

# Ironwork

Ian Scott

## INTRODUCTION

The ironwork assemblage catalogued and discussed in this chapter was discovered in Trenches 2, 4, 5, 7, 9–13, 15, 18, and 19.<sup>1</sup> These areas were excavated during the rescue excavations at Zeugma in 2000.<sup>2</sup>

## METHODOLOGY

### Recording

The complete ironwork assemblage was studied, quantified, and recorded, and data were entered into a database. Some objects were x-rayed to enhance study.<sup>3</sup> Most material was recorded in full, with measurements, descriptions, findspot, and museum record in the Gaziantep Museum.<sup>4</sup> Objects were identified and allocated to broad functional categories to aid later analysis (table 1). Miscellaneous fragments and nails were not recorded in detail; only selected measurements were made and most of this material was simply quantified. The quantification was by fragment count, except where fragments could be identified to a single object or part of an object, in which case the object was counted. In other instances where a number of fragments were recorded but did not comprise a single object, all fragments were counted. Similarly, all fragments of nails were counted. The number of nails is therefore the maximum number represented by the fragments recovered.

### Analysis and Report

The assemblage as a whole has been analyzed in terms of function, stratigraphic position and/or deposit type, and spatial distribution.

### *Functional Categories*

It is the accepted norm to order finds catalogues by functional or typological categories; for example, Waldbaum, in her report on the metal finds from Sardis, organized the catalogue by major typological classifications.<sup>5</sup> Also in 1983, Crummy's volume on the small finds from Colchester catalogued all finds, regardless of material, according to function.<sup>6</sup> This was something of a landmark in finds studies within Romano-British archaeology. Crummy established a set of functional categories, which has by default become established as a standard to be adopted for other Romano-British finds reports.<sup>7</sup> A similar approach to Crummy's has been adopted for this ironwork report and catalogue.

Whereas the single list of categories adopted by Crummy worked for the Colchester finds, the system is not always directly applicable to other assemblages. Crummy's groups seem to have been established empirically and intuitively, rather than determined by fixed criteria. Thus the categories are appropriate to the Colchester assemblages, but not necessarily to others. For example, Crummy identified as separate categories the tools and equipment of certain trades—textile manufacturing equipment, agricultural tools, metalworking tools and equipment, bone working tools—while the tools of other crafts were simply lumped together under tools as a catchall category. The functional categories adopted for the Zeugma ironwork differ in detail from Crummy's, but they serve the same purpose. In place of a single listing, a hierarchical system of three tiers (table 1) has been adopted. This allows for tools to be put together under one heading, but also allows the tools of different trades to be distinguished. There is no merit in trying to create special categories to accommodate anomalies, since this puts the system in danger of becoming ever more complex and unwieldy, and, consequently, unworkable. For example, arms and armor are readily identifiable as separate categories in the classification adopted here, but hunting equipment is not. Should a boar spear be classified as a weapon or a tool? Undoubtedly a boar spear is a weapon, but it is also a tool of the huntsman's trade.

The category of function has been used to analyze the composition of the overall ironwork assemblage and for consideration of assemblages by trench and by individual room. Certain objects obviously fall into more than one category. Chains, for example, can secure doors or chests ("security/chains" or "household/furnishings"), they can function with carts and wagons ("transport"), and vessels and lamps can be suspended from them ("household/furnishings" or "household/vessels"). In this analysis, all chain has been assigned to the functional category of security (IR371–381), with the exception of two swivels attached to chain, which have been classified as harness fittings (IR84–85). In addition, lengths of copper alloy chain attached to iron keys (IR315–316) have not been classified separately from their keys. At first, one category dealt with building and structural fittings ("structural") and a second with household contents, but this did not accommodate padlocks and keys. The latter are not part of a structure as such, but they can be used to secure door and window shutters. They can also lock chests, in which case classification under furnishings is apt. In the end, locks and keys were grouped together under "security" and door and window fittings were put in a separate category. Small leaf hinges have been

Functional group	Function	Subfunction	Comments
Portable	Arms	Weapon	includes both military and hunting weapons
	Arms	Armor	-
	Tools	Smithing	-
	Tools	Masonry	-
	Tools	Carpentry	-
	Tools	Agricultural	agricultural and horticultural tools
	Tools	Other	other crafts, e.g., leatherworking, weaving, etc.
	Transport	-	includes both harness and cart and wagon fittings
	Personal	Dress	including shoes
	Personal	Jewelry	personal ornament including hairpins, finger rings, etc.
	Personal	Toilet	including pharmaceutical implements
	Personal	Writing	styli, seal boxes, etc.
	Personal	Other	including recreational, games, etc.
	Household	Utensil	vessels, knives, and other domestic utensils
Household	Vessel	-	
Household	Furnishing	furniture, chests, etc.	
Religion	-	objects associated with religious beliefs and practices	
Measure	-	objects employed in weighing and measuring	
Security	Door	Door	door furniture and hinges
	Window	Window	window fittings and fixtures
	Security	Lock	-
	Security	Key	-
	Security	Chain	chains, swivels, and other similar items
Structure	Structural	-	staples, dogs, etc.
	Nails	-	nails, other than hobnails
Unknown	Query	Query	uncertain identification
	Miscellaneous	Binding	reinforcements for furniture and chests, comprising strips and sheet fragments with nail holes
	Miscellaneous	Bar	-
	Miscellaneous	Rod	-
	Miscellaneous	Sheet	-
	Miscellaneous	Plate	-
	Miscellaneous	Strip	-
	Miscellaneous	Wire	-
	Miscellaneous	Ring	-
	Miscellaneous	Other	-
Industrial	-	slag, cinder, etc.	
Unknown	-	fragments that cannot be identified; includes heavily corroded objects and small fragmentary pieces	

Table 1. Functional groups and subcategories.

	Trench												Total
	2	4	5	7	9	10	11	12	13	15	18	19	
Arms	13	–	–	2	2	–	2	–	–	1	17	–	37
Tools	19	–	–	2	15	–	2	–	–	–	7	1	46
Transport	4	–	–	–	1	–	–	–	–	–	–	–	6
Personal	5	–	4	1	1	1	–	1	–	1	–	–	13
Household	78	–	–	4	31	–	7	1	2	1	9	–	133
Door	41	–	3	–	13	–	1	–	–	–	5	–	63
Window	27	–	–	–	2	–	1	–	2	–	43	–	75
Security	84	–	–	1	55	–	–	–	2	1	9	–	152
Structural	104	–	6	11	25	3	9	3	1	–	23	–	185
Nails	2,356	5	28	177	601	6	70	69	73	14	430	4	3,833
Query	28	–	1	1	9	–	4	2	–	1	6	–	52
Miscellaneous	432	–	4	45	154	3	9	11	63	3	145	–	869
Industrial	10	–	–	9	1	–	–	3	–	6	4	1	34
Unknown	149	–	3	13	47	–	6	27	12	2	101	–	360
<b>Total</b>	<b>3,350</b>	<b>5</b>	<b>49</b>	<b>266</b>	<b>957</b>	<b>13</b>	<b>111</b>	<b>117</b>	<b>155</b>	<b>30</b>	<b>799</b>	<b>6</b>	<b>5,858</b>

Table 2. Summary quantification of ironwork assemblage by trench and function.

Phase number	Phase description and date
1	Hellenistic construction
2	late Hellenistic construction
3	late Augustan/Tiberian construction and destruction
4	Flavian occupation
5	early to mid-third-century construction
6	mid-third-century destruction and collapse
7	fourth-century occupation
8	fifth-century construction
9	sixth- to seventh-century construction and destruction
10	eighth- to ninth-century occupation

Table 3. Key to phasing.

assigned to the “household” category on the grounds that they would have been used on furniture, especially chests and cupboards. Drop hinges, on the other hand, were used to pivot or hang doors and shutters, so these fall into the category of door and window fittings. Anomalies persist. For example, some fittings identified as structural, such as split spike loops, actually have a number of functions. As linked pairs they can be used to make crude hinges (e.g., IR407–410). They can also serve as a means of attachment for other fittings (e.g., the split spike loops attached to the brazier suspension rods, IR103 and IR105), and they can form the riders for smaller drop hinges.

Why use functional categories? Functional categories are used here not only to standardize the ordering of the catalogue, but also as an analytical tool. In order to analyze finds assemblages instead of simply produce an illustrated catalogue, a first consideration is the function of objects, then the gender of their likely users, and finally the overall composition of finds assemblages in terms of function

and gender. The identification of function is basic to our understanding of the finds and their use. Allison, whose studies of domestic assemblages from selected houses at Pompeii are based solidly on the function and use of artifacts, has also called attention to problems of the identification and categorization finds and has questioned the validity of some of the labeling of finds.<sup>8</sup> Allison’s strictures are valid, but the identification of artifacts is essential if meaningful analysis of finds assemblages is to be undertaken. It is important that the limitations of any identification are honestly noted and treated accordingly by later workers. For the Zeugma ironwork, functional categories defined and employed during the recording process were refined in analysis. Individual finds were reallocated to categories as initial identifications were confirmed or revised.

#### *Stratigraphic Position and Deposit Type*

Stratigraphy is key for dating ironwork, much of which is not closely datable typologically. Stratigraphy is also poten-

tially important for understanding the composition of the ironwork assemblages from different phases of a site. For the evidence behind the site phasing used here, the reader is directed to chapters in this publication by Aylward, Butcher, Kenrick, and Tobin. Stratigraphic position was established from matrices, excavator notes, and information from stratigraphic analysis (tables 3 and 4). For convenience, phases have been assigned numbers in this chapter's quantification tables, and these are explained in table 3.

Also essential for the interpretation of finds is an appreciation of site-formation processes and deposit types and their impact on assemblage composition. The work of Schiffer on prehistoric American sites is particularly relevant.<sup>9</sup> The majority of the iron artifacts from Zeugma come from destruction deposits resulting from the Sasanian attack on the city in A.D. 252/253. It is arguable that these deposits are evidence for what Schiffer has termed "catastrophic abandonment," but it is probable that the contents of houses were *not* simply abandoned in situ, as will be shown when spatial distribution of finds is considered.

#### *Spatial Distribution*

Spatial distribution is key to understanding the use of space within or around buildings and also to understanding movement of artifacts. For the Zeugma finds, spatial distribution was established in broad terms. Because the excavations were a rescue operation, the excavators only assigned pinpoint coordinates to a fraction of the total number of finds recovered.<sup>10</sup> Accordingly, finds are allocated as far as possible to rooms, spaces within buildings, or areas outside buildings.

Some recent studies have taken artifact studies beyond simply identifying, dating, and cataloguing finds.<sup>11</sup> There is a growing emphasis on artifacts as cultural objects and on the study of finds assemblages as integral parts of sites. As such they can throw additional light on the use and occupation of domestic structures and areas.<sup>12</sup> Potentially, the evidence of artifact distributions can reveal divisions in use of space between public and private areas of houses and also identify specific functions for different parts of houses. It may also reveal divisions on gender lines. In a domestic setting, for example, evidence for men, women, children, servants, and slaves could be expected.

Analysis of artifactual evidence varies in practice. One approach applicable to sites with sparse cultural debris is statistical analysis of the distribution of finds identified to functional categories. This form of analysis is particularly useful where structures are not well defined, or their use uncertain. Cool used a statistical approach combined with a division of finds into functional categories and an accounting of evidence for gender in overviews of the finds from the York legionary fortress and from the fort and *vicus* at Castleford, West Yorkshire.<sup>13</sup> Another approach, more appropriate for the Zeugma material, is that developed in particular by Allison in her study of finds assemblages

from selected houses at Pompeii.<sup>14</sup> A similar approach has been advocated by George and by Nevett.<sup>15</sup> Here the underlying assumption is that finds assemblages taken together with architectural evidence — plan, layout, and decorative schemes — can help to create an integrated picture of room function.

Evidence can be misleading without proper interpretation, and the example of Pompeii provides a case in point. To what extent is an assemblage a true reflection of the original contents of a room? It should not be assumed that any finds assemblage is a simple view of the possessions and material culture of the occupants.<sup>16</sup> Allison has questioned the idea that the evidence from Pompeii presents a moment frozen in time, and she has convincingly demonstrated that this is a false notion.<sup>17</sup> For example, 17 years before the eruption of A.D. 79, a substantial earthquake had already damaged structures in the town, and the nature of the eruption itself allowed many inhabitants time to escape, presumably with many of their treasured possessions.<sup>18</sup> Furthermore, there is evidence for posteruption disturbance cut into the ash, either by inhabitants returning to recover possessions or by looters.<sup>19</sup> All of these factors have clear implications for the interpretation of finds assemblages from Pompeii. In general, given reasonable warning of impending danger, portable items of high value will be removed, or at least moved. Portable items of lower value, such as pottery, are not as likely to be moved, as are bulky or fixed items, particularly those of lesser value. Accordingly, householders are likely to remove valuable and portable furnishings, as well as jewelry and other personalia, but not bulky or heavy items, although the contents of cupboards and chests will be emptied. In addition, craftsmen are likely to remove tools of their trade and their stock in trade and raw materials, if portable and of value to them. Once these considerations have been taken into account, the evidence of finds (i.e., house contents) can be integrated with other evidence, such as room location and decoration, to establish the use or function of rooms and areas of houses. Allison has used this method with a sample of Pompeian houses, and Berry has also contributed to the debate.<sup>20</sup> It is with this work in mind that we can approach the Zeugma data.

Some are skeptical of finds data as meaningful indicators of room function and use, but there is merit in the possibilities of the finds data. As Ellis has noted, in apparent contradiction of himself, the finds data are more likely than architectural evidence to represent "passing preferences."<sup>21</sup> This is surely of some value, particularly in determining the use of space, and a point which needs to be made forcibly.<sup>22</sup> Buildings may be built to a specific plan and follow contemporary social conventions in their use, but in houses with long occupation histories social requirements may change, and the use of areas and rooms will follow accordingly. Houses are adaptable and layout and decor are rarely left unchanged.<sup>23</sup>

The Zeugma finds, in this instance the ironwork, can

potentially throw light on two main themes: firstly, the use and function of buildings and rooms within building, and secondly, the nature of the destruction of the individual buildings. Zeugma was attacked by the Sasanians in the mid-third century A.D., and much evidence for the consequent destruction was uncovered in the rescue excavations of 2000. The bulk of the ironwork was discovered in contexts and deposits dated to this phase by independent evidence. The result is a substantial body of closely dated material that can be analyzed and interpreted.

### SIZE AND COMPOSITION OF THE IRONWORK ASSEMBLAGE

The assemblage comprises 5,858 objects or fragments (table 2). By far the largest part of this is nail fragments ( $n = 3,833$ ; 65.4 percent by number). The second largest category comprises miscellaneous fragments, including bindings (strips with nail holes), bars, rods, sheets, etc. ( $n = 869$ ; 14.8 percent), which cannot be identified to a specific object or function. Another large category comprises unidentifiable fragments (Unknown), many of which are small in size ( $n = 360$ ; 6.1 percent). A few pieces of slag and slag-like material ( $n = 34$ ) were found, and these are identified as industrial. There is too little of this material for meaningful discussion, and therefore its presence is merely recorded in the quantification tables.

These four categories together comprise 5,096 objects or fragments, or 87 percent of the assemblage by number. The nails are tabulated but not catalogued in detail (table 22), with the exception of two unused Type A nails (IR559–560), four Type B nails (IR561–564), and four tacks (IR186–189). The miscellaneous material is similarly tabulated (table 23). Only two miscellaneous fragments—both bindings—are catalogued (IR615–616).

The remaining objects or fragments ( $n = 762$ ) form the main focus of this report. They comprise the categories Arms ( $n = 36$ ; IR1–36), Tools ( $n = 46$ ; IR37–81), Transport ( $n = 5$ ; IR82–86), Personal ( $n = 14$ ; IR87–97), Household ( $n = 133$ ; IR98–205), Door and Window fittings ( $n = 138$ ; IR206–303), Security, including locks and keys ( $n = 151$ ; IR304–381), and Structural ( $n = 185$ ; IR382–564), including a small selection of nails (IR559–564).<sup>24</sup> A number of objects or fragments cannot be identified to function (grouped under “query” in the tables), although they are clearly deliberately formed ( $n = 53$ ). These have been catalogued (IR565–614) and illustrated where appropriate.

### PROVENANCE AND DATING OF THE ASSEMBLAGE

The ironwork assemblage is not uniformly distributed between trenches (table 2). The largest assemblage of the ironwork ( $n = 3,350$ ; 57.2 percent) was recovered from Trench 2. Trenches 9 ( $n = 957$ ; 16.3 percent) and 18 ( $n = 799$ ; 13.6 percent) also produced sizeable assemblages. Together these three trenches produced 5,106 objects or fragments, which is 87.2 percent of the assemblage by number. Trenches 2, 9, and 18 form the primary basis of the discussion in this chapter. Trenches 7 and 11–13 produced smaller assemblages, which will not be considered in the same detail. The remaining trenches (4, 5, 10, 15, and 19) produced only 103 fragments among them.

The bulk of the ironwork assemblage comes from destruction deposits and later accumulations. The destruction deposits are of predominantly mid-third-century date (phase 6). Only 56 fragments or objects are unprovenanced or unassigned to a stratigraphic phase. There are similar concentrations of material in mid-third-century contexts in Trenches 9 ( $n = 906/957$ ) and 18 ( $n = 756/799$ ). There are lesser quantities of material from sixth- to seventh-century-context deposits in Trenches 5 ( $n = 49/49$ ), 7 ( $n = 180/266$ ), and 12 ( $n = 115/117$ ). The material from Trench 13 is divided between mid-third-century contexts ( $n = 86$ ) and sixth- to seventh-century contexts ( $n = 69$ ). The sixth- to seventh-century material comes mainly from destruction deposits. There is a small concentration of material from contexts of Early Imperial date in Trench 2. This material is mainly from the House of the Peopled Plaster, which goes out of use at an early date (table 6).

#### Trenches 2, 9, and 18: Spatial and Chronological Distribution of the Assemblages

##### *Trench 2*

In Trench 2, at least four houses have been identified: the House of the Pelta Mosaic, the House of the Peopled Plaster, the House of the Helmets, and the House of the Bull. The majority of the iron finds came from within these buildings (tables 5–9). Substantial parts of the architectural plans for the House of the Helmets and the House of the Bull were investigated and a number of rooms or areas distinguished by the excavators. Large numbers of iron finds were recovered from both buildings. The House of the Pelta Mosaic and the House of the Peopled Plaster were not fully revealed and the remains were more limited, including smaller ironwork assemblages, than the more fully excavated House of the Helmets and House of the Bull (table 5).

##### HOUSE OF THE PEOPLED PLASTER

This building was only investigated in part, but nonetheless at least three rooms or areas were identified: Rooms 2B–D. Most of the 130 iron fragments are from deposits in Room 2D ( $n = 6$ ) or in Rooms 2C and 2D combined ( $n = 124$ ).

Phase	Trench												Total
	2	4	5	7	9	10	11	12	13	15	18	19	
1	–	–	–	–	–	–	–	–	–	–	–	–	–
1 or 2	–	–	–	–	–	–	–	–	–	–	19	–	19
2	1	–	–	21	–	–	–	–	–	–	–	–	22
2 or 3	–	–	–	–	–	–	–	–	–	2	1	5	8
3	127	–	–	–	–	–	–	–	–	6	1	–	134
4	31	–	–	19	–	–	–	–	–	–	–	–	50
5	–	–	–	–	30	–	51	–	–	–	7	–	88
Pre-6	–	–	–	–	–	–	–	–	–	–	14	–	14
6	3,135	–	–	–	906	–	60	–	86	–	756	–	4,943
6 or later	–	–	–	–	6	2	–	–	–	–	–	–	8
7	–	–	–	–	1	–	–	–	–	–	–	–	1
7 or 8	–	–	–	4	–	–	–	–	–	–	–	–	4
8	–	–	–	–	–	–	–	–	–	–	–	–	0
8 or 9	–	–	–	2	–	–	–	–	–	11	–	–	13
9	–	3	49	180	11	–	–	115	69	9	1	–	437
9 or 10	–	–	–	13	–	–	–	–	–	–	–	–	13
Late	–	2	–	1	1	–	–	–	–	–	–	–	4
Unphased	56	–	–	26	2	11	–	2	–	2	–	1	100
<b>Total</b>	<b>3,350</b>	<b>5</b>	<b>49</b>	<b>266</b>	<b>957</b>	<b>13</b>	<b>111</b>	<b>117</b>	<b>155</b>	<b>30</b>	<b>799</b>	<b>6</b>	<b>5,858</b>

Table 4. Summary quantification of ironwork by phase and trench.

	House of the Pelta Mosaic	House of the Peopled Plaster	House of the Helmets	Alley	House of the Bull	Deposits over all buildings	Un- attributed	Un- provenanced	Possible House of the Bull	Totals
Arms	2	–	7	–	3	–	1	–	–	13
Tools	1	–	11	–	7	–	–	–	–	19
Transport	–	–	0	–	4	–	–	–	–	4
Personal	2	–	2	–	–	1	–	–	–	5
Household	5	2	23	–	47	1	–	–	–	78
Door	3	2	11	–	25	–	–	–	–	41
Window	–	–	13	–	14	–	–	–	–	27
Security	7	–	51	–	26	–	–	–	–	84
Structural	7	6	25	–	63	3	–	–	–	104
Nails	147	113	756	9	1,282	41	–	3	5	2,356
Query	3	–	19	–	6	–	–	–	–	28
Misc.	37	3	128	1	246	14	–	–	3	432
Industrial	6	–	2	–	1	1	–	–	–	10
Unknown	11	4	68	1	55	8	–	1	1	149
<b>Total</b>	<b>231</b>	<b>130</b>	<b>1,116</b>	<b>11</b>	<b>1,779</b>	<b>69</b>	<b>1</b>	<b>4</b>	<b>9</b>	<b>3,350</b>

Table 5. Trench 2: Summary quantification of iron finds by house and by function.

The finds are almost exclusively from late Augustan/Tiberian contexts. The range of finds is limited (table 6). Nails are the dominant element, with a total of 113 fragments. There are two items of household equipment: the bowl of a ladle (IR173) and a fragment of a knife of a distinctive form identified here as the Zeugma type (IR139). There are

four other structural objects (six fragments) (IR468, 508, 514–515) and two pintles for drop hinges (IR225–226). The remaining items include three miscellaneous fragments and four unidentified pieces. Overall the assemblage lacks distinctive pieces, particularly portable items such as personal pieces, tools, and household objects.

	Phase 3	Phase 4	Phase 6	Total
Arms	—	—	—	0
Tools	—	—	—	0
Transport	—	—	—	0
Personal	—	—	—	0
Household	2	—	—	2
Door	2	—	—	2
Window	—	—	—	0
Security	—	—	—	0
Structural	6	—	—	6
Nails	110	1	2	113
Query	—	—	—	0
Misc.	3	—	—	3
Industrial	—	—	—	0
Unknown	4	—	—	4
<b>Total</b>	<b>127</b>	<b>1</b>	<b>2</b>	<b>130</b>

Table 6. *House of the Peopled Plaster: Quantification of iron finds by phase and function.*

#### HOUSE OF THE PELTA MOSAIC

At least two rooms or areas were identified: Room 2A to the north and an area defined by a mosaic (M2) to the south.<sup>25</sup> A total of 231 iron pieces were recorded from this building and all appear to be from Room 2A, although the precise location within the room is uncertain. Most of the finds are from mid-third-century destruction deposits or from collapse and colluvial deposits that seal the destruction deposit. A small number of finds came from later colluvial deposits. The range of portable finds — arms, tools, pieces of transport equipment, personal items, and household equipment — is limited (table 5). Included are two *pila* heads (IR23–24), an awl (IR61), an iron finger ring (IR90), a single hobnail (IR97), fragments of possibly three vessels (IR126–128), and a poorly preserved knife (IR134). The finds relating to security, such as locks and keys, as well as door and window fixtures, are also limited. These include fragments of three padlocks (IR325, 339, 361), three pintles for drop hinges (IR216, 227–228), and a possible leaf hinge (IR202). The main component of the assemblage from the House of the Pelta Mosaic is structural items, including three split spike loops and 146 nails or nail fragments. There are also 37 miscellaneous pieces. The finds cannot be identified to areas within the building, and therefore they provide little additional information about the use or function of the structure. The absence of significant household or personal items, and of tools and other portable pieces, is interesting. The assemblage is instead dominated by structural metalwork in the broadest sense, particularly nails. The hinge elements and lock fragments are broadly associated with the security of the house and its contents. All portable items of value appear to have been removed.

#### HOUSE OF THE HELMETS

Much of this building was investigated (tables 7 and 8). The excavated portion includes a peristyle court flanked by rooms on the north, east, and west. A total of 1,116 pieces of ironwork were recovered from this building, and 1,039 of these were found in mid-third-century destruction deposits (table 8). The most ironwork came from Rooms 2I (n = 367) and 2F (n = 275), to the east and west of the peristyle court, respectively.

WEST OF THE PERISTYLE COURT: There are 84 finds from Room 2E. There are no arms or armor, no personal items, household objects, or tools from this room (table 9). Three fragments of window bars (IR278–279) were found, but window grilles and door fittings were absent. Also present was a piece of chain with three extant links (IR371), a single structural fitting, 64 nails, and 10 miscellaneous fragments. The finds from this room do not contribute to our understanding of its use, and the lack of diagnostic finds suggests that the room had been cleared of effects.

Room 2F, to the south of Room 2E, produced 275 iron fragments, all from mid-third-century destruction or collapse deposits. The range of finds is quite limited and includes two tools, both awls or punches (IR59, 66), and seven household objects: four knives (IR136–137, 147, 149), two shallow vessels of uncertain function (IR122–123) and a small hinge that is probably for furniture rather than a door (IR192). Six door fittings are present, but no window fittings. The door fittings include two latch hooks (IR245–246), a possible drop hinge rider (IR214), and three L-shaped hinge pintles (IR221–223). Security is represented by two keys — a possible lever lock key (IR309) and an L-shaped slide key (IR310) — as well as fragments from large square padlocks (IR328, 333–335, 338), a fragment of

Room	Phase 2	Phase 4	Phase 6	Unphased	Total
2E	—	—	84	—	84
2F	—	—	275	—	275
2G	—	—	—	5	5
2H	—	—	11	20	31
Peristyle court	—	—	189	—	189
Peristyle court and 2H	—	—	118	—	118
2I	1	30	335	1	367
East of house	—	—	—	20	20
Deposits over whole trench	—	—	27	—	27
<b>Total</b>	<b>1</b>	<b>30</b>	<b>1,039</b>	<b>46</b>	<b>1,116</b>

Table 7. Trench 2: House of the Helmets. Numbers of iron finds by room and phase.

	Room									Total
	2E	2F	2G	2H	Peristyle court	Peristyle court and 2H	2I	East of house	Deposits over whole trench	
Arms	—	—	—	—	7	—	—	—	—	7
Tools	—	2	—	—	2	3	4	—	—	11
Transport	—	—	—	—	—	—	—	—	—	0
Personal	—	—	—	—	—	—	2	—	—	2
Household	—	7	—	—	4	1	10	1	—	23
Door	—	6	—	—	1	1	3	—	—	11
Window	3	—	—	1	8	1	—	—	—	13
Security	1	22	—	—	4	1	23	—	—	51
Structural	5	2	—	—	6	3	8	1	—	25
Nails	64	193	—	15	129	105	221	6	23	756
Query	—	6	—	—	3	—	9	1	—	19
Misc.	10	31	5	9	9	3	55	2	4	128
Industrial	1	—	—	—	1	—	—	—	—	2
Unknown	—	6	—	6	15	—	32	9	—	68
<b>Total</b>	<b>84</b>	<b>275</b>	<b>5</b>	<b>31</b>	<b>189</b>	<b>118</b>	<b>367</b>	<b>20</b>	<b>27</b>	<b>1,116</b>

Table 8. Trench 2: House of the Helmets. Numbers of iron finds by room and function.

a possible cylindrical padlock (IR358), and six fragments from possible pillbox-shaped padlocks (IR362). The only structural fittings are a T-staple, a split spike loop, and 193 nails. There are six unidentified objects (IR576–581) and 31 miscellaneous fragments. The assemblage lacks diagnostic pieces beyond the awls, household objects, door fittings, and padlocks.

Room 2G, to the south to Room 2F, produced only five fragments of thin strip, all without visible nail holes.

**THE PERISTYLE COURT AND ROOM 2H:** The finds from the peristyle court comprise 188 fragments, all from mid-third-century contexts. Among the finds from this area are a number of weapons and pieces of armor. They include an almost complete cavalry parade helmet (IR1) and possible fragments from other helmets (IR2–3). The complete helmet is dated to the late second century or first half of the

third century. Also found in the peristyle court were three spearheads (IR14–16) and a length of sword blade (IR33). All but spearheads IR15 and IR16 came from the same burnt layer (context 2008) over the courtyard mosaic (M6). Two awls (IR60, 64) account for the only tools found, and personal items in iron were entirely absent. Household items consist of two knives (IR135, 138) of Zeugma type (the distinctive form found in some numbers at Zeugma) and two small hemispherical vessels with copper alloy suspension rings (IR119–120), also from context 2008. The latter should perhaps be assigned to a different functional category—namely, measurement—since these were almost certainly scale pans. Finds also included a single latch hook (IR248), an almost complete window grille (IR269) and fragments of barb spring padlock cases (IR326, 336) and a possible door bolt (IR368), a piece of chain (IR371), six structural fittings, and 129 nails. There were only nine mis-

	Room										Deposit over entire trench	Total
	2K	2J	2J and 2K	2K and 2M	Courtyard and 2J	2M	Courtyard	2N	2O	2P		
Arms	–	–	1	–	1	–	1	–	–	–	–	3
Tools	–	–	1	–	–	2	3	–	–	1	–	7
Transport	–	–	–	–	–	–	3	–	–	1	–	4
Personal	–	–	–	–	–	–	–	–	–	–	–	0
Household	3	–	36	1	–	2	2	2	–	1	–	47
Door	6	–	–	–	3	7	6	1	–	2	–	25
Window	1	–	–	–	1	3	7	–	–	2	–	14
Security	1	–	4	–	1	16	2	2	–	–	–	26
Structural	9	–	8	–	1	10	24	6	–	4	1	63
Nails	127	–	95	6	96	187	440	39	–	290	2	1,282
Query	–	–	–	–	1	1	1	1	–	2	–	6
Misc.	12	–	139	–	7	10	43	16	–	19	–	246
Industrial	–	–	–	–	–	1	–	–	–	–	–	1
Unknown	–	–	3	–	2	8	29	5	–	8	–	55
<b>Total</b>	<b>159</b>	<b>0</b>	<b>287</b>	<b>7</b>	<b>113</b>	<b>247</b>	<b>561</b>	<b>72</b>	<b>0</b>	<b>330</b>	<b>3</b>	<b>1,779</b>

Table 9. Trench 2: House of the Bull. Numbers of iron finds by room and function.

cellaneous pieces and three unidentified fragments (IR564, 567).

The peristyle court is notable for the burnt deposit (context 2008) over the courtyard mosaic (M6) that included arms and armor. Personal objects were again absent and household items limited. The lack of door fittings other than a latch hook is perhaps to be expected for a peristyle court, but an almost complete window grille is not. Structural fittings are poorly represented and nails were fewer than expected. Finds from the burnt deposit are distinctive for the complete helmet and two complete iron vessels, and these have implications for the interpretation of the assemblage. It suggests that loot, or salvage, had been gathered in the peristyle court in preparation for removal, but that the process was interrupted, perhaps by destruction and burning. Inhabitants preparing to flee with possessions may have been forced to abandon the peristyle court prematurely, or perhaps looters scouring the abandoned city for goods were prevented from completing the task by the firing of the building. It is impossible to be certain whether personal items would be expected in the peristyle court, but household items—furniture, for example—might have been present. The almost total absence of such items suggests removal to safety or theft by looters.

Room 2H to the north of the peristyle court produced only 32 iron finds, including a possible fragment of a window grille (IR277) and several miscellaneous fragments, nails, and unidentifiable fragments. The range of finds is limited. No arms or armor, no tools, no personal items, and no household objects were found.

A quantity of finds ( $n = 118$ ) was also found in mid-third-century collapse deposits over both the peristyle court and Room 2H to the north. There were no weapons

or armor, no personal items, and only a single household item: a possible hasp for a chest or box (IR180). There were three tools: an awl (IR58), a possible froe (IR53), and a tool of uncertain use with curved blade and the tang set at a right angle (IR52) that superficially resembles a sickle, but is wrongly shaped and balanced. A single door fitting (IR220), fragments of a window grille (IR275), and fragments of a barb spring padlock (IR332) were also found. Structural fittings comprise three split spike loops and 105 nails. Numerically, the assemblage of iron finds from Room 2H and the peristyle court is dominated by nails: 105 of the 118 iron fragments are nails. No personal items were found, no arms or armor, and no items relating to transport. With the exception of the three tools, the absence of portable objects, especially personal and household items, is noteworthy.

**EAST OF THE PERISTYLE COURT:** Of the 367 fragments from Room 2I, 335 were from mid-third-century contexts. The finds include a saw blade fragment (IR45), two sockets, possibly from tools (IR75, 77), and a possible tool blade fragment (IR74). Personal items include an iron finger ring with an empty setting for an intaglio (IR91), and a probable boot cleat (IR93). A number of possible household items can be identified: These include four knives or blade fragments (IR150, 156–157, 161), a possible vessel foot (IR133), although the identification is not certain, a bucket or brazier handle (IR110), a drop handle with attachment plates (IR182), and a possible weight (IR179). Two hinges with tapering leaves were used for furniture (IR190–191). Door fittings include a latch hook (IR244), a hinge strap (IR206), and a possible rider for a drop hinge (IR211). No window bars or other fittings were identified. However,

a number of padlocks and fragments of padlocks were found: these included a bolt and barb spring from a large padlock (IR320), the case from a similar lock (IR337), and other fragments of padlock cases (IR327, 329–331). Both IR320 and IR337 come from a burnt destruction deposit (context 2141) that also produced five Type B nails used for door fittings. Fragments from smaller square barb spring padlocks (IR351–355) all belong to a context dated to occupation in Flavian times. This context also produced a bolt from a slide lock (IR368). The room also produced eight structural fittings—seven split spike loops and a looped spike—and 221 nails, including 11 from Flavian contexts, 209 from mid-third-century contexts and one from an unphased context. There were 55 miscellaneous pieces, and some unidentifiable fragments.

Although household and personal items were present, they were often fragmentary or of uncertain identification. Structural fittings, nails, and padlock fragments were more common. Some door fittings were identified but no window bars. Although a substantial number of iron fragments were found in this room, they form an assemblage dominated by structural fittings and security items, rather than household or personal items. The implication is that the household contents had been removed prior to destruction.

Finds from adjacent areas are as follows. In an unphased context east of the House of the Helmets, a blade from a pair of shears (IR176), a split spike loop, six nails, two miscellaneous fragments, an unidentified object (IR588), and some unidentifiable fragments were found. Colluvial deposits sealing the whole of the House of the Helmets contained four miscellaneous fragments and 23 nails. The alleyway between the House of the Helmets and the House of the Bull produced a small assemblage of iron comprising seven nails, one bar fragment (miscellaneous), and one heavily encrusted undiagnostic lump. Of these nine pieces, five were from the drain in the alley (context 2218).

#### HOUSE OF THE BULL

This appears to be the most complete of the structures investigated in Trench 2. At least six rooms were identified around all four sides of a central courtyard. The ironwork assemblage from the house had 1,779 items from mid-third-century deposits (table 9), most recovered from specific rooms. The distribution was not even, although all rooms contained at least some iron objects, with the exception of Room 2O, which seems to have produced no ironwork.

WEST OF THE COURTYARD: Rooms 2J and 2K produced 446 iron objects or fragments, all from mid-third-century deposits. None of these could be definitely assigned to Room 2J, but 159 objects were from deposits in Room 2K. The remaining 287 objects are therefore assigned to the west rooms as a group. A spearhead (IR17) and part of a saw (IR46) were discovered, but no personal items and no items relating to transport are among the assemblage.

Thirty-six fragments of possible household items came from the rooms west of the courtyard. These included a lock hasp (IR181), a saucepan (IR121), 24 fragments of bucket or brazier bindings (IR106–109), a brazier or bucket handle mount (IR111), a possible pot hook (IR172), and two items of uncertain identification (IR117–118). Three noteworthy household items from Room 2K were a brazier and suspension system (IR103), and parts of the bucket and the suspension rod of a second brazier assembly (IR104–105). A possible fragment of a bucket handle (IR110) was found in Room 2I, not far to the north but across an alleyway, in the House of the Helmets.

Room 2K also produced six door fittings—five latch hooks (IR255–259) and an L-shaped hinge pintle (IR231)—as well as a single window-bar fragment (IR285). An L-shaped slide key (IR311) was also found in Room 2K, and a barb spring padlock key (IR304) and three barb spring padlock fragments (IR341) came from the west rooms as a group. The remainder of the iron finds from the rooms west of the courtyard comprised 17 structural pieces, 222 nails, 151 miscellaneous fragments, and 3 unidentified fragments. Overall, the number of household items—in particular the braziers and saucepan—is noteworthy. Otherwise portable items were limited in number. Door and window fittings and padlocks are present.

COURTYARD AND ROOM 2M: The courtyard produced a large ironwork assemblage comprising 560 pieces. Another 113 pieces came from either the courtyard or from Room 2J to the west. An assemblage of 247 iron objects came from Room 2M to the north of the courtyard.

The finds from Room 2M included an awl or punch (IR63), a socket from a possible tool (IR76), and two household items: a knife with a broad blade (IR146), very possibly a kitchen knife, and a leaf hinge (IR195), possibly from a chest or cupboard. There were no personal items or weapons. Seven door fittings consist of three L-shaped hinge pintles (IR217–219), two drop hinge riders (IR212–213), and two latch hooks (IR247, 249). Three window bar fragments (IR276, 280) were also recovered. Among 16 fragments of padlocks, 13 are from context 2095 and could have belonged to a number of locks (IR317–319, 359). The remaining three fragments are from a single padlock case from context 2056 (IR340). The remaining ironwork from Room 2M comprises 10 structural pieces, 187 nails, 10 miscellaneous fragments, 1 unidentifiable object (IR582), and 8 unidentified fragments.

The ironwork from the courtyard includes a possible arrowhead (IR28) and three tools: a smith's punch (IR37), an axe (IR40), and a socket, possibly for a tool (IR78). The axe is unusual because it has two cutting edges, whereas Roman axes usually have a single blade. There are also three possible items of transport equipment. These include two swivels used with chain (IR84–85) and a possible nave band fragment (IR86). There are no personal items. The solitary household item is the flat circular dish from a lamp

stand or candlestick (IR100). Door fittings comprise two L-shaped hinge pintles (IR229–230), three latch hooks (IR250–252), and a latch rest (IR268). Window grille and bar fragments were also recovered (IR281–283), as well as an almost complete barb spring padlock (IR321) and a fragment of chain link (IR374). The remaining finds include 24 structural pieces, 440 nails, a single unidentified piece (IR587), 43 miscellaneous fragments, and 29 unidentifiable fragments.

Overall, the absence of personal pieces and the paucity of other portable items is notable. Window and door fittings are more common, and in Room 2M fragments of padlocks are quite numerous. The courtyard produced an almost complete padlock. Structural fittings are common, and nails are the dominant finds numerically.

**EAST OF THE COURTYARD:** There were two rooms to the east of the courtyard, one of which (Room 2N) produced 72 iron fragments, while the other (Room 2O) seems to have produced no iron finds. The finds from Room 2N included no arms, tools, transport items, or personal objects, but there were two household objects: a possible knife handle (IR170) and a leaf hinge (IR193). A single L-shaped hinge pintle was found (IR224), but otherwise door and window fittings are absent. There is a piece of heavily encrusted chain (IR372) and a possible circular lock case (IR363). The remaining iron finds include 6 structural pieces, 39 nails, 16 miscellaneous pieces, 1 unidentified object (IR583), and 5 unidentifiable fragments. Again, the lack of personal and other portable items is noteworthy. Household items are limited, and only a single door fitting was found.

**SOUTH OF THE COURTYARD:** The excavators found 330 iron finds in Room 2P, south of the courtyard. The portable finds include a possible awl (IR67), a harness strap loop (IR83), and a fragment of plate hinge (IR196). There are two door or window fittings, both latch hooks (IR253–254); two fragments of window bar (IR284, 286); and two unidentified fragments (IR591–592). The remaining iron finds are dominated by 290 nails and 19 miscellaneous pieces. The absence of portable finds — notably personal items — is very marked in this room.

#### *Trench 9*

Trench 9 produced a substantial assemblage of 953 iron objects or fragments (tables 10 and 12). The structures in this trench were divided between upper and lower terraces by an alley, from which there appear to be no iron finds. There were 340 objects from the lower terrace, 500 from the upper terrace, and 113 pieces from overall deposits. Most of the finds ( $n = 906$ ) come from mid-third-century deposits (table 10). There are a few earlier finds: one nail from a Flavian-period deposit and 30 from early to mid-third-century deposits on the lower terrace. There are a few finds from later deposits.

#### LOWER TERRACE — HOUSE OF THE MOSAICIST

Four rooms of this house were excavated, three to the west (Rooms 9A, 9B, and 9D) and one to the east (Room 9E).<sup>26</sup> Overall, there were 340 iron pieces from the lower terrace. One nail belonged a Flavian-period context, and 27 nails, 2 miscellaneous fragments, and a split spike loop were from and early to mid-third-century contexts. The remaining finds are from mid-third-century contexts.

Deposits from Room 9A revealed a shield boss (IR4), an awl (IR57), and three household objects: namely, two knife blades and a shallow spouted vessel (IR153, 158, 124). There are also 4 chain fragments (IR375–376), 10 fragments of padlock (IR324, 343), 2 unidentified pieces (IR597, 599), 1 structural fragment, 58 nails, and 15 miscellaneous fragments. Room 9D did not yield any portable items, but the excavators recovered 2 structural pieces, 72 nails, and 7 miscellaneous fragments. The only portable items from Room 9B are a small iron brooch (IR88), part of a possible knife handle (IR136), and a bucket or brazier handle mount (IR112). Also from this room are 30 nails, 10 miscellaneous fragments, an unidentified object (IR598), and an L-shaped hinge pintle (IR232). Room 9E produced 100 iron fragments. These include an awl (IR62), a small leaf hinge (IR197), and a blade fragment (IR162). There are also three latch hooks (IR260–262) and a fragment of window bar (IR287), as well as 68 nails and 16 miscellaneous fragments.

The comparative lack of portable items — only one shield boss, two awls, one small brooch, and seven household items — from the lower terrace is worthy of comment. There are also only a few door or window fittings, and only Room 9A produced any padlock or chain fragments. Numerically, the bulk of the ironwork comprised nails and miscellaneous fragments. In general, there is little to throw light on the use and function of individual rooms on the lower terrace.

#### UPPER TERRACE — HOUSE OF THE HOARDS

There are 505 iron pieces from rooms on the upper terrace. All but 19 are from mid-third-century contexts. Room 9I produced an awl or punch (IR68), five flax or wool combs (IR69–73), a harness fitting (IR82), and eleven fragments of household items or tools, including five curved socketed knives (IR163–167) that were found together with the five flax combs. Other household items are two distinctive knives with square tangs and riveted collars (IR137, 139), a possible utensil handle (IR178), and three vessel fragments (IR129–130). There are no personal objects. Door and window fittings include three, possibly four, drop hinge pintles for doors (IR234–235, 236), a door strap (IR210), and a possible window bar (IR288). There are 2 or 3 chain links (IR377), an L-shaped slide key (IR316), 3 or 4 fragments of large barb spring padlocks (IR345, 347–348), 3 structural objects, 49 nails, and 18 miscellaneous fragments.

Room 9J revealed 91 iron pieces, including an awl or leather punch (IR65), a knife blade (IR154), and a small

	Phase						Total
	4	5	6	6 or later	Late	Unphased	
Lower Terrace—							
The House of the Mosaicist							
9A	—	—	97	—	—	—	97
9D	—	30	52	—	—	—	82
9B	—	—	60	—	—	—	60
9A, 9B, 9D	—	—	—	—	—	1	1
9E	1	—	99	—	—	—	100
Upper Terrace—							
The House of the Hoards							
9I	—	—	113	—	1	—	114
9J	—	—	91	—	—	—	91
9G	—	—	215	—	11	—	226
9K	—	—	—	6	—	—	6
9H	—	—	60	—	—	—	60
9F	—	—	6	—	—	1	7
All	—	—	113	—	—	—	113
<b>Total</b>	<b>1</b>	<b>30</b>	<b>906</b>	<b>6</b>	<b>12</b>	<b>2</b>	<b>957</b>

Table 10. Trench 9: Summary of numbers of iron finds by room and phase.

	Lower Terrace: House of the Mosaicist					Upper Terrace: House of the Hoards						Deposit over entire trench	Deposits over Lower Terrace	Deposits over Upper Terrace	Total from overall deposits	Total
	9A	9D	9B	9A, 9B, 9D	9E	9I	9J	9G	9K	9H	9F					
Arms	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2
Tools	1	—	—	—	1	6	2	3	—	—	1	—	1	—	1	15
Transport	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
Personal	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Household	3	—	2	—	2	11	2	10	—	1	—	—	—	—	—	31
Door	—	—	—	1	3	5	4	—	—	—	—	—	—	—	—	13
Window	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	2
Security	14	—	—	—	—	6	1	14	—	13	—	1	6	—	7	55
Structural	1	2	1	—	5	3	1	5	—	2	—	4	1	—	5	25
Nails	58	72	30	—	68	49	59	47	4	36	6	29	28	15	72	601
Query	2	—	1	—	—	—	—	3	—	—	—	1	2	—	3	10
Misc.	15	7	10	—	16	18	18	35	2	8	—	10	12	3	25	154
Industrial	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
Unknown	2	1	15	—	4	13	5	7	—	—	—	—	—	—	—	47
<b>Total</b>	<b>97</b>	<b>82</b>	<b>60</b>	<b>1</b>	<b>100</b>	<b>113</b>	<b>92</b>	<b>26</b>	<b>6</b>	<b>60</b>	<b>7</b>	<b>45</b>	<b>50</b>	<b>18</b>	<b>113</b>	<b>957</b>

Table 11. Trench 9: Summary of numbers of iron finds by room and function.

plate hinge (IR204). There are no personal objects. There are three hinge pintles (IR233, 236–237), a latch hook (IR263), and a fragment of a large barb spring padlock (IR344). There are no window fittings. There are 59 nails and a single structural fitting.

The excavators recovered 226 iron objects from Room 9G, including one military item — a dagger (IR36). Also found were an axe (IR42), an awl (IR55), and a pos-

sible tool socket (IR80). There are no personal objects. There are a number of household items: a probable dish from a candlestick or lamp stand (IR101), five small hinges (IR198–201, 205), a knife (IR138), a ladle (IR174). A small pierced disc (IR177) and a possible handle (IR116) might also be household items. There are no door or window fittings, but there are seven lock fragments (IR346, 357, 364–367), three L-shaped slide keys (IR313–315), two barb

	Phase							Total
	1 or 2	2 or 3	3	5	Pre-6	6	9	
North alley	-	-	-	7	-	23	-	30
House of the Painted Floors								
Room 18C	-	-	-	-	-	-	-	0
Room 18D	-	-	-	-	-	-	-	0
Room 18E	-	-	-	-	5	-	-	5
Rooms 18C and 18E	-	-	-	-	-	1	-	1
Rooms 18C and 18D	19	-	-	-	-	-	-	19
Room 18F	-	-	-	-	6	6	-	12
Room 18G	-	-	-	-	-	3	-	3
Rooms 18G and 18I	-	-	-	-	-	3	-	3
Room 18I	-	-	-	-	-	-	-	0
Room 18H	-	-	-	-	-	-	-	0
Mud-brick House								
Room 18A	-	-	-	-	-	193	1	194
Room 18B	-	-	1	-	3	167	-	171
Pits	-	1	-	-	-	-	-	1
Deposits over whole trench	-	-	-	-	-	360	-	360
<b>Total</b>	<b>19</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>14</b>	<b>756</b>	<b>1</b>	<b>799</b>

Table 12. Trench 18: Numbers of iron finds by room and phase.

	House of the Painted Floors										Mud-brick House		Pits south of buildings	Deposits over whole trench	Total	
	North alley	18C	18D	18D and 18E	18E	18C and 18D	18G	18F	18G and 18I	18H	18I	18A				18B
Arms	-	-	-	-	-	-	-	-	-	-	6	5	-	6	17	
Tools	-	-	-	-	-	-	-	-	-	-	3	2	-	2	7	
Transport	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Personal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Household	-	-	-	-	-	-	-	-	-	-	1	3	-	5	9	
Door	-	-	-	-	-	-	-	-	-	-	2	1	-	2	5	
Window	1	-	-	-	-	2	-	-	-	-	24	-	-	16	43	
Security	-	-	-	-	-	-	-	-	-	-	1	1	-	7	9	
Structural	2	-	-	-	-	1	-	3	-	-	6	3	-	8	23	
Nails	26	-	-	1	4	16	3	9	3	-	74	58	-	236	430	
Query	-	-	-	-	-	-	-	-	-	-	2	1	-	3	6	
Misc.	1	-	-	-	1	-	-	-	-	-	42	57	-	44	145	
Industrial	-	-	-	-	-	-	-	-	-	-	-	1	-	3	4	
Unknown	-	-	-	-	-	-	-	-	-	-	33	39	1	28	101	
<b>Total</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>19</b>	<b>3</b>	<b>12</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>194</b>	<b>171</b>	<b>1</b>	<b>360</b>	<b>799</b>

Table 13. Trench 18: Summary of numbers of iron finds by room and function.

spring padlock keys (IR306–307), and two fragments of chain (IR378–379). Three objects could not be unidentified (IR567, 600–601). There are 5 structural pieces, 147 nails, and 35 miscellaneous fragments.

The three eastern rooms on the upper terrace produced 73 iron objects, most of which came from Room 9H. Room 9K had only four nails and two miscellaneous fragments, and Room 9F had a froe for cutting lathes (IR50) and six nails. The iron finds from Room 9H included a complete folding tripod (IR98). Apart from this complete object, portable items, such as arms and tools, items relating to transport, personal objects, and door and window fittings are absent from this room. There are 13 fragments forming most of the square box and bar of a large barb spring padlock (IR323). The remaining finds include 2 structural fittings, 36 nails, and 8 miscellaneous fragments.

The distribution of finds from the upper terrace is not uniform. The eastern rooms produced fewer finds than the western rooms, and the complete lack of personal items is noteworthy. There are some household or possible household items and a number of tools. These include three awls, probably for leatherworking, an axe and a probable froe for woodworking, and a socket, possibly from a tool.

#### *Trench 18*

This trench revealed parts of what are interpreted as two structures. The House of the Painted Floors is located at the north end of the trench (Rooms 18C–I) and the Mud-brick House at the south (Rooms 18A–B). Only 43 of the 799 iron pieces are not from mid-third-century contexts (table 12). The distribution of iron finds is concentrated in the Mud-brick House (table 13). A good number of the finds are from deposits that cover all or parts of the trench and are not restricted to single rooms (tables 12 and 13). An alley at the far north end of the House of the Painted Floors produced a window bar fragment (IR299), 2 structural fittings, 26 nails, and a miscellaneous fragment.

#### HOUSE OF THE PAINTED FLOORS

The northern rooms of the house (Rooms 18C–E) and the entrance to the building produced only 25 iron pieces, including 2 fragments of window bar (IR300), 1 split spike loop, 21 nails, and a miscellaneous fragment. Much of this material, including the window bar fragments and split spike loop, was found in Hellenistic or late Hellenistic contexts. All but one nail came from contexts dated before the mid-third-century destruction deposits.

Rooms 18F–I produced only 3 structural fragments and 15 nails. Most material was from mid-third-century destruction deposits, and the remainder from contexts pre-dating the destruction. Room 18F produced 12 pieces, comprising 9 nails, 2 L-shaped staples, and a probable circular collar. There are three nails from Room 18G, and three nails from a context in Rooms 18G and 18I. Room 18H had no iron finds.

#### MUD-BRICK HOUSE

The two rooms of this structure produced 366 pieces of iron. Room 18A produced 195 pieces, all but one nail from mid-third-century destruction deposits. The finds included a probable shield boss (IR5), the elongated tip of a Mainz-type *gladius* (IR35), a *pilum* or bolt head (IR26), a catapult bolt head (IR27), and a number of fragments of possible strip armor (IR10–11). The tools comprise fragments from two pit or frame saw blades (IR47–48). There are two fragments of a deep round-bottomed vessel that is oval in plan (IR125). This has been categorized as household, although its function is uncertain. It seems to have been designed for a specific purpose, which is not now clear. Also found were two latch hooks (IR266–267), 24 fragments of window bar or grille (IR301–303), a small chain link, 6 structural fittings, 74 nails, 2 unidentified pieces (IR613–614), 42 miscellaneous fragments, and 32 unidentifiable fragments.

Room 18B produced 171 pieces of iron. These include a spearhead (IR20), most of a badly preserved sword blade (IR34), and three strips of possible segmental armor (IR8–9). The tools comprise a possible froe (IR51) and a socket, possibly from a tool (IR81). The only household objects are fragments of three knives (IR155, 160, 169). There is a single latch hook (IR265) but otherwise no identifiable window fittings from this room. A circular plate, probably a lock plate (IR369), could have been fitted to a chest or cupboard. The remaining finds include 6 structural pieces, 58 nails, 1 uncertain object, possibly a key (IR612), and 57 miscellaneous fragments.

The assemblage from the Mud-brick House is notable for its weapons and possible armor fragments. There are a small number of tools, but household objects are limited and personal items absent. There are also locks and keys, some door or shutter fittings, and window bars and grilles. The most common finds are nails and miscellaneous fragments.

#### Trenches 7, 11, 12, and 13

Trenches 7, 11, 12, and 13 all produced smaller assemblages that are nonetheless worth some discussion.

#### *Trench 7*

Trench 7 produced 266 objects, 180 of which were from seventh-century destruction deposits. These came predominantly from Terrace B and, in particular, from the late Roman courtyard house (table 14).

#### TERRACE A

Some finds were recovered from late Hellenistic and Flavian contexts on Terrace A. The late Hellenistic finds, which came from a destruction deposit over the whole of the terrace, comprise part of an axe (IR41), eight nails, three miscellaneous fragments, and nine unidentifiable small corroded fragments (table 14).

The finds from Flavian-period contexts came from

Rooms 7A and 7B. A barbed and tanged arrowhead (IR29), two nails, and two miscellaneous pieces were found in an occupation layer (context 7007) in Room 7A. Finds from Room 7B consist of a stylus (IR92), a fragment of padlock case (IR342), one looped spike (IR396), five nails, two miscellaneous pieces, and four unidentified fragments. These were found in a leveling layer (context 7023) and a mortar floor (context 7021). Seventh-century and later finds from Terrace A comprise 50 nails and a fragment of joiner's dog.

#### TERRACE C

Excavations here were limited. The iron finds comprise a possible knife handle (IR171), six nails, and a fragment of an iron strip, all are from unphased contexts.

#### TERRACE B

There are 151 iron finds from Terrace B, 145 of which are from the late Roman courtyard house. Most of the finds are from sixth- or seventh-century contexts. The excavated portion of the courtyard house has a courtyard and a row of rooms on its south side. Room 7C, at the west end, produced eight nails and three miscellaneous fragments (table 17). The central room (7D) produced a knife (IR151), two structural fittings, nine nails, and six miscellaneous fragments. The east room (7E) is smaller and contained nine nails. The majority of the finds ( $n = 86$ ) came from the central courtyard, and included a possible tool (IR79), a knife blade (IR152), a plate hinge possibly from a chest or piece of furniture (IR203), two structural fittings, and an unidentified spatulate object (IR594). There are 60 nails and 20 miscellaneous fragments. The absence of door and window fittings from the deposits within the courtyard house may be significant. On the whole, the iron finds here are uninformative.

The few iron finds from the corridors to the east, west, and south of the central courtyard comprise mainly nails and miscellaneous fragments. There was also a barbed and tanged arrowhead from a seventh-century destruction deposit (IR30) in the west corridor.

#### Trench 11

The majority of the finds came from early third-century and mid-third-century contexts (table 16), and these include two leaf-shaped spearheads (IR18, 21), a mattock that is of a military type (IR39), and an awl (IR56). The household items include four binding fragments from a chest (IR185), two possible handles (IR113, 183), and a ladle (IR175). There is a latch hook (IR264) and a fragment from a window bar (IR289), as well as four unidentified fragments (IR602–604).

#### Trench 12

Nails and unknown fragments dominate among the 117 iron finds from this trench (table 16). The finds came almost exclusively from late Roman contexts, and they include a

hobnail (IR96), a vessel fragment (IR131), and two unidentified pieces (IR606–607).

#### Trench 13

Finds from this trench are divided between mid third-century contexts and late Roman contexts (table 16). The mid-third-century objects are dominated by nails and miscellaneous fragments. There are also a vessel fragment (IR132), fragments of a padlock (IR349), and two window bar fragments (IR290–291). Miscellaneous fragments dominate the late Roman finds. The only identifiable object is a possible utensil handle (IR114).

## COMPOSITION OF THE ASSEMBLAGE BY FUNCTION

### Arms and Armor (IR1–36)

The small assemblage of military items includes a cavalry parade helmet (IR1), some helmet fragments (IR2–3), shield bosses (IR4–5), and possible armor fragments (IR6–13). There are also spearheads (IR14–21), *pila* heads (IR22–24), boltheads (IR25–27), arrowheads (IR28–32), fragments of sword blades (IR33–35), and a dagger (IR36). There is also a mattock (IR39), which is classed as an agricultural tool but belongs to a type generally associated with military sites. These items are discussed together with the militaria in copper alloy and bone in my chapter in this volume on the military objects from the PHI rescue excavations at Zeugma in 2000.

### Tools (IR37–81)

There are a small number of tools. They include two possible smith's punches (IR37–38) and the mattock (IR39) already noted. Most prominent among the tools are fragments of saws, saw blades, and other carpenter's tools (IR40–48, and possibly IR49–53). Also significant in terms of numbers are the awls or punches for leatherworking (IR54–68). A notable find was a group of combs for flax or wool (IR69–73). Their presence in a burnt deposit in the House of the Hoards in Trench 9 may be taken as evidence for textile production in the vicinity.<sup>27</sup> Found bundled with the flax combs were five socketed knives (IR163–167). These superficially resemble spearheads, but they differ from spearheads in two regards: firstly the blades are slightly angled in relation to the sockets, and secondly the blades are crescentic. Both the flax combs and the knives have been burnt. The blackened metal, particularly on the knives, shows signs of heat fracture. Other objects in this category can only be identified as possible tools (IR74–81).

Given the size of the assemblage, the overall number of tools seems quite small, but it must be remembered that the craftsman's tools were his livelihood, and they would have been carefully stored and curated. Any craftsman

	Phase								Total
	2	4	7 or 8	8 or 9	9	9 or 10	Late ?	Unphased	
Terrace A									
All	21	-	-	-	51	-	-	-	72
Room 7A	-	5	-	-	-	-	-	-	5
Room 7B	-	14	-	-	-	-	-	-	14
Terrace B— courtyard house									
Room 7C	-	-	4	-	7	-	-	-	11
Room 7D	-	-	-	2	16	-	-	-	18
Room 7E	-	-	-	-	9	-	-	-	9
Central court	-	-	-	-	77	5	-	4	86
E corridor	-	-	-	-	6	-	-	-	6
S corridor	-	-	-	-	1	-	-	-	1
W corridor	-	-	-	-	8	-	-	-	8
unlocated	-	-	-	-	3	-	-	-	3
Terrace B— outside courtyard house									
S of house	-	-	-	-	2	-	-	-	2
W of house	-	-	-	-	-	-	1	-	1
Terrace B—unlocated	-	-	-	-	-	-	-	6	6
Terrace C—S structure	-	-	-	-	-	-	-	16	16
All terraces	-	-	-	-	-	8	-	-	8
<b>Total</b>	<b>21</b>	<b>19</b>	<b>4</b>	<b>2</b>	<b>180</b>	<b>13</b>	<b>1</b>	<b>26</b>	<b>266</b>

Table 14. Trench 7: Summary quantification of ironwork by findspot and phase.

	Terrace A			Terrace B— courtyard house					Terrace B— outside courtyard house		Terrace B, Terrace C,			Total			
	7A	7B	All	7C	7D	7E	Central court	E corridor	S corridor	W corridor	Un- located	S of house	W of house		Un- located	S structure	All terraces
Arms	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2
Tools	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	2
Transport	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Personal	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
House- hold	-	-	-	-	1	-	1	-	-	-	1	-	-	-	1	-	4
Door	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Window	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Security	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Structural	-	1	1	-	2	-	3	-	-	-	-	-	-	1	-	3	11
Nails	2	5	58	8	9	9	60	4	-	5	2	1	-	4	6	4	177
Query	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Misc.	2	2	3	3	6	-	20	2	1	2	-	1	-	1	1	1	45
Industrial	-	-	-	-	-	-	-	-	-	-	-	-	1	-	8	-	9
Unknown	-	4	9	-	-	-	-	-	-	-	-	-	-	-	-	-	13
<b>Total</b>	<b>5</b>	<b>14</b>	<b>72</b>	<b>11</b>	<b>18</b>	<b>9</b>	<b>86</b>	<b>6</b>	<b>1</b>	<b>8</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>16</b>	<b>8</b>	<b>266</b>

Table 15. Trench 7: Summary quantification of ironwork by findspot and function.

	Phase										
	Trench 11			Trench 12			Trench 13				
	5	6	Total	9	Unphased	Total	6	6?	9	9?	Total
Arms	–	2	2	–	–	0	–	–	–	–	0
Tools	–	2	2	–	–	0	–	–	–	–	0
Transport	–	–	0	–	–	0	–	–	–	–	0
Personal	–	–	0	1	–	1	–	–	–	–	0
Household	1	6	7	1	–	1	1	–	1	–	2
Door	–	1	1	–	–	0	–	–	–	–	0
Window	1	–	1	–	–	0	–	–	–	–	0
Security	–	–	0	–	–	0	1	1	–	–	2
Structural	4	5	9	3	–	3	3	–	–	–	3
Nails	30	40	70	68	1	69	57	–	13	3	73
Query	3	1	4	2	–	2	–	–	–	–	0
Misc.	6	3	9	11	–	11	15	–	48	–	63
Industrial	–	–	0	3	–	3	–	–	–	–	0
Unknown	6	–	6	26	1	27	8	–	–	4	12
<b>Total</b>	<b>51</b>	<b>60</b>	<b>111</b>	<b>115</b>	<b>2</b>	<b>117</b>	<b>85</b>	<b>1</b>	<b>62</b>	<b>7</b>	<b>155</b>

Table 16. Trenches 11, 12, and 13: Summary quantification by phase and function.

Trench	House	Room	Description
Trench 2	House of the Helmets	2E	1 chain fragment
		2F	1 slide key, 1 possible lever lock key, 20 padlock fragments
		2I	1 slide lock bolt, 22 padlock fragments
		peristyle court	1 possible lock bolt, 1 chain fragment, 2 padlock fragments
		peristyle court and 2H	1 barb spring padlock case fragment
		House of the Bull	2K
Trench 9	House of the Mosaicist	2J and 2K	1 slide key, 3 padlock fragments
		2M	16 padlock fragments
		courtyard and 2J	1 small barb spring padlock case
		courtyard	1 chain fragment, 1 almost complete large barb spring padlock
		2N	1 chain fragment, 1 possible lock case fragment
Trench 9	House of the Hoards	9A	4 chain fragments, 10 padlock fragments
		9J	1 padlock fragment
		9I	2 chain fragments, 1 slide key, 4 padlock case fragments
		9G	2 chain fragments, 2 barb spring padlock keys, 3 slide keys, 7 padlock case fragments
Trench 18	Mud-brick House	Upper Terrace	15 padlock fragments
		9H	15 padlock fragments
Trench 18	Mud-brick House	overall deposits	1 chain fragments, 6 padlock fragments
		18A	1 chain fragment
		18B	1 possible lock plate

Table 17. Summary of findspots for keys, locks, and chain fragments.

fleeing the city under Sasanian attack would have carried his tools with him to enable him to continue in his trade. The greater number of leatherworking awls and punches can be explained by the fact that they are small and therefore more easily mislaid and perhaps less of a problem to replace than larger and more complex tools. It is possible that some of the carpenter's tools may have made it into the assemblage through use in salvage operations or looting following the Sasanian attack.

#### Transport (IR82–86)

There are few pieces relating to transport, and some are only tentatively assigned to this category. The decorative hinge (IR82) seems to have been attached to leather straps and may have been a harness fitting. IR83 is a harness or strap loop. The swivels (IR84–86) would have been used with chain and are therefore not exclusively cart fittings. IR86 may be a piece of a nave band from a wagon wheel hub, but the fragment is too small for certain identification.

The absence of significant quantities of transport equipment in mid-third-century destruction deposits is scarcely to be wondered at. In the face of the Sasanian attack, presumably all available transport and horses would have been used by fleeing inhabitants to carry away families and valuables. Furthermore, the sloped topography of the parts of the city excavated in the rescue work of 2000 was not particularly suited to wheeled transport.

#### Personalia (IR87–97)

Although most personal items will have been made of copper alloy or precious metals, the absence of all but a small number of personal items of iron from mid-third-century destruction deposits is suggestive. The personal items that were found are predominantly small objects—a brooch (IR88), finger rings (IR89–91), a stylus (IR92), and boot fittings (IR93–97)—and all of these could be easily lost. It seems probable that most personalia left the city with the fleeing inhabitants, or that items left behind were collected by the Sasanian attackers. One notable piece, probably of Medieval or post-Medieval date, is a horseshoe-shaped boot or shoe calkin (IR87).

#### Household Fittings and Furnishings (IR98–268)

In this category, the pieces of furniture are of most interest. The folding tripod (IR98) stood only 635 mm high and it is therefore a little short to be used when standing, as, for example, during religious ceremonies. Instead, it is likely to have been used to support a small side table or a bowl for household use. To judge from comparable archaeological evidence, folding metal furniture—particularly tripods and stools—formed a regular feature of Roman furnishings. A recently discovered folding stool from Aphrodisias and six stools of early Byzantine date from Sardis have

been described as campstools, but they are in fact pieces of household furniture.<sup>28</sup> They can be paralleled by similar stools from a number of sites.<sup>29</sup> Folding furniture appears to have been a particular feature of the Roman household.

Metal furniture and metal furniture fittings form a large part of the archaeological evidence for furniture. As a result, they can perhaps be given too much prominence, especially since evidence for wooden furniture rarely survives and usually comprises metal fittings and decorative bone inlays. The remarkable survivals from Herculaneum are an obvious exception.<sup>30</sup> The other main sources of evidence are sculptural representations, images on coins, and wall paintings (e.g., House of Lucretius Fronto and the Villa of the Mysteries, Pompeii).<sup>31</sup> In her study of ancient furniture, Richter focuses very much on surviving items of furniture, but gives little consideration to metal items; for example, her discussion of tables makes little reference to folding metal tables.<sup>32</sup>

In addition to the large complete items of iron furniture, the finds also include numerous leaf hinges, many of which may have been used for chests or cupboards (IR189–204). These serve as a reminder that much of the furniture would have been made of wood and therefore does not survive.<sup>33</sup> There are also lock hasps (IR180–181) and possible handles (IR182–183). A rectangular iron plate with applied copper alloy decorative strips (IR184) has small nail holes at the corners, and these suggest that it was fixed to a piece of wooden furniture. Copper alloy and iron fittings from a chest are also noteworthy (IR185). If the Simpelveld sarcophagus is to be trusted as evidence, some Roman houses will have been well supplied with cupboards and dressers for storage and quite as cluttered as modern houses.<sup>34</sup> But we should perhaps treat the evidence with some caution and assume that the cluttered appearance of the furnishings in the Simpelveld sarcophagus is a matter of artistic composition rather than necessarily a reflection of reality. In fact, Roman houses do not seem to have been as cluttered with furnishings as modern (particularly western) houses, and this may explain the apparent widespread use of folding furniture in antiquity. Such furnishings could be brought out on demand, especially to accommodate guests or periodic religious ceremonies. We must also bear in mind that most of the evidence available to us is limited and applies to higher status housing. Undoubtedly, the furnishings of poorer houses will have been more meager than those of wealthy households.

The lamp stand or candelabrum is another item of furniture regularly found in Roman houses. In addition to the iron example from the rescue work at Zeugma (IR99), there is also part of a broken specimen in copper alloy (see Khamis, this volume, BR20) and some iron fragments of what are probable lamp holders or drip trays from lamp stands or candelabra (IR100–102). The absence of more examples is perhaps further evidence for the removal of household equipment and furnishings by fleeing inhabitants or by looters. Today, when electric lighting is readily available,

it is difficult to conceive of the importance of appropriately positioned lighting—candles and lamps—within the house, for entertaining as well as for simple household tasks. It was not practical to flood rooms with light, as is common today, and therefore the positioning of the limited light sources was critical.<sup>35</sup>

The so-called braziers (IR103–105) and brazier fragments (IR106–112) are unusual. No parallel can be found. The type may be indigenous to Zeugma, or it may represent influence from the Persian side of the frontier. They were clearly intended to be suspended, and they seem to have been adjustable and intended to hold combustible material for lighting or heating. They are not finely finished and were probably for use in the open air.

The remaining household items are portable pieces—knives, ladles, vessels, and the like. There are a small number of complete, or almost complete, vessels. These include a pair of small hemispherical iron pans with copper alloy fittings (IR119–120) that were probably scale pans. There is an almost complete saucepan with a small deep pan (IR121). Two possible spouted shallow vessels (IR122–123) seem to be rectilinear in outline. They could be small lamp holders or possibly open iron lamps. More certain is a third shallow spouted vessel (IR124), which was a lamp holder or open lamp. Finally there is a deep round-bottomed vessel (IR125). Its distinctive features are the rim with internal flange, oval plan, and bag-shaped base. Its form is unparalleled. Again, it could represent a form indigenous to Zeugma or it could be a Persian type.

In general, the vessel fragments (IR126–132) are small, undiagnostic, and unremarkable. The exception is a fragment of a small vessel with a pedestal base (IR129).

Knives (IR134–171) are the commonest household finds. The largest single group of knives comprises examples of a distinctive type, which have a small square tang pierced for one or two rivets and a collar or binding to secure the handle (IR134–145). These have been called the Zeugma type. The method of hafting on the Zeugma knives is unparalleled on knives from other Roman contexts. It is likely that these knives represent an indigenous tradition or an intrusive type. They were almost all found in contexts of mid-third-century date, with the exception of IR139, from a context of Early Imperial date in Trench 2. Most other knives (IR146–160) are unremarkable and would not be out of place at any site of Roman date. There are, however, a number of more specialized knives (IR161–168) that might be better classified as tools than household items. The bundle of socketed crescentic knives (IR163–167), found with the flax combs, have already been discussed above.

#### Door and Window Fittings (IR206–303)

Doors were usually hung on pivots rather than hinges. Although larger drop hinges might have been employed, there are none suitable from Zeugma. There are fragments of door straps secured with large Type B nails with

slightly domed heads (e.g., IR206, 209). These fragments are bent into a U-shape with a large nail at the apex of the curve. These are not drop hinge straps but are intended to reinforce or secure the inner edge of the door, around which the door swung. Some pivot holes have been found in door thresholds, for example in Trenches 5, 11, and 18. In Trench 18, there is evidence for the hanging of double doors. A bar across the width of the doorway would have been secured to these doors. Given the numbers of large padlocks found, it is likely that door bars were used in conjunction with padlocks to secure doors. This makes good sense where double doors are used.

The latch hooks (IR241–267), a common find at Zeugma, were used to close shutters or cupboards. Shorter examples could be operated from one side only and could not be locked. This is fine for a shutter, which only needs to be opened or closed from the inside, but a distinct disadvantage for a door. Longer examples could have been used to latch doors if they were operated from outside using a latch lifter.<sup>36</sup> No examples of latch lifters have been found, although the latch rest (IR268) from Trench 2 would have been used with a straight latch and latch lifter combination, but probably not in combination with a latch hook. The lack of much evidence for the latch lifter/latch rest combination may indicate that other means were generally used to secure doors at Zeugma.

The L-shaped drop hinge pintles (IR211–240) that were found in such numbers at Zeugma were probably used for window shutters rather than doors or furniture. IR215 is fixed with lead yotting to a fragment of dressed stone.

Bars and grilles (IR269–303) were found in large numbers and may have been preferred to glass for windows.<sup>37</sup> Single bars with attached stars could have been used to prevent entry through small windows, while pairs of bars, or more likely window grilles, secured larger windows. There is evidence for two methods of fixing window grilles and bars: some examples end in tapering points, which were fixed into the masonry or brickwork of the house (e.g., IR269), while others were fastened by nails (IR272).

#### Security, Including Locks and Keys (IR304–381)

A good number of keys and locks have been recovered from the excavations. The keys (IR304–316) include five barb spring padlock keys (IR304–308), a late Roman example of which (IR308) has a cruciform bit and was probably used with a cylindrical padlock. The others are L-shaped and would have been used with box-shaped padlocks, a number of which were discovered. More common are L-shaped slide keys (IR310–316) used with tumbler locks. However, there is only one identifiable fragment of a sliding bolt (IR368) from such a lock. It is probable that most of the slide locks were fixed to pieces of furniture, which were presumably removed from the houses. Some of the slide keys are small (e.g., IR311–313, 315–316) and therefore probably for small pieces of furniture or caskets, which

	Trench									Total
	2	5	7	9	10	11	12	13	18	
Collars	3	2	–	–	–	1	–	–	1	7
Decorated L-shaped holdfasts	–	–	–	–	–	1	–	–	–	1
Holdfasts	4	–	–	–	–	1	–	–	1	6
Joiner's dogs	5	2	1	1	–	–	–	–	–	9
Looped spikes	14	–	1	4	–	1	–	–	5	25
L-shaped staples	2	–	–	3	–	1	1	–	3	10
Masonry clamps	–	–	–	–	–	–	–	–	1	1
Spikes	2	–	–	1	–	–	2	–	1	6
Split spike loops	66	2	5	14	3	3	–	1	7	101
T-shaped staples	3	–	1	1	–	–	–	–	3	8
U-shaped staples	4	–	1	1	–	–	–	–	1	7
<b>Total</b>	<b>103</b>	<b>6</b>	<b>9</b>	<b>25</b>	<b>3</b>	<b>8</b>	<b>3</b>	<b>1</b>	<b>23</b>	<b>181</b>

Table 18. Summary quantification of structural ironwork by trench and type.

Trench	Nail type													Total
	1	2	A	B	C	D	E	F	G	H	Other	Tack	Stem	
2	84	1	754	262	35	8	5	9	14	1	38	7	1,138	2,356
4	3	–	1	1	–	–	–	–	–	–	–	–	–	5
5	–	–	4	19	–	–	–	–	–	–	1	–	4	28
7	16	–	50	26	–	–	–	–	–	–	–	3	82	177
9	25	–	242	87	3	–	2	–	2	–	4	2	234	601
10	1	–	1	2	–	–	–	–	–	–	–	–	2	6
11	2	–	14	17	–	–	1	–	–	8	1	1	26	70
12	16	–	12	3	–	–	–	–	–	–	1	4	33	69
13	5	–	12	8	2	–	1	–	–	–	–	6	39	73
15	1	–	3	1	–	–	–	1	–	–	–	–	8	14
18	19	–	151	40	6	–	2	1	2	3	12	1	193	430
19	1	–	1	1	–	–	–	–	–	–	–	–	1	4
<b>Total</b>	<b>173</b>	<b>1</b>	<b>1,245</b>	<b>467</b>	<b>46</b>	<b>8</b>	<b>11</b>	<b>11</b>	<b>18</b>	<b>12</b>	<b>57</b>	<b>24</b>	<b>1,760</b>	<b>3,833</b>

Table 19. Nails: Numbers per trench, by nail type.

Trench	Fragment type										Total
	Bindings	Bar	Block	Rod	Plate	Sheet	Strip	Ring	Wire	Other	
2	70	80	2	13	55	143	60	8	–	1	432
4	–	–	–	–	–	–	–	–	–	–	0
5	–	–	–	–	–	–	3	1	–	–	4
7	19	4	–	3	4	–	12	3	–	–	45
9	22	16	–	9	43	21	38	3	1	1	154
10	1	–	–	–	1	–	–	1	–	–	3
11	2	5	–	–	–	–	2	–	–	–	9
12	–	3	–	1	–	–	6	1	–	–	11
13	1	1	–	–	17	41	3	–	–	–	63
15	–	–	–	–	1	1	1	–	–	–	3
18	6	17	–	1	50	50	19	1	1	–	145
19	–	–	–	–	–	–	–	–	–	–	0
<b>Total</b>	<b>121</b>	<b>126</b>	<b>2</b>	<b>27</b>	<b>171</b>	<b>256</b>	<b>144</b>	<b>18</b>	<b>2</b>	<b>2</b>	<b>869</b>

Table 20. Miscellaneous fragments: Summary quantification by trench and type.

Phase	Fragment type										Total
	Binding	Bar	Rod	Block	Ring	Plate	Sheet	Strip	Wire	Other	
<b>Trench 2</b>											
2	–	–	–	–	–	–	–	1	–	–	1
3	–	–	–	–	1	–	2	–	–	–	3
6	69	78	13	2	7	50	141	54	–	1	415
Unphased	1	2	–	–	–	5	–	5	–	–	13
<b>Total</b>	<b>70</b>	<b>80</b>	<b>13</b>	<b>2</b>	<b>8</b>	<b>55</b>	<b>143</b>	<b>60</b>	<b>0</b>	<b>1</b>	<b>432</b>
<b>Trench 7</b>											
2	–	–	–	–	–	1	–	2	–	–	3
4	–	–	–	–	2	–	–	2	–	–	4
9	19	3	3	–	1	2	–	5	–	–	33
9 or 10	–	1	–	–	–	1	–	1	–	–	3
Unphased	–	–	–	–	–	–	–	2	–	–	2
<b>Total</b>	<b>19</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>45</b>
<b>Trench 9</b>											
5	–	–	–	–	–	1	–	1	–	–	2
6	21	16	9	–	3	42	13	36	1	1	142
6 or later	1	–	–	–	–	–	1	–	–	–	2
9	–	–	–	–	–	–	7	1	–	–	8
<b>Total</b>	<b>22</b>	<b>16</b>	<b>9</b>	<b>0</b>	<b>3</b>	<b>43</b>	<b>21</b>	<b>38</b>	<b>1</b>	<b>1</b>	<b>154</b>
<b>Trench 13</b>											
6	1	1	–	–	–	7	5	1	–	–	15
9	–	–	–	–	–	10	36	2	–	–	48
<b>Total</b>	<b>1</b>	<b>1</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>17</b>	<b>41</b>	<b>3</b>	<b>–</b>	<b>–</b>	<b>63</b>
<b>Trench 18</b>											
Pre-6	–	–	–	–	–	–	–	1	–	–	1
6	6	17	1	–	1	50	50	18	–	–	144
<b>Total</b>	<b>6</b>	<b>17</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>50</b>	<b>50</b>	<b>19</b>	<b>1</b>	<b>0</b>	<b>145</b>

Table 21. Trenches 2, 7, 9, 13, and 18: Summary quantification of miscellaneous pieces by type and phase.

could be readily carried. There is a single possible fragment of a lever or warded lock key (IR309), but its identification is far from certain.

Large numbers of padlock fragments were found. Most of these were large padlocks with square boxes (IR317–350). At least one example was attached to a chain (IR324), but most seem to have had a long lock bar for fastening doors and the like. The lock bar on another example (IR321) clearly had been broken in antiquity and apparently had been secured temporarily. The bar comprised a hollow tube, and a large nail had been jammed into its broken end after being passed through the eye at the lock bolt. Also present are some smaller square padlock fragments (IR351–357) and a

possible cylindrical barb spring padlock (IR358). There are also fragments of barb spring padlock bolts (IR359–360) and some other pieces that might be parts of padlocks (IR361–367). The overall number of padlocks is noteworthy, and it is possible that some at least were broken in antiquity (e.g., IR322). They are predominantly found in Trenches 2 and 9 and concentrated in a small number of rooms (table 17), most notably Rooms 2F and 2I in the House of the Helmets and the courtyard and Room 2M in the House of the Bull. The number of padlocks and their concentration is suggestive of doors and cupboards being hastily opened for the removal of valuables.

### Structural Fitting and Nails (IR382–564)

The range of structural fittings is quite limited. There are 181 identified structural fittings, which comprise looped spikes (IR382–406; n = 25), split spike loops (IR407–503; n = 101), joiner's dogs (IR505–513; n = 9), U-, L- and T-shaped staples (IR514–538; n = 25), holdfasts or wall hooks (IR540–545; n = 6), collars (IR546–552; n = 7), and spikes (IR553–558; n = 6). One holdfast or wall hook is decorated (IR539). Only a single masonry clamp (IR504) was identified, but more fragments might be lost among the miscellaneous strips. Most of the fittings are from Trench 2 (table 18). Looped spikes and split spike loops were used for a number of purposes — as simple loops attached to masonry or timber they functioned as junctions, as hinge riders, and even as crude hinges (e.g., IR407–410). Joiner's dogs and staples were used for fastening timbers or for securing timber to masonry.

Nails were the principal structural fixture recovered in the rescue work of 2000 (table 19). The vast majority (n = 2,356) were recovered from Trench 2. Many of the nail fragments (n = 1,760) are simply pieces of stem that cannot be identified to nail type. The majority of the identifiable nails (n = 2,073) are of Type A (n = 1245; 60.1 percent). The type is unparalleled elsewhere. The Type A nail at Zeugma serves the same function as Manning's Type 1 for Sardis, the most common nail at that site.<sup>38</sup> This is a general-purpose wood nail, and, as Manning's Type 2, the head is designed to be driven fully into the grain of the timber, as in the case of floor boards.

### Other Material, Including Miscellaneous Pieces (IR565–616)

The unidentified pieces ("query") (IR565–614) and miscellaneous fragments are quite numerous and concentrated in Trenches 2, 9, 11, and 18 (tables 2 and 20). They come mainly from destruction deposits (table 21).

There is little to be said of the miscellaneous fragments, most of which cannot be identified to function. They include bindings in the form of strips with nail holes that were probably used to reinforce chests and boxes. They also include plain iron rings that could be put to a number of uses, from horse harness to household function. As with the rest of the ironwork assemblage, the bulk of the miscellaneous finds are from Trenches 2, 9, and 18 (table 20). There are also quantities from Trenches 7 and 13. Most of the miscellaneous fragments are from destruction deposits (table 21).

## COMPOSITION OF THE IRONWORK ASSEMBLAGES

The majority of the ironwork assemblage is from mid-third-century destruction and collapse deposits. The mate-

rial from these deposits includes a more limited range of portable items — arms, tools, transport items, personal items, and household objects — than might be expected if the contents of the excavated houses had been deserted by their owners. The pieces of armor and the weapons that were found may represent personal possessions or mementos, or they may indicate the presence of soldiers.<sup>39</sup> The presence of a Mainz type *gladius* fragment (IR35) in Trench 2 suggests that at least one piece was a souvenir or family memento, which had been kept for a long time. The absence of substantial numbers of tools and sets of tools must be explained by their removal by their owners. The one exception seems to be the group of flax combs and crescentic socketed knives found bundled together and burnt in Trench 9 (IR69–73, 163–167).

The almost complete lack of transport equipment suggests that any means of transport had been removed, at least from the excavated areas. Personal items are also largely absent, and those that were found are all small items, suggesting accidental loss rather than intentional abandonment. Household objects are more common but still fewer than might have been expected, unless most of the house contents had been removed either by fleeing inhabitants or by looters following the Sasanian attack. The comparatively large numbers of small hinges, probably from chests and cupboards; window bars and grilles; latch hooks; and padlock fragments all suggest that the doors and perhaps windows of the houses had been broken in, and that cupboards and chests had been opened hurriedly for the removal of valuables. The structures and storage equipment to which these security devices were once affixed had disappeared in the conflagration that brought down the houses. Because the remains are fragmented and broken as a result of the violent destruction, they do not reveal the circumstance of their opening — whether goods were removed by fleeing inhabitants or by looters pilfering empty homes remains open.

The distribution of the iron finds is also suggestive. Finds were concentrated in a limited number of areas and rooms. For example, in Trench 2, large numbers of finds were recovered from both the House of the Helmets and the House of the Bull, but these were not evenly distributed. Most iron finds came from the peristyle court and Rooms 2F and 2I in the House of the Helmets, and, in the House of the Bull, from Rooms 2K, 2M, and 2P, and deposits covering both 2J and 2K, and 2J and the courtyard. By contrast Rooms 2J and 2O in the House of the Bull produced no iron objects. Some of the more interesting pieces came from a burnt deposit (context 2008) overlying the mosaic (M6) in the peristyle court of the House of the Helmets. These include the cavalry parade helmet (IR1), two helmet fragments (IR2–3), a sword fragment (IR33), a spearhead (IR14), and two small hemispherical scale pans (IR119–120). The house may have been consumed by fire before the contents were fully removed. There are 189 iron fragments from the courtyard, and most of these belong to



Figure 1. IR1. Parade helmet: side view of skull portion.



Figure 2. IR1. Parade helmet: facemask.



Figure 3. IR1. Parade helmet: detail of skull portion.

three destruction contexts (2008, 2075, and 2251). Context 2075 produced mainly nails and structural fittings, but also a spearhead (IR16), an awl (IR60), a Zeugma-type knife (IR138), and a latch hook (IR248). In the House of the Bull, the braziers (IR103–105) were also found in a destruction deposit (context 2312) in Room 2K. Another destruction deposit (context 2269) in the courtyard of the same house produced substantial numbers of finds ( $n = 343$ ) including many nails and structural fittings. A deposit of mud-brick collapse (context 2294) in Rooms 2K and 2J produced 227 fragments, including various brazier or bucket fragments

(IR106–109, IR111), a large part of a saw (IR46), a saucepan (IR121), a lock hasp (IR181), and a slide key (IR311). Concentrations of finds like these suggest irregularity in the abandonment and looting that may have consumed the city at the time of the Sasanian attack—some areas were completely devoid of artifacts, whereas others had clearly been overlooked. In addition, concentrations of finds may also represent the deliberate collection of items for inventory and removal or for safekeeping with the intent to return. Unfortunately, the evidence does not go so far as to reveal if the iron artifacts recovered in these contexts had



Figure 4. IR1. Parade helmet: rear view of skull portion.



Figure 5. IRI. Parade helmet: detail of facemask.

been assembled by fleeing inhabitants or by looters in the face of the city's destruction by fire.

## CATALOGUE

### Arms and Armor

#### *Helmets*

IRI (SF 2076, context 2008)

#### **Parade helmet**

Facemask H. 230 mm; W. 157 mm; skull H. 220 mm;  
B. 185 mm

FIGS. 1–7

Parade helmet of iron with some copper alloy fittings, in two sections—facemask and skull—both largely complete. Originally it would have had a third section covering the eyes, nose, and mouth. The facemask is comparatively plain. It has an opening in the center front to expose the mouth, nose, and eyes while protecting the brow, cheeks, and chin. This opening would almost certainly have been covered with a separate panel, which is missing. Photographs taken shortly after discovery seem to show patches of green corrosion, which suggest that the helmet may have had a covering of thin copper alloy sheet overlaying the iron. However, there is little sign of any copper alloy covering, with the exception of a plate on the back of the skull portion, as described below.

#### *Facemask*

Across the brow the mask is embellished with raised decoration representing hair in tight curls below a plain raised border. At either side of the brow, the decoration ends in representations of two tightly curled ringlets. These are positioned in front of the ears. On each side below the ringlets are single loose running rings to close and secure the helmet when in use. At the top center of the facemask there is a small strip of iron riveted near the edge above the plain raised border. This is probably the remains of the

small hinge or loop, which would have attached the facemask to the skull.

#### *Skull*

The skull portion of the helmet is formed with a slightly pointed ridge or crest. The back of the helmet is decorated with a thin plain copper alloy plate. This is now roughly pelta-shaped, but upper edge is broken and the plate originally may have been simply circular. There is no sign of any decoration on the copper alloy plate. Below the plate is an apparent lug of iron. There is no evidence from inside the skull to indicate one way or the other whether this piece of iron is part of the design of the helmet or simply a lump that has fused to the helmet postdeposition.

The front edge of the helmet over the brow is decorated with two plain raised borders; the larger outer one ends in curled terminals above the ears. The ears were covered by plain raised sections, which have a slight raised border around them. Otherwise the skull of the helmet is largely undecorated. If, as is possible, the helmet originally had a copper alloy outer skin, this could have been decorated, perhaps to represent tightly curled hair. Originally the helmet had a small plain neck guard, only a small part of which survives. There is a strip of thin iron riveted to the top front of the helmet. The strip has been folded double to form a loop or tube.

#### *Complete Helmet*

The two parts of the helmet were held together either by a hook-and-eye arrangement or a small hinge. The small fragment of strip riveted to the top of the facemask and similar fitting at the top front of the skull could be two parts of the same fitting. The problem is that the facemask should fit inside the front of the skull with a slight overhang at the rim. If this is correct, then the fragment of strip at the top of the facemask is difficult to interpret. It must have continued some way forward to link with the loop on the skull and allow the mask and skull to meet correctly without a gap. Either a small hinge or form of hook and eye might be expected. The evidence is not conclusive. Once the two



Figure 6. IRI. Parade helmet: detail of facemask.

halves of the helmet were in place, they would have been secured to the wearer's head by lacing at the neck, which was attached to the loops on either side of the neck of the skull.

A substantial number of parade helmets are known from the Roman world (Garbsch 1978). Although no exact parallel for the Zeugma helmet is known, a number of its features are paralleled on other helmets. Its three-part form — skull, facemask, detachable face section — is readily paralleled. There are good examples from Pfrondorf, Mainz, and Weissenburg (all Germany), and Sotin (Vukovar, Croatia). This form of three-piece helmet is generally dated to the end of the second century or early third

century A.D. Often Roman parade helmets took the form of Greek helmets, such as the helmets from Frankfurt-Heddernheim, Brigetio, and the Iron Gate/Danube region, in which the skull is shaped like a Corinthian helmet pushed back from the face. The Zeugma example has some affinities with both the Chalcidian and the Pilos-type helmets, with its pointed, slightly ridged top and distinctive decoration across the brow.

Bibliography: Pfrondorf, Mainz, Weissenburg, Sotin (Garbsch 1978, Taf. 26, O48–O51). Frankfurt-Heddernheim, Brigetio, the Iron Gate/Danube region (Garbsch 1978, Taf. 28–29, O53–O55).

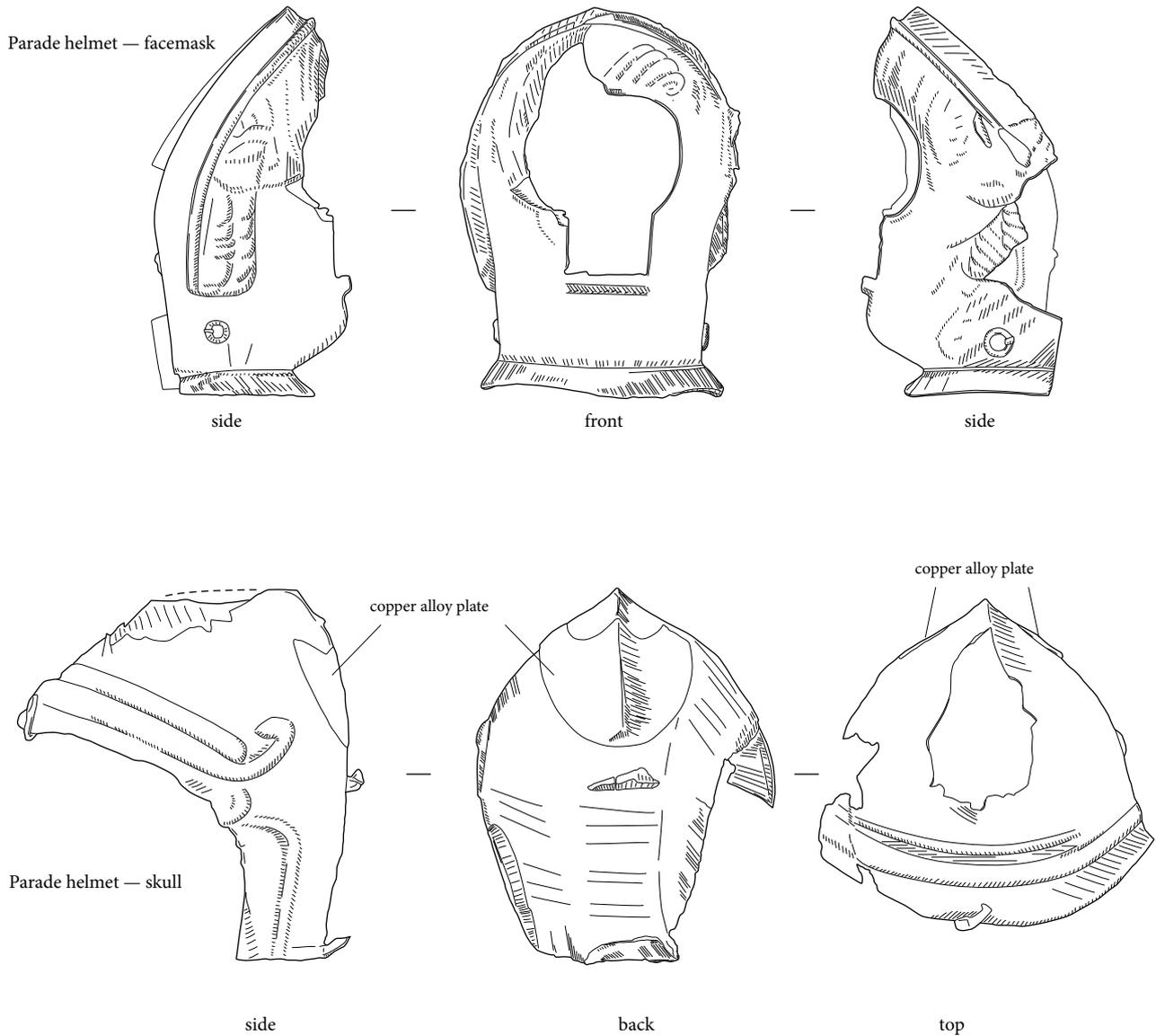


Figure 7. 1R1. Parade helmet: drawing of facemask and skull portion.

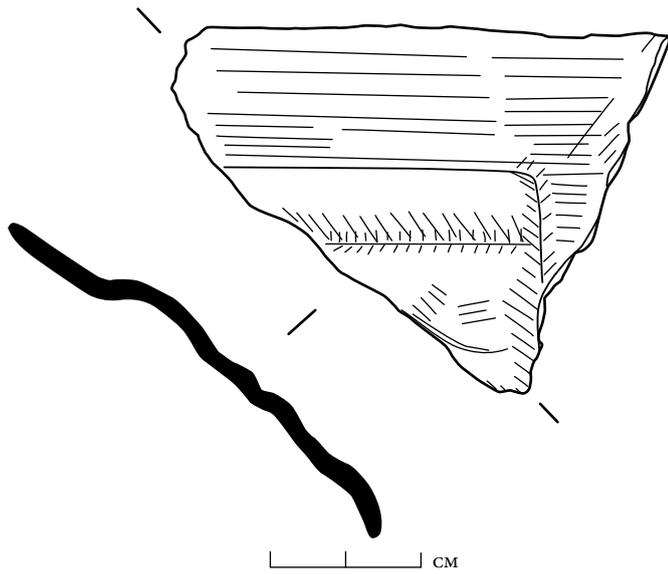


Figure 8. IR2.

**IR2** (context 2008)  
**Helmet fragment**  
L. 65 mm

FIG. 8

Fragment from the earpiece of a cavalry helmet or parade helmet. A roughly triangular fragment with one straight edge; the other two sides are broken. There is raised decoration parallel to the surviving edge. There are traces of possible mineralized leather on the underside.

**IR3** (context 2008)  
**Helmet fragment**  
L. 52 mm; W. 43 mm

Irregular fragment with part of a raised border towards one edge. Fragment with repoussé decoration from a helmet or similar item.



Figure 9. IR4.

*Shield Bosses*

Shield boss IR4 is slightly unusual in that its bowl is oval rather than circular, and particularly because it seems likely that the flange is not concentric with the bowl. The second boss (IR5) is less certain in its identification. It has a large bowl and a wider angled flange, suggesting that it was attached to curved shield. Because the object is in fragments, it is not possible to determine precisely the angle of the flange. IR4 was applied to a flat shield and therefore probably to an oval rather than rectangular shield. Similarly, boss IR5 would have been attached to an oval shield, but one that was curved or dished like the shields from Dura-Europos, not flat (James 2003, 160–2; see also Bishop and Coulston 1993, 149).

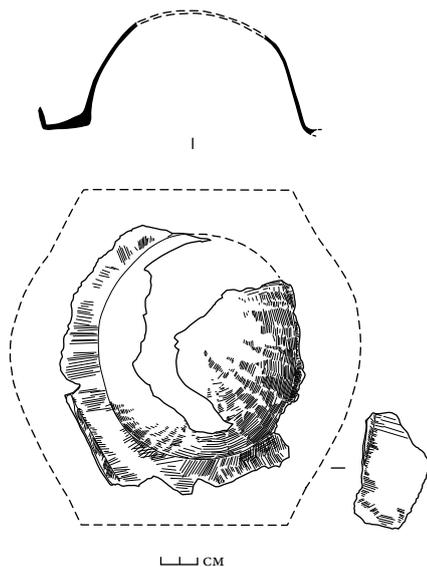


Figure 10. IR4.

IR4 (SF 59, context 9073)

**Shield boss**

L. 140 mm; H. 55 mm

FIGS. 9, 10

Shield boss with deep bowl slightly oval in plan. The flange is incomplete, although detached fragments survive. The flange may well not have been concentric with the bowl. No nail holes could be identified, but much of the flange was damaged or missing. The precise shape of the flange is not certain; it is not concentric but wider at the ends, (possibly even squared off). There are a small number of examples of bosses with nonconcentric flanges. There is a fragment from Dura-Europos (James 2004, 175 and fig. 95: 607) best interpreted as a boss. Other examples come from Carnuntum (von Groller 1902, 97 and pl. viii, 8–9) and Trentholme Drive, York (Wenham 1968, 95 and fig. 37: 1). There is a possible parallel for this form of boss dating to the first century A.D. from Mainz (Mittelrheinisches Landesmuseum).

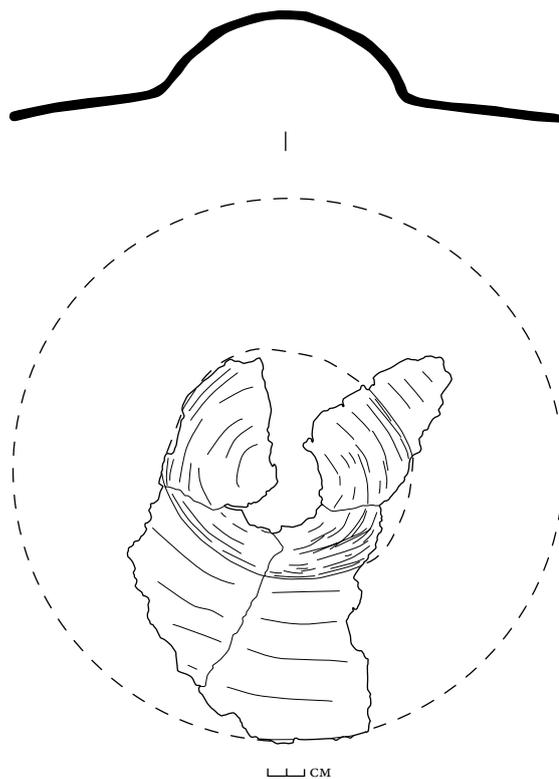


Figure 11. IR5.

IR5 (context 18108)

**Shield boss**

D. ca. 305 mm; overall H. of boss at least 65 mm; D. of bowl 135 mm

FIG. 11

Large fragmentary boss, with broad bowl and wide angled flange curved in section. Approximately three quarters of the bowl and about one half of the flange survives. The bowl is ca. 50 mm deep, but overall the boss is at least 65 mm and probably nearer 80 mm high because of the angle and curvature of the flange. The large diameter and the curvature of the boss indicate that it must have been fitted to a round or oval shield, which itself was curved. There are no obvious nail holes in the flange, which does raise a slight doubt about the identification of the object.

*Possible Armor Fragments*

None of the catalogued fragments can be certainly identified as pieces of armor. They are all fragments of strip, some with small nail or rivet holes. If they are armor fragments, they are unlikely to be from *loricae*, because they are too narrow. The widest strip (IR10) is only 37 mm wide. The narrowest pieces from the Corbridge *loricae* are the lower backplates of the collar section, which measure at least 50 mm wide, and the lesser shoulder plates, which measure between 45 mm and 50 mm wide (Allason-Jones and Bishop 1988, 23–43, figs. 22, 25–6, 28–31, 33, 37–9, 41, 46). The hoops that formed the body of the cuirasses were all in excess of 40 mm wide (*ibid.*, 43–51, figs. 50–2, 55–66, 68–9). The later Newstead-type cuirass had strips of similar width.

It is more likely that these strips were from articulated arm protection sometimes referred to as *manicae*. This form of armor is attested both by archaeological finds and sculptural evidence (Simkins 1990; see also Bishop 2002, 68–72 and figs. 8.1–5). There are examples from Newstead, Scotland (Curle 1911, pl. 23; see also Bishop and Coulston 1993, fig. 55.1, and Simkins 1990, fig. 4) and Carnuntum, Austria (von Groller 1901, 115–6; see also Bishop and Coulston 1993, fig. 55.2a–e, and Simkins 1990, fig. 3). More recently similar arm guards have been recovered from excavations at Carlisle (Richardson 2001; Bishop 2002, fig. 8.3; see also McCarthy, Bishop, and Richardson 2001). The latter date to the first half of the second century.

The most notable sculptural evidence comes from the Tropaeum Traiani at Adamklissi (e.g., Metopes 17, 18, 20, and 21; Florescu 1965). There are also representations of articulated arm defenses on the base of Trajan's column, which is decorated as a trophy with weapons including captured armor, helmets, and weapons. The northeast side of the base, facing the Quirinal, shows what appears to be a segmental cuirass with segmental armor for the arms (Gamber 1964, Abb. 4 and 17). The tombstone of Sextus Valerius Severus of *legio XXII Primigenia* from Mainz has a carving of a possible articulated arm guard on one edge (Selzer 1988, 142, no. 59; see also Simkins 1990, fig. 2). There is also a possible piece of sculpture from Alba Iulia in Romania that shows the torso of a legionary soldier with segmental armor, a curved rectangular *scutum*, and a clear representation of an articulated arm guard on the sword arm (Coulston 1995, figs. 1 and 2). Of more direct relevance is the well-known graffito of a *clibanarius* from Dura-Europos showing arm guards (Rostovzeff et al. 1936, pl. 22, 2; see also Gamber 1964, Abb. 22; Gamber 1968, Abb. 43). Sasanian *clibanarii* with articulated arm guards are shown on the monumental relief of Ardaschir I (Gamber 1968, Abb. 42).

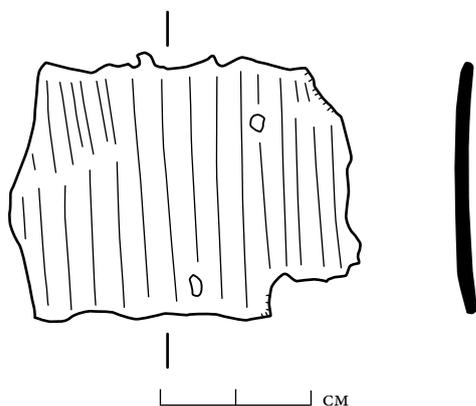


Figure 12. IR6.

**IR6** (context 18001)

**Strip, possible fragment of segmented armor**

L. 46 mm; W. 34 mm

FIG. 12

Thin curved sheet with two nail holes, broken at both ends. Found with IR7.

**IR7** (context 18001)

**Strip, possible fragment of segmented armor**

W. 30 mm

Strip fragment with rounded end and centrally placed nail or rivet hole. Found with IR6.

**IR8** (context 18070)

**Strip, possible fragment of segmented armor**

L. 60 mm; W. 34 mm

Strip with three nail holes near one edge and a further one on the opposite side. There is a second fragmentary piece of strip stuck on one side of the main piece. Possibly a piece of armor. Similar to IR9.

**IR9** (context 18070)

**Strips, possible fragments of segmented armor**

L. 37 mm; W. 32 mm

Two small fragments similar IR8. One has a square end with a single nail hole surviving. Possibly pieces of armor.

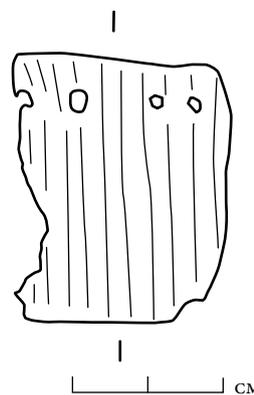


Figure 13. IR10.

**IR10** (context 18108)

**Strip, possible fragment of segmented armor**

L. 29 mm; W. 37 mm

FIG. 13

Possible piece of armor, comprising small length of strip with slightly rounded end. There are four nail holes in two pairs close to one edge.

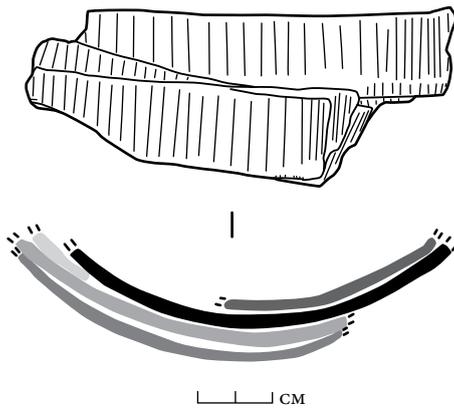


Figure 14. IR11.

**IR11 (context 18108)**

**Strips, possible armor fragments**

L. 115 mm

FIG. 14

Fragment comprising at least five overlapping curved strips. Two of the strips appear to be of a slightly curved section and butt against one another edge to edge. There is a single strip on the inside of this pair and at least two further layers of single strips. Could be fragments of segmental armor.

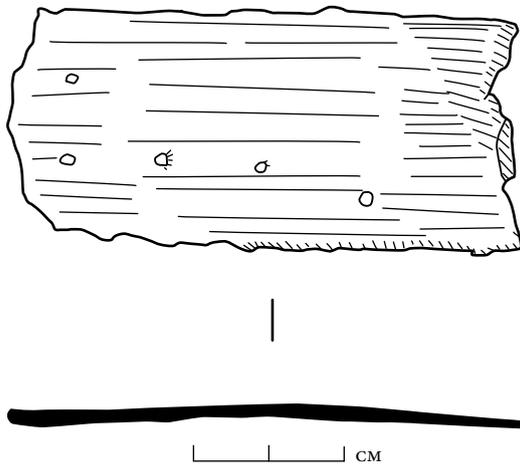


Figure 15. IR12.

**IR12 (context 18001)**

**Strip, possible fragment of segmented armor**

L. 65 mm; W. 30 mm

FIG. 15

Thin strip with a rounded end, broken at the other end. Near the rounded end, there is a pair of small holes and then a line of a further three holes along the length of the strip, in a slight arc. Possibly a piece of armor.

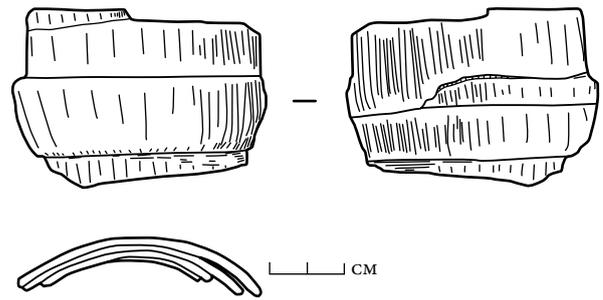


Figure 16. IR13.

**IR13 (context 18001)**

**Strips, possible armor fragments**

L. 68 mm

FIG. 16

Five curved overlapping strips with a radius of ca. 45 mm. The way the plates are laid is suggestive of segmented armor but the radius of the curve is too tight for this to be a realistic possibility. No visible nail or rivet holes. The identification as armor is not certain.

*Spearheads*

Spearheads can be used for throwing or thrusting, on foot or on horse (Scott 1980; Bishop and Coulston 1993, 69). Different blade forms and sizes reflect different uses. A further variable, possibly the most important, is the length and weight of the shaft. The only information about shaft size regularly recovered is diameter, which can be estimated from the socket size.<sup>40</sup> However, correlation between the size and form of the spearhead and the length and weight of the shaft is subject to much speculation. Accordingly, function can only be discussed in the broadest terms. We can suggest that it is likely that small spearheads with slim sockets are thrown weapons, while those with larger sockets suggesting a thick shaft might be thrusting weapons. Large broad spearheads are more likely to be used as stabbing or thrusting weapons, probably on foot, than as throwing weapons.

Most of the weapons under discussion are slim and leaf-shaped (IR15, 17-19), ranging in length from 215 to 275 mm. These could be used by horsemen or foot soldiers, for both thrusting and throwing. The surviving sockets have diameters of 16 and 19 mm (IR15, 17). The other heads include a broader leaf-shaped spearhead (IR14) with broad rounded shoulders but lacking a socket, and a large broad-bladed spear (IR16) measuring 300 mm long, which was clearly not thrown. The latter is heavy and probably had a heavy shaft, since the socket is 27 mm in diameter. The final head (IR20) has a tapering square section point and is 180 mm long with a socket 22 mm in diameter. It could be a large catapult bolthead, but it is more likely the head of a thrusting spear.

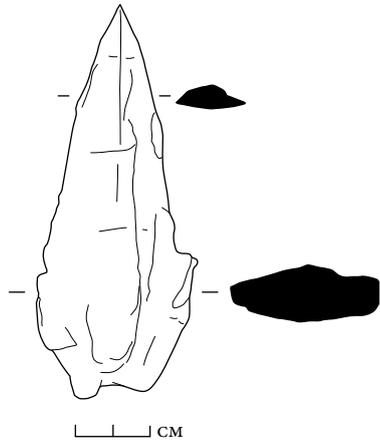


Figure 17. IR14.

IR14 (SF 2062, context 2008)

**Spearhead**

L. 104 mm; W. of blade 37 mm

Small leaf-shaped spearhead with rounded shoulders and lenticular cross section. The socket is missing.

FIG. 17

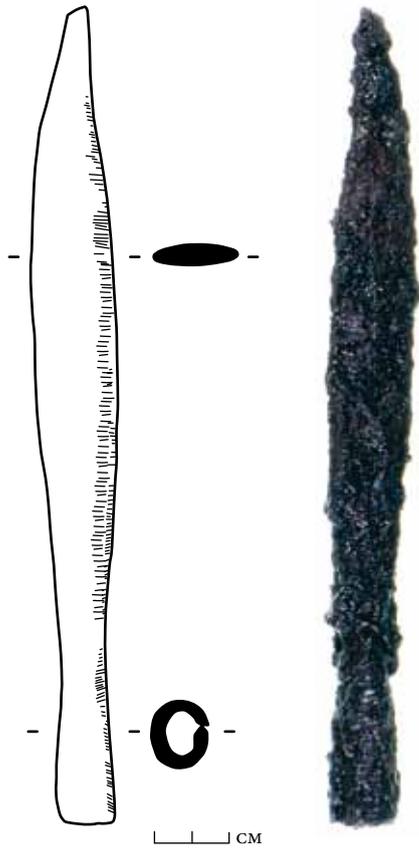


Figure 18. IR15. Drawing (left) and photo (right).

IR15 (SF 2097, context 2029)

**Spearhead**

L. 215 mm; W. of blade 24 mm; Th. 7 mm;

D. of socket 16 mm

FIG. 18

Slim leaf-shaped spearhead of lenticular cross section with a closed socket.

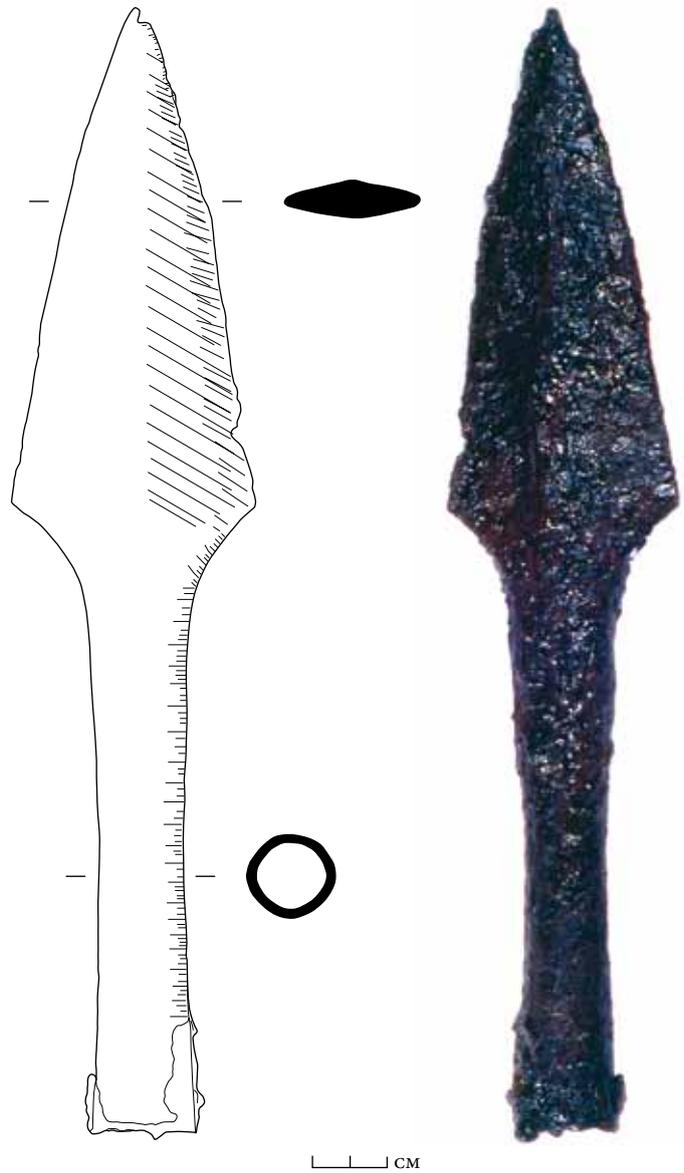


Figure 19. IR16. Drawing (left) and photo (right).

IR16 (SF 2127, context 2075)

**Large spearhead**

L. 300 mm; W. of blade 64 mm; Th. 17 mm;

D. of socket 27 mm

FIG. 19

Spearhead of diamond cross section, gently curving edges and angular shoulders with long closed socket.

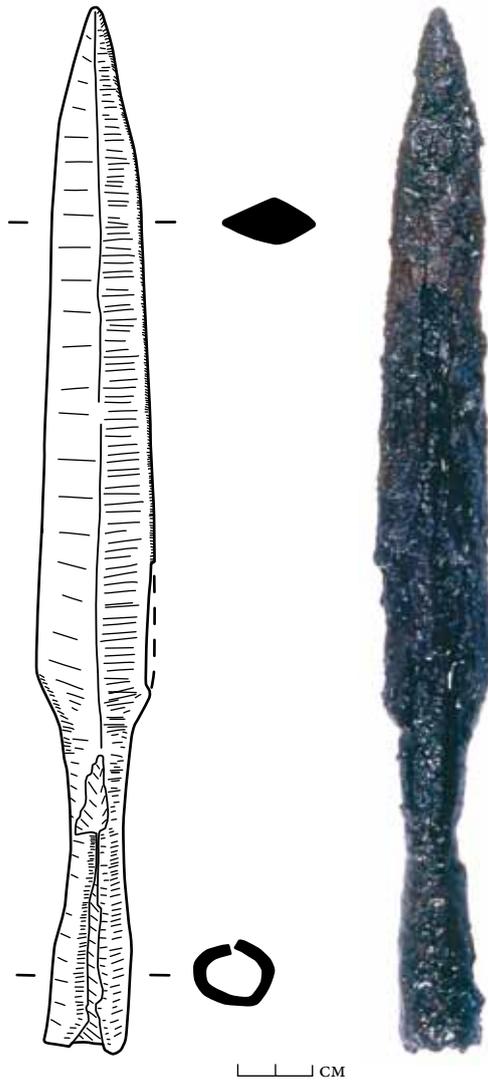


Figure 20. IR17. Drawing (left) and photo (right).

IR17 (SF 2273, context 2275)

**Spearhead**

L. 275 mm, W. of blade 30 mm; Th. 14 mm;  
D. of socket 19 mm

FIG. 20

Lance head of elongated leaf shape. The blade is of thick lenticular cross section. The shoulders are slightly rounded and quite sharp. It has a short split socket with a single nail hole opposite the split.

IR18 (SF 25, context 11031)

**Spearhead**

L. 137 mm

Slim leaf-shaped spearhead of lenticular section. Socket is missing.

IR19 (context 18001)

**Spearhead**

L. 205 mm

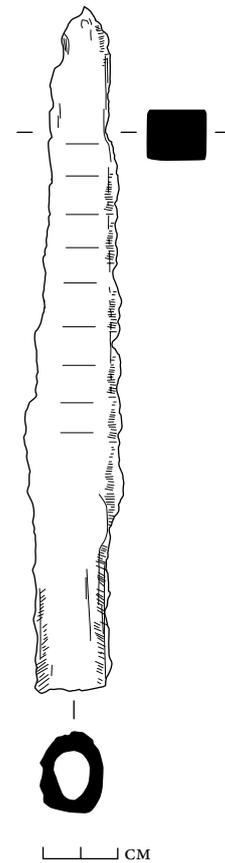


Figure 21. IR20.

Slim leaf-shaped blade. Heavily corroded. The tip is missing, but the break reveals its lenticular cross section. There is no visible evidence of any features or the socket.

IR20 (SF 3467, context 18143)

**Lance head**

L. 184 mm; L. of point 139 mm; W. of point 17 mm; D. of socket 22 mm

FIG. 21

Tapering square-section head with slight step to a short closed socket.

IR21 (context 11034)

**Spearhead?**

L. 75 mm; W. 18 mm

Long tapering narrow socket with split. No obvious nail or nail hole. Possibly socket from a spearhead.

*Pila Heads*

*Pila* heads featured elongated pyramidal points mounted on a long slightly tapering stem. Only rarely do heads survive complete with their stems and attachment (see Bishop and Coulston 1993, 65, 123, and figs. 33–34 and 83). The points can be confused with tangs of drill bits—although the latter can be of rectangular rather than square section, which allows them to be distinguished—and some-

times with awls or punches. However the latter are generally lighter and smaller. Five possible *pila* points have been identified. Of these, two (IR25–26) could also be the points broken from catapult bolt heads.

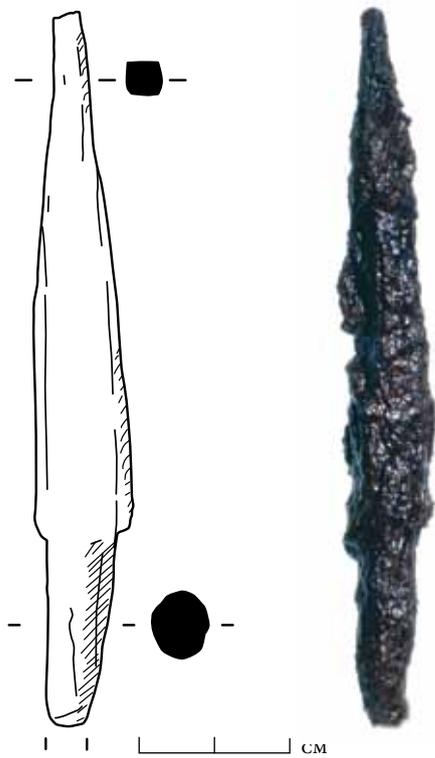


Figure 22. IR22. Drawing (left) and photo (right).

IR22 (SF 2243, context 2223)

**Pilum head**

L. 105 mm; L. of point 76 mm; W. of point 14 mm; D. of shaft 10 mm

FIG. 22

Possible *pilum* head, comprising tapering square-section point with distinct step to round section shank.

IR23 (SF 4500, context 2006)

**Possible pilum head**

L. 62 mm; W. 12 mm; D. of stem 8 mm

Possible *pilum* head, of uncertain identification; it may be part of a drill bit.

IR24 (context 2006)

**Possible pilum head**

L. 68 mm; W. of point 16 mm; D. of stem 10 mm

Possible *pilum* head, its identification less certain; it may be part of a drill bit.

*Bolt or Pila Heads*

IR25 (SF 4506, context 18001)

**Possible pilum or bolt head**

L. 103 mm; L. of head 89 mm; W. 13 mm; D. of stem or shaft 10 mm

Tapering square-section point with broken shaft or stem of circular section. The length of the point suggests that it is a bolt head rather than a *pilum* head.

IR26 (SF 4516, context 18108)

**Possible pilum or bolt head**

L. 54 mm; W. 13 mm; D. of shaft or stem 11 mm

Incomplete tapering square-section point with broken shaft or stem of circular section. The identification is uncertain. Could be a fragment of a bolt head or a *pilum* head.

*Bolt Head*

IR27 (context 18108)

**Catapult bolt head**

L. 100 mm; D. of socket 16 mm

Elongated pyramid head and a narrow socket. The precise form of the head is obscured by heavy encrustations but the square-section tip is clearly visible, as is the end of the socket. The socket appears to be split.

A socketed catapult bolt head with pyramidal head and complete with wooden shaft was found at Dura-Europos (Rostovzeff et al. 1936, pl. 24, 2; see also Baatz 1996, Bild 1,7).

*Arrowheads*

For archers and their equipment in general, see Coulston 1985.

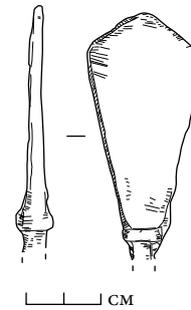


Figure 23. IR28.

IR28 (SF 2332a, context 2278)

**Kite-shaped arrowhead**

L. 66 mm

FIG. 23

Kite-shaped blade with no sharp edges. There is an expansion forming a lip at the base of the blade and the remains of a tang.

Similar tanged kite-shaped iron objects can be cited from Sardis (Waldbaum 1983, 36, pl. 4, 50), Nova Černa (Milčev 1977, Taf. 35, 2), and Iatrus, Moesia Inferior, and Carnuntum (site museum, unpublished). They have usually been identified as arrowheads. This identification seems inherently unlikely in terms of form. The kite-shaped objects are often flat in section, and it seems more likely that they were some form of modeling tool. There are arrowheads broadly similar in form but these have their widest point at

the middle of the blade or lower and are either diamond- or shield-shaped and have diamond cross sections. There are examples of shield and diamond-shaped arrowheads from Sardis (Waldbaum 1983, 37, pl. 4, 53) and Boğazköy-Hattuša (Boehmer 1972, 153–4, Taf. 52 and 54, 1604–9), from Limeskastell Iatrus, Moesia Inferior (Gomolka 1966, 326–7, Taf. 23, 369–73, 375–7), and Nova Černa, Moesia Inferior (Milčev 1977, Taf. 35, 2), among other sites.

The date of these arrowheads poses a problem. The object from Zeugma comes from a mid-third-century destruction deposit. The shield- and diamond-shaped arrowheads from Sardis, Limeskastell Iatrus, Moesia, and Nova Černa, Moesia Inferior, are all from contexts that are much later in date. The occupation at Nova Černa is late Roman, dating between the fourth and early seventh centuries, while at Iatrus the occupation starts about the same date but continues until at least the tenth century (Gomolka 1968, 172–3). Gomolka suggested that this particular type of arrowhead was known in the Merovingian period and later (*ibid.*, 239–40). The examples from Sardis come from Byzantine levels. The examples from Boğazköy-Hattuša are not closely dated, but it is suggested that they may be of Hellenistic date (Boehmer 1972, 151). If the later dating for the arrowheads is correct, then the object from Zeugma must be intrusive in context 2278.

#### TANGED AND BARBED ARROWHEADS

Tanged arrowheads (IR29–30) with three barbs are a distinctive form widely found on Roman sites (Erdmann 1976, Davies 1977). With origins in western Asia, it was probably brought into the Roman army by Syrian archers, who dominated recruitment to the army (Davies 1977, 260–2). See examples from Straubing (Walke 1965, Taf. 105, 5–8) and Vindonissa (Unz and Deschler-Erb 1997, Taf. 20, 338–58) and Kastell Ibligo-Invillino (Fingerlin et al. 1968, 104, Abb. 8, 3, and 4).

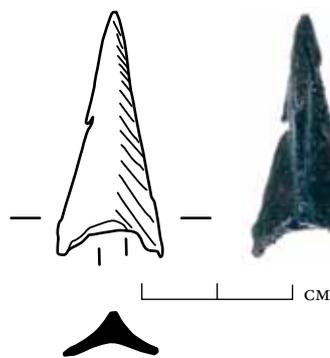


Figure 24. IR29. Drawing (left) and photo (right).

IR29 (SF 486, context 7007)

**Tanged and barbed arrowhead**

L. 33 mm; W. of blade 14 mm

FIG. 24

Tanged arrowhead with three barbs. The tang is missing, but otherwise the arrowhead is well preserved.



Figure 25. IR30.

IR30 (SF 610, context 7061)

**Tanged arrowhead**

L. 70 mm; W. of blade 21 mm

FIG. 25

Tanged arrowhead with three triangular lobes, not barbed.

#### SOCKETED ARROWHEADS

Socketed arrowheads with square section points (IR31–32) are also widely found (Erdmann 1982). Some larger examples certainly served as catapult bolt heads rather than arrowheads (see IR27 above).

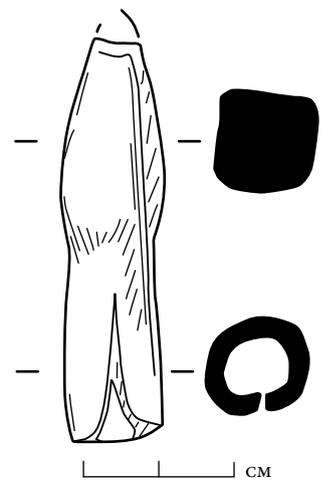


Figure 26. IR31.

IR31 (context 2009)

**Socketed arrow or bolt head**

L. 54 mm; W. of blade 17 mm; D. of socket 13 mm

FIG. 26

Small bolt head or large socketed arrowhead with pyramidal point.

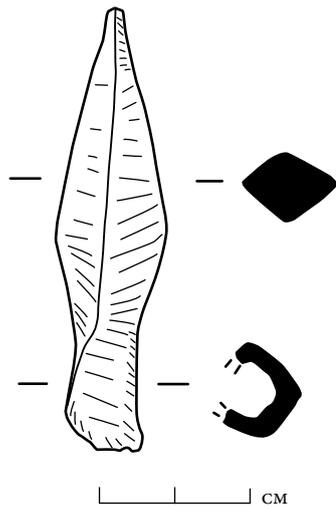


Figure 27. IR32.

IR32 (context 15296)

**Socketed arrowhead**

L. 60 mm; L. of point 42 mm; W. of point 15 mm;

D. of socket 14 mm

FIG. 27

Socketed arrowhead, with a point of elongated diamond shape with a diamond cross section. It has a short socket, which is broken.

*Swords*

The sword fragments are poorly preserved, and only one example (IR34) appears to be anywhere near complete. It represents a slim blade of some length. IR33 is probably the tip of a similar long sword, perhaps a cavalry weapon. IR35 is the tip of a Mainz-type *gladius* and is therefore residual. Mainz-type *gladii* were used during the late Republic and early principate.

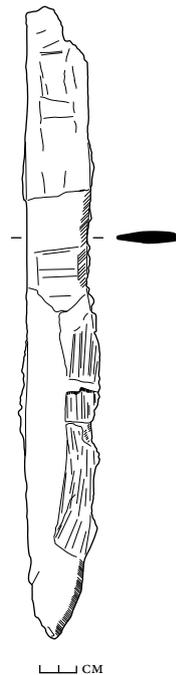


Figure 28. IR33.

IR33 (SF 2056, context 2008)

**Sword blade fragment**

L. 332 mm, W. 32 mm; Th. 8 mm

FIG. 28

Piece of parallel-sided sword blade of lenticular cross section with a slightly rounded point. The traces of mineralized wood on surface of the object may be derived from a scabbard.

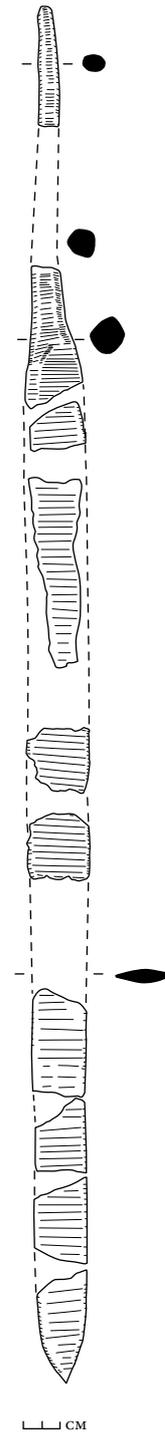


Figure 29. IR34.

**IR34 (context 18070)**

**Sword**

L. ca. 720 mm; W. ca. 30 mm

FIG. 29

Nine pieces of very badly corroded iron, but where broken clearly of lenticular cross section appropriate to a sword. Although heavily corroded, it is possible to identify what is probably the handle end (although incomplete) and what is clearly the point of the sword. Some of the fragments do not join, and therefore it is possible that the sword was originally a little longer than it now measures.

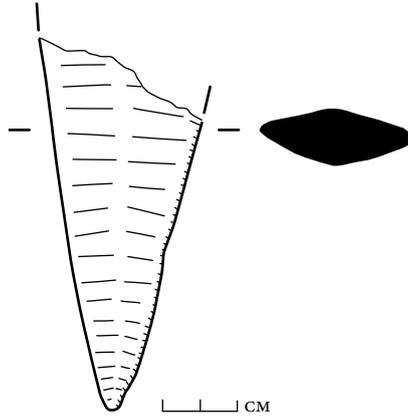


Figure 30. IR35.

**IR35 (context 18108)**

**Mainz-type *gladius***

L. 155 mm; W. 62 mm, Th. 13 mm

FIG. 30

Distinctive broad, elongated point from a Mainz-type *gladius*. The blade is heavy and its cross section is lenticular. The archaeological evidence suggests that Mainz-type *gladii* were superseded in the mid-first century A.D. by the so-called Pompeii type, which had a quite different and narrower blade form, and that they were certainly no longer in current use in the mid-third century (Ulbert 1969a, 118–25; Bishop and Coulston 1993, 69–74, figs. 36 and 38).

Bibliography: Mainz-type *gladii* from Rheingönheim (Ulbert 1971, Abb. 2); Mainz (the Sword of Tiberius: Manning 1985a, pl. 21), and from the Thames, Fulham, London (Manning 1985a, 148–9, pl 71.V2 and pls. 19–20.V2).

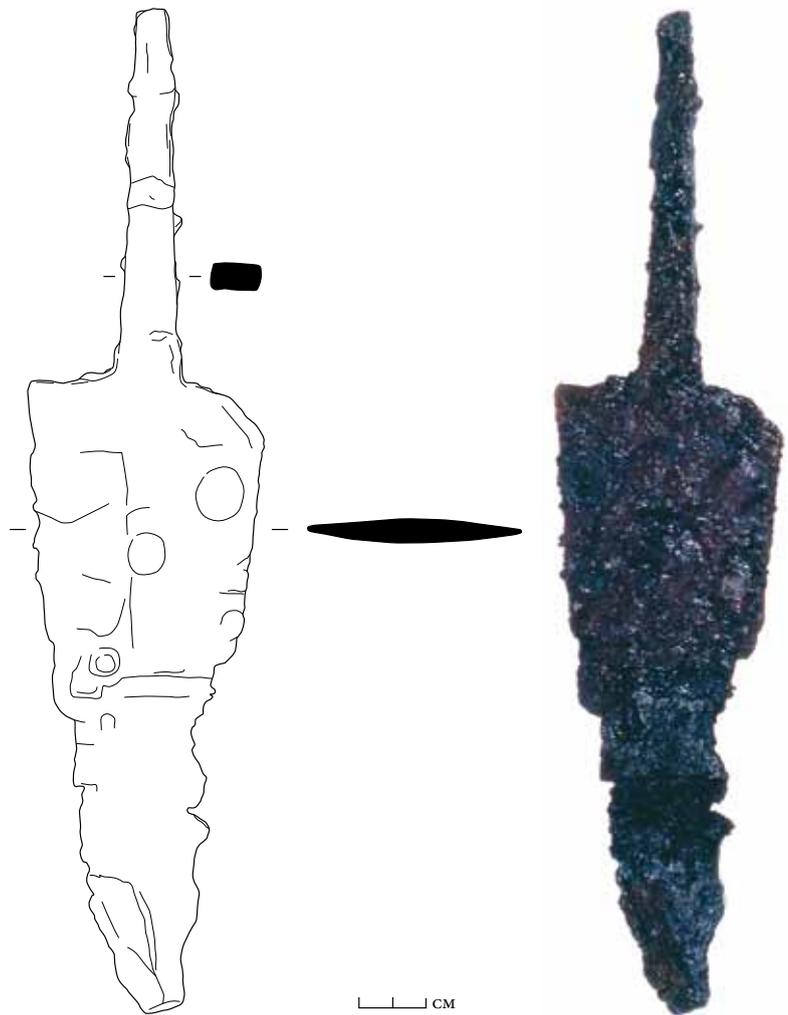


Figure 31. IR36. Drawing (left) and photo (right).

*Dagger or Short Sword*

IR36 (SF 438, context 9144)

**Dagger fragment**

L. 300 mm; W. 69 mm; Thickness 8 mm.

FIG. 31

Tanged dagger. The blade appears to taper to a point, although much of the edge of the blade below the shoulders is eroded. The cross section is lentoidal and lacks any obvious midrib. The width of the blade and its thickness might suggest that more likely this is part of a Mainz-type *gladius* than a dagger. However, the evidence that the blade tapers suggests the possibility that it is a short tapering sword or dagger comparable to those found in the Künzing hoard, which is dated to the mid-third century, although the latter are much thinner in the blade. This could be the upper part of a Mainz-type *gladius* (see, for example, the well-preserved example from Rheingönheim, Germany), but this is perhaps unlikely. It could be the upper part of a short broad sword of Lauriacum/Hromowka type, but this seems unlikely. A dagger is the most likely identification.

Bibliography: Künzing short swords or daggers (Herrmann 1969, 133 and Abb. 2, 1; see also Ulbert 1974, 210–1 and Abb. 3); Rheingönheim *gladius* (Ulbert 1971, Abb. 2).

**Tools***Smithing Tools*

There is a very limited range of smithing tools, comprising two possible fragments of smith's punches (IR37–38). Larger tools and smithing equipment—hammers, tongs, anvils, and the like—are not easily misplaced. Furthermore, the smith's tools were both essential to his work and symbolic of his role: either a hammer or a pair of tongs frequently appear as the main attribute of smiths and of smith gods on tombstones and other reliefs (Duval 1952; see also Coulon 2000, 12; Gaitzsch 1978, Abb. 1: Mercury with hammer; Abb 2: Vulcan with tongs; Abb 7: smith with tongs; Abb 8: smith with hammer). He could not function without them, and any smith will have ensured that his tools were carefully curated. For this reason, smith's tools are not usually found on site in circumstances of casual loss. Where they have been found they are often deliberately deposited or perhaps hidden. Their absence from the Zeugma record need not occasion surprise. The two possible smith's punches are small and could have been mislaid. Both come from mid-third-century destruction deposits.

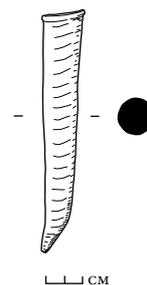


Figure 32. IR37.

IR37 (context 2129)

**Punch**

L. 133 mm

FIG. 32

Circular section, tapering to a now lost point. Possible evidence for battering of head although the object is now laminating and is encrusted.

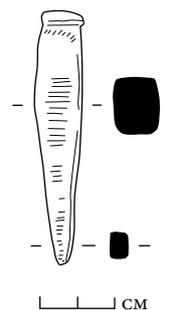


Figure 33. IR38.

IR38 (context 9003)

**Punch**

L. 73 mm

FIG. 33

Square-section stem tapering to a small chisel point, narrowed slightly at the top with a battered head.

*Agricultural Tool*

IR39 (SF 5, context 11034)

**Mattock or entrenching tool**

L. 220 mm

FIG. 34

Mattock or entrenching tool with strongly curved square blade. The shaft hole is almost circular. This mattock or entrenching tool is probably a military type. They certainly occur frequently on military sites, although they are known from civil settlements. It comes from a colluvial deposit laid down following the mid-third-century destruction. They occur in a variety of blade forms, as is demonstrated especially in the Künzing hoard. The commonest form has a pick head opposed to the broad square or rhomboidal digging blade (e.g., examples from the Old Rhine near Xanten, and from Caerleon). There are examples with a hammerhead rather than a pick blade, again from the Old Rhine, from Künzing on the Danube, from *colonia Ulpia Traiana* (Xanten), and from the Magdalensberg, Austria.

Bibliography: Old Rhine near Xanten (Gaitzsch 1993, 91–92, Abb. 76 and Taf. 66, Ger. 12 and 13); *colonia Ulpia*

*Traiana* (Xanten) (Gaitzsch 1993, Abb. 77a); Caerleon (Scott 2000, 391–2, pl. 31 and fig. 95, 14); Künzing, dated mid-third century (Herrmann 1969, Abb. 35); Magdalensberg (Dolenz 1998, 140, Taf. 36–7, L27–L9).

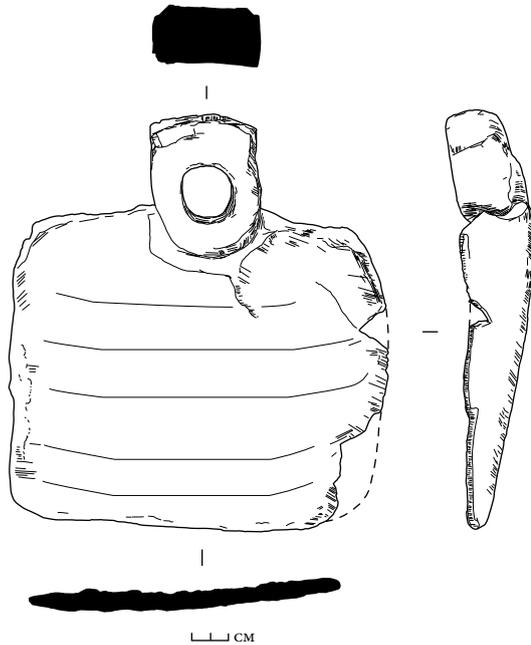


Figure 34. IR39.

Carpentry Tools  
AXES

Three complete or partial axes were found. Axes with a single cutting edge are the usual type in the Roman world (Manning 1985a, 14–6, fig. 3). The double-bladed axe (IR40) from Trench 2 is not a common Roman type and may be intrusive, perhaps even brought by the Sasanian attackers in the mid-third century.

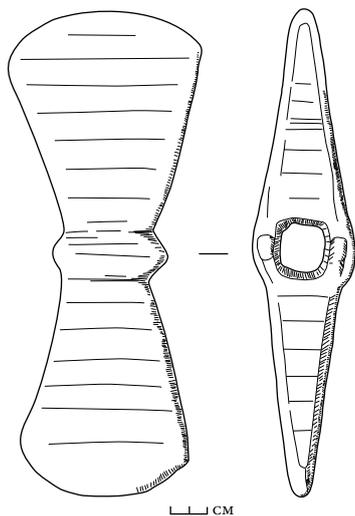


Figure 35. IR40.

IR40 (SF 2335, context 2278)  
Axe with two cutting edges  
L. 230 mm

FIG. 35

Double-headed axe, almost complete. It has a subsquare shaft hole. Both blades are complete, but one survives as five shattered fragments that can be reconstructed.

IR41 (context 7002)  
Axe fragment  
L. 148 mm

Part of heavily corroded axe, broken around shaft hole. The form of the shaft hole is not clear but is probably rectangular and there is no evidence for flanking lugs. The cutting edge is quite broad (ca. 90 mm) and the blade is gently curved. It is unclear whether the axe was single- or double-bladed, but is most likely that it had a single blade.

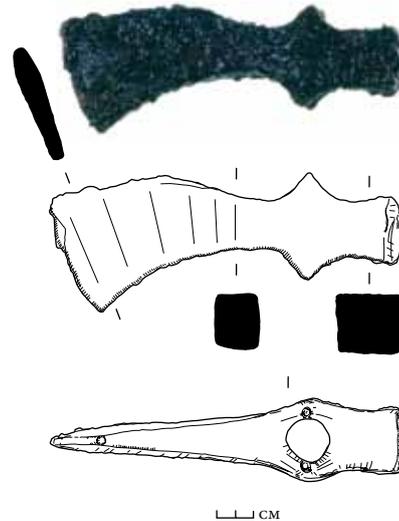


Figure 36. IR42. Photo (top) and drawing (bottom).

IR42 (SF 720, context 9175)  
Axe with single blade  
L. 180 mm

FIG. 36

Axe with single cutting edge and hammer head. The blade has a circular shaft hole and is flanked by lugs on both sides. The blade curves forward then back, and the hammer end is slightly battered.

IR43 (SF 909, context 18001)  
Adze hammer  
L. 214 mm

FIG. 37

Adze hammer with subrectangular shaft hole flanked by lugs on the rear face. The blade is angled and quite thick in cross section. The hammer head may have been of hexagonal section.

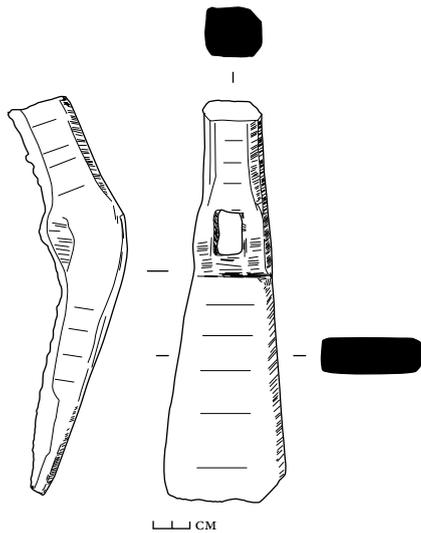


Figure 37. IR43.

The adze hammer is a good Roman type, and the most versatile of carpenter's tools. The form of this example differs from many Roman examples in having a thicker blade and being less angular: The blades of many Roman examples have a sharp angular transition to the cutting blade (cf. Gaitzsch 1993, Abb. 69 and Taf. 64, Ger. 7–8; Manning 1985a, pls. 8, B14 and 9, B16; see also an example apparently of Byzantine date from Sardis: Waldbaum 1983, 49, pl. 11, 136).

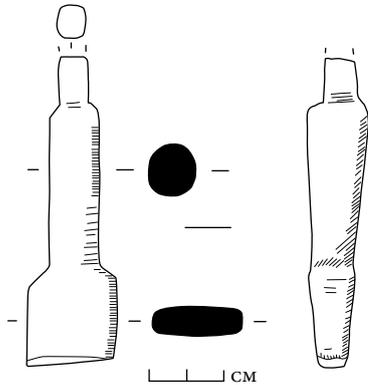


Figure 38. IR44.

IR44 (context 18001)

**Firmer chisel**

L. 83 mm

FIG. 38

Stem of circular section attached to a parallel-sided blade of rectangular section. The blade is broken. At the top of the stem there is a distinct shoulder and a broken tang of square section.

SAWS

A variety of saws were used by Roman carpenters: frame and bow saws, a variety of sizes of handsaw, and long saws operated by two men for heavier cutting, including split-

ting timber into planks. The latter will have included large two-handed frame saws for splitting balks into planks. The evidence comprises surviving archaeological finds and sculptural depictions.

Fragments of four different saws were identified. IR45 is a small fragment of a narrow parallel-sided blade. It is probably part of a frame saw blade. Frame saws are widely illustrated on tombstones and other reliefs. Examples include representations on a tombstone in the Musée Rolin, Autun (Espérandieu 1910, 1881; see also CIL 13, 2721), on a relief from Rome (Gaitzsch 1980, Taf. 65, 309), and on a fragment of marble relief from Ayasoluk, Selçuk, in western Turkey (Büyükkolancı and Trinkl 2003, Abb. 1). The blade is held in a wooden frame, comprising two curved end pieces joined by a central crosspiece. The blade is fixed between the lower ends of the curved side pieces and a loop of cord stretched between the opposite ends of the side pieces serves to tension the blade and can be tightened by twisting with a short length of wood (Gaitzsch 1980, Abb. 35).

IR47–48 are probably parts of large frame saw blades. Although from their size they could be parts of two-man saw blades, the fact that both fragments have only a single nail or rivet hole at the end makes it unlikely that they had a fixed handle attached. Part of a similar blade was found at Straubing on the Danube (Walke 1965, 160, Taf. 127, 13). See also saw blade fragments from Magdalensberg (Dolenz 1998, 193–4, Taf. 66, W215–W220). A complete blade, with straight cutting edge and a gently arched back and measuring some 755 mm long, was found in the Corbridge hoard (Allason-Jones and Bishop 1988, 53, fig.73, 85). This was identified as a frame saw blade. A similarly curved blade set in a frame is shown on an altar set up to Minerva by a *collegium fabri tignarii* in Rome (Gaitzsch 1980, Taf. 65, 308). This altar also shows a detached saw blade with curved back and a fixing hole at the end.

A long two-man pit saw is illustrated on a Gallic-Roman sculpture from Deneuvre (Espérandieu 1915, 4702). The sculpture clearly shows two sawyers splitting a balk of timber. The timber is propped up on legs, with one man standing on the timber and the second man standing underneath. The saw was operated vertically between the men. The sculpture shows no detail of the saw. However, there is a wall painting from Pompeii that shows in some detail a two-handed pit saw being used in the same fashion (6, 7, 8: Gaitzsch 1980, 357, Taf. 27, 137; see also Nappo 1998, 24–5, and Guillaumet 1996, 10). The saw comprises a rectangular frame with the saw blade stretched across the middle. The figures operating the saw hold the short ends of the frame. The saw blade can be moved across the frame to make regularly spaced cuts through balks of timber to make planking.

A representation of an alternative form of two-man saw is found on a bas-relief in the Musée de Metz, which shows two men cutting timber on a saw horse (Guillaumet 1996, 22; see also Coulon 2000, 23). The blade of the saw

clearly broadens at the center — both the back and cutting edge are curved — and has a fixed upright handle, possibly D-shaped, at the end that is visible.

IR46 is a handsaw with a parallel-sided blade. It has the remains of a broad-shaped collar and two rivets to secure the handle at one end. A small handsaw apparently of Byzantine date was found at Sardis (Waldbaum 1983, 53, pl. 13, 166). The Sardis saw has a parallel-sided blade for much of its length, then the back curves down to meet the cutting edge. There is a centrally placed tang and collar to which the handle was attached. Another handsaw, measuring 417 mm long, was found at Verulamium (Manning 1972, 166, fig. 61, 12). This is more or less complete and has a tapering blade and broad broken tang with a single rivet in situ. Two small handsaws have been identified from villas on the Isle of Wight (Tomalin 1987, 76, 80, F35: Carisbrooke villa; 80, F36: Brightstone villa).

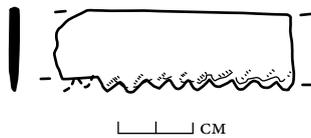


Figure 39. IR45.

IR45 (context 2014)

Saw blade fragment from a frame saw

L. 63 mm

FIG. 39

Narrow straight parallel-sided saw blade fragment with possible rivet hole. Four and a half teeth per 25.4 mm.

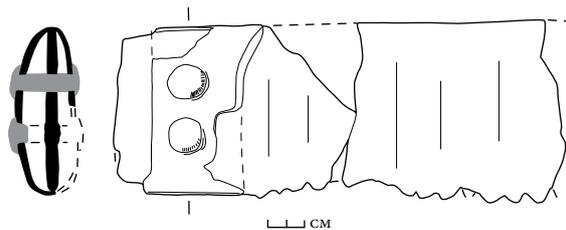


Figure 40. IR46.

IR46 (context 2294)

Saw blade fragments from a handsaw, with part of handle attachment

L. 272 mm

FIG. 40

Broad parallel-sided blade with saw teeth on one edge. One end is squared off and has traces of mineralized wood and the remains of a collar made from folded and shaped sheet. This served to secure the handle and was fixed by two rivets through the end of the blade. The other end of the blade is broken. One tooth per cm.

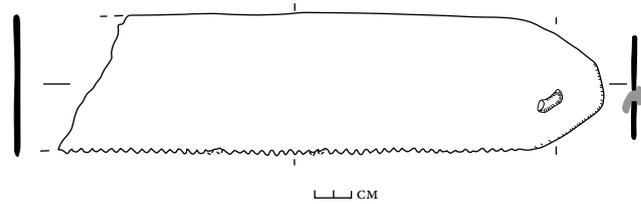


Figure 41. IR47.

IR47 (SF 3463a, context 18108)

Pit or frame saw blade fragments

L. 280 mm; W. 72 mm

FIG. 41

Saw blade in two fragments. Broad blade of saw with one rounded end. Round end is pierced by nail. Two teeth per cm. These fragments were found with IR48. They form parts of similar blades, but are distinguished by the differences in the size and density of their teeth and their overall width, and therefore are most likely to be parts of two different saws. This blade has more and smaller teeth than IR48. Possibly part of the blade of a long pit saw used for sawing up tree trunks to make planks and long timber, or alternatively part of the blade of a large frame saw. The single nail through the terminal indicates that this is more likely to be a blade for a frame saw than for a two-handed saw.

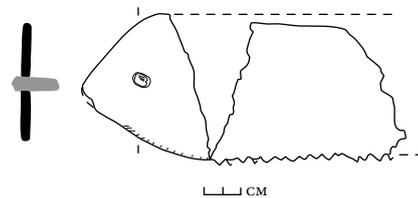


Figure 42. IR48.

IR48 (SF 3463b, context 18108)

Pit or frame saw blade fragments

L. 169 mm; W. 75 mm

FIG. 42

Saw blade fragments. Broad blade with rounded pointed end pierced by a nail. One and four-fifths teeth per cm. Found with IR47 and forming part of a similar saw blade. It is overall slightly wider and has fewer and larger teeth than IR47. Possibly part of the blade of a long pit saw used for sawing up tree trunks to make planks and long timber, or alternatively part of the blade of a large frame saw. The single nail through the terminal makes it more likely to be a blade for a frame saw than for a two-handed saw.

IR49 (SF 3928, context 19218)

Possible saw or knife

L. 225 mm; blade W. 66 mm

FIG. 43

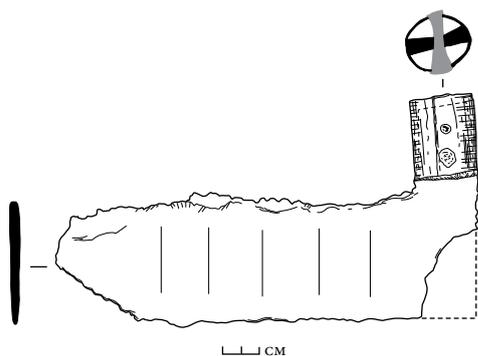


Figure 43. IR49.

Possible saw comprising short parallel-sided blade with rounded point. The handle is set at 90 degrees at the top of one end of the blade. It was attached by means of two rivets through a short broad tang and a copper alloy collar. The corner of the blade by the handle is missing. The back or inside edge of the blade appears to have saw teeth, but the corrosion makes it difficult to be certain of this. It is possible that this was a form of saw — the overall shape of the blade is reminiscent of a modern floorboard saw — though we might expect the lower edge to be toothed, rather than the back. If not a saw, then it is a distinctive form of knife, which would be used with a chopping or scrapping action. It is too thin in the blade to be a froe, or riving knife. Possibly a specialized knife for chopping.

KNIVES WITH HANDLES AT A RIGHT ANGLE TO THE BACK OF THE BLADE

There are several knives with their handles set at right angles to the back of the blade. IR50 has a slightly curved blade and IR51 a straight blade with down-curved tip. Both could be froes or riving knives, which are used to split timber into thin lathes along the grain. The blade is usually straight, although curved blades to cut barrel staves are known. The blade is driven into the grain using a mallet usually of wood. The handle serves to work the blade down the grain and to ensure that the lathe is split to the correct thickness (Jenkins 1965, 27, 74, fig.6 and photo 70). Both the possible examples are perhaps a little small compared to modern froes, which generally have 300- to 350-mm long blades attached to the handle by an eye, rather than a tang. There are knives comparable to the Zeugma examples from Augsburg-Oberhausen (Hübener 1973, 53, Taf. 20, 21) and from Rißtissen (G. Ulbert 1970, 40, Taf. 21, 316). The example from Augsburg-Oberhausen has a socket rather than a tang and has slightly curved blade which is 260 mm long in the blade. It is identified simply as a “socketed knife.” The example from Rißtissen is described as a *Bandeisen mit Dorn* (iron hoop with nail). It has broad short blade with a cutting edge that curves up. There are blades from Zugmantel and the Saalburg, which more resemble modern froes and are described as *Spaltnmesser*, that is, knives for splitting (Pietsch 1983, 119–20, Taf. 26, 570 and 571).<sup>41</sup>

IR52 is different. Its blade is too narrow and too strongly

curved to be a froe. Superficially, it appears to be a sickle or pruning hook with its curved blade, but the tang is at the wrong angle. Sickles can either be shaped like a hook, or more strongly curved with the handle set at an angle, to give it balance. Either form works by hooking the weeds or crops to be cut in the curve of the blade. Pruning hooks do not have to be strongly curved, although many are, but blade and handle are usually in line or form a more or less continuous curve, again to allow the branch to be hooked. The tool from Zeugma would not work in that way. The angle of its handle is appropriate to a balanced sickle, but the blades would need to be much longer and more strongly curved. It is clear that this tool was intentionally formed and was therefore made for a purpose. That purpose is not clear. IR53 appears to be a smaller version of the froes but is rather small. Most of the tang is missing, and its precise identification is uncertain.



Figure 44. IR50.

IR50 (SF 449, context 9336)

Probable froe

L. 235 mm; blade L. 210 mm

FIG. 44

Gently curved broad blade of triangular cross section, with the tang set at a right angle to the back.

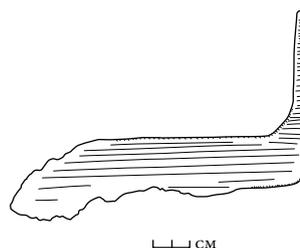


Figure 45. IR51.

IR51 (SF 3399, context 18070)

Possible froe

L. 160 mm

FIG. 45

Knife with blade of triangular section. The tang is set at right angles to the back of the blade. The back is straight except near the tip, where it curves down. The edge is straight, then curves down near the tip.

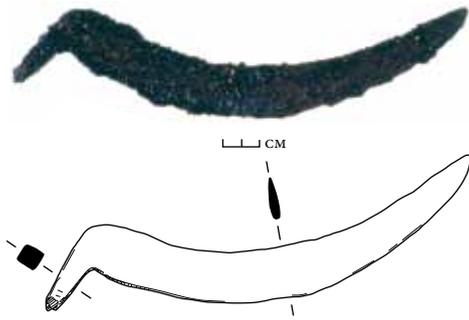


Figure 46. IR52. Drawing (bottom) and photo (top).

IR52 (SF 2080, context 2007)  
**Knife with strongly curved blade**  
 L. 237 mm; blade 210 mm

FIG. 46

Sickle-like curving, tapering blade with cutting edge on concave curve. The tang at the broad end is set at a right angle to the blade. The cross section near the handle is thick and triangular but further along the blade it appears to become lentoidal and thinner.

IR53 (context 2025)  
**Possible knife or small froe**  
 L. 111 mm

Possible knife with handle at a right angle to the back of the blade. Blade tapers and curves to a point. The broader end may be broken and may have turned at right angles to form a handle at right angles to the blade.

#### *Leatherworking Tools*

These comprise a number of possible awls and punches. The identification of some pieces is far from certain, because none of the examples is complete. Most of the objects are probably awls, but three pieces are more likely to have been leather punches (IR63–65), and three could be either awls or punches (IR66–68) but lack any distinctive features. Awls are used to cut holes in leather and their

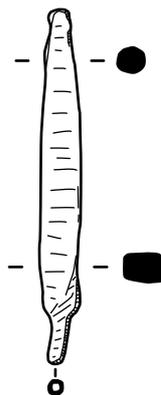


Figure 47. IR54.

blades can vary in shape. The awl types are those defined by Manning in his *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum* (1985a, 38–42 and fig. 9).

#### POSSIBLE TYPE 1 AWLS

Type 1 awls have tapering stems of circular section, a sharply defined shoulder, and a short tang. Two of the examples, identified here as Type 1 awls, have quite short stems, which change from square to round section towards the point. They could be tanged leather punches rather than awls.

IR54 (SF 432, context 9140)  
**Possible Type 1 awl or punch**  
 L. 95 mm

FIG. 47

Possible awl, with a square-section tapering stem or blade changing to a rounded section towards the point. At the other end there is a step to a circular-section tang. The point is rounded, suggesting this is a punch rather than an awl.

IR55 (context 9175)  
**Possible Type 1 awl or punch**  
 L. 95 mm

Possible awl, with a square-section tapering stem or blade changing to a circular section towards the point. Stepped to a broken tang at the top. Slightly bent.

IR56 (context 11031)  
**Possible Type 1 awl**  
 L. 172 mm

Possible awl, with a long circular-section tapering point. At the top end, it narrows to a subrectangular tang.

#### TYPE 3A AWL

Type 3a awls are not tanged, but instead have an expanded heads or handles and tapering elongated stems or blades.

IR57 (context 9076)  
**Type 3a awl**  
 L. 63 mm

Probable awl consisting of an expanded handle of square section with an oval-section blade or point at the other end, now incomplete.

#### TYPE 4A AWLS

Type 4a awls have pyramidal tangs and long stems. They can be confused with carpenters' drill bits.

IR58 (context 2035)  
**Possible Type 4a awl**  
 L. 98 mm

Probable awl with a tapering square-section tang and a broken circular-section stem.

**IR59** (context 2046)

**Possible Type 4a awl**

L. 105 mm

Possible awl with a tapering square-section tang and a circular-section stem.

**IR60** (context 2075)

**Possible Type 4a awl**

L. 85 mm

Possible awl with a tapering square-section tang and a slim square-section stem.

**IR61** (context 2238)

**Possible Type 4a awl**

L. 66 mm

Possible awl with a narrow tapering tang of square section, stepped to a broken stem of uncertain cross section.

**IR62** (context 9133)

**Possible Type 4a awl**

L. 68 mm

Probable awl with a tapering tang of square section and a broken square-section stem.

#### LEATHER PUNCHES

Punches are used for making holes and for creating decorative patterns. For the latter purpose they are required to cut through the leather and have rounded points.

**IR63** (context 2095)

**Possible leather punch or awl**

L. 105 mm

Tapering stem or blade of square section with a slim tang of square section. The blade may be circular sectioned at its widest. The point is sharp but squared off.

**IR64** (context 2251)

**Possible leather punch**

L. 85 mm

Punch with a tapering square-section stem with a rounded point. The other end, which also tapers, is broken.

**IR65** (context 9077)

**Possible leather punch or awl**

L. 59 mm

Punch with short tapering stem of circular section and with a rounded point. The slim tang is of rectangular section.

#### POSSIBLE AWLS OR PUNCHES

These items are of uncertain identification. If they were awls or punches; insufficient evidence now survives to make identification certain.

**IR66** (context 2046)

**Possible awl or punch**

L. 93 mm

Formed from rod of square section, tapering at each end. Probably an awl.

**IR67** (context 2285)

**Possible awl or punch**

L. 57 mm

Tapering point of subrectangular or oval section. At the wider end it is stepped down to the stub of a small tang or shaft. Possibly part of an awl or punch.

**IR68** (context 9194)

**Possible awl or punch**

L. 97 mm

Formed from a square-section bar tapering to a point at each end and slightly bent in the middle.

#### *Weaving Tools*

**IR69–73** (SF 789, context 9198)

**Flax or wool combs × 5**

L. 340 mm

Five similar flat rectangular flax combs bundled together, one on top of another. At the ends numerous fine teeth are clearly visible. They are bound by thicker square-section rod-like outer edges. The ends of the combs, where surviving, appear to be neatly squared off. They are all slightly curved in longitudinal section, which may be due to heating. Four of the combs have straight, or more or less straight, long sides. The fifth differs in that it is wider at each end and constricted at its center. They were found with five curved and socketed knives (IR163–167).

#### *Other Possible Tools*

**IR74** (context 2105)

**Possible tool blade**

L. 71 mm

Possible blade of tool comprising square-section bar narrowing to a rectangular section at one end. Found with broken socket IR77.

**IR75** (context 2014)

**Socket**

Substantial split socket. No nail hole. Probably from a large tool.

**IR76** (context 2092)

**Socket**

L. 51 mm

Incomplete socket from a tool or knife. It appears to be of lenticular cross section at one end and opens out in an incomplete socket at the other.

**IR77** (context 2105)

**Socket**

L. 72 mm

Broken fragment of socket. It ends in a square-section scar where the stem or blade of the tool would have joined. Found with IR74.

**IR78** (context 2269)

**Socket**

L. 103 mm

Heavily corroded socket. Incomplete. There is a square-section scar set at a slight angle to the socket, which may be from the stem or blade of the tool. Heavily encrusted with slag-like substance.

**IR79** (context 7060)

**Socket**

L. 60 mm

Probable closed socket, formed from thin sheet. Appears to have been slightly squashed at one end where there is an apparent slot or cut, ending in a neat hole. There appears to be a nail hole for fixing the socket. Function is by no means certain.

**IR80** (context 9175)

**Socket**

L. 54 mm

Short socket, split, with the edges slightly overlapping. There is a nail hole opposite the split. The top of the socket has a rectangular scar suggesting that the socket belonged to a tool.

**IR81** (context 18070)

**Socket**

L. 55 mm

Badly corroded socket, heavily encrusted. No obvious nail holes or signs of fixing. Possibly of circular cross section at the narrow end.

**Transport**

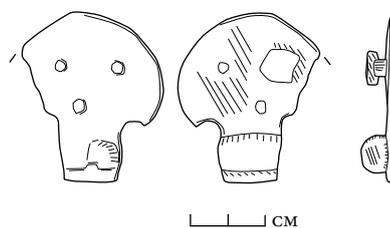


Figure 48. IR82.

**IR82** (context 9194)

**Harness fitting**

L. 46 mm; W. 38 mm

FIG. 48

Pelta-shaped terminal with three nail holes, in which one nail is still extant. There is a half-round ridge, which may be a hinge pivot, and originally it may have been symmetrical with a second pelta-shaped plate. If that was the case it will have been a hinge or junction possibly attached to a harness strap or similar item, to judge from the position of the extant nail. There is a similar but larger fitting from a Byzantine level at Sardis. It is complete and was identified as a possible hinge (Waldbaum 1983, 64, pl. 18, 256).

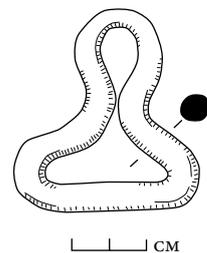


Figure 49. IR83.

**IR83** (context 2285)

**Harness link**

L. 54 mm

FIG. 49

Link with a rounded loop at one end and a wider loop at the other to take a strap.

**IR84** (SF 2332b, context 2278)

**Swivel**

L. 123 mm

FIG. 50

Swivel comprising horseshoe-shaped loop of thin rectangular section joined across the narrow end by a bar containing the swivel. The swiveling bar appears to be of rectangular section and the loop at the lower end has two rings through it. These in turn have a third ring looped through them.

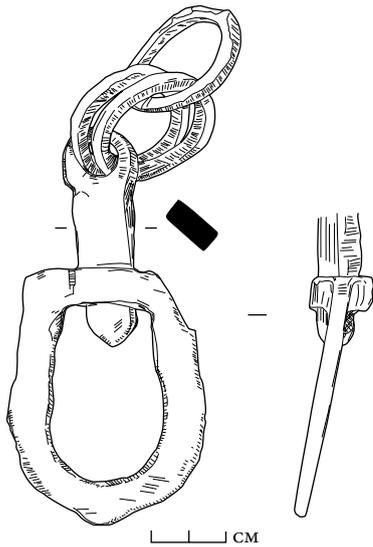


Figure 50. IR84.

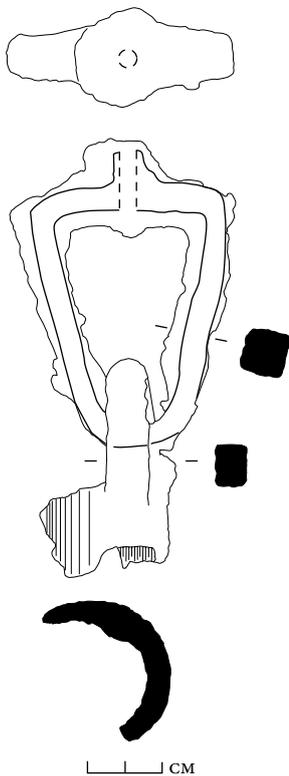


Figure 51. IR85.

IR85 (SF 2305, context 2269)

Swivel

L. 116 mm

FIG. 51

Swivel comprising triangular link with swivel attachment at the broader end and ring linked at the narrow end. Fragment of a cylindrical casing, probably part of a barbed spring padlock, attached to the ring. It is possibly part of a slave shackle with integral lock, similar, though not identical, to shackles from Chalon-sur Saône and Glanon (France)

and Sanzeno (Italy) that Thompson (1994, 92–7 and illus. 40–3) would date to the Iron Age, and to examples from Autun (France) and Bengel (Germany) (Thompson 1994, 111–4, illus. 72–4). The Autun example apparently lacks the swivel found on other examples. The Bengel example came from a well and was found with third- and fourth-century coins and pottery (ibid. 159, no. 96).

IR86 (context 2278)

Nave band

L. 84 mm

Section of heavy strip, thicker along one edge and slightly curved. Possibly part of a nave band but identification is not certain.

Personalia

IR87 (SF 3518, context 15002)

Decorative plate

L. 86 mm

FIG. 52

The horseshoe-shaped plate is slightly curved and angled in section. The end of one arm is slightly expanded and has a rivet in situ. The second arm is broken at the end but part of the rivet hole survives. There is a third rivet at the apex and a slight lug or expansion on the inside edge at the apex. The flattened rivet heads and short rivet stems, together with the form of the object, suggest that it is some form of plate for attachment to leather. Similar objects from Nicopolis ad Istrum (Bulgaria) have been identified as boot or shoe reinforcements or calkins and assigned a Medieval or post-Medieval date (Poulter 2007, 54–5, nos. 2.59–69 and fig. 2.27: 2.59–61).

Jewelry

IR88 (context 9079)

Crossbow brooch

L. 48 mm

FIG. 53

Small brooch formed from oval-section rod. It has a strongly curved bow and a neatly formed catch plate. The pin and pin assembly are missing. Although the wings of the crossbow are missing, the strongly curved bow and the catch plate are distinctive and paralleled in copper alloy crossbow brooches. See, for example, the simple brooches from Dura-Europos (Frisch and Toll 1949, 51–61 and pls. 11–5). The trace of copper alloy suggests that this might have been of composite construction.

Finger Rings

For a discussion of iron rings see Manning 1985a, 77–8, pl. 32, J1–J8

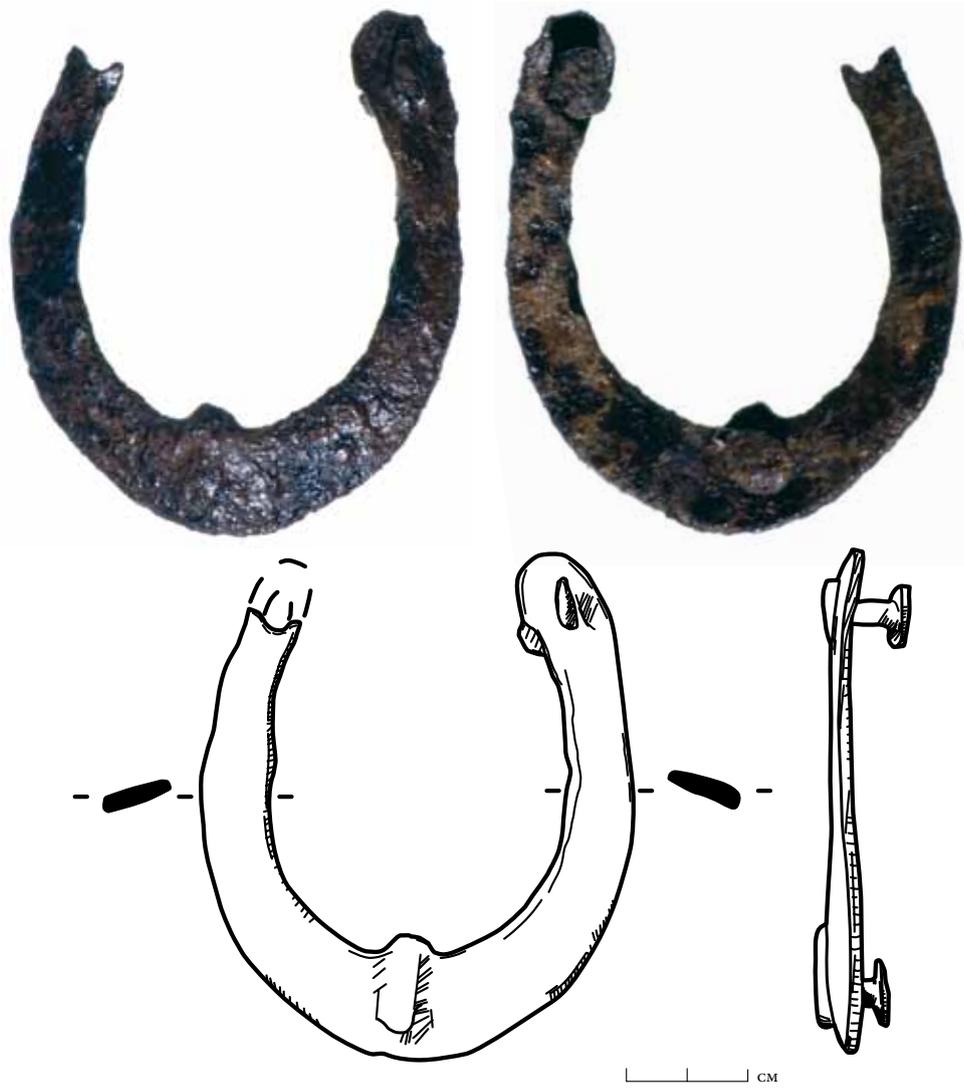


Figure 52. IR87. Drawing (bottom) and front and back photos (top).

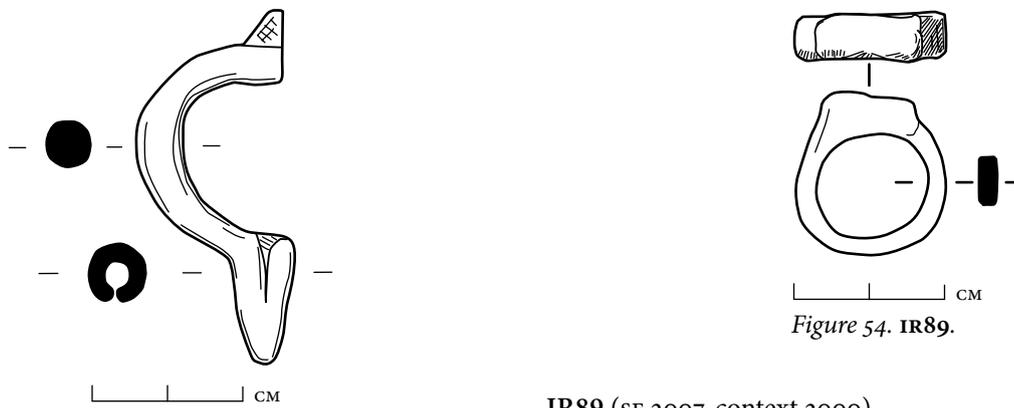


Figure 53. IR88.

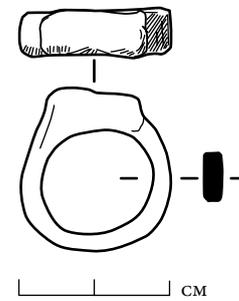


Figure 54. IR89.

IR89 (SF 2007, context 2000)

Finger ring

L. 22 mm

FIG. 54

Probable finger ring, with broad band of oval section and flat rectangular bezel.

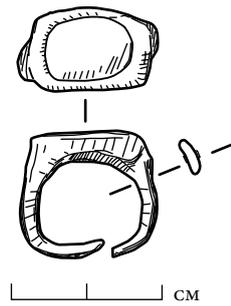


Figure 55. IR90.

IR90 (SF 2154, context 2041)

Finger ring

L. 19 mm

FIG. 55

Finger ring, small. Plain with oval bezel, which appears to contain a plain setting in a different material (possibly copper alloy).

IR91 (context 2036)

Finger ring

W. 27 mm

Incomplete finger ring with oval setting for intaglio. Setting is empty.

*Writing Tools*

IR92 (context 7023)

Stylus

L. 85 mm

Consists of wedge-shaped eraser and a plain circular-section stem with no surviving point.

*Shoe Fittings*

IR93 (context 2283)

Boot cleat

L. 30 mm

Small diamond-shaped plate with narrow points at each end. One end is missing.

*Hobnails*

Catalogue number	Context	Count
IR94	10021	1
IR95	5075	4
IR96	12011	1
IR97	2002	1

Household Furnishings

*Tripod*

IR98 (SF 824, context 9247)

Folding tripod

H. 635 mm

FIG. 56

The tripod has three straight legs of rectangular section. The top end of each of these bars terminates in a small flat lug on the inside face and at right angles to the face. Above the lug each leg ends in a flat diamond-shaped terminal. The bottom end of each leg is plain, although in the case of one bar the last few centimeters are missing. Between each pair of legs is a folding mechanism formed from pairs of strips pivoted at the center. The upper end of each is attached to and pivots from a folded and riveted strip fixed on the inside face of a leg; the lower end is attached to and pivots from a rectangular collar by means of angled lugs. The collars could slide up and down the legs. The strips or struts forming the folding mechanism would brace the tripod in use. The tripod legs could have been used either as the base of a small table, which could be folded away, or to support a small bowl containing water for hand washing. The diamond-shaped terminals at the top ends of the legs suggest that the legs could have supported either a bowl or a table top.

Folding tables of bronze and silver with four and three legs have been exhaustively studied by Klatt (1995). Klatt has catalogued almost 100 examples that are widely distributed across the Roman world (Klatt 1995, Tab. 3, Abb. 18). Many are made in copper alloy or bronze and are highly decorated with elaborately molded feet and terminals (e.g., Tigava, Algeria: Klatt 1995, 473–4, Abb. 140–2, D14; Antakya, Turkey: Klatt 1995, 474–5, Abb. 144, D15; Környe, Budapest: Klatt 1995, Abb. 22, D29; Bavai, France: Henig 1983, ill. 118). There is a silver example in the Hildesheim treasure (Henig 1983, 150). Few iron examples have been published.

Folding tripod tables were a regular feature of Roman furnishings (Liversidge 1955, 28–37). Some tripods will have supported table tops; others may have held bowls (e.g., examples from Pompeii: Klatt 1995, Abb. 17). The latter use is more probable for the tripods with elaborate decorated upper terminals of the legs. It is possible that the Zeugma tripod, which has plain lugged terminals, was intended to take a small circular table top.

Tripod tables are widely illustrated on wall paintings, carved reliefs, and coins (Klatt 1995, 430–7, Abb. 92–112). Many of the illustrations show tripods being used in religious ceremonies and in particular being used for making offerings (for example, a painted *lararium* in the Via dell' Abbondanza, Pompeii [9, 12, 7]; see also Klatt 1995, Abb. 92, 93, 96, 98–99). The use of tripods in religious ceremonies is probably overrepresented in sculpture and painting and especially on coins (Klatt 1995, Abb. 104–12); use in more mundane circumstance can be assumed. Given that the

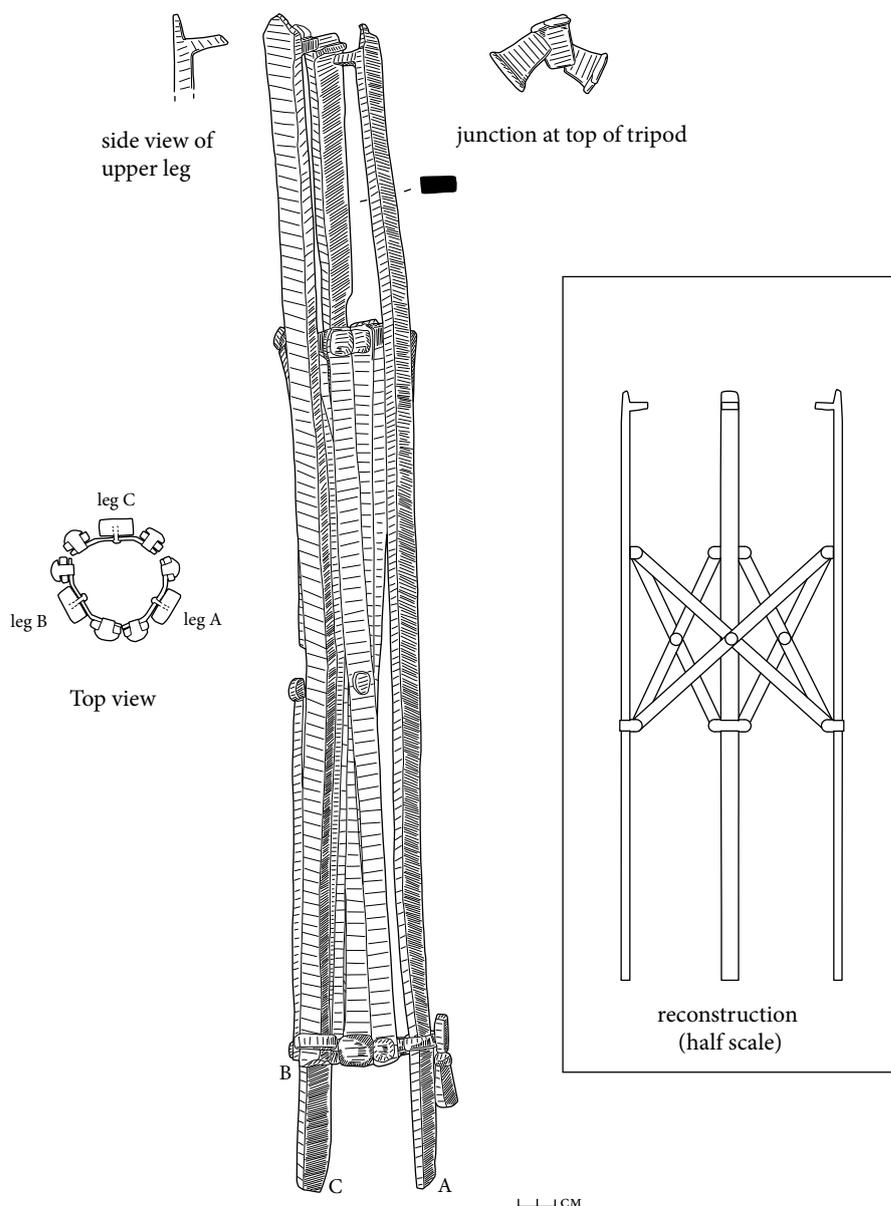


Figure 56. IR98.

Zeugma example is only 635 mm tall, its use by celebrants standing in a religious context is perhaps questionable. A side table or a support for a bowl holding food is perhaps more likely.

#### *Lighting Equipment*

IR99 (SF 2039, context 2000)

#### **Candelabrum or lamp stand with a tripod base**

H. 1350 mm

FIG. 57

Candelabrum, or lamp stand, with a tripod base. It was at least 1350 mm tall. The stick or stand can be divided into four elements: the candle or lamp holder, the upper stem, the lower stem, and the tripod foot. The surviving pieces

comprise the candle or lamp holder, which is in pieces, the upper stem, and the lower stem, together with the tripod foot.

The candle or lamp holder at the top can be reconstructed in different ways. Unfortunately, the surviving fragments do not join in any obvious way. One reconstruction might be with a cup-like candleholder over a flat circular drip tray. The other, and perhaps more likely, reconstruction has the cup-shaped element opening out to form a flat dish with low vertical edges. This could either serve as a lamp holder or could have been fitted with a pricket, or spike, to secure a candle. If it was a lamp stand, then a pricket would not be required.

The upper stem was a plain bar of rectangular section.



Figure 57. IR99. Candelabrum: remains (left), reconstruction (middle), and photo (right).

At the top of this stem, just beneath the candle or lamp holder, was a baluster molding. The lower portion of stem comprised two plain parallel rectangular-section bars with a gap between. The bar forming the upper stem slotted between the upper ends of the two bars of the lower stem and was secured by an elongated iron collar, which may also have been decorated with moldings, but which is not sufficiently well preserved for complete certainty. It is likely that the upper bar was intended originally to slide up or down between the lower pair of bars to enable the height of the candlestick to be adjusted. The tripod foot and lower stem were attached to the lower end of the pair of parallel bars. The legs/feet were equally spaced and curve out from the stem. Their ends are turned up sharply then rolled under to form feet. There is evidence for another tripartite element attached beneath the tripod foot. It appears to be attached to a rod passing up through the stem of the tripod foot. The three arms of this element are broken off short. They may have formed decorative features to fill the spaces between the feet/legs of the candlestick.

Examples of tall freestanding candlesticks or candelabra are quite common. Perhaps the best-known examples are from Pompeii (e.g., *Real Museo Borbonico*, vol. 1, pl. 11, vol. 4, pl. 57; vol. 6, pl. 61). Two similar candlesticks from the villa of N. Popidius Florus (Boscureale) are in the J. Paul Getty Museum, California (Gorecki 1993, 230 and Taf. 1, A1 and A2). These measure 1,620 mm and 153 mm tall, respectively, and are made of copper alloy or bronze and are much more highly decorated than this iron example and comparable to the copper alloy candlestick base (BR20) from context 18001 (see the chapter by Khamis, this vol-

ume). In essentials they are similar, with their tripod base, long stem, and cupped candle holder. There are iron candelabra or lamp stands comparable in size to the Zeugma example from early Byzantine levels at Sardis (Waldbaum 1983, 104, pls. 39, 613 and 40, 614). The construction of the Zeugma candlestick is quite different from that of a fragmentary iron candlestick from the legionary *canabae* of the fortress at Caerleon, South Wales. This was formed and shaped from iron sheet around an iron rod, which formed an armature and had a cup-like candleholder rather than a pricket (Scott 2000, 398–400, figs. 99, 57).

Some of the Pompeii examples are adjustable for height with the upper part of the upright tube sliding into the lower portion like a telescope (e.g., *Real Museo Borbonico*, vol. 6, pl. 61). Other examples of adjustable candlesticks include specimens from Beaurains, Pas-de-Calais (in silver), and another in copper alloy from Arceau, Côte d'Or (Künzl 1993b, 388, Abb. 2 and 3). These have a different arrangement with parallel tubes or rods linked by collars, which allow them to be adjusted for height. The example from Beaurains has a series of three equally spaced holes through the upper bar, by means of which the candleholder can be secured at the required height by a peg or pin. At its minimum height this candelabrum measures a little over half a meter high. Fully extended it would measure over 800 mm high. On the specimen from Arceau, which is smaller, only 150 mm tall, or ca. 220 mm fully extended, there is a similar arrangement, but the adjustable shaft is secured by a hook attached the top of the lower tube, rather than a loose pin.

The closest parallel for the Zeugma piece is a copper alloy lamp stand now in the British Museum (Bailey 1996, 98, pls. 116–7, Q3901). Although made of copper alloy, it has a similar form to the Zeugma stand and is telescopic. If the Zeugma example was adjustable, which seems probable, the upper bar would have slid up and down between the two lower parallel bars as with the British Museum example. Bailey gives this example an Early Imperial date, but the provenance is unknown. Overall, the Zeugma stand would have been about 1,350 mm high at its maximum extension, and fully retracted only a little over 900 mm high.

IR100 (context 2129)

Lamp stand or candlestick fragment

D. 154 mm

FIG. 58

Shallow circular vessel, more or less flat bottomed with a low vertical wall. Three-quarters complete. Probably the drip tray from a candlestick or lamp holder from a lamp stand. Perhaps from a candelabrum or lamp stand similar to IR99.

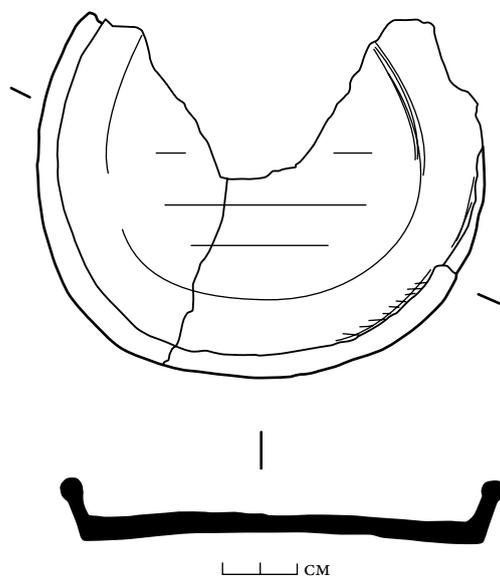


Figure 58. IR100.

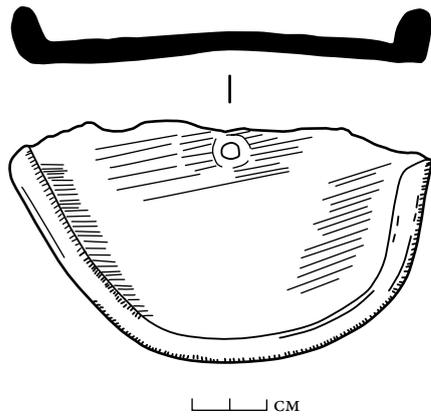


Figure 59. IR101.

IR101 (context 9175)

**Lamp stand or candlestick fragment**

D. 112 mm

FIG. 59

Dish with a slightly convex but more or less flat base and short vertical rim. Just over half survives. Probably the top of a lamp stand or the drip tray from a candlestick. The hole through the center would have served to secure the dish to the candlestick. The candle was probably held by means of a spike or pricket. Comparable to IR100.

IR102 (context 18001)

**Lamp stand or candlestick fragment**

L. 68 mm

Possibly the top of a lamp stand or the drip tray from a candlestick. It is bent and distorted. Comparable to IR100-101.

*Braziers or Lights*

The exact function of these objects is uncertain, although suggestions can be made.<sup>42</sup> They each comprise a small bucket-shaped vessel, formed from iron strips, and are attached to an iron rod that was fixed by means of a pair of split spike loops. The use of a pair of split spike loops together with a rod suggests that the buckets were intended to be fixed but also to be adjustable for height. The fact that there is no evidence for any lining—either wood or leather—and the fact that the more complete bucket has a solid and dished iron base suggest that they were meant to be open, and therefore must have been to hold fire. They could be for heating or lighting.

Heating in many Roman houses was provided by means of freestanding braziers, often of copper alloy. They are generally in the form of a deep rectangular tray with feet at the four corners and were intended to burn charcoal, and are quite different from the objects under discussion. Many are highly decorated, others are quite plain and utilitarian. They could also be used for cooking and heating, but it is possible that these hanging objects were for lighting, although lighting was usually provided by oil lamps or candelabra, examples of both of which have been found at

Zeugma. Another possibility is that they might have been a rather plain form of censer with a liturgical or ritual function. They appear to have been fixed in position, and this is perhaps the key to their function, as lighting or heating are the most likely functions for fixed objects. It is not possible to be more certain without additional information. More examples may have existed, since some of the fragments catalogued as parts of buckets or braziers (IR106-112) must have been from similar assemblages.

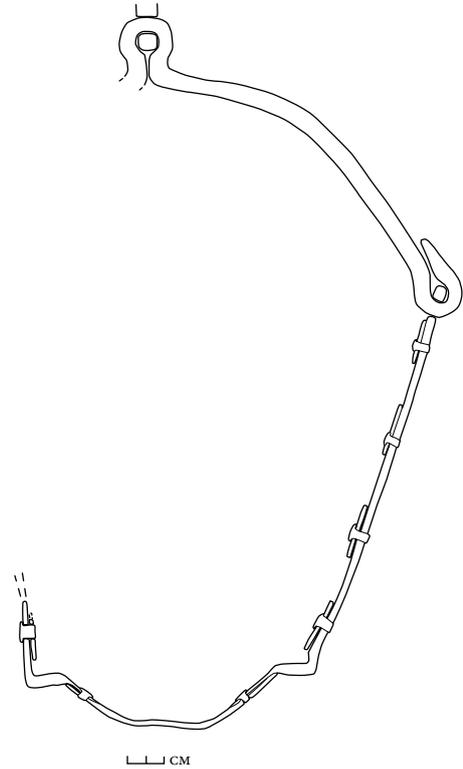


Figure 60. IR103.

IR103 (SF 2301a, context 2312)

**Brazier and suspension system**

Bucket H. 240 mm; hanging rod L. 435 mm

FIG. 60-62

Brazier 1 comprises an iron bucket (Bucket 1) and a hanging rod (Rod 1) attached to its handle. The bucket has a dished base and sides formed from horizontal iron strips reinforced by vertical strips. There are four evenly spaced horizontal bands and four vertical strips. Two of the vertical strips are extensions of the base and extend above the top horizontal band and each has a hole for the handle. The other two vertical strips are riveted to the base and do not extend above the top hoop. All the vertical strips are riveted to horizontal bands. The brazier bucket is ca. 240 mm deep. The handle of the bucket is formed from a single rod of iron of circular section and has a hook formed at each end and a loop in the middle. The central loop is linked to a loop at the end of an iron suspension bar or rod (Rod 1) ca. 435 mm long. The other end of the bar has a flattened circular terminal. Two split spike loops are attached to the rod. It



Figure 61. IR103 and IR105.

seems likely that the long rod was attached vertically by the split spike loops to a timber or timbers. The brazier, which was attached to the bottom of the rod, could be raised and lowered by sliding the rod up and down. Presumably there was some means of securing the brazier bucket in any chosen position.

Brazier 2 comprises fragments of an iron bucket (Bucket 2) (IR104) and a suspension rod (Rod 2) (IR105), similar to that attached to the bucket of Brazier 1. The two pieces were found together and are presumed to be parts of a single set, but they are not now physically linked.

One bucket fragment consists of a vertical strip with fragments of three horizontal hoops, and another has a complete vertical strip with handle mount and fragments of four horizontal hoops. These fragments were found with IR103, but they probably belonged to a separate bucket (Bucket 2). There was no clear evidence for the bottom of the bucket. Although less survives, it is clear that the horizontal hoops are narrower and spaced more closely together than Bucket 1, and it was probably slightly smaller. There is no certain evidence for the shape of the bottom of the bucket, but it was probably dished like the more complete bucket.

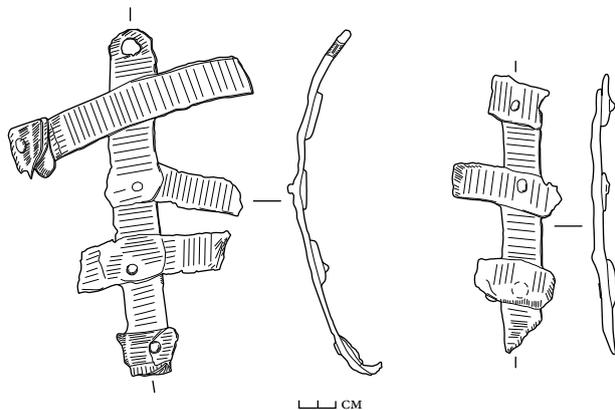


Figure 63. IR104.

IR104 (SF 2301b, context 2312)  
**Brazier bucket fragments**  
 Bucket fragments L. 185 mm

FIG. 63

IR105 (SF 2301c, context 2312)

**Brazier suspension rod**

L. 430 mm

FIGS. 61 and 62

Suspension Rod 2 was fused to the rod of Brazier 1. It differed from the first rod both by being thicker and by having its top end terminating with a knob. The other end has a rolled-over loop for attachment to the bucket. Again there are two split-spike loops attached to the rod. Taken with Bucket 2 (IR104), it is probably part of a second brazier set.

*Bucket or Brazier Fragments*

IR106 (SF 2295, context 2294)

**Bucket hoop fragments × 4**

L. 108 mm

FIG. 64

Four fragments of binding where strips are joined by nails or rivets at right angles. Probably from bucket but possibly

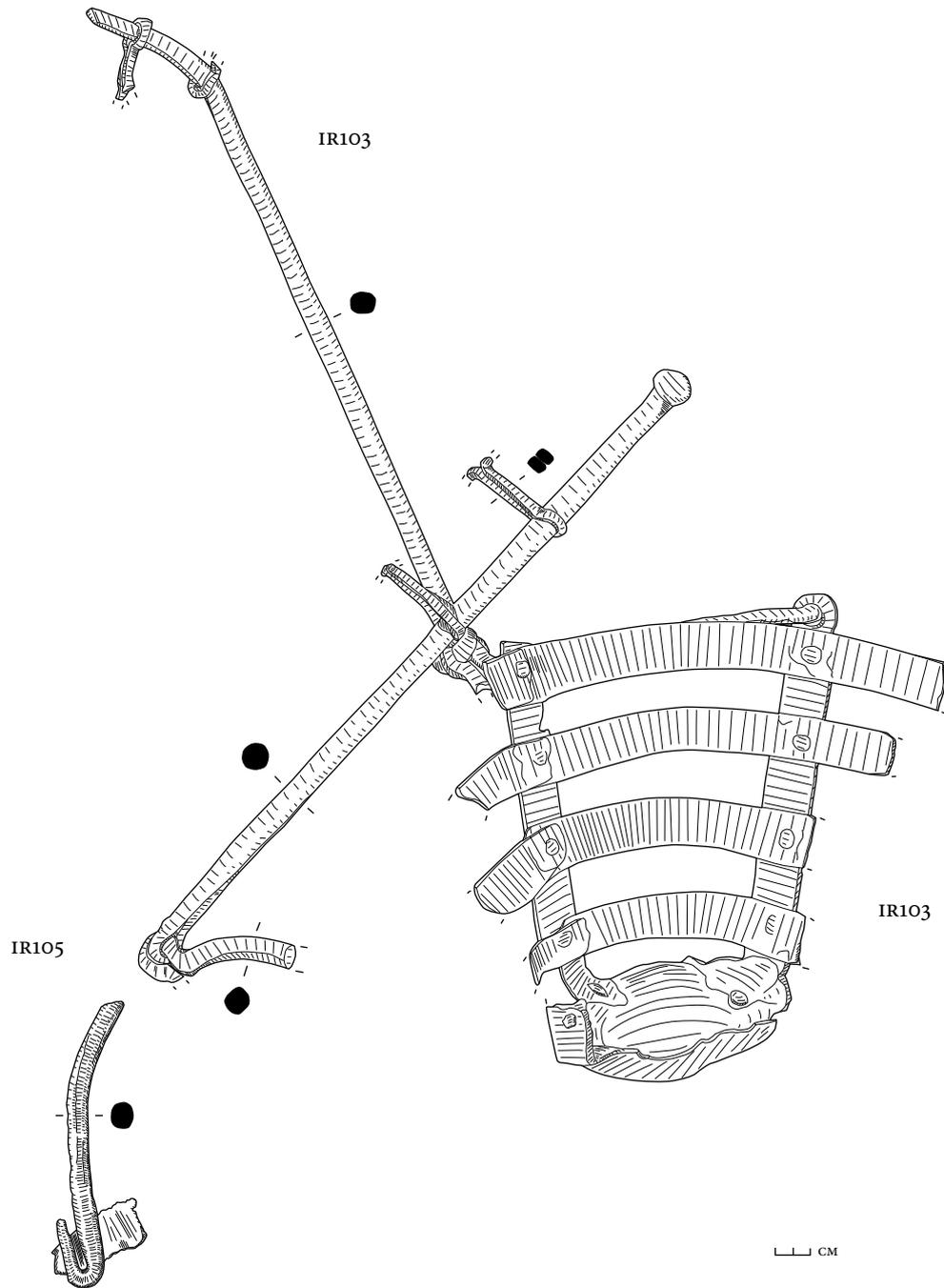


Figure 62. IR103 and IR105.

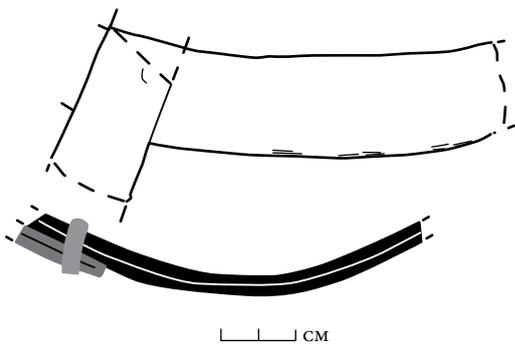


Figure 64. IR106.

from a chest. One fragment is definitely curved and part of a bucket.

**IR107 (SF 2295, context 2294)**  
**Bucket hoop fragments × 2**

Two fragments of bucket handle mounts with attached bucket hoop fragments. One fragment has part of the bucket handle attached.

**IR108** (SF 2295, context 2294)  
**Bucket hoop fragments** × 15

Strips of thin rectangular section, most gently curved, probably fragments of bucket hoops. At least 15 large fragments with additional small fragments.

**IR109** (SF 2295, context 2294)  
**Bucket handle fragments** × 3

Curved bar fragments including one with a looped end. Bucket handle or handles

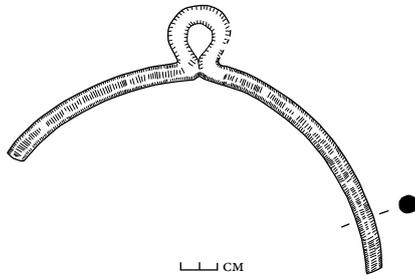


Figure 65. IR110.

**IR110** (SF 2355, context 2283)  
**Bucket handle**  
 L. 220 mm

FIG. 65

Bucket handle formed from circular rod formed into a loop at the center. The hooked ends are missing

**IR111** (context 2294)  
**Bucket handle mount**  
 L. 82 mm

Thin strip of rectangular section, square at the top with a neatly made square hole for the handle. It tapers to a long point. The precise form of the lower part is unclear due to corrosion.

**IR112** (SF 129, context 9079)  
**Bucket handle mount**  
 L. 83 mm

Probable bucket handle mount formed from strip with a loop at one end and pierced by an elongated hole.

*Miscellaneous Domestic Fragments*

**IR113** (context 11031)  
**Handle**  
 L. 42 mm; W. 18 mm

Handle formed from square-section rod rolled over at the end to form a neat loop.

**IR114** (context 13001)  
**Handle**

Looped end of a handle formed from rectangular-section bar.

**IR115** (context 18001)  
**Handle**  
 L. 78 mm

Handle of square section formed into a neat loop at one end.

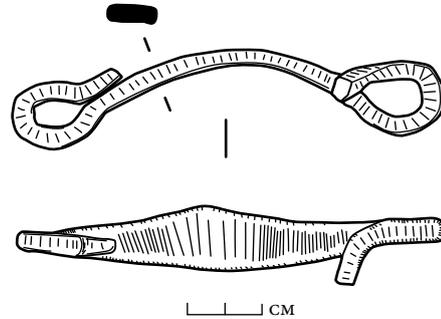


Figure 66. IR116.

**IR116** (context 9175)  
**Object of uncertain function**  
 L. 115 mm

FIG. 66

Object formed from a curved strip of rectangular section, which tapers to each end. Each end changes to a circular section and is rolled over to form loop. However, one end turns as if to continue to one side but is broken.

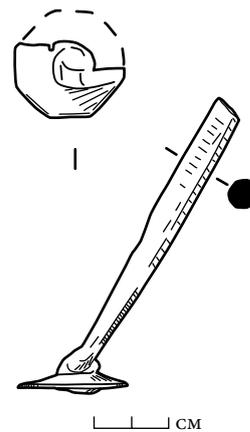


Figure 67. IR117.

**IR117** (context 2379)  
**Object of uncertain function**  
 L. 92 mm

FIG. 67

Object of uncertain function, comprising a circular-section rod, broken at one end, which tapers to the other end, where it joins a thin octagonal plate, which is incomplete.

The junction is far from clear, but it appears that the rod is rolled over at the narrow end to form a loop where it joins the plate.

**IR118** (SF 2274, context 2275)

**Object of uncertain function**

L. 70 mm, 80 mm, 82 mm, 90 mm, 100 mm, 114 mm

Six fragments, probably from a single object, comprising two lengths of thick wire or thin rod (114 mm and 90 mm), one of which joins to a flattened curved section (80 mm), broken at the other end. The fourth object formed from thick wire has a loop at one end and is broken at the other (82 mm). The fifth object comprises two linked loops formed from thick wire, broken at their outer ends (100 mm). The sixth object is a curved fragment of subrectangular section at one end, thinning to a flatter section at the other (70 mm).

*Vessels*

Few of the vessels survive other than as small fragments.



Figure 68. IR119 and IR120. Detail.

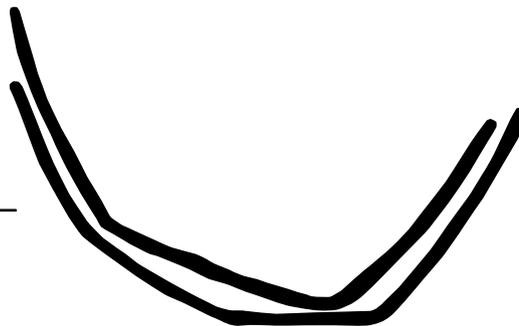
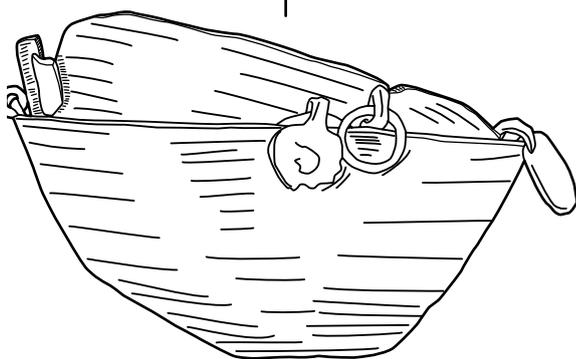
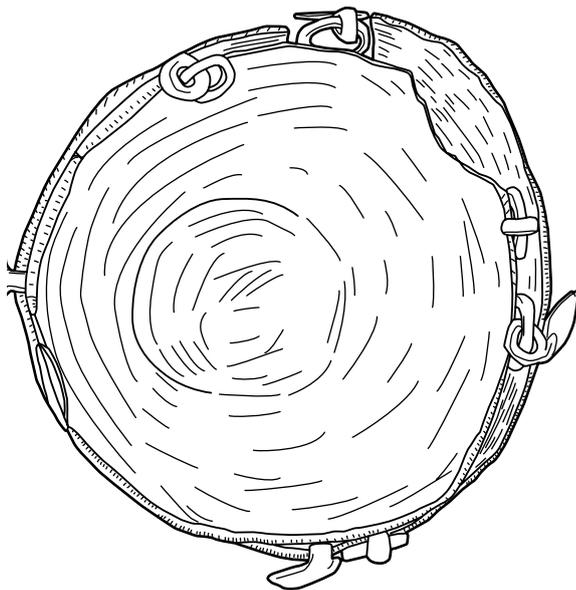
**IR119–120** (SF 2075, context 2008)

**Pair of hemispherical vessels — scale pans**

D. 140 mm

FIGS. 68, 69

Two hemispherical vessels of iron with copper alloy suspension rings secured by copper alloy attachments on the



1 1 1 CM

Figure 69. IR119 and IR120. Drawings and photo.

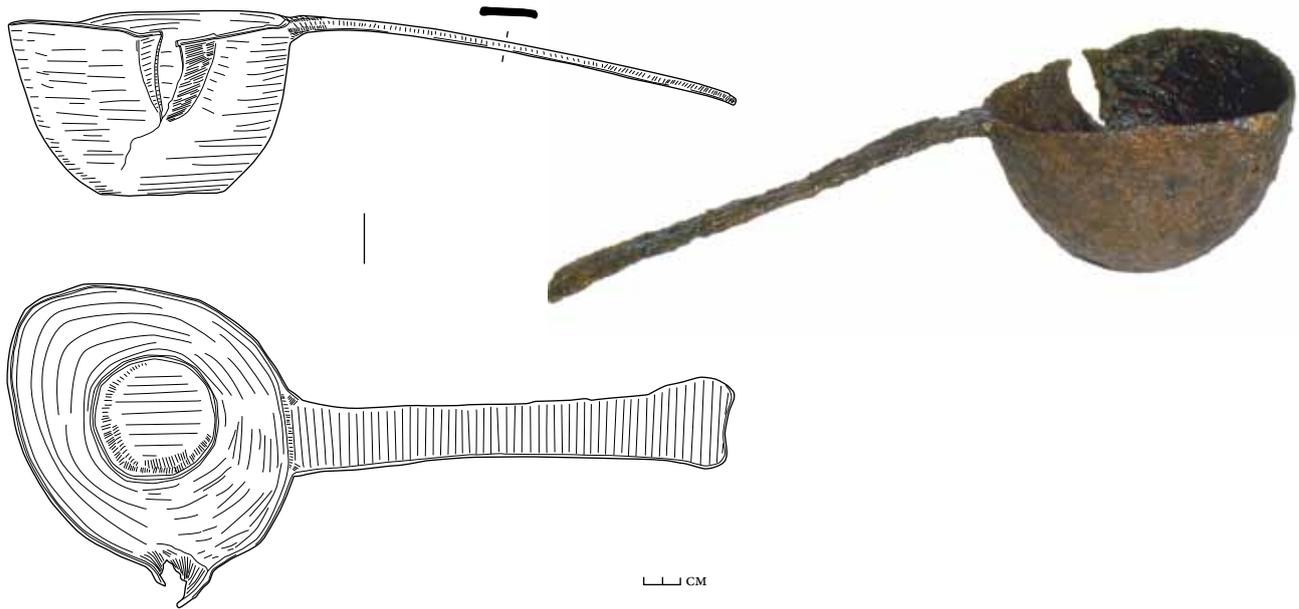


Figure 70. IR121. Drawings (left) and photo (right).

outside edge of each of the vessels. The teardrop- or leaf-shaped attachment plates appear to be plain and are positioned just beneath the rim, with the plain rolled-over loop showing above the rim. The outer bowl appears to have four loops and attachment plates, although at least three of the attachment plates are now detached. They have not been lost because the attached rings are wedged between the two bowls. The inner bowl is similar but appears to have only three rings and/or attachment plates in situ. Although parts of the rims and sides of both vessels are missing, enough survives for their form to be clear. The bowls are ca. 140 mm in diameter. These were almost certainly scale pans for a balance.

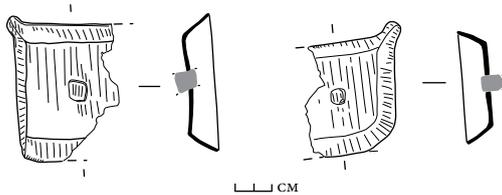


Figure 71. IR122 and IR123.

**IR121 (SF 2319, context 2294)**

**Spouted saucepan**

L. 390 mm

FIG. 70

Saucepan with a deep bowl with flat bottom and curving sides. It has a spout on one side. The handle is long and flat with a slight expansion at the end. A good Roman form—deep, flat-bottomed, with curved sides and long handle—it is more commonly found in copper alloy. This example has a smaller diameter body than many examples and also has a spout. It was almost certainly a small saucepan for heating and pouring liquids.

Bibliography: Handle of an iron pan from Straubing (Walke 1965, 156, Taf. 114, 4); copper alloy vessels from the Old Rhein near Xanten (Schalles and Schreiter 1993, 240–51, Taf. 53–60).

**IR122–123 (context 2039)**

**Possible shallow spouted vessels**

L. 82 mm; L. 62 mm

FIG. 71

Two objects formed from sheet. Parts of small square or rectangular flat-bottomed vessels, each with a possible elongated spout at one corner. Both appear to have a rod attachment fixed to the center of the base. Function uncertain. Possibly open lamps or small lamp holders.

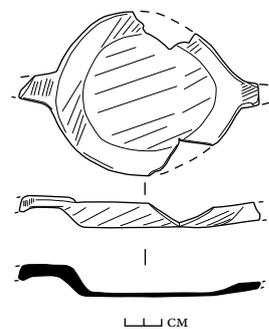


Figure 72. IR124.

**IR124 (context 9073)**

**Spouted shallow vessel**

L. 126 mm

FIG. 72

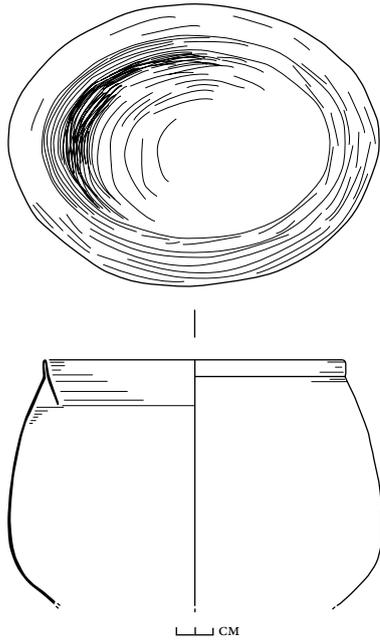


Figure 73. IR125.

Shallow, more or less circular flat-bottomed vessel with sloping sides at about 40 degrees to the horizontal. At one end there is a stub of a rectangular handle. Opposite is a spout of semicircular section, which is incomplete but appears to be quite extended. This could be a small spouted vessel, or possibly a form of lamp holder, perhaps less probably an open lamp, which could have been freestanding or hung from a chain.

IR125 (context 18108)

**Deep round-bottomed vessel**

Extant H. 126 mm, L. ca. 200 mm × ca. 150 mm FIG. 73

Deep vessel with a rim folded over to form an internal flange. It appears to be oval rather than circular. The rim of the largest fragment appears to have a slightly tighter curve at one end than the other, suggesting an oval form. This is also suggested by the remaining portion of the lower part of the vessel, which also appears to have a smaller radius than the rim. Bag-shaped. The second smaller rim fragment has a smaller radius than the large fragment and was therefore possibly from one end of the vessel. The distinctive form of this vessel—deep, bag-shaped, with a round bottom, oval in plan, and the inturned rim—all indicate a vessel designed for a specific purpose. What that purpose was, is less clear. No parallels known. It may have been intended as a metal lining set in a wooden or even leather holder or frame.

*Vessel Fragments*

IR126 (context 2013)

**Vessel fragment**

L. 108 mm; H. 45 mm FIG. 74

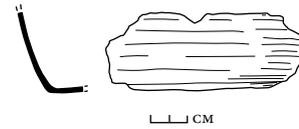


Figure 74. IR126.

Possible vessel with flat bottom and slightly curving side between 110 and 120 degrees to the base. The sides are about 45 mm in height. Probably from a large flat pan. Insufficient material survives to be certain of the diameter.

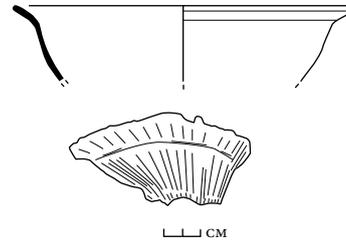


Figure 75. IR127.

IR127 (context 2181)

**Vessel fragment**

D. 160 mm FIG. 75

Fragment of vessel, probably part of a bowl.

IR128 (context 2242)

**Possible vessel fragment**

L. 42 mm

Plate that may form part of a vessel or casing. Consists of a flat sheet with a raised edge angled at about 70 degrees to the horizontal. The angled side slightly curves, suggesting that this is the edge of a circular object.

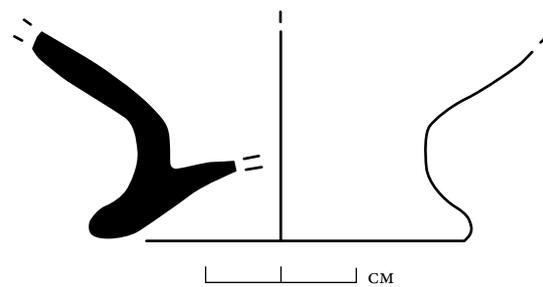


Figure 76. IR129.

IR129 (context 9194)

**Vessel fragment**

Extant L. 54 mm, base D. ca. 50 mm FIG. 76

Part of the base of a small round-bodied iron vessel with a narrow foot. The base appears to be pushed up. Not enough survives to determine the size or overall form of the vessel.

IR130 (context 9194)

**Vessel fragments**

Two small curved fragments of thin sheet with slaggy deposits on the surface, possibly from a vessel.

IR131 (context 12001)

**Vessel fragment**

Fragment of vessel formed from curved plate.

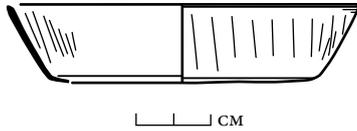


Figure 77. IR132.

IR132 (context 13036)

**Vessel fragment**

D. 90 mm; H. 21 mm

FIG. 77

Fragment of vessel with flat base and sloping side at approximately 130 degrees.

IR133 (SF 2199, context 2141)

**Possible vessel foot**

L. 75 mm

Possible foot that is a flat and approximately oval flange formed at the end of a short length of substantial square-section bar, which curves off at an angle.

*Knives*

ZEUGMA TYPE

These knives are a distinct type and form the largest single group of knives. They have curved backs and cutting edges, and short square tangs. The small square tang is pierced for one or two rivet holes and a handle secured by rivets and a collar or binding is distinctive. It is likely that these knives represent a tradition indigenous to Zeugma, or an intrusive type. All were recovered from contexts of mid-third-century date with the exception of an example from Trench 2 (IR139) found in a context of Early Imperial date. No knives with this method of hafting are known from Sardis (Waldbaum 1983, 54, pls. 14–5). There is a published knife from Fishbourne with a square tang and single rivet, which may have originally had a collar or binding (Cunliffe 1971, vol. 2, 134, fig. 60, 44). This example comes from destruction levels dating to the late third century. The method of hafting is more commonly used on tools of Iron Age and later date but not on knives.<sup>43</sup> There is a knife or tool from Boğazköy-Hattuša that has this method of attachment (Boehmer 1972, 147, Taf. 47, 1327) and comes from Phrygian levels.

IR134 (SF 2051, context 2006)

**Knife**

L. 106 mm

Knife blade with curved back and cutting edge. Middle section and tang missing. Blade form not certain.

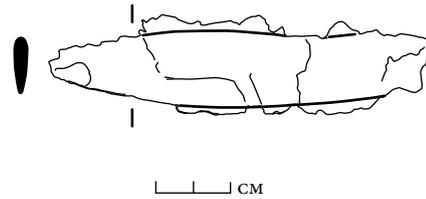


Figure 78. IR135.

IR135 (SF 2057, context 2008)

**Knife**

L. 103 mm

FIG. 78

Knife blade of lenticular section with curved cutting edge and back. The tang is square but incomplete.

IR136 (context 2039)

**Knife blade**

L. 135 mm

Straight parallel-sided blade attached to its handle by means of an iron collar and two rivets, which pass through the collar, and a square tang.

IR137 (context 2039)

**Knife fragment**

L. 48 mm

Fragment of small knife, comprising part of the blade and a squared tang with two rivets in situ. The blade form is uncertain.

IR138 (SF 2130, context 2075)

**Knife**

L. 135 mm

Knife blade with curving back and cutting edge. It has a thick triangular cross section. It has a broken square tang with part of a rivet hole surviving.

IR139 (context 2154)

**Knife fragment**

L. 39 mm; W. 21 mm

Fragment of collar from knife handle formed from thin strip sheet, which appears to be overlapped and riveted. The tube is oval in cross section.

IR140 (context 9079)

**Knife fragment**

L. 51 mm

Collar and tang from a knife. The collar tapers and is oval in cross section and largely complete. There is one possible nail visible. The flat square tang is visible.

IR141 (context 9112)

**Knife**

L. 140 mm

Knife with gently curving back and edge. The cross section is triangular. There is an iron collar formed from sheet to secure the handle. It is heavily corroded and no detail can be discerned.

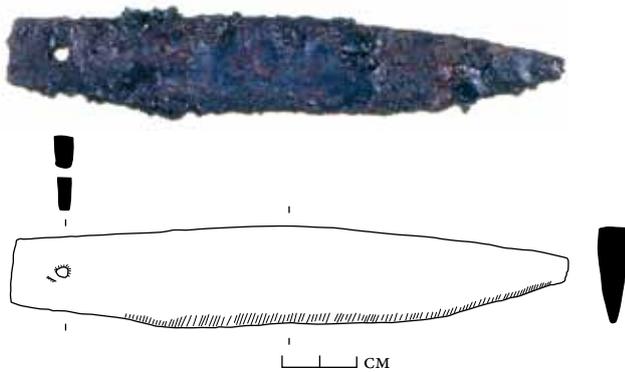


Figure 79. IR142. Drawing (bottom) and photo (top).

IR142 (SF 458, context 9137)

**Knife**

L. 148 mm

FIG. 79

Knife blade of thick triangular cross section with curved back and curved cutting edge. It has a short square tang pierced with a single rivet hole.

IR143 (context 9194)

**Knife fragment**

L. 81 mm

Comprises part of a blade with curved edge and back and square tang and collar. The collar is formed from thin sheet and was secured by means of two rivets through the tang of the blade.

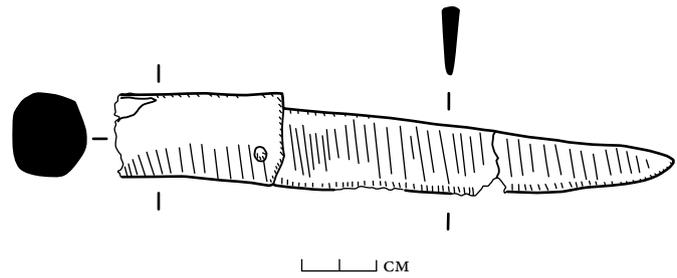


Figure 80. IR144.

IR144 (SF 3458, context 18001)

**Knife**

L. 148 mm

FIG. 80

Knife blade of triangular section with curved back and cutting edge. There is an iron collar riveted through a tang to secure the handle. A single nail, or rivet, is visible. The tang is not visible.

IR145 (context 18001)

**Knife blade fragment**

L. 72 mm

Fragment of knife blade. Both the back and edge are gently curved. The cross section is triangular with a rounded back. The tip has been bent into a curve. No tang survives.

OTHER KNIVES

IR146 (SF 2125, context 2032)

**Knife**

L. 260 mm

FIG. 81

Large broad-bladed knife or cleaver blade with elongated tang. The tang is broad and tapering and has a nail hole visible near the blade. The blade has a more or less straight edge. The back is straight then breaks and slopes down to the point.

Bibliography: Hod Hill (Manning 1985a, 123, pl. 57, Q101).

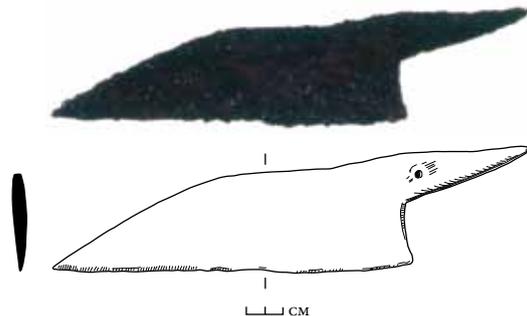


Figure 81. IR146. Drawing (bottom) and photo (top).

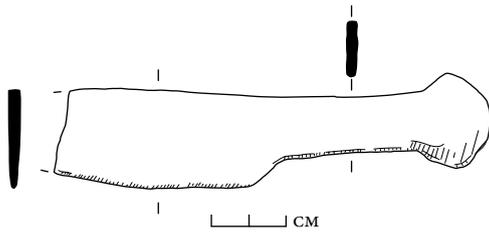


Figure 82. IR147.

IR147 (SF 2213, context 2191)

**Knife**

L. 115 mm

FIG. 82

Knife with integral handle and blade. The flat handle is of rectangular section with expansion at the hilt end. The blade is incomplete but has a straight back and a slightly curved edge. The precise blade form is not clear. See IR170 and IR171 for fragments of similar handles.

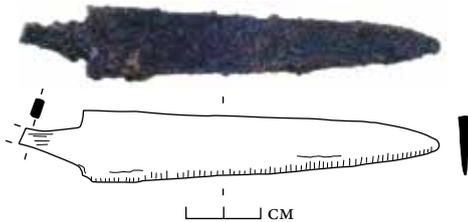


Figure 83. IR148. Drawing (bottom) and photo (top).

IR148 (SF 735, context 7025)

**Knife**

L. 112 mm

FIG. 83

Small knife with straight tapering blade of triangular section. Part of the rod tang survives.

## KNIFE BLADE FRAGMENTS

IR149 (context 2046)

**Knife blade fragment**

L. 102 mm

Knife blade fragment with a straight back that breaks and slopes down to the point. The cutting edge is more or less straight. The blade is of triangular section and incomplete and there is no evidence of a handle

IR150 (context 2283)

**Knife blade fragment**

L. 93 mm

Knife blade of lentoidal cross section. The back of the blade is straight. The cutting edge curves up to meet the back of the point. The blade is incomplete. Only part of the tip survives.

IR151 (context 7036)

**Knife blade fragment**

Blade fragment with a straight back that curves slightly down to a point and a straight edge that curves up near the point. No evidence of handle or method of attachment.

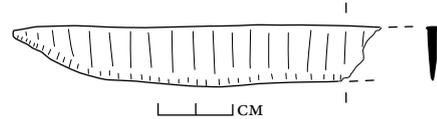


Figure 84. IR152.

IR152 (SF 628, context 7201)

**Knife blade fragment**

L. 99 mm

FIG. 84

Blade fragment of triangular section with a straight back. The edge curves upwards to the point. No surviving handle or tang.

IR153 (context 9076)

**Knife blade fragment**

L. 78 mm

Slim blade with slightly curved back and curved cutting edge. The tip of the blade is missing, and there is no tang or handle.

IR154 (context 9077)

**Knife blade fragment**

L. 88 mm

Blade fragment of triangular cross section, with a very slightly curved back and a more or less straight edge. Neither the handle nor the point survives.

IR155 (context 18070)

**Knife**

L. 50 mm

Knife blade of triangular section with straight back and curved cutting edge. Handle and point are missing.

## POSSIBLE KNIFE FRAGMENTS

IR156 (context 2011)

**Knife?**

L. 57 mm

Probable knife fragment with rod tang. Much of the blade is missing. Form of the blade is unclear.

IR157 (context 2141)

**Knife?**

L. 15 mm

Small fragment of knife blade comprising triangular fragment from the point. Section is triangular.

**IR158** (context 9073)  
**Knife blade fragment?**  
 L. 78 mm

Possible fragment of knife blade, comprising tapering strip of lenticular section. The tip of the blade and the handle are both missing.

**IR159** (context 15002)  
**Knife?**  
 L. 43 mm; W. 15 mm

Small fragment of a rod-tanged knife. The small piece of blade surviving appears to be parallel sided with straight back and edge.

**IR160** (context 18070)  
**Knife?**  
 L. 48 mm

Rod tang from a knife handle. Tapering strip of rectangular section. The narrow end terminates with a washer through which the end of the strip passes and is burred over.

SPECIALIST KNIFE FORMS

**IR161** (context 2014)  
**Knife**  
 L. 115 mm

FIG. 85

Short broad knife blade, incomplete, triangular in cross section, with straight back and cutting edge tapering to a point. The tang or handle is missing.

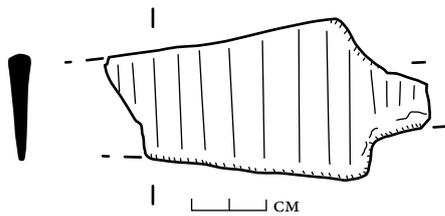


Figure 85. IR161.

**IR162** (context 9133)  
**Blade fragment**  
 L. 130 mm

Fragment of parallel-sided blade, of roughly triangular section. The back and edge are straight. No evidence for handle or hafting.

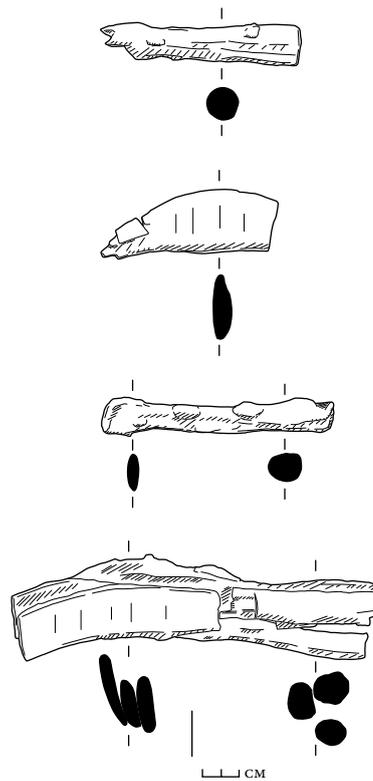


Figure 86. IR163-IR167.

**IR163-167** (SF 698, context 9198)  
**Curved socketed knives × 5**  
 L. 195 mm

FIG. 86

Fragments of five similar socketed knives with curved blades. The sockets are slightly angled in relation to the plane of the blade. Possibly specialized knives or sickles. They are fused together and were found with five flax or wool combs (IR69-73).

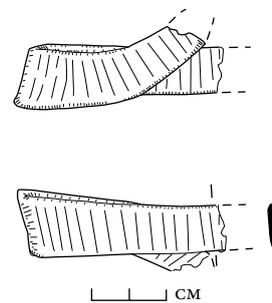


Figure 87. IR168.

**IR168** (context 18000)  
**Knife blade fragment?**  
 L. 57 mm

FIG. 87

Possible blade of triangular section, bent back on itself. There appears to be a curved blade with the edge on the inside of the curve. The extant blade would have been 108

mm long, but the tip of the blade and the tang or handle are missing.

KNIFE HANDLES AND POSSIBLE KNIFE HANDLES

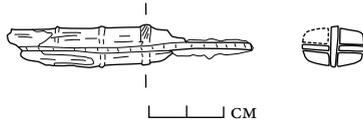


Figure 88. IR169.

IR169 (SF 3382, context 18070)

**Knife**

L. 63 mm

FIG. 88

Scale tang handle fragment with bone? Handle plates in situ.

IR170 (context 2099)

**Possible knife handle**

L. 85 mm

Heavily corroded piece, expanded at one end. Possibly the handle of a knife. Compare with IR147.

IR171 (context 7321)

**Possible knife handle**

L. 51 mm

Fragment of probable knife handle. Narrow strip with a diamond-shaped terminal. Compare with IR147.

*Household Utensils*

IR172 (SF 2274, context 2275)

**Pot hook**

H. 327 mm

FIG. 89

Long subrectangular-section stem with probable double hook at one end. One hook survives. The other end is slightly flattened and rolled over into a large hook. Probably a hook for suspending a pot or cauldron over a fire.

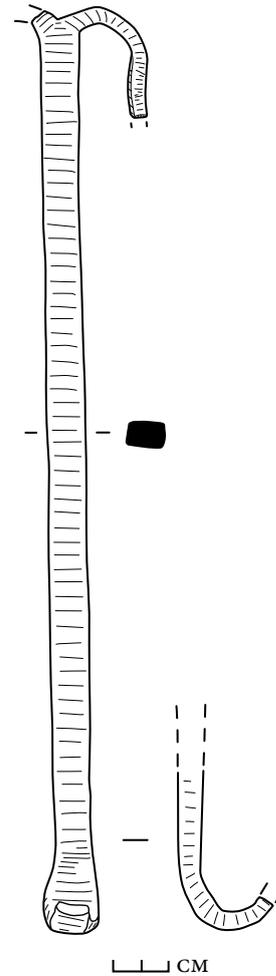


Figure 89. IR172.

IR173 (context 2154)

**Ladle**

D. 80 mm

Bowl from small ladle, although there is no surviving handle. There are breaks in the circumference where the handle could have been attached.

Bibliography: Example from Sardis (Waldbaum 1983, 60, pl. 16, 221).

IR174 (SF 828, context 9175)

**Ladle**

D. 70 mm

Small deep, hemispherical bowl, probably from a ladle.

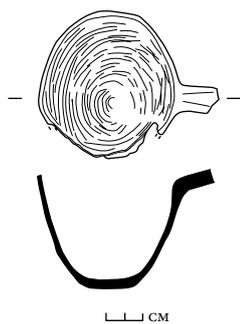


Figure 90. IR175.

IR175 (SF 20, context 11038)

**Ladle**

D. 99 mm

FIG. 90

Ladle with deep bowl oval in plan. Little of the handle survives.

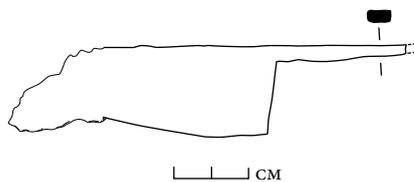


Figure 91. IR176.

IR176 (SF 2281, context 2276)

**Shears**

L. 105 mm

FIG. 91

Shears blade with part of the handle or spring surviving. Blade has a sharply down-turning point.

Bibliography: Aislingen, Germany (Ulbert 1959, 96, Taf. 28, 19–20); see also Manning 1985a, 34–5, pl. 14, D4–8.



Figure 92. IR177.

IR177 (context 9175)

**Punched dished disc**

D. 42 mm

FIG. 92

Fragment of a small circular dished object with holes regularly punched over the surface. Function uncertain. Possibly designed to act as a strainer over an outlet hole in a vessel.

IR178 (context 9194)

**Possible utensil handle**

L. 106 mm

Possible utensil handle comprising a strip of rectangular section that broadens into a circular expansion at one end. It thins in longitudinal section. It is not clear whether or not the expansion was pierced by a hole for suspension or for a nail. It could be a handle or possibly a piece of binding.



Figure 93. IR179.

IR179 (context 2011)

**Possible weight**

D. 53 mm

FIG. 93

Small circular block of iron flat on one face and seemingly slightly domed on the other face. There is apparently a small hole through the center. An x-ray plate of the object shows that the hole may be larger than appears from visual examination. It could have been a weight or counterweight, but if the hole is larger, it is more likely that it was a heavy collar.

#### Furniture Fittings

IR180 (context 2023)

**Possible hasp**

L. 74 mm

Possible hasp, comprising badly preserved and laminating rectangular strip of iron with small loop at one end.

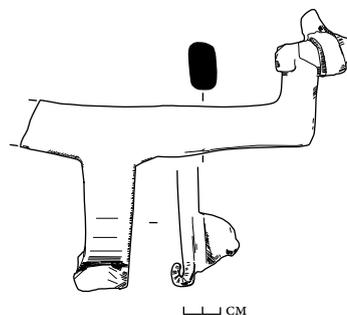


Figure 94. IR181.

IR181 (SF 2296, context 2294)

**Hasp**

L. 170 mm

FIG. 94

Hinged hasp broken at one end. T-shaped. The back of

the hasp has a lug that presumably was pierced to take a bolt — not now clear. The surviving pivot comprises a split spike loop through which the end of the hasp passes.

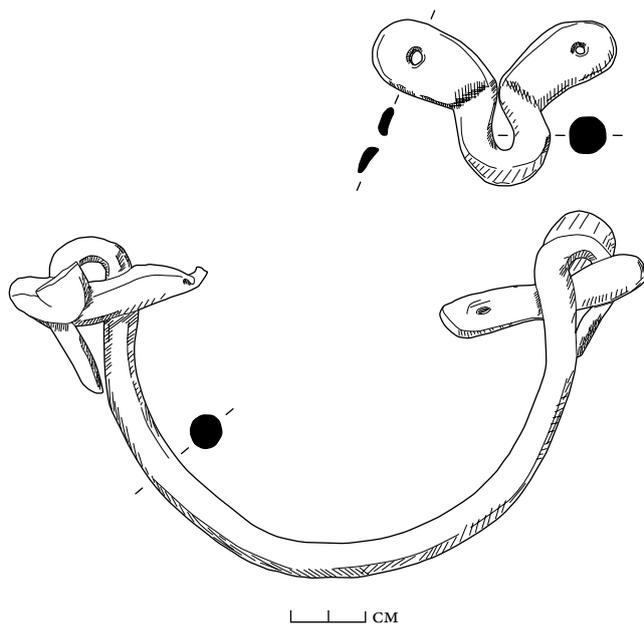


Figure 95. IR182.

IR182 (SF 2218, context 2141)

**Drop handle**

L. 165 mm

FIG. 95

Handle formed from circular-section rod curved into a neat arc. The ends taper and are rolled back to form loops. These are attached to looped fixing plates formed from rod with the ends flattened and pierced. Possibly for a piece of furniture or a small vessel.

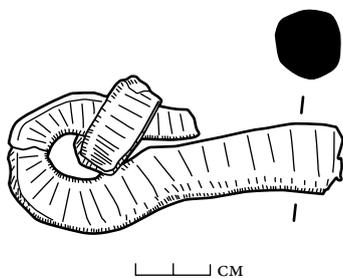


Figure 96. IR183.

IR183 (context 11056)

**Handle**

L. 90 mm

FIG. 96

Looped terminal from a handle formed from thick rod (18 mm diameter) that tapers slightly and is rolled over to

form the loop. Linked to the loop is a curved fragment, circular section at one end, broadening to an oval section at the other: presumably part of a handle mount.

IR184 (SF 2309, context 2269)

**Decorative fitting**

L. 74 mm; W. 62 mm

Rectangular iron plate, with a lip or folded edge along one long side decorated with an applied copper alloy strip in the form of wave crests. There are no visible rivets and the method by which the strip is attached is uncertain. The opposite side has a wide applied strip with running meander motifs attached by rivets. There are small rivet holes in the corners of the plate for attachment. Possibly from a piece of furniture. See Khamis, this volume, BR23.

IR185 (SF 244a, context 11038)

**Possible box or chest bindings**

L. 56 mm

Four fragments of plate. The largest piece is approximately square with two original edges. There is thin copper alloy folded over one edge and a possible nail in the center of the fragment. Another fragment is a corner and may have copper alloy folded over both extant edges. A third fragment has one extant edge with copper alloy sheet folded over it and a flat possible nail head or thin sheet fragment. The remaining piece is small. See Khamis, this volume, BR24.

IR186–187 (context 13036)

**Tacks with domed heads × 2**

D. 22 mm

Tacks with hollow domed heads and broken stems.

IR188–189 (context 13036)

**Tacks with rimmed domed heads × 2**

D. 28 mm

Tacks with hollow domed heads with distinct flat rims, and broken stems.

*Furniture Hinges (Leaf Type)*

For hinge forms see Manning 1985a, 126 and fig. 31. Manning identifies the main hinge forms as drop hinges, loop hinges, and strap hinges. It is perhaps possible to elaborate on this typology: Strap hinges can be divided into those with robust elongated leaves (IR190–197) and those with thin leaves (IR198–205). In addition there appears to be a form of loop hinge that uses linked split spike loops (IR407–410). Plate hinges with robust elongated leaves, leaf hinges, and drop hinges are in evidence at Zeugma. There are no unequivocal loop hinges, except for those formed by linked pairs of split spike loops.

Leaf hinges (IR190–205), because of their comparatively

small size, have been categorized as furniture fittings. Drop hinge riders (IR211–215), hinge pintles (IR216–240), latch hooks (IR241–267), and a single latch rest (IR268) have been categorized as door fittings and are catalogued separately, together with door and hinge straps (IR206–210). It is possible that some of the latch hooks were used to secure furniture, but their size and robustness suggests that they were for doors and shutters rather than furniture.

**PLATE HINGES WITH ELONGATED TAPERING LEAVES**

The strap hinges were probably for lids on boxes, for doors on furniture, and the like. Generally strap hinges were used for smaller, lighter doors and lids, because wrought iron will bend under weight. Hinges with elongated tapering leaves are widely found: e.g., London (Manning 1985a, 127, pl. 59, R13), Saintes (Feugère et al. 1992, 34–6, nos. 44–6), Aislingen (Ulbert 1959, 96, Taf. 29, 6), and Rheingönheim (Ulbert 1969b, 55, Taf. 52, 10).

**IR190** (context 2011)

**Plate hinge**

L. 82 mm

Plate hinge with heavily corroded junction and tapering leaves, of which one is broken. The surviving leaf has a probable nail through it.

**IR191** (context 2011)

**Plate hinge**

L. 88 mm

Plate hinge with tapering leaves and traces of nails. Heavily corroded.

**IR192** (context 2012)

**Plate hinge**

L. 45 mm

One tapering leaf from a small hinge. The hinge pivot is intact but the second leaf is missing.

**IR193** (context 2099)

**Plate hinge**

L. 77 mm

Probable plate hinge with tapering leaves. One, possibly two nails visible. The pivot is heavily encrusted with slag-like material, and therefore identification is difficult.

**IR194** (context 2252)

**Plate hinge**

L. 85 mm

The tapering pointed plates have both broken, and there is no trace of any fixing nail.

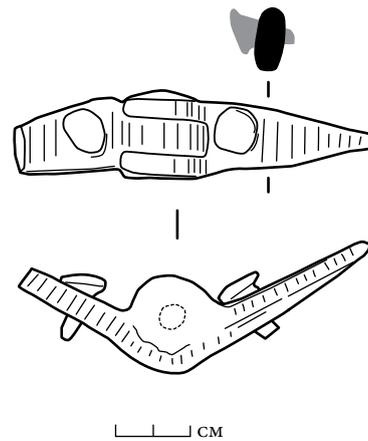


Figure 97. IR195.

**IR195** (context 2256)

**Plate hinge**

L. 95 mm

FIG. 97

Plate hinge with tapering leaves secured by two nails with flat circular heads.

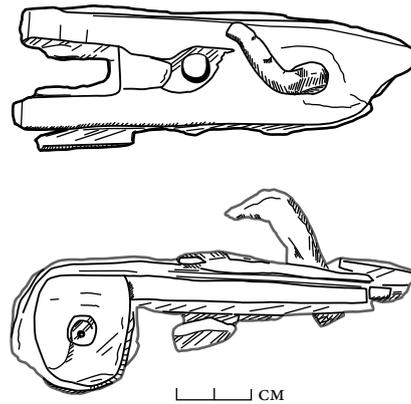


Figure 98. IR196.

**IR196** (SF 2351, context 2285)

**Plate hinge**

L. 110 mm

FIG. 98

Half a hinge comprising a stout rectangular-section tapering plate pierced with two nails. It tapers to a rounded point. At the opposite end there are two circular extensions pierced with holes for the hinge rivet. The second plate is missing.

IR197 (context 9133)

**Plate hinge**

L. 67 mm

Small hinge with tapering leaves, both broken.

IR198 (context 9175)

**Plate hinge**

L. 49 mm

Plate hinge with one tapering plate surviving. The other is broken.

IR199 (context 9175)

**Plate hinge**

L. 65 mm

One elongated leaf and the pivot of a plate hinge. Heavily corroded. No detail visible.

IR200 (context 9175)

**Plate hinge**

L. 100 mm

One tapering pointed leaf is complete and has at least one nail in situ. The other leaf is broken but appears to have two nails in situ.

IR201 (context 9175)

**Plate hinge**

Small leaf hinge with tapering leaves. Two probable nails visible.

IR202 (context 2006)

**Plate hinge**

Possible leaf hinge, heavily corroded and incomplete.

RECTILINEAR AND OTHER LEAF HINGES

Leaf hinges formed from this type of sheet or plate were employed where little weight had to be supported—box and chest lids, for example—and are comparatively rare in the archaeological record, probably in part because they are less robust than the tapering leaf hinges (IR190–202).

Bibliography: Augsburg-Oberhausen (Hübener 1973, Taf. 16, 27).

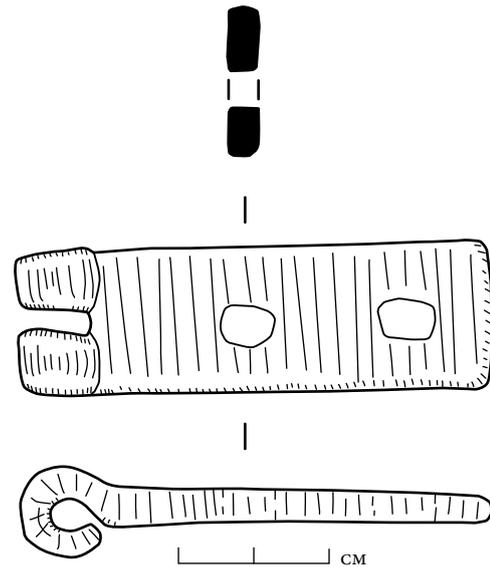


Figure 99. IR203.

IR203 (context 7060)

**Rectilinear plate hinge**

L. 64 mm

FIG. 99

One leaf of a hinge with an elongated rectangular plate with two nail holes. The plate has a slightly chamfered edge and rounded corners.

IR204 (context 9082)

**Rectilinear plate hinge**

L. 65 mm

Comprises two rectilinear plates, both fragmentary but with two nail holes in one plate, one in the second plate. The two plates join to a circular-section pivot. Probably a plate hinge, but heavily encrusted.

IR205 (context 9175)

**Butterfly hinge**

L. 46 mm

Possible plate from a butterfly hinge. It has one very slightly curved edge and two straight edges, which are converging at the broken end. There was one possible nail although the identification is far from certain.

Bibliography: cf. the copper alloy example from late Roman levels at Sardis (Waldbaum 1983, pl. 18, 255).

**Door and Window Fittings**

*Hinge and Door Straps*

The door straps from Trenches 2 (IR206) and 5 (IR209) are interesting because they have been bent around the edge of the door, and they each have a nail through the apex of the bend. These are not straps intended to hook onto L-shaped

pintles for hanging (cf. the examples from the late Roman Lakenheath hoard, Suffolk: Manning 1985a, 126, pl 58, R8, and R9). The Zeugma door straps are associated with the use of large nails with large, slightly domed circular heads (fig. 147, type B) (IR561-564). The doors to which these straps were attached were substantial (ca. 75 mm thick), and it must be presumed that these were external doors to houses and properties. Such heavy doors could be hung using large drop hinges, but they would be better suited to pivoting. Although no evidence for metal-shod pivots or pivot linings has been found in the assemblage (cf. pivot binding, Gestingthorpe: Manning 1985b, 54, fig. 25, 237; pivot lining, from Gloucestershire: Manning 1985a, 127-8, pl. 59, R15; see also Manning 1988, esp. fig. 1.10, nos. 3, 4 and 6; pivot lining from Saintes: Feugère et al. 1992, 37-8, no. 53) a number of pivot holes were found. In Trench 5, the threshold of doorway 5148 in the Hellenistic structure had a pivot hole.<sup>44</sup> In Trench 11, a doorway (context 11144) was inserted into the east wall of Room 11C of the House of the Fountain in the third century A.D. The threshold of this door had a pivot hole. The threshold of the doorway (context 18091) through the north wall (context 18207) of the House of the Painted Floors in Trench 18 was flanked by pivot holes, which shows that there were double doors at this entrance. The other straps (IR207-208, IR210) are fragmentary and provide no additional information regarding the form of hinges.

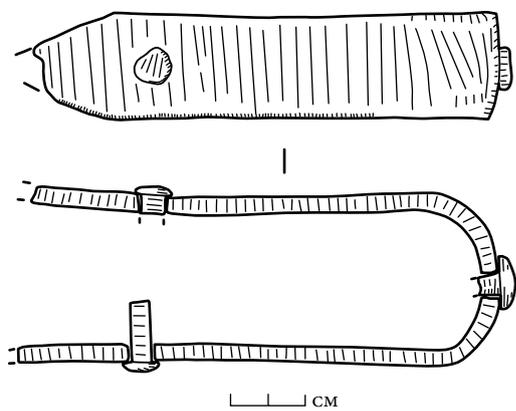


Figure 100. IR206.

IR206 (context 2011)

Door strap

L. 135 mm

FIG. 100

Comprises strip of subrectangular section bent double. The ends narrow to points (now broken), and each end has a piercing for a nail. There is a nail hole at the apex of the bend.

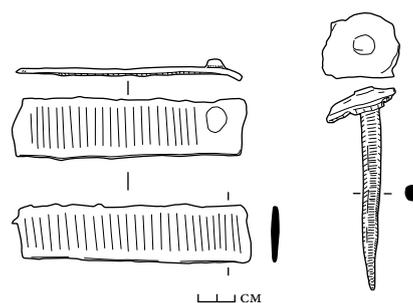


Figure 101. IR207.

IR207 (SF 78, context 5000)

Door strap

L. 236 mm

FIG. 101

Strap of thin rectangular cross section, very slightly tapering at one end, that is bent and broken. The other end has a domed-headed nail in situ. Fragmentary.

IR208 (SF 78, context 5000)

Door strap

L. 205 mm

Strap of thin rectangular cross section, deliberately bent at one end. Both ends broken. No visible nail holes.

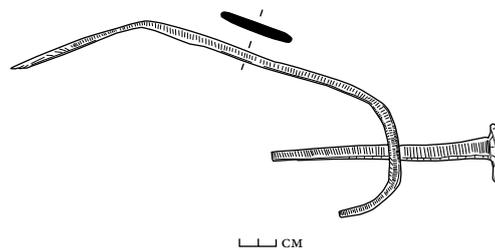


Figure 102. IR209.

IR209 (SF 73, context 5000)

Door strap

L. 270 mm

FIG. 102

Broad strap of thin rectangular section deliberately bent back on itself with a nail through the apex of the bend.

IR210 (SF 339, context 9112)

Door strap

L. 76 mm

Fragment of broad strap formed from thin rectangular strip, with circular slightly dome-headed nail. Fragment of nail stem survives.

*Drop Hinge Rides*

A number of drop hinge rides were identified, but some of the looped spikes (IR382–406) and split spike loops (IR407–503) may have served as rides for smaller hinges. Often the rides for drop hinges are formed by looped door straps (e.g., examples from the Lakenheath hoard: Manning 1985a, 126, pl. 58, R8 and R9). These are then hung on L-shaped pintles fixed to the masonry or to the door frame (cf. Manning 1985a, fig. 31, 1). These rides could have been fixed to the edge of doors or shutters, or as in the case of IR215, to the masonry. If the latter is a ride, then the pintle will have been mounted open end down on the door or shutter.

IR211 (context 2014)

**Drop hinge ride**

L. 95 mm

Possible rider from a drop hinge formed from heavy rectangular-section bar tapering to a point away from the loop.

IR212 (context 2031)

**Drop hinge ride**

L. 87 mm

Incomplete.

IR213 (context 2031)

**Drop hinge ride**

L. 81 mm

Formed from rectangular-section bar. Part of a drop hinge.

IR214 (context 2039)

**Drop hinge ride**

L. 132 mm

Formed from bar of rectangular section folded to form a loop.

IR215 (context 18001)

**Drop hinge ride**

L. 87 mm; W. 47 mm

Looped spike fixed to masonry with lead yotting. A piece of stone is still adhering but the spike is incomplete.

FIG. 103

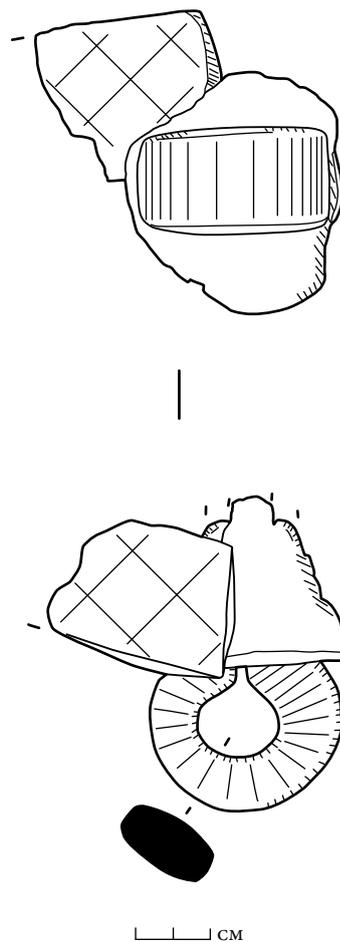


Figure 103. IR215.

*Hinge Pintles*

L-shaped pintles for drop hinges. The upright arm is of circular cross section and supports the rider. The horizontal arm is usually of square section and pointed. It was driven into a baulk of timber or set in stone.

IR216 (context 2006)

**Hinge pintle**

L. 77 mm

L-shaped hinge pintle with tapering square-section point.

IR217–219 (context 2031)

**Hinge pintles × 3**

L. 99 mm

L-shaped hinge pintles. Two are incomplete, the third is complete but encrusted.

IR220 (context 2035)

**Hinge pintle**

L. 67 mm

L-shaped hinge pintle, badly preserved.

IR221–223 (context 2039)

**Hinge pintles × 3**

L. 85 mm

Three L-shaped hinge pintles, very badly laminated. The long arms are square section and taper to a point.

IR224 (context 2099)

**Hinge pintle**

L. 87 mm

L-shaped hinge pintle.

IR225 (context 2177)

**Hinge pintle**

L. 120 mm

The spike is slightly foreshortened.

IR226 (context 2177)

**Hinge pintle**

L. 136 mm

The spike is complete.

IR227 (context 2181)

**Hinge pintle**

L. 64 mm

L-shaped hinge pintle. The spike is incomplete.

IR228 (context 2242)

**Hinge pintle**

L. 81 mm

L-shaped hinge pintle.

IR229 (context 2269)

**Hinge pintle**

L. 105 mm

L-shaped hinge pintle. The upright pintle is largely missing but enough survives to show the circular section. The tapering spike is bent.

IR230 (context 2269)

**Hinge pintle**

L. 94 mm

L-shaped hinge pintle.

IR231 (context 2376)

**Hinge pintle**

L. 87 mm

L-shaped hinge pintle. Suitable for use with one of the smaller riders.

IR232 (context 9012)

**Hinge pintle**

L. 72 mm

L-shaped hinge pintle. The point of the spike is broken.

IR233 (context 9081)

**Hinge pintle**

L. 50 mm

L-shaped hinge pintle. Most of the spike is missing.

IR234 (context 9112)

**Hinge pintle**

L. 110 mm

L-shaped hinge pintle. The end of the spike is bent and broken.

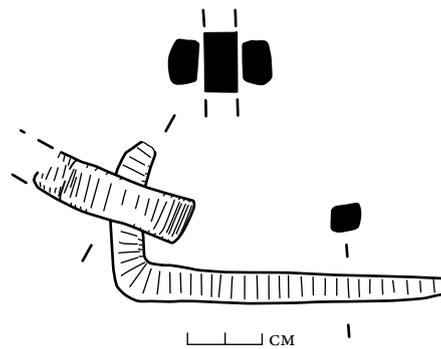


Figure 104. IR235.

IR235 (context 9112)

**Hinge pintle**

L. 93 mm

FIG. 104

L-shaped hinge pintle. Complete. Part of the ride formed from a split spike loop is still in place. The loop of the ride is 33 mm in diameter.

IR236 (context 9138)

**Hinge pintle**

L. 111 mm

L-shaped hinge pintle. The point of the spike is bent.

IR237 (context 9138)

**Hinge pintle**

L. 90 mm

L-shaped hinge pintle.

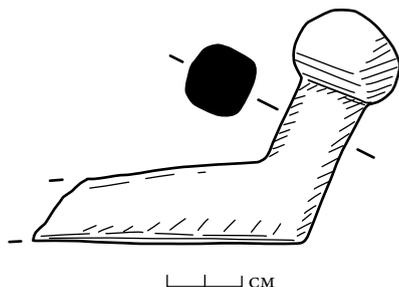


Figure 105. IR238.

IR238 (context 9194)

**Hinge pintle fragments, × 2**

Hinge pintle L. 105 mm; pintle fragment L. 90 mm FIG. 105

Distinctive hinge pintle formed from square-section bar, bent at one end, probably originally to form a right angle. This portion of the object appears to be circular in section and terminates in a slight round knob. There is a second fragment of bar with similar dimensions and corrosion that may be part of the same object.

IR239 (context 11039)

**Hinge pintle**

L. 76 mm

L-shaped hinge pintle. The end of the point is missing.

IR240 (context 18001)

**Hinge pintle**

L. 45 mm

L-shaped hinge pintle missing most of its spike.

*Latch Hooks*

The latches are comprised of rectangular bars with a hook at one end and an eye at the other end, which served as the pivot. Where the evidence survives, the hooks seem to have been fastened by nails around which they swiveled. The nails had large slightly domed heads. Although the hooks are all basically similar, there are some variations in the form of the hook and in length. The shortest is 68 mm long (IR252), and the longest complete example (IR254) is 111 mm long. IR244 has two fragments and could be at least 180 mm long, but the fragments do not join and could be from two separate latch hooks. IR253 is longer (L. 180 mm) but is one of two latch hooks with a handle; the other is IR267, which is incomplete. IR242–243, IR252, IR260, and IR262 were all hooked into split spike loops.

Comparable examples of latch hooks include a specimen from Sardis (Waldbaum 1983, 64, pl. 18, 257), an example from Saintes (Feugère et al. 1992, no. 54), and another from Straubing (Walke 1965, 163, Taf. 134, 21). Both the Sardis and Straubing examples have split spike loops rather than nails through their eyes.

IR241 (context 2009)

**Latch hook**

Latch hook with flat circular-headed nail.

IR242 (context 2009)

**Latch hook**

Broken hooked end of latch hook with split spike loop.

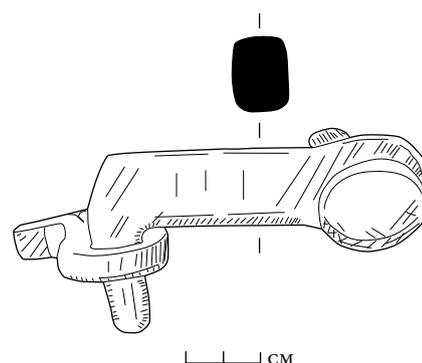


Figure 107. IR243.

IR243 (context 2009)

**Latch hook and split spike loop**

Overall L. 111 mm; latch hook L. 90 mm

FIG. 107

Latch hook, complete with flat round-headed nail to secure it and split spike loop into which it was hooked.

IR244 (context 2011)

**Possible latch hook fragments × 2**

L. 150 mm

Possible latch hook formed from bar of rectangular cross section. One fragment has a slight circular expansion at one end pierced by an eye with a large dome-headed Type B nail. The other end is broken. The second fragment, which does not directly join the first, narrows to form the hook, which is now missing. Overall length at least 150 mm.

IR245–246 (context 2012)

**Latch hooks × 2**

L. 76 mm

Latch hook comprising rectangular section strip. Slightly expanded and pierced for the pivot. The opposite end is formed into a hook roughly at right angles. Also hook from second example.

IR247 (context 2032)

Latch hook

L. 52 mm

Hooked end of latch hook, most of which is lost.

IR248 (context 2075)

Latch hook

L. 88 mm

Complete with nail with large round head in situ

IR249 (context 2256)

Latch hook

Latch hook formed from narrow bar of rectangular section. The hook is bent at right angles to the bar.

IR250 (context 2269)

Latch hook

L. 100 mm

The hook is missing, although the body of the latch is complete. The pivot nail (Type B) is in situ.

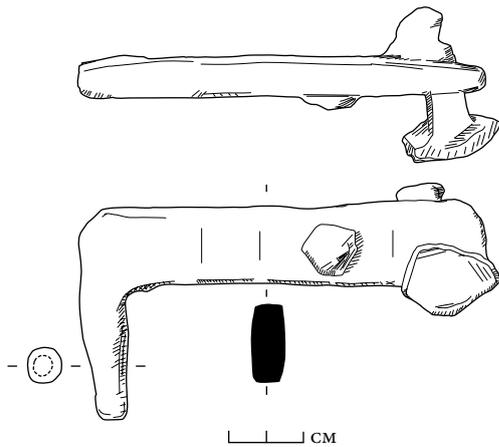


Figure 107. IR251.

IR251 (SF 2324, context 2269)

Latch hook

L. 108 mm

FIG. 107

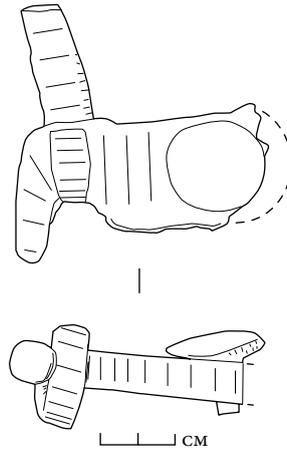


Figure 108. IR252.

IR252 (context 2269)

Latch hook and split spike loop fragment

L. 68 mm

FIG. 108

Short latch hook, almost complete. The hook has a broad rectangular section body, which narrows to form a hook. The hook is still attached to the remains of a split spike loop, which served to secure the latch in use. The head of the nail around which the latch hook pivoted is in situ.

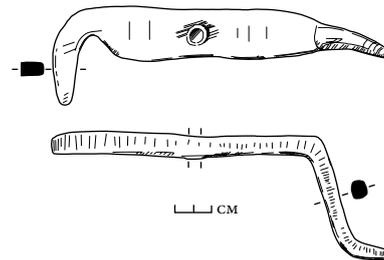


Figure 109. IR253.

IR253 (SF 2338, context 2285)

Latch hook with handle

L. 180 mm

FIG. 109

Latch hook at one end of a pivoting strip with a handle at the other end. See also IR267.

IR254 (SF 2339, context 2285)

Latch hook

L. 111 mm

FIG. 110

Comprised of a strip of iron with one extant nail formed into a hook. Nail is clenched over, which gives a clue to the thickness of the door.

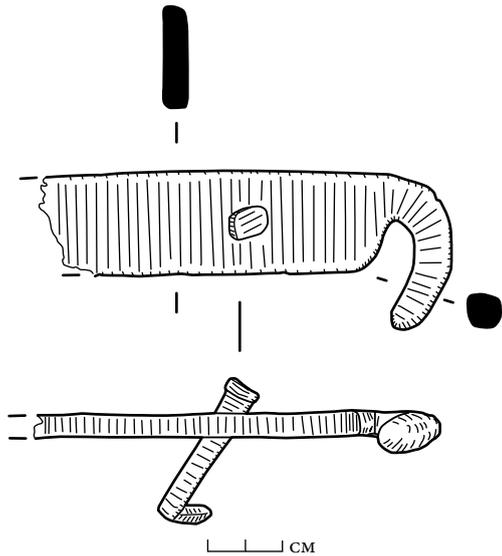


Figure 110. IR254.

IR255 (context 2376)

**Latch hook**

L. 104 mm

Formed from a strip of rectangular section expanded and pierced for the pivot at one end and formed into a hook at the other. It is secured with a nail with a circular slightly domed head (Type B).

IR256 (context 2376)

**Latch hook fragment**

L. 35 mm

Just the hook end.

IR257 (context 2376)

**Latch hook fragment**

L. 39 mm

Pivot end and nail.

IR258 (context 2376)

**Latch hook**

L. 111 mm

Hook missing.

IR258 (context 2376)

**Latch hook**

L. 111 mm

Hook missing.

IR259 (context 2376)

**Latch hook**

L. 94 mm

Formed from a strip of rectangular section expanded and pierced for the pivot at one end and formed into a hook at approximate right angles at the other. It is secured with a nail with a circular slightly domed head (Type B).

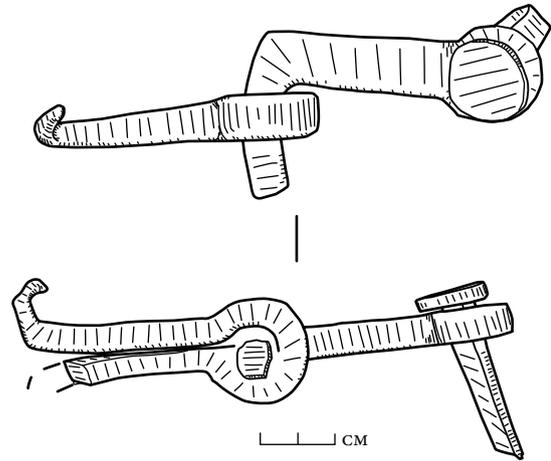


Figure 111. IR260.

IR260 (context 9133)

**Latch hook**

L. 80 mm; split spike loop L. 80 mm; D. 28 mm FIG. 111

Latch hook and split spike loop. The latch hook is a plain rectangular bar with a hook at right angles. It pivots around a Type E nail.

IR261 (context 9133)

**Latch hook**

L. 84 mm

Plain rectangular section bar with a hook at right angles. Pivots around a Type B nail.

IR262 (context 9133)

**Latch hook**

L. 76 mm; split spike loop L. 80 mm; D. 31 mm

Latch hook and split spike loop.

IR263 (context 9138)

**Latch hook**

L. 84 mm

The hook is missing.

IR264 (SF 239, context 11039)

**Latch hook**

L. 90 mm FIG. 112

Stout hook.

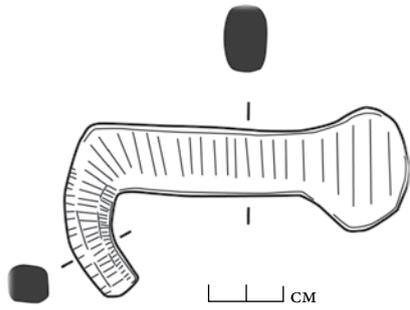


Figure 112. IR264.

IR265 (SF 933, context 18070)

Latch hook

L. 99 mm

IR266 (context 18071)

Latch hook

L. 72 mm

IR267 (context 18108)

Latch hook with handle, incomplete

L. 82 mm

Comprised of a rectangular section pierced for a nail, broken at the hooked end, it narrows at the other end into a point that is bent at right angles to form the handle of the latch. Comparable to IR253.

IR268 (context 2278)

Latch rest

L. 140 mm

FIG. 113

Latch rest with tapering spike. This latch rest is more likely to have been used in conjunction with a plain pivoting latch operated by a latch lifter (e.g., Manning 1985a, rather than one of latch hooks catalogued above). As such it could have been operated from both sides of the door.

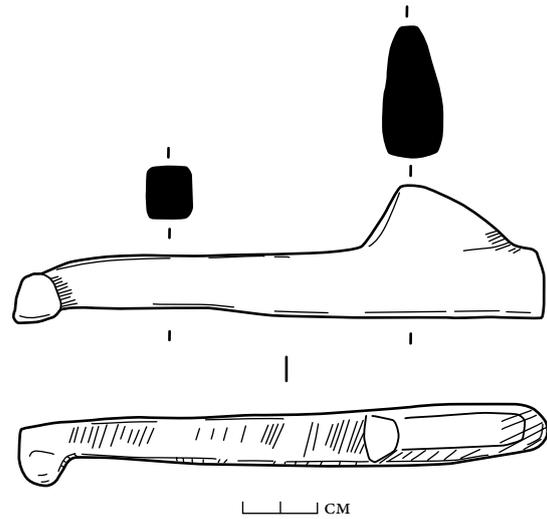


Figure 113. IR268.

#### Window grilles and bars

A number of grilles and bars have been found, together with numerous fragments, which could be from window grilles but have no distinguishing features.

Both bars (e.g., IR291) and grilles (e.g., IR269, 272) were fitted with star-shaped pieces. In some instances the stars are more decorative, with deliberately wavy points (e.g., IR269). Two methods of attaching the bars and grilles can be observed. Some bars are terminated with tapering points, which were set into the masonry of the window (e.g., IR269). Other bars and grilles were fixed by nails (e.g., IR272). Window grilles are widely distributed. The very complete and well-preserved example from Hinton St. Mary, Dorset (Manning 1985a, 128, pl. 60, R18) was fastened by nails. Examples are known from both Pompeii and Herculaneum (Manning and Painter 1967). Another good example, which was probably set into masonry rather than nailed, comes from Sardis (Waldbaum 1983, pl. 18, 263).

#### WINDOW GRILLES

IR269 (SF 2265, context 2251)

Window grille

L. 775 mm; star fragments L. 105 mm

FIG. 114

Window grille, comprised of three short bars and two long bars. The extant ends of the bars are pointed. Five fragments of decorative stars with wavy points.

IR270 (context 18001)

Window grille fragment

L. 200 mm

Two lengths rectangular-section window bar, one crossing the other. There is no star between the bars.

IR271 (context 18001)

Window grille fragments

L. 230 mm

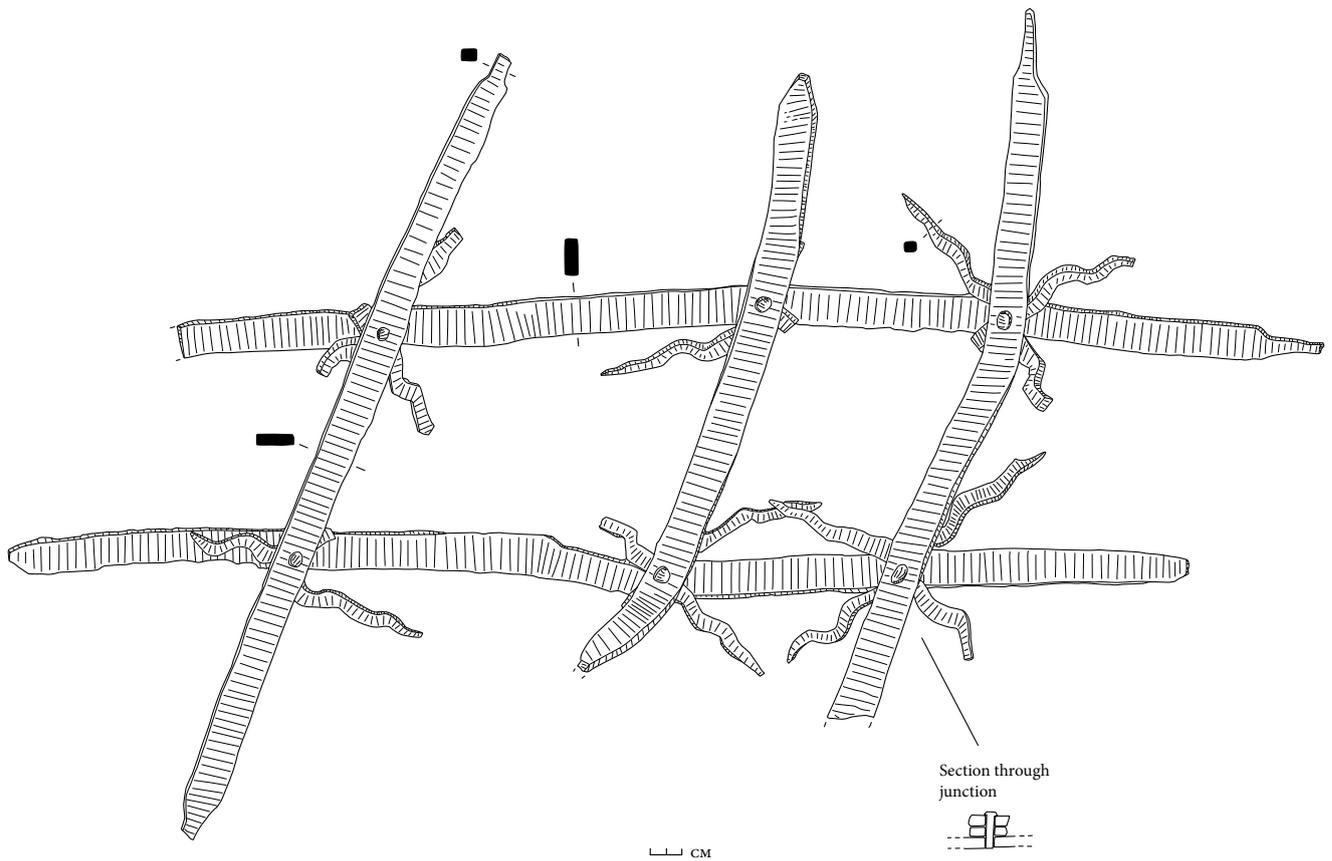


Figure 114. IR269.

Two lengths of window grille, badly damaged, comprised of rectangular-section bar with broken star shapes attached to them. One of the two fragments has a crossing bar attached to it. On the other, the crossing bar is missing.

IR272 (SF 918, context 18001)

**Window grille**

L. 545 mm

FIG. 115

Window grille, part, comprised of one bar and fragments of two others with one star. The extant end of the bar is bent at a right angle and pierced with a nail hole.

IR273 (SF 918, context 18001)

**Window grille**

L. 470 mm

FIG. 116

Window grille, part, comprised of two bars by two bars, with traces of four stars. The extant ends of three of the bars are bent at right angles and pierced with nail holes.

POSSIBLE WINDOW GRILLES OR BARS

IR274 (context 2009)

**Window bar**

L. 130 mm

Fragment of window bar with single star.

IR275 (context 2023)

**Window grille, fragments**

Probable window grille in many fragments. The grille appears to have no stars. There are eleven pointed ends and eight crossings. Probably remains of complete window grille of three bars by three bars.

IR276 (context 2031)

**Window bar**

Two strips of rectangular section with pointed ends probably from a window bar or window grille.

IR277 (context 2050)

**Window bar**

L. 72 mm

Probable window bar fragment formed from thick strip of rectangular section. It has a right-angle bend at one end, which is pierced with a nail hole.

IR278 (context 2080)

**Window bar**

L. 96 mm

Possible window bar formed from strip of subrectangular section, tapering to a point at one end. A nail with an oval flat head is fused to the strip.

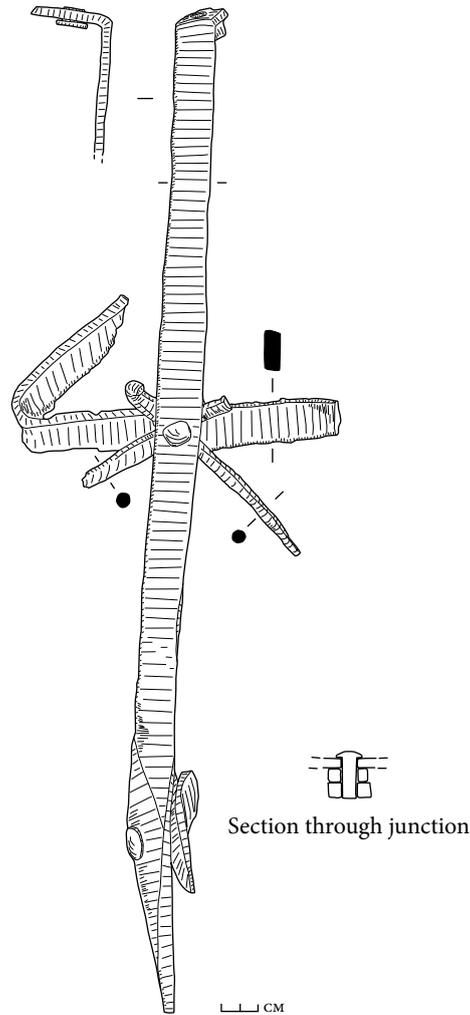


Figure 115. IR272.

IR279 (context 2080)

**Window bar**

L. 164 mm

Two fragments, including a stout strip of subrectangular section tapering at one end to a point. The two pieces do not join.

IR280 (context 2256)

**Window bar**

L. 90 mm

Thick, rectangular section, tapering to a point.

IR281 (context 2269)

**Window bar fragments × 4**

L. 195 mm

Bar or strip of thick rectangular section. Four fragments, three of which taper to a point. Probably window bar fragments.

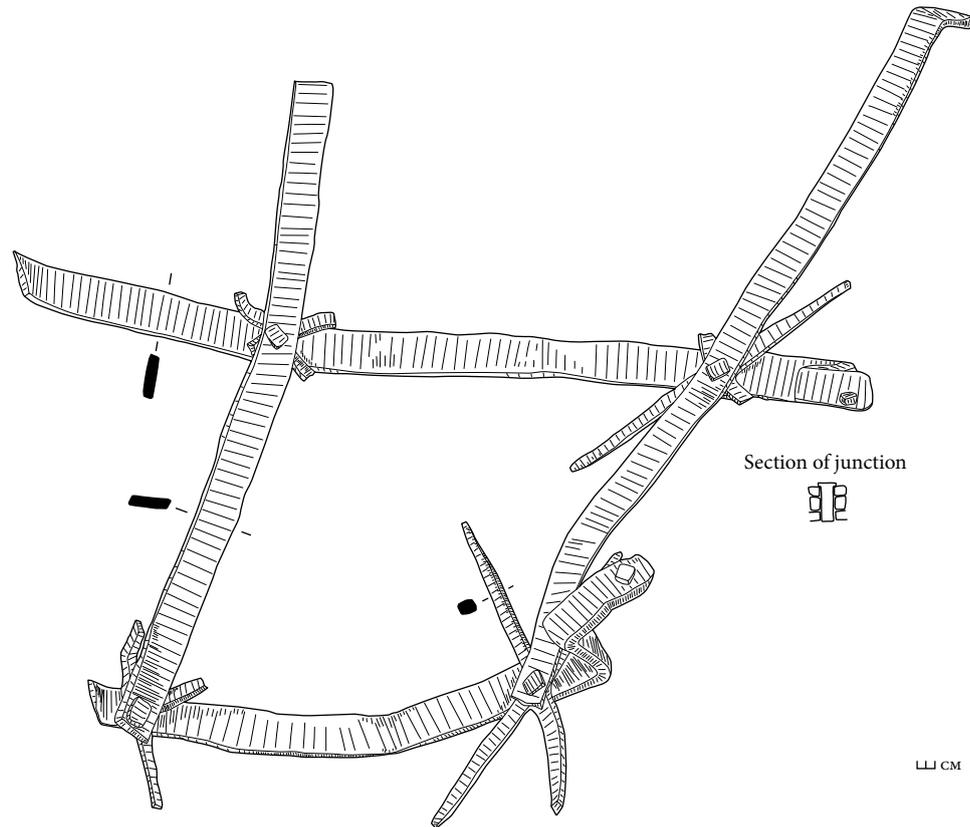


Figure 116. IR273.

**IR282** (context 2269)  
**Window grille fragments**  
 L. 90 mm

Comprises two short lengths of bar of rectangular section and small fragment of star. Fragments join. Heavily corroded.

**IR283** (context 2278)  
**Window bar fragments × 2**  
 L. 130 mm

Two window bar fragments, comprising part of heavy bar, fragmentary star, and piece of crossing bar. Also further piece of short heavy bar.

**IR284** (context 2285)  
**Window bar**  
 L. 155 mm

Heavy rectangular-section strip pointed at one end. There is a nail through the bar just above the point. Identification not totally certain.

**IR285** (context 2376)  
**Window bar**  
 L. 99 mm

Strip of rectangular cross section, broken at one end, pointed at the other. Probably window bar or part of grille.

**IR286** (context 2383)  
**Window bar star**  
 L. 130 mm

Probable star from a window bar. Heavily encrusted with slag-like material.

**IR287** (context 9133)  
**Possible window bar fragment**  
 L. 75 mm

Object consisting of strip of rectangular section pierced with a nail hole, it then narrows to a square section and tapers to an irregular point.

**IR288** (context 9194)  
**Possible window bar**

Strip or bar, heavy, slightly curved, rectangular section. Very small fragment. Possibly from a window bar, from its dimensions and cross section.

**IR289** (context 11056)  
**Window bar star fragment**  
 L. 111 mm

Tapering point of wavy outline, probably from a window star.

**IR290** (context 13007)  
**Window bar**  
 L. 210 mm

Length of rectangular-section bar narrowed to a point at one end. No obvious nail holes.

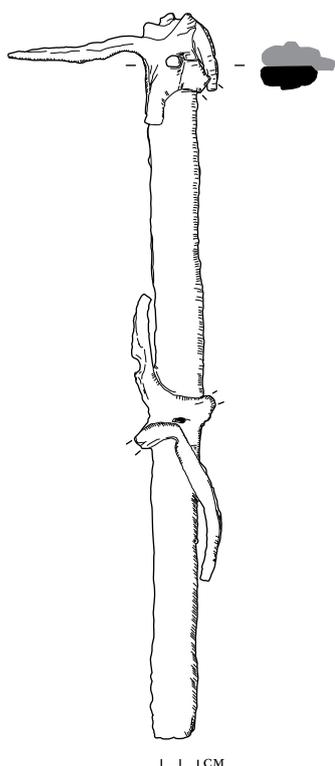


Figure 117. IR291.

**IR291** (SF 857, context 13040)  
**Window bar**  
 L. 380 mm

Single bar with fragments of two stars attached. No evidence for crossbar, and therefore probably a vertical window rather than part of a window grille. No extant ends.

**IR292** (context 18001)  
**Window grille fragment**

Length of bar, bent with the crossing bar and remains of a star between the two bars.

**IR293** (context 18001)  
**Window bar**  
 L. 103 mm; 103 mm; 92 mm; 65 mm

Four lengths of window bar without nail holes or other features.

**IR294** (context 18001)  
**Window bar**  
 L. 65 mm

Length of window bar bent at an angle at the end and with lead yotting.

**IR295** (context 18001)  
**Window bar**

End of a bar, badly bent but with a right-angle bend at the end for fastening.

**IR296** (context 18001)  
**Window bar fragment**

Short length of bar, probably window bar. Of subrectangular section, no nail holes.

**IR297** (context 18001)  
**Window grille fragments**  
 L. 85 mm

Two pieces of heavy rectangular-section bar. No visible nail holes. The pieces do not join, although clearly part of the same object.

**IR298** (context 18001)  
**Window bar fragment**  
 L. 108 mm

Bar or strip of rectangular section, broken at one end, narrowing to a point at the other end. No nail or rivet holes visible.

**IR299** (context 18054)  
**Window bar**  
 L. 106 mm

Length of rectangular cross-section strip narrowing to a point at one end.

**IR300** (context 18065)  
**Window grille fragments**  
 L. 125 mm

Two pieces of window bar. One is comprised of two crossing bars but is badly laminated, so it is difficult to see whether there is a star between them.

FIG. 117

IR301 (context 18071)

Window grille fragments × 17

L. 140 mm

Seventeen pieces of straight, rectangular-section bar from a window grille. The longest piece is 140 mm long.

IR302 (context 18071)

Window grille fragment × 3

L. 130 mm; 120 mm; 105 mm

Three pieces with stars and crossbars. The stars are straight pointed stars.

IR303 (context 18071)

Window grille fragment × 4

Longest fragment L. 142 mm

Four pieces with evidence for right-angle ends pierced for nails. Two have nails in situ.

**Security: Keys, Locks, and Padlocks**

See Manning 1985a, 88–97, fig. 25, and pls. 40–3, and Birley 1997; cf. Künzl 1993c and Feugère et al. 1992, 20–34, for discussions of the different types of Roman keys and locks.

*L-Shaped Barb Spring Padlock Keys*

Barb spring padlocks have a simple system of closure that employs sprung barbs attached to the end of the bolt, which is inserted into the lock box. The barbs spring up to prevent the removal of the bolt without a key. The simple key has a bit with a cutout or cutouts, which slide over the end of the bolt to depress the sprung barbs and allow the bolt to be retracted (see Künzl 1993c, Abb. 7).

IR304 (context 2241)

Barb spring padlock key

L. 74 mm

FIG. 118

Possible L-shaped barb spring padlock key. The end is bent, but the bit is missing.

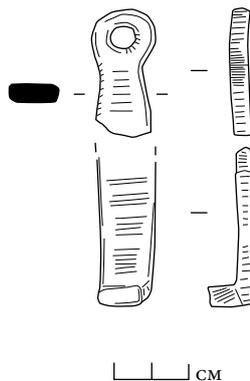


Figure 118. IR304.

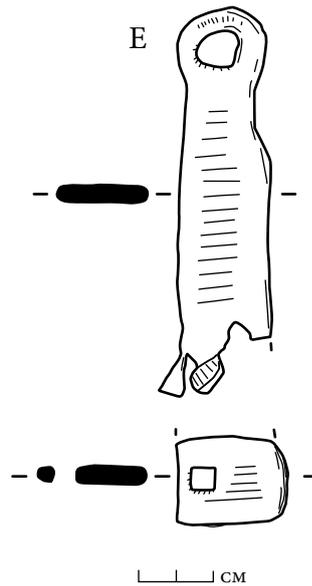


Figure 119. IR305.

IR305 (SF 44, context 9000)

Barb spring padlock key

L. 105 mm

FIG. 119

Barb spring padlock key formed from strip of thin rectangular section, squared off at the wider end; originally it was bent at a right angle. The squared end has a square cutout in its center. It narrows towards the top, which ends in a suspension loop.

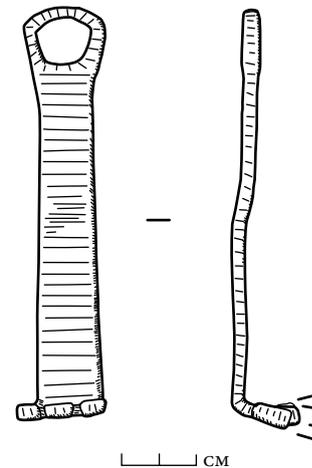


Figure 120. IR306.

IR306 (context 9175)

Barb spring padlock key

L. 110 mm

FIG. 120

Barb spring padlock key formed from tapering strip with a suspension loop at the narrow end. The broader end is bent at a right angle forming a bit. It appears to have been cut to form three slots, but the bit is incomplete.

**IR307** (context 9175)  
**Barb spring padlock key**  
 L. 88 mm

Possible barb spring padlock key, incomplete. Formed from strip narrowing to one end and formed into a suspension loop. The other end is broken.

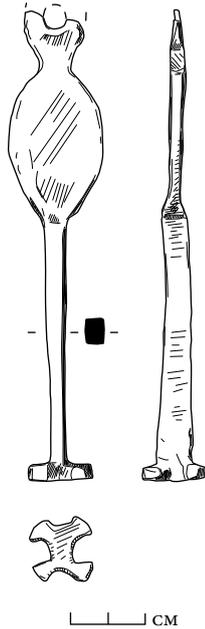


Figure 121. IR308.

*Barb Spring Padlock Key with Cruciform Bit*

**IR308** (SF 589, context 15001)

**Barb spring padlock key with cruciform bit**

L. 125 mm

FIG. 121

Key with a tapering rectangular-section shank terminating in a cruciform bit. The other end is flattened to form a handle and has a possible suspension loop. For use with a cylindrical barb spring padlock.

*Lever Lock Key*

Lever locks are similar to modern locks and have pivoting tumblers and fixed words. The key is rotated in the lock to move the tumbler and move the lock bolt. See Künzl 1993b, Abb. 1 and 2; cf. Manning 1985a, 94–5, fig. 25, 8–9, pls. 41–2, O57–O64.

**IR309** (context 2012)  
**Possible lever lock key**  
 L. 55 mm

Possible lever lock key with incomplete bit and damaged square-section stem. Badly eroded, the identification is far from certain.

*L-Shaped Slide Keys*

Slide keys are used with tumblers locks. The tumblers engage with holes in the bolt to prevent its movement. The key has a bit cut to match the pattern of holes in the bolt and is used to lift the tumblers and to slide the bolt. There is only one example of a bolt from a tumbler lock (IR369) but seven slide keys. Manning (1985a, 92–3, fig. 25, 4–7) has identified two forms of slide key. All the Zeugma examples are of Manning’s type 2, which are L-shaped, usually small, and have closely set teeth (Manning 1985a, fig. 25, 7).

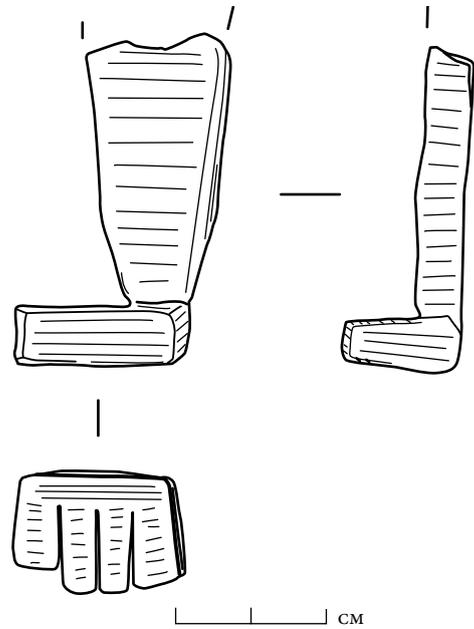


Figure 122. IR310.

**IR310** (context 2012)

**L-shaped slide key**

L. 45 mm

FIG. 122

L-shaped slide key (Manning type 2). Precise form of bit is not clear although it appears to have some cutouts. The rectangular-section handle is incomplete.

**IR311** (context 2294)

**L-shaped slide key**

L. 55 mm

L-shaped slide key (Manning type 2) with very short handle pierced with suspension loop. The bit appears to have no cuts or slots but is corroded.

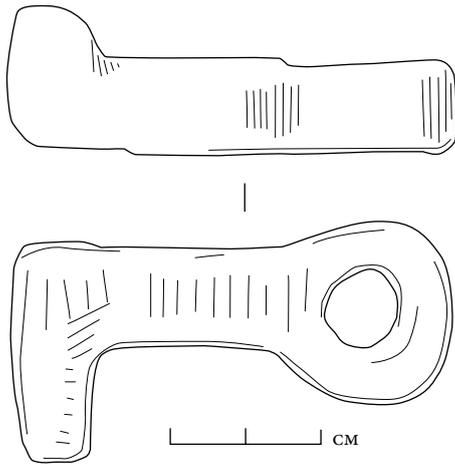


Figure 123. IR312.

IR312 (context 9003)  
L-shaped slide key  
L. 59 mm

FIG. 123

Small L-shaped slide key (Manning type 2). No visible cuts or slots in the bit.

IR313 (context 9175)  
L-shaped slide key  
L. 43 mm

Small L-shaped slide key (Manning type 2) with short tapering rectangular-section stem with a small L-shaped bit. Its suspension loop is missing. There appear to be no teeth or cuts on the bit. However, it is badly corroded so it is not possible to be certain.

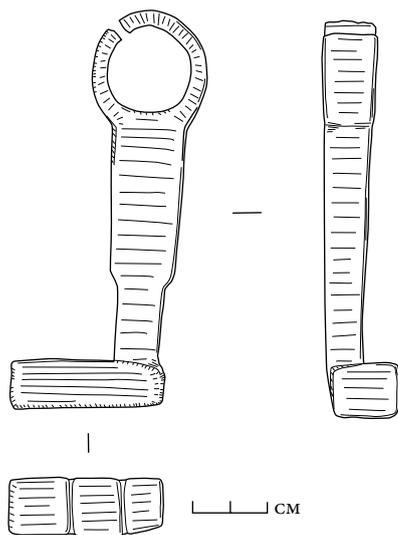


Figure 124. IR314.

IR314 (context 9175)  
L-shaped slide key  
L. 115 mm

FIG. 124

Large L-shaped slide key (Manning type 2) with stout stem and suspension loop. The bit is set at right angles. There are slight traces of two slots in the bit.

IR315 (SF 455, context 9137)  
L-shaped slide key and chain  
L. 55 mm

Small iron L-shaped slide key (Manning type 2) attached to copper alloy chain comprised of five twisted figure-of-eight links and two half links. Other fragments of chain totaling twelve links, three halves, and one fragment. The bit has no visible slots.

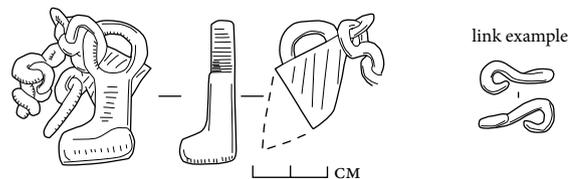


Figure 125. IR316.

IR316 (context 9195)  
L-shaped slide key and chain  
L. 39 mm

FIG. 125

Small iron L-shaped slide key (Manning type 2) attached to copper alloy chain comprised of nine or ten twisted figure-of-eight links of copper alloy. There is a diamond-shaped copper alloy plate with a loop at one end attached to the opposite end of the chain from the key. The bit has no visible slots.

#### *Barb Spring Padlocks*

The majority of the locks recovered from the excavations were barb spring padlocks with square cases and elongated bars. They were found in two sizes, the larger examples with cases ca. 70 mm to 75 mm square, and the smaller examples ca. 50 mm square. Many, if not all, of the large examples had large round-headed nails on their front face; the smaller examples had patterns of nails, but with less prominent heads.

Barb spring padlocks are comprised of three elements: lock case, lock bar attached to the case, and a barbed bolt (fig. 126). A variant is comprised of a case, chain, and barbed bolt attached to the chain. Only one lock with attached chain can be definitely identified (IR324). The lock cases are constructed of a back and a front plate and sides formed from a single strip bent to form a square box. The front and back of the boxes are formed by separate square plates, which on the larger locks have folded-up, or lipped, edges, which fit over the sides of the box. The smaller locks do not appear to have these folded, or lipped, edges. The front and back plates are held in place by four rivets, or nails, one at each corner of the box. These pass from front to back. On the larger locks these have prominent round heads on the

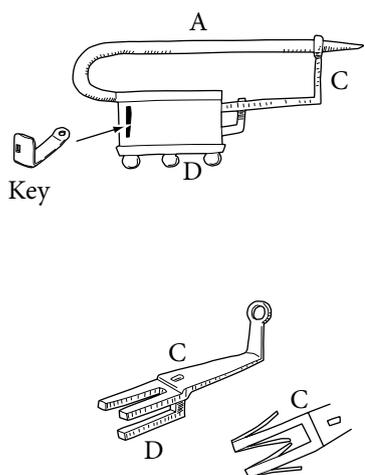


Figure 126

front face. The rest of the front plate is often decorated with other rivets or nails with prominent heads, but these are merely for show and serve no structural function.

The lock bar is usually attached to the middle of one edge of the back plate, or formed in one piece with the back plate. It is U-shaped and runs across the back of the lock case and usually ends in a point. On the side of the box opposite the base of the bar is a pattern of square holes or cutouts into which one end of the bolt is inserted. The lock bolt is L-shaped. The shorter arm is pierced at the end by a circular eye, which slips over the pointed end of the lock bar. The other arm has a pronged terminal attached to it, which is inserted into the lock case through the pattern of holes in the side. This terminal can have one, two, three, or four prongs. The pattern of holes and the pronged terminal have to match. The box itself is empty, for there is no lock mechanism as such. The prongs on the bolt that are inserted into the box have sprung barbs, which prevent their removal without the appropriate key.

On one of the other sides of the box is a slot into which the padlock key can be inserted. The L-shaped padlock key has a pattern of cutouts in its bit which slot over the prongs of the bolt and depress the barbs, allowing removal of the bolt.

The larger barb spring padlocks were probably used to secure doors and perhaps larger cupboards or chests. The smaller locks are more likely to have been used on furniture than on doors.

Padlocks with square cases are the predominant type of barb spring padlock in the Zeugma assemblage. In the north and west parts of the empire the barb spring padlock is common, but the forms are quite different. One common form of box was an elongated rectangle, as for example from Vindolanda (Jackson 1985, 147, fig. 54, 103–4; cf. Manning 1985a, fig. 25 and pl. 43, O67–O69; Birley 1997, 36–8, fig. 14, 82–3). Barb spring padlocks with cylindrical boxes are also known, as for example from Straubing (Walke 1965, 158, Taf. 123, 22). Some padlocks are attached to chains (see Thomp-

son 1994, illustrations 49–52) and others to slave shackles (e.g., Künzing: Herrmann 1969, Abb. 10; Künzl 1993c, Abb. 6–7, 10; see Thompson 1994, esp. ills 40–3, 49–53, 73–90, 93–5). Most interesting are the chains and shackles from the mid-third-century Künzing hoard (Thompson 1994, illus. 49–52) and from Silchester (Thompson 1994, illus. 64–5). These chains and shackles have large square boxes decorated with nails or rivets and are comparable to the examples from Zeugma. Another type of square padlock case decorated with large nail heads was recovered from Fishbourne, but this has a slimmer case probably with a lever lock mechanism (Cunliffe 1971, vol. 2, 140–3 and fig. 64, 84). It was found on a floor with other ironwork, including a cylindrical barb spring padlock, and was sealed by late third-century destruction deposits (Cunliffe 1971, vol. 1, 187–8). It is tempting to see the barb spring padlock with square box as a distinctive type from the eastern half of the empire. Further, it could be suggested that the examples found at Künzing and Silchester, and possibly the variant form from Fishbourne, which are unusual in the north and west, reflect the impact of trade, in this instance, in slaves.

#### *Large Square Barb Spring Padlocks with Bar and Bolt*

**IR317** (context 2095)

##### **Barb spring padlock bar**

L. 270 mm

Lock bar from a large barb spring padlock. Circular-section bar looped back on itself at one end and flattened in section where it joined the lock case. The other end appears to narrow to a point but is covered in slag-like encrustations, so it is not possible to be certain. Possibly part of a single padlock with IR317 and IR318.

**IR318** (context 2095)

##### **Barb spring padlock case**

L. 67 mm × 67 mm

Outer casing of square padlock, possibly originally formed from a single strip of iron bent around four sides of a square. Where the ends of the strip meet, they are cut to interlock; one end has a central cutout and the other a matching central lug. Presumably the two ends were soldered together. Possibly part of a single padlock with IR317 and IR319.

**IR319** (context 2095)

##### **Barb spring padlock case fragments**

Five small fragments of plate, which may form the front and back plates of a padlock. Possibly part of same lock as IR317 and IR318.

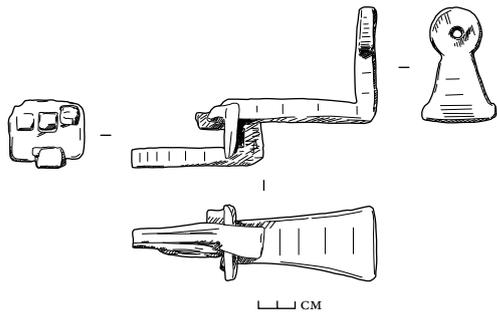


Figure 127. IR320.

IR320 (SF 2198, context 2141)

**Barb spring padlock bolt**

L. 137 mm

FIG. 127

Bolt, including most of barb spring from a large barb spring padlock. The opposite end of the bolt is bent at a right angle and pierced with a circular hole to facilitate securing to padlock bar.

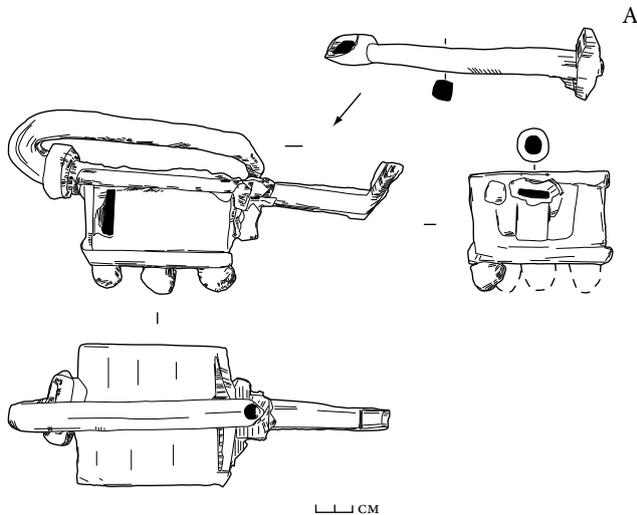


Figure 128. IR321.

IR321 (SF 2310, context 2269)

**Barb spring padlock**

L. 200 mm

FIG. 128

Almost complete large barb spring padlock, comprised of square lock case decorated with round-headed nails on one face. The barbed spring bolt is still inside the lock, and most of the bar of the lock survives. The latter is comprised of a tube, which appears to have been broken in antiquity, and a large nail (A) has been jammed in the broken end as a temporary repair. This is probably a makeshift repair rather than evidence for the breaking of the lock by force.

IR322 (SF 41, context 9003)

**Barb spring padlock box, bar, and bolt**

Case and part of lock bar L. 120 mm; part of lock bar L. 138 mm; lock bolt 165 mm

FIG. 129

Barb spring padlock box, although in fragments, is essentially complete. It is a substantial square box with decorative round-headed nails at the corners and along the edges. Part of the lock bar is still attached. The bar is formed from a thick rod of circular section bent into a hook or loop and passing through a split spike loop, which is still attached. The other end tapers to a rounded point, which passes through the broken loop of the padlock, bolt. The bolt is of rectangular section and tapers. The broader end turns at a right angle but is broken. The narrower end is divided into two prongs with a thin barb springs attached.

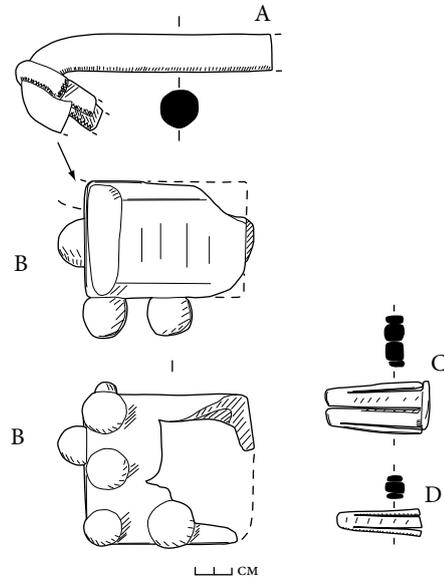


Figure 129. IR322.

IR323 (context 9245)

**Barb spring padlock bar, bolt fragments, and case fragments**

Padlock bar L. 270 mm; bolt L. 128 mm

Padlock bar and bolt, almost complete, though in pieces. The bar is complete but in three sections. Attached to the bar are part of a split spike loop and the loop from the padlock bolt. The bolt is almost complete except for its loop attached to the bar. Two of the three barbed prongs, which were inserted into the lock box, survive. Fragments of large square lock case also found.

*Large Square Barb Spring Padlock with Chain*

IR324 (context 9073)

**Barb spring padlock case fragment with attached chain**

L. 70 mm

More than half of one face, with lipped edges, and part of the sides. There is a loop attached to one edge of the case with a ring (possibly a chain link) linked to it. A smaller fragment, possibly from the same case although not actually joined, comprises a corner of the front plate with one nail hole and a fragment of the case side.

*Large Square Barb Spring Padlock Fragments*

IR325 (context 2006)

**Barb spring padlock case fragments**

Fragments of square barb spring padlock case, including one corner piece with decorative nail.

IR326 (context 2008)

**Barb spring padlock case fragments**

Two fragments of square barb spring padlock case, including corner with nail.

IR327 (context 2011)

**Barb spring padlock case fragment**

Corner fragment from square padlock case.

IR328 (context 2012)

**Barb spring padlock case fragment**

Small fragment from the edge of a square padlock face. The upturned edge is clear. Badly bent.

IR329 (context 2014)

**Barb spring padlock case fragment**

L. 80 mm

Part of one face of a square padlock case with raised lip.

IR330 (context 2014)

**Barb spring padlock case fragment**

Corner of a square barb spring padlock case.

IR331 (context 2014)

**Barb spring padlock case fragments**

Two fragments of one face of a square padlock case with raised lip and a nail hole in one corner.

IR332 (context 2035)

**Barb spring padlock case fragment**

L. 64 mm

Plate from a square barb spring padlock case. Incomplete. The object comprises the corner of a plate with its turned-up edges. There are four round nail heads and a hole for a fifth nail in the corner.

IR333 (context 2039)

**Barb spring padlock bolt**

L. 83 mm

Probable lock bolt with looped end, which passes through a plate that has one round-headed nail. None of the origi-

nal edges of the plate survive. Presumably part of a barb spring padlock bolt and case. May be part of same padlock as IR334.

IR334 (context 2039)

**Barb spring padlock case fragments**

Padlock case. Five fragments of lock case. At least two of the fragments are from the front plate and are decorated with round-headed nails. All the fragments are flat; three have folded edges. Possibly parts of same padlock as bolt IR333.

IR335 (context 2039)

**Barb spring padlock nail**

Large round-headed nail from a padlock case.

IR336 (context 2043)

**Barb spring padlock case, fragment**

L. 33 mm

Corner fragment of front plate of square padlock case, with one round-headed nail in situ.

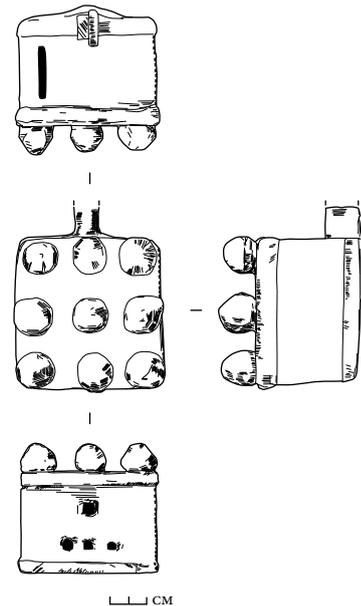


Figure 130. IR337.

IR337 (SF 2196, context 2141)

**Barb spring padlock case**

L. 75 mm

FIG. 130

Case from a barb spring padlock. It is ca. 75 mm square and 55 mm deep without the nails, and has nine round-headed nails on one face. The bar is missing (a stump remains). On the top edge there is a slot for the key, next to the stump of the bar. On the opposite edge there are four holes for the barb spring bolt, in a triangular pattern — a row of three holes with a single hole above.

IR338 (context 2184)

**Barb spring padlock case fragments**

Fragments of a square padlock case. Piece of front plate with a nail hole, small corner fragment with nail.

IR339 (context 2242)

**Barb spring padlock case fragments**

L. 73 mm

Plate from the front or back of a large barb spring padlock case and one small corner piece.

IR340 (context 2256)

**Barb spring padlock case fragments × 3**

L. 50 mm

Three fragments from a square padlock case. One fragment is probably from the side of the square lock case. Another fragment, which has a round-headed decorative nail piercing it, is from the front face. A third fragment is probably from the corner.

IR341 (context 2379)

**Barb spring padlock case fragments × 3**

L. 53 mm; W. 49 mm

One complete front plate with three decorative nails in the face. Two further fragments of plates.

IR342 (context 7021)

**Barb spring padlock case fragments**

Fragment of padlock lock case with nails fused to it.

IR343 (context 9073)

**Barb spring padlock case fragments × 8**

Small fragments probably from a lock case. One fragment is a corner from the front plate of a lock, with turned up edges.

IR344 (context 9111)

**Barb spring padlock case**

Corner of square padlock case with large rounded nail in situ.

IR345 (context 9143)

**Nails from a barb spring padlock case × 2**

Two large round-headed nails from a large padlock case.

IR346 (context 9175)

**Barb spring padlock case**

L. 75 mm

Two fragments of a large square padlock case. Both fragments are from one of the corners of the case. The larger fragment is 75 mm long and has one large round-headed nail in situ.

IR347 (context 9194)

**Barb spring padlock case fragment**

L. 68 mm

One side of a square padlock case with a fragment of the face with two prominent nails extant.

IR348 (context 9194)

**Barb spring padlock case fragment**

L. 42 mm

Fragment from a square padlock case comprising part of one side, with traces of two cutouts for the padlock bolt still surviving. Part of the lipped edge of one face of the padlock also survives along one edge.

IR349 (context 13036)

**Barb spring padlock case fragment**

L. 45 mm

Small fragment of face and part of side of padlock case.

IR350 (context 18001)

**Barb spring padlock case fragments**

Four fragments from a large padlock case, comprising two corner fragments, one of which has a nail at a corner and a circular copper alloy fragment, which may be a washer, where a second nail was positioned. The head of this nail is detached. There are also two further fragments from the front of the case with nails in situ.

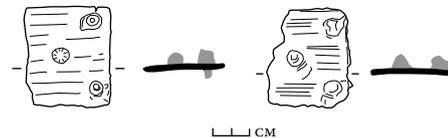


Figure 131. IR351.

*Small Square Barb Spring Padlocks*

IR351 (context 2036)

**Barb spring padlock case fragments**

Largest fragment L. 44 mm

FIG. 131

Three fragments of the front plate of a small square padlock case. Two fragments have in situ round nail heads. On the largest fragment the nail head is in the corner.

IR352–355 (context 2036)

**Barb spring padlock case fragments × 4**

Nearly complete face plates L. 54 mm and L. 52 mm

Pieces from at least four small barb spring padlock cases. Two almost complete square front plates, each with three out of five decorative nail heads. There are three corner fragments from further front plates: one with a single nail hole, one with a nail in situ, the third corner fragment with two nails in situ. There is a round-headed nail attached to small corner fragment. The presence of mineralized organic materials on some of the inside faces appears to confirm that the locks were broken before deposition. A further almost complete square plate with no visible nail holes, which has been bent, may be the back plate of a lock. Three small fragments are from the front or back plates of a lock. In addition there is a detached round-headed nail. Finally there is an L-shaped bar of circular section, the short end of which has passed through a broken copper alloy plate. This may be the bar from a small padlock. A small curved tongue-shaped piece may have nothing to do with the locks.

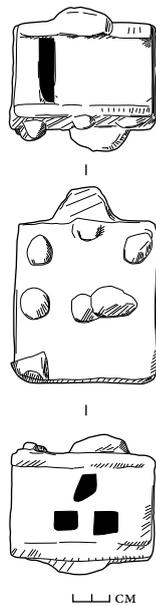


Figure 132. IR356.

IR356 (SF 2257, context 2182)

**Barb spring padlock case, small**

L. 50 mm; W. 40 mm

FIG. 132

Small square barb spring padlock case. Decorated on one face with round-headed nails. On the bottom there are three holes to take the barbed bolt and at the top a slot for the key and the stump of the lock bar.

IR357 (context 9175)

**Barb spring padlock case, small**

Corner fragment of a small square padlock case with one nail in place.

*Cylindrical Barb Spring Padlock*

IR358 (context 2039)

**Probable cylindrical barb spring padlock case fragments**

L. 46 mm

Probable fragment from a barb spring padlock with a cylindrical case. Part of the circular casing of the lock survives with a loop attached to it. Attached to the loop appears to be part of a ring or chain.

*Possible Barb Spring Padlock Bolts*

IR359 (context 2095)

**Possible barb spring padlock fragments**

Two fragments with slag-like encrustations. Possibly part of a barb spring padlock bolt.

IR360 (context 18001)

**Possible barb spring padlock bolt fragment**

Two square-section pieces of bar set parallel to one another, and probably part of a barb spring padlock bolt. They are heavily corroded.

*Other Possible Padlocks*

IR361 (context 2006)

**Small pillbox padlock case**

D. 37 mm

FIG. 133

Possible lock case of pillbox shape with an elongated T-shaped slot in one face. The opposite face has a bar or strip attached, but its exact form is unclear. Associated with it was a triangular piece with a stem of square section extending from one corner.



Figure 133. IR361.

**IR362** (context 2046)

**Flat circular padlock case fragments**

D. 90 mm

Fragments of a circular flat padlock case. Six fragments of one or possibly two circular faces. One fragment has a nail piercing it.

**IR363** (context 2099)

**Possible lock case fragment**

L. 66 mm

Fragment of possible lock case. The fragment has one curved original edge and a small nail hole on the edge. The edge has a slight lip. Probably part of a flat circular lock case. Corrosion on the inner face.

**IR364** (context 9175)

**Probable pillbox-shaped lock case**

L. 47 mm

Part of one face and the side of a probable pillbox-shaped padlock case. Less than half the box survives.

**IR365** (context 9175)

**Probable small flat oval padlock case**

L. 40 mm; strip L. 30 mm, W. 16 mm

Neatly made oval sheet with a segment missing. One possible nail hole but no certain nail holes. There is also a piece of strip, probably from the side of the case.

**IR366** (context 9175)

**Probable small flat oval padlock case**

L. 40 mm

Oval sheet, less well preserved than IR79 but maybe part of the same lock case. It has a piece of iron fused to its front face.

**IR367** (context 9175)

**Circular padlock fragment**

Small fragment of part of the front face and side wall of a pillbox-shaped padlock case. Has round-headed nail in situ.

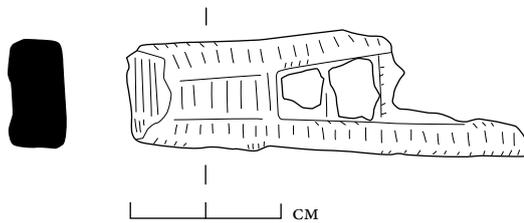


Figure 134. IR368.

*Slide Lock Bolt*

**IR368** (SF 2121, context 2036)

**Slide lock bolt fragment**

L. 53 mm

FIG. 134

Slide lock bolt fragment with two extant cutouts. Found with part of a circular copper alloy plate with a central cut-out, possibly a lock plate.

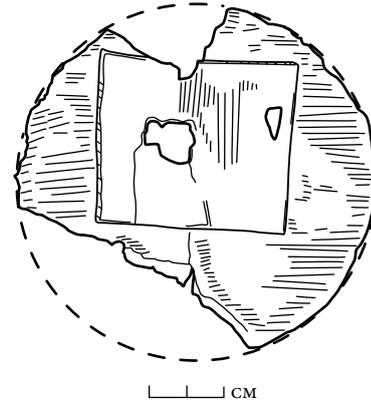


Figure 135. IR369.

*Lock Plate*

**IR369** (SF 3396, context 18070)

**Circular plate, probable lock plate**

D. 95 mm

FIG. 135

Thin circular plate with clear traces of mineralized wood on one face. The alignment of the grain suggests that the wood was part of the original object rather than an accident of burial. The mineralized wood grain is largely absent from a square at the center of the object, which is delineated by a slight ridge of corrosion. Within the square there are two holes through the plate, one of which is original.

Doubt about the identification as a lock plate is raised by the lack of a suitable slot — either L-shaped or keyhole-shaped (cf. Vindolanda: Birley 1997, 38, fig. 15, 87; and Colchester: Crummy 1983, 85, fig. 90, 2195) — for the key. It is possible that it was the back plate of a lever lock case, and the single off-center hole served as a guide for the end of the key stem.

*Possible Lock Bolt*

**IR370** (SF 2061, context 2008)

**Possible lock bolt**

L. 136 mm

Possible door bolt formed from length of rod with a rectangular expansion at one end.

*Chains*

Catalogue number	Context	Size (mm)	Description	Count
IR371	2010	L. 0	Chain comprised of three oval links, pinched in the middle.	1
IR372	2075	L. 92	Oval links pinched in the middle to form figure-of-eight. There are three complete links with half a link at one end and a fragment of a link at the other end.	3
IR373	2099	L. 76	Irregular block formed from possible length of chain, heavily encrusted with slag-like material.	1
IR374	2278	L. 35	Fragment of chain link.	1
IR375	9073	L. 35	Three fragments of chain links. Links are of pinched oval shape. One complete link 35 mm long.	3
IR376	9073	L. 45	Chain link consisting of oval link pinched in the middle to form a figure of eight.	1
IR377	9143	L. 62; 37	Two, possibly three links, heavily corroded: 62 mm long. One further link, heavily corroded: 37 mm.	2
IR378	9175	L. 35	Single incomplete link, heavily encrusted.	1
IR379	9175	L. 79	Heavily encrusted, possibly as many as seven links but only a complete link at one end and a fragmentary link at the other are totally visible.	1
IR380	18000	L. 25	Possible fragment of chain link.	1
IR381 (SF 873)	18108	L. 44	Figure-of-eight chain link with a pointed fragment fused to it.	1

**Structural Metalwork***Looped Spikes and Pins*

Looped spikes were either driven into wood or set in stone, and secured by melted lead (see drop hinge ride/looped spike IR215, above). Some of these looped spikes may have served as drop hinge rides, but others will have served simply to hold rings or similar objects.

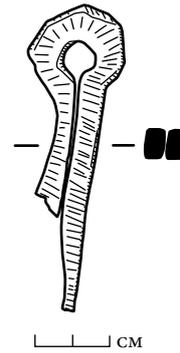


Figure 136. IR398.

Catalogue number	Context	Size (mm)	Description
IR382	2002	–	Looped spike, incomplete stem of circular section with neatly formed loop. Slight trace of copper alloy on stem.
IR383	2011	L. 58	Looped spike with attached link or split spike loop.
IR384	2080	L. 33; D. 15	Looped spike. Identification is not certain due to corrosion.
IR385	2093	L. 56	Looped spike. Stem of the pin is slightly curved and the hoop is offset to one side.
IR386	2162	L. 62	Looped spike, loop missing.
IR387	2241	L. 62; D. 20	Looped spike. Heavily corroded.
IR388	2242	L. 100; W. 27	Looped spike. Possibly a drop hinge ride.
IR389	2256	L. 48; D. 38	Looped spiked with ring attached. The ring has a diameter of 38 mm and is of circular section.
IR390	2269	L. 106; W. 34	Looped spike.
IR391	2269	L. 71	Looped spike fragment lacking loop.
IR392	2376	L. 89	Looped spike formed from tapering strip of rectangular section. A neat loop possibly used as a hinge ride.

Catalogue number	Context	Size (mm)	Description
IR393	2376	L. 86	Looped spike formed from tapering strip of rectangular section. A neat loop possibly used as a hinge ride.
IR394	2376	L. 81	Looped spike formed from tapering strip of rectangular section. A neat loop possibly used as a hinge ride.
IR395	2376	L. 115	Looped spike. Large loop spike probably used as a drop hinge ride.
IR396 (SF 512)	7023	L. 71	Looped pin or spike, heavily encrusted.
IR397	9001	L. 66; D. 20	Looped spike.
IR398 (SF 343)	9112	L. 81; D. 26	Looped spike. Loop of oval section. Fig. 136.
IR399	9175	L. 103; D. 29	Looped spike.
IR400	9194	L. 43; D. 24	Looped spike.
IR401	11056	L. 67; D. 23	Looped spike.
IR402	18001	L. 72; D. 23	Looped spike.
IR403	18054	L. 60; D. 30	Looped spike. Spike is missing.
IR404	18108	L. 98; D. 28	Looped spike.
IR405	18108	L. 87; D. 25	Looped spike.
IR406	18108	L. 105; D. 34	Looped spike.

#### *Split Spike Loops*

Some split spike loops were linked in pairs to make loop hinges (e.g., IR407–410), and others probably served as riders for drop hinges, as attachments for rings, and to hold bars and rods such as those attached to braziers (IR104, 106). They could also be used to attach handles, to hold bolts, and as the loops for latch hooks.

Catalogue number	Context	Size (mm)	Description
IR407	2014	L. 70	Two split spike loops linked together, possibly to form a hinge.
IR408	2276	L. 66	Two small split spike loops linked together perhaps to form a hinge. Heavily encrusted.
IR409	2376	L. 52	Two linked split spike loops. Probably a loop hinge.
IR410	10000	L. 70, D. 31; L. 87, D. 31	Two linked split spike loops. Fig. 137.
IR411	9245	L. 45, D. 16	Split spike loop. Attached to a length of tapering strip, which is bent. It has a loop at the wide end. Possibly part of a loop hinge for a box or chest.
IR412	2000	–	Split spike loop.
IR413 (SF 2060)	2008	L. 75	Split spike loop with part of ring attached and mineralized wood fragments.
IR414	2009	L. 47	Split spike loop.
IR415	2010	–	Split spike loop fragment.
IR416	2011	–	Small split spike loop with a looped pin or rod linked to it.
IR417	2014	L. 83	Split spike loop. Possibly a hinge ride.
IR418	2014	–	Split spike loop.
IR419	2014	L. 87	Possible split spike loop formed from bar of square section with neatly formed loop at one end. It has traces of wood across the stem.
IR420	2019	L. 64	Split spike loop. Fragment of ring attached.
IR421	2031	L. 85	Split spike loop.
IR422	2031	L. 65	Split spike loop, incomplete.

Catalogue number	Context	Size (mm)	Description
IR423	2031	L. 77	Split spike loop. Could be a small hinge ride.
IR424	2035	L. 60	Split spike loop.
IR425	2035	L. 82	Split spike loop.
IR426	2035	L. 77	Split spike loop with part of ring attached to the loop.
IR427	2036	L. 42	Split spike loop.
IR428	2039	L. 28	Split spike loop with part of ring attached.
IR429	2075	L. 68; D. 23	Split spike loop with two-thirds of a ring of circular cross section attached. The ring is 41 mm in diameter.
IR430	2080	L. 60	Small split spike loop.
IR431	2092	L. 90; D. 34	Split spike loop. Heavily encrusted.
IR432	2092	L. 50; D. 20	Split spike loop.
IR433	2095	L. 66	Split spike loop.
IR434	2099	L. 83	Large split spike loop with ring attached. Incomplete.
IR435	2099	L. 67	Split spike loop.
IR436	2099	L. 65	Split spike loop.
IR437	2099	L. 63	Split spike loop.
IR438	2099	L. 69; D. 37	Split spike loop. Fig. 138.
IR439	2108	L. 56; D. 19	Split spike loop.
IR440	2108	L. 38; D. 16	Small split spike loop.
IR441	2154	L. 40; D. 22; ring D. 41	Split spike loop with ring attached. Heavily corroded.
IR442	2235	L. 63; D. 27	Split spike loop.
IR443	2238	L. 65; D. 24	Split spike loop.
IR444	2251	D. 25	Split spike loop. Loop only.
IR445	2256	L. 48; D. 27	Split spike loop. Fragmentary.
IR446	2269	L. 60; D. 18	Split spike loop. Badly corroded.
IR447	2269	L. 87; D. 21	Split spike loop.
IR448	2269	L. 71; D. 26	Split spike loop.
IR449	2269	L. 51; D. 18	Split spike loop with circular section rod attached to it. The rod is curved at one end.
IR450	2269	L. 44; D. 24	Split spike loop with chain or ring through loop. Heavily encrusted so identification is uncertain.
IR451	2269	L. 56; D. 22	Split spike loop. Heavily corroded.
IR452	2269	L. 90; D. 27	Split spike loop.
IR453	2269	L. 52	Split spike loop—fragment lacking loop.
IR454	2269	L. 59; D. 26	Split spike loop.
IR455	2269	L. 77; D. 26	Split spike loop, almost complete.
IR456	2269	L. 88; D. 30	Split spike loop.
IR457	2278	L. 53	Split spike loop with attached ring of circular section.
(SF 233c)			
IR458	2278	—	Split spike loop.
(SF 2335)			
IR459	2283	L. 52	Small split spike loop. The spike ends have been bent in such a way that they cross.
IR460	2285	L. 77	Split spike loop.
IR461	2285	L. 51	Split spike loop, fragmentary.
IR462	2285	L. 71	Split spike loop, heavily corroded.
IR463	2285	L. 39	Split spike loop fragment, loop missing.
IR464	2294	L. 67	Split spike loop or looped spike.
IR465	2294	L. 46	Small split spike loop.
IR466	2294	L. 83	Split spike loop.
(SF 2299)			

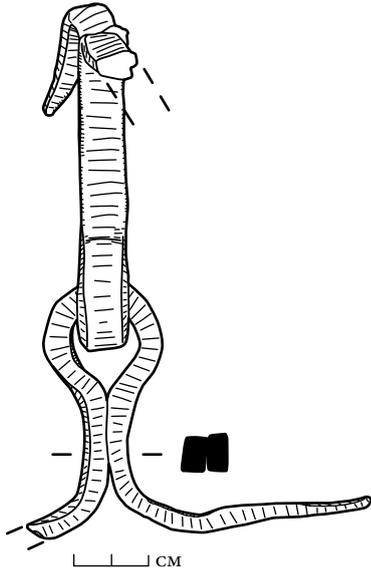


Figure 137. IR410.

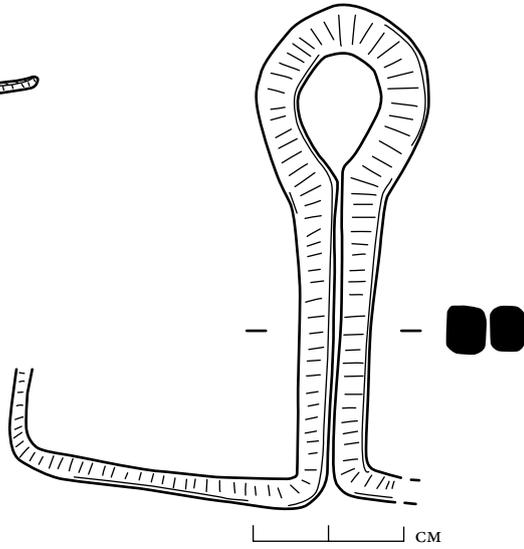


Figure 138. IR438.

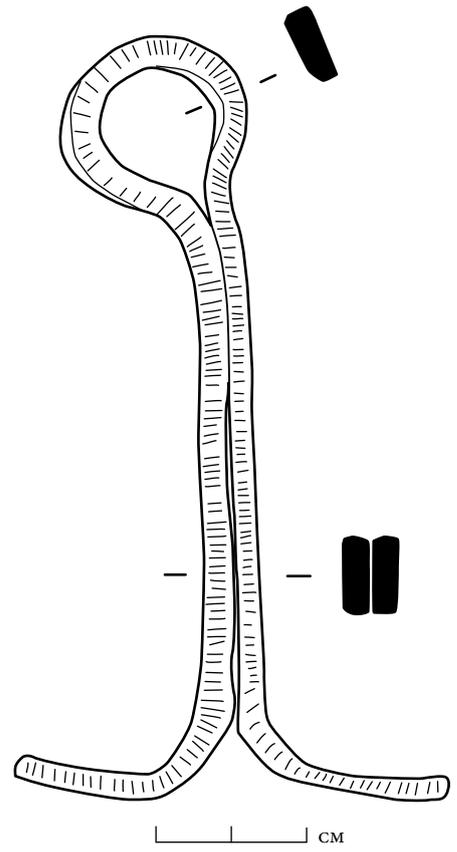


Figure 140. IR473.

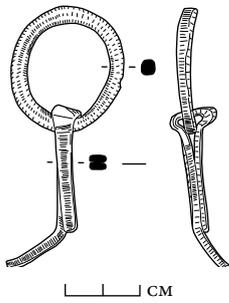


Figure 139. IR472.

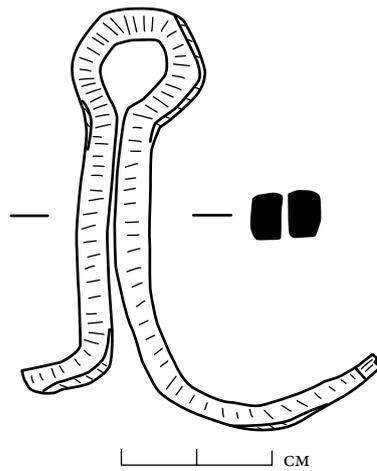


Figure 141. IR478.

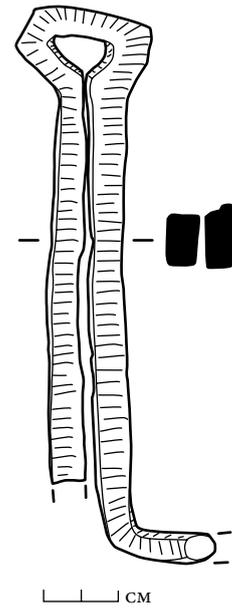


Figure 142. IR482.

Catalogue number	Context	Size (mm)	Description
IR467	2376	L. 65	Split spike loop. Probably used as a small hinge ride.
IR468	2376	L. 88	Split spike loop. Probably used as a small hinge ride.
IR469	2379	L. 79	Split spike loop.
IR470	2379	L. 74	Split spike loop.
IR471	2379	L. 39	Split spike loop, incomplete.
IR472 (SF 71)	5000	L. 140	Split spike loop with attached ring. The loop is squashed and the ring is of square section. Fig. 139
IR473 (SF 72)	5000	L. 102	Split spike loop formed from strip of rectangular section tapering to points at each end. Neatly formed circular loop. The points are bent at right angles. Fig. 140
IR474	7027	L. 62; D. 23	Split spike loop.
IR475	7036	L. 36; D. 22	Split spike loop. Most of spike is missing.
IR476	7073	L. 65; D. 17	Split spike loop.
IR477	7213	L. 62	Incomplete split spike loop — only one spike and part of loop.
IR478 (SF 884)	7214	L. 59; D. 15	Split spike loop. Neat circular loop. Fig. 141
IR479	9000	L. 68; D. 26	Split spike loop.
IR480	9000	L. 61; D. 26	Probable split spike loop, with nail through loop. Heavily corroded.
IR481	9000	L. 85	Split spike loop.
IR482 (SF 125)	9074	L. 145; D. 36	Large split spike loop formed from rectangular-section strip. The loop is slightly deformed to a rectangular shape. Fig. 142
IR483 (SF 342)	9112	L. 61; D. 23	Split spike loop.
IR484	9133	L. 50; D. 23	Split spike loop with link attached through loop.
IR485	9133	L. 67; D. 29	Split spike loop.
IR486	9133	L. 53; D. 29	Split spike loop.
IR487	9133	L. 71; D. 28	Split spike loop.
IR488	9133	L. 70; D. 25	Split spike loop.
IR489	9138	L. 61; D. 24	Split spike loop.
IR490	9175	L. 86	Possible split spike loop, but with no surviving loop.
IR491 (SF 711)	9207	L. 61; D. 26	Split spike loop.
IR492 (SF 4003)	10026	L. 95; D. 26	Split spike loop. The arms of the spike have been slightly opened.
IR493 (SF 227)	11028	L. 49	Split spike loop.
IR494 (SF 8)	11039	L. 52	Split spike loop.
IR495	11048	L. 70; D. 31	Split spike loop. Fragment of ring through the loop.
IR496	13036	L. 45; D. 30	Split spike loop. Most of the spikes are missing.
IR497	18001	L. 73; D. 23	Split spike loop.
IR498	18001	L. 77; D. 26	Split spike loop. Possible fragment of ring through loop. Heavily corroded.
IR499	18054	L. 52; D. 31	Split spike loop. Spikes are partly missing and loop is slightly squashed.
IR500	18065	L. 60; D. 20; ring D. 47	Split spike loop with ring attached. Half of square cross-section ring attached.
IR501	18071	L. 68; D. 20	Split spike loop.
IR502	18108	L. 58; D. 20	Split spike loop.
IR503	18108	L. 54; D. 26	Split spike loop.

*Masonry Clamp*

IR504 (context 18001)

Masonry clamp

L. 118 mm

Piece of bar of rectangular section now badly laminated. At the end it is bent at a right angle and set into a block of lead yotting.

Bibliography: Sardis (Waldbaum 1983, 67, pls. 19 and 20, 278–90).

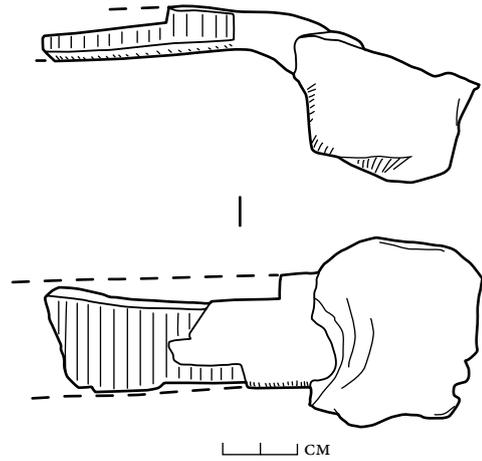


Figure 143. IR504.

*Joiner's Dogs*

Catalogue number	Context	Size (mm)	Description
IR505	2000	L. 70	Joiner's dog. Two fragments of joiner's dogs, with rectangular-section back. Both incomplete.
IR506	2075	L. 57	Small joiner's dog comprising rectangular-section back; one end is missing. The other point is broken off.
IR507	2129	L. 122	Joiner's dog. Back of thick rectangular section that is drawn to downturned points at each end. Both ends are incomplete but the downturn is visible at one end.
IR508	2177	L. 70	Joiner's dog. Two fragments. The larger fragment has a rectangular-section back tapering to the ends and turned down to form points. One end is missing. A smaller fragment possibly from the same dog (but not joining) comprises one end of the dog.
IR509	2269	L. 74	Joiner's dog with back of rectangular section, tapering to the ends and formed into a spike at right angles. Only one spike and part of the back survive.
IR510 (SF 72)	5000	L. 87	Probable joiner's dog formed from strip of rectangular section tapering to a point at each end. Bent into a square. Fig. 144
IR511 (SF 74)	5000	L. 88	Joiner's dog with broad flat back of rectangular section. Fig. 144
IR512	7006	L. 55	Tapering spike from joiner's dog.
IR513	9076	L. 35	Fragment of joiner's dog or clamp. Comprises a piece of the back of rectangular section with a tapering spike.

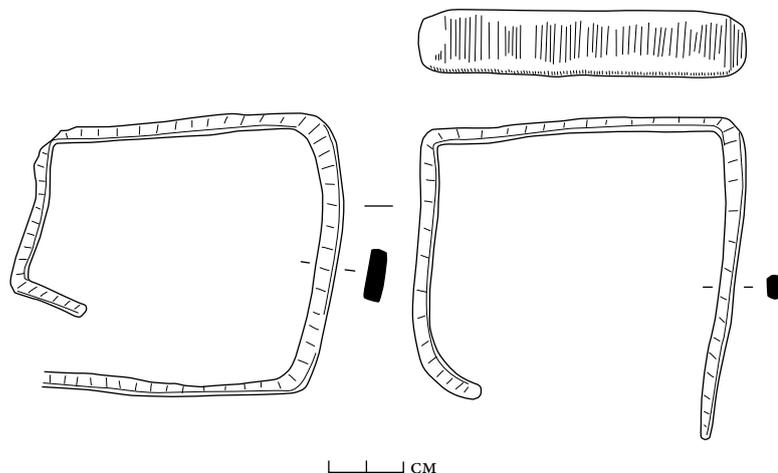


Figure 144. IR510 (left) and IR511 (right).

*U-Shaped Staples*

Catalogue number	Context	Size (mm)	Description
IR514	2177	L. 76	U-shaped staple formed from bar of rectangular section.
IR515	2177	L. 76	U-shaped staple formed from bar of rectangular section. Almost complete.
IR516	2269	L. 30	Small U-shaped staple or possibly rectangular collar formed from a narrow rectangular strip. One long side, two short sides.
IR517 (SF 2295)	2294	L. 94	Possible U-staple or a dog. Rectangular section.
IR518	7000	–	U-staple or dog in two pieces.
IR519	9000	L. 61	U-shaped staple.
IR520	18001	L. 98	U-shaped staple or dog. Formed from strip of rectangular section. The end of one spike is bent at right angles. The other is incomplete.

*L-Shaped Staples*

Catalogue number	Context	Size (mm)	Description
IR521	2353	L. 90	L-staple, fragmentary.
IR522	2376	L. 87	L-staple. Both the arms are of square-section and pointed.
IR523	9175	L. 63	L-staple, incomplete, formed from bar of square section.
IR524	9175	L. 90	L-staple, formed from tapering square-section bar.
IR525	9245	L. 126	L-shaped staple or nail with small head.
IR526	11040	L. 65	L-staple, formed from rod of square section.
IR527	12001	–	L-staple fragment with incomplete square-section stem and a rectangular-section head.
IR528	18023	L. 80	L-staple. Could be a small L-shaped hinge pintle.
IR529	18023	L. 80	L-staple. Could be a small L-shaped hinge pintle.
IR530	18070	–	L-staple. Heavily corroded.

*T-Shaped Staples*

Catalogue number	Context	Size (mm)	Description
IR531	2031	L. 67	T-shaped staple with square-section stem and small T-shaped head.
IR532	2038	L. 80	Head of T-staple tapering to points at either end. The stem is broken off just under the head.
IR533	2039	–	Head of a small T-staple. The pointed arms of the head are bent down.
IR534	7000	–	T-staple. Fig. 145
IR535 (SF 41)	9003	L. 77	T-staple with stout stem of circular section and small head.
IR536	18001	–	Small T-staple with a rectangular-section stem.
IR537	18001	L. 65	T-staple, with square-section stem with a flat elongated oval head.
IR538	18121	L. 60	T-shaped staple that appears to consist of two L-shaped staples joined back to back.

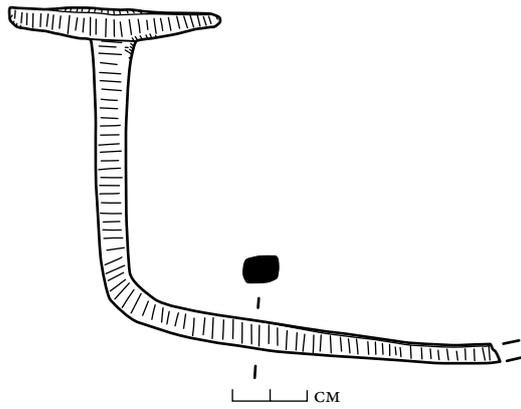


Figure 145. IR534.

*L-Shaped Holdfast or Staple with Decorative Terminal*

IR539 (context 11039)

**L-shaped holdfast with split decorative terminal**

L. 45 mm

Formed from rod of square section. One arm is broken. The other is split at the end to form two decorative curls, one of which is broken.

Context	Nail type												Totals	
	1	2	A	B	C	D	E	F	G	H	Other	Tack		Stem
2000	4	-	6	-	-	-	-	-	-	-	-	1	23	34
2001	2	-	2	-	-	-	-	-	-	-	-	-	2	6
2002	-	-	1	1	-	-	-	-	-	-	-	-	4	6
2006	4	-	4	-	-	-	-	-	-	-	-	-	22	30
2007	2	-	14	1	-	-	-	-	-	-	-	-	15	32
2008	-	-	1	-	-	-	-	-	-	-	-	-	5	6
2009	2	-	18	10	-	-	-	-	-	-	-	-	22	52
2010	3	-	9	4	-	-	1	-	-	-	-	-	4	21
2011	4	-	20	2	1	-	-	1	-	-	-	1	33	62
2012	10	-	11	9	1	-	-	-	-	-	-	-	29	60
2013	2	-	7	1	-	-	-	-	-	-	-	-	2	12
2014	2	-	33	6	-	-	1	1	-	-	2	-	42	87
2016	-	-	-	-	-	-	-	-	-	-	1	-	-	1
2017	-	-	-	-	-	-	-	-	-	-	-	-	1	1
2019	-	-	1	3	-	-	-	-	-	-	-	-	4	8
2023	1	-	-	2	-	-	-	-	-	-	-	-	3	6
2025	-	-	2	-	-	-	-	-	-	-	1	-	2	5
2030	-	-	-	1	-	-	-	-	-	-	-	-	1	2
2031	2	-	19	2	-	4	-	-	1	-	-	-	23	51
2032	-	-	3	1	-	-	-	-	-	-	1	-	14	19
2035	-	-	17	10	-	1	-	-	-	-	-	-	33	62
2036	-	-	4	1	-	-	-	-	-	-	-	-	5	10
2038	1	-	9	5	-	-	-	-	-	-	-	-	17	32
2039	-	-	15	5	2	-	-	-	-	-	22	-	23	67
2041	-	-	1	-	-	-	-	1	-	-	-	-	8	10
2043	-	-	1	3	-	-	-	-	-	-	-	-	2	6
2044	1	-	1	-	-	-	-	-	-	-	-	-	-	2
2046	2	-	21	11	2	-	-	-	-	-	-	-	28	64
2050	-	-	2	-	-	-	-	-	-	-	-	-	5	7
2075	1	-	9	13	-	-	-	-	-	-	-	-	43	66
2080	2	-	12	11	-	-	-	-	-	-	1	-	17	43
2089	-	-	-	-	-	-	-	-	-	-	-	-	2	2
2091	-	-	-	-	-	-	-	-	-	-	-	-	5	5
2092	-	-	1	1	-	-	-	-	-	-	-	-	2	4
2093	2	-	2	-	-	-	-	-	-	-	-	-	-	4
2095	-	-	11	4	-	-	-	-	-	-	-	-	24	39
2098	-	-	15	-	-	-	-	-	-	-	-	-	15	30
2099	-	-	5	4	2	-	-	-	-	-	-	1	26	38

Table 22. Nails: Summary quantification by context and nail type. (Continued on next page.)

Context	Nail type												Totals	
	1	2	A	B	C	D	E	F	G	H	Other	Tack		Stem
2105	-	-	-	2	-	-	-	-	-	-	-	-	1	3
2107	-	-	-	1	-	-	-	-	-	-	-	-	1	2
2108	1	1	10	11	-	-	-	-	-	-	-	1	19	43
2111	-	-	1	6	-	-	-	-	-	-	-	-	1	8
2129	1	-	5	1	-	-	2	-	-	-	-	-	4	13
2135	-	-	1	-	-	-	-	-	-	-	-	-	1	2
2139	-	-	2	1	-	-	-	-	-	-	1	1	15	20
2141	-	-	4	5	-	-	-	-	-	-	-	-	12	21
2150	-	-	2	-	-	-	-	-	-	-	-	-	1	3
2154	1	-	-	-	-	-	-	-	-	-	-	-	1	2
2158	1	-	9	3	-	-	-	-	-	-	-	-	10	23
2162	-	-	1	-	-	-	-	-	-	-	-	-	-	1
2177	6	-	44	-	7	-	-	3	7	-	-	-	38	105
2178	-	-	-	-	-	-	-	-	-	-	-	-	1	1
2181	2	-	5	-	-	-	-	-	-	-	-	-	6	13
2182	2	-	24	3	2	-	-	-	-	-	-	-	13	44
2189	1	-	10	2	-	-	-	-	2	-	-	-	8	23
2191	-	-	1	1	-	-	-	-	-	-	-	-	-	2
2195	-	-	-	-	-	-	-	-	-	-	1	-	-	1
2197	1	-	-	1	-	-	-	-	-	-	-	-	3	5
2218	-	-	3	-	-	-	-	-	-	-	-	-	2	5
2228	-	-	-	-	-	-	-	-	-	-	-	-	2	2
2234	-	-	-	-	-	-	-	-	-	-	-	-	1	1
2235	-	-	9	-	-	-	-	-	-	-	-	-	5	14
2238	-	-	4	-	1	-	-	-	-	-	-	-	7	12
2241	-	-	6	2	-	-	-	-	-	-	-	-	6	14
2242	2	-	5	-	-	-	-	-	-	-	-	-	5	12
2248	-	-	-	-	-	-	-	-	-	-	-	-	1	1
2251	4	-	15	11	-	-	-	-	-	-	-	-	22	52
2252	-	-	2	1	-	-	1	-	-	-	-	-	2	6
2256	1	-	13	2	-	-	-	-	-	-	-	-	20	36
2260	-	-	3	-	-	-	-	-	-	-	-	-	-	3
2261	-	-	1	-	-	-	-	1	-	-	-	-	3	5
2262	3	-	2	-	-	-	-	-	-	-	-	-	1	6
2269	5	-	98	36	1	-	-	2	3	-	1	-	132	278
2274	-	-	-	-	-	-	-	-	-	-	3	-	-	3
2275	1	-	14	1	-	-	-	-	-	-	-	-	9	25
2276	-	-	1	-	1	-	-	-	-	-	-	-	4	6
2277	-	-	5	1	-	-	-	-	-	-	-	-	-	6
2278	-	-	16	10	3	-	-	-	-	-	1	-	34	64
2283	-	-	1	1	-	-	-	-	-	-	-	-	1	3
2285	4	-	80	30	6	-	-	-	-	1	-	2	129	252
2294	1	-	22	-	-	-	-	-	-	-	1	-	33	57
2301	-	-	1	2	-	-	-	-	-	-	-	-	-	3
2332	-	-	-	1	-	-	-	-	-	-	-	-	-	1
2353	-	-	1	-	-	-	-	-	-	-	-	-	-	1
2376	-	-	45	8	4	3	-	-	-	-	-	-	50	110
2379	-	-	1	-	1	-	-	-	-	-	2	-	6	10
2383	-	-	9	7	-	-	-	-	-	-	-	-	22	38
2430	-	-	1	1	1	-	-	-	-	-	-	-	-	3
<b>Totals</b>	<b>84</b>	<b>1</b>	<b>754</b>	<b>262</b>	<b>35</b>	<b>8</b>	<b>5</b>	<b>9</b>	<b>14</b>	<b>1</b>	<b>38</b>	<b>7</b>	<b>1,138</b>	<b>2,356</b>

Table 22. Nails: Summary quantification by context and nail type. (Continued on next page.)

Context	Nail type												Totals	
	1	2	A	B	C	D	E	F	G	H	Other	Tack		Stem
4004	1	-	-	-	-	-	-	-	-	-	-	-	-	1
4019	1	-	-	-	-	-	-	-	-	-	-	-	-	1
4021	-	-	-	1	-	-	-	-	-	-	-	-	-	1
<b>Totals</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>5</b>								
5000	-	-	1	19	-	-	-	-	-	-	1	-	-	21
5003	-	-	3	-	-	-	-	-	-	-	-	-	3	6
5075	-	-	-	-	-	-	-	-	-	-	-	-	1	1
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>28</b>
7000	1	-	-	-	-	-	-	-	-	-	-	-	3	4
7002	-	-	2	-	-	-	-	-	-	-	-	-	6	8
7003	-	-	1	1	-	-	-	-	-	-	-	-	2	4
7004	-	-	1	-	-	-	-	-	-	-	-	-	1	2
7005	1	-	-	-	-	-	-	-	-	-	-	-	-	1
7006	3	-	22	4	-	-	-	-	-	-	-	-	21	50
7007	-	-	1	-	-	-	-	-	-	-	-	-	1	2
7023	-	-	-	1	-	-	-	-	-	-	-	1	3	5
7025	-	-	2	-	-	-	-	-	-	-	-	-	-	2
7026	-	-	2	1	-	-	-	-	-	-	-	-	1	4
7027	-	-	-	2	-	-	-	-	-	-	-	-	2	4
7036	1	-	3	-	-	-	-	-	-	-	-	-	1	5
7060	4	-	6	8	-	-	-	-	-	-	-	-	18	36
7061	1	-	1	-	-	-	-	-	-	-	-	1	2	5
7066	-	-	1	-	-	-	-	-	-	-	-	-	-	1
7077	2	-	1	-	-	-	-	-	-	-	-	1	-	4
7141	-	-	2	-	-	-	-	-	-	-	-	-	2	4
7143	-	-	-	1	-	-	-	-	-	-	-	-	1	2
7159	-	-	-	2	-	-	-	-	-	-	-	-	7	9
7201	3	-	1	4	-	-	-	-	-	-	-	-	6	14
7202	-	-	-	2	-	-	-	-	-	-	-	-	1	3
7210	-	-	1	-	-	-	-	-	-	-	-	-	-	1
7213	-	-	-	-	-	-	-	-	-	-	-	-	1	1
7321	-	-	3	-	-	-	-	-	-	-	-	-	2	5
7329	-	-	-	-	-	-	-	-	-	-	-	-	1	1
<b>Totals</b>	<b>16</b>	<b>0</b>	<b>50</b>	<b>26</b>	<b>0</b>	<b>3</b>	<b>82</b>	<b>177</b>						
9000	-	-	14	2	-	-	-	-	2	-	-	-	11	29
9001	1	-	17	9	-	-	-	-	-	-	-	-	18	45
9003	2	-	8	4	-	-	1	-	-	-	1	-	12	28
9013	-	-	8	2	-	-	-	-	-	-	-	1	4	15
9073	4	-	9	-	-	-	-	-	-	-	-	-	20	33
9074	1	-	7	1	1	-	-	-	-	-	-	-	2	12
9076	-	-	16	2	-	-	-	-	-	-	-	-	7	25
9077	-	-	4	-	-	-	-	-	-	-	-	-	-	4
9079	2	-	2	4	-	-	-	-	-	-	-	-	10	18
9081	-	-	5	-	-	-	-	-	-	-	-	-	3	8
9082	2	-	5	1	1	-	-	-	-	-	-	-	7	16
9111	-	-	7	-	-	-	-	-	-	-	-	-	6	13
9112	-	-	1	2	-	-	-	-	-	-	-	-	3	6
9133	4	-	27	6	-	-	1	-	-	-	-	-	29	67
9136	1	-	4	-	-	-	-	-	-	-	-	-	1	6
9138	-	-	10	2	-	-	-	-	-	-	1	-	5	18
9143	1	-	10	-	-	-	-	-	-	-	1	-	9	21

Table 22. Nails: Summary quantification by context and nail type. (Continued on next page.)

Context	Nail type												Totals	
	1	2	A	B	C	D	E	F	G	H	Other	Tack		Stem
9175	4	-	38	35	1	-	-	-	-	-	1	1	40	120
9176	-	-	3	-	-	-	-	-	-	-	-	-	3	6
9190	-	-	1	-	-	-	-	-	-	-	-	-	-	1
9191	-	-	3	-	-	-	-	-	-	-	-	-	1	4
9194	1	-	8	4	-	-	-	-	-	-	-	-	8	21
9195	-	-	-	-	-	-	-	-	-	-	-	-	1	1
9207	1	-	9	4	-	-	-	-	-	-	-	-	13	27
9245	1	-	19	6	-	-	-	-	-	-	-	-	10	36
<b>Totals</b>	<b>25</b>	<b>0</b>	<b>242</b>	<b>87</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>234</b>	<b>601</b>
10000	-	-	-	2	-	-	-	-	-	-	-	-	-	2
10001	1	-	1	-	-	-	-	-	-	-	-	-	2	4
<b>Totals</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>6</b>							
11005	-	-	2	-	-	-	-	-	-	-	-	-	-	2
11028	-	-	-	2	-	-	-	-	-	2	-	-	1	5
11031	-	-	1	-	-	-	-	-	-	-	-	-	-	1
11034	2	-	6	1	-	-	-	-	-	4	-	-	5	18
11036	-	-	-	-	-	-	-	-	-	-	-	-	2	2
11039	-	-	-	1	-	-	1	-	-	1	-	-	3	6
11040	-	-	2	1	-	-	-	-	-	-	-	-	8	11
11048	-	-	-	-	-	-	-	-	-	-	-	1	-	1
11056	-	-	2	6	-	-	-	-	-	1	-	-	2	11
11072	-	-	-	-	-	-	-	-	-	-	-	-	1	1
11105	-	-	-	2	-	-	-	-	-	-	1	-	-	3
11112	-	-	1	4	-	-	-	-	-	-	-	-	4	9
<b>Totals</b>	<b>2</b>	<b>0</b>	<b>14</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>26</b>	<b>70</b>
12001	3	-	3	3	-	-	-	-	-	-	-	-	3	12
12002	4	-	1	-	-	-	-	-	-	-	-	1	2	8
12011	8	-	8	-	-	-	-	-	-	-	1	3	28	48
12016	1	-	-	-	-	-	-	-	-	-	-	-	-	1
<b>Totals</b>	<b>16</b>	<b>0</b>	<b>12</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>33</b>	<b>69</b>
13000	-	-	-	-	-	-	1	-	-	-	-	1	1	3
13001	1	-	2	1	-	-	-	-	-	-	-	1	8	13
13007	1	-	1	2	1	-	-	-	-	-	-	-	5	10
13028	-	-	2	1	-	-	-	-	-	-	-	-	2	5
13029	1	-	-	-	-	-	-	-	-	-	-	-	5	6
13036	2	-	7	4	1	-	-	-	-	-	-	4	18	36
<b>Totals</b>	<b>5</b>	<b>0</b>	<b>12</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>39</b>	<b>73</b>
15001	1	-	1	-	-	-	-	-	-	-	-	-	1	3
15070	-	-	2	-	-	-	-	-	-	-	-	-	2	4
15108	-	-	-	-	-	-	-	-	-	-	-	-	1	1
15200	-	-	-	1	-	-	-	-	-	-	-	-	1	2
15207	-	-	-	-	-	-	-	1	-	-	-	-	0	1
15211	-	-	-	-	-	-	-	-	-	-	-	-	1	1
15295	-	-	-	-	-	-	-	-	-	-	-	-	2	2
<b>Totals</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>14</b>
18000	1	-	4	8	1	-	-	-	-	2	-	-	20	36
18001	13	-	82	8	3	-	1	-	-	1	1	-	91	200
18002	-	-	1	-	-	-	-	-	-	-	-	-	-	1

Table 22. Nails: Summary quantification by context and nail type. (Continued on next page.)

Context	Nail type													Totals
	1	2	A	B	C	D	E	F	G	H	Other	Tack	Stem	
18054	-	-	4	4	-	-	-	-	-	-	-	-	11	19
18056	-	-	-	-	-	-	-	-	-	-	-	-	1	1
18061	-	-	1	2	-	-	-	-	-	-	-	-	2	5
18065	-	-	3	6	-	-	-	-	-	-	-	-	7	16
18070	-	-	23	6	1	-	-	-	-	-	10	-	16	56
18071	-	-	3	-	-	-	1	-	-	-	-	-	8	12
18083	-	-	-	-	-	-	-	-	-	-	-	-	3	3
18084	-	-	-	-	-	-	-	-	-	-	-	-	3	3
18085	-	-	4	1	-	-	-	-	-	-	-	1	1	7
18102	-	-	2	1	-	-	-	-	-	-	-	-	-	3
18108	5	-	20	4	1	-	-	-	2	-	1	-	25	58
18121	-	-	1	-	-	-	-	-	-	-	-	-	1	2
18159	-	-	2	-	-	-	-	-	-	-	-	-	2	4
<b>Totals</b>	<b>19</b>	<b>0</b>	<b>151</b>	<b>40</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>12</b>	<b>1</b>	<b>193</b>	<b>430</b>
19001	1	-	1	1	-	-	-	-	-	-	-	-	1	4
<b>Totals</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>4</b>
<b>Totals, all contexts</b>	<b>173</b>	<b>1</b>	<b>1,245</b>	<b>467</b>	<b>46</b>	<b>8</b>	<b>11</b>	<b>11</b>	<b>18</b>	<b>12</b>	<b>57</b>	<b>24</b>	<b>1,760</b>	<b>3,833</b>

Table 22. Nails: Summary quantification by context and nail type (continued).

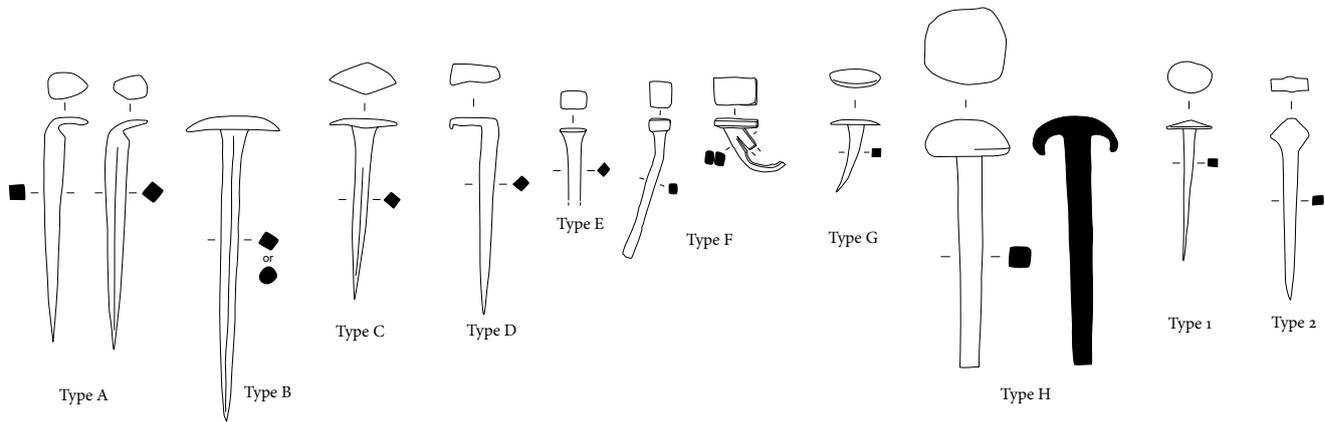


Figure 146. Nails: Zeugma Types A-H. Manning Types 1 and 2.

*Holdfasts and Wall Hooks*

Catalogue number	Context	Size (mm)	Description
IR540	2030	L. 82	Holdfast or L-shaped staple, with tapering stem and square section.
IR541	2095	L. 57	Holdfast. Consists of a short tapering round section stem and what appears to be a small loop coming off at right angles from the wider end. Identification uncertain due to heavy corrosion.
IR542	2108	L. 95	Small wall hook with tapering spike with traces of wood still adhering. Fig. 147.
IR543	2269	L. 36	Wall hook or holdfast. Incomplete stem of rectangular section ending in a hook at one side with a scar suggesting a further matching hook on the other side.
IR544	11040	L. 112	Possible holdfast. Tapering point formed from strip of rectangular section. Broken and bent at the wider end.
IR545	18001	–	Holdfast or wall hook, comprises tapering stem of subrectangular or circular section. It is split at the top. One arm is bent over and is formed into an oval flange. The other arm is broken but may have been similar. Fig. 148.

*Collars*

Catalogue number	Context	Size (mm)	Description
IR546	2075	W. 100	Two thirds of an iron collar formed from rectangular section strip with two nails to secure the collar. From the position of the surviving nails and a nail hole, it would seem that there were four nails positioned equidistant from each other around the collar.
IR547	2080	W. 40	Collar of rectangular section, only about one quarter survives.
IR548	2158	L. 73	Collar or staple formed from rod or bar of rectangular cross section bent round three sides of a square. Possibly a square collar rather than a staple.
IR549 (SF 95)	5003	L. 65	Probable collar, possibly joiner's dog. Formed from rectangular section strip and bent into a square shape.
IR550	5048	L. 41; W. 65	Collar formed from iron strip of rectangular section.
IR551 (SF 224)	11028	W. 68	Square collar of rectangular cross section. There is a nail hole with a nail piercing one face. Fig. 149.
IR552 (SF 864)	18060	D. 62	Circular collar, or possibly part of a casing.

*Spikes*

Catalogue number	Context	Description
IR553	2008	Tapering spike of rectangular section, possibly from a staple or dog.
IR554	2080	Tapering spike, rectangular cross section, slight thickening towards the point.
IR555	9175	Short tapering spike. Could be part of a staple or split spike loop.
IR556	12001	Tapering spike of narrow thin rectangular section with traces of mineralized wood. May be the spike from a small U-shaped staple or dog.
IR557	12001	Tapering spike of narrow thin rectangular section with traces of mineralized wood. May be the spike from a small U-shaped staple or dog.
IR558	18070	Tapering slightly curved spike of square section.

*Nails*

A range of nail types was recovered (fig. 146).

- Type A (IR559–560): Tapering square-section stems with heads created by hammering flat the end and folding over to form a flange. If a nail with a small head that could be driven fully into wood was required, the flange could be folded down again to make it much smaller. This seems to be a distinctive type of nail which served as the equivalents of both of Manning's Types 1 and 2 (Manning 1985a, 134–7, fig. 32). Occur in lengths from ca. 50 mm to at least 170 mm.
- Type B (IR561–564): Tapering square section stem and large slightly dome circular head. Used for fixing door straps and for securing latch hooks. Most measure around ca. 150–160 mm, but they range from ca. 100 mm to ca. 180 mm. Head diameter 30–40 mm, but up to 50 mm.
- Type C: Tapering square section stem with flat diamond-shaped head. Uncommon.
- Type D: Tapering square section stem. The head is L-shapes, with a turned-over end. Difficult to distinguish from wall hooks/holdfasts. Uncommon.

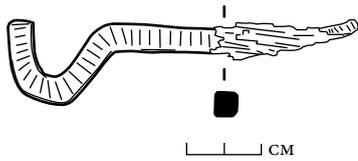


Figure 147. IR542.

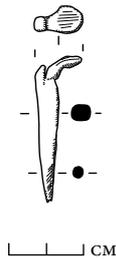


Figure 148. IR545.

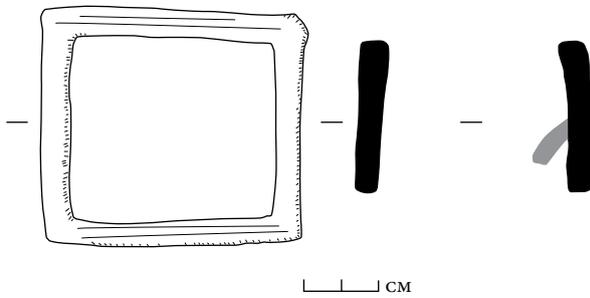


Figure 149. IR551.

- Type E: Tapering square-section stem, with expanded square- or rectangular-section head. Uncommon.
- Type F: Square-section stem, with flat rectangular head with squared edge. Variant with split stem. Uncommon.
- Type G: Tapering square-section stem, with elongated oval head, slightly domed. Small. Uncommon.
- Type H: Tapering square-section stem, with large hollow domed head. Large nails.

In addition to these, both Manning Type 1 and Type 2 nails were found.

The large number of nails recovered have not been individually catalogued, although examples of Types A and B are listed and illustrated (IR559–564). Instead they have been listed by context and type (table 22) and by trench and nail type (table 19; see p. 186).

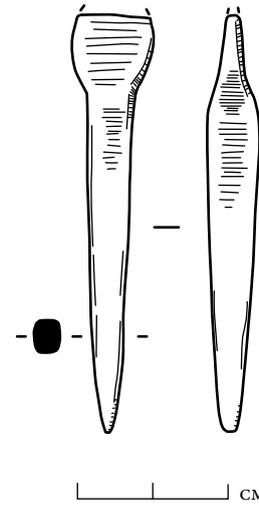


Figure 150. IR559.

IR559 (context 9175)  
Unfinished Type A nail  
L. 112 mm

FIG. 150

Probable unfinished Type A nail. Tapering spike of square section with a flattened flange or head of approximately oval shape. Similar to IR560.

IR560 (context 9176)  
Unfinished Type A nail  
L. 113 mm

Probable unfinished Type A nail. Tapering spike of square section with flattened flange or head, oval-shaped. Similar to IR559.

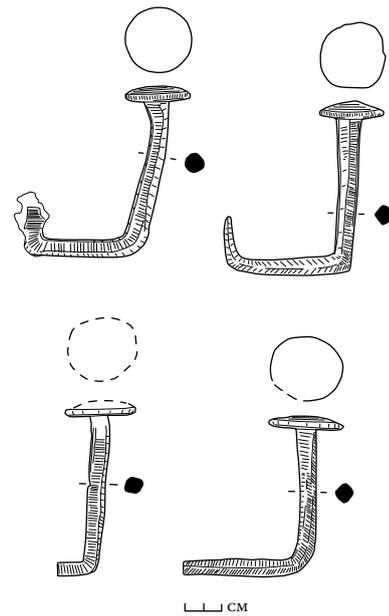


Figure 151. IR561–564.

IR561-564 (SF 76, context 5000)

Type B nails × 4

L. 95 mm

FIG. 151

Type B. Door nails with slightly domed circular heads and tapering square-section stems. The stems are all bent at right angles between 72 and 76 mm from the underside of the head. Where they survive, the tips are bent through a further right angle.

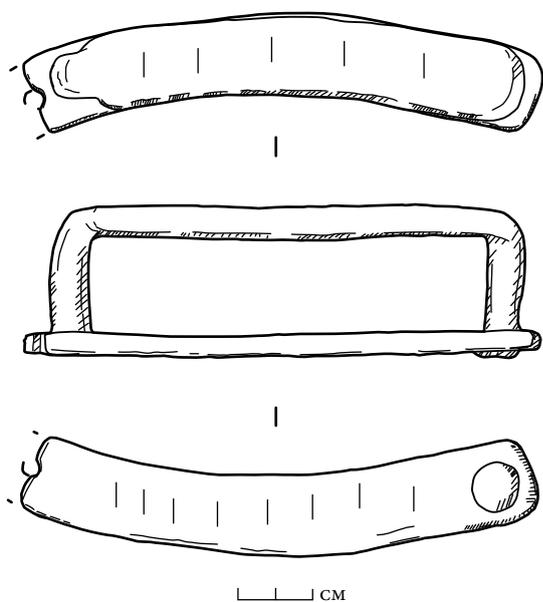


Figure 152. IR565.

**Unidentified Objects**

IR565 (SF 2058, context 2008)

Object of unknown function

L. 137 mm

FIG. 152

Object formed from curved bar or strip of rectangular section. One end is rounded. The other end is broken and has the remains of a nail hole. Attached to the bar is a possible handle formed from a rectangular-section strip, the ends of which are bent down to form rods that are secured through the main bar.

IR566 (context 2014)

Object of unknown function

Formed from two pieces of heavy rod or bar. One portion is curved at one end and of near circular section. At the other end it widens to an oval section and is fastened to a second bar by a substantial nail or rivet with a rectangular-section stem. Only a short section of the second bar survives comprising an oval-section expansion with a nail hole through it. The hole is very badly laminating and splitting.

IR567 (context 9175)

Object of unknown function

L. 137 mm

Length of square-section bar with a loop formed at one end. The bar appears to continue, although now broken, to form an A-shaped suspension. The other end is incomplete but appears to be bent over.

*Unidentified Fragments*

IR568 (context 2008)

Unidentified

L. 59 mm; L. 50 mm

Two fragments. Both have one square corner. The other edges are broken. The longer piece has a thin piece of strip apparently attached to the back, which may be part of a loop for fastening. It is unlikely that these pieces form part of a helmet although they may form pieces of armor.

IR569 (context 2009)

Unidentified

Object apparently formed from thin sheet. One flat face with a possible hole. The other side is curved to create a hollow pocket.

IR570 (context 2011)

Unidentified

W. 48 mm

Fragments of parallel-sided strip with a lentoidal section. Possibly section of sword blade.

IR571 (context 2011)

Unidentified

L. 90 mm

Bar slightly curved. Square section formed into a loop at one end.

IR572 (context 2013)

Unidentified

L. 54 mm

Object formed from square-section bar with a chisel edge at one end. It tapers away at the other. Unlikely to be a tool.

IR573 (context 2014)

Unidentified

Corroded object with ear-shaped loop. Function unknown.

IR574 (context 2014)

Looped peg

L. 132 mm

Tapering shank formed from strip of rectangular section. At the top there is a loop formed to one side by extending and rolling over the corner of the head.

**IR575** (context 2014)

**Tapering point**

L. 61 mm

Tapering point of circular(?) section with a thin rod of square section sticking out from one side. Function uncertain.

**IR576** (context 2039)

**Possible handle**

L. 85 mm

Possible handle. Y-shaped object formed from circular rod. The longer arm appears to be a handle. The shorter arms presumably continued either to form a complete circle or to form attachments for the handle.

**IR577** (context 2039)

**Possible handle**

L. 50 mm

Possible handle formed from oval-section strip, broken. Surviving fragment seems to form one end of the object. The strip is bent back on itself and then formed into a foot or bar to attach the handle. Identification uncertain.

**IR578** (context 2039)

**Unidentified**

L. 130 mm

Object formed from oval-section rod, straight with a loop formed at one end and broken at the other.

**IR579** (context 2039)

**Unidentified**

L. 170 mm

Object of uncertain function forming a zigzag shape. Possibly some sort of hinged object. The end tapers to a point, heavily encrusted.

**IR580** (context 2039)

**Unidentified**

Object of uncertain function formed from sheet. One part of the sheet is folded over another and joined by a nail. This piece seems to form an almost conical object. Beneath is another piece of sheet, which is folded to form a right angle. Its function is far from clear but it is probable that the object was broken before deposition.

**IR581** (context 2039)

**Unidentified**

L. 50 mm

Piece of strip apparently ending in a rounded end. An incomplete subrectangular bar or lug attached to one face. Could be part of the leg of a folding table (**IR100**)

**IR582** (context 2098)

**Unidentified**

D. 35 mm

Roughly circular flat object originally attached to a strip. No obvious nail hole, suggesting that it is not part of a binding.

**IR583** (context 2099)

**Unidentified**

L. 59 mm

Object comprising two thin rods or narrow strips parallel but spaced apart. One at least is expanded at one end, and the objects appear to meet at this point. The other ends of the objects are broken. Function uncertain.

**IR584** (context 2141)

**Unidentified**

W. 85 mm

Fan-shaped object. The curved edge appears to be thinner. At the apex there is a scar, which suggests that originally the object had a circular-section handle or stem.

**IR585** (context 2181)

**Unidentified**

L. 82 mm

Object with diamond-shaped expansion of square cross section, possibly pierced for a nail. The long points are extended as thin square-section bar. There is a small piece of copper alloy sheet adhering to one face. Function uncertain.

**IR586** (context 2242)

**Unidentified**

L. 60 mm

Curved piece of plate or channel. Cross section is slightly asymmetrical. One edge is thicker than the other.

**IR587** (context 2269)

**Unidentified**

L. 60 mm

Short length of bar of circular section formed into a neat loop at one end.

**IR588** (context 2276)

**Unidentified**

Hollow domed or spherical object formed from thin sheet. Only part survives.

**IR589** (context 2283)

**Unidentified**

L. 46 mm

Fragment formed from thin bar or rod of rectangular section, hooked at each end. One hook is at right angles to the line of the bar. Function unclear.

**IR590** (context 2283)

**Unidentified**

L. 44 mm

Fragments formed from thin bar or rod of rectangular section. It is bent to form two sides of a square with a third piece extending off from one corner. Function is unclear.

**IR591** (context 2285)

**Unidentified**

L. 23 mm

Small piece of sheet roughly square in shape with one small rectangular hole and two possible cutouts on one edge. Function unclear.

**IR592** (context 2285)

**Unidentified**

L. 38 mm

Bar of rectangular section, which may be complete. At right angles to it a tapering strip comes off. Function uncertain.

**IR594** (context 7060)

**Unidentified**

L. 73 mm

Object formed from piece of square-section bar. Flattened and widened at one end to form a spatulate end.

**IR595** (context 9000)

**Possible socket**

W. 45 mm

Two fragments that do not join but that appear to be part of a large socket. Insufficient material survives to be certain of identification.

**IR596** (context 9003)

**Possible socket (in two fragments)**

Two fragments, which do not join, possibly from socket or tube.

**IR597** (context 9073)

**Unidentified**

L. 106 mm

Object comprising bar of rectangular section, broken at one end, widening at the other, changing to a lenticular section but broken off. Part of handle of tool or similar item?

**IR598** (context 9074)

**Unidentified**

L. 74 mm

Heavily encrusted object of rectangular section, though it does not appear to be a blade. One edge is strongly curved. The opposite edge is more or less straight.

**IR599** (SF 708, context 9076)

**Unidentified**

L. 102 mm

Curved tapering strip of rectangular section. Uncertain function but not a blade.

**IR600** (context 9136)

**Possible socket**

Socket or tubing, incomplete.

**IR601** (context 9175)

**Unidentified**

L. 43 mm

Piece of sheet, apparently pinched up to form a circular-section tang at one end. Too little survives to be certain of its original function.

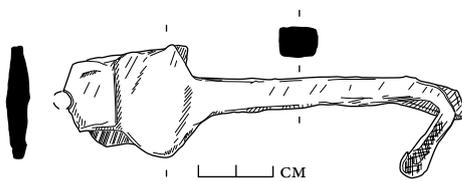


Figure 153. IR593.

**IR593** (SF 91, context 5021)

**Unidentified**

L. 107 mm

FIG. 153

Possible blade fragment of lenticular cross section, with a handle or tang of rectangular section bent at the end. Identification as a possible blade fragment is made uncertain by the clear evidence of a square nail hole through the extant portion of the blade.

**IR602** (SF 240, context 11028)**Unidentified**

L. 59 mm

Object formed from tapering rod of iron. Narrow end folded back on itself to form a loop and a point left sticking out at an angle.

**IR603** (SF 228, context 11028)**Unidentified**

L. 49 mm

Curved flat piece of iron, broken at the wider end, with a possible nail through the center.

**IR604** (SF 7, context 11039)**Unidentified**

L. 40 mm

T-shaped fragment.

**IR605** (context 11056)**Unidentified**

Object comprised of short length of bar of rectangular section, bent, and terminating in a diamond-shaped expansion, which may be pierced with a hole. Function uncertain.

**IR606** (context 12001)**Unidentified**

L. 67 mm

Formed from bar or strip of rectangular section. It is bent over at one end to form almost a loop or hook. It tapers to the other end. It is then twisted and bent at right angles.

**IR607** (context 12001)**Unidentified**

W. 38 mm

Object comprising ring of subrectangular cross section (incomplete) with a small loop apparently attached to the outer face. Identification is difficult due to encrustation. Function uncertain.

**IR608** (context 15286)**Unidentified**

L. 26 mm

Object formed from strip folded around a piece of rod or nail, perhaps to form a pivot. The strip is of rectangular section.

**IR609** (context 18001)**Possible socket**

Possible socket or length of tube. Short length, heavily encrusted with slag-like material.

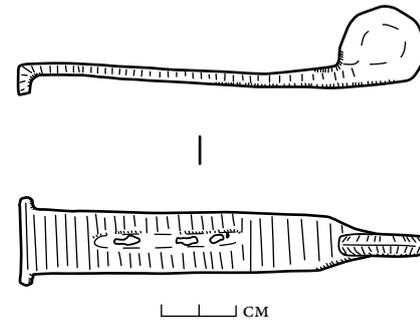


Figure 154. IR610.

**IR610** (context 18001)**Unidentified**

L. 110 mm

FIG. 154

Object comprising strip of thin subrectangular section that widens slightly at one end and is bent at a right angle but is broken. The other end narrows and is formed into a rolled-over loop or a flat, roughly circular flange. It is unclear which is the case. In the center of the strip there appears to be an elongated slot running along part of its length. The slot is not quite parallel to the edges of the strip, and it is not clear whether it is continuous or whether it consists of a series of elongated holes.

**IR611** (context 18001)**Unidentified**

L. 50 mm

Slightly curved strip of rectangular section, with another strip coming out at right angles from one face. No nail holes.

**IR612** (context 18070)**Unidentified**

L-shaped corroded fragment. Could be a small key.

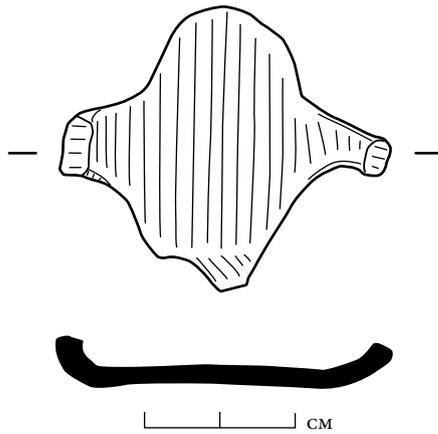


Figure 155. IR613.

IR613 (context 18108)

Unidentified

L. 44 mm; W. 39 mm

FIG. 155

Object comprising two lobes, one of which thins towards the edge and is turned up slightly. The other seems to be slightly thicker. The lobes are slightly asymmetrical in plan. At each end there are thin rectangular extensions that turn up sharply and may have formed a loop. Possibly some form of clamp?

IR614 (sf 873, context 18108)

Unidentified

L. 47 mm

Pointed object of rectangular section with possible rivets or nails visible on one face.

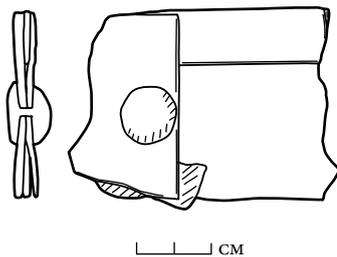


Figure 156. IR615.

*Miscellaneous Bindings*

IR615 (context 9230)

Possible box or chest binding

L. 73 mm

FIG. 156

Piece of plate with thin strips overlaid and riveted. Possibly part of a box or chest binding. There is a comparable fragment from context 9231 (table 23).

IR616 (sf 4008, context 10000)

Binding

L. 90 mm

FIG. 157

Formed from thin broad strip, with two elongated holes or slots off the center line, and a single extant nail hole.

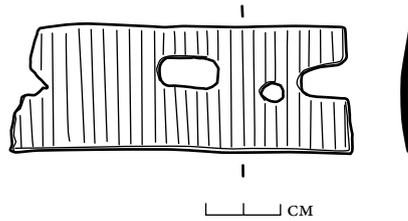


Figure 157. IR616.

Context	Fragment type										Totals
	Binding	Bar	Rod	Block	Ring	Plate	Sheet	Strip	Wire	Other	
2000	3	6	-	-	-	-	4	-	-	-	13
2001	-	-	-	-	-	-	-	1	-	-	1
2002	-	-	-	-	-	-	1	-	-	-	1
2006	10	-	-	-	-	-	10	-	-	-	20
2008	-	1	-	-	-	-	-	-	-	-	1
2009	-	-	-	-	-	1	1	-	-	-	2
2010	1	-	-	1	-	-	-	-	-	-	2
2011	-	4	3	-	-	12	5	2	-	-	26
2012	1	4	-	-	-	1	1	2	-	-	9
2013	-	-	1	-	-	-	3	-	-	-	4
2014	1	6	1	-	-	-	5	3	-	-	16
2025	-	2	-	-	-	-	-	-	-	-	2
2031	-	1	-	-	-	1	-	-	-	-	2
2032	-	-	-	-	-	-	-	1	-	-	1
2035	-	-	1	-	-	-	-	-	-	-	1
2038	4	-	-	-	-	-	-	-	-	-	4
2039	-	5	1	-	1	3	5	1	-	-	16
2043	-	-	-	-	-	2	-	1	-	-	3
2046	-	-	-	-	-	-	-	5	-	-	5
2050	1	-	-	-	-	-	-	5	-	-	6
2075	-	2	1	-	-	-	-	1	-	-	4
2080	-	-	1	-	-	1	1	5	-	-	8
2092	-	-	-	-	-	-	-	-	-	1	1
2095	1	-	-	-	-	-	-	-	-	-	1
2099	8	5	-	-	1	1	-	-	-	-	15
2105	-	-	-	-	-	-	-	1	-	-	1
2107	-	1	-	-	-	-	-	-	-	-	1
2108	-	3	1	-	-	-	-	-	-	-	4
2129	-	-	1	-	-	1	-	-	-	-	2
2139	-	-	-	-	-	-	1	-	-	-	1
2141	1	-	2	-	1	1	-	2	-	-	7
2154	-	-	-	-	-	-	2	-	-	-	2
2177	-	-	-	-	1	-	-	-	-	-	1
2182	1	4	-	-	-	-	-	-	-	-	5
2189	-	1	-	-	-	-	1	2	-	-	4
2191	-	-	-	-	-	-	1	-	-	-	1
2238	-	-	-	-	-	-	2	-	-	-	2
2241	-	-	-	-	-	4	-	-	-	-	4
2242	-	1	-	-	-	9	-	-	-	-	10
2251	1	2	-	-	-	-	-	-	-	-	3
2256	-	-	-	-	-	-	1	4	-	-	5
2261	-	1	-	-	-	2	-	-	-	-	3
2263	-	-	-	-	-	5	-	-	-	-	5
2269	2	11	-	-	-	-	2	2	-	-	17
2275	1	-	-	1	-	-	-	-	-	-	2
2276	-	2	-	-	-	-	-	-	-	-	2
2278	3	-	-	-	1	11	-	1	-	-	16
2283	1	1	-	-	1	-	-	-	-	-	3
2285	1	8	-	-	-	-	3	6	-	-	18

Table 23. Miscellaneous fragments: Summary quantification by context and type. (Continued on next page.)

Context	Fragment type										Totals
	Binding	Bar	Rod	Block	Ring	Plate	Sheet	Strip	Wire	Other	
2294	28	3	-	-	-	-	93	9	-	-	133
2301	-	-	-	-	1	-	-	-	-	-	1
2312	-	4	-	-	-	-	-	1	-	-	5
2353	1	-	-	-	-	-	-	-	-	-	1
2376	-	1	-	-	1	-	1	-	-	-	3
2379	-	1	-	-	-	-	-	3	-	-	4
2383	-	-	-	-	-	-	-	1	-	-	1
2513	-	-	-	-	-	-	-	1	-	-	1
<b>Totals</b>	<b>70</b>	<b>80</b>	<b>13</b>	<b>2</b>	<b>8</b>	<b>55</b>	<b>143</b>	<b>60</b>	<b>0</b>	<b>1</b>	<b>432</b>
5003	-	-	-	-	1	-	-	3	-	-	4
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>4</b>
7000	-	-	-	-	-	1	-	-	-	-	1
7002	-	-	-	-	-	1	-	2	-	-	3
7003	-	-	-	-	-	-	-	2	-	-	2
7004	-	-	2	-	-	-	-	1	-	-	3
7005	-	-	-	-	-	-	-	1	-	-	1
7007	-	-	-	-	1	-	-	1	-	-	2
7023	-	-	-	-	1	-	-	1	-	-	2
7026	-	2	-	-	-	-	-	-	-	-	2
7027	-	-	-	-	-	-	-	1	-	-	1
7036	1	-	-	-	1	-	-	-	-	-	2
7060	-	1	-	-	-	-	-	-	-	-	1
7061	-	-	-	-	-	2	-	-	-	-	2
7062	-	-	-	-	-	-	-	1	-	-	1
7073	-	-	1	-	-	-	-	-	-	-	1
7076	1	-	-	-	-	-	-	-	-	-	1
7114	-	1	-	-	-	-	-	1	-	-	2
7186	17	-	-	-	-	-	-	-	-	-	17
7321	-	-	-	-	-	-	-	1	-	-	1
<b>Totals</b>	<b>19</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>45</b>
9000	2	-	-	-	-	-	2	6	-	-	10
9001	-	2	1	-	1	-	-	1	-	-	5
9003	2	3	3	-	-	-	1	2	-	1	12
9013	-	2	-	-	-	-	-	1	-	-	3
9073	-	1	1	-	-	3	-	5	-	-	10
9074	-	-	-	-	-	7	-	2	-	-	9
9076	1	-	-	-	1	-	-	3	-	-	5
9079	-	-	-	-	-	-	-	-	1	-	1
9081	-	-	-	-	-	4	-	1	-	-	5
9082	-	-	-	-	-	-	2	-	-	-	2
9111	-	-	-	-	-	7	-	1	-	-	8
9112	-	-	-	-	-	5	1	-	-	-	6
9133	2	1	-	-	1	10	-	2	-	-	16
9136	-	-	-	-	-	-	7	1	-	-	8
9138	-	1	1	-	-	-	-	1	-	-	3
9143	-	-	1	-	-	-	1	1	-	-	3
9144	-	1	-	-	-	-	1	-	-	-	2
9175	10	4	2	-	-	2	2	5	-	-	25

Table 23. Miscellaneous fragments: Summary quantification by context and type. (Continued on next page.)

Context	Fragment type										Totals
	Binding	Bar	Rod	Block	Ring	Plate	Sheet	Strip	Wire	Other	
9178	1	-	-	-	-	-	1	-	-	-	2
9194	-	1	-	-	-	2	3	2	-	-	8
9207	-	-	-	-	-	1	-	1	-	-	2
9227	1	-	-	-	-	-	-	-	-	-	1
9230	-	-	-	-	-	1	-	-	-	-	1
9231	-	-	-	-	-	1	-	-	-	-	1
9245	3	-	-	-	-	-	-	3	-	-	6
<b>Totals</b>	<b>22</b>	<b>16</b>	<b>9</b>	<b>0</b>	<b>3</b>	<b>43</b>	<b>21</b>	<b>38</b>	<b>1</b>	<b>1</b>	<b>154</b>
10000	1	-	-	-	1	-	-	-	-	-	2
10034	-	-	-	-	-	1	-	-	-	-	1
<b>Totals</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>
11028	1	3	-	-	-	-	-	-	-	-	4
11039	1	2	-	-	-	-	-	-	-	-	3
11056	-	-	-	-	-	-	-	2	-	-	2
<b>Totals</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>9</b>
12001	-	2	-	-	1	-	-	1	-	-	4
12002	-	1	-	-	-	-	-	1	-	-	2
12003	-	-	1	-	-	-	-	2	-	-	3
12011	-	-	-	-	-	-	-	2	-	-	2
<b>Totals</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>11</b>
13001	-	-	-	-	-	10	36	2	-	-	48
13028	1	-	-	-	-	-	3	-	-	-	4
13029	-	-	-	-	-	-	2	-	-	-	2
13035	-	-	-	-	-	1	-	-	-	-	1
13036	-	1	-	-	-	6	-	1	-	-	8
<b>Totals</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>41</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>63</b>
15108	-	-	-	-	-	1	-	-	-	-	1
15286	-	-	-	-	-	-	1	1	-	-	2
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>
18000	-	-	-	-	-	2	-	-	1	-	3
18001	-	9	1	-	-	17	4	10	-	-	41
18054	1	-	-	-	-	-	-	-	-	-	1
18070	-	4	-	-	-	5	45	3	-	-	57
18108	5	4	-	-	1	26	1	5	-	-	42
18159	-	-	-	-	-	-	-	1	-	-	1
<b>Totals</b>	<b>6</b>	<b>17</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>50</b>	<b>50</b>	<b>19</b>	<b>1</b>	<b>0</b>	<b>145</b>
<b>Totals, all contexts</b>	<b>121</b>	<b>126</b>	<b>27</b>	<b>2</b>	<b>18</b>	<b>171</b>	<b>256</b>	<b>144</b>	<b>2</b>	<b>2</b>	<b>869</b>

Table 23. Miscellaneous fragments: Summary quantification by context and type (continued).

## NOTES

1. There were no iron finds from Trench 1. I would like to thank the following OA staff—Adam Brossler, Andy Millar, Serap Guler, and particularly Phillipa Walton and Luke Adams—for their help and support during my visit to Birecik to study the metalwork. Phillipa helped with the recording of the metalwork and Luke Adams was responsible for the original drawings of selected ironwork. Thanks are also due to Bruce Sampson for photographing selected items, to the director and staff of the Gaziantep Museum for allowing access to the iron finds held in their stores, and Said Yilmaz, Gaziantep Museum representative, for making bulk finds stored at Birecik available for study. Grateful mention should also be made of the Turkish support staff at the Birecik compound. I would also like to thank William Aylward and Jennifer Tobin for their support and for providing a rapid response to my questions and queries. Finally I would like to thank Professor William Manning, who has provided comments on certain items in the assemblage. These are specifically noted in the text.
2. Not included here are iron objects from areas excavated by other teams in 2000, namely the Gaziantep Museum, the University of Nantes, and the Zeugma Initiative Group.
3. The x-ray plates were created by OA for the PHI rescue excavations at Zeugma and deposited in the Gaziantep Museum.
4. In the catalogue, items appearing without measurement were either unavailable for detailed autopsy or too fragmentary to measure.
5. Waldbaum 1983, 28. In Romano-British artifact studies, Professor Manning pioneered this approach to the publication of ironwork in a number of important reports (e.g., Manning 1972, 1985a, and 1985b).
6. Crummy 1983.
7. The finds from the York legionary fortress: Cool et al. 1995, and from Kingscote and Wycomb: Timby 1998.
8. In general, Allison 1995; 1997b; 1992b. For problems of identification and categorization: Allison 1999c; 1999b, 9–10.
9. In particular Schiffer 1996; see also LaMotta and Schiffer 1999 on domestic floor assemblages.
10. For limitations on spatial analysis at Zeugma, see Aylward, volume 1.
11. E.g., Cool 1995, 1998a, 1998b; Allison 1992a, 1995, 1997a, 1997b, 2001.
12. Allison 1995, 1997b.
13. York: Cool 1995; Castleford: Cool 1998a.
14. Allison 1992a, 1995, 1997b.
15. George 1997, Nevett 1997.
16. A point made by Ault and Nevett 1999, 51–2.
17. Allison 1995, 149.
18. Allison 1995, 157–8.
19. Allison 1992a, 50.
20. Allison 1992a, 1995, 1997a, 1997b, and 2001. See also Allison 2004. Berry 1997a, 1997b.
21. E.g., Ellis 2000, 159–60.
22. Allison 1999a, 8; Goldberg 1999, 157.
23. Ellis 2000, 160; cf. Allison 2001, 185, who stresses the divergence between the intended use and actual use of domestic space.
24. “Query” is the category to which finds that have clear form but that cannot be identified to a function are assigned. “Unknown” is the category to which fragments and shapeless pieces are assigned. Usually these are quite small pieces. They are quantified as part of the process of characterizing the assemblage.
25. For this and other mosaics from the PHI rescue excavations of 2000 at Zeugma, see Dunbabin, volume 1.
26. East of Room 9E, the space designated 9328 by the excavators was not fully investigated, and this may explain the absence of iron finds there.
27. For textiles found during the PHI rescue excavations of 2000 at Zeugma, including fragments of linen from Trench 9, see Cole, this volume, TX1–TX3.
28. Aphrodisias: Smith and Ratté 2000, 223 and fig. 3; Sardis: Waldbaum 1983, 79, nos. 424–8, pls. 26, 423 and 27, 424.
29. E.g., from Britain: Liversidge 1955, 28–37, and illustrations 38–40.
30. Mols 1999.
31. Sculptural representations: e.g., Liversidge 1955, illus. 1–21, 32, 35–6, and 68–9; coins: e.g., in particular folding tripods: Klatt 1995, Abb. 104–112; wall paintings: e.g., Pompeii, the House of Lucretius Fronto (V, 4, A): Clarke 1991, pl. 8 and fig. 73, also Nappo 1998 125; Villa of the Mysteries: Nappo 1998, 154–7.
32. Richter 1966, 97–116.
33. For charred remains of wood discovered in the PHI rescue excavations at Zeugma in 2000, see Gale, this volume. For a fragment of wooden furniture, see Aylward, volume 1.
34. Liversidge 1955, illustrations 68–9. For general discussions of furnishings in the domestic setting see McKay 1975, chapter 6, and Ellis 2000, chapter 5, and also Ellis 1997.
35. Ellis 1994, 70.
36. See for example Manning 1985a, 88–9, pls. 37–9, O11–O20; Feugère et al. 1992, 20–2: nos. 1–3.
37. For window glass from Zeugma recovered in large quantities, see Grossmann, volume 2.
38. Waldbaum 1983, 68, pl. 22, nail types 1–3.
39. See discussion of the military community at Zeugma in other chapters in this volume by Scott, Elton, Hartmann and Speidel, by Reynolds in volume 2, and by Tobin in volume 1.
40. Manning (1985, 162, 170–171, fig. 34) noted that the socket mouth diameters of spear heads and bolt heads differed and that the measurements clustered. Bolt heads had socket mouth diameters of 10 mm, whereas spear socket mouth diameters were centred about 18 mm to 20 mm.
41. I would like to thank Professor W.H. Manning for his suggestion that some of these knives could be froes and for drawing my attention to the Rißtissen example.
42. Professor Manning kindly commented on the braziers.
43. I owe this point to Professor Manning.
44. For this and other thresholds in the Zeugma houses, see Tobin, volume 1.

## BIBLIOGRAPHY

- Allason-Jones, L., and M.C. Bishop. 1988. *Excavations at Roman Corbridge: The Hoard*. English Heritage Archaeological Report 7. London: Historic Buildings and Monuments Commission for England.
- Allison, P.M. 1992. “Artefact Assemblages: Not the ‘Pompeii Premise.’” In *Papers of the Fourth Conference of Italian Archaeology: New Developments in Italian Archaeology*, pt. 1, edited by E. Herring, R. Whithouse, and J. Wilkins, 49–56. London: Accordia Research Centre.
- . 1994. “The Distribution of Pompeian House Contents and Its Significance.” Ph.D. diss., University of Sydney.
- . 1995. “Pompeian House Contents: Data Collection and Interpretative Procedures for a Reappraisal of Roman Domestic Life and Site Formation Processes.” *Journal of European Archaeology* 3.1:145–76.
- . 1997a. “Why Do Excavation Reports Have Finds Catalogues?” In *Not So Much a Pot, More a Way of Life*, edited by C.G. Cumberpatch and P.W. Blinkhorn, 77–84. Oxford: Oxbow Books.
- . 1997b. “Artefact Distribution and Spatial Function in Pompeian Houses.” In *The Roman Family in Italy*, edited by B. Rawson and P. Weaver, 321–54. Oxford: Oxford University Press.

- , ed. 1999a. *The Archaeology of Household Activities*. London: Routledge.
- . 1999b. Introduction to *The Archaeology of Household Activities*, edited by P.M. Allison, 1–18. London: Routledge.
- . 1999c. “Labels for Ladles: Interpreting the Material Culture of Roman Households.” In *The Archaeology of Household Activities*, edited by P.M. Allison, 57–77. London: Routledge.
- . 2001. “Using the Material and the Written Sources: Turn of the Millennium Approaches to Roman Domestic Space.” *AJA* 105:181–208.
- Ault, B.A., and L.C. Nevett. 1999. “Digging Houses: Archaeologies of Classical and Hellenistic Greek Domestic Assemblages.” In *The Archaeology of Household Activities*, edited by P.M. Allison, 43–56. London: Routledge.
- Baatz, D. 1966. “Zur Geschützbewaffnung römischer Auxiliärtruppen in der frühen und mittleren Kaiserzeit.” *BjB* 166:194–207.
- Bailey, D.M. 1996. *A Catalogue of the Lamps in the British Museum*. Vol. 4, *Lamps of Metal and Stone, and Lampstands*. London: British Museum Press.
- Berry, J. 1997a. “Household Artefacts: Towards a Re-interpretation of Roman Domestic Space.” In *Domestic Space in the Roman World: Pompeii and Beyond*, edited by R. Laurence and A. Wallace-Hadrill, 183–95. *JRA* Suppl. 22. Portsmouth: Journal of Roman Archaeology.
- . 1997b. “The Conditions of Domestic Life in Pompeii in A.D. 79: A Case-Study of Houses 11 and 12, Insula 9, Region I.” *PBSR* 65:103–25.
- Birley, A. 1997. *Security: The Keys and Locks*. Vindolanda Research Reports, Vol. 4, fasc. 2, *The Small Finds*. Greenhead: Vindolanda Trust.
- Bishop, M.C. 2002. *Lorica Segmentata*. Vol. 1, *A Handbook of Articulated Roman Plate Armour*. Duns: The Armatura Press.
- Bishop, M.C., and J.C.N. Coulston. 1993. *Roman Military Equipment: From the Punic War to the Fall of Rome*. London: Bastford.
- Boehmer, R.M. 1972. *Die Kleinfunde von Boğazköy, aus den Grabungskampagnen 1931–1939 und 1952–1969*. Berlin: Boğazköy-Hattuša VII.
- Büyükkolancı, M., and E. Trinkl. 2003. “Ein Marmorrelief mit der Darstellung einer Säge.” *Forum Archaeologiae* 26/III (2003). <http://farch.net> (8 June 2004).
- Clarke, J.R. 1991. *The Houses of Roman Italy, 100 B.C.–A.D. 250: Ritual, Space and Decoration*. Berkeley: University of California Press.
- Cool, H.E.M. 1995. “An Overview of the Assemblage from the Fortress.” In *Finds from the Fortress*, edited by H.E.M. Cool, G. Lloyd-Morgan, and A.D. Hooley, 1626–47. *The Archaeology of York* 17. York: Council for British Archaeology.
- . 1998a. “Part Eight: Life in Roman Castleford.” In *Roman Castleford*. Vol. 1, *The Small Finds*, edited by H.E.M. Cool and C. Philo, 355–73. *Yorkshire Archaeology* 4. Wakefield: West Yorkshire Archaeology Service.
- . 1998b. “A General Overview of the Finds Assemblage from Kingscote.” In *Excavations at Kingscote and Wycomb, Gloucestershire*, edited by J.R. Timby, 220–7. Cirencester: Cotswold Archaeological Trust.
- Cool, H.E.M., G. Lloyd-Morgan, and A.D. Hooley. 1995. *Finds from the Fortress*. *The Archaeology of York* 17. York: Council for British Archaeology.
- Cool, H.E.M., and C. Philo, eds. 1998. *Roman Castleford*. Vol. 1, *The Small Finds*. *Yorkshire Archaeology* 4. Wakefield: West Yorkshire Archaeology Service.
- Coulon, G. 2000. “Artistes et artisans en Gaule Romaine.” *L'Archéologue, Archéologie Nouvelle* 49:4–29.
- Coulston, J.C.N. 1985. “Roman Archery Equipment.” In *The Production and Distribution of Roman Military Equipment*, edited by M.C. Bishop, 220–366. BAR-IS 275. Oxford: British Archaeological Reports.
- . 1995. “The Sculpture of an Armoured Figure at Alba Julia, Romania.” *Arma, Newsletter of the Roman Military Equipment Conference* 7:13–7.
- Crummy, N. 1983. *The Roman Small Finds from Excavations in Colchester 1971–1979*. Colchester Archaeological Report 2. Colchester: Colchester Archaeological Trust.
- Cunliffe, B. 1971. *Excavations at Fishbourne*. Vol. 1, *The Site*; Vol. 2, *The Finds*. Research Reports of the Society of Antiquaries of London 26–7. London: Society of Antiquaries of London.
- Davies, J.L. 1977. “Roman Arrowheads from Dinorben and the Sagittarii of the Roman Army.” *Britannia* 8:257–70.
- Dolenz, H. 1998. *Eisenfunde aus der Stadt auf dem Magdalensberg*. Archäologische Forschungen zu den Grabungen auf dem Magdalensberg 13. Klagenfurt: Verlag des Landesmuseum für Kärnten.
- Duval, P.-M. 1952. “Vulcain et les Métiers du métal.” *Gallia* 10:43–57.
- Eckardt, H. 2003. *Illuminating Roman Britain*. Monographies Instrumentum 23. Montagnac: Monique Mergoil.
- Ellis, S. 1994. “Lighting in Late Roman Houses.” In *TRAC 94: Proceedings of the Fourth Annual Theoretical Roman Archaeology Conference, Durham 1994*, edited by S. Cottam, D. Dungworth, S. Scott, and J. Taylor, 65–71. Oxford: Oxbow.
- . 1997. “Late Antique Dining: Architecture, Furnishings and Behaviour.” In *Domestic Space in the Roman World: Pompeii and Beyond*, edited by R. Laurence and A. Wallace-Hadrill, 46. *JRA* Suppl. 22. Portsmouth: Journal of Roman Archaeology.
- . 2000. *Roman Housing*. London: Duckworth.
- Erdmann, E. 1976. “Dreiflügelige Pfeilspitzen von der Saalburg.” *SaalbJb* 33:5–10.
- . 1982. “Vierkantige Pfeilspitzen aus Eisen von der Saalburg.” *SaalbJb* 38:5–11.
- Espérandieu, E. 1907–81. *Recueil général des bas-reliefs, statues et bustes de la Gaule romaine*. 16 vols. Paris: Presses universitaires de France.
- Feugère, M., M. Thauré, and G. Vienne. 1992. *Les objets en fer dans les collections du Musée Archéologique de Saintes (Ier–XVe siècle)*. Saintes: Édition Musée de Saintes.
- Fingerlin, G., J. Garbsch, and J. Werner. 1968. “Die Ausgrabungen in langobardischen Kastell Ibligo-Invillino (Friaul): Verrorbericht über die Kampagnen 1962, 1963 und 1965.” *Germania* 46:73–110.
- Florescu, F.B. 1965. *Das Siegesdenkmal von Adamklissi: Tropaeum Traiani*. 3rd ed. Bucharest: Verlag der Akademie der Rumänischen Volksrepublik.
- Gaitzsch, S. 1993. “Geräte und Werkzeuge.” In *Geschichte aus dem Kies: Neue Funde aus dem Alten Rhein bei Xanten*, edited by H.-J. Schalles and C. Schreiter, 83–102. *Xantener Berichte* 3. Bonn: Rudolf Habelt.
- Gaitzsch, W. 1978. *Römische Werkzeuge*. Kleine Schriften zur Kenntnis der römischen Besetzungsgeschichte Südwestdeutschlands 19. Stuttgart: Gesellschaft für Vor- und Frühgeschichte in Württemberg und Hohenzollern.
- . 1980. *Eiserne römische Werkzeuge: Studien zur römischen Werkzeugkunde in Italien und nördlichen Provinzen des Imperium Romanum*. BAR-IS 78. Oxford: British Archaeological Reports.
- Gamber, O. 1964. “Dakische und sarmatische Waffen auf der Traianssäule.” *JKS* 60:7–34.
- . 1968. “Kataphrakten, Clibanarier, Normannenreiter.” *JKS* 64:7–34.
- Garbsch, J. 1978. *Römische Paraderüstung*. Munich: Beck.
- George, M. 1997. “Repopulating the Roman House.” In *The Roman Family in Italy*, edited by B. Rawson and P. Weaver, 299–319. Oxford: Oxford University Press.
- Goldberg, M.Y. 1999. “Spatial and Behavioural Negotiations in Classical Athenian City Houses.” In *The Archaeology of Household Activities*, edited by P.M. Allison, 142–61. London: Routledge.

- . 1966. "Katalog der Kleinfunde." *Klio* 47:291–356.
- Gomolka, G. 1968. "Die Kleinfunde vom Limeskastell Iatrus in Moesia Inferior." *Klio* 50:171–250.
- Gorecki, J. 1993. "Metallgefäße und Objekte aus der Villa des N. Popidius Florus (Boscocoreale) im J. Paul Getty Museum, Malibu, Kalifornien." In *Bronces y religion romana: Actas del XI congreso internacional de bronce antiguos*, Madrid, Mayo–Junio, 1990, 229–46. Madrid: Consejo Superior de Investigaciones Científicas.
- von Groller, M. 1901. "Römische Waffen." *Der Römische Limes in Österreich* 2:85–132.
- . 1902. "Grabungen in Lager Carnuntum." *Der Römische Limes in Österreich* 3:31–112.
- Guillaumet, J.-P. 1996. *L'artisanat chez les Gaulois*. Paris: Collection Hesperides.
- Henig, M. 1983. "The Luxury Arts: Decorative Metalwork, Engraved Gems and Jewellery." In *A Handbook of Roman Art*, edited by M. Henig, 139–65. London: Phaidon.
- Herrmann, K.R. 1969. "Der Eisenhortfund aus dem Kastell Künzing." *Saalbjb* 26:129–41.
- Hübener, W. 1973. *Die römischen Metallfunde von Augsburg-Oberhausen: Ein Katalog*. Materialheft zur Bayerischen Vorgeschichte 28. Kallmünz: Lassleben.
- Jackson, R.P.J. 1985. "The Objects of Iron." In *The Roman Fort of Vin-dolanda at Chesterholm, Northumberland*, edited by P.T. Bidwell, 131–51. English Heritage Archaeological Report 1. London: Historic Buildings and Monuments Commission for England.
- James, S. 2004. *Excavation at Dura-Europos. Final Report VII: Arms and Armour and Other Military Equipment*. London: British Museum Press.
- Jenkins, J.G. 1965. *Traditional Country Craftsmen*. London: Routledge and Kegan Paul.
- Klatt, U. 1995. "Römische Klappische: Drei- und vierbeinige Stützgestelle aus Bronze und Silber." *KölnJb* 28:349–574.
- Künzl, E. 1993a. *Die Alamanenbeute aus dem Rhein bei Neupotz: Plündergut aus dem römischen Gallien. Teil 1: Untersuchungen*. Mainz am Rhein: Römisch-Germanisches Zentralmuseum.
- . 1993b. "Schlösser und Fesseln." In *Die Alamanenbeute aus dem Rhein bei Neupotz: Plündergut aus dem römischen Gallien. Teil 1: Untersuchungen*, edited by E. Künzl, 365–78. Mainz am Rhein: Römisch-Germanisches Zentralmuseum.
- . 1993c. "Glocken und verschiedene Geräte." In *Die Alamanenbeute aus dem Rhein bei Neupotz: Plündergut aus dem römischen Gallien. Teil 1: Untersuchungen*, edited by E. Künzl, 385–91. Mainz am Rhein: Römisch-Germanisches Zentralmuseum.
- LaMotta, V.M., and M.B. Schiffer. 1999. "Formation Processes of House Floors Assemblages." In *The Archaeology of Household Activities*, edited by P.M. Allison, 19–29. London: Routledge.
- Liversidge, J. 1955. *Furniture in Roman Britain*. London: Academy Editions.
- Manning, W.H. 1972. "The Iron Objects." In *Verulamium Excavations*, Vol. 1, edited by S.S. Frere, 163–95. Reports of the Research Committee of the Society of Antiquaries of London 28. London: Society of Antiquaries of London.
- . 1985a. *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum*. London: British Museum Press.
- . 1985b. "Ironwork." In *Excavations by Mr H.P. Cooper on the Roman Site at Hill Farm, Gestingthorpe, Essex*, edited by J. Draper, 45–60. East Anglian Archaeology 25. Chelmsford: Archaeology Section, Essex County Council.
- . 1988. "A Note on the Iron Fittings from Gateways." In *Portae cum turribus: Studies of Roman Fort Gates*, edited by P. Bidwell, R. Miket, and B. Ford, 17–21. BAR-BS 206. Oxford: British Archaeological Reports.
- Manning, W.H., and K.S. Painter. 1967. "A Roman Iron Window Grille from Hinton St Mary, Dorset." *BMQ* 31:122–30.
- McCarthy, M., M.C. Bishop, and T. Richardson. 2001. "Roman Armour and Metalworking at Carlisle, Cumbria, England." *Antiquity* 75:507–8.
- McKay, A.G. 1998. *Houses, Villas and Palaces in the Roman World*. Baltimore: Johns Hopkins University Press.
- Milčev, A. 1977. "Eine Festung am Unterdonauländischen Limes bei Nova Černa (Bezirk Silistra)." In *Studien zu den Militärgrenzen Roms II. Vorträge des 10. Internationale Limeskongress in der Germania Inferior*, edited by D. Haupt and H.G. Horn, 351–7. Bonn: Rudolf Habelt.
- Mols, S.T.A.M. 1999. *Wooden Furniture in Herculaneum: Form, Technique, and Function*. Amsterdam: Gieben.
- Nappo, S. 1998. *Pompeii: Guide to the Lost City*. London: Weidenfeld and Nicholson.
- Nevett, L. 1997. "Perceptions of Domestic Space in Roman Italy." In *The Roman Family in Italy*, edited by B. Rawson and P. Weaver, 281–98. Oxford: Oxford University Press.
- Niccolini, A. 1824–57. *Real Museo Borbonico*. 16 vols. Naples: Stamperia Reale.
- Pietsch, M. 1983. "Die römischen Eisenwerkzeuge von Saalburg, Feldberg und Zugmantel." *Saalbjb* 39:5–132.
- Poulter, A., ed. 2007. *Nicopolis ad Istrum III: A Roman and Early Byzantine Site: The Finds and Environmental Evidence*. Oxford: Oxbow Books for the Society of Antiquaries of London.
- Rawson, B., and P. Weaver, eds. 1997. *The Roman Family in Italy*. Oxford: Oxford University Press.
- Richardson, T. 2001. "Preliminary Thoughts on the Roman Armour from Carlisle." *Royal Armouries Yearbook* 6:186–9.
- Richter, G.M.A. 1966. *The Furniture of the Greeks, Etruscans and Romans*. London: Phaidon.
- Rostovzeff, M.I., et al., eds. 1936. *The Excavations at Dura-Europos: Preliminary Report of the Sixth Season of Work, October 1932–March 1933*. New Haven: Yale University Press.
- Schiffer, M.B. 1996. Reprint. *Formation Processes of the Archaeological Record*. Salt Lake City: University of Utah Press. Original edition, Albuquerque: University of New Mexico Press, 1987.
- Scott, I.R. 1980. "Spearheads of the British Limes." In *Roman Frontier Studies 1979*, edited by W.S. Hanson and L.J.F. Keppie, 333–43. BAR-IS 71. Oxford: British Archaeological Reports.
- . 2000. "Objects of Iron." In *The Caerleon Canabae: Excavations in the Civil Settlement 1984–90*, edited by E. Evans, 386–407. Britannia Monograph 16. London: Society for the Promotion of Roman Studies.
- Selzer, M. 1988. *Römische Steindenkmäler: Mainz in römischer Zeit: Katalog der Sammlung in der Steinhalle, Landesmuseum Mainz*. Katalogreihe zu den Abteilungen und Sammlungen 1. Mainz am Rhein: Philipp von Zabern.
- Simkins, M. 1990. "The Manica Lamminata." *Arma, Newsletter of the Roman Military Equipment Conference* 2.2:23–6.
- Smith, R.R., and C. Ratté. 2000. "Archaeological Research at Aphrodisias in Caria." *AJA* 104:221–53.
- Thompson, H. 1994. "Iron Age and Roman Slave Shackles." *ArchJ* 150:57–169.
- Tomalin, D. 1987. *Roman Wight: A Guide Catalogue*. Newport: Isle of Wight County Council.
- Ulbert, G. 1959. *Die römischen Donau-Kastelle Aislingen und Burghöfe*. Limesforschungen 1. Berlin: Gebr. Mann.
- . 1969a. "Gladius aus Pompeji." *Germania* 47:97–128.
- . 1969b. *Das frühromischen Kastell Rheingönheim*. Limesforschungen 9. Berlin: Gebr. Mann.
- . 1970. *Das römische Donau-Kastell Rißtissen. Teil I: Die Funde aus Metall, Horn und Knochen*. Urkunden zur Vor- und Frühgeschichte aus Südwürttemberg-Hohenzollern 4. Stuttgart: Müller & Gräff.

- . 1971. "Gaius Antonius der Meister des silbertauschierten Dolches von Oberammergau." *Bayerisches Vorgeschichtsblätter* 36:44–9.
- . 1974. "Straubing und Nydam: Zu römischen Langschwerten der späten Limeszeit." In *Studien zur Vor- und Frühgeschichtlichen Archäologie: Festschrift für Joachim Werner zum 65. Geburtstag*, edited by G. Kossack and G. Ulbert, 197–216. Münchner Beiträge zur Vor- und Frühgeschichte 1. Munich: Beck.
- Unz, C., and E. Deschler-Erb. 1997. *Katalog der Militaria aus Vindonissa*. Veröffentlichungen der Gesellschaft pro Vindonissa 14. Brugg: Gesellschaft pro Vindonissa.
- Waldbaum, J.C. 1983. *Metalwork from Sardis: The Finds through 1974*. Archaeological Exploration of Sardis 8. Cambridge, MA: Harvard University Press.
- Walke, N. 1965. *Das römische Donaukastell Straubing-Sorviodurum*. Limesforschungen 3. Berlin: Gebr. Mann.
- Wenham, L.P. 1968. *The Romano-British Cemetery at Trentholme Drive, York*. Ministry of Public Building and Works Archaeological Report 5. London: H.M.S.O.