Worked Bone and Ivory

Bethan Charles

INTRODUCTION

The objects discussed in this chapter were discovered in Trenches 1, 2, 4, 5, 7, 9, 10, 11, 12, 13, 15, 18, and 19 during the rescue excavations at Zeugma in 2000.¹ All objects are bone and antler, with the exception of B45, an ivory rod with incised lattice decoration.²

Methodology

Initial quantification was conducted by the excavators in 2000. I studied the objects firsthand at the site in 2000 and 2002. A hand-held eyeglass was used to identify some of the more intricate designs. Measurements were recorded with sliding callipers. Finds catalogued here are assigned an alphanumeric identifier with the prefix B, for bone and ivory. To these objects the excavators had assigned inventory numbers with the prefix SF ("small find"). These numbers are preserved in the catalogue for purposes of crossreferencing, as are four- and five-digit context numbers indicating provenience. The latter can be used to identify finds from the same context in the context descriptions in volume 1. Classification and dating for some of the bone pins follows Crummy 1979. Two of the objects presented here are also published in this volume's chapter on military equipment by Ian Scott. My catalogue entries provide Scott's catalogue numbers (with the prefix ML), for crossreferencing. The presentation of these objects in this chapter and in the chapter by Scott allows for full discussion about them in terms of their material class and their functionality.

Dating

Finds from datable contexts are assigned to their corresponding ceramic groups in the catalogue entries. Among these, three belong to contexts connected to the Sasanian sack of Zeugma in A.D. 252/253 (B11, B33, B40). For descriptions of other contexts and their dates as determinable from coins and other artifacts, the reader is directed to the context descriptions in volume 1. Notes on dating the objects on the basis of intrinsic characteristics and comparanda are presented below.

WORKED BONE AND IVORY: IDENTIFICATION AND FUNCTION

The bone pins from Zeugma are typical of other bone examples found throughout the Roman Empire in the second and third centuries A.D. Comparanda can be found at Roman sites such as Alba Iulia in Romania and Kärnten in Austria.³ A good parallel for B1, the pin with gold-plated head, is illustrated by Deschler-Erb.⁴ Pins with expanded shanks, like B7 and B10, tend to be late Roman in date.⁵⁶ In general, pins are thought to have been worn in women's hair, although some may have been used for the fastening of clothing.⁷ The needle and distaff in the corpus of objects published here provides some evidence, albeit very small, for textile manufacture at Zeugma (B12-13).8 These should be added to evidence for textile production at Zeugma as demonstrated by loom weights, spindle whorls, and textiles themselves, published in this volume in chapters by Cole and Parton.

The dome-headed fastener (B18) probably belonged to a military costume, and it most likely belongs to the first to second century A.D.9 B19 may be a discarded antler tine rather than an awl, because polish at the end of a tine can occur naturally. The spatula-type object B20 is identical to many objects identified as awls from Alishar Höyuk from late Hellenistic and Roman/Byzantine deposits: see von der Osten 1937, figs. 98, 196). However, it is probably incorrect to call B20 an awl. The flattened profile is more likely to be a spatula, or possibly a potter's tool for modeling clay, with the pointed end used for indentation or incision.¹⁰ Similar objects have also been recovered from excavations at Tell Afis, Tell Abou Danne, and Umm el-Mara, where they have been identified as weaving tools, possibly used to beat the threads of the weft on the loom.¹¹ Similar wooden objects are known to have been used in this manner in Aleppo, Hama, and Antioch around fifty years ago.¹² All the handles identified here appear to have belonged to knives (B22-25). Only very few objects appear to have had a personal function. The best example among the objects published here is a small container and lid with residue of pink powder (B28). The container may have been used for holding make up.

The figurines are only preserved in fragments (B29–35), but they all appear to have belonged to jointed dolls. The excavators identified the find spots for all of these as areas of occupation prior to, or at the very time of, the Sasanian sack of A.D. 252/253. All are finely carved, highly polished. Some of the surviving pieces were made from large ungulate long bones on a similar design. B32–33, however, appear to have been made from sheep or goat metapodial bones; these examples are not as finely carved. The dolls are only represented by fragments of the torso. Legs and arms were presumably all attached separately, and none survives. It is conceivable that they were made out of perishable material, like leather or cloth, although examples of disarticulated doll limbs carved from bone have been found at Ephesos.¹³ All parts of Attic, Corinthian, and Boiotian articulated dolls from the fifth and fourth centuries B.C. were made of terracotta.¹⁴ Articulated dolls with arms attached have been found in a late Hellenistic/early Roman deposit at Seleucia-on-the-Tigris, and with both arms and legs attached in Hellenistic deposits at Tarentum and in the catacombs at Rome, where they are dated by form to around the third century A.D.¹⁵ The function of these dolls is not made absolutely certain from their find spots at Zeugma, although, in general, the contexts are domestic in character. It is possible that the dolls were used as idols or offerings. However, it is more likely that they were children's playthings. Evidence linking dolls to children at Seleucia-on-the-Tigris consists of dolls placed inside the graves of children.¹⁶ There are many depictions of children and dolls in Greek art.17

Tesserae (dice) for gaming are occasionally found on sites dated from Roman to Medieval times, and they seem to have retained a very similar design throughout the ages.¹⁸ **B36** is no exception. Some of the items in the catalogue identified as discs (B14–17) may have been used as counters for games. Several objects were too fragmentary to allow secure identification. B37–38 and B43–44 may be stylus fragments. B39–40 and B42 may be fragments from handles or mounts.

The fragment of worked ivory (**B45**) was identified with the assistance of published guides¹⁹ and by comparison of recorded data and photographs of the object with the ivory reference collection at the Pitt Rivers Museum in Oxford. The object was probably carved from elephant tusk. However, because the preserved fragment is small, and part of it abraded, this identification is not absolutely certain.

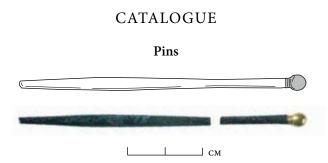


Figure 1. B1. Drawing (top) and photo (bottom).

B1 (SF 3409, context 18070) Pin with gold-plated head Preserved L. 76 mm; max. Dia. (shank) 3.5 mm; max. Dia. (head) 4.1 mm Nearly complete; small break at tip. Burnt dark brown / black. Crummy Type 3. Spherical head with gold plating; shank tapers at both ends. Two incised lines around the shank just below the head.



Figure 2. B2. Drawing (top) and photo (bottom).

B2 (SF 583, context 11092) **Pin** L. 85 mm; max. Dia. (shank) 5 mm; max Dia. (head)

6.2 mm; H. (head) 7.8 mm FIG. 2

Complete. Slightly oval head. Polished, but with evidence of tool marks. Variant of Crummy Type 4.

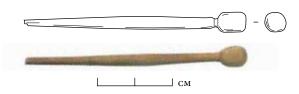


Figure 3. B3. Drawing (top) and photo (bottom).

B3 (SF 858, context 18070)

Pin

L. 59 mm; max Dia. (shank) 3.5 mm; max. Dia. (head) 5.2 mm; H. (head) 7.5 mm FIG. 3

Nearly complete; broken at tip. Variant of Crummy Type 4. Polished pin with elongated, irregular, spherical head. Tool marks visible on shank.

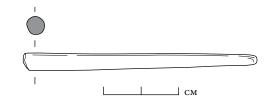


Figure 4. B4.

B4 (SF 1031, context 1024) **Pin** L. 63 mm; max. Dia. 4.5 mm

FIG. 1

FIG. 4

Preserves most of shank and point. Broken at proximal end. From a context in Ceramic Group G: Islamic. Probably a residual find.

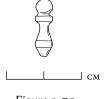
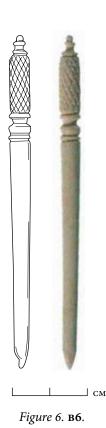


Figure 5. B5.

B5 (SF 4334, context 10038) Pin L. 15.5 mm; max. Dia. 4.5 mm

Broken on one end. Spherical head with flattened sides above a flattened, flanged shank. Variant of Crummy Type 4.

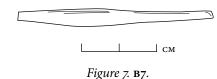


B6 (SF 4247, context 9013) Antler pin

L. 88 mm; max. Dia. 5.6 mm

FIG. 6

Nearly complete; slightly broken at tip. Crummy Type 7. Polished shank terminating at three reels that bound the lower end of an elongated head with carefully incised lattice decoration. Another reel marks the top of the head, and this extends out into an elaborate finial.



B7 (SF 2284, context 2275) Broken shank of pin L. 51 mm; max. Dia. 5 mm; Dia. at preserved ends is 3 mm

FIG. 7

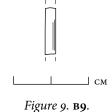
Broken at both ends. Polished and tapering shank.

СМ

Figure 8. **B8**.

B8 (SF 697, context 9183) Broken shank of pin L. 79 mm; max. Dia. 3 mm FIG. 8

Broken at middle and at both ends. Polished shank in two pieces.



B9 (SF 5008, context 10041) Broken shank of pin L. 12.5 mm; Dia. 3 mm

Small shank broken at both ends.

FIG. 9

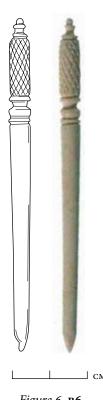
FIG. 10



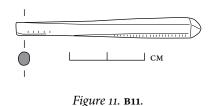
Figure 10. **B10**.

B10 (SF 935, context 18071) Broken shank of pin L. 44.5 mm; max. Dia. 5.5 mm

Broken at one end. Shank tapers at both ends. Polished, but with evidence of tool marks.







Bl1 (SF 2208, context 2139) Pin? L. 48 mm; Dia. 6 mm

FIG. 11

FIG. 12

Broken at point. Polished shank with irregular triangular head. Ceramic Group D: A.D. 252/253.

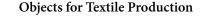




Figure 12. B12. Drawing (top) and photo (bottom).

B12 (SF 2176, unstratified, Trench 2) Needle L. 78 mm; W. at pierced end 6 mm

Broken at tip. Round shaft transitions to flattened head with rounded top. Principal eye formed by two overlapping drill holes. Small round drill hole next to this, closer to shaft.

B13 (SF 505, context 7023) Antler distaff L. 104.7 mm; max. Dia. 10 mm; min. Dia. 5 mm FIG. 13

Near complete; slight break on one end. Polished circular shank with elaborate decoration. Narrow end terminates with spherical finial, slightly flattened, with a small indentation in the middle. Above this, two reels of different size mark the transition to an elongated bulb with a single incision around its greatest diameter (7.6 mm). Adjacent is another elongated bulb, slightly longer, with two incisions around its greatest diameter (8.55 mm). The remainder of the shank is comprised of a single rod, 42.5 mm long and 10 mm in diameter, incised with 30 adjacent rings. The 10 rings closest to the bulb ornament are very neat. The remaining 20 incisions have some variation in spacing. The incised rod terminates with an abrupt narrowing to 6.5 mm in diameter and a flat end with a central perforation, 3 mm in diameter and 12 mm deep. Ceramic Group C: Flavian / Trajanic.

Similar: Lang-Auinger 2003, B175 (Trinkl).

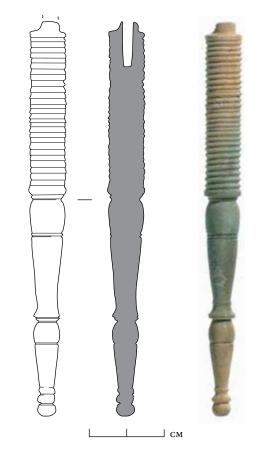


Figure 13. B13. Drawing (left) and photo (right).

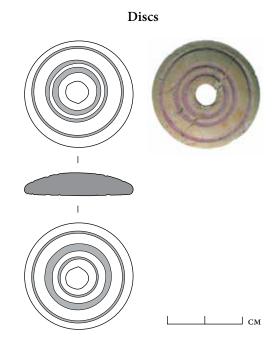


Figure 14. B14. Drawing (left) and photo (right).

FIG. 14

B14 (SF 81, context 5000) Antler disc Dia. 28.8 mm; Th. 6.2 mm; Dia. of perforation 5.5 mm

FIG. 15

FIG. 16

Complete. Circular with central perforation. Somewhat polished convex face with three concentric rings, each 1.2 mm wide, incised around the central perforation. Flat back with two concentric rings, each ca. 2 mm wide, incised around the central perforation.

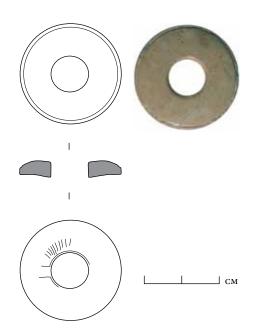


Figure 15. B15. Drawing (left) and photo (right).

B15 (SF 631, context 7201)
Antler disc
Dia. 27 mm; max. Th. 6 mm;
Dia. of perforation: 9 mm

Complete. Circular with central perforation. Highly polished. One face is convex with an incised groove around the outer edge. Opposite face is slightly concave with a narrow ledge around the perforation and a shallow groove across part of the surface.

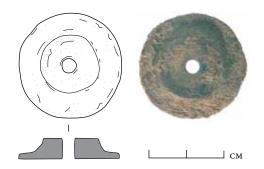


Figure 16. B16. Drawing (left) and photo (right).

B16 (SF 2174, context 2043) **Disc** Dia. 27 mm; max. Th. 5 mm Complete, but with eroded surfaces. Circular with central perforation. Evidence for polish, but now eroded.

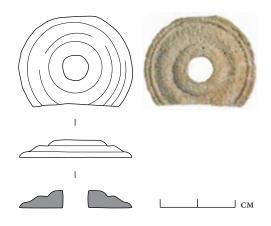


Figure 17. B17. Drawing (left) and photo (right).

B17 (SF 929, unstratified, Trench 18) Disc Dia. 30 mm; max. Th. 5 mm; Dia. of perforation 7 mm FIG. 17

Broken on one edge of disc. Circular with central perforation. Face has a raised flat top surrounded by a stepped profile of three incised rings. Flat base. Cf. Scott, this volume, ML65.

Fasteners

Figure 18. B18. Drawing (left) and photo (right).

B18 (SF 2088, context 2011)

ToggleL. 26 mm; Dia. at base 11.7 mm; Dia. at neck 5.5 mm;Dia. of dome 12.2 mmFIG. 18

Complete. Narrow cylindrical shank terminating on one end with a flat circular base and on the other with a large domed head. Black; highly polished. The diameter of the domed head appears to reflect the original diameter of the bone from which the object was carved. Small indentation at top of domed head. Small convex circle at center of base. Cf. Scott, this volume, ML68.

Awls

B19 (SF 5006, context 2295) Antler awl? L. 131 mm; W. at base 21.2 mm

FIG. 19

Only part of the tine is preserved. Polished and slightly scorched to black.

Spatulas

B20 (SF 3418, context 19006) Spatula preserved in two pieces Section 1: L. 95 mm; max. W. 17 mm; Th. 2 mm Section 2: L. 71 mm; max. W. 14 mm; Th. 2 mm FIG. 20

Broken into three pieces. Thin shaft of polished bone with tapered end terminating in a point. A nonjoining fragment probably forms the opposite end. All fragments have one highly polished side, slightly convex, and an opposite side that is flat and slightly rough.



Figure 20. **B20**.

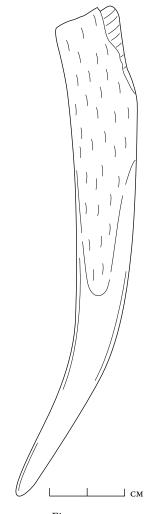


Figure 19. **B19**.

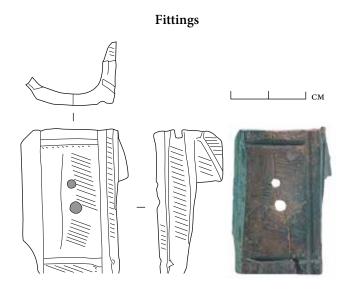


Figure 21. B21. Drawing (left) and photo (right).

B21 (SF 2089, context 2011) Furniture fitting? L. 38 mm; W. 18 mm

FIG. 21

FIG. 22

Broken on one side; now in two pieces. Rectangular object in two pieces. One face has an incised line along three edges and two perforations along the central axis, perhaps for nails. The opposite face (broken) has two incised lines and a small notch in the top. There are scratch marks on the broad surface. Carved from a cattle metapodial.

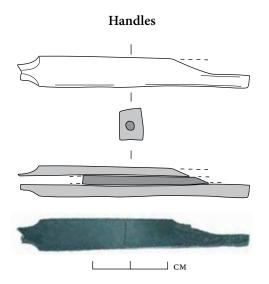
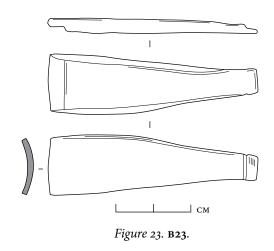


Figure 22. B22. Drawing (top) and photo (bottom).

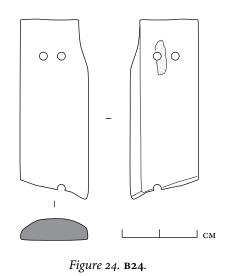
B22 (SF 2045, context 2007) Handle with iron shank

Broken on both ends. Long bone shank, rectangular in section, with remains of an iron shank running lengthwise through the middle (most of the iron has now become separated from the bone). Bone exterior tapers at one end. Parallel: Béal 1983, pl. 12.79. Similar: Deschler-Erb 1998.



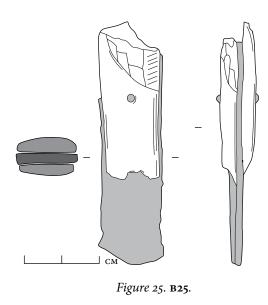
B23 (SF 664, context 7006) Handle L. 55 mm; W. 8–16 mm FIG. 23

Broken at both ends. Rectangular strip from a hollow object, tapering at one end; polished. The preserved diameter suggest a cylindrical shape. Near each broken end a ledge is cut into exterior surface.



B24 (SF 5005, context 7110) Handle mount? L. 47.5 mm; W. 18.1 mm; Th. 3 mm FIG. 24

Broken at one end. Rectangular strip, highly polished. Convex exterior has two perforations, each ca. 2 mm in diameter, located 3 mm apart and about 8 mm from the preserved end. Iron-oxide stain around one hole. Raised line, approximately 2 mm wide, runs along one side of exterior.



B25 (SF 3382, context 18070) = IR169 Knife handle L. 64 mm; W. 18 mm; Th. 11 mm

FIG. 25

Two pieces, carved separately. Rectangular plates on either side of an iron haft, all joined by a single rivet. Convex exterior, flat on surface abutting iron. Polished. Traces of burning on bone.

Tubes

B26 (SF 2165, context 2000) Tube L. 50 mm; Dia. (exterior) 25.7–28 mm; Dia. (interior) 19 mm FIG. 26

Intact. Long hollow cylinder, tapering at one end; narrow cuff on one side. Blackened from burning across one half. Tool marks suggest turning on a lathe. The object resembles section of ceramic water pipe in its shape, and it may have functioned in a segmented pipe or flue. Surface find.

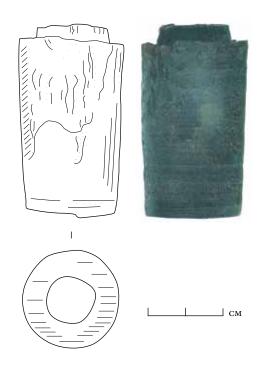
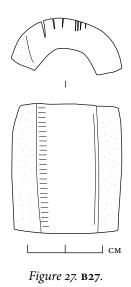


Figure 26. B26. Drawing (left) and photo (right).



B27 (SF 2164, context 2006) Antler tube L. 34 mm; W. 30 mm; Th. 8 mm

Broken. Half-preserved hollow cylinder. Burnt black. Surface find.

FIG. 27

Containers

B28 (SF 819, context 9231) Tube-shaped pyxis with lid Container: L. 50.8 mm; Dia. (top) 10 mm; Dia. (base) 11.9 mm Lid: L. 16.7 mm; Dia. (top) 12.6 mm; Dia. (body) 11.2 mm

FIG. 28

FIG. 29

Container: The container is a cylinder with a flat bottom and flared base set off from the walls of the container by a projecting reel. The interior preserved traces of powder, light pink in color. Lid: Two reels project for the upper edge. Slightly convex rounded top with two concentric rings incised around a small central depression. Incised ring around outside edge. The inside of the top of the lid is also carved with two circular rings. Below the decorative top, the lid has the same diameter of the container. The lower interior as the lid is stepped inward, allowing for a snug fit over the tapered top as the container.

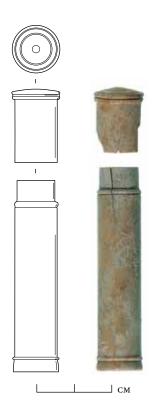


Figure 28. B28. Restored drawing (left) and photo (right).

Figurines

B29 (SF 3511, context 9195) Female torso, nude L. 52 mm; W. (waist) 17.5 mm; W. (base) 30.7 mm; Th. 21.6 mm Two joining fragments preserve the lower half of a nude female torso carved from a cattle metatarsal (right). Hollow interior. Thin line of drapery around lower hips serves as the base for the figurine. There are no signs that the drapery was meant to join to another element. Front preserves incisions defining pudenda and navel. Buttocks defined by a deep, incised vertical groove. Polished, dark brown. Faint tool marks visible around base. This appears to be part of an Aphrodite Anadyomene figurine, in this case truncated below the hips. Complete statuettes of Aphrodite Anadyomene were found during the Zeugma 2000 rescue excavations in Trenches 5 and 18 (BR153–154). A fragment of a terracotta statuette with the same pose was also found in Trench 18 (TC1).

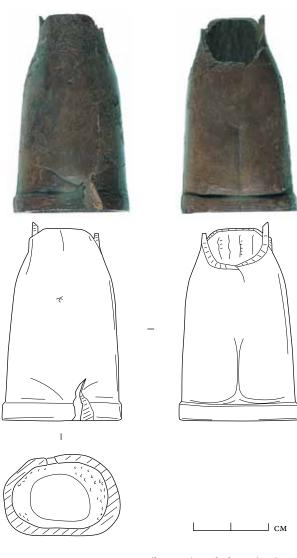


Figure 29. B29. Drawing (bottom) and photo (top).

B30 (SF 850, context 13029) Female torso and lower body, draped L. 117 mm; W. 14 mm

FIG. 30

Broken at shoulder, at lower drapery, and through the middle of the figurine along the axis of the bone shank. Probably carved from a cattle metacarpal (left?). Preserves left side of torso, left arm, and draped lower body. Two horizontal incised lines below the neck. Three circular perforations are aligned on the arm: 2.1, 1.9, and 2.8 mm dia. from top to bottom. Highly polished; tool marks in the form of diagonal striations preserved on back and side. Traces of burning on neck and drapery.

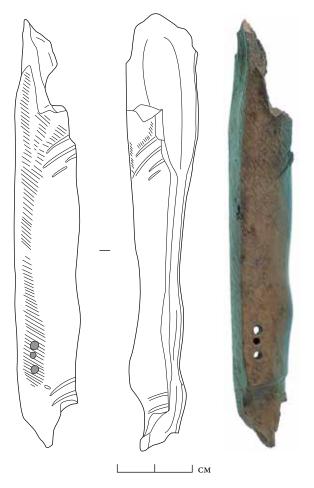


Figure 30. B30. Drawing (left) and photo (right).

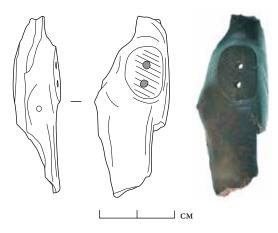


Figure 31. B31. Drawing (left) and photo (right).

B31 (SF 855, context 13036) Female torso, nude L. 48.2 mm; max. W. 12 mm

FIG. 31

Fragment of upper left torso of nude female. Probably carved from a cattle metapodial. Preserves part of left breast with protruding nipple. Raised sockets at the shoulders have two perforations, 2.1 mm diameter, passing all the way through the torso, presumably for the attachment of separately carved arms. Sockets for arms are flat, and preserve tool marks in the form of diagonal striations. Highly polished and slightly blackened on both sides, presumably as a result of burning.

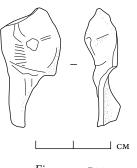


Figure 32. B32.

B32 (SF 3386, context 18070) Torso, nude L. 32 mm; W. 16 mm

FIG. 32

Fragment of upper right torso: gender indeterminable. Preserves right breast and part of the lower torso. Polished; burnt black.

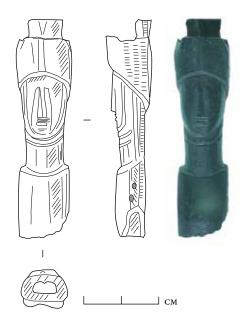


Figure 33. B33. Drawing (left) and photo (right).

 B33 (SF 870, context 18108)

 Head with headdress

 L. 58 mm; W. 14.7 mm; Th. 12.5 mm
 FIG. 33

Broken at top and bottom. Preserves head, neck, shoulders, and part of upper torso. Hollow; probably carved from a sheep or goat metatarsal (right). Polished black. Tall, elongated, and anatomically incorrect features. A cylindrical cap, like a polos, curves up over the forehead and slopes down to the back of the head. The face is flat, with only the nose and lips in relief. Two horizontal lines incised just below the chin mark the transition to the long neck, perhaps meant to indicate neckware. At each shoulder, a socket for the attachment of an arm has two perforations, each 1.4 mm in diameter, arranged one above the other, 2.5 mm apart. Tool marks across the axis of the bone shank are present on the cap, the shoulder sockets, and on the back. Ceramic Group D: A.D. 252/253.

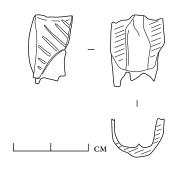


Figure 34. **B34**.

FIG. 34

B34 (SF 3385, context 18070) Possible fragment of headdress Preserves small fragment of possible headdress similar to B33. Probably carved from a sheep or goat metatarsal. Diagonal incisions are present; burnt black.

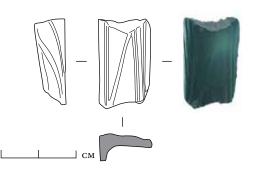


Figure 35. B35. Drawing (left) and photo (right).

B35 (SF 854, context 13036) Drapery fragment? L. 25 mm; W. 14.5 mm; Th. 7.4 mm

FIG. 35

Broken on top and bottom. Rectangular shape, polished, smooth, and dark brown in color. From the same context as **B31**, but there are no joins to indicate that these fragments were ever part of the same object.

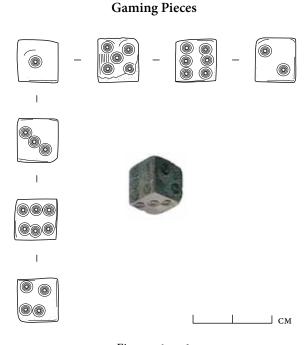
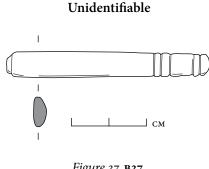


Figure 36. **B36**.

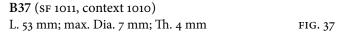
B36 (SF 3155, context 9112) Tessera 10 mm wide on all sides.

FIG. 36

Complete. Incised cube, reddish brown in color, from a set of dice for the Roman game of tesserae. Each face of the cube has a numerical value indicated by a dot or dots surrounded by two concentric rings. Minor damage to sides 1, 2, 4, and 5, but sharp corners may indicate only mild use.







Broken at one end. Part of bone shank, oval in section, but slightly flattened on one side. Preserved end has two horizontal incised grooves approximately 2 mm around the shank. Three more incised grooves, each 2 mm apart, appear 6 mm further down the shank. Ceramic Group G: Islamic.

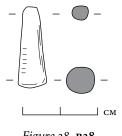


Figure 38. **B38**.

 B38 (SF 1013, context 1010)
 FIG. 38

 L. 21 mm; max. Dia. 7 mm; min. Dia. 4 mm
 FIG. 38

Broken at both ends. Part of a rod or pin tapering at one end. Ceramic Group G: Islamic.

B39 (SF 1029, context 1010)	
L. 57 mm; Th. 5 mm	FIG. 39

Broken along one side. Strip from the side of a hollow cylindrical object. Traces of two parallel incisions are preserved at one end. Opposite end has parts of four parallel incised lines with irregular zigzag incisions between the two middle lines. Two shallows pits and five rough diagonal lines are preserved at the break. Ceramic Group G: Islamic.

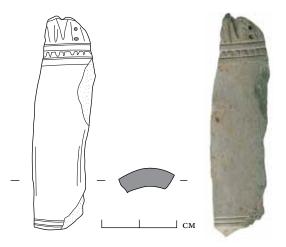


Figure 39. B39. Drawing (left) and photo (right).

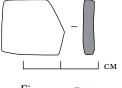


Figure 40. **B40**.

B40 (SF 4245, context 2039)

L. 17 mm; W. 15 mm; Th. 3.2 mm

FIG. 40

Broken at both ends. Highly polished, small flat square. Perhaps part of a spatula-like object. Ceramic Group D: A.D. 252/253.

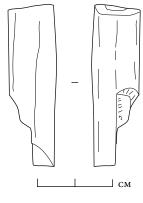
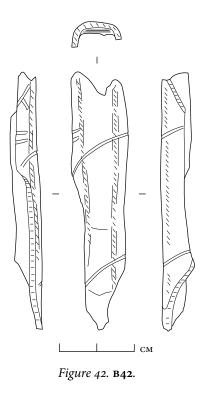


Figure 41. **B41**.

B41 (SF 5009, context 9076) L. 43 mm; W. 13 mm; D. 10 mm

FIG. 41

Broken section of sheep or goat metatarsal, roughly worked. Traces of burning. FIG. 42



B42 (SF 3512, context 9195) L. 69 mm; W. 14 mm; Th. 10 mm

Broken at both ends and along one side. Part of a long rectangular hollow object, probably carved from a sheep or goat metapodial. Perhaps part of a container or handle. One preserved face has two incised diagonal lines. Another preserved face has parallel and diagonal lines. **B43** (SF 3668, context 15113) L. 83 mm; Dia. 9 mm

FIG. 43

Broken at both ends. One end has four concentric circles incised to make bands approximately 4–6 mm wide.

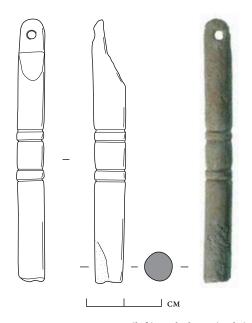
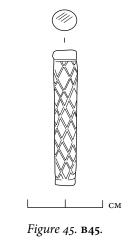


Figure 44. B44. Drawing (left) and photo (right).

B44 (SF 737, unstratified, Trench 7) L. 68 mm; Dia. 8 mm

FIG. 44

Partially broken at both ends. Part of a cylindrical object. One end is rounded, with a deep incision across it. A hole is carved in the opposite end. The exterior has four parallel grooves incised to make bands of 2, 8, and 2 mm wide.



B45 (SF 492, context 7028) Ivory Rod L. 36.2 mm; W. 6.5 mm; Dia. 5.5 mm FIG. 45

Broken at both ends. Rod, oval in section, with incised lattice decoration. Two incised concentric rings around each end. Pale cream in color.

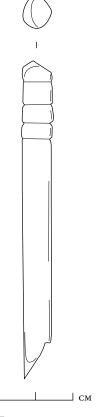


Figure 43. **B43**.

NOTES

- 1. Finds from areas excavated by other teams in 2000 (the Gaziantep Museum, the University of Nantes, and the Zeugma Initiative Group) are not published here.
- 2. I thank William Aylward, Ian Riddler, and Holly Parton for their comments and assistance in preparing this study for publication.
- 3. Alba Iulia: Ciugudean 1997. Kärnten: Gostenčnik 2001.
- 4. Deschler-Erb 1998, 164, pl. 2148.
- 5. Greep 1995.
- 6. At least two more expanded-shank pins like **B7** and **B10** were discovered during the 2000 rescue excavations. Oxford Archaeology assigned the following inventory numbers: SF77 (from context 8182 in Trench 8) and SF3349 (from context 3045 in Trench 3). Publication of Trenches 3 and 8 is in the purview of the Gaziantep Museum.
- 7. Deschler-Erb 1998; Bíró 1994.
- 8. At least three other identical needles were discovered in the rescue work in Trench 8 during the 2000 rescue excavations. Oxford Archaeology assigned the following inventory numbers to these in its database, although finds from Trench 8 are not included in the quantification list of small finds in the unpublished OA Interim Report (April 2001, pages 158–198): SF 693, SF 761, SF 2176 (all from context 8154). Publication of Trench 8 is in the purview of the Gaziantep Museum.
- 9. Ian Riddler, personal communication. For similar fasteners, see Oldenstein 1976, pl. 46:483–9.
- 10. Ian Riddler, personal communication.
- 11. Cecchini 2000, with references.
- 12. Cecchini 2000.
- 13. Hogarth 1908, pl. 42.5 (arm), 42.6 (leg).
- 14. Neils and Oakley 2003, cat. 72-4.
- 15. Seleucia-on-the-Tigris: Van Ingen 1939, pl. 83:615, no 1596. Tarentum and Rome: McK. Elderkin 1930, figs. 18, 25.
- 16. Seleucia-on-the-Tigris: Van Ingen 1939.
- 17. E.g., a relief of a girl holding a doll, in the Athens National Museum: Klein 1932, pl. 15B.
- 18. Biddle 1990, 698.
- 19. Penniman 1952; Krzyszkowska 1990.

BIBLIOGRAPHY

- Biddle, M. 1990. *Object and Economy in Medieval Winchester*. Winchester Studies 7 ii. Oxford: Clarendon Press.
- Cecchini, S.M. 2000. "The Textile Industry in Northern Syria during the Iron Age according to the Evidence of the Tell Afis Excavation." In *Essays on Syria in the Iron Age*, edited by G. Bunnens, 211–34. Ancient Near Eastern Studies Suppl. 7. Louvain: Peeters.
- Ciugudean, D. 1997. Obiectele din os, Corn Si Fildes de la Apulum. Bibliotheca Musei Apulensis 5. Alba Iulia: Muzeul Național al Unirii.
- Crowfoot, G.M. 1941. "The Vertical Loom in Palystine and Syria." PEQ 73:141-51.
- Crummy, N. 1979. "A Chronology of Romano-British Bone Pins." Britannia 10:157–63.
- Deschler-Erb, S. 1998. *Römische Beinartefakte aus Augusta Raurica: Rohmaterial, Technologie, Typologie und Chronologie.* Forschungen in Augst 27. Augst: Romermuseum.
- Doyen, J.-M. 1986. "L'oulillage en os des sites de Tell Abon Danné et dí Oumm el Marra (campagnes 1975–1983): Quelques aspects de l'artisanat deen Syrie du Nord du IIIème au Ier millenaire." *Akkadica* 47:30–74.
- Elderkin, K. 1930. "Jointed Dolls in Antiquity." AJA 34:455-79.
- Goldman, H. 1950. "Miscellaneous Finds." In Excavations at Gözle Kule, Tarsus. Vol. 1, Text: The Hellenistic and Roman Periods, edited by H. Goldman, 387–403. Princeton: Princeton University Press.
- Gostenčnik, K. 2001. "Pre- and Early Roman Bone and Antler Manufacturing in Kärnten, Austria." In Crafting Bone: Skeletal Technologies through Time and Space. Proceedings of the 2nd Meeting of the (ICAZ) Worked Bone Research Group, Budapest, 31 August–5 September 1999, edited by A.M. Choyke and L. Bartoisiewicz, 383–96. BAR-IS 937. Oxford: Archeopress.
- Greep, S. 1995. "Objects of Bone, Antler and Ivory from C.A.T. Sites." In *Excavations in the Marlowe Car Park and Surrounding Areas*, edited by K. Blockley, M. Blockley, P. Blockley, S. Frere, and S. Stow, 1112–52. The Archaeology of Canterbury 5. Canterbury: Canterbury Archaeological Trust.
- Hogarth, D.G., ed. 1908. *Excavation at Ephesus: The Archaic Artemisia*. London: British Museum.
- van Ingen, W. 1939. Figurines from Seleucia on the Tigris. London: Humphrey Milford.
- Klein, A.E. 1932. Child Life in Greek Art. New York: Columbia University Press.
- Krzyszkowska, O. 1990. Ivory and Related Materials: An Illustrated Guide. Classic Handbook 3. Bulletin Suppl. 59. London: Institute of Classical Studies.
- Lang-Auinger, C., Hrsg., Hanghaus 1 in Ephesos: Funde und Ausstattung. Vienna 2003.
- Oldenstein, J. 1976. "Zur Ausrüstung römischer Auxiliareinheiten." BerRGK 57:49–284.
- von der Osten, H.H. 1937. *The Alishar Höyuk Seasons of 1930–32, Part III.* OIP 28. Chicago: University of Chicago Press.
- Penniman, T.K. 1952. Pictures of Ivory and Other Animal Teeth, Bone and Antler. Pitt Rivers Museum Occasional Paper on Technology 5. Oxford: Oxford University Press.
- Robinson, D.M. 1941. Excavations at Olynthus Part X: Metal and Minor Miscellaneous Finds. An Original Contribution to Greek Life. London: Humphrey Milford.