

THE AGORA EXCAVATIONS AND ATHENIAN BRONZE COINAGE, 200-86 B.C.*

(PLATES 1-4)

THE base-metal coinages of the Greek cities are notoriously neglected and Athens, until quite recently, has been no exception.¹ The standard reference work for Greek coins, the *British Museum Catalogue*, dates the Athenian New Style bronze coinage between 220 and 83 B.C.² The only corpus of Athenian coins of all periods, that of Svoronos,³ gives 229 and 30 B.C. as the initial and terminal dates for the series. At Corinth, the most common bronze series, Pegasos/Trident, is dated by Edwards *ca.* 400-146 B.C.⁴ The striking of bronze coins by Greek cities before the 4th century is almost unknown; Corinth was destroyed in 146 B.C. It is no wonder that the excavator, who often uncovers hundreds of bronze coins for every silver or gold piece found, may tend to dismiss Greek coins as valuable dating tools.

Collectors of Greek coins and Greek numismatists have for centuries favored gold and silver coins to the detriment of the bronze and copper pieces which the average

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Abbreviations for the most frequent references are as follows: *BMC* = B. V. Head, *A Catalogue of the Greek Coins in the British Museum, Attica-Megaris-Aegina*, London, 1888; Edwards = K. M. Edwards, *Corinth*, VI, *Coins, 1896-1929*, Cambridge (Mass.), 1933; Hackens, *Délos* = T. Hackens, "Les monnaies," *Exploration archéologique de Délos*, XXVII, *L'Îlot de la Maison des Comédiens*, Paris, 1970; *IGCH* = M. Thompson, *Inventory of Greek Coin Hoards*, New York, 1973; McClean = S. W. Grose, *Catalogue of the McClean Collection of Greek Coins* (Fitzwilliam Museum), Cambridge, 1923-1929; *SNG, Cop.* = *Sylloge Nummorum Graecorum, Copenhagen*, 1942-; Sv. = J. N. Svoronos, *Les monnaies d'Athènes*, Munich, 1923-1926 (Sv.—indicates that the coin is not included in the corpus); Thompson, *Athens* = M. Thompson, *The New Style Silver Coinage of Athens*, *Amer. Num. Soc. Num. St.*, X, New York, 1961.

¹ M. J. Price, "The New-Style Coinage of Athens. Some Evidence from the Bronze Issues," *Num. Chron.*, Ser. 7, 4, 1964, pp. 27-36. J. H. Kroll, "Two Hoards of First-Century B.C. Athenian Bronze Coins," *Δελτ.*, 27, 1972, A', pp. 86-120. M. Caramessini-Oeconomides and F. S. Kleiner, "A New Hoard of Athenian Bronze Coins," *Ath. Ann. Arch.*, 7, 1974, pp. 149-156. F. S. Kleiner, "The 1926 Piraeus Hoard and Athenian Bronze Coinage *ca.* 86 B.C.," forthcoming in *Δελτ.*, 28, 1973, A'. F. S. Kleiner, "The Earliest Athenian New Style Bronze Coins. Some Evidence from the Athenian Agora," *Hesperia*, 44, 1975, pp. 302-330.

² *BMC*, pp. lviii-lix, 78-92.

³ See Preliminary Note above (Sv.).

⁴ Edwards, pp. 14-15, no. 11.

Hesperia, XLV, 1

Greek of the Hellenistic period handled much more frequently than he did coins struck in precious metals. Auction catalogues, surveys of Greek numismatics,⁵ as well as specialized studies of individual mints,⁶ reflect this prejudice in the near exclusion of base-metal coins. The careful recording of the contexts of excavation coins can, however, lead to a narrower dating of the base-metal pieces. The coins may then prove useful to the excavator in dating buildings, layers of stratified fill, or other objects. In the Athenian Agora, the systematic cataloguing of coins and coin provenances was introduced at the outset by Josephine Shear.⁷ The evidence accumulated during 40 years of excavations now forms an indispensable foundation for Athenian numismatic studies. I believe that this record, when considered in conjunction with a large body of hoard material in the Athens Numismatic Museum and elsewhere, is sufficient to provide a reasonably precise relative and absolute chronology for the Athenian bronzes struck between 200 and 86 B.C. This study is an attempt to establish such a chronology.

THE ATHENIAN "NEW STYLE" BRONZE COINAGE

The term "New Style," as applied to the coinage of late Hellenistic Athens, owes its origin to a change in format of the silver coins struck by the Athenian mint from the first quarter of the 2nd century B.C. on. The New Style coins (Pl. 4, Nos. 111–112), unlike the earlier "Old Style" silver pieces, were struck on large, thin flans. A more up-to-date head of Athena Parthenos, a free version of the famous 5th century cult statue of Pheidias,⁸ replaced the archaistic head of Athena which had been stamped on the Old Style obverses for centuries. On the reverses, a larger owl standing on a Panathenaic amphora was substituted for the Old Style owl and olive spray. The new coins also bore the names or monograms of monetary magistrates, a letter indicating the month of issue, a symbol, and other control marks. These changes, once introduced, were retained until about 40 B.C., when the New Style silver ceased to be struck.⁹

⁵ Bronze and copper coins are not treated, save for an occasional reference, in the three major modern surveys of Greek numismatics: P. R. Franke, *Die griechische Münze*, Munich, 1964; C. M. Kraay, *Greek Coins*, London and New York, 1966; G. K. Jenkins, *Ancient Greek Coins*, London and New York, 1972.

⁶ In the past fifty years, three monographs, as well as numerous articles, have appeared on Athenian silver coinage: C. T. Seltman, *Athens, Its History and Coinage before the Persian Invasion*, Cambridge, 1924; Thompson, *Athens* (see Preliminary Note above); C. G. Starr, *Athenian Coinage, 480–449 B.C.*, Oxford, 1970. A full-length study of the Athenian bronze coinage has never been published.

⁷ The system adopted by Mrs. Shear is described in M. Thompson, *The Athenian Agora*, II, *Coins from the Roman through the Venetian Period*, Princeton, 1954, p. v.

⁸ W. Schwabacher, "Der Parthenos-Archetyp der hellenistischen Silbermünzen Athens," *Opuscula Atheniensi*, I, 1953, pp. 104–114.

⁹ The beginning and end of the New Style series is currently the subject of controversy. The chronology proposed in Thompson, *Athens* was first challenged by D. M. Lewis, *Class. Rev.*, N.S. 12, 1962, pp. 290–292, and, "The Chronology of the Athenian New Style Silver," *Num. Chron.*, Ser. 7, 2, 1962, pp. 275–300. Cf. Thompson's reply, "Athens Again," *Num. Chron.*, Ser. 7, 2, 1962, pp. 301–333. For recent discussions of the problem, see M. Thompson, *The Agrinion Hoard*, *Amer. Num. Soc. N. Mon.*, CLIX, New York,

The contemporary bronze coinage, generally but inappropriately also called New Style, neither represents a sharp break from the earlier bronze coinage nor is of uniform type. The 2nd century bronzes do not differ significantly in fabric or size from their 3rd century counterparts. The New Style silver types are not copied on the bronze coins until after 86 B.C., and then only for a short time.¹⁰ Nor are Athena and her owl the only types selected for the series. Zeus, Apollo, Demeter, the Eleusinian pig and kernos, even a cicada, are also represented on the bronzes. The silver and bronze coinages are best considered separately. We may begin with a survey of the bronze types struck by the Athenian mint between *ca.* 200 and 86 B.C.

ATHENIAN BRONZE TYPES, 200–86 B.C.

The following list is not complete, but comprises all the major types and all varieties found in the hoards and deposits discussed below. Some scarce types and the contemporary “Athenian cleruchy coins,” commonly found on Delos, but rarely encountered in Attica, are omitted.¹¹

Type 1. Athena/Zeus holding thunderbolt. Sv. 81.1–16 (Pl. 1, 1–3).

Obv. Head of Athena r., wearing Attic or Corinthian helmet; border of dots.

A Θ

Rev. E Zeus, nude, standing r., holding thunderbolt in lowered r. hand, extending l. arm; to r., symbol.

1. Athens 5.77 ↓ (Christomanos coll., 1242) 3. Athens 6.33 ↖ (IK. 50)

2. Athens 5.68 ↗ (Inv. 2770a = Sv. 81.9)

Athena/Zeus holding thunderbolt marks a transition from the 3rd century bronze types to the Athena/Fulminating Zeus types of the 2nd century. Athena is shown wearing both an Attic and a Corinthian helmet. Only the latter helmet type is worn by Athena on the 2nd century series. Three reverse symbols are known: owl (Sv. 81.1–6), wheat ear (Sv. 81.7–8), prow (Sv. 81.9–16) (Pl. 1, 2–3). The Attic helmet appears only with the owl reverses (Sv. 81.1–4) (Pl. 1, 1).

Type 2. Athena/Fulminating Zeus. Sv. 81.17–52 (Pls. 1 and 2, 4–33).

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

Θ

Rev. A E (or variant) Zeus, nude, striding r., hurling thunderbolt in raised r. hand, extending l. arm; to l. and/or r., symbol(s).

1968; H. B. Mattingly, “Some Problems in Second Century Attic Prosopography,” *Historia*, 20, 1971, pp. 34–43; Mattingly, “Some Third Magistrates in the Athenian New Style Coinage,” *J.H.S.*, 91, 1971, pp. 85–93; C. Boehringer, *Zur Chronologie mittelhellenistischer Münzserien, 220–160 v. Chr.*, *Antike Münzen u. Geschnittene Steine*, V, Berlin, 1972, pp. 22–31, 200–204; M. Thompson, “Byzantium over Aesillas,” *Rev. Num.*, Ser. 6, 15, 1973, pp. 54–65; M. Caramessini-Oeconomides and F. S. Kleiner, “The Hierapytna Hoard. A Supplement,” forthcoming in *Rev. Belge Num.*, 121, 1975. I have argued elsewhere (*Hesperia*, 44, 1975, pp. 326–327), that the New Style silver chronology has only limited applicability to the bronze series.

¹⁰ Kroll, *Δελτ.*, 27, 1972, A', pp. 86–120.

¹¹ Those supposed “cleruchy” issues which normally circulated in Attica are, of course, included in the list.

Athena/Fulminating Zeus is the major large-denomination bronze series of the 2nd century. The Athena head of the Athena/Zeus-holding-thunderbolt types is carried over. The figure of Zeus is redrawn, but the attribute is retained. Both reverse types are probably based on statues. Eleven reverse symbols and seven ethnic variants are recorded.

Θ

A

a. E and to r., star and eagle (Sv. 81.17–18) (Pl. 1, 4–5).

4. Athens 6.79 ↖ (Christomanos coll., 1043) 5. Athens 6.81 ↓ (*IIK.* 50)

Θ

b. A E and to l., wheat ear; to r., eagle (Sv. 81.28–29) (Pl. 1, 6–8).

6. Athens 5.87 ↖ (Inv. 2769β) 8. Athens 6.95 ↑ (Inv. 1905/6, KΓ', 1 = Sv. 81.29)

7. Athens 6.50 ↑ (*IIK.* 50)

A

Θ

c. E and to r., cornucopiae and eagle (Sv. —) (Pl. 1, 9–11).

9. Athens 6.01 ↖ (Attica 1949, B20) 11. Athens 6.86 ↗ (*IIK.* 50)

10. Agora 6.49 ↑ (T. L. Shear, Jr. coll.)

Θ

d. A E and to l., pilos; to r., eagle (Sv. 81.30–31) (Pl. 1, 12–13).

12. Athens 5.57 ↑ (Tambouria 1938, A31) 13. Athens 6.01 ↑ (Tambouria 1938, A32)

A E

e. Θ and to l., kernos; to r., cornucopiae and eagle (Sv. 81.19, 22–24) (Pl. 1, 14–17).

14. Athens 4.20 ↗ (Attica 1949, B56) 16. Agora 5.84 ↗ (EE-40)

15. Athens 5.32 ↑ (Tambouria 1938, A35) 17. Athens 6.23 ↗ (Tambouria 1938, A37)

A E

f. Θ and to l., amphora; to r., cornucopiae and eagle (Sv. 81.20–21).

Θ

g. A E and to l., amphora; to r., eagle (Sv. 81.25–27) (Pl. 1, 18–20).

18. Agora 5.13 ↑ (QΔ-59) 20. Athens 7.10 ↑ (Attica 1949, B68)

19. Athens 6.45 ↗ (Attica 1906, 32 = Sv. 81.25)

h. A Θ E and to l. and r., two piloi (Sv. 81.32–39) (Pl. 1, 21–23).

21. Athens 5.26 ↖ (Attica 1969, 83) 23. Agora 6.76 ↑ (Pnyx 1937)

22. Athens 5.88 ↑ (Attica 1969, 91)

A Θ

i. E and to l., bakchos (Sv. 81.49–52) (Pl. 2, 24–26).

24. Athens 7.01 ↑ (Attica 1969, 117) 26. New York 6.82 ↑ (ex E. T. Newell coll.)

25. Athens 7.49 ↑ (Attica 1906, 23)

A Θ

j. E and to l., thyrsos (Sv. 81.40–44) (Pl. 2, 27–29).

27. Athens 6.42 ↑ (Attica 1906, 14) 29. Athens 6.25 ↑ (*IIK.* 50)

28. Athens 6.52 ↑ (Attica 1969, 130)

A E

k. Θ and to r., star between crescents (Sv. 81.45–48) (Pl. 2, 30–33).

30. Agora 6.24 ↖ (ΓΓ-151) 32. Agora 8.22 ↗ (NN-20)

31. Athens 7.55 ↑ (Piraeus 1926, 629) 33. Athens 8.49 ↗ (Piraeus 1926, 712)

Type 3. Zeus/Fighting Athena. Sv. 22.53–58 (Pl. 2, 34–39).

Obv. Head of Zeus r., bound with tainia; border of dots.

A Θ

Rev. E (or variant) Athena, striding r., hurling thunderbolt in raised r. hand, holding shield on extended l. arm; to l. and r., symbols.

34. Athens 5.71 ↘ (Attica 1949, B32)

37. Athens 6.59 ↑ (Attica 1906, 9 = Sv. 22.55)

35. Athens 6.11 ↑ (Attica 1949, B37)

38. Athens 7.93 ↑ (Attica 1949, B52)

36. Athens 6.86 ↑ (Attica 1949, B42)

39. Athens 7.64 ↑ (*ITK*. 61)

Zeus/Fighting Athena is the second most important large-denomination bronze issue of the 2nd century. Athena and Zeus are retained as types, but their positions are reversed. A Zeus head is on the obverse and a fulminating Athena is on the reverse. Two combinations of reverse symbols are known: to l., wheat ear;

A E

A Θ

A E

to r., serpent (with Θ or E) (Pl. 2, 34–37); and to l., helmet; to r., horse's head (with Θ) (Pl. 2, 38–39).

Type 4. Demeter/Pig. Sv. 103.50–56 (Pl. 2, 40–42).

Obv. Head of Demeter r., wearing wheat wreath.

Rev. AΘE above pig r.

40. Agora 5.43 ↑ (Φ-132)

42. Athens 7.34 ↙ (Attica 1906, 48 = Sv. 103.55)

41. Athens 6.30 ↗ (Inv. 1905/6, NΓ', 4)

Demeter/Pig is a rare issue, struck in small quantities for a short time during the 2nd century. Its size and weight are similar to those of *Types 1–3*. The types commemorate the sanctuary at Eleusis, but the ethnic indicates that the series was produced at the Athenian mint.

Type 5. Apollo/Owl and lyre. Sv. 106.1–7 (Pl. 2, 43–45).

Obv. Head of Apollo r., laureate.

A E

Rev. Θ E Owl r., wings closed; to r., lyre.

43. Agora 4.53 ↗ (AA-845 bis)

45. Athens 5.43 ↑ (Inv. 2792)

44. Athens 4.94 ↑ (Inv. 1905/6, KΓ', 2 = Sv. 106.5)

Apollo/Owl and lyre is a scarce variety and was classified by Svoronos among the Delian cleruchy issues, because of the Apollonian types. This series is, however, Athenian in origin, as the ethnic indicates. Specimens are rarely, if ever, encountered on Delos. The denomination is the same as that of *Types 1–4*.

Type 6. Cicada/Owl. Sv. 107.50–54 (Pl. 3, 46–50).

Obv. Cicada.

A

Rev. Θ E Owl r., wings closed, on thunderbolt.

46. Agora 3.17 ↑ (Pnyx 1937)

49. Agora 4.03 ↘ (Pnyx 1937)

47. Athens 3.20 ↑ (Attica 1906, 50 = Sv. 107.54)

50. Agora 5.22 ↑ (Pnyx 1937)

48. Agora 3.27 ↘ (Pnyx 1937)

Cicada/Owl was classified by Svoronos as a Delian cleruchy issue, but the types are commonly found in the Agora excavations and in Attic hoards, and not on Delos. The cicada, as well as the owl on thunderbolt, are Athenian bronze types.¹² The size and weight of Cicada/Owl pieces are less than those of *Types 1–5*.

*Type 7. Athena/Owl on thunderbolt.*¹³ Sv. 23.46–49 (Pl. 3, 51–53).

Obv. Head of Athena r., wearing Attic or Corinthian helmet.

¹² Kroll, *Δελρ.*, 27, 1972, A', p. 97, note 32 (cicada). Sv. 23.46–49 (owl on thunderbolt, *Type 7*).

¹³ F. S. Kleiner, "Some Unpublished Athenian Bronze Coins," forthcoming in *Amer. Num. Soc. Mus. N.*, 20, 1975.

A Θ

Rev. E (or variant) Owl r., wings closed, on thunderbolt.

51. Agora 1.39 ↖ (BB-475)

53. Agora 2.01 ↖ (ΔΔ-39)

52. Agora 1.40 ↑ (NN-922)

Athena/Owl on thunderbolt, like the Athena/Zeus-holding-thunderbolt series, documents the transition from the Attic to the Corinthian helmet type, in this case on the smallest bronze denomination. The series, as *Type 8* below, precedes the so-called New Style bronze proper.

Type 8. Athena/Owl on prow. Sv. 23.50–52 (Pl. 3, 54–57).

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. Θ E Owl r., wings closed, on prow r.

54. Agora 1.41 ↗ (T-89)

56. Agora 1.93 ↙ (NN-1658)

55. Agora 1.59 ↗ (T-51)

57. Athens 2.19 ↗ (Christomanos coll., 1226)

Athena/Owl on prow is a variation of *Type 7*. Only the Corinthian helmet is represented on the obverses. The prow also appears on the contemporary Athena/Zeus-holding-thunderbolt bronzes, *Type 1*.

Type 9. Cicada/Amphora. Sv. 107.55–69 (Pl. 3, 58–61).

Obv. Cicada.

A Θ

Rev. E Amphora, usually with palm branch.

58. Agora 0.66 ↖ (AA-266)

60. Agora 1.93 ↓ (Z-2644 bis)

59. Agora 1.70 ↗ (NN-1401)

61. Agora 1.96 ↓ (Θ-792 bis)

Cicada/Amphora is the first of the New Style bronze fractions. Although published by Svoronos as a Delian cleruchy issue, the cicada and amphora are Athenian types. This series is very commonly unearthed in the Agora. Cicada/Amphora bronzes do, however, appear frequently in Delian contexts.¹⁴

Type 10. Demeter?/Amphora. Sv. 107.36–41 (Pl. 3, 62–66).

Obv. Female head r.

A Θ

Rev. E Amphora.

62. Agora 1.76 ↗ (IIΘ-287)

65. Athens 2.01 ↑ (Delos 1899/1900, IH', 16 = Sv. 107.37)

63. Agora 1.85 ↑ (A-159 bis)

64. Agora 1.86 ↗ (NSR-76)

66. Athens 2.01 ↑ (Delos 1906/7, KΓ', 104)

Demeter?/Amphora carries over the Cicada/Amphora reverse type, but a female head of uncertain identity replaces the cicada. The head has usually been identified as that of Artemis, hence its presence among the Delian cleruchy coins on Svoronos' plates. The head is very similar to that on the obverse of *Type 11*, a fraction of the Demeter/Pig bronzes (*Type 4*). Size and weight are comparable to those of the Cicada/Amphora bronzes.

Type 11. Demeter?/Pig. Sv. 103.57–64 (Pl. 3, 67–72).

Obv. Female head r.

Rev. AΘE above pig r.

67. Athens, De Navarro coll. 1.25 ↑

69. Agora 1.60 ↑ (Γ-1605)

68. Agora 1.38 ↑ (Γ-110)

¹⁴ IGCH, 319 (Delos, 1906), *Jour. Int. Arch. Num.*, 10, 1907, p. 193. IGCH, 321 (Delos, 1906), *Jour. Int. Arch. Num.*, 13, 1911, p. 76. IGCH, 324 (Delos, 1968), *Archaeometry*, 11, 1969, pp. 170–171. Hackens, *Délos*, p. 393, pl. 66, and table, p. 409.

70. Athens 1.73 ↖ (Inv. 1892/3, KΘ', 712 = Sv. 103.64) 71. Athens 2.02 ↗ (Inv. 1905/6, NB', 6)
 72. Athens 2.10 ↑ (IIIK. 124, F3)

Demeter?/Pig is the small-denomination bronze coin that accompanies the Demeter/Pig large bronzes. Although the obverse heads differ, the reverse types are identical. It is possible that *Types 10* and *11* are die linked, but it cannot yet be proven.

Type 12. Apollo/Owl on amphora. Sv. 106.52–62 (Pl. 3, 73–76).

Obv. Head of Apollo r., laureate.

A Θ

Rev. E Owl r. on horizontal amphora.

73. Athens 0.64 ↖ (Delos 1899/1900, IH', 65) 75. Athens 1.18 ↘ (IIIK. 61)
 74. Athens 0.89 ↖ (Delos 1899/1900, IH', 63) 76. Athens 1.24 ↖ (Delos 1899/1900, IH', 102)

Apollo/Owl on amphora is rarely found in Attica and is common in Delian contexts.¹⁵ One example appears in Agora Deposit H 12:1, published below. The owl on amphora echoes the New Style silver reverses. These bronzes may be the same denomination as *Types 7–11*, but they are usually lighter in weight.

Type 13. Apollo/Kernos. Sv. 106.48–51 (Pl. 3, 77–79).

Obv. Head of Apollo r., laureate; border of dots.

Θ

Rev. A E or A Θ E Kernos; all within wheat wreath.

77. Agora 1.54 ↑ (NN-1120) 79. Athens 2.12 ↑ (Inv. A-E. 1025 = Sv. 106.49)
 78. Athens 1.58 ↗ (Inv. 1891/2, I', 87 = Sv. 106.48)

Apollo/Kernos is classified as a Delian cleruchy fraction by Svoronos, but usually is found in Attica, unlike the Artemis/Kernos fractions (Pl. 4, 101–104) which have been found on Delos in significant numbers.¹⁶ The kernos is the sacred vessel of the Eleusinian cult.

Type 14. Zeus/Kernos. Sv. 107.9–11 (Pl. 4, 80–83).

Obv. Head of Zeus r., laureate; border of dots.

A Θ

Rev. E Kernos.

80. Agora 1.27 ↑ (O-177) 82. Athens 1.90 ↑ (IIIK. 124, F6)
 81. Athens 1.35 ↑ (Christomanos coll., 1073) 83. Athens 2.00 ↑ (Inv. 2773)

Zeus/Kernos retains the reverse type of Apollo/Kernos, but there is no reverse border. Svoronos placed the Zeus/Kernos types among the Delian cleruchy coins, but the types and provenance of the recorded specimens point to an Athenian origin, as does the ethnic.

Type 15. Athena/Amphora. Sv. 107.75–79 (Pl. 4, 84–86).

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

A

Rev. Θ E Amphora and palm branch.

84. Agora 2.47 ↑ (Pnyx 1937) 86. Athens 2.92 ↑ (Attica 1906, 59 = Sv. 107.78)
 85. Athens 2.81 ↖ (Attica 1906, 60 = Sv. 107.75)

Athena/Amphora was incorrectly published by Svoronos as a Delian cleruchy coin. The types are purely Athenian, the ethnic is Athenian, and Athena/Amphora pieces frequently appear in Attic hoards and in Agora deposits. They are rarely, if ever, found on Delos.

¹⁵ *IGCH*, 321 (Delos, 1906), note 14 above. *IGCH*, 324 (Delos, 1968), note 14 above. Hackens, *Délos*, p. 391, pl. 65, and table, p. 409.

¹⁶ Hackens, *Délos*, table, p. 409.

Type 16. Athena/Two owls on thunderbolt. Sv. 24.60–68 (Pl. 4, 87–92).

Obv. Head of Athena r., wearing Attic helmet; border of dots.

Rev. AΘE (in exergue) Two owls r. and l., on thunderbolt; all within olive wreath.

87. Athens 1.89↖ (Piraeus 1926, 1242)

90. Athens 3.20↖ (Attica 1906, 77)

88. Athens 2.53↑ (*IIK.* 61)

91. Agora 3.39↑ (Pnyx 1937)

89. Agora 2.62↗ (*IIΘ*-424)

92. Athens 4.94↗ (Inv. 2760γ = Sv. 24.60)

Athena/Two owls on thunderbolt is the major Athenian fractional denomination of the 2nd century. The reverse revives, in a revised form, the two-owls reverses of the late 4th century (Sv. 24.34–59). The Athena head in Attic helmet is a free version of that on the New Style silver. It differs from that on the comparably small New Style hemidrachm obverses.

ATHENIAN BRONZE DENOMINATIONS, 200–86 B.C.

Our knowledge of the names given to the various Greek bronze denominations is very limited. Based on the evidence presently available, it is unwise to apply such names as obol or χαλκοῦς to specific Athenian bronzes. It is also almost impossible to determine the theoretical weight of a given denomination, for even well-preserved specimens fluctuate greatly in weight. Little care was taken in the adjustment of bronze

TABLE I. WEIGHTS OF ATHENA/FULMINATING ZEUS COINS

(Weight in grams: number of specimens)

under 5.00	65				
5.00	1	6.00	19	7.00	9
5.05	6	6.05	12	7.05	14
5.10	8	6.10	14	7.10	8
5.15	9	6.15	11	7.15	7
5.20	9	6.20	14	7.20	4
5.25	9	6.25	15	7.25	9
5.30	10	6.30	11	7.30	6
5.35	8	6.35	14	7.35	5
5.40	13	6.40	20	7.40	8
5.45	8	6.45	16	7.45	4
5.50	12	6.50	8	7.50	7
5.55	5	6.55	24	7.55	5
5.60	20	6.60	24	7.60	4
5.65	10	6.65	10	7.65	5
5.70	10	6.70	12	7.70	6
5.75	14	6.75	15	7.75	1
5.80	13	6.80	12	7.80	5
5.85	7	6.85	12	7.85	2
5.90	13	6.90	18	7.90	6
5.95	17	6.95	10	7.95	2
				8.00	4
				over 8.00	19

Total—698 specimens

coin weights, unlike the precious-metal issues. Carelessly struck pieces and irregular flans are not uncommon (Pls. 1-4, 20, 33, 50, 57, 58, 69, 76, 81, 87, 97, 105). It is not difficult, in fact, to find two bronze pieces of identical types, one of which is twice the weight of the other. Frequency tables also prove to be of little value for the 2nd century bronze coinage. For example, in Tables I and II below, the weights of the Athena/Fulminating Zeus and Athena/Two-owls-on-thunderbolt specimens from several Attic hoards have been compiled.¹⁷ These tables suffice to establish the *range* of weights for a given type, but are hardly adequate to determine the *theoretical* weight. The Athenian bronzes clearly passed in commerce by size; the actual weight of a given specimen was of little significance.

Three denominations appear to have been struck by the Athenian mint during the 2nd century B.C. These are best referred to simply as AE 1 (large), AE 2 (intermediate), and AE 3 (small).¹⁸ The relative values of AE 1, AE 2, and AE 3 pieces, and their

TABLE II. WEIGHTS OF ATHENA/TWO OWLS ON THUNDERBOLT COINS

(Weight in grams: number of specimens)

under 2.00	6		
2.00	1	3.00	3
2.05	2	3.05	7
2.10	0	3.10	5
2.15	0	3.15	4
2.20	1	3.20	9
2.25	8	3.25	5
2.30	4	3.30	0
2.35	2	3.35	2
2.40	4	3.40	5
2.45	4	3.45	1
2.50	8	3.50	4
2.55	3	3.55	2
2.60	5	3.60	2
2.65	4	3.65	3
2.70	2	3.70	2
2.75	6	3.75	1
2.80	5	3.80	2
2.85	7	3.85	1
2.90	8	3.90	0
2.95	3	3.95	1
		4.00	0
		over 4.00	3

Total—145 specimens

¹⁷ *IGCH*, 249, 269, 274, 276-283, and the Attica 1969 hoard, *Ath. Ann. Arch.*, 7, 1974, pp. 149-156. Weights which include fractions equal to 0.00, 0.01, 0.02, 0.08, 0.09 g. have been entered as 0.00 g. Fractions equal to 0.03, 0.04, 0.05, 0.06, 0.07 g. have been entered as 0.05 g.

¹⁸ Kleiner, forthcoming in *Δελτ.*, 28, 1973, A' (Table I).

value with respect to the New Style silver, would, of course, have been known to every Athenian.

AE 1 comprises pieces roughly 16–19 mm. in diameter; the weight range is usually 5.50–7.00 g.; the average weight is about 6.30 g.: *Types 1–5*.¹⁹

AE 2 comprises pieces roughly 12–16 mm. in diameter; the weight range is usually 2.75–4.00 g.; the average weight is about 3.50 g.: *Type 6*.²⁰

AE 3 comprises pieces roughly 12–14 mm. in diameter (and thinner than AE 2); the weight range is usually 2.25–3.25 g.; the average weight is about 2.75 g.: *Types 7–16*. The usually lighter Apollo/Owl-on-amphora (*Type 12*) coins may represent an AE 4 denomination.

COUNTERMARKS

Two countermarks regularly appear on 2nd century Athenian bronze coins. One, a star, occurs only on Zeus/Fighting Athena pieces (Pl. 2, 37, 39). The purpose of the countermark, and the date when it was applied, are particularly enigmatic. As shall be established below, the Zeus/Fighting Athena types were struck for a short time around the middle of the 2nd century. Although star-countermarked pieces are not uncommon, only the Attica 1906 hoard²¹ contained any such coins. This hoard was buried about 88–86 B.C., over half a century after the Zeus/Fighting Athena pieces were issued. Only seven of the twelve Zeus/Fighting Athena coins in the hoard were countermarked; no other variety in the hoard bears any countermark. If the countermarking took place around 88–86 B.C., it is strange that no other mid- to late 2nd century pieces are stamped with a star. If the countermarking occurred soon after the Zeus/Fighting Athena pieces were struck, it is curious that no earlier hoard or Agora deposit includes any countermarked examples. The star countermark is, to my mind, inexplicable at this time.

The second recorded countermark is a cicada. It appears only on late Athena/Fulminating Zeus pieces (Pl. 2, 26, 29) and the countermarking must have taken place at about the time of the last Athena/Fulminating Zeus emissions, *ca.* 86 B.C. I have published the seventeen known cicada-countermarked pieces elsewhere and suggested that the countermark signified that the AE 1 pieces were devalued to AE 2 (Cicada/Owl) at a time when the weight of AE 1 was increased from *ca.* 6.30 g. to over 10 g.²²

¹⁹ Athena/Fulminating Zeus pieces with star-between-crescents (*Type 2k*) symbol are regularly 15–20% heavier than all other varieties. No example of this type was present in any of the hoards used in plotting the weights in Table I.

²⁰ Cicada/Owl (*Type 6*) is the only AE 2 variety commonly found in Attica, but other scarce AE 2 types are known: Pl. 4, 93–96, 105–110.

²¹ See note 37 below.

²² Kleiner, forthcoming in *Δελτ.*, 28, 1973, A'.

DEPOSITS IN THE ATHENIAN AGORA

In establishing a chronological framework for the Athenian bronze coinage, the deposits of coins, pottery, and other objects in the Athenian Agora are crucial. As we shall see later, the evidence provided by Attic hoards is considerable, but the hoards are useful primarily for the establishment of a relative chronology based on such factors as relative wear and comparative numerical representation of the various types. Hoards of bronze coins tend to be composed almost exclusively of local issues, for bronze pieces did not usually travel far from their place of minting.²³ Consequently, hoards of Athenian coins do not normally contain foreign coins, and there is no recorded hoard in which the foreign pieces are sufficiently numerous or well preserved to aid in fixing the date of the Athenian coins in the find. The Agora deposits, on the other hand, include, in addition to the coins, such datable objects as pottery and amphora stamps. Sometimes, too, a deposit may be connected with the destruction of a building (e.g., the Sullan sack of 86 B.C.), or with the construction of a building (e.g., the fill dumped for the erection of the Stoa of Attalos II), etc. The deposits associated with the three great Hellenistic stoas of the Agora (Middle Stoa, Stoa of Attalos, and South Stoa II), have been published in an earlier issue of *Hesperia*.²⁴ Three additional deposits, dating from the third quarter of the 2nd century to the sack of 86, are presented here.

DEPOSIT H 12:1

Deposit H 12:1 consists of the sand and gravel filling of the old course of the west branch of the Great Drain, a large (ca. 1.00 m. deep and 1.30 m. wide) underground channel in the area of the Tholos.²⁵ The deposit comes from the approximately 30 m. long section of the drain which was abandoned and sealed when the course of the drain was altered at the time of the construction of the Doric Propylon south of the Tholos. The latest amphora stamps in the deposit are Knidian of the third quarter of the 2nd century B.C. Long-petal Megarian bowls, pottery, and lamps of the second half of the 2nd century B.C. were also present. Deposit H 12:1 appears to have been closed during the third quarter of the century, or perhaps somewhat later.

²³ Athenian coins in Crete: G. Le Rider, "Un groupe de monnaies crétoises à types athéniens," *Humanisme actif, Mélanges Julien Cain*, Paris, 1968, p. 330, note 41; *Etudes crétoises*, XV, *Monnaies crétoises du Ve au Ier siècle av. J.-C.*, Paris, 1966, p. 295, note 5.

²⁴ Kleiner, *Hesperia*, 44, 1975, pp. 302–330.

²⁵ H. A. Thompson, *Hesperia*, Suppl. IV, *The Tholos of Athens and Its Predecessors*, Cambridge (Mass.), 1940, pp. 111–121; R. H. Howland, *The Athenian Agora*, IV, *Greek Lamps and Their Survivals*, Princeton, 1958, p. 241; M. Lang and M. Crosby, *The Athenian Agora*, X, *Weights, Measures and Tokens*, Princeton, 1964, p. 136.

A total of 246 coins were found in the deposit, of which 96 were securely identifiable after cleaning.²⁶ These are catalogued below.

DEPOSIT H 12:1—CATALOGUE

MACEDON, ANTIGONOS GONATAS

Obv. Head of Athena r., wearing Corinthian helmet.

Rev. Pan r., erecting trophy; details illegible.

McClean, 3594–3608.

1. Z-2740

2. B-551

MACEDON, ANTIGONOS DOSON

Obv. Head of young Herakles r., wearing lion skin.

Rev. Nude youth on horse stepping r.; below, monogram; other details illegible.

McClean, 3609–13.

3. Z-2857

LEMNOS, MYRINA

Obv. Head of Athena r., wearing Corinthian helmet.

Rev. MYPI to l., inwards. Owl facing; to r., uncertain symbol.

BMC, 3.

4. Z-2735

5. Z-2854 (obv. countermark: X)

BOIOTIA

Obv. Boiotian shield.

Rev. ΒΟΙΩΤΩΝ Ornamented trident; details illegible.

BMC, 57–62.

6. Z-2842

BOIOTIA, THEBES?

Obv. Head of Demeter, three-quarter face r., wearing wheat wreath.

Rev. ΒΟΙΩΤΩΝ reading downwards to r. Poseidon, nude, standing l., resting r. foot on rock, leaning on trident in l. hand.

BMC, 81–89.

7. Z-2741

ATTICA, ATHENS

Obv. Head of Athena r., wearing Attic helmet.

A

Rev. Θ Ε Double-bodied owl, head facing; above, on either side, olive spray.

Sv. 22.41–45.

8–9. Z-2777a–b

10. Z-2861

Obv. Athena, Attic helmet, as preceding.

Rev. Double-bodied owl, as preceding, except below, bakchos ring.

Sv. 22.35–40.

11. Z-2772

13. B-547

12. Z-2847

Obv. Athena, Attic helmet, as preceding.

Rev. Double-bodied owl, as preceding, except details illegible.

Sv. 22.35–45.

14. Z-2860

15. B-546

Obv. Head of Athena r., wearing Attic helmet.

Rev. Two owls r. and l.; between them, ΑΘ and kernos; all within olive wreath.

Sv. 24.34–39.

16. B-550

Obv. Athena, Attic helmet, as preceding.

Rev. Two owls, as preceding, except between them, ΑΘ.

Sv. 24.51–57.

17. Z-2729

20. Z-2832

18. Z-2752

21. Z-2845

19. Z-2811

22. B-548

²⁶ The entire deposit of 246 coins includes the following 185 pieces with inventory numbers: Z-2723; 2726–2754; 2757; 2763–2780; 2787–2813; 2822–2868; B-539–551; some numbers were assigned to groups of coins. One of the coins is clearly an intrusion: Z-2748, an Athenian Imperial bronze fraction (Sv. 88.49–50). An additional 61 coins, without inventory numbers, were discarded during the early excavations. Almost all of these either disintegrated during cleaning or were identified as “Athens, 3rd century B.C.,” “Greek,” or “Illegible.” “Athens, 3rd century B.C.” signified coins which were similar in fabric and size to 3rd century Athenian bronzes. Today they would be catalogued as “Greek” or “Illegible.”

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. HΘ Owl l., wings closed; all within olive wreath.

Sv. 22.85–88.

23. Z-2766a 25. Z-2866

24. Z-2830

Obv. Head of Athena r., wearing Corinthian helmet.

AΘ

Rev. H Owl r., wings closed; all within olive wreath.

Sv. 22.80–84.

26. Z-2733

Obv. Triptolemos seated l. in winged chariot drawn by two serpents, holding wheat ears in r. hand.

Rev. AΘE above pig r., standing on bakchos; below, uncertain symbol.

Sv. 103.33–39.

27. Z-2753 28. B-539

Obv. Head of Athena r., wearing Corinthian helmet.

Rev. AΘ or ΘA Owl r., wings closed; all within wheat wreath.

Sv. 22.64–70.

29. Z-2732 35. Z-2834

30. Z-2770 36. Z-2846

31. Z-2801 37. Z-2848a

32. Z-2805 38. Z-2865

33. Z-2809 39. Z-2867

34. Z-2831 40. Z-2868

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. ΘE Owl r., wings closed; to r., cornucopiae.

Sv. 22.73–74.

41. Z-2803

Obv. Head of Athena r., wearing Corinthian helmet.

Rev. Owl r., wings closed; details illegible.

Sv. 22.64–84.

42. Z-2778 43. Z-2790

44. Z-2792

47. Z-2844

45. Z-2797

48. Z-2848b

46. Z-2841

49. Z-2862

Obv. Head of Athena r., wearing Attic helmet.

A

Rev. ΘE Two owls, facing.

Sv. 24.29–31.

50. Z-2856

Obv. Head of Athena r., wearing Attic helmet.

A

Rev. ΘE Owl r., wings open; to r., amphora.

Sv. 24.10–17.

51. Z-2736

Obv. Athena, Attic helmet, as preceding.

Rev. Owl r., as preceding, except to r., amphora or kernos.

Sv. 24.10–17, 33.

52. Z-2859

Obv. Head of Demeter r., bound with wheat.

AΘ

Rev. E Kernos with wheat ear passed through each handle; to r., aplustre.

Sv. 104.14–20.

53. Z-2827 (Struck over Athenian bronze, Sv. 24.10–17, 33)

Obv. Demeter head, as preceding.

Rev. Kernos, as preceding, except to r., uncertain symbol.

Sv. 104.8–20.

54. Z-2825

55. Z-2855

(Both pieces struck over Athenian bronze, Sv. 24.10–17, 33)

Obv. Kernos with wheat ear passed through each handle.

Θ

Rev. A E Bakchos ring; all within wheat wreath.

Sv. 104.21–23.

56. Z-2730

60. Z-2810

57. Z-2744

61. Z-2853

58. Z-2789

62. Z-2863

59. Z-2802

Obv. Head of Zeus r., bound with tainia.

AΘ

Rev. E Amphora; all within ivy wreath.

Sv. 25.15–21.

63. Z-2769

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. Θ E or A Θ Owl r., wings closed, on thunderbolt; border of dots.

Sv. —.

64. Z-2750 (Θ ^A E) 65. Z-2812 (A Θ)

Obv. Head of Athena r., wearing Attic helmet.

A Θ

Rev. E Owl r., wings closed, on thunderbolt.
Sv. 23.47–49.

66. Z-2728 68. Z-2791

67. Z-2768

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

A Θ

Rev. E Zeus, nude, standing r., holding thunderbolt in lowered r. hand, extending l. arm; to r., owl r.

Sv. 81.5–6.

69. Z-2794

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus holding thunderbolt, as preceding, except to r., prow r.

Sv. 81.9–16.

70. Z-2824

Obv. Athena head, uncertain helmet.

Rev. Zeus holding thunderbolt, as preceding, except to r., uncertain symbol.

Sv. 81.1–16.

71. Z-2828

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

Θ

A

Rev. E Zeus, nude, striding r., hurling thunderbolt in raised r. hand, extending l. arm; to r., star and eagle r.

Sv. 81.17–18.

72. B-542a

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding,

Θ

except A E and to l. wheat ear; to r., eagle r.

Sv. 81.28–29.

73. Z-2796

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding,

A

Θ

except E and to r., cornucopiae and eagle r.

Sv. —.

74. Z-2737

76. Z-2799

75. Z-2773a

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding, except to r., eagle r.; other details illegible.

Sv. 81.17–31.

77. Z-2798

80. Z-2829

78. Z-2822

81. B-542b

79. Z-2823

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding, except details illegible.

Sv. 81.17–52.

82. Z-2858

83. B-542c

Obv. Head of Demeter r., wearing wheat wreath.

Rev. A Θ E above pig r.

Sv. 103.50–56.

84. Z-2738

Obv. Cicada.

A Θ

Rev. E Amphora, usually with palm branch.

Sv. 107.55–69.

85. Z-2727

87–88. Z-2806a–b

86. Z-2774

89. Z-2850

Obv. Head of Apollo r., laureate; border of dots.

Θ

Rev. A E Kernos; all within wheat wreath.

Sv. 106.48–49.

90. Z-2723

Obv. Head of Zeus r., laureate; border of dots.

A Θ

Rev. E Kernos.

Sv. 107.9–11.

91. Z-2743

Obv. Head of Apollo r., laureate.

A Θ

Rev. E Owl r., wings closed, on horizontal amphora.

Sv. 106.52–62.

92. Z-2852

DELOS

Obv. Head of Apollo l., laureate.

Rev. Δ H Lyre.

Sv. 105.32–34.

93. Z-2804

Obv. Head of Apollo l., laureate.

Rev. Δ H Lyre.

Sv. 105.35–41.

94. Z-2767

Obv. Head of Apollo r., laureate.

Rev. Δ H Lyre.

Sv. 105.43–62.

95. Z-2837

KARIA, KNIDOS

Obv. Head of Apollo r., laureate.

Rev. KNI Prow r.; magistrate's name illegible.

BMC, 67–70.

96. Z-2835

DEPOSIT A–B 19–20:1

Deposit A–B 19–20:1 consists of the silted-up filling of the southern branch of the Great Drain.²⁷ The deposit comes from the abandoned section of the drain south of the Roman Bath which suffered considerable damage at some time in the 2nd or early 1st century B.C., perhaps during the Sullan sack. The material from the deposit—pottery, stamped amphoras, lead tokens, coins, etc.—is almost wholly of the first half of the 2nd century or earlier; much old material was also dumped in. The pottery includes long-petal Megarian bowls. The amphora stamps, according to Virginia Grace, suggest a date for the deposit in the third quarter of the 2nd century B.C., although two Knidian stamped handles of *ca.* 108 and *ca.* 88 B.C. are present in the fill. The possibility of contamination cannot be ruled out since the excavators noted that blocks were missing from the drain's top courses before it was filled and remained open thereafter.

A total of 512 coins were found in the deposit, of which 165 were securely identifiable after cleaning.²⁸ These are catalogued below.

DEPOSIT A–B 19–20:1—CATALOGUE

MACEDON, APHYTIS

Obv. Head of Zeus Ammon r.

Rev. ΑΦΥ Two birds billing; between them, kantharos.

BMC, 3 (different symbol).

1. NN-1121

MACEDON, ALEXANDER III

Obv. Head of Apollo r., hair bound with tainia; border of dots.

²⁷ R. S. Young, "An Industrial District of Ancient Athens," *Hesperia*, 20, 1951, pp. 262–263; Lang and Crosby, *op. cit.* (note 25 above), p. 135; B. A. Sparkes and L. Talcott, *The Athenian Agora*, XII, *Black and Plain Pottery*, Princeton, 1970, p. 384.

²⁸ The entire deposit of 512 coins includes the following 269 pieces with inventory numbers: NN-1042, 1043; 1056–1063; 1067–1072; 1117–1122; 1149, 1150; 1155–1158; 1160–1162; 1167–1171; 1174; 1186–1189; 1199–1204; 1212–1214; 1242, 1243; 1246–1251; 1260; 1350–1356; 1560–1570; 1584; 1589–1623; 1669–1710; 1712–1717; 1812–1851; 1854–1859; some numbers were assigned to groups of coins. Two of the coins are clearly intrusions: NN-1149, a very worn post-Sullan Athenian bronze piece (Sv. 80.1ff.) and an antoninianus of Gallienus (A.D. 253–268). An additional 243 coins, without inventory numbers, were discarded during the early excavations. Cf. note 26 above.

- Rev. ΑΛΞΑΝΔΡΟΥ around from above. Horse prancing r.; details illegible.
 McClean, 3526-31.
 2. NN-1686
- MACEDON, DEMETRIOS POLIORKETES
 Obv. Head of Athena? r., wearing Corinthian helmet; border of dots.
 Rev. BA above prow r.; below, monogram.
 McClean, 3588-89; E. T. Newell, *The Coinages of Demetrius Poliorcetes*, London, 1927, no. 172.
 3. NN-1694
- MACEDON, ANTIGONOS GONATAS
 Obv. Head of Athena r., wearing Corinthian helmet.
 Rev. Pan r., erecting trophy; details illegible.
 McClean, 3594-3608.
 4. NN-1067 6-8. NN-1589a-c
 5. NN-1119 9. NN-1605
- MACEDON, ANTIGONOS GONATAS TO DEMETRIOS II
 Obv. Macedonian shield; details illegible.
 Rev. Double-crested Macedonian helmet with cheek-pieces; details illegible.
 McClean, 3614-27.
 10. NN-1688
- LOKRIS
 Obv. Head of Athena r., wearing Corinthian helmet.
 Rev. ΑΟΚ ΡΩΝ Bunch of grapes.
BMC, 57-60.
 11. NN-1717
- PHOKIS
 Obv. Head of Athena facing, wearing helmet with three crests and necklace.
 Rev. Φ in olive wreath.
BMC, 66-74.
 12. NN-1828
- Obv. Head of bull facing, bound with sacrificial fillet.
 Rev. ΦΩ in laurel wreath.
BMC, 97-100.
 13. NN-1843
- EUBOIA, CHALKIS
 Obv. Female head facing, wearing diadem with five disks, over which passes a sacrificial fillet.
 Rev. Eagle flying r., holding serpent in beak and claws; details illegible.
BMC, 70-78.
 14. NN-1838
- ATTICA, ATHENS
 Obv. Head of Athena r., wearing Attic helmet.
 A
 Rev. Θ E Double-bodied owl, head facing; above, on either side, olive spray; below, bakchos ring.
 Sv. 22.35-40.
 15-16. NN-1693a-b 19. NN-1819
 17-18. NN-1698c-d 20. NN-1826
- Obv. Athena, Attic helmet, as preceding.
 Rev. Double-bodied owl, as preceding, except details illegible.
 Sv. 22.35-45.
 21. NN-1043 31. NN-1606
 22. NN-1057a 32. NN-1620
 23. NN-1068a 33. NN-1674a
 24. NN-1157 34. NN-1687
 25. NN-1161a 35. NN-1697a
 26. NN-1170 36-37. NN-1698a-b
 27. NN-1186 38-39. NN-1715a-b
 28-29. NN-1251a-b 40. NN-1827a
 30. NN-1595 41-42. NN-1832a-b
- Obv. Head of Athena r., wearing Attic helmet.
 Rev. Two owls r. and l.; between them, bakchos ring and ΑΘΕ; all within olive wreath.
 Sv. 24.42-50.
 43. NN-1708
- Obv. Athena, Attic helmet, as preceding.
 Rev. Two owls, as preceding, except between them, ΑΘ and kernos.
 Sv. 24.34-39.
 44. NN-1609 46-47. NN-1713a-b
 45. NN-1675
- Obv. Athena, Attic helmet, as preceding.
 Rev. Two owls, as preceding, except between them, ΑΘ.
 Sv. 24.51-57.
 48. NN-1167 51. NN-1676
 49. NN-1189a 52. NN-1705
 50. NN-1622 53. NN-1823

Obv. Athena, Attic helmet, as preceding.

Rev. Two owls, as preceding, except details illegible.

Sv. 24.34–57.

54. NN-1214

57. NN-1701

55. NN-1684

58–60. NN-1712a–c

56. NN-1689

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. HΘ Owl l., wings closed; all within olive wreath.

Sv. 22.85–88.

61. NN-1168

66. NN-1691

62. NN-1246a

67–68. NN-1696a–b

63. NN-1561

69. NN-1707

64. NN-1616

70. NN-1850

65. NN-1677

71. NN-1855

Obv. Head of Athena r., wearing Corinthian helmet.

AΘ

Rev. H Owl r., wings closed; all within olive wreath.

Sv. 22.80–84.

72. NN-1056

Obv. Triptolemos seated l. in winged chariot drawn by two serpents, holding wheat ears in r. hand.

Rev. AΘE above pig r., standing on bakchos; below, uncertain symbol.

Sv. 103.33–39.

73. NN-1830b

Obv. Head of Athena r., wearing Corinthian helmet.

Rev. AΘ or ΘA Owl r., wings closed; all within wheat wreath.

Sv. 22.64–70.

74. NN-1608

81. NN-1714

75. NN-1611a

82. NN-1825

76. NN-1621

83. NN-1839

77. NN-1679

84–85. NN-1844a–b

78–79. NN-1704a–b

86. NN-1845

80. NN-1710

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. Θ E Owl r., wings closed; to r., wheat ear.

Sv. 22.78–79.

87. NN-1260

88. NN-1817

Obv. Athena, Corinthian helmet, as preceding.

Rev. Owl r., as preceding, except to r., uncertain symbol.

Sv. 22.73–79.

89. NN-1212

93. NN-1837

90. NN-1564a

94. NN-1841

91. NN-1566

95. NN-1844c

92. NN-1599a

96. NN-1847

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. Two owls r. and l.; between them, Θ; all within olive wreath.

Sv. 24.58–59.

97. NN-1072

98. NN-1623

Obv. Head of Athena r., wearing Attic helmet.

A

Rev. Θ E Two owls, facing.

Sv. 24.29–31.

99. NN-1061

Obv. Head of Athena r., wearing Attic helmet.

A

Rev. Θ E Owl r., wings open; to r., amphora.

Sv. 24.10–17.

100. NN-1591

102. NN-1613

101. NN-1604

103. NN-1673

Obv. Head of Zeus r., laureate.

A

Rev. Θ E Athena standing r., helmeted, holding owl on l. and patera in r. hand; border of dots.

Sv. 25.1–4.

104. NN-1596

Obv. Head of Athena r., wearing Corinthian helmet.

Rev. AΘ Owl r., wings closed, on thunderbolt; border of dots.

Sv. —.

105. NN-1243

Obv. Head of Athena r., wearing Attic helmet.

A Θ

Rev. E Owl r., wings closed, on thunderbolt.

Sv. 23.47-49.

106. NN-1171a

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. Θ E Owl r., wings closed, on prow r.

Sv. 23.50-52.

107. NN-1598

108. NN-1614

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

Θ

Rev. A E Zeus, nude, striding r., hurling thunderbolt in raised r. hand, extending l. arm; to l., wheat ear; to r., eagle r.

Sv. 81.28-29.

109. NN-1062

110. NN-1155

Obv. Head of Demeter r., wearing wheat wreath.

Rev. AΘE above pig r.

Sv. 103.50-56.

111. NN-1156

Obv. Head of Apollo r., laureate.

A

Rev. Θ E Owl r., wings closed; to r., lyre.

Sv. 106.1-7.

112. NN-1117

Obv. Cicada.

A Θ

Rev. E Amphora, usually with palm branch.

Sv. 107.55-69.

113. NN-1702

Obv. Head of Apollo r., laureate; border of dots.

Θ

Rev. A E Kernos; all within wheat wreath.

Sv. 106.48-49.

114. NN-1120 (Pl. 3, 77)

Obv. Head of Athena r., wearing Attic helmet; border of dots.

Rev. AΘE (in exergue). Two owls r. and l., on thunderbolt; all within olive wreath.

Sv. 24.60-68.

115. NN-1063

116-117. NN-1350a-b

ATTICA, ELEUSIS

Obv. Triptolemos seated l. in winged chariot

drawn by two serpents, holding wheat ears in r. hand.

Rev. EΛEYΣI or AΘE above pig standing r. on bakchos; below, uncertain symbol.

Sv. 103.1-13, 33-39.

118. NN-1569

Obv. Demeter or Triptolemos seated l. in winged chariot drawn by two serpents, holding wheat ears in r. hand.

Rev. Pig standing r. on bakchos; below, EΛEYΣI; all within wheat wreath.

Sv. 103.17-24.

119. NN-1672a

121. NN-1849a

120. NN-1680a

Obv. Triptolemos l., mounting winged chariot drawn by two serpents, holding wheat ears in r. hand.

Rev. Pig standing r. on bakchos; below, EΛEYΣI; all within wheat wreath.

Sv. 103.26-28.

122-123. NN-1071 a-b

125. NN-1695a

124. NN-1680b

Obv. Triptolemos seated in or mounting serpent chariot.

Rev. Pig on bakchos, as preceding.

Sv. 103.17-28.

126. NN-1602

128. NN-1830a

127. NN-1695b

SALAMIS

Obv. Female head r.; details illegible.

Rev. Shield of Ajax; details illegible.

BMC, 1-11.

129. NN-1242

130. NN-1829

MEGARIS, MEGARA

Obv. Prow l.; on it, a tripod.

Rev. MEΓ or MEΓA between two dolphins swimming in a circle; border of dots.

BMC, 21-29.

131. NN-1059

136. NN-1706

132. NN-1568

137. NN-1815

133. NN-1593

138. NN-1822

134. NN-1617

139. NN-1833

135. NN-1671

140-141. NN-1859a-b

Obv. ΜΕΓΑ above prow l.
Rev. Tripod between two dolphins; border of dots.

BMC, 30–34.

142. NN-1070 150. NN-1670

143. NN-1204 151. NN-1692

144. NN-1560 152. NN-1700

145–146. NN-1590 a–b 153. NN-1820

147–148. NN-1600 a–b 154. NN-1858

149. NN-1619

ΑΙΓΙΝΑ

Obv. Α between two dolphins upwards.
Rev. Incuse square divided by bands into five compartments; details illegible.

BMC, 206–222.

155. NN-1669

ΚΟΡΙΝΘΙΑ, CORINTH

Obv. Pegasos flying l.; beneath, ♀.
Rev. Trident upwards; to r., dolphin.

BMC, 440; Edwards, no. 11.

156. NN-1615

Obv. Pegasos, as preceding.
Rev. Trident upwards; to l., Α or Δ; to r., uncertain symbol.

BMC, 446ff.; Edwards, no. 11.

157. NN-1188 158. NN-1856

Obv. Pegasos, as preceding.
Rev. Trident upwards; to l. and r., uncertain letters and/or symbols.

BMC, 423ff.; Edwards, no. 11.

159–160. NN-1200a–b

ΑΧΑΪΑ, ΣΙΚΥΟΝ

Obv. Dove flying l.
Rev. Σ in olive wreath.

BMC, 92.

161. NN-1162

ΜΕΣΣΕΝΙΑ, ΜΕΣΣΕΝΕ

Obv. Head of Demeter l., crowned with wheat.
Rev. Μ Ε Tripod.

BMC, 4–5.

162. NN-1122

ΑΝΔΡΟΣ

Obv. Head of bearded Dionysos r., bound with ivy.

Α

Ν Ι

Rev. Δ Ρ Kantharos.

BMC, 7.

163. NN-1835

ΚΕΟΣ

Obv. Bearded head (of Aristaios?) r., laureate.
Rev. Forepart of dog (Seirios) l., surrounded by rays.

BMC, 1–11.

164. NN-1612

ΙΟΝΙΑ, ΣΜΥΡΝΑ?

Obv. Head of Eurydike r., veiled.
Rev. [ΕΥΡΥΔΙΚΕΩΝ] to l., inwards. Tripod, upon which, laurel wreath.

BMC, Ionia, p. 56, nos. 75–77; *BMC, Macedonia*, Eurydicea, 1–3.

165. NN-1836

DEPOSIT B 20:9

Deposit B 20:9 consists of the sandy filling in two pits in the bedrock, about 2 m. apart, at the bottom of the so-called Post-Sullan Drain, which replaced the abandoned section of the southern branch of the Great Drain several meters to the west (Deposit A–B 19–20:1, p. 15 above). In addition to coins, the deposit contained a large number of lead tokens, which are not datable independently.²⁹ The pottery evidence was negligible. The coins in the deposit are similar to those regularly found in Sullan hoards.

²⁹ Lang and Crosby, *op. cit.* (note 25 above), p. 135.

Deposit B 20:9 contained a total of 222 coins, of which 114 were securely identifiable after cleaning.³⁰ These are catalogued below.

DEPOSIT B 20:9-CATALOGUE

THRACE, IMBROS

Obv. Head of Persephone r., wearing wheat wreath; border of dots.

Rev. IMBPOY Hermes, wearing petasos, standing r. before an altar, holding branch in r. hand and patera in l. hand; to r., caduceus.

BMC, 1 (different symbol).

1. NN-1126

BOIOTIA, THEBES?

Obv. Head of Athena r., wearing 'Corinthian helmet.

Rev. BOIOTON Trophy of arms r.

BMC, 64-65.

2. NN-1106

BOIOTIA, THESPIAI

Obv. Female head r., laureate, wearing modios and veil; border of dots.

ΘΕΣΠΙ

Rev. ΕΩΝ Lyre; all within laurel wreath.

BMC, 14-22.

3. NN-1105

EUBOIA, CHALKIS

Obv. Female head facing, wearing diadem with five disks, over which passes a sacrificial fillet.

Rev. Eagle flying r., holding serpent in beak and claws; other details illegible.

BMC, 70-78.

4. NN-1107

EUBOIA, ERETRIA?

Obv. Female head r., veiled.

EYBOI

Rev. ΕΩΝ Bull butting r.; other details illegible.

BMC, 39-44.

5. NN-1088

ATTICA, ATHENS

Obv. Head of Athena r., wearing Attic helmet.

A

Rev. Θ Ε Double-bodied owl, head facing; above, on either side, olive spray; below, bakchos ring.

Sv. 22.35-40.

6. NN-1095

Obv. Athena, Attic helmet, as preceding.

Rev. Double-bodied owl, as preceding, except details illegible.

Sv. 22.35-40.

7. NN-1087

8. NN-1101a

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. ΗΘ Owl l., wings closed; all within olive wreath.

Sv. 22.85-88.

9. NN-1078

Obv. Kernos with wheat ear passed through each handle.

Θ

Rev. A Ε Bakchos ring; all within wheat wreath.

Sv. 104.21-23.

10. NN-1077

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. Θ Ε Owl r., wings closed, on prow.

Sv. 23.50-52.

11. NN-1133

³⁰ The entire deposit of 222 coins includes the following 143 pieces with inventory numbers: NN-1075-1111; 1115, 1116; 1126-1148; some numbers were assigned to groups of coins. An additional 79 coins, without inventory numbers, were discarded during the early excavations. Cf. note 26 above.

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

Θ

Rev. A E Zeus, nude, striding r., hurling thunderbolt in raised r. hand, extending l. arm; to l., wheat ear; to r., eagle r.

Sv. 81.28–29.

12. NN-1131

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding,

A E

except Θ and to l., kernos; to r., cornucopiae and eagle r.

Sv. 81.19, 22–24.

13. NN-1081 14. NN-1083

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding,

A Θ

except E and to l., thyrsos.

Sv. 81.40–44.

15. NN-1076

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding, except to l., thyrsos or bakchos.

Sv. 81.40–44, 49–52.

16. NN-1147

Obv. Cicada.

Θ

Rev. A E Amphora and palm branch.

Sv. 107.55–69.

17–20. NN-1080a–d 61–67. NN-1128a–g

21–27. NN-1089a–g 68–69. NN-1141a–b

28–39. NN-1091a–l 70–74. NN-1143a–e

40–59. NN-1100a–t 75–80. NN-1145a–f

60. NN-1115

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

A

Rev. Θ E Amphora and palm branch.

Sv. 107.75–79.

81–82. NN-1079a–b 83. NN-1110

Obv. Head of Athena r., wearing Attic helmet; border of dots.

Rev. AΘE (in exergue). Two owls r. and l., on thunderbolt; all within olive wreath.

Sv. 24.60–68.

84–89. NN-1075a–f 96–100. NN-1134a–e

90–91. NN-1090a–b 101–103. NN-1139a–c

92–94. NN-1098a–c 104–105. NN-1142a–b

95. NN-1104 106. NN-1146

Obv. Cicada.

A

Rev. Θ E Owl r., wings closed, on thunderbolt.

Sv. 107.50–54.

107. NN-1097 108. NN-1144

ATTICA, ELEUSIS

Obv. Triptolemos seated l. in winged chariot drawn by two serpents, holding wheat ears in r. hand.

Rev. EΛEYΣI or AΘE above pig standing r. on bakchos; below, uncertain symbol.

Sv. 103.1–13, 33–39.

109. NN-1132

Obv. Demeter or Triptolemos seated l. in winged chariot drawn by two serpents, holding wheat ears in r. hand.

Rev. Pig standing r. on bakchos; below, EΛEYΣI; all within wheat wreath.

Sv. 103.17–24.

110. NN-1094

MEGARIS, MEGARA

Obv. MEΓA above prow l.

Rev. Tripod between two dolphins; border of dots.

BMC, 30–34.

111. NN-1137

ACHAIA, SIKYON

Obv. Dove flying l.; other details illegible.

Rev. ΣI in olive wreath.

BMC, 203–224.

112. NN-1082 113. NN-1092

KARIA, RHODOS

Obv. Head of Rhodos r., radiate, wearing stephane, earring, and necklace.

Rev. P O Rose with branch on each side; all within incuse square.

BMC, 327–332.

114. NN-1085

ATHENIAN BRONZE HOARDS

The evidence provided by deposits in the Agora is considerably amplified by the record of thirteen Attic hoards containing, in total, over 3000 bronze coins, almost every one Athenian. These hoards are tabulated below in Table III, p. 32, together with the Agora deposits. Five of the most important hoards, which have until now been unpublished or published only in summary fashion, are recorded in full here. The contents of the five hoards are presented together, organized by coin types. Weights in grams, die positions, and condition of the coins are given. Relative wear of the individual specimens is rated on a scale of w1 to w6, mint condition to extremely worn. The five hoards are:

A. *Tambouria* 1938 (*IGCH*, 249, Athens Numismatic Collection)—49 Athenian bronze coins found in Tambouria, Piraeus, in 1938; cited by I. Varoucha in *B.C.H.*, 62, 1938, p. 447.³¹ No record has previously been published of the hoard's contents. The coins from this hoard (A) have been assigned A-numbers in my catalogue.

B. *Attica* 1949 (*IGCH*, 269, Athens Numismatic Collection)—131 bronze coins (Athens 129, Sikyon 1, illegible 1) including 1 Athenian Imperial intrusion (Sv. 88.23–26, 2.66 ↑, w5); published by Price in *Num. Chron.*, Ser. 7, 4, 1964, pp. 28–29 (Hoard VI) as coming from Kyriaki in Attica, but the hoard is of unknown provenance, a gift of E. Kyriaki to the Athens Numismatic Collection. Oeconomides connects the gift with the find of 150 bronze coins near the Hephaisteion in Athens (Varoucha, *B.C.H.*, 74, 1950, p. 292), which seems very likely to judge from its contents, but Varoucha reports that only 40 pieces were acquired by the museum. The group of 41 bronzes recorded by Thompson (*IGCH*, 268) could not be located in the collection in 1973–74; the 41 coins are perhaps part of the 131 Attica 1949 pieces rather than a separate find. Price's record of the Attica 1949 hoard differs in detail from my own. The coins from this hoard (B) have been assigned B-numbers in my catalogue.

C. *Athens* 1955 (*IGCH*, 276, Athens Numismatic Collection)—38 bronze coins (37 Athens, 1 illegible) found in Athens in 1955; published by Varoucha, with some illustrations, in *B.C.H.*, 80, 1956, pp. 227–228, and later by Price, *Num. Chron.*, Ser. 7, 4, 1964, pp. 28–29 (Hoard V).³² Price's record of the hoard differs in detail from my own. The coins from this hoard (C) have been assigned C-numbers in my catalogue.

D. *Keratea* 1954 (*IGCH*, 277, American Numismatic Society)—131 Athenian bronzes found in a pot in Keratea in southern Attica in 1954; cited in Thompson, *Athens*, pp. 526ff. and Price, *Num. Chron.*, Ser. 7, 4, 1964, p. 28. No record has previously been published of the hoard's contents. The coins from this hoard (D) have been assigned D-numbers in my catalogue.

³¹ Other bibliography: Kleiner, forthcoming in *Amer. Num. Soc. Mus. N.*, 20, 1975.

³² Other bibliography: Thompson, *Athens*, pp. 526ff. (Hoard 3).

E. *Attica* 1951 (*IGCH*, 283, Athens Numismatic Collection)—75 Athenian bronzes, probably found in 1951; 29 representative pieces were acquired by the museum; cited by Varoucha in *B.C.H.*, 76, 1952, p. 205. No record has previously been published of the hoard's contents. The coins from this hoard (E) have been assigned E-numbers in my catalogue.

IGCH, 249, 269, 276, 277, 283—CATALOGUE (HOARDS A-E)

Coins marked (*) are illustrated on Plates 1–4

ATTICA, ATHENS

Obv. Head of Athena r., wearing Attic helmet.

A

Rev. Θ E Double-bodied owl, head facing; above, on either side, olive spray; below, bakchos ring.

Sv. 22.35–40.

Athens 1955—1w4

C1. 1.53↘

Obv. Head of Athena r., wearing Attic helmet.

Rev. Two owls r. and l.; between them, bakchos ring and AΘE; all within olive wreath.

Sv. 24.42–50.

Attica 1949—1w5

B1. 2.30↘

Obv. Athena, Attic helmet, as preceding.

Rev. Two owls, as preceding, except between them, AΘ.

Sv. 24.51–57.

Attica 1951—1w5

E1. 2.59↘

Obv. Head of Athena r., wearing Corinthian helmet.

A

Rev. Θ E Owl r., wings closed; to r., cornucopiae.

Sv. 22.73–74.

Tambouria 1938—1w6

A1. 1.99↗

Obv. Athena, Corinthian helmet, as preceding.

Rev. Owl r., as preceding, except to r., bakchos ring.

Sv. 22.75.

Tambouria 1938—1w6

A2. 2.47↗

Obv. Athena, Corinthian helmet, as preceding.

Rev. Owl r., as preceding, except to r., wreath.

Sv. 22.76–77.

Tambouria 1938—1w6

A3. 3.12↘

Obv. Head of Athena r., wearing Attic helmet.

A Θ

Rev. E Owl r., wings closed, on thunderbolt.

Sv. 23.47–49.

Tambouria 1938—5w3–5

A4. 1.30 ↑

A7. 2.05↗

A5. 1.81 ↑

A8. 2.22 ↑

A6. 19.6↗

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

A Θ

Rev. E Zeus, nude, standing r., holding thunderbolt in lowered r. hand, extending l. arm; to r., prow r.

Sv. 81.9–16.

Attica 1949—1w5

B2. 4.96 ↑

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

Θ

A

Rev. E Zeus, nude, striding r., hurling thunderbolt in raised r. hand, extending l. arm; to r., star and eagle r.

Sv. 81.17–18.

Tambouria 1938—6w5–6

A9. 4.82 ↑

A12. 7.06 ↑

A10. 5.51 ↓

A13. 7.19↗

A11. 5.69↗

A14. 7.82↘

Attica 1949—6w5–6

B3. 5.73↗

B6. 6.75 ↑

B4. 6.19 ↑

B7. 6.75↘

B5. 6.63↗

B8. 7.81↘

Attica 1949—8w3–5

B45. 5.51 ↗ B49. 6.50 ↑
 B46. 5.93 ↗ B50. 6.51 ↑
 B47. 6.47 ↑ B51. 6.84 ↗
 B48. 6.48 ↑ *B52. 7.93 ↑

Keratea 1954—1w6

D14. 6.29 ↗

Obv. Zeus head, as preceding.

Rev. Athena hurling thunderbolt, as preceding,
 except details illegible.

Sv. 22.53–55.

Tambouria 1938—1w3

A30. 7.99 ↑

Athens 1955—1w5

C7. 6.08 ↑

Attica 1949—1w6

B53. 6.05 ↖

Keratea 1954—5w6

D15. 4.30 ↑ D18. 7.05 ↑
 D16. 5.54 ↑ D19. 7.65 ↑
 D17. 5.78 ↑

Obv. Head of Athena r., wearing Corinthian helmet; border of dots.

Θ

Rev. A E Zeus, nude, striding r., hurling thunderbolt in raised r. hand, extending l. arm; to l., pilos; to r., eagle r.

Sv. 81.30–31.

Tambouria 1938—3w4–6

*A31. 5.57 ↑ A33. 6.88 ↓
 *A32. 6.01 ↑

Athens 1955—1w5

C8. 4.50 ↑

Attica 1949—2w6

B54. 5.08 ↓ B55. 5.11 ↑

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding,
 A E
 except Θ and to l., kernos; to r., cornucopiae and eagle r.

Sv. 81.19, 22–24.

Tambouria 1938—6w1–3

A34. 4.89 ↗ *A37. 6.23 ↗
 *A35. 5.32 ↑ A38. 6.53 ↑
 A36. 5.38 ↗ A39. 7.53 ↑

Athens 1955—1w6

C9. 4.10 ↑

Attica 1949—6w3–5

*B56. 4.20 ↗ B59. 5.30 ↗
 B57. 4.53 ↑ B60. 5.81 ↑
 B58. 5.24 ↗ B61. 6.99 ↑

Keratea 1954—6w3–5

D20. 3.86 ↑ D23. 5.14 ↑
 D21. 4.75 ↗ D24. 5.69 ↑
 D22. 4.97 ↑ D25. 5.99 ↑

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding,
 except to l., amphora.

Sv. 81.20–21.

Athens 1955—1w6

C10. 6.54 →

Attica 1949—1w4

B62. 4.73 ↗

Keratea 1954—1w6

D26. 5.39 ↑

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding,
 except to l., kernos or amphora.

Sv. 81.19–24.

Tambouria 1938—2w2–4

A40. 4.85 ↗ A41. 7.49 ↑

Attica 1949—1w4

B63. 5.60 ↗

Keratea 1954—1w6

D27. 3.82 ↗

Obv. Athena, Corinthian helmet, as preceding.

Rev. Zeus hurling thunderbolt, as preceding,
 Θ

except A E and to l., amphora; to r., eagle r.

Sv. 81.25–27.

Athens 1955—2w3–4

C11. 5.86 ↑ C12. 6.61 ↗

Attica 1949—5w3–4

B64. 5.64 ↗ B67. 6.83 ↑
 B65. 6.02 ↗ *B68. 7.10 ↑
 B66. 6.28 ↗

B68 is overstruck; the undertype is probably another Sv. 81.25–27.

Keratea 1954—4w3-5

D28. 4.48↗ D30. 5.74↗
D29. 5.48↗ D31. 7.05↗

Obv. Athena, Corinthian helmet, as preceding.
Rev. Zeus hurling thunderbolt, as preceding,
except to r., eagle r.; other details illegible.
Sv. 81.17-31.

Tambouria 1938—2w6

A42. 6.40↑ A43. 7.17↑

Athens 1955—4w6

C13. 5.15↑ C15. 6.21↑
C14. 5.77↑ C16. 6.58↑

Attica 1949—13w6

B69. 5.48↑ B76. 6.53↑
B70. 6.04↘ B77. 6.87↑
B71. 6.13↑ B78. 7.24↘
B72. 6.23↘ B79. 7.39↓
B73. 6.25↑ B80. 7.55↙
B74. 6.50↑ B81. 7.78↙
B75. 6.50↘

Keratea 1954—7w6

D32. 4.36↑ D36. 6.25↑
D33. 5.60↙ D37. 6.51↓
D34. 5.63↓ D38. 6.58↑
D35. 6.24↓

Obv. Athena, Corinthian helmet, as preceding.
Rev. Zeus hurling thunderbolt, as preceding,
except A ΘE and to l. and r., two piloi.
Sv. 81.32-39.

Athens 1955—4w3-4

C17. 4.43↑ C19. 6.39↑
C18. 4.96↘ C20. 6.76↘

Attica 1949—47w2-4

B82. 4.67↗ B93. 5.63↗
B83. 4.84↑ B94. 5.65↘
B84. 4.84↑ B95. 5.73↑
B85. 4.95↑ B96. 5.73↘
B86. 4.97↘ B97. 5.75↘
B87. 5.30↑ B98. 5.89↑
B88. 5.36↑ B99. 5.90↘
B89. 5.41↑ B100. 5.92↑
B90. 5.43↑ B101. 5.93↘
B91. 5.59← B102. 5.96↘
B92. 5.61↘ B103. 5.96↘

B104. 5.99↘ B117. 6.40↑
B105. 6.03↑ B118. 6.42↑
B106. 6.10↘ B119. 6.53↘
B107. 6.12↑ B120. 6.54↘
B108. 6.14↘ B121. 6.57↑
B109. 6.16↑ B122. 6.61↑
B110. 6.18↑ B123. 6.98↘
B111. 6.19↘ B124. 7.11↘
B112. 6.22↑ B125. 7.32↑
B113. 6.23↑ B126. 7.69↘
B114. 6.28↘ B127. 7.78↘
B115. 6.36↑ B128. 7.89↑
B116. 6.36↘

Keratea 1954—18w3-5

D39. 4.82↘ D48. 5.58↗
D40. 5.19↑ D49. 5.62↑
D41. 5.19↑ D50. 5.78↘
D42. 5.25↘ D51. 5.93↗
D43. 5.36↘ D52. 6.11↘
D44. 5.38↗ D53. 6.34↑
D45. 5.48↑ D54. 6.60↑
D46. 5.49↘ D55. 7.23↘
D47. 5.57↑ D56. 7.45↑

Obv. Athena, Corinthian helmet, as preceding.
Rev. Zeus hurling thunderbolt, as preceding,

A Θ

except E and to l., bakchos.

Sv. 81.49-52.

Keratea 1954—1w5

D57. 7.88↗

Obv. Athena, Corinthian helmet, as preceding.
Rev. Zeus hurling thunderbolt, as preceding,
except to l., thyrsos.

Sv. 81.40-44.

Keratea 1954—5w3-4

D58. 5.78↗ D61. 6.42↑
D59. 5.88↗ D62. 6.53↑
D60. 6.08↗

Obv. Athena, Corinthian helmet, as preceding.
Rev. Zeus hurling thunderbolt, as preceding,
except to l., bakchos or thyrsos.

Sv. 81.40-44, 49-52.

Keratea 1954—2w4-5

D63. 5.82↑ D64. 6.40↗

Obv. Athena, Corinthian helmet, as preceding.
 Rev. Zeus hurling thunderbolt, as preceding,
 except details illegible.

Sv. 81.17–52.

Tambouria 1938—2w6

A44. 6.61 ↑ A45. 9.57 ↗

Athens 1955—4w5–6

C21. 4.74 ↗ C23. 5.82 ↑

C22. 5.43 ↑ C24. 6.55 ↑

Keratea 1954—19w5–6

D65. 3.97 ↑ D75. 5.93 ↓

D66. 4.83 ↓ D76. 6.11 ↘

D67. 5.27 ↑ D77. 6.38 ↑

D68. 5.44 ↑ D78. 6.69 ↗

D69. 5.58 ↑ D79. 6.70 ↑

D70. 5.59 ↑ D80. 6.74 ↑

D71. 5.59 ↑ D81. 6.88 ↘

D72. 5.79 ↗ D82. 6.96 ↑

D73. 5.88 ↑ D83. 7.00 ↗

D74. 5.90 ↑

Obv. Cicada.

A Θ

Rev. E Amphora, usually with palm branch.

Sv. 107.55–69.

Tambouria 1938—4w2–3

A46. 1.62 ↗ A48. 1.98 ↑

A47. 1.66 ↗ A49. 2.20 ↑

Attica 1951—19w3–5

E2. 0.88 ↑ E12. 1.17 ↑

E3. 0.90 ↗ E13. 1.18 ↑

E4. 0.92 ↑ E14. 1.21 ↑

E5. 1.00 ↑ E15. 1.24 ↑

E6. 1.01 ↑ E16. 1.25 ↑

E7. 1.04 ↑ E17. 1.29 ↑

E8. 1.07 ↑ E18. 1.30 ↑

E9. 1.07 ↑ E19. 1.39 ↑

E10. 1.11 ↑ E20. 1.71 ↗

E11. 1.16 ↘

Obv. Head of Apollo r., laureate; border of dots.

Rev. A ΘE Kernos; all within wheat wreath.

Sv. 106.50–51.

Attica 1951—1w4

E21. 1.94 ↘

Obv. Head of Athena r., wearing Corinthian
 helmet; border of dots.

A

Rev. Θ E Amphora and palm branch.

Sv. 107.75–79.

Athens 1955—1w5

C25. 1.95 ↑

Keratea 1954—1w4

D84. 3.56 ↑

Obv. Head of Athena r., wearing Attic helmet;
 border of dots.

Rev. AΘE (in exergue). Two owls r. and l., on
 thunderbolt; all within olive wreath.

Sv. 24.60–68.

Attica 1951—8w3–5

E22. 2.36 ↑ E26. 3.16 ↑

E23. 2.92 ↑ E27. 3.18 ↑

E24. 3.10 ↑ E28. 3.27 ↑

E25. 3.12 ↑ E29. 3.83 ↑

Athens 1955—6w2–4

C26. 1.83 ↑ C29. 2.91 ↗

C27. 2.25 ↑ C30. 2.95 ↑

C28. 2.91 ↑ C31. 3.20 ↘

Keratea 1954—22w3–5

D85. 2.06 ↗ D96. 2.50 ↗

D86. 2.22 ↗ D97. 2.54 ↗

D87. 2.24 ↗ D98. 2.62 ↗

D88. 2.25 ↘ D99. 2.71 ↑

D89. 2.28 ↑ D100. 2.74 ↗

D90. 2.31 ↑ D101. 2.74 ↗

D91. 2.38 ↑ D102. 2.84 ↑

D92. 2.46 ↑ D103. 2.89 ↗

D93. 2.47 ↑ D104. 3.50 ↑

D94. 2.48 ↑ D105. 3.66 ↗

D95. 2.49 ↑ D106. 4.35 ↑

Obv. Cicada.

A

Rev. Θ E Owl r., wings closed, on thunder-
 bolt.

Sv. 107.50–54.

Athens 1955—6w1–3

C32. 2.26 ↑ C35. 3.00 ↑

C33. 2.80 ↑ C36. 3.22 ↑

C34. 2.90 ↑ C37. 3.49 ↑

Keratea 1954—25w2–5

D107. 2.06 ↑ D109. 2.81 ↑

D108. 2.48 ↑ D110. 2.88 ↑

D111. 2.94 ↑	D122. 3.45 ↖	ACHAIA, SIKYON
D112. 3.03 ↗	D123. 3.56 ↑	Obv. Dove flying l.
D113. 3.04 ↗	D124. 3.60 ↗	Rev. ΣI in olive wreath.
D114. 3.05 ↑	D125. 3.62 ↑	<i>BMC</i> , 143–145.
D115. 3.15 ↖	D126. 3.95 ↖	<i>Attica</i> 1949—1w5
D116. 3.16 ↑	D127. 4.11 ↑	B129. 3.37
D117. 3.37 ↑	D128. 4.14 ↑	ILLEGIBLE GREEK AE
D118. 3.37 ↖	D129. 4.48 ↗	<i>Athens</i> 1955—1w6
D119. 3.39 ↑	D130. 4.62 ↑	C38. 1.32
D120. 3.43 ↑	D131. 4.77 ↖	<i>Attica</i> 1949—1w6
D121. 3.45 ↑		B130. 4.32

AN ATTIC HOARD?

In addition to the five hoards catalogued above, a small group of coins acquired as a lot (*IK*. 124) before World War II by the Athens Numismatic Collection is of special interest here. There is no recorded information as to the provenance of the seven coins and no external evidence indicates that the group constituted a hoard in antiquity. Nevertheless, all the coins in question are quite uncommon and are rarely found in the Agora excavations. The testimony of other hoards and Agora deposits suggests that all the coins are contemporary Athenian issues of the third quarter of the 2nd century, with the exception of No. F7, which Kroll considers to be post-Sullan.³³ The seven coins are comparably well preserved (w1–3) and the group may represent a small hoard (perhaps with one intrusive coin) secreted during the third quarter of the 2nd century B.C. It is difficult to imagine a dealer or collector assembling such a lot of seven rare Athenian bronzes comprising at least four contemporary issues and two duplicates.

ATHENS *IK*. 124—CATALOGUE (HOARD? F)

Coins marked (*) are illustrated on Plates 3 and 4

ATTICA, ATHENS

Obv. Head of Demeter r., wearing wheat wreath.

Rev. AΘE above pig r.

Sv. 103.50–56.

F1. 7.26 ↑ (w2) F2. 8.25 ↗ (w1)

Obv. Head of Demeter (?) r.

Rev. AΘE above pig r.

Sv. 103.57–64.

*F3. 2.10 ↑ (w2)

Obv. Head of Apollo r., laureate; border of dots.

Θ

Rev. A E Kernos; all within wheat wreath.

Sv. 106.48–49.

F4. 1.22 ↑ (w3)

Obv. Head of Zeus r., laureate; border of dots.

A Θ

Rev. E Kernos.

Sv. 107.9–11.

F5. 1.73 ↖ (w3) *F6. 1.90 ↑ (w2)

Obv. Head of Demeter r., veiled; border of dots.

A Θ

Rev. E Triptolemos l., mounting winged chariot drawn by serpents.

Sv. 104.29–30.

F7. 4.86 ↑ (w2)

³³ Kroll, *Δελτ.*, 27, 1972, A', pp. 87, 106, nos. 7–8.

ATHENIAN CHRONOLOGY, 200–86 B.C.

In addition to the three Agora deposits, five hoards, and one museum lot published here, there are three other deposits and eight other recorded hoards which are fundamental for the establishment of a relative and absolute chronology of the Athenian bronzes struck between *ca.* 200 and 86 B.C. These are tabulated below in Table III, p. 32. The additional deposits and hoards are:

Agora Deposit H–K 12–14 (Middle Stoa Building Fill). The deposit comprises the coins excavated in the construction filling of the Middle Stoa in the Athenian Agora. 189 coins were securely identifiable after cleaning. These have been published in *Hesperia*, 44, 1975, pp. 304–311 (Deposits I and II). The date at which the building fill was closed has been placed about 180 B.C. on the basis of the stamped amphora handles, which do not include any varieties datable after 183 or 182 B.C.³⁴ In Table III, only the fully legible 2nd century Athenian coins are listed.

Agora Deposits P–R 6–12 and Q–R 10–11 (Stoa of Attalos Building Fill). The deposit comprises the coins excavated in the construction filling of the Stoa of Attalos, as well as those associated with a small brick building underlying the stoa, and a small hoard from an extension of the Stoa of Attalos terrace. 56 coins were securely identifiable after cleaning. These have been published in *Hesperia*, 44, 1975, pp. 315–317 (Deposits IV and V). The building fill was probably closed *ca.* 150–146 B.C. No amphora stamps later than 146 were present in the fill, nor were there any long-petal Megarian bowls, a variety introduced at Corinth just before the destruction of the city in 146.³⁵ In Table III, only the fully legible 2nd century Athenian coins are listed.

Agora Deposit M–N 15:1 (South Stoa II Building Fill). The deposit comprises the coins excavated in the construction filling of South Stoa II, as well as those found in the destruction debris of South Stoa I (the predecessor of South Stoa II), and those contained in the uppermost floors of South Stoa I. 95 coins were securely identifiable after cleaning. These have been published in *Hesperia*, 44, 1975, pp. 319–325 (Deposits VI–VIII). The building fill of South Stoa II was probably closed about 140 B.C., and contained some long-petal Megarian bowls.³⁶ In Table III, only the fully legible 2nd century Athenian coins are listed.

Porto Rapti 1967 (IGCH, 279, Athens Numismatic Collection). 16 Athenian bronze coins found in Porto Rafti in eastern Attica in 1967; cited by M. Caramessini-Oeconomides in *Δελτ.*, 23, 1968, B', p. 12. In addition to the coins listed in Table III, the hoard contained the following: Athena/Fulminating Zeus (1, Sv. 81.19–24).

³⁴ V. R. Grace, "Les timbres amphoriques grecs," *Délos*, XXVII, Paris, 1970, pp. 291, 320; *idem*, "Stamped Handles of Commercial Amphoras," *Excavations at Nessana*, I, London, 1962, p. 124.

³⁵ G. R. Edwards, *Corinth*, VII, iii, *Corinthian Hellenistic Pottery*, Princeton, 1975, pp. 176–179. Information regarding the amphora stamps courtesy V. R. Grace.

³⁶ Information regarding the pottery courtesy H. A. Thompson.

Attica 1906 (IGCH, 280, Athens Numismatic Collection). 84 bronze coins (Athens 83, Eleusis 1), part of a larger hoard, found in 1906; published by Svoronos in *Jour. Int. Arch. Num.*, 9, 1906, pp. 298–299, and again by Price in *Num. Chron.*, Ser. 7, 4, 1964, pp. 28–29 (Hoard II).³⁷ Price lists 87 coins, but Svoronos published only 84, and in 1973–74 only 84 were in the museum trays. In addition to the coins listed in Table III, the hoard contained the following: Athena/Owl r. (1, Sv. 22.78–79); Athena/Fulminating Zeus (2, Sv. 81.40–44, 49–52); Eleusis (1, Sv. 103.1–13).

Attica 1927 (IGCH, 281, American Numismatic Society). 288 Athenian bronze coins found in 1927; published by A. R. Bellinger in *Amer. Num. Soc. N. Mon.*, 42, 1930, pp. 1–9, and again by Price in *Num. Chron.*, Ser. 7, 4, 1964, pp. 28–29 (Hoard III).³⁸ The American Numismatic Society acquired 255 pieces from the hoard. My record of the hoard's contents differs slightly from Bellinger's. The entry in Table III is based solely upon the 255 coins I examined in New York in 1973. In addition to the tabulated coins, the New York lot contained the following: Athena/Fulminating Zeus (7, Sv. 81.17–31; 3, Sv. 81.30–39; 1, Sv. 81.40–44, 49–52; 13, Sv. 81.17–52).

Attica 1937 (IGCH, 282, Athens Numismatic Collection). 118 bronze coins (Athens 116, Boiotia 1, Eleusis 1) found in 1937; cited by Varoucha in *B.C.H.*, 61, 1937, p. 443. In addition to the coins listed in Table III, the hoard contained the following: Athena/Fulminating Zeus (6, Sv. 81.17–31; 1, Sv. 81.40–44, 49–52; 5, Sv. 81.17–52); Boiotia (1, BMC, 81–89); Eleusis (1, Sv. 103.1–13).

Pnyx 1937 (IGCH, 274, Agora). 240 Athenian bronze coins³⁹ discovered on the Pnyx in Athens in 1937 by the American excavation team; published by S. S. Atherton with commentary by M. Thompson in 1943,⁴⁰ and again by Price in *Num. Chron.*, Ser. 7, 4, 1964, pp. 28–29 (Hoard IV).⁴¹ The coins had been concealed between 1934 and 1937 in a burlap bag, but the character of the deposit suggests that it was an ancient as well as a modern hoard. In addition to the coins listed in Table III, the hoard contained the following: Athena/Owl r. (1, Sv. 22.64–70; 1, Sv. 22.73–79); Athena/Fulminating Zeus (3, Sv. 81.17–31; 6, Sv. 81.17–52). My record differs slightly from those of Atherton and Price.

Plaka 1944 (IGCH, 275, R. Evelpidis coll., Athens; casts at American Numismatic Society). 85 Athenian bronze coins found in a pot in the Plaka, Athens, in 1944;

³⁷ Other bibliography: Thompson, *Athens*, pp. 526ff. (Hoard 2).

³⁸ Other bibliography: Thompson, *Athens*, pp. 526ff. (Hoard 1).

³⁹ The initial publication reports 243 coins, but both Price and myself were able to locate only 131, as opposed to 134, Cicada/Owl pieces.

⁴⁰ G. R. Davidson and D. B. Thompson, *Hesperia*, Suppl. VII, *Small Objects from the Pnyx: I*, Princeton, 1943, p. 14, note 8, pp. 24–27.

⁴¹ Other bibliography: Thompson, *Athens*, pp. 526ff. (Hoard 4).

published by Price in *Num. Chron.*, Ser. 7, 4, 1964, pp. 28–29 (Hoard I).⁴² My record, based on the American Numismatic Society casts, differs slightly from Price's list.

Athens 1969 (Athens Numismatic Collection). 150 bronze coins (Athens 148, Antigonos Gonatas 1, Ambrakia 1) found in 1969; published by Oeconomides and Kleiner in *Ath. Ann. Arch.*, 7, 1974, pp. 149–156. In addition to the coins listed in Table III, the hoard contained the following: Athena/Fulminating Zeus (4, Sv. 81.19–24; 15, Sv. 81.17–31; 1, Sv. 81.40–44, 49–52; 7, Sv. 81.17–52); Antigonos Gonatas (1, *SNG, Cop.* 1205–1213); Ambrakia (1, *SNG, Cop.* 32–34).

Piraeus 1926 (*IGCH*, 316, Athens Numismatic Collection). 1716 bronze coins (Athens 1650, Boiotia 1, Illegible 65) found in Piraeus in 1926; cited by Oikonomos in *B.C.H.*, 50, 1926, p. 537, and published (forthcoming) in *Δελτ.*, 28, 1973, A'. In addition to the coins listed in Table III, the hoard contained the following: Athena/Owl I. (1, Sv. 22.85–88); Athena/Fulminating Zeus (6, Sv. 81.19–24; 64, Sv. 81.17–31; 7, Sv. 81.30–39; 22, Sv. 81.40–44, 49–52; 448, Sv. 81.17–52); Boiotia (1, *BMC*, 81–89); Illegible (65).

The contents of the Agora deposits and Attic hoards are summarized in Table III. FZ denotes Athena/Fulminating Zeus. Uncertain identifications, 4th and 3rd century Athenian coins, and foreign pieces are omitted from the tabulation, but have been noted in the foregoing discussion of the deposits and hoards.

We may begin with the establishment of a relative chronology, postponing for the moment the assignment of dates to the various issues. The three earliest AE 1 series (excluding the ca. 200 B.C. Athena/Zeus-holding-thunderbolt varieties, *Type 1*) are the Athena/Fulminating Zeus pieces with star and eagle, wheat ear and eagle, and cornucopiae and eagle, as symbols (*Types 2a, 2b, 2c*). These are the only 2nd century AE 1 coins present in the construction fills for the Middle Stoa and the Stoa of Attalos in the Athenian Agora. There is little evidence to indicate the order in which these three series were issued, except that a small hoard of six coins found in the Agora excavations contained three examples each of the star and wheat-ear varieties. The coins, perhaps the contents of a purse, may have been lost prior to the striking of the cornucopiae variety, suggesting that *Type 2c* postdates *Types 2a* and *2b*.⁴³ Internal evidence is of little help, inasmuch as the reverse ethnic is arranged differently in each case and none

is identical to that of the Athena/Zeus-holding-thunderbolt types. Only the A E arrangement of *Type 2b* is repeated in later series (*Types 2d, 2g*). The orientation of obverse and reverse dies varies from upright or nearly upright (↖ ↑ ↗) to opposite or nearly opposite (↙ ↓ ↘) in all three cases. This is true for all series through *Type 2d*

⁴² Other bibliography: Thompson, *Athens*, pp. 526ff. (Hoard 6).

⁴³ Kleiner, *Hesperia*, 44, 1975, p. 317, Deposit V.

TABLE III. AGORA DEPOSITS AND ATTIC HOARDS

	Middle Stoa	Stoa of Attalos	South Stoa II	Athens <i>IK</i> . 124 (F)	Agora H 12:1	Tambouria 1938 (A)	Agora A-B 19-20:1	Attica 1951 (E)	Athens 1955 (C)	Attica 1949 (B)	Porto Raphti 1967	Agora B 20:9	Attica 1906	Attica 1927	Attica 1937	Pnyx 1937	Plaka 1944	Keratea 1954 (D)	Attica 1969	Piraeus 1926
FZ, star	4	3	4		1	6				6	1			8	1			1	6	6
FZ, wheat ear	4	3	3		1	8	2			10		1	1	11	7			3	8	16
FZ, cornucopiae	4	2	5		3	6			1	7	1		2	3	5	1	1		5	12
Demeter/Pig				2	1	1	1						1		1			1	1	7
Apollo/Owl and lyre							1			1			1		2			1	2	10
Zeus/Fighting Athena			1			1			5	27	5		12	34	22	5	15	13	22	170
FZ, pilos						3			1	2			2	3	1				2	2
FZ, kernos, cornucopiae						6			1	6		2	4	9		2	1	6	4	15
FZ, amphora, cornucopiae									1	1				3	2		2	1		5
FZ, amphora									2	5	1		8	9	5	3	8	4	2	22
FZ, two piloi									4	47	2		10	71	47	15	6	18	37	88
FZ, bakchos											2		2	13	5	5	11	1	9	36
FZ, thyrsos												1	4	27	6	7	12	5	23	31
FZ, star between crescents																				235
Cicada/Amphora	4	3	2		5	4	1	19				64								
Demeter ?/Amphora			1																	
Demeter ?/Pig				1																
Apollo/Owl on amphora					1															
Apollo/Kernos				1	1		1	1												
Zeus/Kernos				2	1															
Athena/Amphora									1			3	6			14		1		2
Athena/Two owls							3	8	6		3	23	19	40		46	25	22		434
Cicada/Owl									6			2	8			131	4	25		11

(i.e. *Types 1, 2a-d, 3-5, 7-9*); thereafter the dies are always fixed in an upright or nearly upright position.

In the deposits associated with the construction of South Stoa II, the last of the three great 2nd century stoas to be erected in the Agora, *Types 2a, 2b, and 2c*, are again present, but a new AE 1 type (*Type 3*) also appears, Zeus/Fighting Athena. At this point, the Athena/Fulminating Zeus series is interrupted and a series of special issues with a wide variety of types is struck.⁴⁴ Contemporary with the Zeus/Fighting Athena types are the two rare AE 1 varieties Demeter/Pig (*Type 4*) and Apollo/Owl and lyre

⁴⁴ By "special" I do not mean to imply that the coins commemorate a specific occasion or that they are medallic in character, but that they deviate from the standard Athena/Fulminating Zeus iconography of the 2nd century. After a short time, striking of the Athena/Fulminating Zeus types was resumed. These special AE 1 types also exhibit a variation in die position (↖ ↗ or ↘ ↙).

(*Type 5*). One Demeter/Pig piece was found in Agora Deposit H 12:1 with five Athena/Fulminating Zeus coins of *Types 2a–c*. No later AE 1 pieces were included in the deposit. In Agora Deposit A–B 19–20:1, the only four 2nd century AE 1 coins were two Athena/Fulminating Zeus pieces (*Type 2b*), and one coin each of the Demeter/Pig and Apollo/Owl-and-lyre types.

The Athena/Fulminating Zeus series is resumed with the pilos-and-eagle variety (*Type 2d*), which first appears in the Tambouria 1938 hoard (3 pieces), in conjunction with 6 kernos, cornucopiae, eagle coins (*Type 2e*) and other earlier AE 1 types. The pilos variety must precede the kernos, cornucopiae issue for the latter is clearly to be associated with the amphora, cornucopiae, eagle series (*Type 2f*) which is only present in later hoards. The greater number and better preservation of the kernos, cornucopiae, eagle pieces in the Tambouria hoard (6w1–3 *vs.* 3w4–6, pilos, eagle) reinforces this supposition.

The kernos, cornucopiae, eagle variety of the Athena/Fulminating Zeus series is followed by the closely related, very rare, amphora, cornucopiae, eagle issue (*Type 2f*) and then by the simpler amphora, eagle variety (*Type 2g*), the last to include an eagle beside Zeus on the reverse. The two issues are present in the Athens 1955 and Attica 1949 hoards, as well as in later burials. The latest pieces in these two hoards are, however, of the Athena/Fulminating Zeus, two-piloi type (*Type 2b*), the first of this series to substitute a symbol for the eagle of Zeus. The Attica 1949 hoard contained 47 two-piloi specimens (w2–4), more than all the other Athena/Fulminating Zeus varieties combined.

The two-piloi issue is succeeded by the bakchos and thyrsos varieties (*Types 2i* and *2j*). These first appear in a series of hoards and deposits (Porto Raphti 1967, Agora B 20:9, Attica 1906, Attica 1927, Attica 1937, Pnyx 1937, Plaka 1944, Keratea 1954, Attica 1969) where they are regularly better preserved than all other issues and more numerous than all but the two-piloi coins.⁴⁵ The bakchos and thyrsos varieties are of

A Θ

the same format (symbol E) and are very likely contemporary. In the small Porto Raphti 1967 find, only the bakchos issue is present, and in the other hoards there are usually more thyrsos than bakchos pieces. This suggests that the bakchos variety may have been struck first, but it is not certain.

The final Athena/Fulminating Zeus issue is the star-between-crescents variety (*Type 2k*), which only occurs in the Piraeus 1926 hoard, where it is by far the most common and best preserved type (235w1–3 *vs.* 88w2–5, two piloi, and 89w2–4, bakchos or thyrsos).⁴⁶ The star-between-crescents variety also differs in weight from all preceding

⁴⁵ The two-piloi variety seems to have been struck in greater quantities than any other Athena/Fulminating Zeus type, with the exception of the final, star-between-crescents series (*Type 2k*).

⁴⁶ The 89 bakchos and thyrsos pieces comprise the 67 tabulated pieces and 22 other pieces in which the symbol is uncertain, but where the ethnic (A Θ E) indicates that the symbol is either bakchos or thyrsos. See p. 4 above.

AE 1 types (15–20% heavier) and constitutes a transition between the 6–7 g. 2nd century AE 1 pieces and the 10–11 g. post-Sullan AE 1 coins.⁴⁷

The late 3rd century fractional types which accompanied the Athena/Zeus-holding-thunderbolt types are the Athena/Owl-on-thunderbolt and Athena/Owl-on-prow AE 3 pieces (*Types* 7 and 8).⁴⁸ The first “New Style” fractions are the Cicada/Amphora bronzes (*Type* 9), which are the only 2nd century small-denomination coins present in the Middle Stoa and Stoa of Attalos building fills. The Cicada/Amphora types are contemporary with the first three Athena/Fulminating Zeus varieties (*Types* 2a–2c).

A new AE 3 variety, Demeter?/Amphora (*Type* 10), is present in an Agora deposit connected with the construction of South Stoa II. This series, and several other AE 3 varieties which do not depict Athena either on obverse or reverse, must be contemporary with the three special AE 1 types, Zeus/Fighting Athena, Demeter/Pig, and Apollo/Owl and lyre (*Types* 3–6). These issues include Demeter?/Pig (*Type* 11), which echoes the Demeter/Pig AE 1 types, Apollo/Owl on amphora (*Type* 12), Apollo/Kernos (*Type* 13), and Zeus/Kernos (*Type* 14). All appear either in Agora Deposit H 12:1, with AE 1 *Types* 2a–c and 3, and with five Cicada/Amphora fractions, or in Athens *IIIK*. 124, with two Demeter/Pig AE 1 pieces. Apollo/Kernos and Zeus/Kernos are present in both deposits.⁴⁹ The following other fractional types, not included in the tabulated Attic hoards or Agora deposits, may be associated with these on stylistic and iconographic grounds: Apollo/Amphora (AE 3, Pl. 4, 97–100),⁵⁰ Artemis/Kernos (AE 3, Pl. 4, 101–104),⁵¹ and Zeus/Eagle (AE 2, Pl. 4, 105–109).⁵² The Apollo/Amphora variety has been found in a well in the Kerameikos in conjunction with the Zeus/Fighting Athena AE 1 type.⁵³

⁴⁷ Kleiner, forthcoming in *Δελτ.*, 28, 1973, A'.

⁴⁸ Kleiner, *Hesperia*, 44, 1975, p. 328; forthcoming in *Amer. Num. Soc. Mus. N.*, 20, 1975.

⁴⁹ Apollo/Owl-on-amphora pieces were also present in the small Delos 1968 hoard comprising only these and Cicada/Amphora types. T. Hackens, *Archaeometry*, 11, 1969, pp. 170–171 (*IGCH*, no. 324).

⁵⁰ Sv. 106.12–16.

97. Athens 1.89 ↑ (Christomanos coll., 1055) 99. Agora 2.10 ↗ (Δ-169)

98. Athens 1.96 ↑ (Inv. II. 199 = Sv. 106.12) 100. Athens 2.38 ↗ (Christomanos coll., 1077)

⁵¹ Sv. 106.76–83.

101. Athens 1.22 ↑ (Delos 1899/1900, IH', 85) 103. Athens 1.52 ↑ (Delos 1906/7, ΚΓ', 309)

102. Athens 1.31 ↘ (Delos 1899/1900, IH', 78) 104. Athens 1.77 ↘ (Delos 1906/7, ΚΓ', 308)

⁵² Sv. 22.59–61. Svoronos believed that this series was the fractional denomination accompanying Zeus/Fighting Athena.

105. Agora 2.30 ↗ (Φ-98)

106. Athens 3.42 ↑ (Inv. 2772 = Sv. 22.60)

107. Athens 3.80 ↑ (Delos 1899/1900, IH', 99 = Sv. 22.61)

108. Agora 3.97 ↗ (ΩΔ-42)

109. Athens 4.43 ↑ (Delos 1908/9, Λ15, 28)

⁵³ K. Braun, “Der Dipylon-Brunnen B₁. Die Funde,” *Ath. Mitt.*, 85, 1970, pp. 165, 193, 196, pl. 77,5, 6, Abschnitt XII, nos. 215–220. The six coins from this level are 1, Sv. 24.10–17 (3rd century); 1, Sv. 22.53–55 (Zeus/Fighting Athena); and 4, Sv. 106.12–16 (Apollo/Amphora).

Closely related to this group of unusual iconographical types is the Athena/Amphora AE 3 issue (*Type 15*). The reverse type of the Cicada/Amphora, Demeter?/Amphora, and Apollo/Amphora series is retained, and Athena's head in Corinthian helmet, the obverse type of the Athena/Fulminating Zeus AE 1 issues, is adopted for the fractional denomination. The Athena/Amphora types may be somewhat later than the special AE 3 issues, because such pieces still turn up in some late hoards which may be connected with Sulla's presence in Attica, 88–86 B.C.: Attica 1906, Pnyx 1937, Keratea 1954, and Piraeus 1926. The other amphora- and kernos-reverse fractions do not appear in these or in other Sullan hoards. On stylistic grounds, the Athena/Artemis AE 2 types (Pl. 4, 110)⁵⁴ may be associated with the Athena/Amphora series.

The most important fractional type of the 2nd century, Athena in Attic helmet/Two owls on thunderbolt (*Type 16*), first appears in Agora Deposit A–B 19–20:1, and is well represented in late hoards and deposits: Agora B 20:9, Attica 1906, Attica 1927, Pnyx 1937, Plaka 1944, Keratea 1954, and Piraeus 1926. Contemporary with this AE 3 series, or perhaps somewhat later, is the chief AE 2 issue of the 2nd century, Cicada/Owl (*Type 6*). Cicada/Owl pieces are also common in the late hoards and deposits: Agora B 20:9, Attica 1906, Pnyx 1937, Plaka 1944, Keratea 1954, and Piraeus 1926. In the Pnyx find they outnumber the AE 1 pieces. The series is not included in Agora A–B 19–20:1 or Attica 1951. On stylistic and iconographical grounds, the rarer Artemis?/Cicada AE 2 series (Pl. 4, 93–96)⁵⁵ is probably contemporary with the Cicada/Owl types.

In assigning absolute dates to the 2nd century Athenian bronze types, we are fortunate in having several fixed points of reference: the construction fillings of the Middle Stoa (*ca.* 180 B.C.), of the Stoa of Attalos (*ca.* 150 B.C.), and of South Stoa II (*ca.* 140 B.C.); the Agora deposits of the third quarter of the 2nd century (H 12:1 and A–B 19–20:1); and the Attic hoards which can convincingly be associated with Sulla (Porto Rapti 1967, Attica 1906, Attica 1927, Attica 1937, Pnyx 1937, Plaka 1944, Keratea 1954, Attica 1969, and Piraeus 1926).

A key element in the establishment of an absolute chronology is also the Athena/Fulminating Zeus issue with star between crescents as symbol (Pl. 2, 30–33). The identical symbol also appears on the reverses of Athenian New Style gold and silver coins (e.g., Pl. 4, 111–112) which bear the names of ΒΑΣΙΛΕ ΜΙΘΡΑΔΑΤΗΣ and ΑΡΙΣΤΙΩΝ. These coins have traditionally been associated with the Pontic king

⁵⁴ Sv. 81.53–56. Svoronos had grouped this series with the Athena/Fulminating Zeus types.

110. Athens 3.80↗ (ITK. 50)

⁵⁵ Sv. 107.28–35.

93. Agora 3.29↗ (ITΘ-447)

94. Athens 4.25↘ (Inv. 1892/3, KΘ', 711)

95. Athens 5.34↑ (Inv. 2777 = Sv. 107.33)

96. Athens 5.55↑ (Delos 1908/9, Λ15, 7 = Sv. 107.30)

Mithradates VI, his Athenian supporter Aristion, and the events of 87/86 B.C.⁵⁶ It is the star-between-crescents issue which is the basis of the Sullan dating of the Piraeus hoard and the other Attic burials which include all Athena/Fulminating Zeus types except the Mithradates issue. These hoards must have been secreted shortly after Sulla appeared in Attica, but before the Mithradatic coins had been struck, or at least before they had circulated widely.

The date of the last Athena/Fulminating Zeus issue is thus secure. The evidence of the coins from the building fill of the Middle Stoa furnishes a *terminus ante quem* for the beginning of the series. The fill was closed about 180 B.C. and the three Athena/Fulminating Zeus varieties in the deposit—star and eagle, wheat ear and eagle, and cornucopiae and eagle (*Types 2a-c*)—were probably struck between 200 and 180 B.C. The Cicada/Amphora series (*Type 9*) may be assigned a similar date. The earlier Athena/Owl-on-thunderbolt (*Type 7*) and Athena/Owl-on-prow (*Type 8*) fractions were issued late in the 3rd century, the Athena/Zeus-holding-thunderbolt series (*Type 1*) at the end of the 3rd or the beginning of the 2nd century.

The construction filling for the Stoa of Attalos included no 2nd century Athenian bronze types not present in the Middle Stoa building fill and there appears to have been a period of some thirty or more years when the Athenian mint did not strike any bronze coins—from *ca.* 180 to *ca.* 150 B.C., the date when the Stoa of Attalos fill was closed.⁵⁷ It is possible that one or more of the special issues with Apollo, Demeter, etc. as types were issued during this period, but the evidence clearly indicates a thirty-year gap in the bronze, if not in the silver, coinage.

New types first appear in contexts dating to the third quarter of the 2nd century. The deposits associated with the demolition of South Stoa I and the building of South Stoa II *ca.* 140 B.C. contain examples of the Zeus/Fighting Athena (*Type 3*) and Demeter?/Amphora (*Type 10*) series. Agora Deposit H 12:1 includes Demeter/Pig (*Type 4*), Apollo/Owl-on-amphora (*Type 12*), Apollo/Kernos (*Type 13*), and Zeus/Kernos (*Type 14*) pieces. Athens *ΠΚ.* 124, if it is in fact a hoard, must also have been formed during the third quarter of the century. It contains Demeter/Pig (*Type 4*), Demeter?/Pig (*Type 11*), Apollo/Kernos (*Type 13*) and Zeus/Kernos (*Type 14*) pieces in excellent condition. All these special issues (which, with the exception of the Zeus/

⁵⁶ The traditional dating of these coins is accepted here, but has been questioned by Thompson, *Athens*. For the historical background, Plut., *Sulla*, 12–15; Appian, *Mithr.*, 5.28–6.41; R. Weil, “Das Bündniss der Athener mit Mithradates,” *Ath. Mitt.*, 6, 1881, pp. 315–337; T. Reinach, *Mithradate Eupator*, Paris, 1890, pp. 154–177; W. S. Ferguson, *Hellenistic Athens*, London, 1911, pp. 437–459; U. von Wilamowitz-Moellendorf, “Athenion und Aristion” (1923), in *Kleine Schriften*, V, i, Berlin, 1937, pp. 204–219; F. Geyer, “Mithradates,” *RE*, XV, 1932, cols. 2171–2173; H. A. Ormerod, *Cambr. Anc. Hist.*, IX, 1932, pp. 246–248; M. Laffranque, “Poseidonios historien,” *Pallas*, 11, 1962, pp. 103–113; J. Deininger, *Der politische Widerstand gegen Rom in Griechenland*, Berlin, 1971, pp. 245–261.

111. Athens 16.20↘ (tetradrachm)

112. Athens 4.05↑ (drachm)

⁵⁷ Kleiner, *Hesperia*, 44, 1975, p. 330.

Fighting Athena types, were struck in small quantities) were in circulation in the third quarter of the century, very likely by *ca.* 140 B.C. to judge from the South Stoa deposits. In the following decade, the next Athena/Fulminating Zeus variety, pilos and eagle (*Type 2d*), and the Athena/Amphora fraction (*Type 15*) were probably issued, the latter in larger quantities than all the preceding 2nd century fractions, with the exception of the huge Cicada/Amphora series which apparently fulfilled the fractional bronze currency needs of Attica for about half a century.

The last three Athena/Fulminating Zeus varieties with eagle as attribute of Zeus—kernos, cornucopiae (*Type 2e*), amphora, cornucopiae (*Type 2f*), and amphora (*Type 2g*)—were probably struck during the period *ca.* 130–*ca.* 110 B.C. These coins are moderately to very worn (w3–6) in the Sullan hoards and, as demonstrated above, are earlier in the sequence than the late 2nd and early 1st century Athena/Fulminating Zeus series (*Types 2h–j*) which are in fresher condition in the Sullan burials.

From *ca.* 130 on, the Athenian mint issued the two most important fractional types of the 2nd century, Athena/Two owls on thunderbolt (AE 3, *Type 16*) and Cicada/Owl (AE 2, *Type 6*). Athena/Two owls is already present in Agora Deposit A–B 19–20:1 and in the Attica 1951 hoard. Cicada/Owl first appears in the Athens 1955 hoard. With the exception of the Athena/Amphora AE 3 types (*Type 15*), these are the only fractions included in the Sullan hoards.⁵⁸ The condition of these pieces in the burials of 88–86 B.C. ranges from w1 to w6, from mint condition to extremely worn. This pattern is consistent in the larger hoards⁵⁹ and suggests that the Athena/Two-owls and Cicada/Owl types were issued over many years, from late in the third quarter of the 2nd century to just before the secretion of the hoards, *ca.* 90 B.C.

The large Athena/Fulminating Zeus, two-piloi issue (*Type 2h*) was probably struck during the last decade of the 2nd century. In the Sullan hoards, two-piloi coins are normally in the range w2–4. The paired piloi have often been associated with the New Style silver series signed ΔΗΜΗΤΡΙΟΣ and ΑΓΑΘΙΠΠΟΣ,⁶⁰ and although it is hazardous to base a chronology upon the duplication of bronze and silver symbols,⁶¹ it is likely in this case that the two-piloi pieces in both metals are contemporary. The

⁵⁸ In Agora Deposit B 20:9, which must also date from the years around 86 B.C., 64 Cicada/Amphora coins were also present. The deposit is, however, a gradual accumulation of lost material rather than an emergency burial. The deposit also included 4th century Athenian bronzes and cannot be used as evidence for the type of currency in circulation when the deposit was closed.

⁵⁹ Attica 1927: Athena/Two owls, 40w2–5. Pnyx 1937: Athena/Two owls, 46w2–5; Cicada/Owl, 131w1–6. Keratea 1954: Athena/Two owls, 22w3–5; Cicada/Owl, 25w2–5. Piraeus 1926: Athena/Two owls, 434w2–6; Cicada/Owl, 11w2–6.

⁶⁰ Thompson, *Athens*, pp. 320–329, pls. 98–102. The 47 obverse dies employed for this series is the highest number recorded for the entire New Style silver coinage. For the association of the two-piloi bronze coins with the Demetrios-Agathippos silver, see, most recently, Price, *Num. Chron.*, Ser. 7, 4, 1964, p. 35. Two piloi are also used as symbols on the post-Sullan bronze coins with New Style types, Sv. 79.8–14.

⁶¹ Kleiner, *Hesperia*, 44, 1975, p. 327; Thompson, *Athens*, pp. 525–526; Bellinger, *Amer. Num. Soc. N. Mon.*, XLII, New York, 1930, p. 12.

Demetrios and Agathippos silver coinage was issued about 100 B.C.⁶² Price has suggested that the Attica 1949 hoard, which includes no pieces later than Athena/Fulminating Zeus, two piloi, was buried at the time of the Laurion slave uprising of 104–102 B.C.⁶³

The Athena/Fulminating Zeus, bakchos and thyrsos varieties (*Types 2i* and *2j*) must have been struck between *ca.* 100 and *ca.* 90 B.C. There are well-preserved (w2–3) specimens of these series in all Sullan hoards, sometimes in conjunction with

TABLE IV. CHRONOLOGY OF ATHENIAN BRONZE COINS

200–180 B.C.	FZ, star, eagle (Pl. 1, 4–5) FZ, wheat ear, eagle (Pl. 1, 6–8) FZ, cornucopiae, eagle (Pl. 1, 9–11) Cicada/Amphora (Pl. 3, 58–61)
150–140	Demeter/Pig (Pl. 2, 40–42) Apollo/Owl and lyre (Pl. 2, 43–45) Zeus/Fighting Athena (Pl. 2, 34–39) Demeter?/Amphora (Pl. 3, 62–66) Demeter?/Pig (Pl. 3, 67–72) Apollo/Owl on amphora (Pl. 3, 73–76) Apollo/Amphora (Pl. 4, 97–100) Apollo/Kernos (Pl. 3, 77–79) Artemis/Kernos (Pl. 4, 101–104) Zeus/Kernos (Pl. 4, 80–83) Zeus/Eagle (Pl. 4, 105–109)
140–130	FZ, pilos, eagle (Pl. 1, 12–13) Athena/Amphora (Pl. 4, 84–86) Athena/Artemis (Pl. 4, 110)
130–110	FZ, kernos, cornucopiae, eagle (Pl. 1, 14–17) FZ, amphora, cornucopiae, eagle FZ, amphora, eagle (Pl. 1, 18–20)
130–90	Athena/Two owls on thunderbolt (Pl. 4, 87–92) Cicada/Owl (Pl. 3, 46–50) Artemis?/Cicada (Pl. 4, 93–96)
110–100	FZ, two piloi (Pl. 1, 21–23)
100–90	FZ, bakchos (Pl. 2, 24–26) FZ, thyrsos (Pl. 2, 27–29)
87–86	FZ, star between crescents (Pl. 2, 30–33)

⁶² Thompson, *Athens*, pp. 320–329 (131/0 B.C.). The date (99/98 B.C.) proposed by Lewis, *Num. Chron.*, Ser. 7, 2, 1962, pp. 275–300, and by Boehringer, *op. cit.* (note 9 above), p. 202, is more likely to be correct.

⁶³ Price, *Num. Chron.*, Ser. 7, 2, 1962, p. 32. Price appears to have confused “Kyriaki,” the donor of the hoard to the Athens cabinet, with “Keratea,” a town not far from Laurion. The Keratea 1954 hoard is a Sullan burial, but this does not, of course, rule out the possibility that the Attica 1949– Kyriaki hoard was connected with the slave revolt at Laurion.

more worn pieces (w4–5). The final issue, with the star between crescents of Mithra-dates the Great (*Type 2k*), can be dated precisely to 87/86.

The dates suggested here for the Athenian bronze coins struck between *ca.* 200 and 86 B.C. are summarized in Table IV. FZ denotes Athena/Fulminating Zeus.

ATHENIAN BRONZE COINAGE IN THE 2ND CENTURY B.C.

The 2nd century B.C. marks a turning point in the numismatic iconography of Athens. From the introduction of the first Old Style owls in the 6th century B.C. until the early 2nd century, the coin types refer almost exclusively to Athena and her owl. There are some notable exceptions on the 3rd century bronze. Zeus and Artemis appear on the obverses of some rare AE 1 pieces, in conjunction with Athena holding a patera and her owl on the reverses.⁶⁴ Zeus and an amphora are paired on some other AE 1 coins.⁶⁵ Eleusinian types, with the AΘE ethnic of Athens, depicting Demeter, a kernos, the Eleusinian pig, and a bakchos or bakchos ring in wheat wreath, are also known.⁶⁶ These coins are, however, comparatively rare. In the Agora excavations, the Athena-and-owl, two-owls, or double-bodied-owl types far outnumber the other 4th and 3rd century bronze coin finds,⁶⁷ and on the silver, Athena and her owl are the invariable types.

With the striking of the Athena/Zeus-holding-thunderbolt and Athena/Fulminating Zeus types, we enter a new phase of Athenian bronze coinage, a period of new content if not of "New Style." The owl no longer dominates the reverses and, in fact, appears only on the fractional denominations and on a very rare AE 1 variety, Apollo/Owl and lyre. Even here, Athena is replaced by Apollo and the owl is accompanied by Apollo's lyre. Zeus assumes a position of prominence on the coins. The god is the standard AE 1 reverse type and replaces Athena on the obverse in the large Zeus/Fighting Athena series. The owls on the Athena/Two-owls and Cicada/Owl series ride Zeus' thunderbolt. Other deities are commonly represented—Apollo, Demeter, Artemis—and sacred or symbolic animals and pots are plentiful—pig, cicada, amphora, kernos.

The 2nd century forms a bridge between the Athena/Owl iconography of the 4th and 3rd centuries and the 1st century, where, after a brief revival of the Athena/Owl types, a wide variety of designs adorns the coins—Apollo, Zeus, Dionysos, Nike, sphinx, tripod, gorgoneion, etc. Finally, in the coinage of Roman Athens, diversity becomes the rule and the Athenian mint strikes coins with an ever-changing series of types

⁶⁴ Sv. 25.1–10.

⁶⁵ Sv. 25.15–21.

⁶⁶ Sv. 103.33–46; 104.1–23.

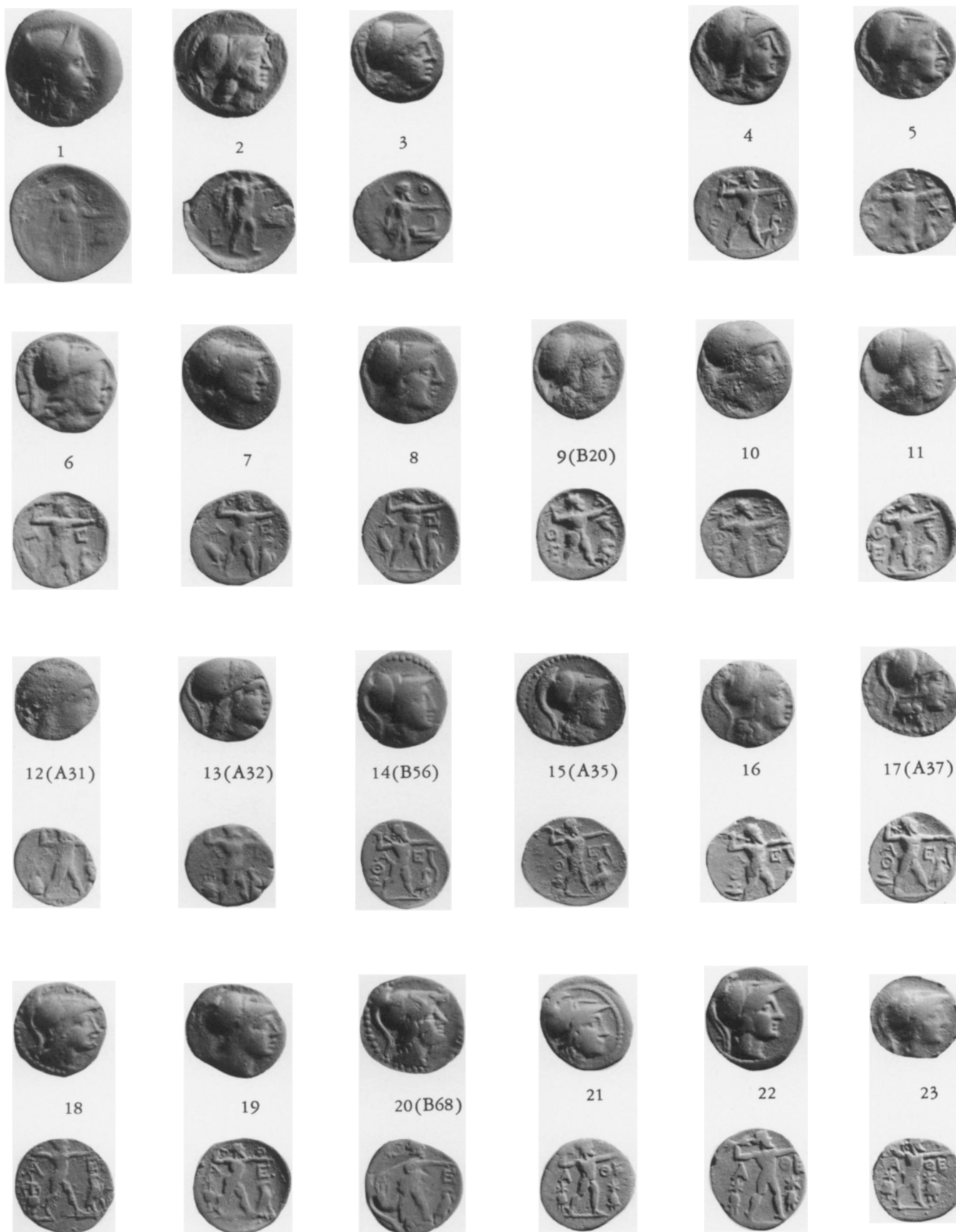
⁶⁷ For an early statistical compilation, J. P. Shear, "Analytical Table of Coins," *Hesperia*, 5, 1936, pp. 123–129.

which include not only deities and sacred animals, but mythological scenes, famous statues, and two of the major architectural monuments of the city, the theater of Dionysos and the Akropolis.⁶⁸

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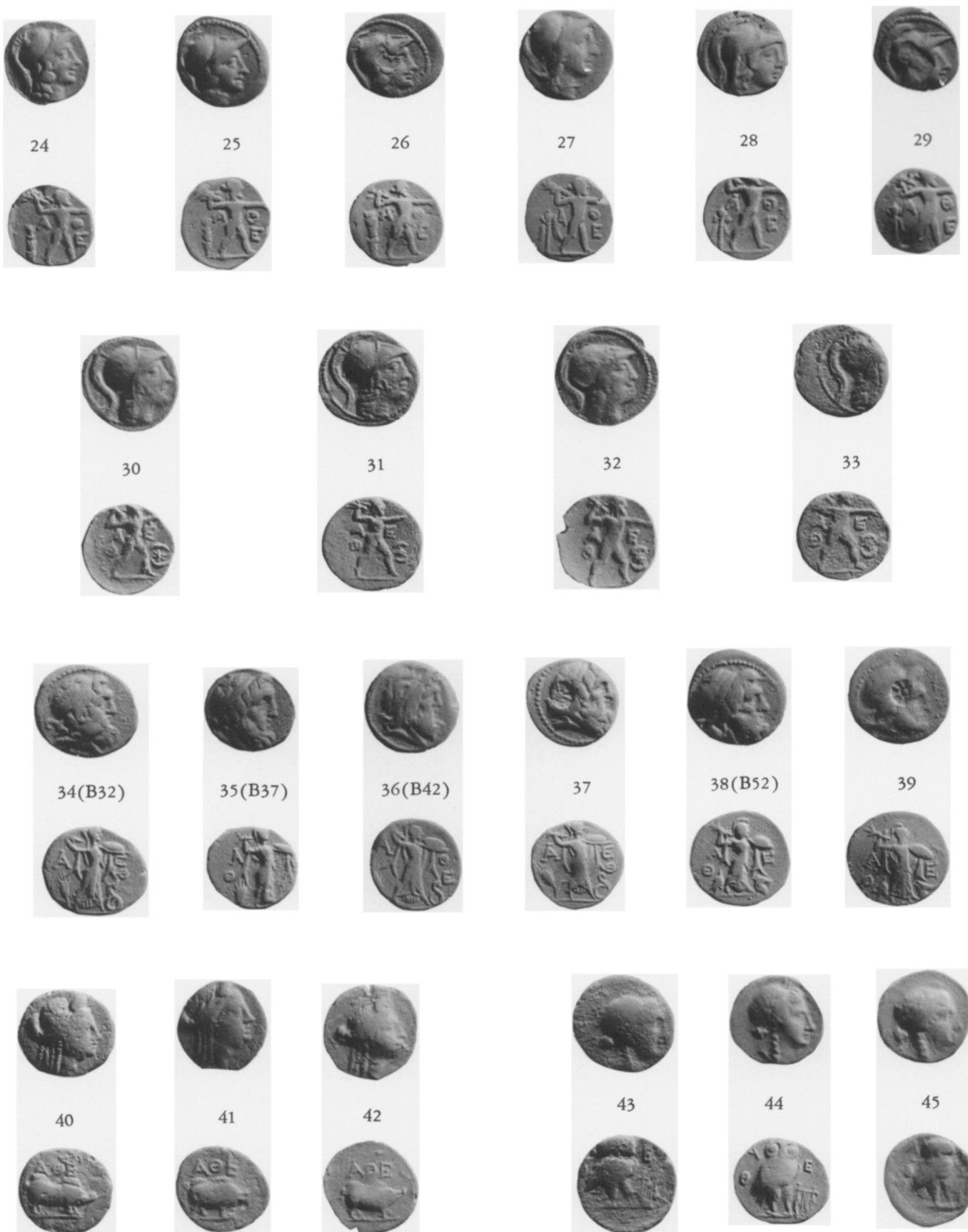
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⁶⁸ Sv., pls. 82–99. J. P. Shear, “Athenian Imperial Coinage,” *Hesperia*, 5, 1936, pp. 285–327; J. H. Kroll, “The Eleusis Hoard of Athenian Imperial Coins and Some Deposits from the Athenian Agora,” *Hesperia*, 42, 1973, pp. 312–333 (clarification of chronology, but no illustrations).

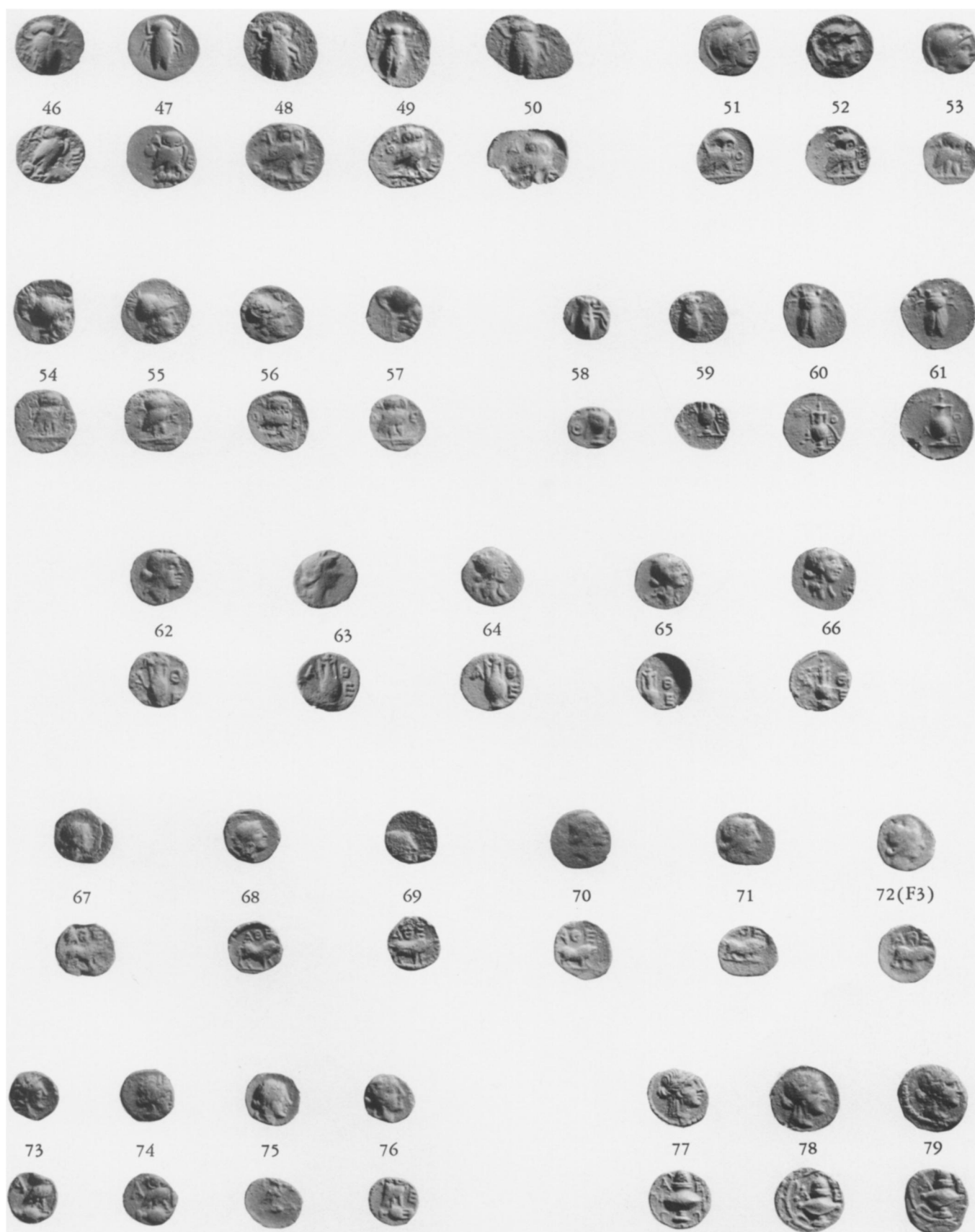


Athenian bronze types: *Types 1* (1-3) and *2a-b* (4-23)

PLATE 2

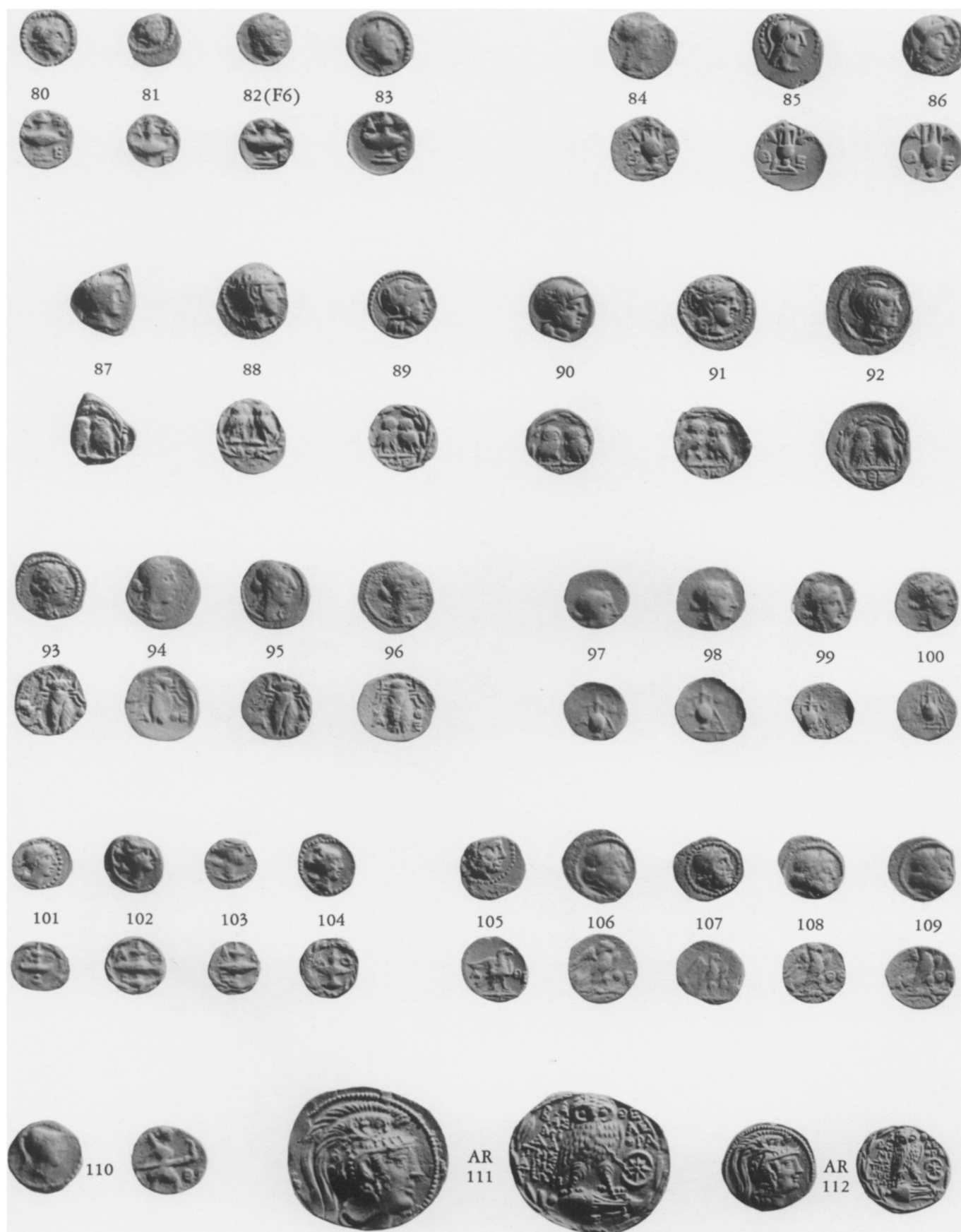


Athenian bronze types: *Types 2i-k* (24-33), *3* (34-39), *4* (40-42), and *5* (43-45)



Athenian bronze types: *Types 6* (46-50), *7* (51-53), *8* (54-57), *9* (58-61), *10* (62-66),

PLATE 4



Athenian bronze types: *Types 14* (80-83), *15* (84-86), *16* (87-92), and contemporary issues (93-112)