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City Coins from Roman Palestine Made of Lead and Comparable Materials

YOAV FARHI

INTRODUCTION

LEAD, a cheap, soft metal, was used as currency from ancient times. In the sixth century BCE, Polycrates of Samos is said to have persuaded the Spartans to remove their troops from the island by paying them with gold-plated lead coins.¹ In the Hellenistic period lead currency became more popular (see below), although it was by no means an exception in monetary history.²

OVERVIEW

The main question regarding Hellenistic, Roman and later lead issues concerns their function in the economy. Below are the common explanations of these objects. Obviously, there was no single use for lead issues, and many examples of most of the functions are known:

1. Emergency coins struck in lead at the time of a shortage of copper or other precious metals³

¹ Herodotus III, 56.

² Babelon describes numerous examples of ancient lead coins. See E. Babelon: *Traité des Monnaies Grecques et Romaines, part 1*, vol. 1, Paris, 1901, cols. 371–374.

³ Milne published clay tesserae from Palmyra, which are actual copies of bronze coins of Sidon. In his opinion, they may have been used as coins in trade when there was a shortage of bronze coins in circulation. If so, it seems that in case of a real shortage of bronze even clay was used as a substitute; See J. G. Milne: *Local Currencies of East Syria under the Roman Empire, Ancient Egypt and the East* (1934), pp. 24–25, nos. 1–4; J. G. Milne: *Syriac Substitute-Currencies, Iraq 6* (1939), pp. 93–94, nos. 1–2. McDowell published clay objects that bear designs approximating Seleucid coin types; see R. H. McDowell: *Stamped and Inscribed Objects from Seleucia on the Tigris*, Ann Arbor, 1935, pp. 241–250. In his opinion they had a certain official character, possibly as admission tokens to public feasts or games (*ibid.*, pp. 241–242). He rejects Milne’s opinion that the objects from Palmyra were used as coins on the grounds that “recourse to clay coinage must then have resulted from a prolonged shortage of stocks of the necessary metals — not from a temporary interruption of traffic” (*ibid.*, pp. 242–243 n. 14). For additional clay tokens see: M. Lang and M. Crosby: *The Athenian Agora: Results of Excavations Conducted by the American School of Classical Studies at Athens*. Vol. X: *Weights, Measures and Tokens*. Princeton. 1964. Pp. 124–130. In my opinion, it is hard to believe that these clay pieces circulated as replacements for bronze coins. I would rather see them as tokens.

2. *Tesserae* (tokens) redeemable for goods or services
3. Test pieces or trial strikes for bronze or silver coin dies
4. Coin-like weights (?)
5. Legal currency, usually small change, supplementing bronze or in periods in which almost no bronzes were minted

1. Emergency coins: Excavations at Nisa, the early Parthian capital, have brought to light several lead coins, including four tetradrachms and three drachms with types of Alexander the Great (dated to the days of Seleucus I), as well as two tetradrachms with types of Antiochus III and a drachm of an early Parthian type.⁴ Because no traces of plating remained on the coins, Lorber and Houghton do not believe that these were lead cores for silver coins. In their opinion, the lead in these coins was used as a substitute for silver and probably reflects a shortage of silver for local minting.⁵ Another lead tetradrachm of Antiochus III was published by Houghton as a test piece,⁶ but Hoover suggested that it may have served as an emergency coin or token.⁷

D. Barag⁸ and later O. D. Hoover, as well as other scholars, have shown clearly that lead coins that copied bronze prototypes were occasionally struck in the second and first centuries BCE by the Ptolemies,⁹ Seleucids,¹⁰ Hasmoneans,¹¹

⁴ A. Houghton and C. Lorber: *Seleucid Coins: A Comprehensive Catalogue*, part 1: *Seleucus I through Antiochus III*, New York and Lancaster, 2002, pp. 98, 466.

⁵ *Ibid.*

⁶ A. Houghton: Some Seleucid Test Pieces, *AJN*, 2nd series, 9 (1997), pp. 3–4, no. 3.

⁷ O. D. Hoover: *Coins of the Seleucid Empire from the Collection of Arthur Houghton*, part 2, New York, 2007, pp. 154–155, no. 852.

⁸ D. Barag: Some Examples of Lead Currency from the Hellenistic Period, in A. Houghton, S. Hurter, P. E. Mottahedeh, and J. A. Scott (eds.), *Studies in Honor of Leo Mildenberg: Numismatics, Art History, Archaeology*, Wetteren, Belgium, 1984, pp. 1–5.

⁹ For Ptolemaic lead coins, see J. N. Svoronos: *Ta Nomismata tou Kratous ton Ptolemaion*, Athens, 1904, vol. 2, p. 236, nos. 1429–1430; O. D. Hoover: A Reassessment of Nabataean Lead Coinage in Light of New Discoveries, *NC* 166 (2006), p. 112; O. D. Hoover: Ptolemaic Lead Coinage in Coele Syria (103–101 BCE), *INR* 3 (2008), pp. 81–85.

¹⁰ For Seleucid lead issues see Barag (n. 8 above), p. 3; A. Houghton: Two Late Seleucid Lead Issues from the Levant, *INJ* 11 (1990–91), pp. 30–31, no. 9; Hoover, Reassessment (n. 9 above), p. 112 and nn. 26, 28; 117 and n. 62; O. D. Hoover: A Late Hellenistic Lead Coinage from Gaza, *INR* 1 (2006), p. 34, no. 14.

¹¹ For lead coins of Alexander Jannaeus, see Barag (n. 8 above), pp. 1–3; Y. Meshorer: *A Treasury of Jewish Coins from the Persian Period to Bar Kokhba*, Jerusalem and Nyack, NY, 2001, pp. 47–48, 211, Group M. Hendin published several new Jewish lead issues, only one of which is a copy of a known bronze coin type; see D. Hendin: Four New Jewish Lead Coins or Tokens, *INJ* 13 (1994–99), pp. 63–64, no. 1. This one seems to me to be a coin, whereas the others were probably used as tokens. Recently a

Nabataeans,¹² and some cities, such as Ascalon (?)¹³ and Gaza.¹⁴ In addition, in the late Hellenistic period lead may have been used for copying silver coins.¹⁵

Barag argues that the Hellenistic lead coins were emergency money.¹⁶ This is also Hoover's opinion regarding the Ptolemaic lead coinage in Coele-Syria.¹⁷ As for the Nabataean lead issues, Hoover argues that they were probably used as some sort of token.¹⁸

2. Lead *tesserae* (tokens) from the Greek and Roman periods are known from various cities and regions.¹⁹ This term is usually used for coin-shaped objects that were minted on one side only and/or bear types not known in contemporary coins. In addition, they tend to lack certain marks, such as a city legend or date. Thus, it seems unlikely that their original function was to circulate as coins. But, as Kovalenko notes, we cannot rule out the possibility that over time lead *tesserae*

new type of lead coin, also struck under Jannaeus, was published; see J. P. Fontanille: Two Unrecorded Hasmonean Coins, *INR* 2 (2007), pp. 91–92, no. 2).

¹² The most recent discussion of Nabataean lead issues is by Hoover (Reassessment, n. 9 above). See also Y. Meshorer: *Nabataean Coins* (Qedem, no. 3), Jerusalem, 1975, pp. 85–86, no. 3; Barag (n. 8 above), pp. 3–4; K. Schmitt-Korte: Nabataean Coinage, part 2: New Coin Types and Variants, *NC* 150 (1990), p. 107, no. 7.

¹³ Barag (n. 8 above, p. 4) ascribed one lead coin to Ascalon. According to Hoover (Reassessment, n. 9 above, p. 112, n. 27), this is a Ptolemaic coin; he also claims that the inscription on the reverse of better-preserved specimens is B-A and not A-[Σ], as reported by Barag.

¹⁴ Hoover, Late Hellenistic Lead Coinage (n. 10 above). Houghton published a lead issue (represented by eight specimens) that he describes as probable Coele-Syrian issues of Antiochus VIII (Houghton, n. 10 above, pp. 26–30, nos. 1–8). Hoover recently argued that this issue was most likely produced by a city or local dynast of Coele-Syria in the first century BCE and not by Antiochus VIII (Hoover, n. 7 above, pp. 151–152, nos. 839–842).

¹⁵ Milne, Syriac Substitute-Currencies (n. 3 above), pp. 96–97, fig. 3.

¹⁶ Barag (n. 8 above), p. 4.

¹⁷ Hoover, Ptolemaic Lead Coinage (n. 9 above).

¹⁸ Hoover, Reassessment (n. 9 above), pp. 117–118.

¹⁹ See, for example, M. Rostovtzeff: *Tesserarum Urbis Romae et Suburbi Plumbearum Sylloge*, St. Petersburg, 1903; M. Lang and M. Crosby: *The Athenian Agora: Results of Excavations Conducted by the American School of Classical Studies at Athens*. Vol. X: *Weights, Measures and Tokens*. Princeton, 1964, pp. 76–123; S. A. Kovalenko: Struck Lead Pieces from Tauric Chersonesos: Coins or Tesserae? *NC* 162 (2002), pp. 33–58; O. Gülbay and H. Kireç: *Ephesian Lead Tesserae*, Selçuk, Turkey, 2008. For finds from Egypt, see below. For a small lead tessera bearing the mintmark of Gaza, see Hoover, Late Hellenistic Lead Coinage (n. 10 above), p. 33, no. 4. See also two unique lead coin-like objects, probably from Antioch, published by Seyrig (H. Seyrig: *Antiquités Syriennes* II, Paris, 1938, pp. 44–45, pl. VI: 1–2, 4–5) as jetons. Based on their shape and types, I believe they may have been used as coins.

acquired monetary status and circulated as small change along with ordinary coins.²⁰

3. Lead test pieces are known from all over the ancient world,²¹ usually in one of three forms: (1) an impression of a single die on one side of a lead plate, which is larger than the usual coin flan and often square;²² (2) impressions of two reverse or obverse dies, one on each side, if both sides of a flan resembling a normal coin are impressed;²³ (3) two dies on a single flan resembling a normal coin except for its metal and size (it is much larger than the usual coin flan).²⁴ Determining whether something is a test piece or a coin is the most difficult in the last case.

4. Coin-like weights(?): Based on a coin-like lead object published by Hoover,²⁵ it is possible that lead weights, shaped like coins but much heavier, were used in the Seleucid period, perhaps in a Seleucid mint.²⁶

²⁰ Kovalenko (n. 19 above), p. 52. A thorough discussion of this subject is beyond the scope of this paper. For further information and bibliography, see M. K. Thornton: The Roman Lead Tesserae: Observations on Two Historical Problems, *Historia: Zeitschrift für Alte Geschichte* 29, no. 3 (1980), pp. 335–355, and the relevant references in the text above.

²¹ A nice example of a lead test piece or trial strike, probably from the late 5th-early 4th centuries BCE, is known from the Bardawil Reef (Egypt); see also Z. Ilan and A. Yosef: Ancient Settlements on the Bardawil Reef, *Qadmoniot* 38–39 (1977), pp. 78–79 (Hebrew). Comstock and Vermeule published a list titled “surviving lead trial pieces” that included seventeen known objects — sixteen lead and one bronze — dated to the Greek — and Roman periods (6th century BCE–3rd century CE); see M. Comstock and C. C. Vermeule: *Greek Coins, 1950–1963*, Boston, 1964, p. 75. In my opinion, since no pictures or full details of these objects were published, the identification of these items as test pieces or trial strikes should be treated with caution.

²² See, for example, Houghton, n. 6 above, p. 5, no. 5; W. Fischer-Bossert: A Lead Test-Piece of a Syracusan Tetradrachm by the Engravers Euth ... and Eum ..., *NC* 162 (2002), pp. 1–9, pls. 2:4, 7; 3:10–12 and 13–14 (?); D. Gricourt, D. Hollard, F. Pilon. Plomb et faux-monnaie en Gaule Romaine: Épreuves de Coins et Empreintes Monétaires Inédites. *Revue Belge de Numismatique et de Sigillographie* 149 (2003): 11–41. pls. I: 1, A, and II: 6, 7 (?). I wish to thank Fabien Pilon and Daniel Gricourt for sending me a copy of their paper and for discussing their finds with me. Hoover (n. 7 above), p. 154, no. 851; O. D. Hoover: Lead Test Pieces, in A. Houghton, C. Lorber and O. Hoover: *Seleucid Coins: A Comprehensive Catalogue*, part 2: *Seleucus IV through Antiochus XIII*, New York and Lancaster, 2008, pp. 237–239, fig. 4. One might wonder why anybody would bother producing a nice round flan as a test piece or trial strike instead of just using a flat piece of lead. One possible explanation for the use of round lead flans is that the lead ingots arrived at the mint as elongated, round (sausage-shaped) bars.

²³ See, for example, Houghton (n. 6 above), p. 2, no. 1; Hoover (n. 7 above), p. 154, no. 850; Hoover, Lead Test Pieces (n. 22 above), fig. 1.

²⁴ See, for example, Fischer-Bossert (n. 22 above), pl. 1:1.

²⁵ Hoover (n. 7 above), p. 155, no. 853; 2008b, p. 239, fig. 5

²⁶ In my opinion, the portrait might be of a Roman emperor (Hadrian?). If so, judging by

5. Legal currency: Lead coins from the Roman period are known as well but seem to be discussed less by scholars than the Hellenistic ones. Le Rider discussed thousands of small lead coins from Susa, struck by the kings of Characene in the mid-first century CE.²⁷ Like the examples from the Hellenistic period, the lead issues from Susa copy bronze coins rather closely. Local lead currency from the Hellenistic and Roman periods is also known from other parts of the ancient world such as Spain, Italy and Central Asia.²⁸

Dattari, Milne, Geissen and Weiser, and Emmett have described local lead currency of Roman Egypt in the late second and third centuries CE.²⁹ Unlike the Hellenistic examples above, these items were probably used as local tokens rather than emergency money.

Geissen and Weiser included in their catalogue one lead coin minted in the name of Antoninus Pius³⁰ and four lead coins (all probably from the same dies)

the beveled edge and the size of the flan, it may have originated in Alexandria. From the published picture of this object it seems that the reverse is not blank; the remains of a figure standing left — a known type in Alexandria (e.g. A. Geissen: *Katalog Alexandrinischer Kaisermünzen der Sammlung des Instituts für Altertumskunde der Universität zu Köln, vol. 2: Hadrian — Antoninus Pius (Nr. 741–1994)*, Opladen, Germany, 1978, p. 94, no. 1007) — are visible. For a Roman-period lead issue (42mm, 161.58gr., dated to the 1st century BCE–1st century CE), attributed to Spain, that may have been used as a weight, see *Classical Numismatic Group Mail Bid Sale 67* (September 22, 2004), lot 1079.

²⁷ G. Le Rider: *Monnaies de Characène, Syria 36* (1959), pp. 236–237, nos. 21–29; G. Le Rider: *Suse sous les Séleucides et les Parthes: Les Trouvailles Monétaires et L'Histoire de la Ville*, Paris, 1965, pp. 188–189, 254 nos. 436–443.

²⁸ For Late Hellenistic lead coins from Spain and central Italy, see C. Stannard: *Numismatic Evidence for Relations between Spain and Central Italy at the Turn of the Second and First Centuries BC, SNR 84* (2005), pp. 47–79 (with further bibliography). It seems that lead issues were very common in Spain (where they are known as “Plomos Monetiformes”); see the bibliography at <http://data.numismatics.org/cgi-bin/libsearch?format=default&fld=any&kw=plomos&type=any&fld=any&kw=&year=&fld=any&kw=>. For lead coins from Central Asia, see R. C. Senior: *Indo-Scythian Coins and History*, Lancaster, 2001, nos. 302, 308, 343, 367–372. I thank Mr. Senior for this reference.

²⁹ G. Dattari: *Numi Augg. Alexandrini*, Cairo, 1901, pp. 426–438, nos. 6412–6547, 6564–6574; J. G. Milne: *The Leaden Token-Coinage of Egypt under the Romans, NC* (1908), pp. 287–310; J. G. Milne: *Catalogue of Alexandrian Coins*, Oxford, 1933, pp. xliv–xlv; A. Geissen and W. Weiser: *Katalog Alexandrinischer Kaisermünzen der Sammlung des Instituts für Altertumskunde der Universität zu Köln, vol. 4: Claudius Gothicus — Bleimünzen (Nr. 3015–3627)*, Opladen, Germany, 1983, pp. 8, 178–213, nos. 3495–3627; K. Emmet: *Alexandrian Coins*, Lodi, WI, 2001, nos. 4275–4675. I did not have access to Emmett’s book.

³⁰ Two similar coins are in the Kadman Numismatic Pavilion, Tel Aviv. These two coins (K-62638 [35.32 gr., 28–29 mm] and K-62639 [39.31 gr., 29–30 mm]) seem to be cast

minted under Claudius Gothicus.³¹ These lead issues, which are copies of known coins, were described by the authors as “imitations”.³²

Milne has also published examples of Roman lead coins found in Syria and Palestine, some of them copies of Roman *denarii*. According to Milne, some of these issues may have been used as coins, but the function of others is unknown.³³ Based on a testimony of Cassius Dio regarding the debased currency that Caracalla furnished to the Romans — “The gold that he gave them was of course genuine, whereas the silver and the gold currency that he furnished to the Romans was debased; for he manufactured the one kind out of lead plated with silver and the other out of copper plated with gold” (*Roman History*, LXXVIII, 14, 4) — it is possible that the lead *denarii* published by Milne were originally silver plated, as the one supplied by Caracalla.

What seems to be a hitherto-unpublished Roman lead coin appeared recently in *Gerhard Hirsch Nachfolger*, Auction 248–249 (February 6, 2007), lot 1914 (no. 1 below).³⁴ The diameter of the coin is 24 mm, the weight is unknown and the axis seems to be 12 (Fig. 1).

1. *Obv.*: Laureate bust of Hadrian to r., wearing paludamentum and cuirass; inscription obliterated
Rev.: Fortuna(?) standing l., draped, holding patera(?) in r. and cornucopia in l.; in l. field [S] and in r. field C; inscription obliterated



This coin seems to be a lead copy of a known bronze coin;³⁵ if so, it may have been minted in Rome itself, or it may be an ancient copy made in one of the provinces.

rather than minted and made of a different alloy than lead. For these reasons, I suspect they are modern imitations.

³¹ Geissen and Weiser (n. 29 above), pp. 174–175, no. 3489; p. 176, nos. 3490–3493.

³² According to Mr. Weiser (personal communication), we know nothing about the origin of these coins; they may be from the Roman period but they may not. I thank Mr. Weiser for this information.

³³ Milne, *Syriac Substitute-Currencies* (n. 3 above), pp. 96–99, fig. 5; J. G. Milne: *Leaden Currencies in Syria*, *NC* 5 (1945), pp. 134–136.

³⁴ I wish to thank Gerhard Hirsch Nachfolger of Munich for his permission to use the pictures of this coin.

³⁵ H. Mattingly and E. A. Sydenham: *The Roman Imperial Coinage*, vol. 2: *Vespasian to Hadrian*, London, 1926, p. 443, no. 812.

ROMAN LEAD CITY COINS FROM SYRIA-PALAESTINA

The first Roman lead city coin from Syria-Palaestina to be published was a coin from Nysa-Scythopolis (no. 2) minted in the name of Caracalla and dated to 215–216 CE.

2. Pb; 16.48 gr.; 31–32 mm; axis: 12 (Fig. 2)
Obv.: Laureate and draped bust of Caracalla to r.; from bottom l., [AVTO.KAI.-ANTΩNINOC]
Rev.: In five lines within wreath,
 ΘOC/NVCAΩ/CKVΘOΠI/IEPACA/CV[ΛOV]³⁶



According to Barkay, this coin was minted with the same dies as a bronze coin of the city, known from a single specimen published by Spijkerman.³⁷ She assumes this was a trial piece.

Recently, a Roman lead coin of Gaza, from the collection of the late Chaim Yashin, was published (no. 3).

3. Pb; 28.88 gr.; 27.5–28.5mm; axis: 12 (Fig. 3)
Obv.: Laureate bust of Antoninus Pius to r., wearing paludamentum and cuirass; from top r., ANTΩ...-CC[BA]
Rev.: Bust of Tyche r., draped, turreted and veiled; to r. ΓAZA and 4; to l. date: [...]IC³⁸



³⁶ R. Barkay: Rare and Unpublished Coins from the Bank of Israel Numismatic Collection, *INJ* 14 (2002), p. 188, no. 8; R. Barkay: *The Coinage of Nysa-Scythopolis (Beth-Shean)*, Jerusalem, 2003, pp. 79, 214, no. 51a.

³⁷ A. Spijkerman: *The Coins of the Decapolis and Provincia Arabia*, Jerusalem, 1978, pp. 198–199, no. 34; Barkay, *Coinage of Nysa-Scythopolis* (n. 36 above), pp. 79, 214, no. 51.

³⁸ C. Yashin: *From Ascalon to Raphia: City-Coins of the Southern Palestinian Coast*, Jerusalem, 2007, p. 79, pl. 18:371.

The coin, in the name of Antoninus Pius, is part of a well-known series of large bronze coins minted between 140/1 and 160/1 CE and having a portrait of Tyche on the reverse. The first letter of the date is not clear. The reverse of this coin is especially similar to the coins dated 215–217 (154/5–156/7 CE), but since this type of obverse die with the inscription CCBA is known only for year 217 (156/7 CE),³⁹ perhaps the coin should be dated to that year.

Another hitherto-unpublished lead coin from the same series of large bronzes, minted in the name of Antoninus Pius, is in the Hebrew University collection (no. 4).

4. Pb; 29.92 gr.; 26–28mm; axis: 12 (Fig. 4)

Obv.: Laureate bust of Antoninus Pius to r., wearing paludamentum and cuirass(?); from bottom l., KAI AΔPIAN- ANTΩN[EINO]

Rev.: Bust of Tyche r., draped, turreted and veiled; to r. ΓΑΖΑ and 4; to l. date: ΘC

HU collection, no. 3710 (unpublished)⁴⁰



The coin is dated to the year 209 (148/9 CE). Several similar bronze coins with similar (but not identical) dies are known.⁴¹

Both coins are part of the well-known series of Antoninus Pius's large bronze coins depicting Tyche. This series was probably very prominent and well known in the Roman period (as it is in collections today). Perhaps that is why people in those days were willing to use these coins, along with the bronze issues.

³⁹ See, for example, M. Rosenberger: *City-Coins of Palestine (The Rosenberger Israel Collection)*, vol. 2: *Caesarea, Diospolis, Dora, Eleutheropolis, Gaba, Gaza & Joppa*, Jerusalem, 1975 (Gaza), no. 76; Y. Meshorer: *Sylloge Nummorum Graecorum: The Collection of the American Numismatic Society*, part 6: *Palestine-South Arabia*, New York, 1981, no. 929.

⁴⁰ I wish to thank Prof. D. Barag, the curator of the numismatic collection, for the permission to publish this coin.

⁴¹ See, for example, Rosenberger (n. 39 above), no. 72; Yashin (n. 38 above), p. 76, no. 348.

DISCUSSION

In addition to the five explanations presented above for lead issues, we should consider another explanation. This one is especially applicable to lead issues that directly copy known coins and are found only in small quantities, such as the provincial issues presented above.

In my opinion, some lead issues, such as the ones from Gaza and Nysa-Scythopolis, may have been produced by local mints for use as legal tender. The evidence that lead and bronze coins were minted in the same year and even with the same dies indicates that the reason for the lead minting was probably not a shortage of copper or bronze.

I would like to suggest that these coins were used as replacement issues in some cases when the mint failed to supply a fixed number of bronze coins from a certain quantity of metal and needed to fill the gap. In these cases the lead issues (probably not many), minted in the same denominations and weight as the bronze ones, were added to the bronze series and circulated in the local market just like the bronze coins.

This possibility is similar to explanation 1 (above), but since in these cases the reason for using lead was not a shortage of copper, but rather a wrong division of a given amount of metal into a certain number of specimens, it should be considered a different explanation.

The evidence that these lead coins did circulate and were not melted might indicate that, in some cases, less care was given to the metal from which the coins were made than to the denomination, which was determined by the type and diameter of the dies and not by the flan diameter and/or an individual weight. The denominations of city coins are hard to determine. As Kadman notes in his discussion of the city coins of Ptolemais: "The coins even of the same type and size differ widely in weight. The weight of the individual bronze coins was obviously not controlled. The minting authorities seem to have been satisfied to receive a fixed number of pieces from a certain quantity of metal."⁴²

The above two specimens from Gaza and the one from Nysa-Scythopolis, as well as examples from other cities,⁴³ are strong evidence, in my opinion, that at

⁴² L. Kadman: *The Coins of Akko Ptolemais* (Corpus Nummorum Palestinensium, no. 4), Jerusalem, 1961, p. 41. On this subject, see also P. Grierson: *Numismatics*, Oxford, 1975, pp. 96–97. Regarding the denominations of city coins (especially in Roman Palestine), see Barkay, *Coinage of Nysa-Scythopolis* (n. 36 above), pp. 171–178.

⁴³ In the course of this study, I came across other Roman provincial lead coins. Some are in public or private collections; others are mentioned in various publications (for example, Milne [Syriac Substitute-Currencies, n. 3 above, p. 97] mentions a leaden copy of a Tyrian bronze of Trebonianus Gallus, but does not provide a picture or other details about it). As these coins were either in a poor state of preservation or were published without sufficient detail, they are not included here.

least some lead coins were minted for circulation and not merely as trial strikes. The evidence of some Late Roman or Early Byzantine lead issues,⁴⁴ as well as Early Islamic and even Mamluk lead coins,⁴⁵ indicates that this monetary phenomenon continued in these periods as well.

⁴⁴ R. Barkay: The Coins of Horvat 'Eleq, in Y. Hirschfeld, *Ramat Hanadiv Excavations*, Jerusalem, 2000, p. 415 and pl. XI: 1–5; G. Bijovsky: The Currency of the Fifth Century C.E. in Palestine: Some Reflections in Light of the Numismatic Evidence, *INJ* 14 (2002), p. 202.

⁴⁵ N. Amitai-Preiss: Some Arab-Byzantine and Umayyad Coins from the Hebrew University Collection, *INJ* 11 (1990–91), pp. 98–99, nos. 6–8; N. Amitai-Preiss: Islamic Lead Coins, Weights and Seals in the Israel Museum, *Israel Museum Studies in Archaeology* 6 (2007), pp. 13–14, 16–17, nos. 1–5; N. Amitai-Preiss and Y. Farhi. A Small Assemblage of Lead Sealings, Weight and Coins from the Early Islamic Period. *INJ* 17 (this volume); L. A. Mayer: Lead Coins of Barqūq, *QDAP* 3 (1934), pp. 20–23 and pl. XIII: a-d.