

Bullae

Sharon Herbert

INTRODUCTION

This chapter¹ presents a group of 21 small clay sealings, of the type commonly known as bullae, found during the rescue project at Zeugma in 2000.² These are tiny clay pellets (average 15 mm dia.) that carried impressions of individuals' seal rings and were commonly used to close and notarize papyrus and parchment documents in the Hellenistic and Roman eras. Those under study here represent only a very small sample of the 140,000+ sealings unearthed at Zeugma from 1998 to 2000.³ The overwhelming majority of the bullae from the site were found in the Gaziantep Museum excavations of Trench 3, where their presence in such vast and concentrated numbers suggests the existence of a public archive building.⁴ In contrast, the sealings from the OA excavations were found in scattered and mostly surface contexts across the site. Twelve of the pieces under consideration here came to light in the spoil heap of Trench 4 (ZB9–21) and two (ZB7–8) were from Trench 13, the first a surface find and the second from Sasanian destruction debris of A.D. 252/253. There was a single item (ZB21) from Trench 2, also from Sasanian destruction debris. An intriguing group of six, the iconography of which suggest connections with Caesarea of Cappadocia (ZB1–6), came from various levels of the houses and shops of Trench 9.⁵ In this chapter I will first locate the bullae from Zeugma in the context of known Hellenistic and Roman sealing practices and archives and then discuss the individual finds from the OA excavation areas of the PHI rescue project of 2000. I conclude with a catalogue.

HELLENISTIC AND ROMAN ARCHIVES AND SEALING PRACTICES

What we know of the sealing practices of the Hellenistic and Roman eras comes from a small number of excavated caches of clay sealings, commonly called archives, that range geographically from Carthage in the West to Seleucia-on-the-Tigris in the East and in date from the mid-fourth century B.C. to the early first century A.D. They vary in size from 38 sealings found at Elephantini in Upper Egypt to 30,000+ from the Italian excavations at Seleucia-on-the-Tigris.⁶ Others include Artaxata in Armenia (8,000), Carthage (4,025), Cyrene (4,000), Delos (16,000+), Edfu (647), Gitana in Epirus (2,500), Kallipolis (600), Kedesh in the Upper Galilee (2,043), Nea Paphos (11,000), Pella (100+), Selinus (688), a small group found in the American excavations at Seleucia-on-the-Tigris

(164), Uruk (897), and Wadi Daliyeh in the Judaeian Desert (128+).⁷ Further information comes from the plethora of papyrus documents from Egypt, which testify to the variety of transactions recorded — sales and leases, wills, marriage contracts, manumissions, and innumerable tax receipts and exemptions. These, though, come down to us, for the most part, recycled as cartonnage in animal mummies and have been stripped of their seals. It is rare to find both document and seals preserved together.⁸ The unbaked clay pellets that seal the papyrus documents do not normally survive beyond a few decades without being subjected to fire — fire that inevitably destroys the records that the pellets sealed. The so-called archives that we have thus consist for the most part of clay sealings without their documents and present serious difficulties in interpretation.⁹ The Zeugma finds are no exception. We have the baked sealings but no papyri. What is exceptional about the Zeugma material is the quantity — more than all the previous collections put together — and the date, which runs at least into the late second century A.D.

From the Hellenistic era there are three distinct types of clay sealings associated with papyri. These were recognized early on in the study of the bullae from Uruk and the American excavations at Seleucia-on-the-Tigris.¹⁰ The first sealing type consists of a cylinder of clay or bitumen wrapped around the papyrus roll and impressed with multiple seals. String marks are sometimes visible on the interior of these. Rostovtzeff made the point that these “envelope” sealings are the only ones that should properly be called bullae.¹¹ The second type is a small clay pellet pierced by one or multiple string holes with a single seal impression on the obverse and papyrus or parchment impressions on the reverse. These are generally marked on the sides by fingerprints made in the process of impressing the seal into the pellet. Rostovtzeff called these medallions, and McDowell referred to them as convex appended sealings.¹² The third type is irregular in shape and exhibits no papyrus markings. These were attached to the loose end of the cords attached to papyri. Because most of this type found at Seleucia were large, McDowell concluded that they were used for the most part to fasten large containers, packages, or warehouses and called them “container appended sealings.”¹³ In fact, my own examination of more recently excavated collections of sealings shows that this type was in common use with papyri. I divide the two types of appended sealings on the basis of shape into “pinched” and “triangular.” The pinched type (Rostovtzeff’s “medallion” and McDowell’s “convex appended sealing,” type two above) has a convex obverse on which the seal is impressed and a

slightly concave reverse that normally carries the marks of papyrus onto which the sealing was affixed. The triangular type has a flat obverse on which a single seal was impressed; it comes to a point at the reverse and bears no papyrus marks, but does carry fingerprints on the sides. These were not affixed to papyrus but rather folded around the cord that tied the roll. None of the sealings published here are of the envelope type; nine are pinched in shape, and four are triangular. The discovery of the vast majority of these types of sealings in Hellenistic contexts (only the Cyrene archive closes later than the first century B.C., and it runs just to A.D. 117) has led to the impression that these sealing practices are predominantly Hellenistic. The evidence from the papyri, however, shows that the medallion type continued in use until paper replaced papyrus and parchment in the medieval period.¹⁴ Of particular interest for our study are a group of the so-called double documents from the Euphrates area dated to the mid-third century A.D.¹⁵ There is as well a fourth type of sealing, which is solely Roman in date. These are generally known as "Untersiegelung."¹⁶ They are flat and circular in shape and often carry the impression of papyrus on the back, but have no string holes or fingerprints. None of this type has been reported from any of the published Hellenistic archives. Eight of the sealings published here are of this type.

Much has been written about the function of the Hellenistic seals and the archival practices they imply.¹⁷ It is generally agreed that for the most part they served to protect the documents they sealed from illicit emendation. The envelope bulla, once it had dried around the rolled papyrus, would be difficult to remove without damage.¹⁸ The convex appended sealings protected the sealed part of Greek "double documents" and bore the seals of contractors, witnesses, and officials, and they were also used on the exterior of rolled papyri.¹⁹ The Roman Untersiegelung, on the other hand, seem to have served a different purpose. They did not seal the document, but rather were affixed to the bottom of an open sheet.²⁰ These were meant to be presented as official validation of what was written on the document, whether it be payment of import or export duties or road taxes.²¹

One significant class of Hellenistic sealed documents deals with taxes, payment of or exemption from. The largest group of these comes from Seleucia-on-the-Tigris, where over half of 30,000 sealings found in the Italian excavations deal with the salt tax. These seals bear the portrait of the Seleucid monarch and the year of the payment. The connection of large numbers of seals with imperial taxation has led to debate about the nature of the archives in which the seals were found. It has long been recognized that not all Hellenistic archives are "official" in the sense that they constitute royal or even municipal repositories of public records. Rather, many of the ancient archives are collections of personal records kept in individuals' houses, such as those from the American excavations at Seleucia-on-the-Tigris, or deposits in the care of private bankers, such as

those from the house in the Skardana quarter on Delos.²² The criteria that are generally applied to determine the official or nonofficial nature of any given archive center are the form of the building in which they were found and the nature of the representations on the bullae themselves. Buildings such as the archive found by the Italian excavators at Seleucia are clearly official. That structure is 140 m long and consists of two suites of seven long narrow interconnecting rooms with bays for shelves on both sides.²³ It is clearly a building designed and dedicated to storage of enormous numbers of records; the presence of such a building in one of the two major capitals of the Seleucid empire is hardly surprising. The subject matter of the bullae reinforces the public nature of the archive: over half record payment or exemption from the annual salt tax.²⁴ Other public archives were situated in temple complexes such as that at Hellenistic Uruk, where seals of Seleucid officials, such as the chreophylax and bibliophylax, came to light.²⁵ At the other end of the spectrum are the 16,000+ bullae from Delos, which were found in a private house of unexceptional form and from whose ca. 14,000 readable impressions only 30 (barely .02 percent) can be identified as official.²⁶ The finds from Seleucia-on-the-Tigris present a particularly interesting case for interaction between public and private archives in a single city. A number of the salt-tax sealings found in the large public archive excavated by the Italian team in the 1960s and 1970s have duplicates in the archives of the private houses excavated by the American team in 1930s. This implies that citizens took home and stored their own sealed copies of the tax documents deposited in the municipal archive. The Zeugma finds, as we will see below, also give evidence for both public and private archives in one town.

THE BULLAE

The discovery of 140,000+ bullae in Trench 3 at Zeugma presents compelling evidence for a large public archive in the vicinity of that trench. The 21 sealings published here, on the other hand, were found from one end of the site to the other, all in areas of houses or shops. Two came from Trench 13 at the western part of the site. The others were unearthed from the eastern sector of the site: one from Trench 2, twelve from Trench 4 and six from Trench 9. The majority were surface finds (ZB1-3, 7, 9-20) while three (ZB5-6, 21) came from Sasanian destruction debris layers and one from debris over a fourth-century A.D. floor (ZB6). Although none was found in anything approaching a primary context, they are most likely to have been in use in the areas in which they were found.

The most interesting group is the set of six (ZB1-6) found in Trench 9. These are all flat and circular in shape, the Roman Untersiegelung type. Four of these (ZB1, 3-5) bear impressions mimicking the imperial coins of Caesarea in Cappadocia, a city some 250 km northwest of Zeugma, and site of one of the two imperial mints in the East. The

most common motif on the reverse of Caesarea's coins is Mt. Argaios, a local landmark and sacred spot. The mountain is sometimes represented as an image placed on an altar, but more often as itself, topped with an eagle, a crescent, or a star. In a number of cases it is shown with a naked man standing atop it and holding a scepter and a globe.²⁷

This is the image on three of the Zeugma sealings. All three have Greek inscriptions. None can be deciphered, but it is clear they are not the same as those on the coins. This image does appear on a few published seals, most notably one of unknown provenance from the British Museum on which the mountain is actually named.²⁸ One of the Zeugma sealings (ZB1) bears the beginning of a year date below the mountain, but not the year itself. This is a popular image on the coins of Caesarea from the time of Tiberius through Macrinus, and nothing in the iconography points to a closer date. We are possibly helped by the fourth sealing (ZB4), which shows another more closely datable coin type of Caesarea. This is an unusually large piece, over twice the size of the other sealings. It shows a semidraped male figure seated to the left on a rock (Mt. Argaios again?). The head is frontal and radiate, and he holds a globe in his left hand. This is an image that to my knowledge appears only on the coins of Commodus and Septimius Severus minted at Caesarea.²⁹ ZB4 carries a date in the exergue, year 11, if read from left to right, or year 13 if read from right to left. Both readings are present in the coins of Commodus.³⁰ If these can be connected with the coins of Commodus, we have a date of either A.D. 189 or 192. In any case, this sealing must date to the principate of Commodus or later. Why would we find these Caesarean images in a house or shop at Zeugma? *Untersiegelung* such as these were used to document payment of export tax or road duty in the Roman era.³¹ In Egypt it was more common to charge the duty or road tax at the point of origin.³² With these seals, then, we most likely have evidence for a merchant importing goods from Caesarea to Zeugma. These sealings happen to cluster in the same area where 150 coins of Caesarea dating from Commodus through Gordian III were found in a hoard, and this suggests that somebody in this quarter had particularly close connections with Caesarea.³³ The remaining two sealings (ZB2, 5) from the area bear male portraits, one with an inscription, most likely his name. It is tempting to see our merchant in these portraits, although given the official nature of *Untersiegelung*, it is more likely that the figure is a magistrate or other local administrator.

There are two other *Untersiegelung* types from the collection under discussion: ZB9 from the spoil heap in Trench 4 and ZB21 from a Sasanian debris layer in Trench 2. Both carry impressions that can be interpreted as official, and both find their closest parallels in Roman coin types. ZB9 is impressed with a head of Apollo laureate, a common type on imperial coins.³⁴ Often these idealized laureate heads are meant to be the emperor himself, but, in the absence of an inscription, this is impossible to determine in this instance. ZB21 shows busts of two draped figures facing one another.

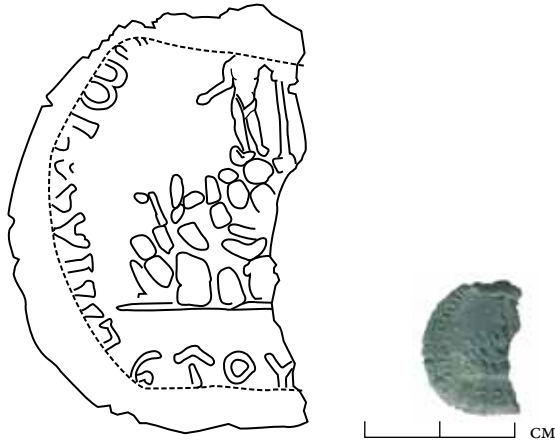
The image is not very clear, but they appear to be wearing headdresses or crowns of some sort. Close parallels for this motif can be found in the coins of Samosata, which show the Tyche of Samosata facing the Tyche of another city.³⁵ The reverse of this piece is of some interest. It has a projecting knob, which would have been pressed through the papyrus document. This was an alternate method of attaching *Untersiegelung* to papyri.³⁶

Of the remaining thirteen sealings in the group, nine (ZB7, 10–12, 14, 19–20) are the pinched shape of appended sealings and four (ZB8, 13, 15, 20) are triangular. In terms of sealing type, then, all could be either Hellenistic or Roman. All come from surface or topsoil layers. In terms of image they are an undistinguished lot. Only five have readable images of any sort. Three (ZB10–12) carry portrait busts of crude workmanship. One of these (ZB11) may be wearing a tiara similar to that favored by the late Hellenistic/early Roman kings of Commagene and Armenia.³⁷ The image on ZB7 is that of a long-necked bird and ZB17 carries a wreath or lotus bud.

The 21 bullae discovered in the OA excavation areas during the PHI rescue project at Zeugma in 2000 present a dramatically different profile than the other archives so far published. In a sense, what is most striking is what is missing from the collection. There are none of the “envelope” bullae common in the Hellenistic groups from Delos, Seleucia-on-the-Tigris, and Uruk. There are no royal Hellenistic portraits and no official inscriptions like those of the bibliophylax and chreophylax or salt-tax receipts from Uruk and Seleucia-on-the-Tigris. One would certainly expect to find all of these in a Hellenistic archive at large mercantile city such as Zeugma. In fact, all of the datable pieces in the group published here are Roman in date, and it seems probable that the archive or archives from which they came belonged to the Roman era of occupation. Another, in some ways more surprising, missing element is the representation of Greek gods so prevalent on both Hellenistic and Roman gems. Their absence from this collection may be just an accident of deposit and recovery patterns. On the other hand, the finds from Trench 9, at least, may be the remnant of some sort of specialized merchant's archive in which such sealings would not be relevant. This, though, is mere speculation. What is not speculation is that the larger corpus from Zeugma has the potential to extend our understanding of ancient archives and sealing practices well beyond the A.D. 117 closing date of the *nomophoulakion* at Cyrene, which until now has been the latest archive known. If the sealings from the larger archive building in Trench 3 share the lengthened time span of our group — and based on the relation between the public and private archives at Seleucia-on-the-Tigris, there is every expectation that they should — we should find a treasure trove of second- and possibly third-century A.D. sealings in that group.

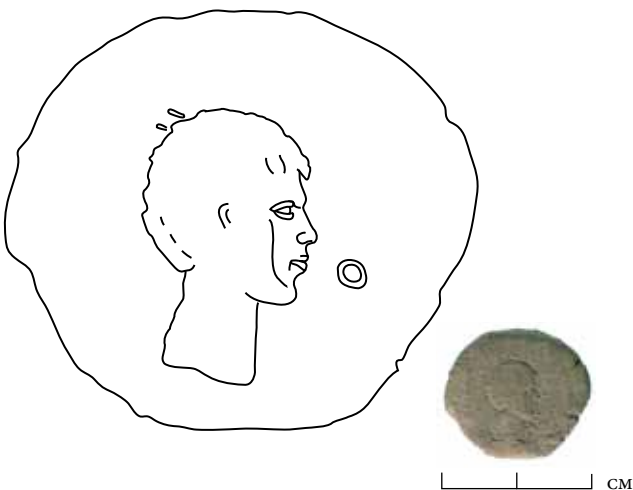
CATALOGUE

With the exception of ZB13, each catalogue entry is preceded by illustrations of the objects described.

**ZB1** (SF 367, context 9000)

Half preserved, M.P.D. 18 mm, grayish brown

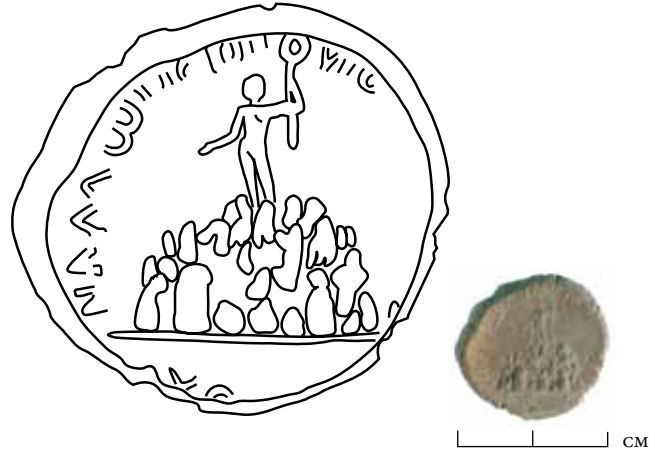
Circular in shape with papyrus impressions on reverse and no string hole; no fingerprints on edges. On obverse, naked male, standing frontal on Mt. Argaios, staff or scepter in left hand, right arm extended to left. Misstamped with head missing. Two inscriptions in Greek, the first running from left to right around edge, most letters unclear with upper parts clipped in stamping. A definite omega visible at upper left. Below the mountain [] TOY (year?). For parallels, see Sydenham 1933 no. 42, 87; 42 no. 92; 45 nos. 97 and 99; 52 no. 128; 57 no. 152; 76 no. 258; 80 no. 290a; 82 no. 303; 99 no. 408; Wroth 1964, 45 no. 2; 46 nos. 11–2; 47 no. 18; 50 nos. 37 and 45; 63 no. 150; 75 no. 233; Burnett et al. 1992 nos. 3620, 3649–51, 3655.

**ZB2** (SF 368, context 9000)

Intact, M.P.D. 19 mm, reddish brown

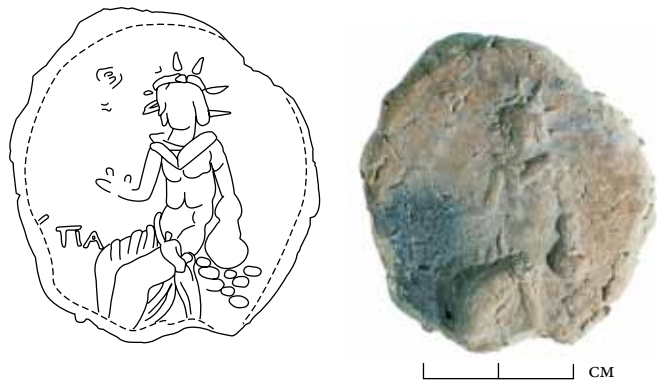
Circular in shape, no clear string or papyrus markings on reverse; no fingerprints. On obverse, male portrait bust

facing right; Roman veristic style with short hair, deep furrow from nose to chin. A single Greek (?) O in field to right.

**ZB3** (SF 371, context 9000)

Intact, M.P.D. 18 mm, reddish brown

Circular in shape, no clear string hole or papyrus markings on reverse; no fingerprints. On obverse, naked male, standing frontal on Mt. Argaios, staff or scepter in left hand, right arm extended to left. Greek inscription running from lower left around edge, letters for the most part unclear but readable. Parallels as in ZB1.

**ZB4** (SF 372, context 9120)

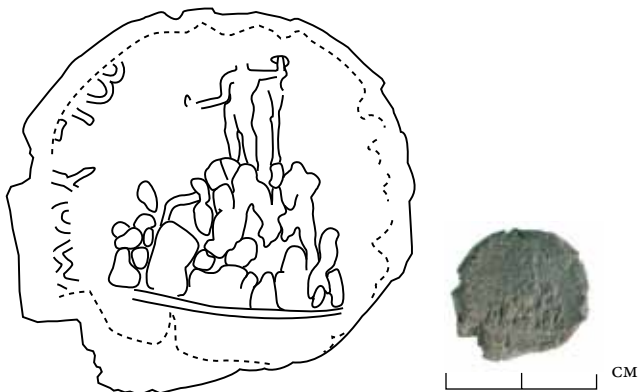
Intact, M.P.D. 44 mm, reddish brown

Circular in shape, no string hole, and no papyrus impressions on reverse; no fingerprints. On obverse, semidraped male figure seated to left on rock (Mt. Argaios?) with globe in left hand, right hand extended; frontal face, radiate. Date to lower left [] TI A. If this could be ascribed to Commodus, it would be year 11 of his principate (A.D. 188). For parallels, see Wroth 1964, 73 no. 217, and Sydenham 1933, 95 no. 384. A similar figure, however, appears on the coins of Septimius Severus minted at Caesarea (Sydenham 1933, 100 nos. 416, 417, A.D. 194).



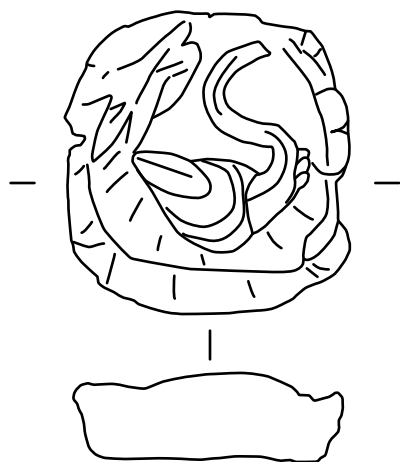
ZB5 (SF 390, context 9137)
Intact, M.P.D. 14 mm, reddish brown

Circular in shape, one string hole, and possible papyrus impression on reverse; no fingerprints. On obverse, male portrait bust facing right; private portrait in Julio-Claudian style. Star behind head, Greek inscription running upwards from lower right.



ZB6 (SF 447, context 9137)
Intact, M.P.D. 17 mm, grayish brown

Circular in shape, one string hole, and no papyrus impressions on reverse; no fingerprints. On obverse, naked male, standing frontal on Mt. Argaios, staff or scepter in left hand, right arm extended to left, head blurred to invisibility. Blurred Greek inscription running along left edge. Parallels as in ZB1.



ZB7 (SF 852, context 13000)
Intact, M.P.D. 13 mm, very dark gray to black

Pinched shape with one string hole and papyrus impressions on reverse; fingerprints on sides. On obverse, long-necked bird, swan or goose to right.



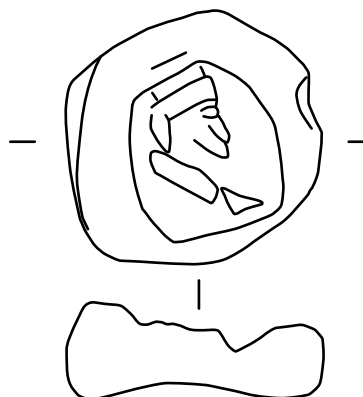
ZB8 (SF 856, context 13036)
Intact, M.P.D. 13 mm, very dark gray to black

Triangular shape with one string hole and papyrus impressions on reverse; fingerprints on sides. On obverse, subject blurred.



ZB9 (SF 2167.01, context: Trench 4 spoil heap)
Three-quarters preserved, M.P.D. 18 mm, reddish brown

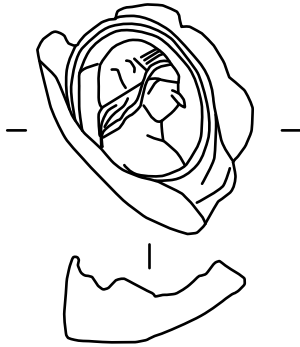
Circular in shape, no string hole or papyrus impressions on reverse; no fingerprints. On obverse, archaizing head of Apollo, facing right with laurel wreath in hair.



ZB10 (SF 2167.02, context: Trench 4 spoil heap)
Intact, M.P.D. 11 mm, grayish brown

Pinched shape with one string hole and papyrus impressions on reverse; fingerprints on sides. On obverse, male

portrait bust facing right, may be wearing tiara. For parallels see Burnett et al. 1992, nos. 3841 and 3845.



ZB11 (SF 2167.03, context: Trench 4 spoil heap)
Intact, M.P.D. 11 mm, grayish brown

Pinched shape with one string hole and papyrus impressions on reverse; fingerprints on sides. On obverse, portrait bust with high headdress. Possible parallel with coins of Antiochos of Commagene.

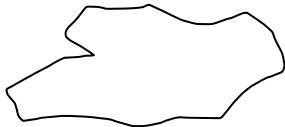


ZB12 (SF 2167.04, context: Trench 4 spoil heap)
Intact, M.P.D. 10 mm, red

Pinched shape with one string hole and possible papyrus impressions on reverse; fingerprints on sides. On obverse, male portrait bust, facing right.

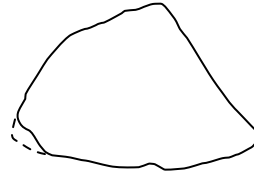
ZB13 (SF 2167.05, context: Trench 4 spoil heap)
Half preserved, M.P.D. 11 mm, very dark gray to black

Triangular shape with one string hole, no papyrus impressions; fingerprints on sides. On obverse, too little preserved to identify subject.



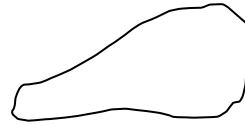
ZB14 (SF 2167.06, context: Trench 4 spoil heap)
Half preserved, M.P.D. 12 mm, very dark gray to black

Pinched shape with one string hole and papyrus impressions on reverse; fingerprints on sides. Face lost.



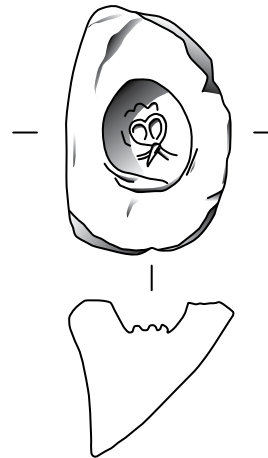
ZB15 (SF 2167.07, context: Trench 4 spoil heap)
Intact, M.P.D. 12 mm, very dark gray to black

Triangular shape with one string hole, no papyrus impressions; fingerprints on sides. Face lost.



ZB16 (SF 2167.08, context: Trench 4 spoil heap)
Three-quarters preserved, M.P.D. 0.013, very dark gray to black

Pinched shape with one string hole and papyrus impressions on reverse; fingerprints on sides. Face lost.



ZB17 (SF 2167.09, context: Trench 4 spoil heap)
Intact, M.P.D. 9 mm, very dark gray to black

Pinched shape with one string hole and papyrus impressions on reverse; fingerprints on sides. On obverse, unclear symbol, possibly a lotus bud or wreath.



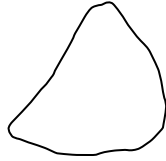
ZB18 (SF 2167.10, context: Trench 4 spoil heap)
Less than half preserved, M.P.D. 10 mm, very dark gray to black

Pinched shape with one string hole and papyrus impressions on reverse; fingerprints on sides. On obverse, subject unclear, perhaps visible with further cleaning.



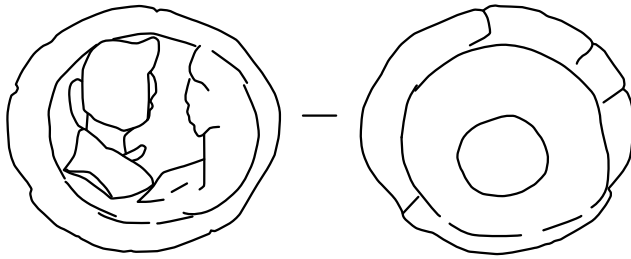
ZB19 (SF 2167.11, context: Trench 4 spoil heap)
three-quarters preserved, M.P.D. 9 mm, reddish brown

Pinched shape with one string hole and papyrus impressions on reverse; fingerprints on sides. Face lost.



ZB20 (SF 2167.12, context: Trench 4 spoil heap)
Half preserved, M.P.D. 7 mm, reddish brown

Triangular shape with one string hole and possible papyrus impressions on reverse; fingerprints on sides. On obverse, subject unclear, perhaps visible with further cleaning.



ZB21 (SF 2168, context 2019)
Intact, M.P.D. 14 mm, reddish brown

Circular in shape. No string hole or papyrus impressions on reverse; instead a knob projects for attachment to papyrus. On obverse, two busts facing, draped, possibly wearing crowns or turrets. See coin of Samosata, Wroth 1964, 119 no. 31.

NOTES

1. I spent five days in July of 2002 at the excavation camp in Birecik. During that time I examined the 16 bullae in the excavation store there and made one trip to view the five in the Gaziantep Museum briefly. I wish to thank William Aylward for the invitation to study the bullae from Zeugma and his efforts to locate the information and illustrations I have needed to complete this study. All the bullae were drawn by OA after my visit, but not all were photographed. Where photographs were available, I reworked the drawings using the digital enhancement equipment available for the study of the University of Michigan papyrus collection. This was especially useful for the Greek inscriptions, which were particularly difficult to decipher. I was immeasurably aided in this by Dr. Traianos Gagos, senior archivist of the Michigan papyrus collection. Lorene Sterner produced the final drawings of these pieces. My reading of the Roman portrait bul-
2. There were initially 22 items identified as bullae by OA excavators. One of these, SF 2167.13, proved not to be a bulla. For an account of the excavation areas, see Tobin, volume 1.
3. Önal 2003, 9–10; Weitz 2000, 102.
4. Önal 2003, 9–10.
5. Tobin, volume 1, n. 112.
6. Elephantini: Rubensohn 1907. Seleucia-on-the-Tigris: Invernizzi 1996.
7. Artaxata: Khachatrian 1996. Carthage: Berges 1997. Cyrene: Maddoli 1965. Delos: Boussac 1988, 1992. Edfu: Milne 1916. Gitana: Preka-Alexandra 1996. Kallipolis: Pantos 1985. Kadesh: Herbert and Berlin 2003. Nea Paphos: Kyrieleis 1996. Pella: Boussac 1996, 513 n. 9. Selinus: Salinas 1883. Seleucia-on-the-Tigris: McDowell 1935. Uruk: Rostovtzeff 1932; Lindstrom 2003. Wadi Daliyeh: Leith 1997.
8. Vondorpe (1995, 1) cites only 180.
9. The rare exceptions to this rule are a few finds in Egypt, most notably the Elephantini cache and the Wadi Daliya find from the Judean Desert. Invernizzi (2003) discusses this problem in some detail.
10. Uruk: Rostovtzeff 1932. Seleucia-on-the-Tigris: McDowell 1935.
11. The use of the term *bulla* is inconsistent. Taken from the Latin for “round item” or “button,” it was not used for seals in antiquity. Rostovtzeff’s distinction between the envelope sealings and others has not been maintained in English, where the term *bulla* is often used for all types of clay sealings. In recent years the practice has been to move away from its use altogether and substitute “sealing” or “seal impression.”
12. Rostovtzeff 1932, 8; McDowell 1935, 3.
13. McDowell 1935, 10.
14. There are papyri with attached medallion sealings in the Michigan collection with Arab scripts dating to the eighth century A.D. (cf. MP1834). My thanks to Professors Arthur Verhoogt and Traianos Gagos for bringing these to my attention.
15. Bowersock 1991, 338.
16. Vondorpe 1995, 24.
17. See Vondorpe (1995) and Boussac and Invernizzi (1996) for overviews.
18. Invernizzi 2003, 304.
19. Vondorpe 1995, 3–8, 11–20.
20. Boak 1935, pl. 13.
21. Vondorpe 1995, 25–8; Sijpesteijn 1987, 46–9.
22. Seleucia-on-the-Tigris: McDowell 1935; Brown 1938. Delos: Boussac 1988, 1992.
23. Invernizzi 1976, 170.
24. Invernizzi 1968 and personal communication.
25. Rostovtzeff 1932; Bickerman 1938, 209.
26. Boussac 1992: 11–18.
27. Sydenham 1933, 42 nos. 87 and 92; 45 nos. 97 and 99; 52 no. 128; 57 no. 152; 76 no. 258; 80 no. 290a; 82 no. 303; 99 no. 408; Wroth 1964, 45 no. 2; 46 nos. 11–2; 47 no. 18; 50 nos. 37 and 45; 63 no. 150; 75 no. 233; Burnett et al. 1992, nos. 3620, 3649–51, 3655.
28. Walters 1926 no. 1662.
29. Wroth 1964, 73 no. 217; 75 no. 231; Sydenham 1933, 95 no. 384.
30. Wroth 1964, 72 no. 212; 73 no. 217.
31. Vondorpe 1995, 25.
32. Sijpesteijn 1987, 46–9.
33. See Butcher, volume 3, Hoard 1.
34. Burnett et al. 1992, 3611.
35. Wroth 1964, 119 no. 31 (dated to Septimius Severus).
36. Vondorpe 1995, 25.
37. Burnett et al. 1992, nos. 3841 and 3845.

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