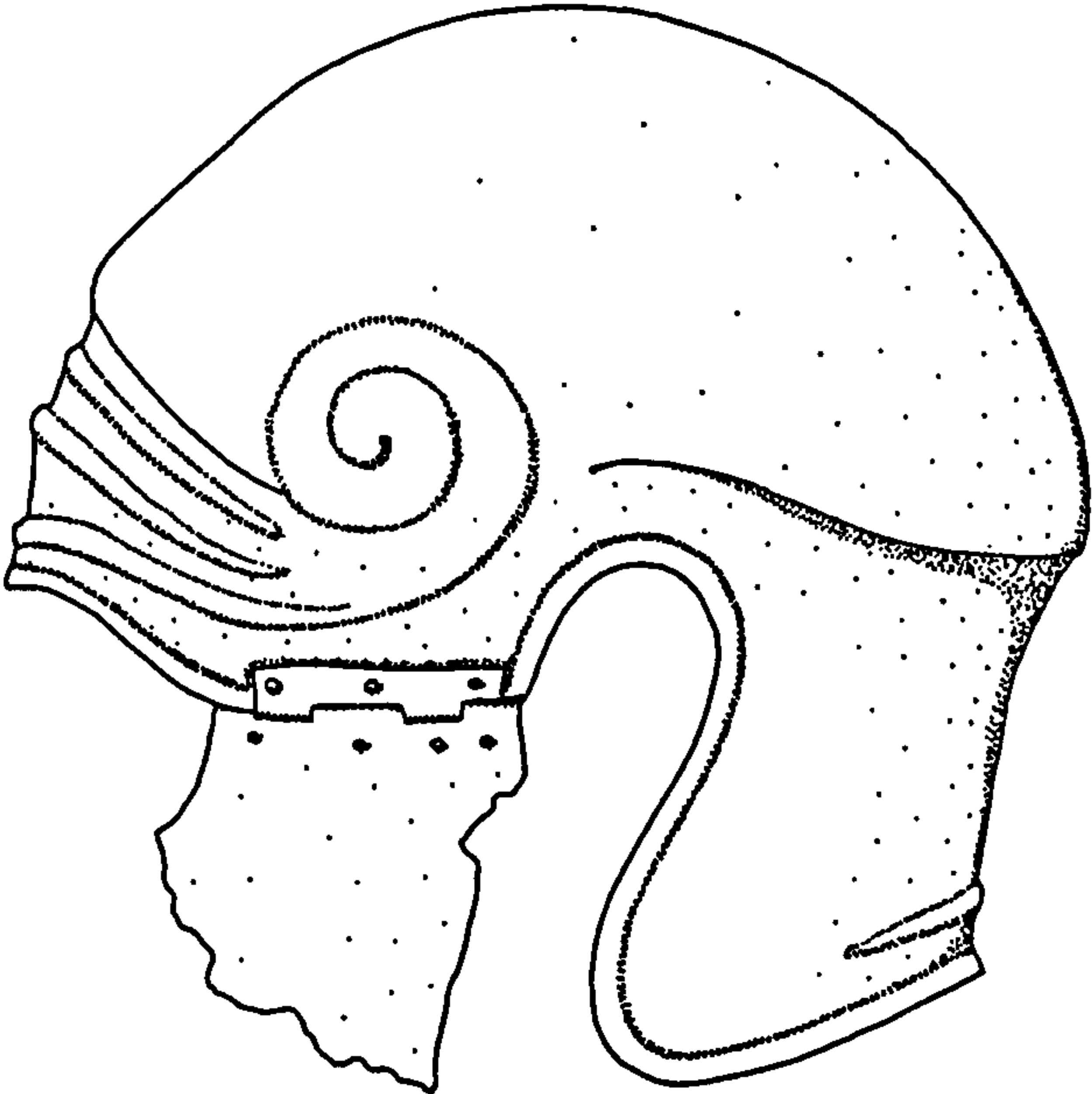
Manufacture: The helmet is "blocked" and "raised from a single sheet of bronze. The cheek-pieces and crest-fixture were manufactured separately and attached as described above.

Description: The helmet has a low slightly bulbous bowl, with a pronounced medial ridge. The bowl swells from a fitted brow-band and the junction is marked by a pronounced embossed ridge. The brow-band is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a very deep and closely fitted neck-guard. This is strongly everted at its base. The helmet has hinged bicuspid cheek-pieces. It is competently made and finished. It is well preserved but restored and has a granular green patina.

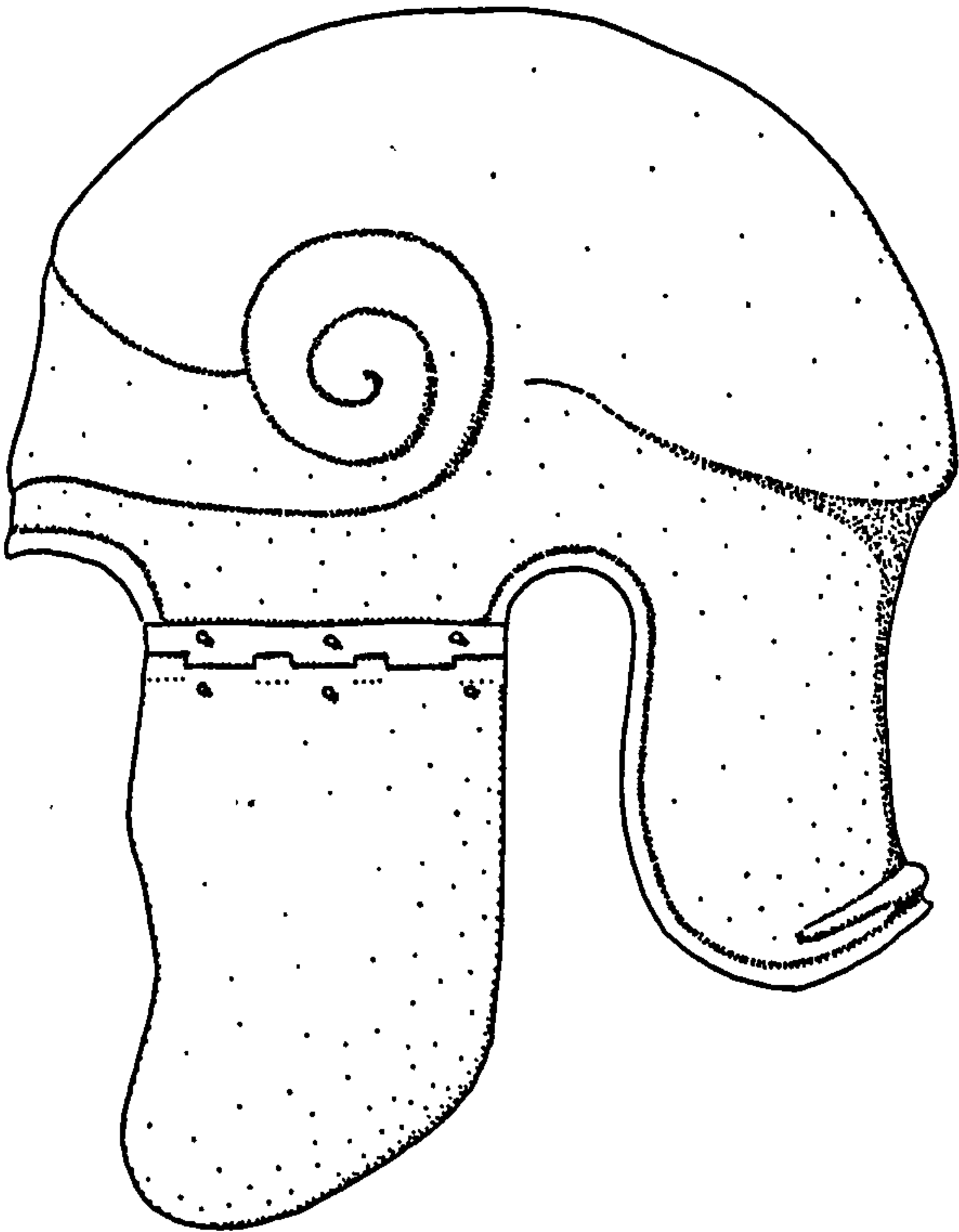
Other Details: None.

Published: Ridder. 1915, 4-5.

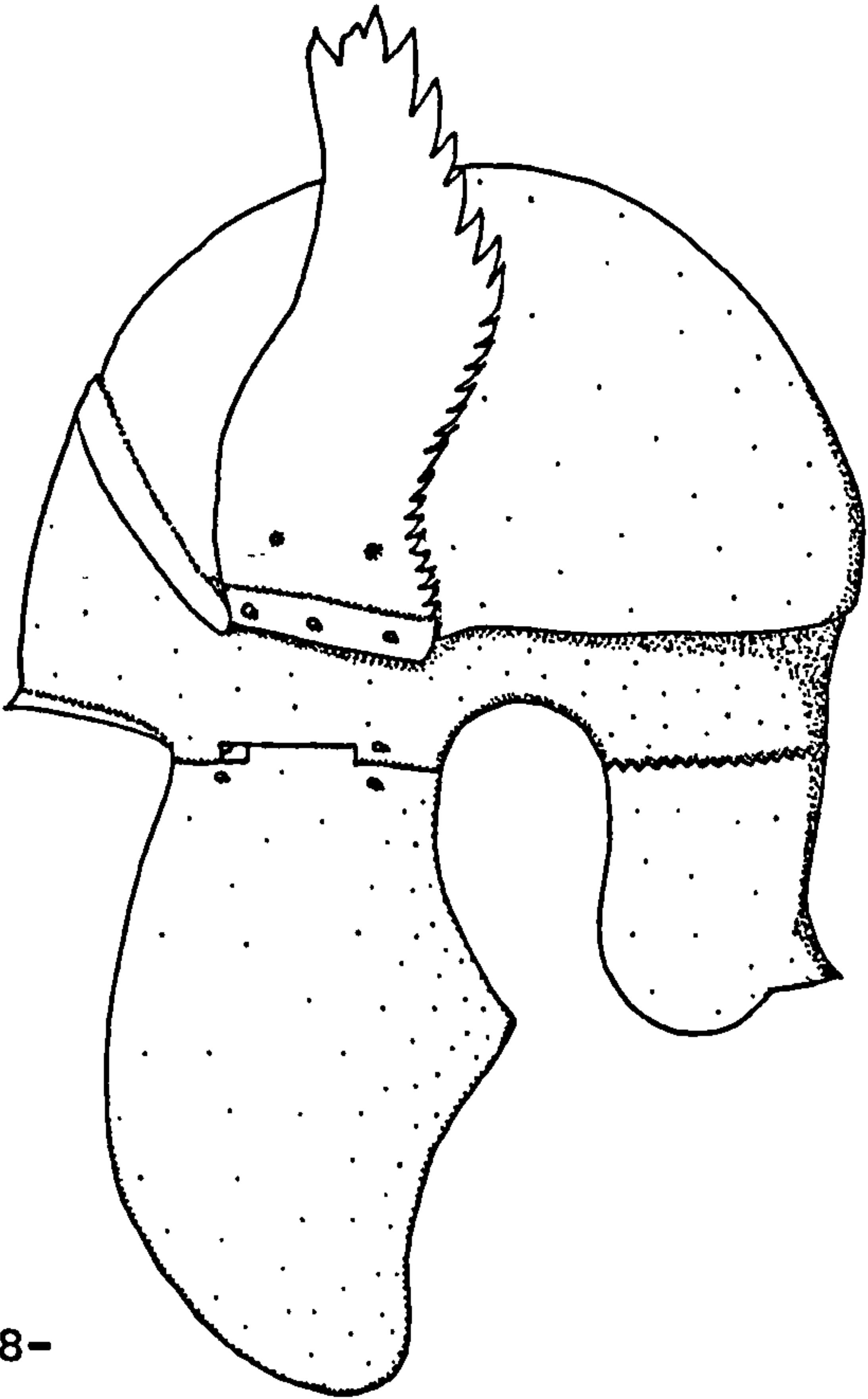
28



29



30



Helmet No. 8.

Type: Type II.

Location: The Museo Arqueologico, Madrid.

Inventory No.: 7360.

Provenance: Unknown.

Context: Unknown.

Suggested Date: 5th-4th centuries B.C.

Material: Bronze.

Dimensions: Height: 265 mm.

Overall width: 202 mm.

Internal width: 198 mm.

Overall Breadth: 160 mm.

Internal breadth 156 mm.

Thickness: Rim: 2 mm.

Bowl: 1 mm.

Cheek-pieces: Present. These are of an unusual form clearly derived from the cheek-pieces of the Italian Chalkidian helmet type V. They have a straight forward edge with a cut-out for the eye. The rear edge is parallel to this for about half its length and then is brought forward at approximately 45 degrees to join the forward edge. Each cheek-piece is decorated with an embossed ram's head also very reminiscent of Chalkidian decorative motifs.

Hinge-plates: Present. These are internal and have a single upper hasp and double lower hasps. They are attached to both the bowl and the cheek-pieces by two rivets.

Crest-fixture: None.

Decoration: The decoration consists simply of an embossed rectilinear moulding around the main edges of the helmet and embossed eyebrows. On each cheek-piece is an embossed ram's head.

Manufacture: The helmet was forged from a single piece of bronze and the cheek-pieces formed separately. They differ from the Chalkidian type in that the rams' heads are embossed in the metal of the cheek-piece itself and are not an applied sheet which has been soldered on.

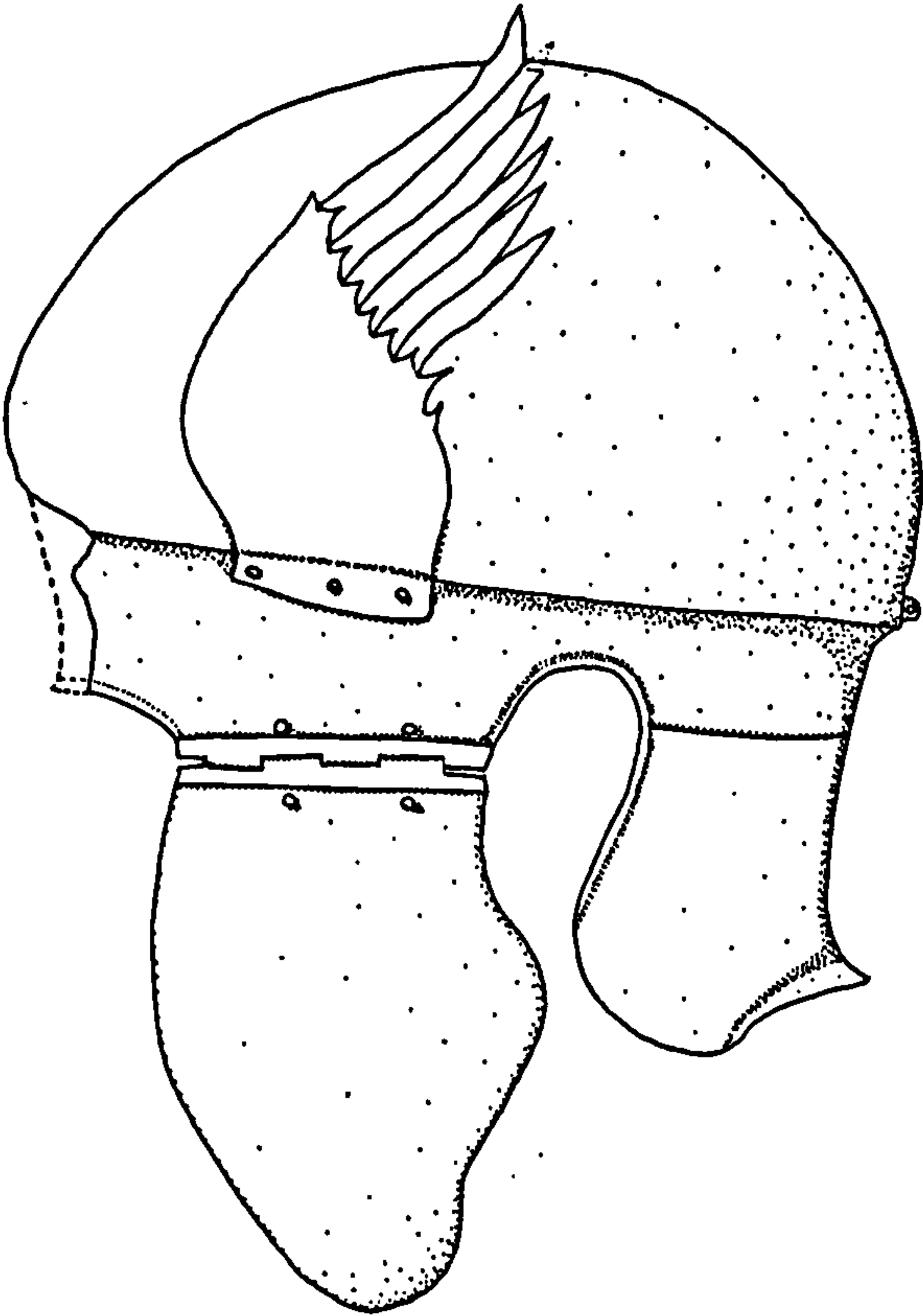
Description: The helmet has a low hemispherical slightly bulbous bowl. The bowl swells from a fitted brow-band and the junction is marked by a pronounced embossed ridge. The brow-band is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a shallow straight neck-guard. At the front there are shallow cut-outs over the wearer's eyes forming a slight vestigial nasal. Around the main edges of the helmet is a raised moulding of square section. The helmet has hinged cheek-pieces, of type IV. It is competently made and finished. It is well preserved and has a smooth brown patina.

Other Details: None.

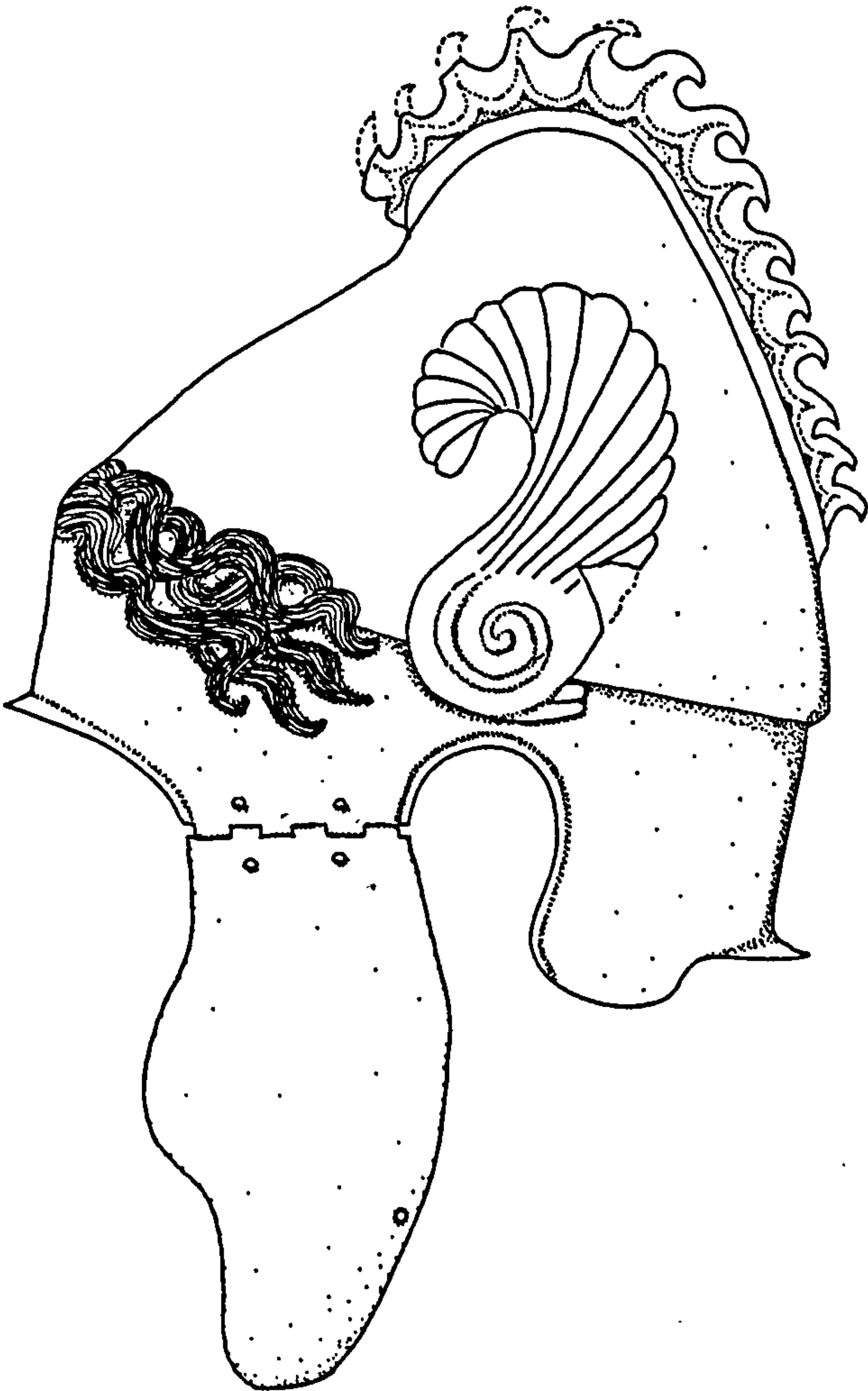
Published: Blazquez. 1957, 150, pl. 4.

FIG. 119

31



32



Helmet No. 10.

Type: Type III.

Location: The Museo Arqueologico, Madrid.

Inventory No.: 7363.

Provenance: South Italy.

Context: Unknown.

Suggested Date: 4th century B.C.

Material: Bronze.

Dimensions: Height: 170 mm.
Overall width: 170 mm.
Internal width: 164 mm.
Overall Breadth: 146 mm.
Internal breadth 140 mm.

Thickness: Rim: 3 mm.
Bowl: 1 mm.

Cheek-pieces: Present. These are of a moderate bicuspid form. The forward edge has two slight cusps cut out for the eyes and the mouth. The rear edge is straight for approximately two thirds of its length and then curves sharply towards the forward edge, where it forms a lobate terminal. Height: 110 mm. The right cheek-piece is missing.

Hinge-plates: Present. These are internal, carefully made and attached to both the helmet bowl and the cheek-pieces by three rivets.

Crest-fixture: None.

Decoration: The decoration consists simply of a pair of

embossed eyebrows on the brow and an embossed square-sectioned moulding along the main edges.

Manufacture: The helmet has been forged in one piece as have the cheek-pieces which are attached by hinges. The decoration is embossed using the repoussé technique.

Description: It has a well made low bowl which swells from a fitted brow-band. This is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a straight but fitted neck-guard. At the front the brow-band rises to form a gable. The junction between the bowl and brow-band is marked by a pronounced angle. The helmet is well made and has a smooth dark green patina.

Other Details: None.

Published: Blazquez. 1957, 153, pl.3a, b.

Helmet No. 14.

Type: Type IV.

Location: The Yorkshire Museum.

Inventory No.: None.

Provenance: The River Tyne, at Newcastle upon Tyne, Great Britain.

The provenance of this helmet is both uncertain and surprising but there is no doubt that this helmet was originally manufactured somewhere in Southern Italy. It was purchased by the Yorkshire Museum circa 1870.

Context: Unknown. River Tyne.

Suggested Date: 4th Century BC. Assigned on the basis of its close stylistic affinities with dated helmets of this type.

Material: Bronze.

Dimensions: Height: 146mm.
Overall Width: 195mm.
Internal Width: 180mm.
Overall Breadth: 185mm.
Internal Breadth: 170mm.

Thickness: Rim: 1mm.
Bowl: 0.5mm.

Cheek-pieces: Present. These are of a moderate bicuspid form, they have raised and embossed borders (type I). Height: 110mm. Width: 7.5mm. They have a hole pierced 10mm. in from their rear edge.

Hinge-plates: Present. These are of a multi-hasped variety with triple upper hasps and double lower hasps. The central pivot pin is now missing. The hinges are internal and attached to the cheek-pieces by two domed headed rivets.

Crest-fixture: There is no crest-fixture present. However there are two circular solder marks one on either side of the apex of the helmet. These probably represent the position of two feather tubes originally soldered to the crown.

Decoration: This consists of a pair of embossed eyebrows which meet over the nose and a raised square-sectioned

moulding along the lower edge of the face and ear openings.

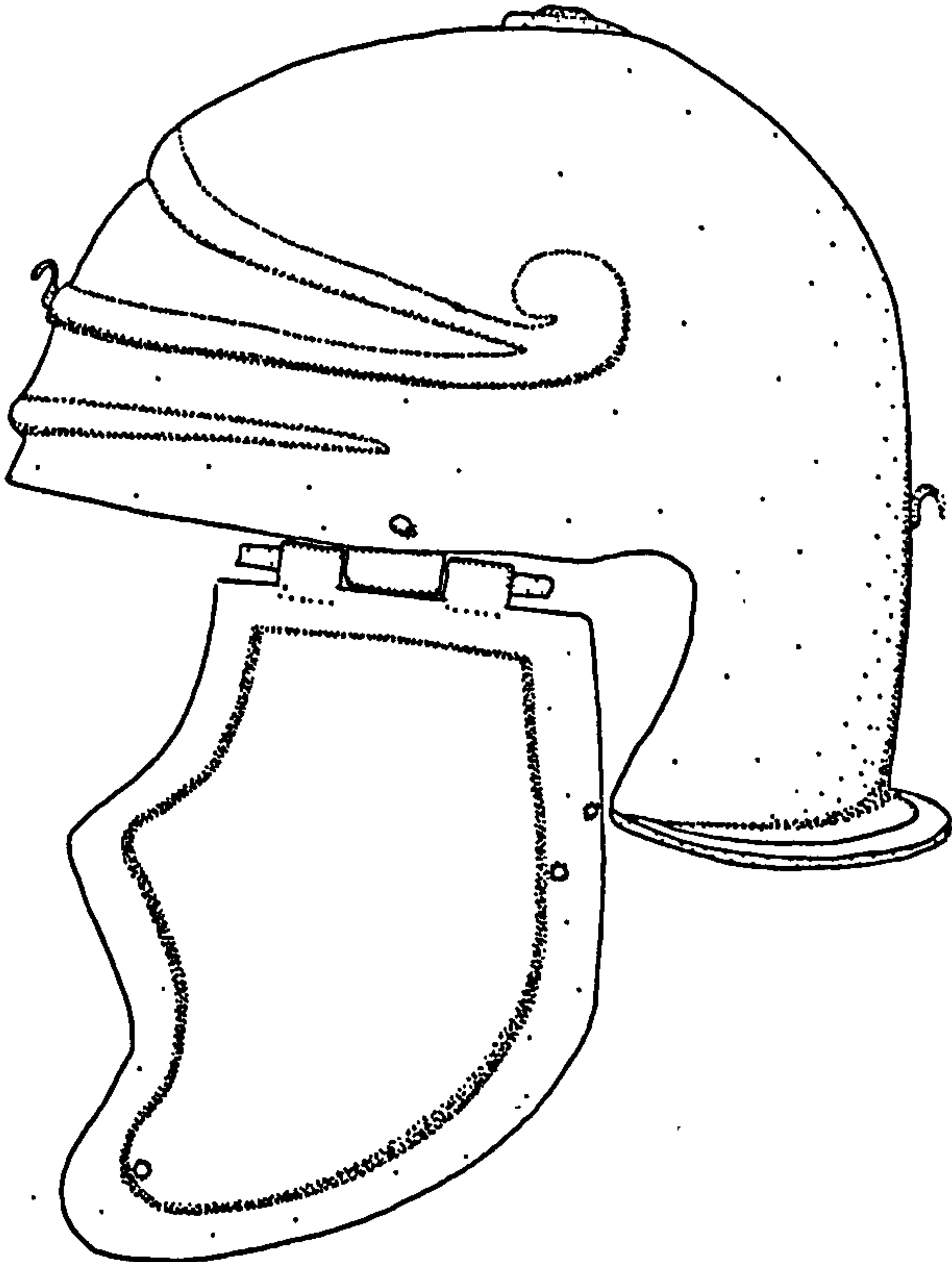
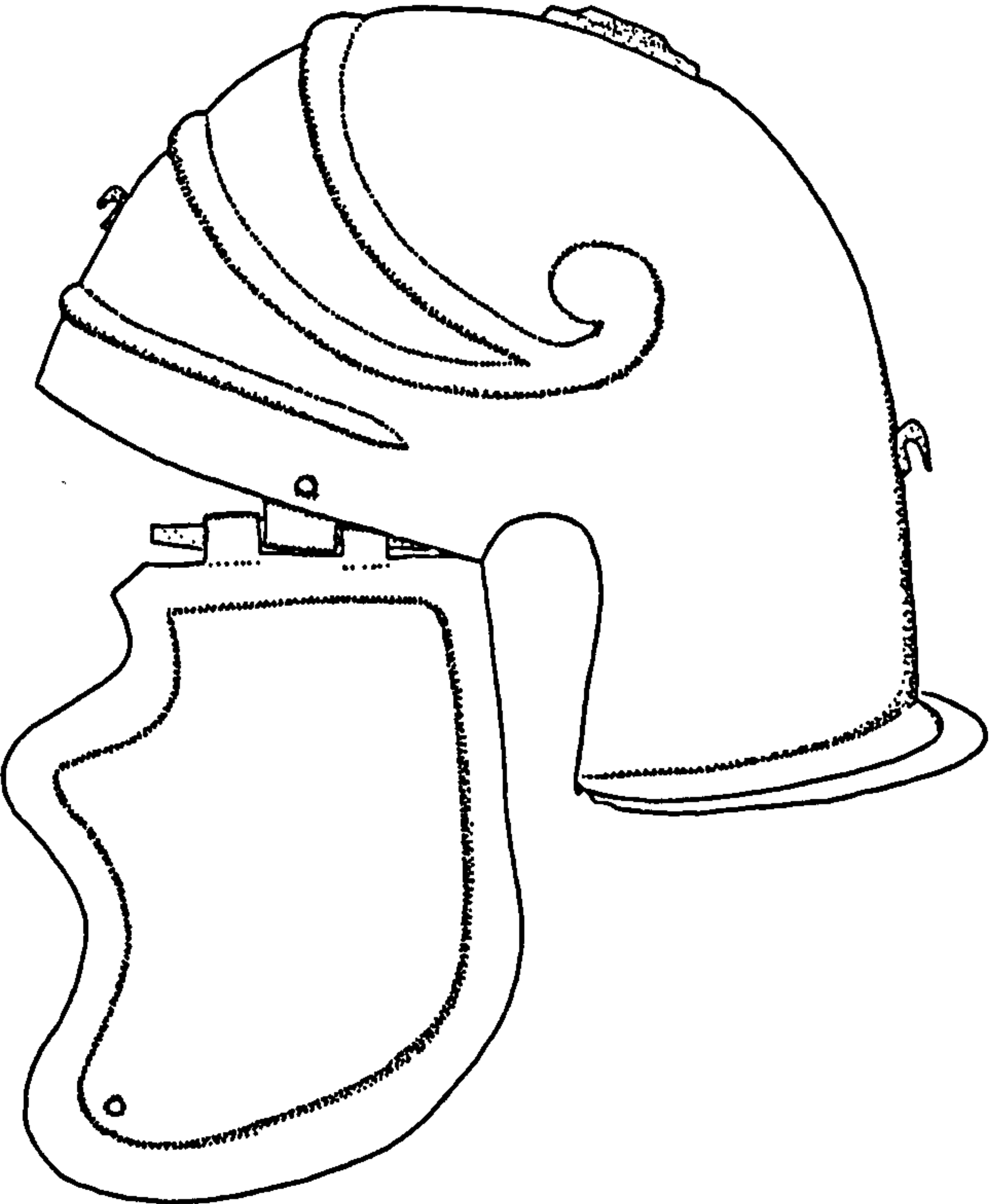
Manufacture: The helmet is raised from a single sheet of bronze as are the cheek-pieces. The decoration is executed in repoussé work.

Description: The helmet has a low hemispherical skull with a pronounced medial ridge. The bowl swells from a fitted brow-band, the junction between the two being defined by a pronounced angle. At the front the brow-band rises to an apex and is decorated with stylised eyebrows. The main edge of the face opening has two slight cut-outs over the wearer's eyes leaving a "V"-shaped projection above the nose, this is given an inward hemispherical roll for both decorative and strengthening purposes. At the sides the brow-band has cut-outs to accommodate the wearer's ears and is drawn down at the rear to form a straight shallow neck-guard which is slightly everted at its base. It is 180mm. deep and 185mm. wide and is now detached; the everted flange measures 15mm. at its widest point. The helmet is very well made and finished but has been considerably damaged and shows signs of many modern repairs. It has a patchy smooth green and brown patina.

Other Details: None.

Published: Paddock. 1981, 30-31, fig.6:7., Connolly. 1981, 61, fig. 19.

FIG. 120



Helmet No. 15.

Type: Type IV.

Location: The Badisches Landesmuseum, Karlsruhe.

Inventory No.: F 431.

Provenance: Ruvo near Bari, Puglia, Italy.

Context: Unknown.

Suggested Date: 4th century B.C.

Material: Bronze.

Dimensions: Height: 185 mm.
Overall width: 236 mm.
Internal width: 232 mm.
Overall Breadth: 159 mm.
Internal breadth 156 mm.

Thickness: Rim: 2-3 mm.
Bowl: 0.7-1 mm.

Cheek-pieces: Present. These are of a modified bicuspid form and are shaped and embossed into the form of eagles' heads facing downwards and to the rear. The eagle's head forms a raised central panel. Height: 130 mm.

Hinge-plates: The cheek-piece hinges are internal and have four lower and three upper hasps. The hinge is held to the bowl by three rivets and to the cheek-piece by four.

Crest-fixture: On the apex of the bowl are the remains of a "U" shaped crest-bracket held by two rivets. The crest-holder and stem are now missing. This is supplemented by a loop at the front and rear of the medial ridge for fixing the crest-box into

position. At either side of the medial ridge are a pair of holes and the remains of an iron crest-fixture of an indeterminable type. These were attached by two rivets each.

Decoration: At the front the brow-band rises to an apex and is decorated with embossed stylised eyebrows, which meet over the nose. The main edge of the face opening is given a hemispherical, inward, roll thus forming a strengthening and decorative moulding. Echoing the shape of the brow-band are two inverted "V" shaped embossed and fluted mouldings. The cheek-pieces are highly decorated with repoussé work in the form of eagle's heads. The rear edge of the cheek-pieces are given a scalloped line to indicate the bird's plumage.

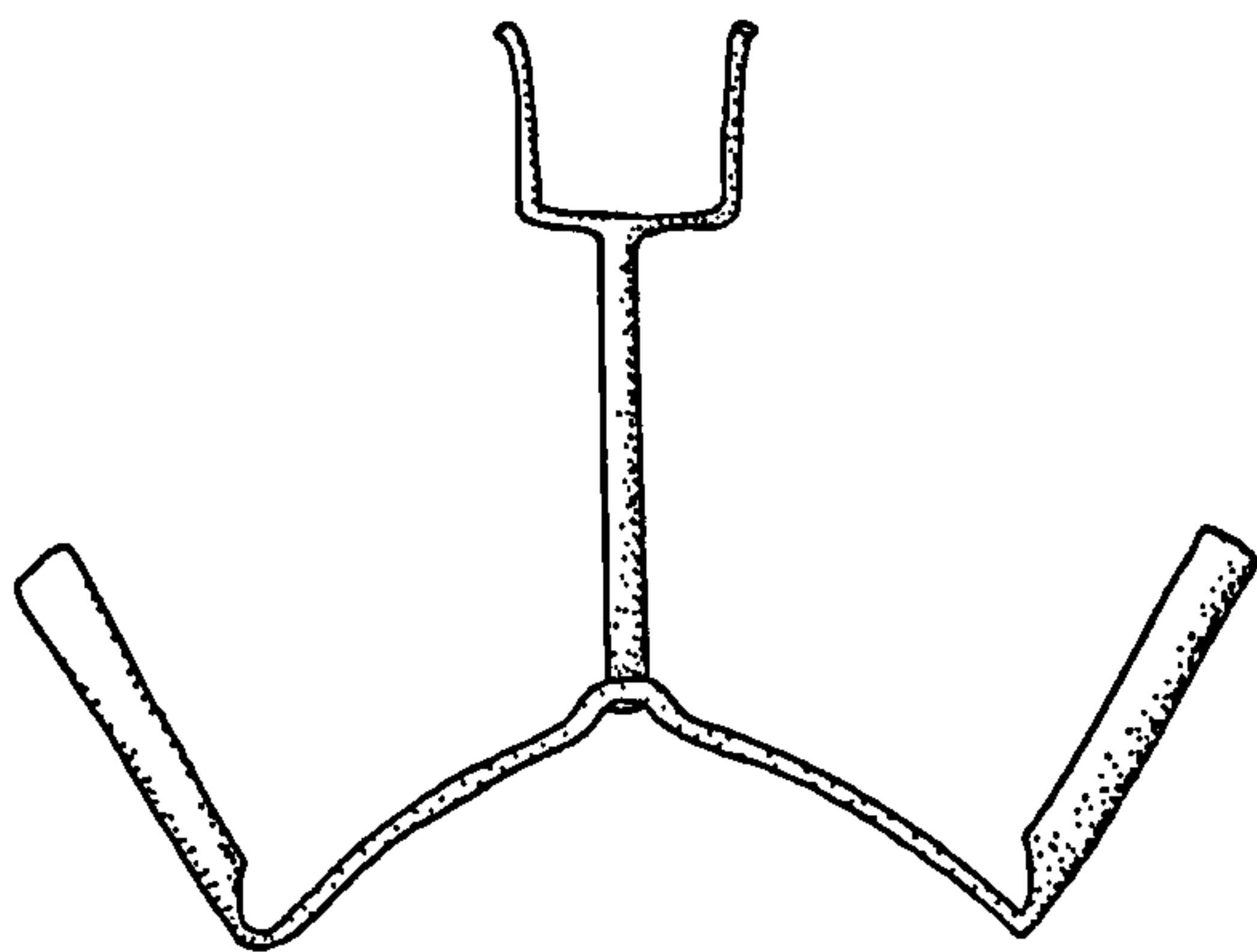
Manufacture: The bowl is raised from a single sheet of bronze and decorated with repoussé work. The cheek-pieces are similarly manufactured and hinged.

Description: It has a moderately high bowl with a very pronounced medial ridge. The bowl is narrow and swells from a fitted brow-band which has cut-outs to accomodate the ears. It is drawn down at the rear to form a shallow straight neck-guard which is slightly everted at its base. The helmet is very well made and finished.

Other details: None.

Published: Schumacher. 1890, 20., Lipperheide, von. 1896, 116.

FIG. 121



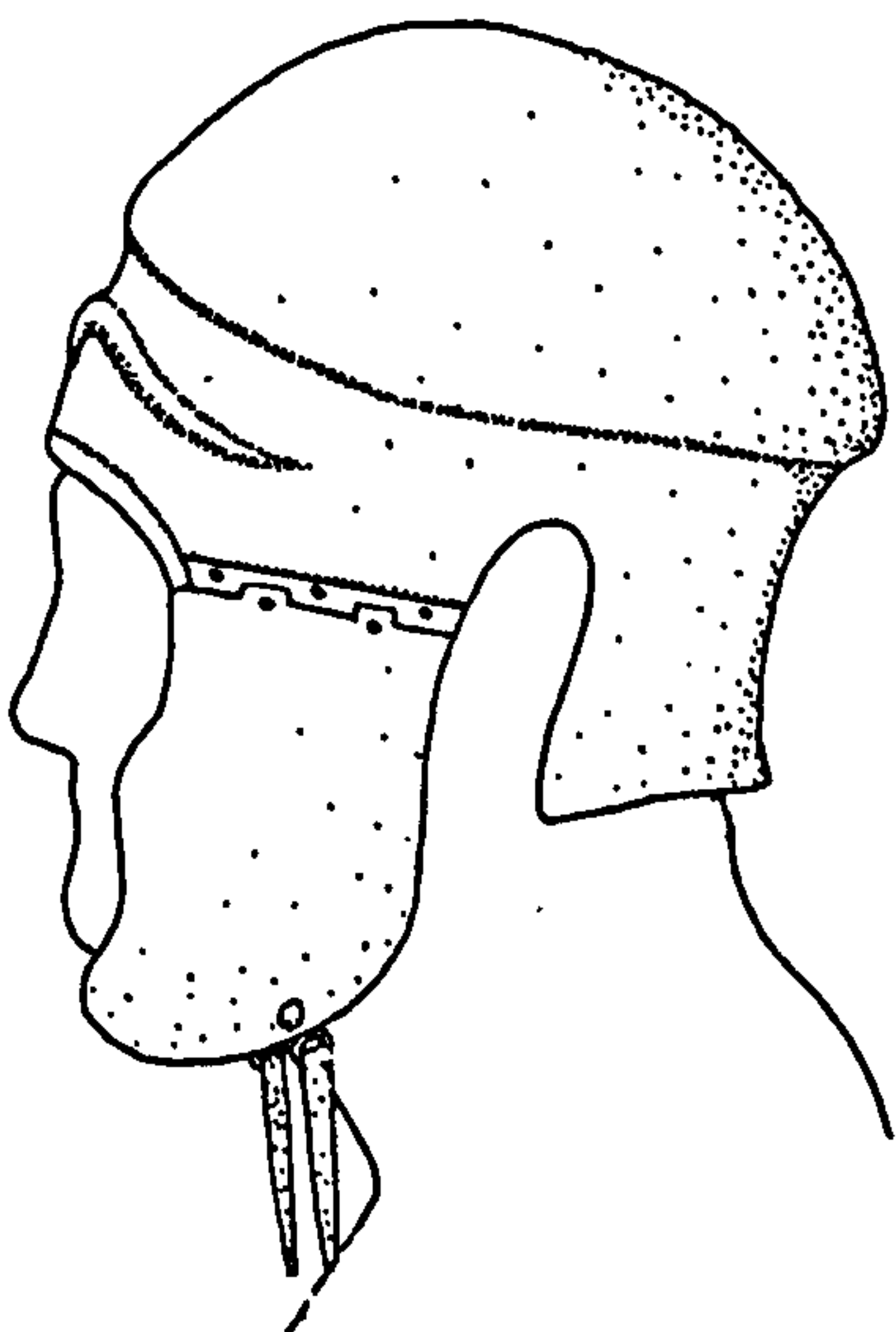
1. Crest-fixture



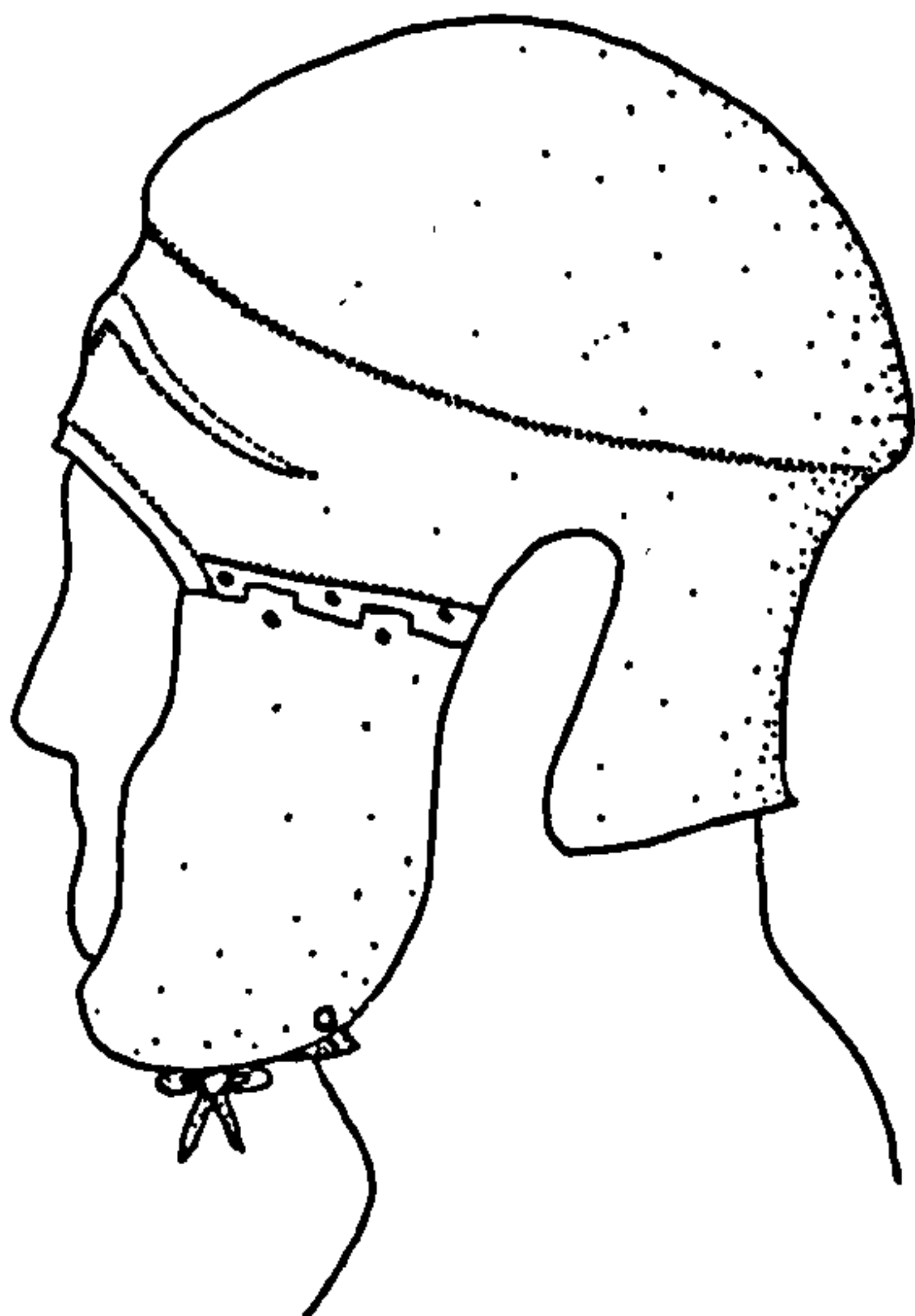
2



3



4



Helmet No.21.

Type: Type V.

Location: The British Museum

Inventory No.: 2724. 1842. 7-28.711.

Provenance: Vulci, Tuscany, Italy.

Context: Unknown.

Suggested Date: 4th century B.C.

Material: Bronze.

Dimensions: Height: 200 mm.

Overall width: 212 mm.

Internal width: 205 mm.

Overall breadth: 170 mm.

Internal breadth 166 mm.

Thickness: Rim Front: 4.5 mm.

Rim Rear: 3 mm.

Bowl: 0.7 mm.

Cheek-pieces: Missing.

Hinge-plates: Missing. These were originally iron and attached to the bowl by three very small rivets.

Crest-fixture: The crest-fixture is made in one piece and consists of a single strip of bronze, 18mm. wide. At each end the strip has been hammered round a tapering conical triblet to form an inverted conical feather tube; the right is now missing. At the centre is a hole for either a further feather tube or a "U" shaped crest-holder. The crest assemblage is held to the bowl by two rivets. It is definitely contemporary

with the helmet and carefully fitted to it but is, however, pierced by two rectangular holes to admit lugs which this helmet does not have. (This type of fixture has been discussed above.)

Decoration: This consists of a narrow rectilinear raised moulding which encircles the whole of the base of the helmet. Above this at the front is one broad embossed band in the form of an inverted "V" shape which terminates in large embossed volutes over the temples. On either side of this band are narrow flutes. Below this is a pair of embossed eyebrows. The neck-guard is decorated and strengthened by a plain embossed band.

Manufacture: The helmet has been forged in one piece and the decoration executed in repoussé work.

Description: It has a well fitted low bowl with a very pronounced deeply embossed crest-ridge. The brow-band has two shallow cut-outs over the wearers eyes to produce a "V"-shaped vestigial nasal. The brow-band is also equipped with cut-outs for the ears and is drawn down at the rear to form a straight and well fitted neck-guard. The helmet is very well made and finished and has a smooth light green patina. The crest-ridge is slightly damaged and holed.

Other Detail: None.

Published: Walters. 1899, 342.

Helmet No. 26.

Type: Type VI.

Location: The Musée de L'Armée, Paris.

Inventory No.: E 4.

Provenance: A Tomb at Capodignano, Campania, Italy.

Context: 4th century B.C.

Material: Bronze.

Dimensions: Height: 222 mm.
Overall width: 214 mm.
Internal width: 209 mm.
Overall breadth: 160 mm.
Internal breadth 155 mm.

Thickness: Rim: 2.5 mm.
Bowl: 0.5 mm.

Cheek-pieces: Present. These are of a moderate bicuspid form with a raised edge (Type 1). The central panel of each cheek-piece is raised and decorated with a superbly executed horse's head in repoussé work.

Hinge-plates: Present. The hinges are held to the bowl by two rivets and are external. The right upper hinge is missing. The hinges have four lower and three upper hasps.

Crest-fixture: None apparent.

Decoration: The decoration consists of two embossed inverted "V"-shaped brow-ridges separated by a flute and rising to an apex at the centre. These terminate at either side in a single large volute. Beneath

the apex is the repoussé head of a diademed woman. Above this is an engraved palmette and scrolling hair design. Over the eyes^{at} the base of the helmet is an embossed band forming stylised eyebrows. The neck-guard is adorned with a raised moulding following the contour of its base and terminating in volutes. Finally each cheek-piece bears the embossed head of a horse, facing forwards.

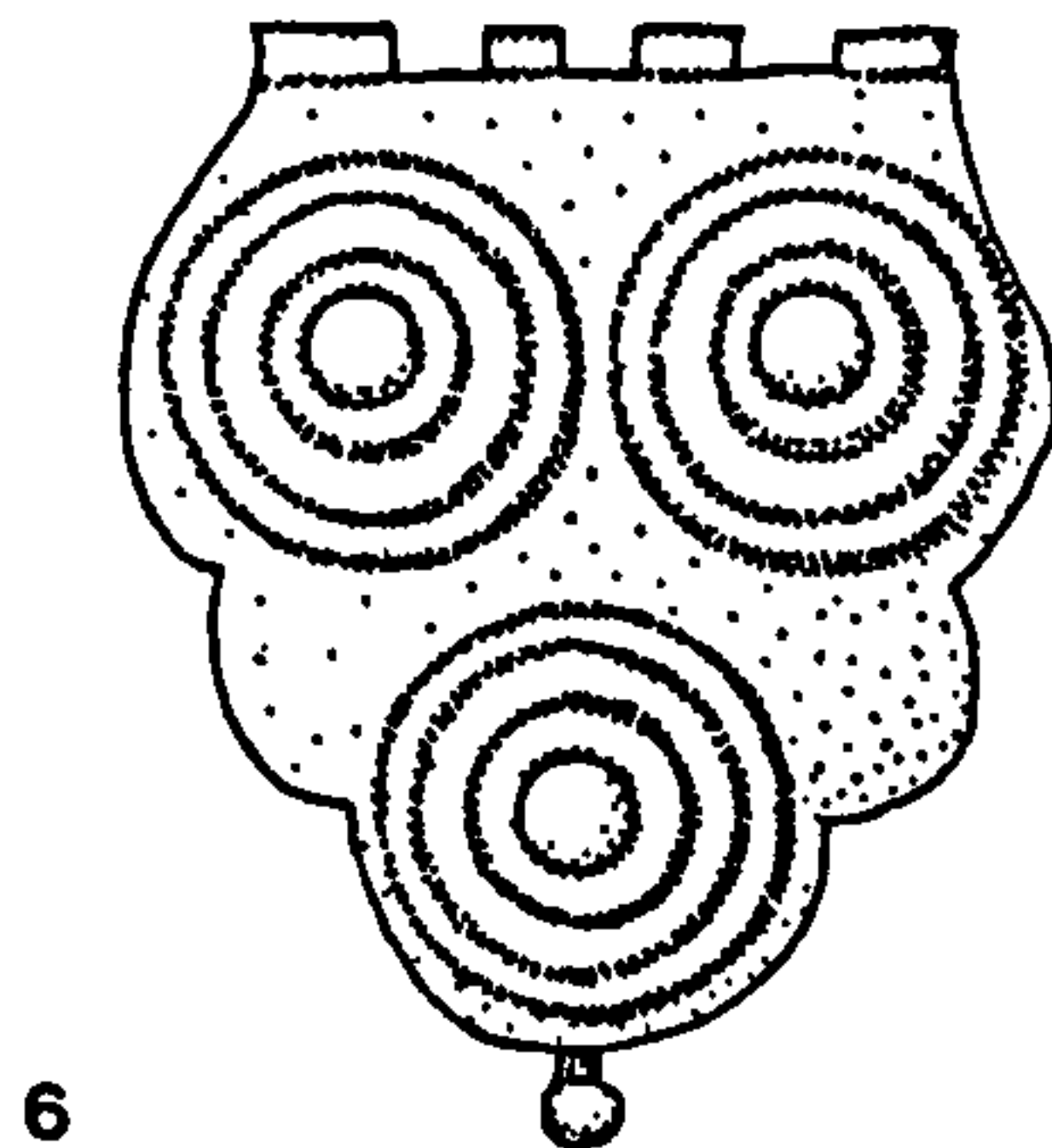
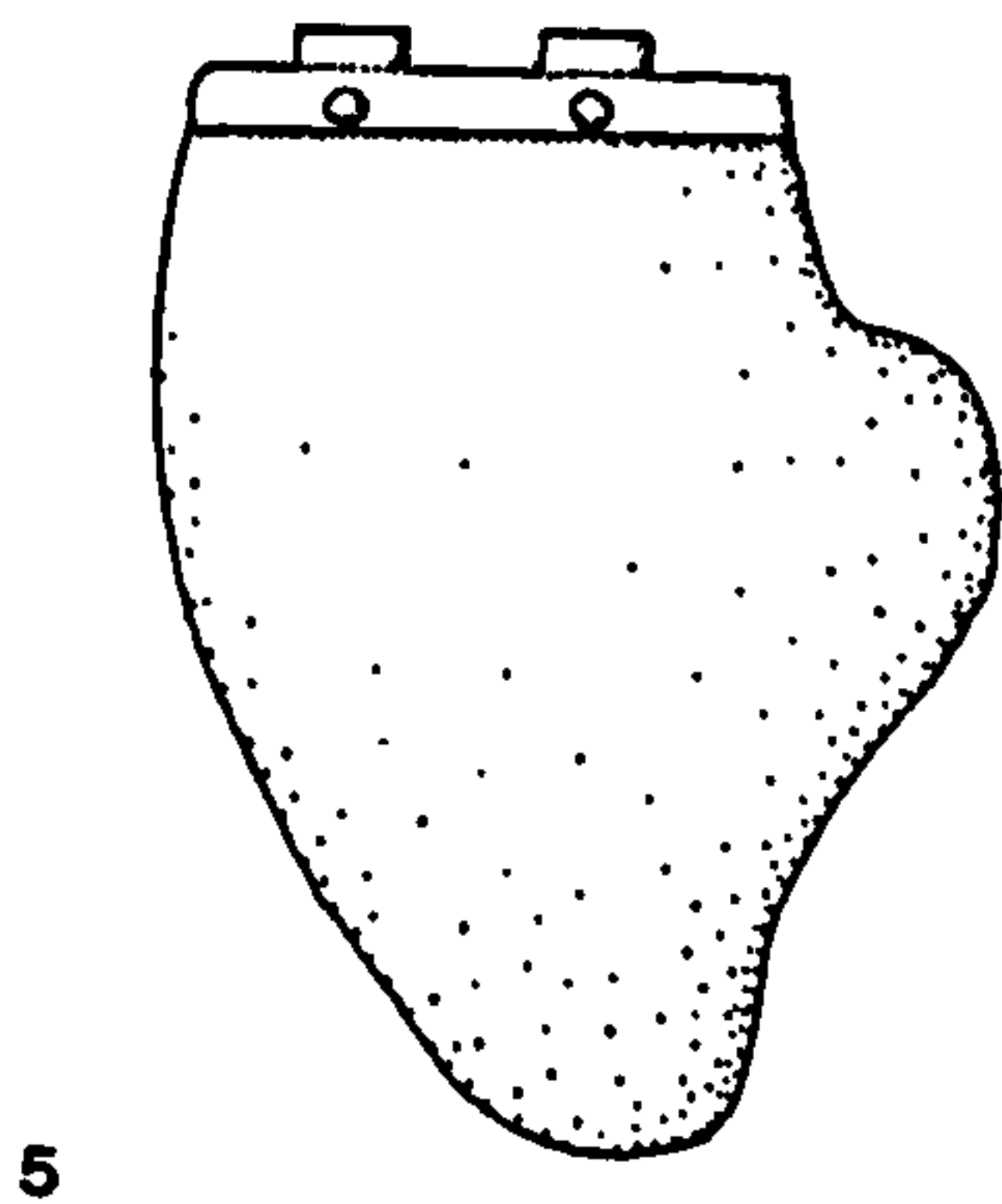
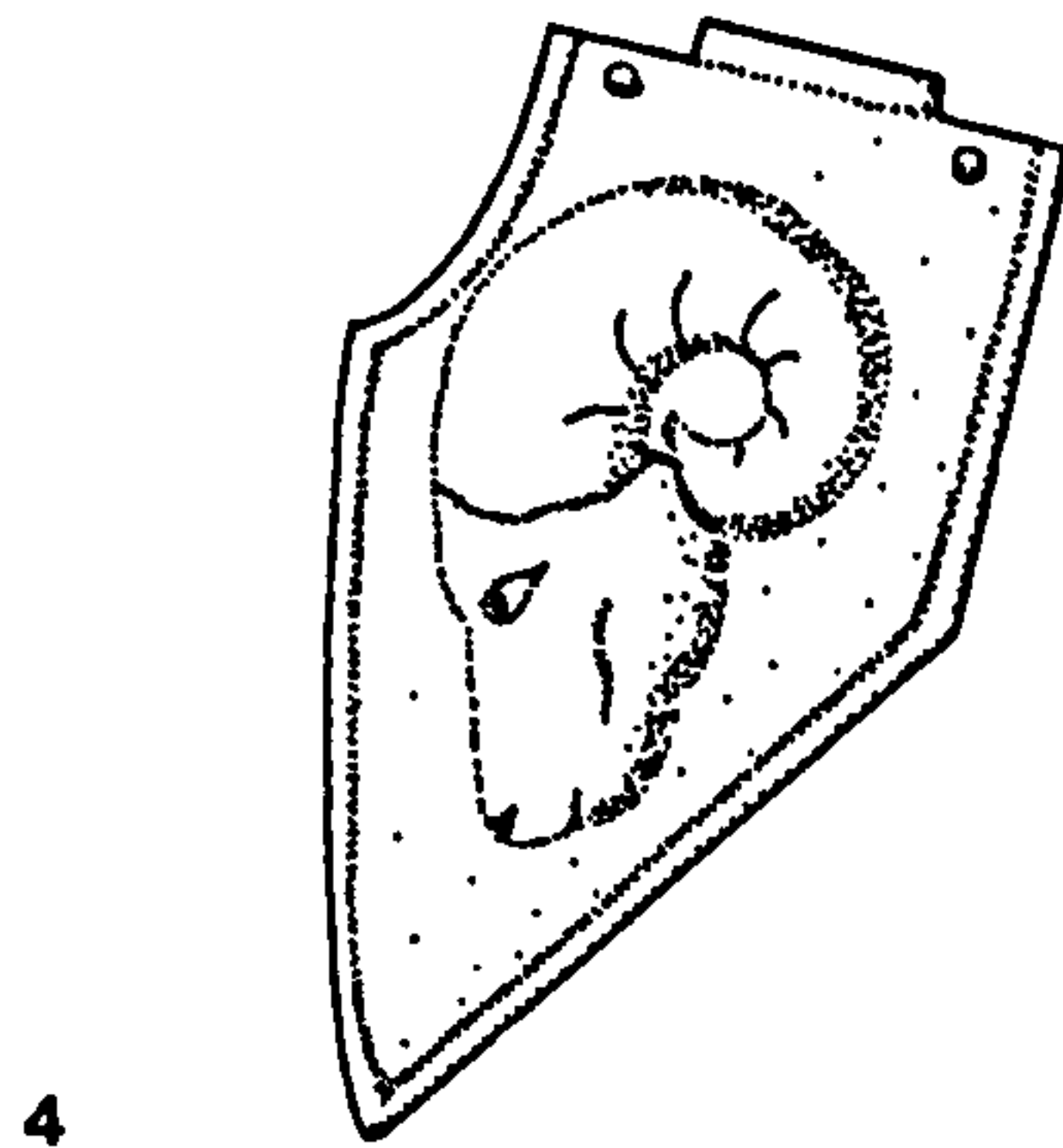
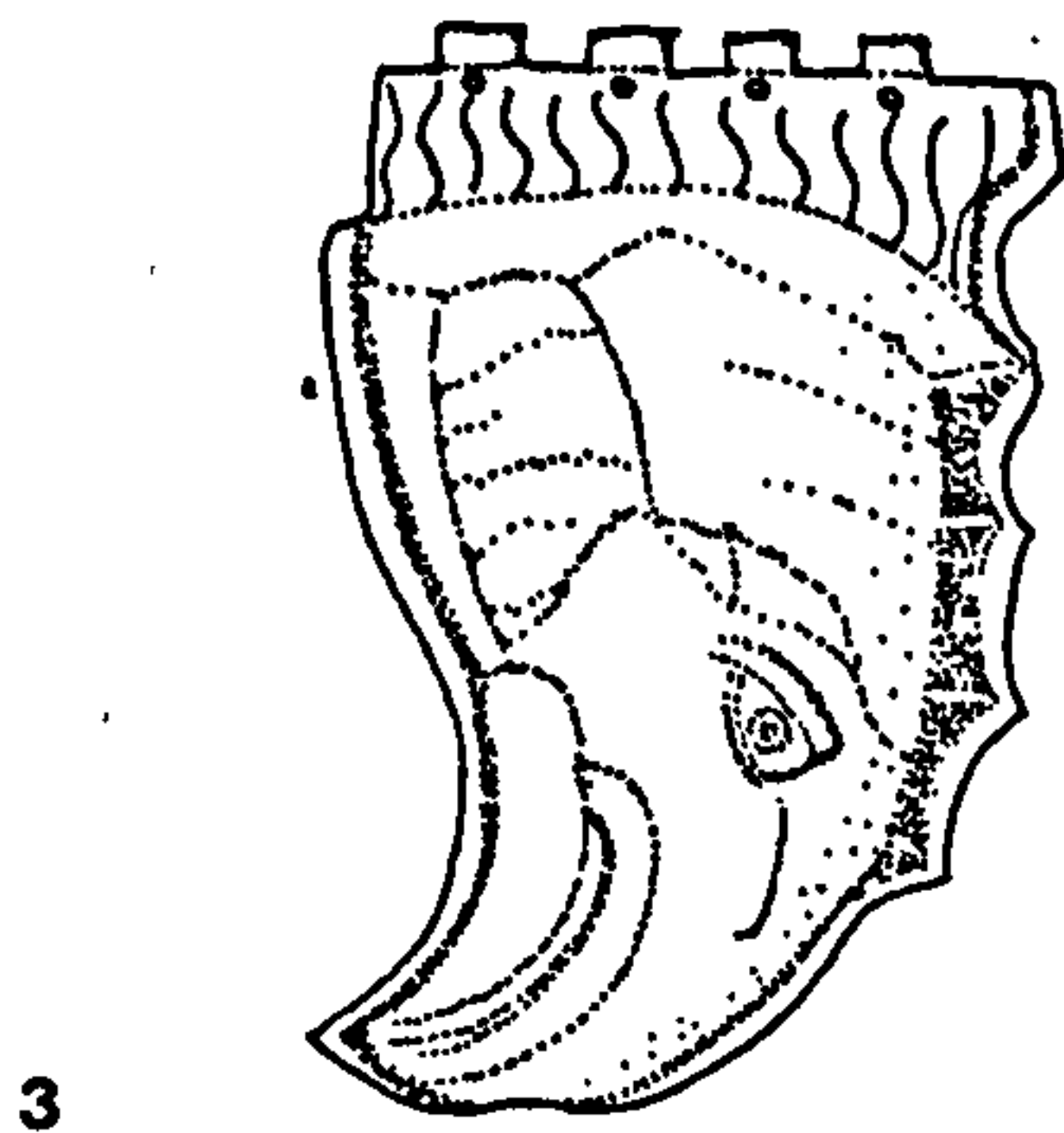
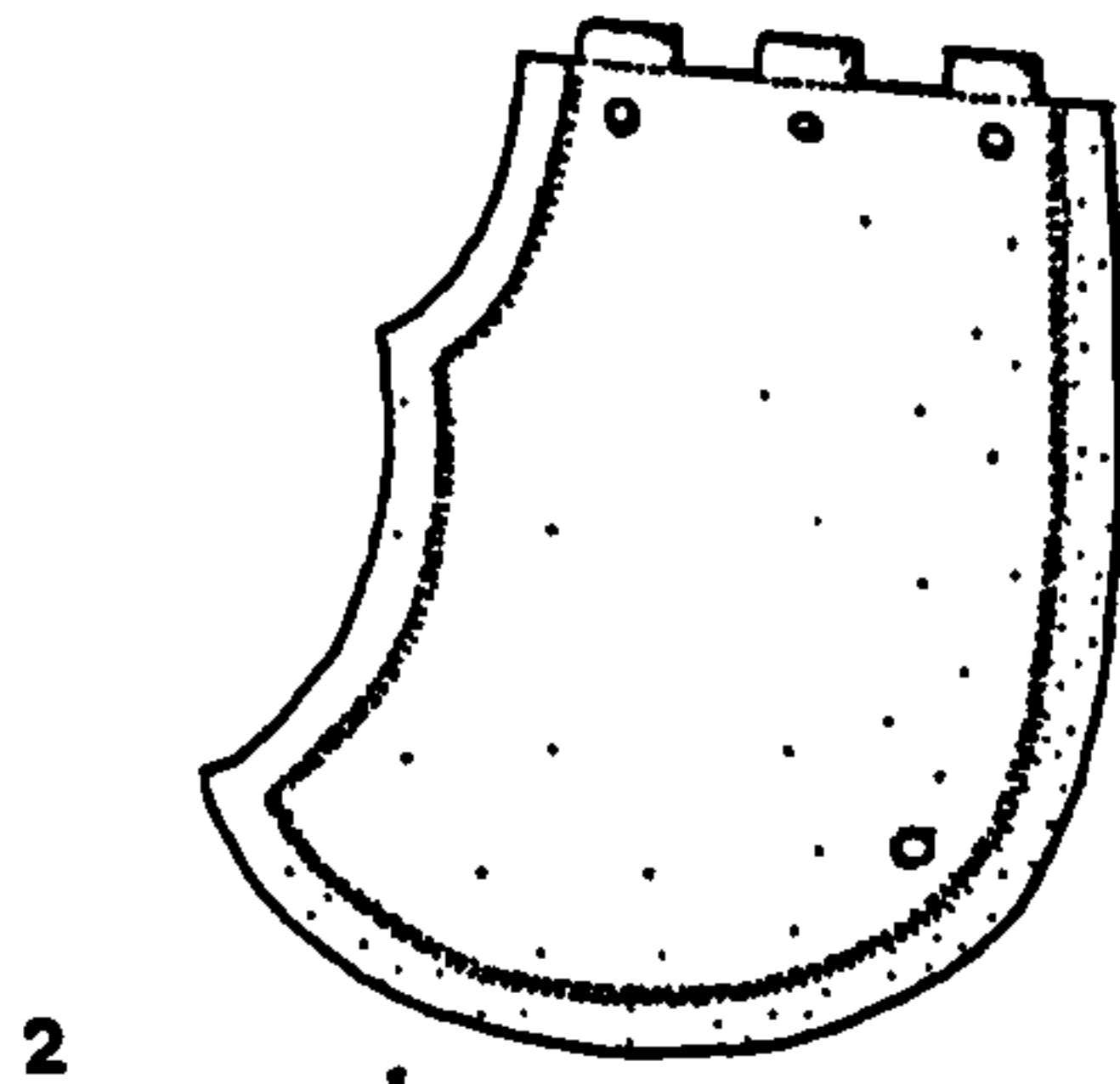
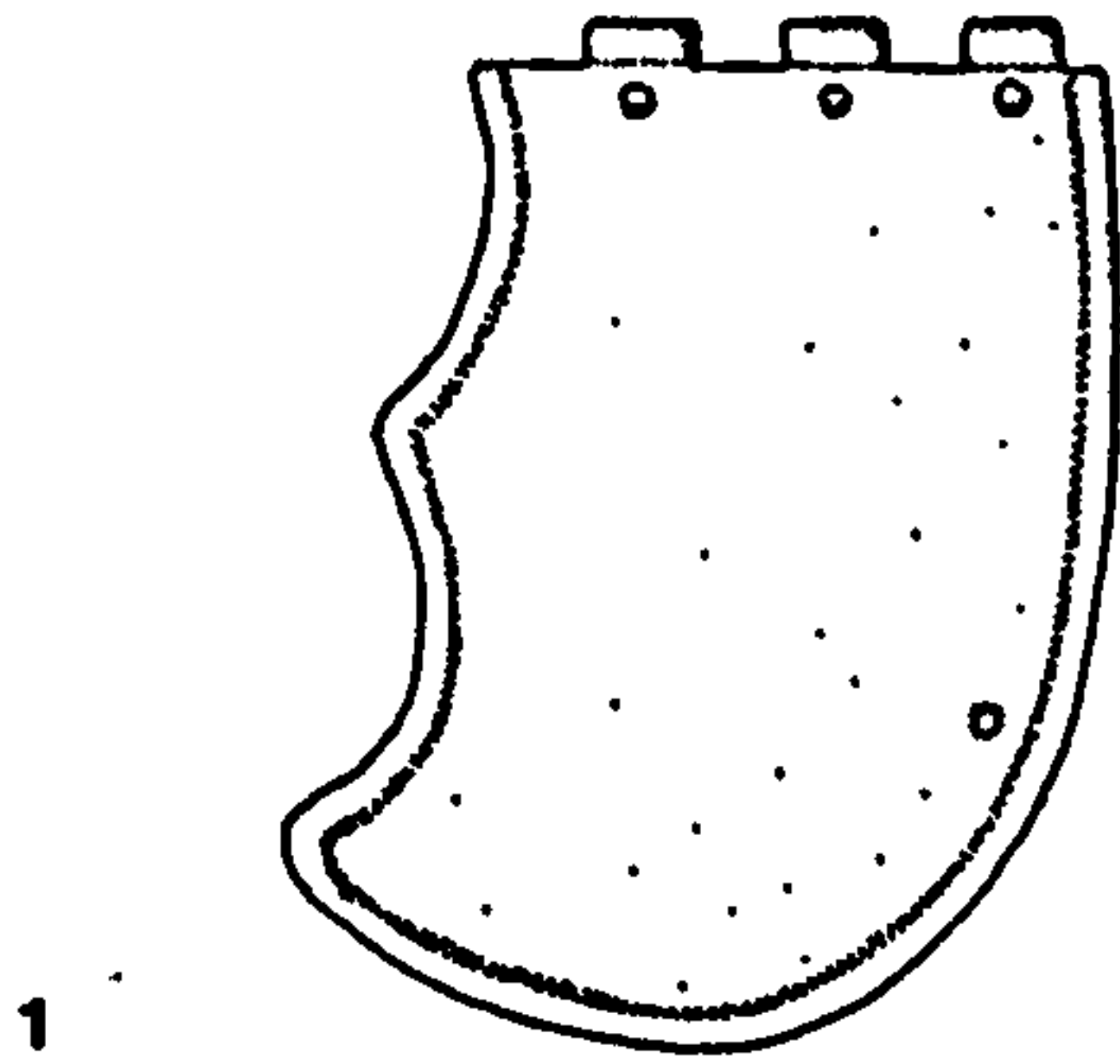
Manufacture: The bowl of the helmet is formed from one piece of bronze. The cheek-pieces were formed and decorated separately and attached with hinges. The decoration on the helmet bowl is executed in repoussé work.

Description: It has a low hemispherical bowl which swells from a fitted brow-band. The junction between the two is marked by a pronounced angle. The brow-band is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a deep fitted straight neck-guard. At the front it rises up to an apex. The lower edge has a cut-out over each eye, producing a "V" shape over the nose. The cheek-pieces are hinged and are of type I. The helmet is extremely well made and finished and has a patchy green patina.

Other Details: None.

Published: Lipperheide, von. 1896, 122., Mohen. 1970, 214-5.

FIG. 122



Helmet No. 31.

Type: Type VII.

Location: The Bibliothèque Nationale, Paris

Inventory No.: 1998.

Provenance: South Italy.

Context: Tomb.

Suggested Date: 4th century B.C.

Material: Bronze.

Dimensions: Height: 240 mm.
Overall width: 209 mm.
Internal width: 204 mm.
Overall breadth: 188 mm.
Internal breadth 184 mm.

Thickness: Rim: 2-3 mm.
Bowl: 0.7 mm.

Cheek-pieces: Present. These are undecorated and of type IV.
They have a convex forward edge and a slightly concave rear edge.

Hinge-plates: Present. These are internal and held to the bowl and cheek-pieces by two rivets. The hinge has three upper and two lower hasps.

Crest-fixture: There are the remains of a "U" bracket form of crest-holder on the apex of the bowl. These consist of two rectangular plates riveted either side of the apex. At the rear just above the junction between the bowl and neck-guard is a small stud-like fitting for attaching the crest-box.

Decoration: The decoration is very simple and consists of an applied embossed wing of sheet bronze riveted at each temple.

Manufacture: The helmet bowl is raised from a single sheet of bronze and the cheek-pieces and the repoussé wings were manufactured separately and riveted on.

Description: It has a well shaped moderate bowl which swells from a fitted brow-band. The junction between the bowl and brow-band is marked by a pronounced angle. At the front the upper edge of the brow-band rises to an apex, while the lower edge is very slightly concave. This is given a slight outward flange to strengthen it. The brow-band is equipped with cut-outs for the wearer's ears and is drawn down at the rear to form a deep fitted neck-guard. At its base two cuts were made in the bottom edge and the central portion was turned into a flange leaving a lobe-like projection down each side of the wearer's neck. The helmet is well made and finished. It has a dark green granular patina and is strongly oxidised. The apex of the brow-band and the frontal portion of the bowl are damaged and holed.

Other Details: None

Published: Blanchet. and Bandon. 1895, 657., Adam. 1984, 121-2.

Helmet No. 33.

Type: Type VIII.

Location: The Museo Nazionale, Naples

Inventory No.: Unknown.

Provenance: Herculaneum, Campania, Italy.

Context: Unknown, before 79 A.D.

Suggested Date: 1st century B.C.

Material: Bronze.

Dimensions: Height: 182 mm.
Overall width: 225 mm.
Internal width: 196 mm.
Overall breadth: 175 mm.
Internal breadth 171 mm.

Thickness: Rim 2 mm.
Bowl: 0.7 mm.

Cheek-pieces: Present. These are of an exaggerated bicuspid form, they have a deep raised central panel and an external stud for the attachment of the chin-strap.

Hinge-plates: Present. These are internal and have a single upper hasp and a double lower hasp and are attached to the bowl and cheek-pieces by a single rivet.

Crest-fixture: This consists of a circular plate, with a raised and slotted centre, soldered to the crown and retaining hooks for the crest-box which are riveted at the front and rear.

Decoration: The decoration consists of two narrow embossed brow-ridges, the upper one rising to an apex at its

centre, the lower one passing straight across the brow. Both terminate in the same debased volute at each temple.

Manufacture: The helmet is raised from a single sheet, but is equipped with a reinforcing band wrapped around the neck-guard flange. The cheek-pieces and crest-fixtures are manufactured separately.

Description: It has a rounded slightly bulbous skull with a deep straight neck-guard, which is not fitted to the rear of the skull and neck, but forms an almost straight line between the bowl and the neck-flange. The helmet is very poorly made and finished. The patina has been removed and the helmet is of a yellow bronze colour.

Other Details: None.

Published: Lipperheide, von. 1896. 256, No. 333.,
Robinson. 1975, 65.