Archaeological excavation at 29-39 Head Street, Colchester, Essex May-September 2000

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on behalf of Licet Developments (1) Ltd

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Contents

Volume 1

Volume 2

List of plates

List of figures

1 Summary

An excavation on the site of the old Post Office (now the Odeon Cinema) revealed multiperiod occupation, principally Roman in date. The site lies in Insulas 25b and 33b of the Roman town.

There was only one pre-Roman feature, but pre-Roman finds were more plentiful. They included prehistoric flints, a Bronze Age awl, Bronze Age pottery, and two silver Iron Age coins.

The Roman period remains included a fortress-period plinth building (Period 1: AD 43/44 to 49) with a contemporary gravelled street; colony period buildings (Period 2: c *AD 49 to 60/1) which were burnt in the Boudican revolt (Period 3: AD 60/1); a Flavian and Antonine period house with mortar floors and rubble-in-mortar footings (Period 4:* c *AD 80 to late 2nd century); and a late Antonine period house with tessellated pavements and an apsidal basin (Period 5: late 2nd to late 3rd century).*

There were no Saxon period features, but an early sceatta *was found in a residual context.*

Medieval features consisted of a few pits and a series of robber trenches dug to remove the foundations of the Period 4 and Period 5 Roman houses. This may indicate that the site was open ground in medieval times.

The post-medieval period is represented by a large number of rubbish pits dug in the rear plots of houses on the Head Street frontage. Principal post-medieval finds include a post-medieval cobble-floored brick structure, good groups of late 17th- and early 18th-century glassware, and a dump of ceramic mould debris from the 17th-century manufacture of bronze cauldrons.

Buildings described here are numbers 202-207 in the Colchester Buildings series.

The project was commissioned by Licet Developments (1) Ltd. Site centre is at NGR TL 9936 2508. Finds are deposited at Colchester Museums under accession code 2000.41.

2 Introduction

2.1 This is the archive report on the archaeological excavation carried out by Colchester Archaeological Trust at 29-39 Head Street, Colchester, Essex, between May and September 2000. This site is now occupied by the Odeon Cinema, but was previously the main Colchester Post Office (since 1874). The work was sponsored by Licet Developments (1) Ltd. Post-excavation work took place from late 2000 to March 2004.

2.2 All fieldwork was done in accordance with a specification agreed with the Archaeology Officer of Colchester Borough Council.

2.3 This report mirrors standards and practices contained in Colchester Borough Council's *Guidelines for the standards and practice of archaeological fieldwork in the Borough of Colchester* (1999) and the Institute of Field Archaeologists *Standards and guidance for archaeological field evaluation* (1994, revised 1999).

3 Archaeological background

3.1 Colchester has been the subject of antiquarian and archaeological interest for some centuries, culminating in modern large-scale archaeological excavations in the town centre and suburbs. There is a large corpus of published information on the town's archaeological and historical background [1], and the archaeological remains likely to be encountered on any given spot can be predicted with a reasonable degree of precision.

3.2 The Head Street site lies on the western side of the modern and medieval town (Fig 1), and is within the area of the Roman fortress and the Roman town of Colchester. On the basis of previous knowledge and the 1998 evaluation [2], remains of the following periods might reasonably be expected:

[1] for which, see Morant 1748, Hull 1958, Crummy 1981, 1983, 1992, 1997; Crummy *et al* 1993,

[2] AOC 1998

- the fortress (*c* AD 43-49)
- the *colonia* (AD 49-60/1)
- the Boudican destruction horizons (AD 60/1)
- several periods of post-Boudican rebuilding (AD 60/1 to 4th century)
- Saxon (structures?, loose finds)
- medieval (structures?, stone-robbing activity, rubbish pits)
- post-medieval (structures?, rubbish-pits).

4 Aim

4.1 The aim of the archaeological excavation was to 'preserve by record' the details of any archaeological features or deposits within the excavation area marked on Figure 2.

4.2 The location of the site on the western side of the Roman town and also within the area of the fortress poses the following research questions.

i The site is in an area of the fortress which is not occupied by barrack blocks. What type of structures will be found here? Will the buildings be on mortared plinths (like the barracks) or post-in-trench?

ii The site is in an area known to have been sacked by Boudica in 60/1. This was confirmed by the discovery of Boudican debris in the 1998 evaluation [3]. Material lying on the Boudican floors is an exceptional source of environmental evidence. Material from previously examined Boudican floors provided the only evidence for east coast fisheries in the Roman period. Will there be well-preserved deposits here which might yield similar high-potential information?

iii What exactly is the nature and function of the apsidal walled structure? Is it part of a small bath house, and was that part of a *mansio*?

4.3 The excavations will also provide information which may assist in complementing and/or amending any existing conclusions about the nature and development of Colchester.

5 The excavated sequence

5.1 Pre-Roman period

A great many pre-Roman finds came from this excavation, yet there was only one convincing prehistoric feature - pit F828 (Fig 3). This contained a prehistoric flake and a sherd of Bronze Age pottery [4].

The lack of pre-Roman features is explained by the absence of any pre-Roman turf-line or topsoil cover. Barring any explanation such as natural erosion (this is a hill-top site), turf and soil must have been removed by human agency. Following from this, the fact that the earliest stratified material on the site dates to the construction of the Roman fortress (site Period 1, *c* AD 44-49) implies that the fortress builders must be responsible for the absence of turf and topsoil. Undoubtedly, and following sound building practice, they stripped off the old turf and topsoil cover in order to build directly on sand [5].

This site, like others in Colchester, has as its lowest archaeological level (on top of the natural sand) a layer of discoloured sand, which is usually described in site notes as ‘dirty sand’ or ‘redeposited natural’. This sand is undoubtedly what is left after the removal of the turf and topsoil, and after the trampling around connected with any large building project. What has therefore been removed from the site is a horizon in which prehistoric cut features would have been evident, and which contained unknowable quantities of prehistoric finds.

There is no question that prehistoric man occupied this hill-top site. Excavations at Culver Street between 1981 and 1985 (100m east of the current site) provided abundant evidence of activity from the Neolithic to the Middle Iron Age, though no evidence of activity immediately before the Roman invasion. At Lion Walk, 300m to the

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3 AOC 1998

4 flint report section 6.10 below, pottery report section 6.3

5 the same absence of topsoil has been noted at Culver Street (Crummy *et al* 1993, 21)

east, a few prehistoric flints and pottery were found in the earliest horizons during the 1971-74 excavations [6]. The absence of Late Iron Age (LIA) or early Roman material at Head Street, Lion Walk and Culver Street is probably due to material of that period being stripped away with the topsoil.

At Head Street, these early disturbed sand contexts (for instance L189, L268, L580, L612) contained 10 of the flints (18% of assemblage by count), and other Period 1 contexts contained a further 20 flints (36%). Twelve flints (21%) were from probable Period 2 contexts, and only 14 from later contexts.

Likewise, the prehistoric pottery was almost exclusively from the disturbed sand layers mentioned above - L189 (x3), L214, L230, L528 (x2), F68, and F828, L190, L214, F119, F828, F877, F878.

There were three intrinsically interesting prehistoric finds: a Bronze Age awl [7] from 'disturbed natural' L593, and two silver Iron Age coins (Icenian and Dobunnic). The Icenian coin may be explained by local trade links, but the Dobunnic coin has a more distant origin.

5.2 Period 1: the Roman fortress (*c* AD 43/44-49) (Figs 3-4)

General

Elements of the fortress at Colchester have been excavated at Culver Street and Lion Walk, and its general layout is known to a reasonable degree of accuracy [8]. It is also clear that the fortress is closely comparable to others within the Roman empire, particularly those of the 'Caerleon type' [9]. The Head Street site lies in the south-western quarter of the fortress, in an area between rows of barrack blocks. In such a position, buildings identified as 'hospitals' are known at Caerleon, Celeia (Celje, Slovenia), and Lauriacum (Lorch, Germany). If Head Street conforms to plan, then there should be a hospital here.

Crummy [10] shows that the area of the Period 1 fortress west of the *via principalis* consists of three zones, nominally 300 pM wide [11] :

- an eastern zone containing the *principia*[12], and to its south the barrack blocks excavated at Culver Street
- a middle zone containing the fortress-period plinth seen in a watching brief in 1984 (ref *CAR* **6**, 1028) and a length of gravel street
- a western zone containing the barrack blocks excavated at the Gilberd School [13].

The Head Street site is located in the middle zone.

Period 1a (Fig 3)

The general layout of the site - plots and fences

An east-west gravel street (F339) runs (almost) along the northern edge of the excavated area [14]. South of the street, the site is split into at least two plots, as defined by north-south wall lines F721, and F1005. Within Crummy's zones, this boundary is located approximately half way (east-west) through the middle zone.

The excavated area includes only 4 m of Plot 1 east of the boundary, but includes at least 20 m of Plot 2. A row of light post-holes (F521, F601, F603-F604, F606, F608) may define a further subdivision of Plot 2, 20m west of the main plot boundary.

The gravel street (sx 20, Fig 10)

The street F339 was in use for several centuries, and shows four certain phases of construction (in site Periods 1, 2, 3, 4/5). It will be useful to discuss the general nature of the street and the dating evidence for its construction at this point.

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6 Crummy 1984, 31
7 prehistoric metalwork is rarely found within the area of the Roman walled town.
8 Crummy 1984, 1992
9 Carrington (1985) defines it as such, along with Caerleon itself, Lauriacum, York, Bonna and Celeia
10 *CAR* **6**, 9, fig 2.2
11 pM = pedes monetales: 1 pM = 0.295 metre
12 not yet confirmed or excavated
13 now the Sixth Form College (*CAR* **6**, 128-133)
14 dividing Insulas 25b and 33b

The street is made up as follows:

- pre-street: layers of trampled sand L357-8. Cut features F647, F1073.
- first phase: sandy gravel layers 333, 335, 337, and 352-3 with a surface layer of charcoal L664, making a total street depth of approximately 250 mm [15]. Later drains F441, F1074 may have cut through the first phase drains. If so, then the street was approximately 8.2m (27.8 pM) wide ditch-centre to ditch-centre. A contemporary gravel layer 530 may be a walkway on the south side of the street.
- second phase: sandy gravel layers 331, 344, 345, 347, 348 forming a gravel band approximately 250 mm deep.
- third phase: sandy clay layers 356/359 were dumped down over the edge of the previous street in connection with the construction of Period 2 wall F447.
- fourth phase: layer 493 (on top of L356/359 dump) is a surface burnt in the Boudican revolt (Period 3).
- fifth phase: post-Boudican period gravel layers 327-328, 334, 330, 341-342 were dumped to bring the street surface by 0.5 m. A coin of Vespasian in L327 dates this period. The position of the street-side drains (F421, F423) demonstrates that the street has shifted slightly to the south (relative to the north edge of the street gravels in Periods 1 and 2).

The coin of Vespasian (AD 69-79) gives a good *terminus post quem*[16] for the Period 4 street gravels, but there is a problem with the dating of the samian ware from contexts L333 and L337, both of which are in the Period 1 street. The Period 1 dates to the fortress period (*c* AD 44-49), yet the samian ware is dated to the Neronian period (ie AD 54 and later). The Neronian date must be inaccurate in these instances, because the Period 1 street is sealed by a Period 2 street, which is itself sealed by Boudican burning. The Neronian date cannot be accepted without:

- unravelling the whole site stratification
- leaving the Period 1 and 2 (fortress and *colonia* period) buildings with no flanking street
- abandoning the Boudican date for the burnt surface L493 (with horrific, knock-on consequences)
- accepting very slow accumulation of street gravels early on, then much accelerated build-up later.

Heretical though it may be to reject conventional samian dating, the samian forms in L333 and 337 must be in circulation in the Claudian period in Colchester.

Alignment of the street (Fig 3)
Only at its western end did any street edge survive. Judging the alignment of the street from surviving fragments would be difficult, were it not for a row of sturdy posts (F1066, F1067, F1070, F525-7, F455, F475, F478, F509, F1032, F504-5, F678-9, F543, F553, F687) which seem to define an east-west running fence, to the south of the street. It is assumed that the posts are contemporary with and run parallel to the edge of the Period 1 street. In fact, a slight change is visible in the lines of posts. They seem to belong to two principal alignments, the first (post alignment 1) angled slightly south of an E-W line, and the second (post alignment 2) later a much more E-W line. This may represent the slight shifting of the street line.

Building 202 [17] (Figs 3, 4)
The earliest Roman period building had rubble-in-mortar plinths (ie footings)[18]. The plinths were present in an unrobbed condition for a total length of only 15 m (F789, F251, F744, F721), the rest being disturbed (F714, F776, F826) or robbed out (F719, F795).

[15] the same thickness as the military (Period 1) street at Lion Walk (*CAR* **3**, 37)
[16] ie earliest possible date
[17] in the continuing series of Colchester building numbers
[18] of the type seen throughout the fortress (Crummy 1984, 34; Shimmin 1992, 128)

Plate 1 Fortress-period plinth F789 (the north-west corner of Building 202): view north-east (site digital image 1217).

Plate 2 Fortress-period plinths F721 and F744 (the north-east corner of Building 202): view south (site digital image 1254).

The plinths define a building measuring 14.4m east-west by at least 26m north-south (48.8 x 88 pedes Monetales) [19]. A central spine wall divides it into two rooms of equal size.

Examples elsewhere in the fortress show that the plinths were the foundations of walls whose superstructure consisted of *either* a timber frame with wattle and daub infill and

[19] the north-south dimension includes a length of plinth recorded in a watching brief in 1984. Since this aligns precisely with the 2000 plinth, they are undoubtedly the same structure

daubed faces, *or* a wall of daub (clay) blocks with daubed and often keyed surfaces. At Head Street, the only surviving superstructure consisted of a narrow, 3.5m long band of clay (F252/F783) on the top of the plinth on the north edge of the west room. The clay was only 30 cm wide and had no surviving faces. It is presumed that it is a remnant of what was originally a clay block wall, which has not otherwise survived. The clay was on top of a charcoal band (F897) which is presumed to be a rotted wooden base plate (sx 46, Fig 13). A copper alloy bull's head ferrule was incorporated into the clay strip F784 (SF 787m, Fig 22.51). As Nina Crummy says in her report (below section 6.2) this may be a deliberate inclusion with a votive significance.

Internal rooms in Building 202 (Fig 3, Plate 3)
Heavy truncation by later activity means that internal details only survived in the north-west corner of the building (in the west room). Here, a series of clay strips (F793-F794, F800, F824-F825) associated with patches of clay floor (L224, L288) appear to define a series of small rooms. The presence of a small hearth F823 helps this interpretation. The clay strips did not survive to any great height (only approximately 5 cm), and had rounded profiles rather than steep, finished edges. For that reason, it is suggested here that the strips are the surviving fragments of a foundation layer of clay which has eroded elsewhere, but has been protected from foot erosion by overlying wall plates (now missing). If this is accepted, then the clay strips (and slot F881) mark the edges of three rooms, as follows:

- southern room: east wall F824, north wall, F823, hearth F821, floor patches L224
- north-east room: south wall F794, west wall slot F881, floor L287-8
- north-west room: south wall F793, east wall slot F881, floor L262.

Slot F804 may represent a southerly continuation of the same structure.

Plate 3 Internal clay strips (walls?) in north-west corner of Building 202: view north (site digital image 1070).

Other features in Building 202
A post-pit F821 with two internal post-holes (F833, F839), if paired with the two post-holes F739, F746 (6m to the south), resembles an the post-in-trench wall in the Period 2 structure at the Gilberd School site [20]. However, if this were a partition or wall, it would be very close to the central plinth of Building 202.

Two pits (F827, F860) in the east room were heavily stained yellowish green, and are therefore interpreted as latrine pits.

[20] Shimmin 1992, fig 4.5

Activity north of Building 202
In both Plots 1 and 2, there is a profusion of post-holes and pits north of Building 202. With the exception of the rows of large posts which have (above) been identified as plot boundary posts, there is no particular observable pattern in the post-holes. Similarly with the pits. The amount of construction work going on in the fortress makes it a reasonable assumption than these pits were primarily dug as quarry pits for sand, and were only subsequently used as rubbish pits (or were infilled deliberately).

Activity north of street F339
A layer of sandy-clay (L323) seen in section on the extreme north edge of the site was probably the floor of a contemporary building on the south edge of Insula 35b.

Period 1b (Fig 4)
Buildings
In this period, the details of Building 202 as described above do not change. However, there were significant changes to the north of the building (between it and the gravel street).

Two new clay walls were constructed in the area between the street and Building 202 (walls F596 and F514/F364/F562). A possible if slightly offset extension to F596 was robbed wall line F458. These new walls define Building 203. Wall F596 is presumed to be of clay-block construction, though there was no clear sign of separate blocks in the surviving structure. Two holes within the body of F596 (F635 and F636) are presumed to be part of an internal wattle support structure which is not otherwise apparent. No surface treatment (plaster or stamped daub) was apparent on F596, and the other wall was too fragmentary for the survival of such detail.

Whereas wall F596 was on the north-south line of the earlier east wall of B202 (and along a plot boundary), the second new wall F514/F364/F562 is not aligned at right angles to it, but precisely parallel with the Period 1a post-line [21], which appears to survive into this period. Other individual posts do not appear to protrude above the Period 1b horizon, so they were presumably sawn off at ground-level (they would have been too big to pull out, and there is no sign in section of any extraction pits (sx 39, Fig 13).

Floors and soils
There is a difference in the type of dumped soils and/or floors associated with this new building. Floor layers south of the wall line F514 etc are sandy clays (L619) with occupation dirt (L662), but layers to the north and west of the north end of B202 are 'banded', in the sense that they consist of interleaving layers of clay, and charcoally soil (L197/164, L585, L502, L483, L591). Similar deposits have been recognised before in Colchester (at the Gilberd School site [22]) and are often associated with industrial activity. If this interpretation is correct, then there was some form of light industry being practised around B203 at this time. This may have a bearing on the interpretation of B202 - would the military authorities have allowed this kind of activity around a hospital?

Street (sx 20, Fig 10)
There is no sign of a renewal of the street in this period, which remains as described above. However, there is a band of gravel (F573, L530) which is associated with Period 1b. Though truncated in the middle, this appears to define a gravel footway running north to join the south edge of the street. A charcoally band L664 on the street surface demonstrates a period of use. It may be the case that the charcoal is connected with the light industrial activity immediately south of the street in this period.

Other Period 1b details
Two hearths or burnt patches (F1042, F518) were found at the east end of B203. A deposit of some interest is associated with this period. This was the probable deliberate burial of a nearly complete glass bowl. Hilary Cool (section 6.11 below) reports it is very unlikely that this was simply rubbish disposal, and it is likely to be a placed deposit, perhaps a terminal deposit. Whereas the location of the bowl (Fig 4) is not specific to

[21] F504-F505, F1037, F1011, F1065, F1067-F1069
[22] D Shimmin, pers comm

either Period 1a or 1b, a function as a terminal deposit for either the use of B202 as a hospital, or of the end of whatever activity is represented by the Period 1a pits and post-holes is an attractive interpretation.

Latrine trench F840 was cut through the clay floors of the internal rooms in the north-west corner of Building 202.

A small amount of painted wall plaster found in overlying deposits is almost certainly associated with this Building 202. The colour schemes represented include predominantly cream or white, with smaller amounts of plain red.

5.3 Period 2: the Roman *colonia* (*c* AD 49-60/1) (Fig 5)

Building 204

A widespread and thick layer of fairly clean sandy clay (L121/186, L134-5, L159, L161) dumped on the Period 1 remains is interpreted as the remains of the demolition of the Period 1 structures [23]. On top of this layer, a new structure was erected (Building 204).

Walls

This new structure was very badly truncated by later activity, and survived only in fragments. Walls F447, F493, F508, F540, F777, and F1044, and robbed out walls F474 and F498 define a structure with at least seven rooms. To the south, a burnt-out timber drain F736/758 implies a rectangular courtyard. The two largest wall fragments were F540 (between Rooms 4 and 5). This was built of clay blocks, whose outline was faintly discernible in the structure of the wall. Its east face was covered in a layer of daub which had been keyed (Fig 6, Plate 6). There was no apparent treatment of the west face. Judging by the discontinuity between this wall and the robbed out F498 to the north, it is possible that sinkage has caused this wall to shift slightly in the direction of the large pit on its east side. The other surviving wall was F493, between Rooms 1 and 2. This was constructed of clay blocks, but had a plastered east face, painted in plain cream with occasional blobs and dots of red and black (Plate 5). This wall may also have shifted slightly to its east.

Floors

The floor surfaces of this building were all of sandy clay, as follows:

- Room 1 L440, L442, L453
- Room 2 L402, L408, L409
- Room 3 L372, L405-7
- Room 4 L395, L397
- Room 5 L394
- Room 6 L550
- courtyard L627

There is a noticeable difference in between the heights of the floors either side of wall F540. To its west, floors are at approximately 32.75m (Rooms 4, 6), and to its east at 31.86m (Room 5) - a difference of approximately 0.9m [24].

Survival of Period 1 structure

In the south-east corner of the site, a number of sandy clay dumps (L233, L249, L253, L256) with occupation dirt (L222, L225, L244) or flecked mortary layer (L199) on top shows that some sort of structure is located here. What is difficult to ascertain is where its walls are, unless the Period 1 plinth (F721) were retained into this period. Looking at the site as a whole, this would mean colony period rebuilding of the street frontage, but retention of (elements of) fortress period structures rear of the frontage.

Courtyard and drain

The layout of the timber drain F736/758/F761 around three sides of a square is best explained as a drain running around a courtyard. The bottom of the drain showed evidence of burnt planks, and loose iron nails were found in the fill (Plate 4). These were

[23] in some parts of the site, this demolition phase is identified as Period 1c

[24] since this excavation, a very similar clay-walled structure has been found at number 7-13 Head Street (CAT report forthcoming).

presumably elements of the drain construction. Part of the drain's eastern arm had later been packed with wall plaster. It is noticeable that the drain does not align well with the rest of Building 204, or with the retained military plinth to its east. Yet its connection with this period seems certain; it was cut into sandy clay demolition material from the fortress period, and it was burnt in Period 3 (Boudican period).

Plate 4 The Period 2 drain (burnt in Period 3); part of the Period 5 hypocaust is visible behind: view west (site digital image 731).

Gravel street (sx 20, Fig 10)
The street was renewed in this period by the laying of sandy gravel deposits L344-L345, L347-L348, L350, which raised the street surface by 0.25m.

Interior decoration
A quantity of painted wall plaster recovered from later horizons was presumably derived from the demolition of this structure. If so, then the predominant decorative schemes were plain white/cream followed by plain red, with smaller quantities of grey. The standing walls of this period, F540 was unpainted, and F493 was painted plain cream with red and black splashes (Plate 5).

5.4 Period 3: the Boudican revolt (AD 60/1)

The Boudican episode is marked at Head Street by the burning of Building 204 and timber-lined drain F736. All the walls of the Period 2 structure were burnt, most obviously in the larger surviving walls F540 and F493, which were burnt through their entire thickness (Plates 5-6). The floor surfaces were also burnt. Analysis of the debris from the Period 3 burnt floors is given below in section 6.13.

A large pit under the east baulk of the site and under Room 6 of Building 203 (F1035) was filled in this period. This is evidence for the continuing problem of sinkage caused by Period 1 pit digging, especially in Plot 1.

Plate 5 The plastered and painted east face of Period 2 wall F493, burnt in Period 3: view west (site digital image 974).

Plate 6 The east face of Period 2 wall F540 (with chevron-patterned daub) burnt in Period 3. A thin strip of burnt Boudican floor (F550) is visible east of the wall. Edges of some clay blocks are visible in the wall core: view south-west (site digital image 862).

There was no Boudican-period burning south of drain F736.

5.5 Period 4: the post-Boudican recovery and the Flavian period (*c* AD 70-late 2nd century)

After the Boudican revolt, material containing (or consisting mainly of) lumps of burnt clay was dumped over the burnt remains of the Period 3 building (L307 sx 51, Fig 140; L102 sx 34, Fig 11; L438 sx 52, Fig 14). In some cases, there seems to have been sporadic robbing of walls (F498, F474), perhaps in an attempt to recover re-usable timber. Following this, a new set of buildings was erected on the site. The finds evidence suggests that the rebuilding did not occur until around or shortly after AD 70, indicating a period of post-Boudican inactivity on this site paralleled by other Colchester sites.

Building 205 (Fig 6)
A stone walled structure was erected along the east side of the site. Without question, this building also had a northern wing along the street frontage, but this part of the building has not survived (the construction of the old post office building had truncated the archaeological horizons down to the top of the Period 3 remains, and any Period 4 structure which may have stood here has been swept away. The deeper footings of the Period 5 house did survive, in part).

Building 205 has a rag-bag appearance; virtually every room had different footings or superstructure, and there is a discontinuity in the alignment of its west wall (the east wall is off-site). This odd jumble of walls suggests that Building 205 was not planned and executed as one structure, but is perhaps more organic and sporadic in its layout. Two periods of construction are apparent in most of the structure (4a, 4b), and three in others (4a, 4b, 4c). The two principal constructional periods will be described here.

Plate 7 People standing in rooms of Period 4 Building 205 - ranging poles mark wall positions: view south-west (site digital image 691).

Period 4a: early Flavian (*c* AD 70-early 2nd century) (Fig 7)
Building 205 had seven rooms in this phase, as follows:
Rooms 1 and 2: substantial south wall with septaria-in-mortar footings (F730, F745-F476) some of which may be a repair phase. The inner face of the wall was partially built in herringbone style. No superstructure survived; presumably it was of clay-block construction. West wall of Room 1 robbed out, a small tile structure (F239) may have been a lower part of the footing, or may be an isolated stretch of wall from Period 2. A septaria-in-mortar wall F726 ran north off the south wall to divide Rooms 1 and 2. No superstructure survived. The floor of these rooms is a gravel surface (L147, F175). North wall is septaria in mortar footing F727. This had a plaster face on the Room 1 side, painted plain cream.

Rooms 3 and 4: south wall is wall F727, with a clay block wall on to, unplastered on the Room 3 side. The north wall of Rooms 2 and 3 is a septaria in mortar footing F248. On this the stub of a clay block wall F1077 had plain cream plaster on its southern face (F267). A short stub of wall (F713) divided the two rooms. The floor of these rooms was gravel layer L147 lying over clay deposit L193. It is especially apparent in sx 45 (Fig 11) that this part of the house was consistently sinking into soft ground underneath. Though the position of this pit (next to the site baulk) precluded deep excavation to explore the cause of the sinkage, it was presumably an earlier pit with a soft fill, such as the Period 1

quarry pits excavated close to this point. The sinkage had caused the gravel floor L147 to shear off and sink, while the corresponding floor surface in the north part of these rooms was never found, having been replaced (possibly) by a dumped clay L218.

Room 5: South wall is F248 (above). Contemporary floor is sandy clay L178 and L218 with occupation dirt L176. The north part of this floor is truncated. The north wall is completely missing, though it can be inferred from the different flooring material in Room 6. A short stretch of a pebble in mortar plinth was found in such a position to indicate that Room 5 was subdivided in this period.

Room 6: Before the construction of this room, a large pit F1074 was infilled with soil L474 to counteract sinkage. The north wall of this room is represented by a robbed out footing F457. The floor is a clay dump L445 (=L432) with a lens of redeposited Boudican debris L446, and occupation dirt L416 [25]. This floor sequence was rapidly replaced by a mortar floor L439.

Activity north of Room 6: Although there are no related walls, another room is indicated here by dumped clays L294-L296 with occupation dirt L293, replaced by sandy clay floor L292. there are also other features of this period which represent fragments of buildings which are not very clear: a length of robbed wall F458 and a surface L302. these are fragments of the continuation of Building 205 along the street frontage which has otherwise been truncated away.

Period 4b (early 2nd-mid 2nd century) (Fig 7)
Building 205 was slightly adapted in this period, with new wall lines being built, and new floors laid.

Rooms 1, 2, 3 and 4 of the Period 4a structure were opened up into one room by the removal of the Period 4a divider walls (F727 and F728) which were covered over by dumped sandy clay L162/L165. Contemporary occupation dirt is L166. Two tile built hearths were laid in the new large room, F12 at the south end and F708 at the north. F12 survived in reasonable condition, measured approximately 0.8m x 0.8m and had been repaired at least once. F708 was badly cut by later features and was not closely measurable. A small grey earthenware pot had been buried at the west edge of hearth F708, presumably as a foundation deposit (Plate 9) [26]. The north wall of Period 4a (F248) was retained, with a renewal of the plastered north face.

There was enormous sinkage over the north part of this room. Layers L129, L154 and L159 were sandy clay dumped to fill a hole slightly over 1 m deep which had appeared in this room. It is not clear what the floor of the north part of the room was; it was probably never standing still long enough to become established.

Room 5: had a new mortar floor F194 laid over dumped material L 175, L123, L156. A coin of Domitian (AD 81-96) is probably residual in this context, but gives a *terminus post quem* for Period 4b.

Room 6: was divided in two (Rooms 6a, 6b) by a new sandy clay wall F490, which is associated with sandy clay floors L415 and L423 dumped over the Period 4a mortar floor L439. Contemporary occupation dirts are L410, L411 and L424. There was a broken but substantially compete pot F501 in the fabric of this wall, probably a foundation deposit (Plate 8).

[25] the coin of Vespasian (AD 69-79) in this horizon is the principal dating evidence for the start of Period 4a.
[26] the contents of the pot were sieved, without result

Plate 8 Foundation deposit? pot F501 in clay wall F490: view east (site digital image 599).

North of Room 6: there are dumped sandy clays L384 and L299 which indicate there was a room north of Room 6, but no wall lines survive.

Other Period 4 features
An isolated pebble in mortar wall footing (F273-F274) on the west edge of the site is approximately aligned with the wall separating Rooms 3 and 5 of Building 205. It is not know whether this was part of Building 205, or a separate structure. A Period 4 cut F491 (west of Room 5) contained an unusually high proportion of samian sherds.

Garden or back yard? (sx 34, Fig 11; sx 28, Fig 12; sx 46, Fig 13)
The area west of Building 205 contained lots of mixed soil layers in this period (L70, L86, L89, L92, L95-L96, L101, L105, L107-L108). These seem to define a area of garden or back yard belonging to Building 205. To what extent all of it was actually cultivated is not certain, but the fact that the 'garden soils' directly overlie Period 2 deposits on the west edge of the site is reasonable evidence that cultivation during Period 4 has eroded and completely removed the Boudican (Period 3) horizons there.

Gravel street (sx 20, Fig 10)
The gravel street was re-laid in this period (ie layers L327-L328, L330, L334, L341-342 were deposited over the old Period 2/3 surface), raising the surface by some 0.25m and closer to contemporary floor level in the buildings. The street is also better defined in this period, with ditches on its north and south sides (F423, F421).

Missing fragments of Building 205
The possibility that the Period 5 basin F27 may have originally been associated with Building 206 is discussed below in section 5. The rear wall of the basin is certainly more aligned with Building 205 that with the Period 5 Building 206. If so, then the basin provides a link between the identified eastern wing of Building 205 and the otherwise apparently isolated wall foundations F273-F274 (Fig 6).

Interior decoration
Something of the interior decoration of the Building 205 is suggested by loose white floor *tessera* from Period 4 contexts (from east of the Period 5 basin F27). While it is possible that this material has been brought in from elsewhere, the balance of probability is that the *tesserae* are from a predominantly white mosaic floor which once lay in Building 205.

Painted wall-plaster which is associated with the Period 4 house is predominantly plain red or cream/white, with smaller quantities of yellow/brown, green, greenish blue. This shows an increase in the diversity of colour schemes from the previous phase.

Plate 9 Foundation deposit (pot F705) next to Period 4b hearth F708, Room 3/4: view north (site digital image 602).

5.6 Period 5: the later Antonine period (late 2nd to late 3rd century AD) (Fig 8)

General

In this period, a new structure was erected on the site, covering over the Period 4 house, and to a certain extent the Period 4 yard (garden?). This is Building 206. It is apparent that we have the north-east corner of a much larger structure (presumably a courtyard house which extends off the site). Eight rooms are apparent on site.

Street frontage

Two isolated lumps of masonry (F1030, and robbed F492) suggest an intermittent structure along the street frontage. The masonry lump on the extreme west edge of the site was cut on its eastern end, and so its original length is not known, but the other (F492) had a discrete robber cut, and does not seem to have been part of a continuous structure. It was originally thought that mortared cobbles F340 were part of the same wall line, but F340 contains medieval pottery and is therefore of a later period. It is difficult to extrapolate from isolated fragments - was there a free-standing colonnade here?

Room 2 - the shop?

The large room on the frontage is in a very suitable position to have been used (or sub-let) as a shop. There is no specific evidence for this interpretation. Fragments show that this room had a tessellated floor.

Room 3 - the hypocaust

The largest room was a hypocaust (under-floor heated room). Though very heavily disturbed by later robbing, it is possible to make out that the hypocaust structure was based on under-floor channels, with solid floor in between. Solid floor survived in only two places; mortar floor F230, and the fragmentary *opus signinum* lump F279. A group of plain white and grey mosaic cubes found (in residual contexts) in the north-east corner of this room suggests that it originally had a mosaic floor, presumably with a plain red tessellated border (none of which survived).

In the centre of the room, the best surviving channel F179/277 had rough stone walling on either face. This may suggest that trenches were dug first, and were then faced with rough stonework. A surviving edge (F278) suggests a square block of solid

ground in the middle of the room, from where the channels radiated to the corners of the room. This is confirmed by isolated lumps of channel facing in other parts of the room (F481, F331). The exceptions to this are the two channels running off at right angles from the centre (unnumbered on plan), and F484. The latter (paired with F408) may be one side of a tiled channel leading to the flue. The purpose of small wall fragment parallel to the north wall of the room (F470) is not clear.

There was no clear sign of where the stoke pit would have been located. It is assumed to be on the north side of the room, where later pits have cut away the ground. The base of the hypocaust was only located on the east side (F244) where it was composed not of freshly laid flooring material, but of blocks of re-used opus signinum. This must have been salvaged from the Period 4 house (from part of an earlier hypocaust?). The depth of the underfloor cavity is not known, but must be the difference in height between the hypocaust base and the surviving Period 5 floor (approx 70 cm) less the thickness of the floor structure (unknown).

The hypocaust room, measuring 10m x 8.6m is a very large room. Could this have been roofed without internal supports? In plan, it is very similar to hypocaust Room 7 of Building 114 at Culver Street [27].

The basin (Plates 10-11)

The basin is one of the most interesting and perplexing features on the site. This semicircular structure (group number F27) was composed of tufa blocks and tile in a poured concrete matrix[28]. It was plastered on its inner face, and had a plain white mosaic floor (which survived in only a fragmentary condition in 2000) [29]. The same plain white mosaic formed a panel in the lower part of all four walls to height of approximately 35 cm. Two stages of use are apparent. First, in its original condition, as just described, it must have been an attractive feature, presumably in a garden or courtyard. Its second phase of use came when a rough plaster coat was applied over the white mosaic. This was undoubtedly a down-grading of its appearance and a distinct change of use.

Plate 10 General view of basin F27, with wall F21 behind: view west (site digital image 616).

The basin has a long history of exploration, having first been discovered in 1934 by Henry Laver. It is worth quoting in full his diary entry for July 1934:

[27] Crummy 1992, 84, fig 3.43

[28] this technique was implied by vertical edging tiles on the back wall of the basin. There would be no point in placing vertical tiles there unless to support liquid mortar while drying

[29] Colchester Museums lifted the surviving piece, which is now in storage

Excavation now on site of premises late in occupation of Eastern Automobiles in Head St now pulled down for the erection of New Post Office. So far found small broken white tess[ellated] pave[men]t which had been repaired as in sketch. The white tess[erae are] of small size, ½ ", the important point being [the] return of this paving up the side walls for the distance of 14". The repair carried out in a pinkish plaster. Under the pave[men]t was found practically nothing to give a near date - generally the bulk of the material (whi[ch] was in extremely small amount) was 2nd/3rd century. On the pave[men]t a small layer of charcoal. The repair extended over or through the break in the curved wall showing that a different disposition of room and use had at some time taken place. Depth of surface of pave[men]t from present ground level (nothing written).

At NW corner another pave[men]t of red tess[erae] found at …. depth, hence … above white pave[men]t. This ?repaired with 2 blocks (square) of Purbeck marble. This pave[men]t itself, especially the S[outhe]rn side is of (unclear) *red + buff tesserae + hence similar to that of the W[este]rn house exposed by Wheeler in the Castle Park in 19..*

It is of importance that Laver identified 2nd-/3rd-century material under the basin, which has a bearing on its date of construction. The pavement he identified to the north, across what appears to be a partially robbed Roman wall is the same floor as the tessellated pavement in our Room 5, with the same Purbeck marble repair.

The basin was re-exposed by the AOC evaluation in 1998.

The basin lies slightly off line from the house walls to its north, and appears at face value to have been tacked onto a large lump of unrobbed wall (F21). However, this relationship is not so straightforward, because all four walls of the basin appear to have been built into a trench. If F21 had been there before, it is hard to explain why the basin was apparently built free-standing. This must imply that the basin was here first, and the wall F21 added later. This being the case, it is possible (*pace* Laver's dating) that the basin was originally part of the Period 4 house, then retained into Period 5, when it was replastered and became a functional water basin rather than a decorative piece.

Plate 11 Rear wall (F29) of basin F27, showing later plaster render over original mosaic: view north (site digital image 618).

Plunge bath, ornamental pool, *nymphaeum*?

The title of this paragraph shows the range of possible interpretations for a basin. Although the room to the north was certainly a hypocaust, it seems to have been simply a heated room rather than part of a bath suite. The basin is therefore unlikely to have been a plunge bath connected with a bath suite. It was also too shallow and probably too

small for this, quite apart from having no steps for access. That being so, it must be interpreted as a rather plain an ornamental pool, and one which is not decorative enough to be classified as a nymphaeum [30]. There is a problem with the water access to this basin. The piped water supply under Room 5 does not seem to head towards it, and an apparent notch in the back wall (which might seem an obvious water inlet point) was in fact caused by Period 8 brick structure F19 cutting into the basin at this point. This is not to say that there wasn't a water inlet on the back wall; the surviving structure is too badly damaged to make a definitive ruling on this point. There was neither an obvious drain, nor a drainage channel leading away from the basin. Taken together, this evidence points towards a rather lower-quality ornamental pool, but without any clear signs of a constant supply of water running through it. Perhaps it was filled and emptied by hand.

The two small rooms and the water inlet

The two small rooms (Rooms 4 and 7) west of and south-east of the hypocaust are of unknown use. However, they share certain characteristics. First, they are both rather small, second, they both have narrow corridors running off them. Whereas Room 7 is of unknown function, Room 4 has a water pipe trench (F286) running under its floor, with a 'riser' (see sx 46, Fig 13) coming up through the floor. The identification of this trench as a water pipe trench rests on the discovery of one of the characteristic iron bands which would have joined two sections of wooden water pipe, better-preserved examples of which are known from Balkerne Lane [31]. The apparent 'riser' shows a branch off the pipe was brought up through the floor for a reason which is not clear, but presumably connected with domestic water supply.

Water trench F286 was presumably fed from a mains pipe running somewhere along the south edge of the gravel street (no details survive). The water trench continued south, beyond the riser, to an unidentified point [32].

F284, sealed under the TP floor in Room 4, contained 2nd-century pottery which gives a *terminus post quem* date for the construction of the TP floors and by implication the building of Building 206.

Wall fragments south of basin

There were several runs of walling south of the basin: F228, and the robbed-out pads F14 and F144. F228 is too close to the basin to make any sense as a contemporary feature (it must be a later addition), but it is conceivable that the pads F14 and F144 were part of a decorative garden colonnade south of the basin.

Corridors

The other rooms in this building were corridors communicating between the different rooms. Room 6 apparently provided private access off the street to Room 7 and the rear of the property. A piece of the floor of this room survived (F310). This was made of pebble and *opus signinum* rubble with a crazy tessellation surface [33]. As mentioned above, corridors run west off Room 5 and south off Room 7. The former certainly had a tessellated floor.

Fragments of an earlier period

One of the most difficult aspects of interpreting this building is trying to establish how much of it was new build, and how much retained from previous periods. It has already been suggested above that the basin (which is misaligned in relation to the Period 5 house walls) was retained from Period 4. A second clue that earlier fragments of walls were retained is shown by the double width robber trenches on the extreme edge of Room 9. There must have been a rebuilding and shift of wall position here. In addition, the extra wall south of the basin implies either the basin is not contemporary, or else the wall is a later addition.

[30] I am grateful to P Skippins for allowing me to consult her recent study on this topic (Skippins 2001)
[31] Crummy 1984, 116-17, figs 108-9
[32] this supply appears to run too far south to have been the supply for the basin
[33] random irregular cubes rather than the usual regular rows of cubes

Placed deposit
In among the material dumped in preparation for the construction of Building 206 (ie L111) was an articulated deer leg. It could be argued that this was rubbish-disposal, but it is more likely that this is a placed deposit of ritual significance.

Plate 12 The Period 5 hypocaust channels, cut by Period 8/9 pits: view south-west (site digital image 642).

The truncation of the Period 5 house, and deposits dating its end
Generally speaking, post-Roman activity has had a disastrous effect on this site. For most of the northern half of the site, post-Boudican deposits were stripped off during the 1930s when the old Post Office was built. The southern half of the site survived rather better, and the modern disturbance penetrated down to approximately the level of the Period 5 floors. Therefore, material dating after the construction of the Period 5 house is very rare on this site. There were two such patches of surviving dark, topsoily material on the floors of Rooms 2 and 5.

L7 on floor F57: finds (0963), pottery: Antonine, 3rd?, 3rd, 3rd
L10 on floor F58: finds (0764), pot, late 3rd-c4, 3rd-4th
(0765) pot 2nd, 3rd-4th
(0926), samian first half of 3rd century, other pot, 3rd, 3rd-4th
(1442) samian ware - Neronian/early Flavian stamp (residual here), other pot 1st, 3rd-4th

It is assumed here that this material accumulated on the floors of Building 206 after its abandonment. The ceramic evidence is strongly biased towards a date at the end of the 3rd century or early in the 4th century for this event.

Plate 13 Soil layer L7 on top of tessellated floor F57 of Period 5 Building 206, Room 5: view south (site digital image 270).

Interior decoration
Painted wall-plaster which can be associated with this period is relatively uncommon compared with Period 4, due to the truncation of the site. Predominant colour schemes were red, followed by cream, with smaller amounts of black, buff, and yellow.

5.7 Period 6: Saxon (5th century to AD 1066)
There were no site features or deposits dating to this period. However, there were a few finds from residual contexts (for which see Nina Crummy's report, section 6.2). the most interesting is an early *sceatta*. It must be assumed that the severe truncation of the site which has removed all the late Roman deposits has also removed whatever Saxon features or deposits may have existed.

5.8 Period 7: medieval (AD 1066 to mid 16th century)
The principal activity of this period was the cutting of robber trenches [34] to remove the stone from the Period 4 and 5 Roman house walls. The presence of such a widespread network of robber trenches implies that the site was open ground at the time.

John Speed's map shows Head street built up in 1610, and it had presumably been built up for several centuries before that date. However, there were several medieval pits which were presumably cut in the back plots of houses of the medieval houses on Head Street. These are spread across the whole site, showing that the present numbers 29-39 Head Street probably had medieval predecessors.

5.9 Period 8: post-medieval period (mid 16th century to AD 1900)
This period is defined by a large number of pits dug in the back posts of properties on the Head Street frontage. Though we have no detailed knowledge of the layout of these properties before the 1st edition of the Ordnance Survey (1876), John Speed's map of 1610 show that Head Street was built up by that time.

[34] F28, F67, F69, F84, F136, F140, F144, F151, F155, F157-F158, F162, F165-F168, F171, F198, F237, F331, F417-F418, F430, F432-F434, F439

Plate 14 Excavation of a large lump of bronze casting slag in top fill of pit containing the mould debris: view south-west (site digital image 230).

The casting debris

One large pit F106/F113 contained a huge quantity (circa 130kg) of ceramic casting debris and copper alloy slag. The slag and metallic adhesions on the mould debris were examined by David Dungworh of English Heritage Centre for Archaeology. A report on the debris itself can be found in section 6.9 below.

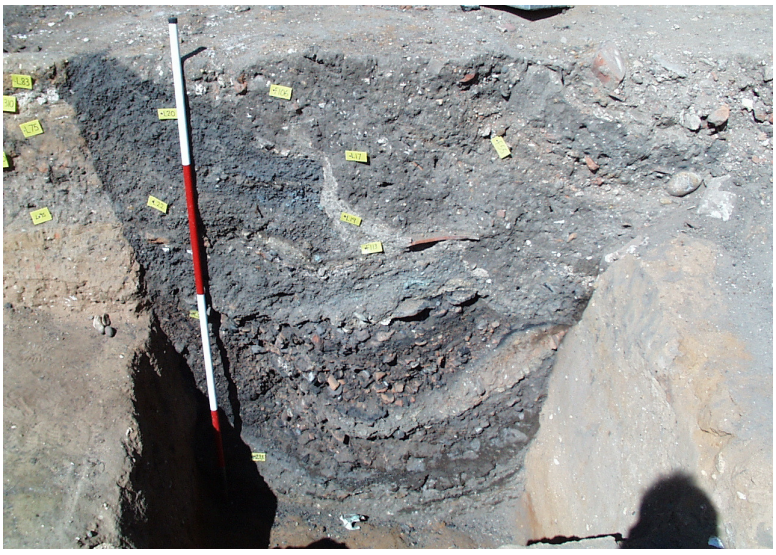


Plate 15 Section of pit F106/F113 containing the casting mould debris: view north (site digital image 941).

It has been possible to deduce from the measurable fragments of mould debris that vessels with an external diameter averaging 25 cm were produced here. These were probably cauldrons. A number of loose handles were also manufactured.

Building 207

The only surviving structural units from this period were a brick structure F19 and a brick-lined pit F105.

The brick structure, named Building 207, consisted of a number of linked brick walls over a cobbled floor. A sloping brick ramp gave access into the north-east side. With the cobbled floor, it is impossible to imagine this was a humanly used space, nor is it large enough to be a functional stable. A function like a storage space, or a manure heap may be close to the truth. The second suggestion is backed up by the 1st edition of the Ordnance Survey, which shows structures (possibly open) at this location.

Plate 16 Building 207 - Period 8 brick structure, cutting Roman basin: view north (site digital image 38).

5.10 Period 9: the 20th century

Post office

The principal archaeological feature of this period was the foundation network of the old post office which stood here. Its foundations were of two distinct types: elaborate brick footings over the north part of the site (presumably built after 1934), and second, the poured concrete footings of the security store built in 1984 in the south-western part of the site.

The excavation trenches cut by Rex Hull and Henry Laver were also re-excavated (F8, F9, F20, F59).

AOC evaluation trenches.

The four evaluation trenches cut by AOC Archaeology Group in 1998 were naturally found on site. The archaeological strata encountered in 1998 have been taken into account in this report [35], though there has been no separate study of the AOC finds.

[35] as detailed in AOC 1998

6 The finds

6.1 The coins

by N Crummy, R Hobbs, P de Jersey, R F Kenyon, and P J Wise

Overview (Tables 1-3; Figs 15-16)
by N Crummy

The Head Street coin assemblage consists of 90 coins, two of which are Iron Age, 73 Roman, one Anglo-Saxon, and fourteen medieval to post-medieval. Several are either rare as site finds or intrinsically interesting: an Iron Age silver unit of the Dobunni, a countermarked coin of Augustus, a defaced coin of Nero, the Anglo-Saxon *sceatta*, and a gold half angel of Elizabeth I.

As might be expected on a multi-period urban site with many large post-medieval pits and modern features, a large proportion of the coins are residual and many are unstratified, in some cases having been recovered by metal-detecting the spoil. The summary catalogue below (Table 1) therefore includes a column for stratigraphic value, expressed as either S (stratified within or close to the period of circulation), R (residual), or X (unstratified). When matched against broad date ranges, it can be seen that none of the 2nd-century or later Roman coins was stratified, despite evidence that occupation on the site continued at least into the later 3rd century (Table 2), but that about half the coins dated to the 1st century BC or 1st century AD were stratified, much the same proportion as was noted for all the excavated Roman coins of the 1970s (*CAR* **4**, 11). No attempt was made in *CAR* **4** to estimate the number of stratified medieval and later coins, but at Head Street two-thirds of the medieval and early post-medieval coins were stratified, with one-third being unstratified and none residual, while all the later post-medieval coins were residual apart from a George I farthing which was intrusive in a medieval robber trench.

Iron Age and Roman periods
Though there is very little evidence for Late Iron Age occupation on the plateau overlooking the main settlement at Sheepen, ie within the area occupied by the Roman fortress and its *canabae* and later by the *colonia*, the recovery of two Iron Age coins is not unusual, nor is altogether surprising that neither is a local issue. Of seven from excavations between 1971 and 1979, six came from the plateau; one was Gaulish and two Icenian, as opposed to only three local issues. Similarly, of four from excavations in the early 1980s, one was Icenian, one Coritanian (this was the impression of a coin rather than the coin itself), and two were local. Goodburn has suggested that their presence within the area of Roman occupation is evidence for their acceptability as currency after the conquest (*CAR* **4**, 15-16; *CAR* **6**, 294-5), which is supported by the recovery of two Gaulish coins from period IV (AD 49-60/1) contexts at Sheepen found during the excavations of the 1930s and another Gaulish bronze found stratified in a pre-Boudican Neronian pit from excavations in 1970 (Hawkes & Hull 1947, 135, 141-2; Allen 1985, microfiche 3:B1-2). The latter was the only non-local Iron Age coin recovered in 1970. Of the eight non-local issues found in the 1930s only one other was stratified, a contemporary forgery of a Brigantian gold unit found in a pre-conquest context.

When the pattern of Roman coin loss at Head Street is compared to that for the town compiled by Reece using the data from the 1970s and early 1980s excavations (*CAR* **4**, table 7, Total column) and also to the most recently published mean for Roman Britain (Reece 2002, 145), it is apparent that coin loss for the early coin periods is very high, and for the later ones very low (Table 3). Given the severe truncation of the late Roman levels and the total excavation of the early levels by hand, neither observation is surprising, but it remains to be seen whether or not the high loss for the earlier periods is what might be expected, given their enhancement in this way, or if it is unusually high even when these factors are taken into account.

Figure 15 shows Table 3 in schematic form, with the British mean represented by the base line '0', and with the Head Street coins per thousand matched against the number of coins per thousand given in *CAR* **4**. It demonstrates that Colchester generally has high coin loss in the early Roman periods followed by low coin loss at the end of the Roman period and that Head Street has much the same characteristics but greatly exaggerated, in other words the expected early-high, late-low pattern is clearly present. However, for the 2nd century and the first part of the 3rd century Head Street does not deviate

overmuch from the general Colchester pattern of loss, suggesting that the high levels of the 1st-century may be genuinely unusual, in particularly for Coin Period 4 (Flavian). It is even more striking that at Head Street this Flavian peak is higher than the Claudian one, whereas the reverse is usually true.

In terms of real numbers Flavian coins often outnumber Claudian ones on sites in Colchester (*CAR* **4**, figs 2-3), but, when compared to the British mean, the Claudian period often ranks as much the same or higher than the Flavian (*CAR* **4**, table 7, columns headed BKC, 1.81, LWC, Total). It is thus very noticeable that it is the high loss for the Flavian period at Head Street which is the most marked characteristic of the site's coin assemblage.

It is similarly of interest to note that in the late Roman period the coin loss at Head Street lies on the British mean for Coin Period 16 (AD 317-330). Though this figure is based on only three coins and cannot be related to any specific activity at Head Street, it is perhaps pertinent to note that in or around this period important public buildings, such as the large aisled Building 127 at Culver Street and the Butt Road cemetery church, were constructed in the western part of the town (*CAR* **6**, 112-16; *CAR* **9**, 164-91). This matches a pattern of 'recovery' noted recently in the coin loss for the town by Reece, which places it alongside military sites such as Richborough and Portchester (R Reece, pers comm).

Figure 15 also shows the coins from the Gilberd School, a site excavated in the 1980s which lies directly to the north of the Head Street site and where there was little occupation after AD 60/1. For the late Roman period it is therefore most likely to be fairly closely comparable to Head Street, and indeed the two sites are much the same from Period 6 onwards, with the marked fluctuations on each from Period 13 onwards being an indication of the low numbers of coins recovered (Table 3; Fig 15).

While at the Gilberd School an absence of activity is responsible for low coin loss in the late Roman period, at Head Street the truncation of the dark earth is the major factor. Excavations at the Angel Yard site, High Street, Colchester, in 1986 showed that even though the Roman buildings there were demolished *c* 300, 4th-century coins were deposited as dark earth built up after that date (Shimmin & Carter 1996, 38). Direct comparison of the Head Street and Angel Yard assemblages is hampered by the recovery from the latter of a dispersed coin hoard dated to the late 3rd-century (and including several much earlier coins), but, even with the over-emphasis on the mid to late 3rd century at Angel Yard caused by the hoard, it is clear that the coin loss there for Coin Periods 17 (AD 330-48) and 18 (AD 348-64) conforms to the general British pattern (Davies 1996, 65-6; Table 1).

Adding the Head Street and Gilberd School coins to the total for Colchester in *CAR* **4** produces little change to the loss pattern against the British mean apart from in Periods 1, 2 and 4 (Fig 16). The late-low figures for these sites are therefore absorbed into the town pattern without affecting it, but the early-high figures do have a real impact. This confirms the idiosyncratic character noted above for Head Street during these periods, and also raises a question about coin supply to the province in the Flavian period.

That Periods 1-3 for Colchester are high against the British mean is to be expected, as both the legionary fortress and the later *colonia*, the provincial capital, would have been the port of entry for new coinage. That the Flavian period also shows as high, and now even higher with Head Street and the Gilberd School included in the graph, suggests that there may be some grounds for considering that Colchester continued to receive a direct supply of new coinage even after it the centre of government shifted to London. Colchester certainly continued to be the port of entry for some trade goods at this time, particularly from the Lower Rhine area. For example, far more Type K mirrors from the Nijmegen workshops have been found in Colchester than in London (Lloyd-Morgan 1977, 244-8; Lloyd-Morgan 1981, x). Though the suggestion that a similar route may have been used for coin supply is highly speculative, especially when there is no published comparative data from London, it is nevertheless worth considering in view of the above-average quantity of Flavian coinage in the town.

Anglo-Saxon and later periods

The *sceatta* found in a medieval pit at Head Street is the first Anglo-Saxon coin dated to earlier than the 10th century to have been found on an archaeological excavation in the town, though. Only two or three others have been recovered, all casual finds (see report

by P J Wise, below). The west side of Head Street is notable for three other Anglo-Saxon finds, a fragment of a saucer brooch of probable 6th-century date and parts of two annular loomweights (*CAR* **1**, 8-9). The recovery of the Head Street *sceatta* is therefore a particularly important addition to the gradually developing picture of early Anglo-Saxon occupation in this part of the town.

The medieval and early post-medieval coin assemblage from the site differs to those from other excavations in the town. The earliest items are three late 14th to late 15th century jetons from France, all from pit F82 and possibly all in use at the same time. The other jetons are all 16th-century Nuremberg types, and the only English coins also date to the 16th century. The presence among the latter of a gold half-angel is extremely unusual. Though medium-value gold coins were produced in some numbers over the 16th century, they do not figure as ordinary site-finds. Valued at 3s 4d when first produced by Henry VI during his short-lived restoration of 1470-1, the half-angel was set at 5s in the improved currency instituted by Edward VI towards the end of his reign. The loss of the Head Street example must therefore have been of serious concern to the owner.

There is a notable absence at Head Street of the late 16th- and early 17th-century jetons of Hans Krauwinckel and Hans Schultes of Nuremberg, and of Royal and Rose farthing tokens and local trade tokens of the early and mid 17th century, all of which dominated the assemblages at Lion Walk, Middleborough, and Angel Yard (*CAR* **4**, 68; Davies 1996, 66). The paucity of 17th century coins is matched in the clay tobacco pipe assemblage from Head Street, which shows low pipe loss until the late 17th century (section 6.6 below). This absence of the commonest 17th-century coins suggests that there was either very little activity on the site over this period, or that social factors affected coin loss, ie even low denomination coinage may have been too important to be casually lost.

Later post-medieval coins are equally scarce, despite the presence of several pits of this date, and all are low denominations; the reigns of George I and George III are represented by only one coin each, and there are also two worn and illegible issues of the 18th or perhaps early 19th century.

The Iron Age coins

by R Hobbs and P de Jersey

The two Iron Age coins are both silver, though on one (SF 391) the copper has leached out preferentially giving it the appearance of bronze. SF 680 is an uninscribed silver unit of the Dobunni with a date range from the late 1st century BC to the early 1st century AD. SF 391 is a silver unit of the Iceni of 'face/horse' type - it is too corroded to be more specific - probably dating to the early 1st century AD. Neither coin was stratified in a contemporary level; SF 391 came from a post-medieval pit, SF 680 was unstratified.

Inter-tribal links such as trade no doubt account for the Icenian silver coins which have previously been found on excavated sites at Lion Walk, Balkerne Lane, and Culver Street, as well as on the Iron Age settlement at Sheepen close to the river Colne (*CAR* **4**, 15; *CAR* **6**, 294; Hawkes & Hull 1947, 135), and Goodburn has suggested that the proportion of local to Icenian issues is exaggerated because the Iceni minted no bronze (*CAR* **4**, 15). Coins of the Dobunni are, however, rarely found in eastern Britain, making the presence of this early issue particularly unusual.

Only seven other Dobunnic coins are recorded from Essex, mostly from Colchester; there are similar small numbers from East Anglia. In some cases the records themselves are of poor quality. The seven are:

1) CCI 61.0028: silver unit, class I (VA 1135), found at Colchester before 1904. Allen 1960, 247.
2) CCI 72.0004: silver unit, class J (VA 1135), found at Colchester before 1924. Colchester and Essex Museum acc no 4928.24, though possibly missing as CCI has no image. Allen suggests that another coin of the same type in the museum may have been found locally, but it is difficult to establish precisely to which coin he refers (1960, 247).
3) CCI - : Allen notes that Evans records a Dobunnic silver unit, class D (VA 1049), found at Colchester with a coin of Domitian 'and other antiquities' (Evans 1890, 466; Allen 1960, 247).

4) CCI 72.0001: silver unit, class D (VA 1049), found at Fingringhoe, *c* 1932. Colchester and Essex Museum acc no 539.60. Listed by Haselgrove as class C (1978, 94).
5) CCI 72.0008: gold stater, possibly Eisu (VA 1105). A very confused record. Found at Dovercourt before 1905; Allen 1960, 252. The coin was noted as missing from Colchester Museum (acc no 162.41) in 1969 and again in 1972; in 1979 an Eisu stater with this provenance was offered for sale by Stanley Gibbons, presumably the same coin.
6) CCI 94.1169: bronze core of a plated gold stater of Eisu (VA 1105). In trade, with provenance simply given as 'Essex'.
7) CCI 88.0002: silver unit, found in excavation at Chelmsford in 1975, "site AG", context 333, small find 47. The coin was sent by Nick Wickenden to the Ashmolean Museum for identification; probably a silver unit of Eisu (VA 1110), but in poor condition and identification therefore uncertain.

The early Roman coins (Table 4; Pl 15)
by R F Kenyon

Excavations at Head Street produced 45 early Roman coins which terminate with a solitary *as* of Nerva (AD 96-8) (see Table 4). Four of the coins are silver *denarii*, two of which are very worn Republican types and the others Vespasianic. The remaining 41 coins, all of which are bronze, represent those that circulated as small change in the years following the establishment of a Roman fortress and colony: mostly copper *asses* with four of the higher denomination brass *dupondius* and a single brass *sestertius*.

This assemblage of coins fairly reflects the pattern of AD 1st-century coin-finds noted at Colchester in previous publications: that is, some examples of well-worn Republican silver coins with some later imperial *denarii*, a predominance of *aes* coins of the emperors Claudius I (AD 41-54) and Vespasian (AD 69-79) with fewer earlier imperial bronze coins complemented by some coins of Nero (AD 54-68) and Domitian (AD 81-96), and occasional examples of the short-reigning emperors Titus (AD 79-81) and Nerva (AD 96-8). All are examples with the more common obverse- and reverse-types of their respective emperors. The absence of an excavated find of a gold *aureus* or the lower bronze denominations *quadrans* and *semis* confirm the pattern of excavated first century bronze coin-finds not only at Colchester but also throughout Britain (Reece 1972, 271).

All the coins are single-finds and there is no stratigraphic evidence to suggest that any might have formed a purse group. There is also nothing to suggest any might be from a savings hoard. It therefore seems safe to say that all were lost individually by chance rather than through deliberate deposition. While some show little sign of wear, the majority exhibit clear evidence of the smoothing effect of being passed from hand to hand and being abraded by constant rubbing against other coins, but none, with the possible exception of an uncertain Vespasian *as*, are worn entirely smooth by long-continued circulation. This would suggest that all the coins were lost in circulation.

In the new province of Roman Britain it was necessary to establish a pool of currency for use by Roman troops, traders and the native populace. This demanded a huge input of bronze coinage as well as silver and gold coins. The newly-created currency pool needed to include old coins of the Republic and of previous emperors, as well as those newly struck in the name of Claudius I. The prevalence of bronze coins struck in imitation of the first issues of Claudius I struck at Rome has been noted before at Colchester and it has been suggested that geographical distribution of die-link evidence from these finds would indicate that Colchester may have been one of the centres of production for these imitations.

The relatively low proportion of coins of Nero found in recent and earlier excavations at Colchester contrasts with the volume of Claudian coinage. This may be explained by noting that no bronze coins were struck during the first ten years of Nero's reign, whereas it seems probable that imitations of *asses* of Claudius I were struck throughout the reign of Claudius and into that of his successor, Nero. It can be supposed that when Nero did strike bronze coins at the mint of *Lugdunum* (Lyon, France) these would have been issued to the troops stationed in Britain and would have been much preferred by the traders supplying them with goods and services. However, they were not struck in sufficient volume to entirely drive out of circulation the specious coins of Claudius I. Hoard evidence, in particular 'The Castle Square hoard' composed of bronze coins of

Claudius, Nero and Vespasian, found at the legionary centre of Lincoln (Petch 1958; Robertson 2000, 11), demonstrates that these imitative coins continued to circulate beyond the reigns of Claudius I and Nero and into that of Vespasian.

Vespasian struck bronze coins in volume at *Lugdunum* to supplement those minted at Rome. These coins were issued in two stages: in AD 71-2 and AD 77-8. It is not hard to recognise that the heavier weight of these new coins would drive out of circulation the worn, poorly struck, lightweight imitative coins of Claudius. A compelling argument is made elsewhere in a study of coins found at Nijmegen, Netherlands, that Vespasian issued *aes* coins in two stages to standardise and co-ordinate the metrology of coins in circulation (MacDowall, Hubrecht & de Jong 1992, 22-3). However, a search through recently published hoard material for Roman Britain assembled by Anne S Robertson (Robertson 2000) shows that several hoards terminating with late-1st or 2nd-century coins include the odd Claudian coin in their coin-list. It is evident that the large quantity of bronze coins struck by the emperor Vespasian and imported into Britain, while not entirely driving out the impoverished Claudian specie, did contribute to the eventual end of Claudian imitations in circulation in Britain.

Bronze coins of Titus, Domitian and Nerva were struck only at the mint of Rome and it would seem from the absence of imitations of these coin-types that sufficient supplies were introduced to the circulation pool to meet the demand for small change.

These recently excavated coins follow the 'normal' pattern of coin-finds at Colchester; there are however some that warrant closer inspection and further consideration.

A countermarked coin (Plate 17, 1)

The excavated find of a worn moneyer's *as* of Augustus (27 BC-AD 14) countermarked with a Latin monogram representing the title '*Caesar*' is uncommon in Britain (Pl 1, 1). I am aware of only one other British provenanced example of this countermark stamped on a badly worn Augustan *as* with an illegible reverse that was found by a metal detector user at Old Winteringham, Humberside (pers comm). It has been argued elsewhere that the distribution of finds of this countermark indicates it was applied in Lower Germany (Kraay 1956) during the reign of emperor Tiberius (AD 14-37). Recent analysis of coin-find evidence argues that the stamp was applied to less worn Augustan moneyers' *asses*, ie those coins of good weight and reasonable condition, between AD 15 and AD 23 at the Roman legionary base of Nijmegen (MacDowall, Hubrecht & de Jong 1992, 48-52). This coin, issued in 15 BC, would have been in circulation for over thirty years at the time of being stamped with the countermark. The above authors postulate that this countermark was applied by the military authorities at Nijmegen to reaffirm a title of the existing titulature that would confirm the coin's status and allow its continued circulation. The loss of this coin at Colchester after the Roman invasion of AD 43, ie almost sixty years after it was struck and some thirty years after it was countermarked, attests to the continued acceptance of the '*Caesar'* countermark as a mark of authority.

A defaced coin (Plate 17, 11)

Three chisel-cuts across the obverse portrait of Nero (Pl 1, 11) single out this coin for our attention now and no doubt for the attention of another in the past at some time after AD 65 when the coin was struck. Surface encrustation makes it difficult to assess the degree of wear of this *as* when it was lost, but it does appear to have seen some circulation. However, it is not the coin which in itself is of interest, it is the distinctive marks of its obverse which attracts the observer. The purpose or function of these chisel-cuts is not clear and warrants further consideration

Cut-marks on coins have not been widely reported; the late George Boon did make a significant, brief and scholarly contribution in his important essay on counterfeit coins found in Roman Britain (Boon 1988), and the ritual mutilation of coins offered at some British sanctuary sites has recently been explored (Kiernan 2002), but other references are rare.

A single cut-mark across a worn coin has been noted twice by the author while inspecting coins in a number of museum collections in Britain: in the first instance, on the obverse of an *as* of Claudius I found at Broxtowe, Nottinghamshire, and on the reverse of another at Wanborough, Wiltshire. A Claudian *as* found at Silchester, Hampshire has two single cut-marks arranged in the shape of a cross on its obverse portrait (Boon 1974, 138, note 22, where, contrary to my experience, the author suggests that cut-marked

coins are 'not uncommon'). It seems likely that these coins were marked for withdrawal from circulation and destined for the melting pot or possibly for halving and quartering and continued circulation as fractional units. A political significance may be attributed to the deliberate wearing away of both the obverse and reverse faces of a Neronian coin from the native burial site at Stanway, Colchester (Colchester Archaeological Trust, report in preparation), and also to an *as* of Nero found at Silchester with a single cut across the neck of the emperor's portrait (Boon 1988, 178, pl 1). In the latter case, however, the cut may merely be a mark to test for plated coins. A 'test-cut' mark to test for solid metal has been noted on a *dupondius* of Claudius (RIC 92) found at Colchester, Essex (*CAR* **4**, pl 5, 14) and on another at Lincoln, Lincolnshire, but nothing like the three-cuts mark on the Head Street coin has been recorded before on a British provenanced find.

It would seem that three chisel-cuts would be an unnecessarily excessive test for identifying a plated coin and similarly for identifying a coin as scrap metal. It is of course possible that this is an example of idle hands merely defacing a coin with a private graffitio, but it is worth considering whether the arrangement of cuts may be of significance and might suggest a purpose or function for this particular 'defacement'. It is difficult to be certain, but it looks as if the coin was first marked with a cut down the length of the emperor's head and then with two cuts forming a V-shape across the portrait: one cut runs from Nero's mouth back across his head to the circumference of the coin; the other cut is from the edge of the coin before Nero's chin to the back of his head. From close inspection it appears one chisel-like tool was used repeatedly to produce the three cuts. In other words, the three marks were made at the same time by the same person, but for what purpose?

It is well known that Neronian bronze coins were countermarked for political purpose during the unsettled years AD 68-70 of the Civil Wars in Gaul, just before and after Nero's death. Countermarks were employed then to claim an existing coin for a new minting authority: for example, *PR* (*Populus Romanus*) and *SPQR* (*Senatus Populusque Romanus*) were used by Gallic rebels under Vindex, and Latin monograms for Vitellius and Vespasian feature as countermarks on coins of Nero. It is possible that this Colchester find may be associated with these distinctive countermarks if the crude V-shaped mark was intended to be read as a token of support for perhaps Vindex or Vitellius after a defacing blow was struck across Nero's head.

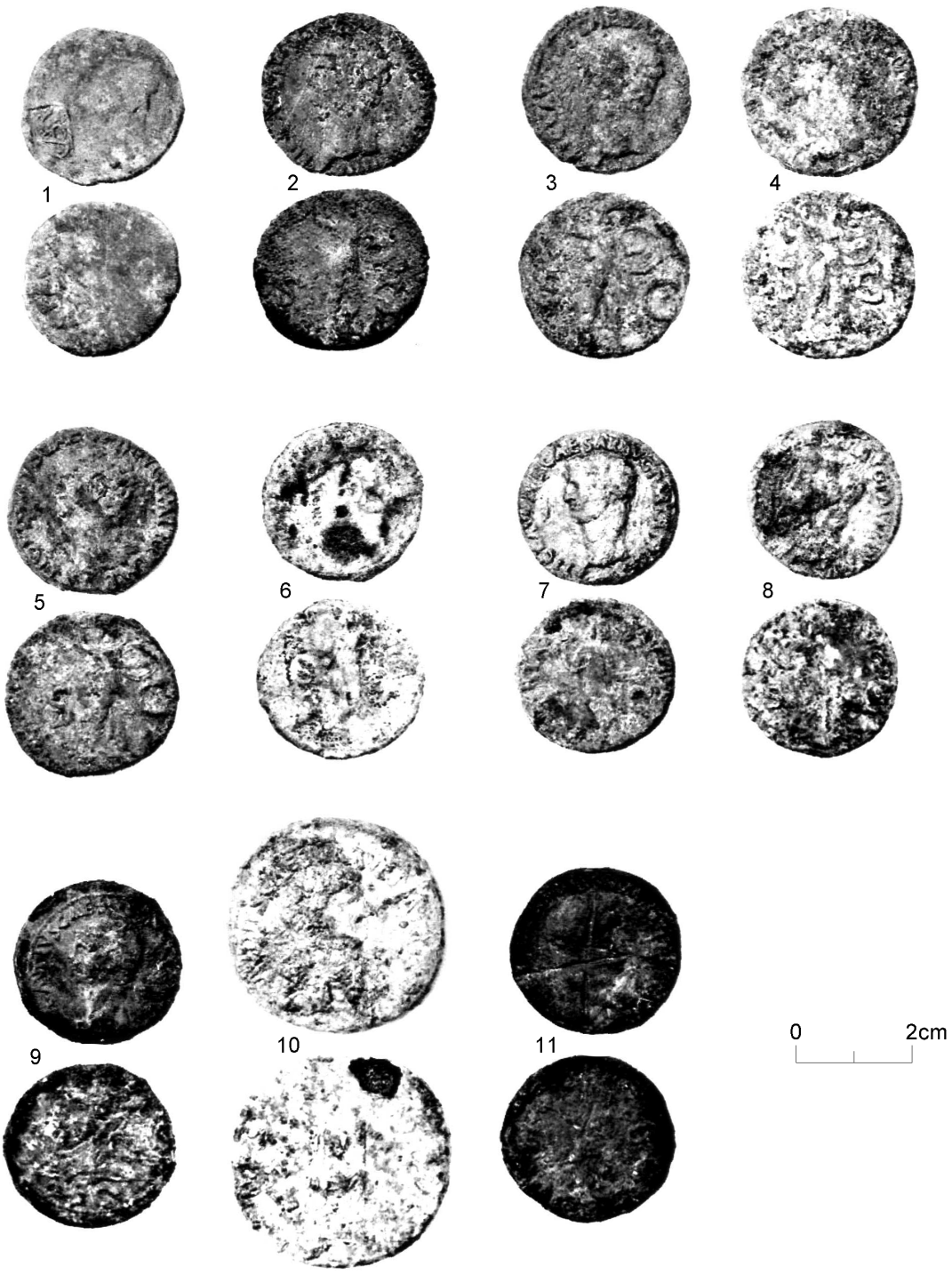
A large deposit of coins found at Saint-Leonard (Sarthe, France) contains a quantity of scratched and punched countermarks generally in the form of very large letters. It is possible that this V-marked coin belongs to that group of countermarked coins and, given the large quantity of those countermarked coins, a votive rather than political purpose for this distinguishing feature might be suggested.

Die-linked coins (Plate 15, 2-10)

A search through a photofile of bronze coins of Claudius I held in museums and archaeological societies in Britain has resulted in further examples of die-links to Colchester coins. Nine of the thirteen coins of Claudius from Head Street, all imitations, provide us with two coins struck from the same pair of dies and further examples of two previously identified die-groups (Groups A and D) noted at Colchester that I have described in detail elsewhere (*CAR* **4**, 24-41; *CAR* **6**, 295-307). Only those coins that show any detail have been photographed to maintain the record for these die-groups. The two coins die-linked by both obverse and reverse dies are *asses* with the reverse of *Libertas* (Pl 1, 7-8); though similar to some other die-groups, they are not directly linked to a previously identified one.

Group A. Seventy British provenanced coins have so far been identified as belonging to this group, which includes in its composition both *dupondii* and *asses.* Six *asses* from the recent Head Street excavations, five with the common Minerva reverse and one with Constantia reverse (five coins are illustrated, Pl 1, 2-6), bring the total for Colchester to thirty provenanced examples of this large die-related group.

Group D. The Ceres *dupondius* (Pl 1, 9) provides an additional specimen to the existing die-group of six *dupondii*. The geographical distribution of this group now shows four coins from Colchester and one each from South Cadbury and Combe St Nicholas, Somerset, and Silchester, Hampshire.



Pl 17: 1st-century coins from Head Street. 1...SF 780, Augustus, *as* with countermark; 2...SF 693, Claudius I, *as*, reverse Minerva, grade A copy; 3...SF 564, Claudius I, *as*, reverse Minerva, grade A copy; 4...SF 561, Claudius I, *as*, reverse Minerva, grade A copy; 5...SF 691, Claudius I, *as*, reverse Minerva, grade A copy; 6...SF 687, Claudius I, *as*, reverse Constantia, grade A copy; 7... Claudius I, *as*, reverse Libertas, grade B copy; 8...Claudius I, *as*, reverse Libertas, grade B copy; 9...SF 588, Claudius I, *dupondius*, reverse Ceres, grade B copy; 10...SF 636, Claudius I, *sestertius*, reverse Spes, grade A copy; 11...SF 268, Nero, *as*, with three chisel cuts across the obverse.

Recent publication of fresh analysis of three very large coin deposits found in France in the 19th and 20th centuries provides stimulating material that calls for a re-examination of Claudian coins found in Britain (Besombes & Barrandon 2000). The authors employed metallographic, geographic and stylistic evidence to propose that several *official* minting centres in Gaul and Spain operated in the reign of Claudius I. They suggest a new classification, embracing the earlier work of Laffranchi, for the bronze coins of Claudius I, which proposes that the output of bronze coins at Rome was supplemented by official mints located in Gaul and the Iberian peninsula (*cf* Laffranchi 1949). These geographically widespread mints, it is postulated, were the sources of an abundant supply of copper and brass coins to the western provinces of the Roman empire. These coins, issued over a short period of time following Claudius's accession as emperor, were subject to imitation by purely local striking in illicit mints.

It is Besombes and Barrandon's view, based on illustrations of coins published in *CAR* **4**, that the majority of Claudian coins found at Colchester are products of one of the two postulated mints operating in the Iberian peninsula. This opinion merits investigation and will be the subject of a future paper by this author.

The *sceatta*

by P J Wise (Colchester Museums)

Early penny (*sceatta*), Series A3 (imitation), BMC type 2a, North 40, pre-*c* 710:
Obverse: TIC, bust right crowned and draped, good style;
Reverse: standard containing TOT II; above, a triangle of pellets enclosing three pellets, and one pellet to right;
Weight 0.77g; diameter 11mm; die axis 8.

Series A is a primary *sceatta*, minted in Kent and possibly struck in the reign of King Hlothere (673-685). There exists a wide range of imitations of Series A which tend to be found anywhere except Kent, including Essex (Metcalf 1993, 85-93). This present find from Head Street is an imitation because of its low weight, only 0.77g as opposed to the average for Series A3 of 1.18g (Metcalf 1993, 87, fig).

Sceattas of any series are very rare in Colchester and its immediate vicinity. From the town itself there is an antiquarian find of a 'continental runic' *sceatta* (Series D, BMC type 8) although a precise provenance is not known (*CAR* **1**, 20). A second of Series Va was found in a garden in Queen Street in 1952 and is now in the British Museum (*CAR* **1**, 7-8). A third of Series A2 was found in 1994 but again no provenance is given (EMC number 1994.0112). From Fingringhoe, to the south-east of the town, a metal-detectorist recovered six *sceattas* of Series D, E and F in the 1990s, now in the collections at Colchester Museums (COLEM 1999.54.1-3 and COLEM 1999.55.1-3).

Table 1: Summary catalogue of the Head Street coin assemblage.
The coins are listed by Site Period, and within period by Feature and then Find order. Roman coin periods are those defined in Reece 2002, 145. Stratigraphic value abbreviations in the sixth column are: S....stratified within or close to the period of circulation; R....residual; X....unstratified. Reference abbreviations are listed in the main bibliography.

SF	Find	Feature/ Layer	Context description	Period	Stratigraphic value	Identification	Diameter (mm)	Weight (g)	Reference	Date	Roman coin period
588	2500	F696	pit	1	S	Claudius I	28	9.90	copy of RIC 94	43-54	2
636	2610	L526	occupation & floor	1	S	Claudius I	36	27.76	copy of RIC 99	43-54	2
561	2465	L537	fill of linear feature	1	S	Claudius I	30	11.75	copy of RIC 100	43-54	2
687	2676	L545	burnt debris	1	S	Claudius I	28	9.70	copy of RIC 95	43-54	2
169	782	L327	top surface of street F339	4	S	Vespasian	28	9.58	reverse uncertain	69-79	4
545	2449	F637	pit	1a	S	Gaius (Agrippa)	25.5	9.80	copy of RIC 58	37-41	1
564	2468	L528	demolition/ dump	1b/2	S	Claudius I	28	10.65	copy of RIC 100	43-54	2
685	2674	L528	demolition/ dump	1b/2	S	Claudius I (Antonia)	27	11.47	copy of RIC 92	43-54	2
587	2499	L582	accumulation	1-3	S	Gaius (Agrippa)	28	10.65	RIC 58	37-41	1
693	2682	F870	drain/ditch	3	S	Claudius I	29	9.88	copy of RIC 100	43-54	2
566	2470	L514	collapsed wall debris	3	S	Claudius I	29	10.58	copy of RIC 100	43-54	2
691	2680	L581	clay	3?	S	Claudius I	29	12.85	copy of RIC 100	43-54	2
449	2126	L434	make-up	post 3?/4	S	Nero	29	11.57	RIC 477	64-8	3
683	2672	F283	pit cut?	4	S	Vespasian	30	10.59	RIC 747	69-79	4
450	2127	L92	soil layer	4	S	Vespasian	27	11.61	RIC 747	69-79	4
677	2666	L598	fill/slump	4	S	Claudius I	30	10.17	RIC 100	43-54	2
678	2667	L598	fill/slump	4	S	Claudius I	29	10.97	?copy, reverse uncertain	43-54	2
581	2493	L147	surface	4a	S	Vespasian	29	10.86	RIC 482	69-79	4
686	2675	L432	clay floor?	4a	S	Vespasian	28	9.84	RIC 502	69-79	4
781	2789	L175	clay floor	4b	S	Domitian	29	11.09	RIC 371	81-96	4
445	2122	L416	black silt/ash occupation	4b	S	Vespasian	30	9.08	reverse uncertain	69-79	4
679	2668	L416	black silt/ash occupation	4b	S	Vespasian	29	8.68	reverse uncertain	69-79	4
692	2681	L416	black silt/ash occupation	4b	S	Domitian	30	10.34	RIC 406	81-96	4
593	2505	L148	make-up	4b	S	Vespasian	29	11.30	RIC 747	69-79	4
689	2678	L156	dump/make-up	4b	S	Domitian	28	11.53	RIC 354	81-96	4
782	2790	L166	occupation?	4b	S	Vespasian	28	9.74	RIC 763	69-79	4
706	2695	L170	make-up	4b	S	illegible *denarius*; silver	18	2.9	-	1st century	-
579	2491	L116	demolition	5	R	Domitian	28	10.25	RIC 354	81-96	4
268	1155	L79	soil accumulation	5b	R	Nero, defaced	28	10.78	RIC 477	64-8	3
584	2496	F383	pit	5 or later	S?	?Trajan, illegible *sestertius*	33	23.21	-	?98-117	5
10	49	F28	robber trench	7	R	House of Constantine	18	1.33	copy as HK 137	346-50	17
175	810	F67	robber trench	7	R	Trajan, illegible *as*	28	10.35	-	98-117	5
38	173	F69	robber trench	7	R	Trajan, *denarius*, fragment	17	1.71	-	98-117	5
101	533	F82	pit	7	S	Charles VI of France jeton, crown type	25	4.01	Mitchiner 477a	*c* 1385-1415	-
117	549	F82	pit	7	S	Tournai jeton, crown type	27	3.10	Mitchiner 661	*c* 1415-97	-
105	537	F82	pit	7	S	French jeton, obv IHS with foliage border, rev three fleur-de-lys in a three-arched tressure with a fleur-de-lys in each angle and a border of fleur-de-lys	22	1.49	see Mitchiner pp 212-13	late 15th century	-
168	759	F141	pit	7	R	Claudius II, rev Consecratio, eagle	15	2.51	RIC 265	270	13
159	750	F142	robber trench	7	R	Constantinopolis	13	1.4	copy as HK 52	330-45	17
504	2312	F145	robber trench	7	S	Nuremberg jeton, rose/orb type	24	1.05	Mitchiner 1249	*c* 1500-50	-
161	752	F151	robber trench	7	R	Marcus Aurelius, *sestertius*, rev female figure with ?abacus in right hand, vertical	30	20.01	-	138-61	7

SF	Find	Feature/ Layer	Context description	Period	Stratigraphic value	Identification	Diameter (mm)	Weight (g)	Reference	Date	Roman coin period
						sceptre in left					
155	746	F155	robber trench	7	X	George I, farthing	23	4.96	Peck 808	1719	-
178	813	F166	robber trench	7	R	Constantine I	20	3.82	RIC 389	323	16
264	1144	F186	robber trench	7	R	Severus Alexander	18	2.98	RIC 412	227	11
100	532	F355	pit	7	R	Series A3 (imitation) sceatta	10	0.77	BMC type 2a, North 40	pre-*c* 710	-
534	2412	F419	robber trench	7	R	Vespasian, burnt	30	9.41	reverse uncertain	69-79	4
391	1929	F36	pit	8	R	Iceni, silver unit, illegible; obv stylised face r, rev stylised horse ?r	13	1.28	as BMC 3556 ff/VA 790, 792	probably late 1st century BC	-
688	2677	F108	pit	8	R	House of Valentinian	18	2.24	as CK 78	364-78	19
158	749	F117	pit	8	R	Constantinopolis	17	2.9	as HK 52	330-40	17
87	499	F120	pit	8	R	House of Constantine, rev illegible	14	2.11	-	330-60	-
93	525	F320	pit	8	R	Constans	13	1.44	copy of HK 90	335-45	17
55	337	F373	pit	8	S	Elizabeth I, half angel; gold	20	2.59	North 1992/1	1574-8	-
162	753	F377	pit sequence	8	R	House of Constantine	14	1.37	copy as HK 48	330-45	17
164	755	F377	pit sequence	8	R	Geta; silver	19	3.04	RIC 40	210	10
179	814	F379	pit	8	R	illegible	15	0.63	-	3rd-4th century	-
257	1136	F379	pit	8	R	House of Constantine, rev illegible	16	1.38	-	330-60	-
153	744	F401	pit	8	S	Nuremberg jeton, rose/orb type	24	1.7	as Mitchiner 1248	*c* 1500-50	-
156	747	F404	cut	8	S	illegible jeton, in fragments	23	1.05	-	late medieval /early post-medieval	-
163	754	F406	pit	8	R	Magnentius	23	4.95	as CK 8	351-3	18
251	1129	F406	pit	8	R	illegible	13	1.02	-	3rd-4th century	-
261	1140	F8	1934 excavation trench	9	R	Nero	32	10.57	reverse uncertain	64-8	3
166	757	F97	construction cut	9	R	Claudius I	29	9.45	copy of RIC 100	43-54	2
152	743	F335	construction cut	9	R	Claudius II, rev Consecratio, altar (?barbarous)	17	1.19	as RIC 257/259	270	13
157	748	F362	construction trench	9	R	Constantine II	17	2.24	HK 63	330-5	17
174	809	F362	construction trench	9	R	Constantine I, rev altar topped by globe (Beata Tranquillitas), otherwise illegible	18	2.4	-	321-4	16
176	811	F398	cellar	9	R	Carausius	24	5.15	as RIC 893	286-93	14
520	2398	F399	pit	9	R	illegible	28	8.18	-	18th-19th century	-
167	758	L11	dumped deposit	9	R	George III, halfpenny	30	8.29	-	late 18th century?	-
41	176	L11	dumped deposit	9	R	illegible	26	6.39	-	18th-19th century	-
85	497	L18	deposited rubbish	9	R	House of Constantine	10	0.76	copy as CK 25	350-60	18
165	756	L307	brick rubble	9	R	Vespasian	28	11.59	RIC 479	69-79	4
780	2788	L477	-	unphased	X	Augustus, *as*, countermarked	28	8.09	RIC 389	27 BC-AD 14	1
530	2408	L392/ 396	-	unphased	X	Nerva	29	10.03	RIC 60	96-98	5
680	2669	u/s	unstratified	-	X	Dobunni, silver unit, uninscribed; obv stylised head r; rev stylised horse l	12	1.09	BMC 2976/ VA 1074	late 1st century BC-early 1st century AD	-

SF	Find	Feature/ Layer	Context description	Period	Stratigraphic value	Identification	Diameter (mm)	Weight (g)	Reference	Date	Roman coin period
515	2393	u/s	unstratified	-	X	Republican *denarius*, obv female head, rev Pegasus	18.5	3.21	-	1st century BC?	1
516	2394	u/s	unstratified	-	X	Republican *denarius*, Petillius Capitolinus, obv eagle, rev temple	18	3.16	Crawford 487/2a	43 BC	1
250	1128	u/s	unstratified	-	X	Claudius I	27	9.92	copy of RIC 97	43-54	2
559	2463	u/s	unstratified	-	X	Claudius I	28	7.94	copy of RIC 97	43-54	2
783	2791	u/s	unstratified - spoil heap	-	X	Nero	28	9.60	RIC 477	64-8	3
694	2683	u/s	unstratified	-	X	Vespasian, *denarius*	19	3.25	RIC 214	69-79	4
684	2673	u/s	unstratified - spoil heap	-	X	Vespasian	27	11.21	RIC 747	69-79	4
177	812	u/s	unstratified	-	X	Vespasian	29	10.96	RIC 73	69-79	4
599	2511	u/s	unstratified	-	X	Vespasian	28	10.51	reverse uncertain	69-79	4
690	2679	u/s	unstratified - spoil heap	-	X	Titus	28	12.54	RIC 668	77-79	4
542	2446	u/s	unstratified	-	X	Crispus	19	3.01	RIC 133	321	16
695	2684	u/s	unstratified	-	X	Constans	14	1.46	as HK 138	346/7-8	17
160	751	u/s	unstratified	-	X	Valens	17	2.45	CK 528	367-75	19
681	2670	u/s	unstratified	-	X	House of Valentinian	16	2.68	as CK 78	364-78	19
154	745	u/s	unstratified	-	X	Nuremberg jeton, Lion of St Mark type	28	4.09	as Mitchiner 1113	*c* 1500-70	-
1	1	u/s	unstratified	-	X	Edward VI, penny; silver	15	0.60	North 1883	1547-51	-
531	2409	u/s	unstratified	-	X	Elizabeth I, 3d; silver	19	1.02	North 1998	1575	-

Table 2: Coin date by stratigraphic value.
S...stratified; R...residual; X...unstratified or intrusive.

Date	S	R	X	Totals
	No	No	No	**No**
1st century BC-1st century AD	28	7	13	**48**
2nd-4th century AD	-	23	4	**27**
Anglo-Saxon	-	1	-	**1**
14th-16th century	7	-	3	**10**
17th-century or later	-	3	1	**4**
TOTALS				**90**

Table 3: Head Street coin loss compared to Reece's mean for Colchester and the British mean. (Periods as in Reece 2002, 145.)

Coin Period	Date	Head Street		Colchester (*CAR* 4)	the Gilberd School		British Mean
		No	per 1000	per 1000	No	per 1000	
1	to AD 41	5	72	18	6	98	6
2	41-54	14	203	44	14	230	12
3	54-69	4	58	17	2	33	6
4	69-96	21	304	47	6	98	31
5	96-117	4	58	16	2	33	20
6	117-138	-	-	17	1	13	16
7	138-161	1	14	27	1	16	19
8	161-180	-	-	17	-	-	12
9	180-192	-	-	4	-	-	5
10	193-222	1	14	23	1	16	15
11	222-238	1	14	10	-	-	7
12	238-260	-	-	10	-	-	8
13	260-275	2	29	128	1	16	144
14	275-296	1	14	146	8	131	121
15	296-317	-	-	10	1	16	17
16	317-330	3	43	5	3	49	44
17	330-348	7	101	253	13	213	246
18	348-364	2	29	84	2	33	98
19	364-378	3	43	59	-	-	118
20	378-388	-	-	3	-	-	5
21	388-402	-	-	41	-	-	50
Totals		**69**			**61**		

Table 4: The 1st-century Roman coins from Head Street.

SF no & context nos	Site Period	Type	Feature	Diameter (mm)	Axis	Weight (g)	Condition	Plate
Republican								
SF 515, 2393	unstratified	female head/pegasus, *denarius*	orthodox	18.5	6	3.21	6	-
SF 516, 2394	unstratified	Petillius Capitolinus, (eagle/temple), *denarius*	orthodox	18	6	3.16	5	-
Augustus								
SF 780, 2788 L477	unphased	moneyers, *as*, RIC 389	countermarked with CAESAR monogram on the obverse	28	3	8.09	5	1
Gaius								
SF 545, 2449 F637	1a	Agrippa, *as*, RIC 58	copy, grade A	25.5	6	9.8	-	-
SF 587, 2499 L582	1-3	Agrippa, *as*, RIC 58	orthodox	28	6	10.65	-	-
Claudius I								
SF 166, 757 F97	9	Minerva, *as*, RIC 100	copy, grade B	29	7	9.45	9	-
SF 693, 2682 F870	3	Minerva, *as*, RIC 100	copy, grade A	29	6	988	3	2
SF 564, 2468 L528	1b/2	Minerva, *as*, RIC 100	copy, grade A	28	6	10.65	3	3
SF 561, 2465 L537	1	Minerva, *as*, RIC 100	copy, grade A	30	6	11.75	3	4
SF 691, 2680 L581	3?	Minerva, *as*, RIC 100	copy, grade A	29	6	12.85	2	5
SF 677, 2667 L598	4	Minerva, *as*, RIC 100	copy, grade A	30	6	10.17	9	-
SF 566, 2470 L514	3	Minerva, *as*, RIC 100	copy, grade A or orthodox	29	6	10.58	4	-
SF 687, 2676 L545	1	Constantia, *as*, RIC 95	copy, grade A	28	6	9.7	4	6
SF 250, 1128	unstratified	Libertas, *as*, RIC 97	copy, grade B	27	6	9.92	4	7
SF 559, 2463	unstratified	Libertas, *as*, RIC 97	copy, grade B	28	6	7.94	3	8
SF 588, 2500 F696	1	Ceres, *dupondius*, RIC 94	copy, grade B	28	7	9.9	1	9
SF 685, 2674 L528	1b/2	Antonia, *dupondius*, RIC 92	copy, grade B	27	10	11.47	4	-
SF 636, 2610 L526	1	Spes, *sestertius*, RIC 99	copy, grade A	38	6	27.73	2	10
SF 678, 2667 L598	4	uncertain, *as*	copy?	29	?	10.97	9	-
Nero								
SF 268, 1155 L79	5b	Victory with shield, *as*, RIC 477	orthodox, 3 chisel cuts across obverse	28	6	10.78	9	11
SF 449, 2126 L434	post 3?/4	Victory with shield, *as*, RIC 477	orthodox	29	6	11.57	2	-
SF 783, 2791	unstratified	Victory with shield, *as*, RIC 477	orthodox	28	6	9.3	3	-
SF 261, 1140 F8	9	uncertain, standing figure, *as*,	orthodox	32	?	10.57	9	-
Vespasian								
SF 38, 173 F69	7	uncertain, *denarius*	orthodox	-	-	-	-	-
SF 694, 2683	unstratified	sow with piglets, *denarius*, RIC 214	orthodox	19	6	3.25	3	-
SF 683, 2672 F283	4	eagle S C, *as*, RIC 747	orthodox	30	7	10.59	1	-
SF 450, 2127 L92	4	eagle S C, *as*, RIC 747	orthodox	27	6	11.61	4	-
SF 593, 2505 L148	4b	eagle S C, *as*, RIC 747	orthodox	29	6	11.3	3	-
SF 684, 2673	unstratified	eagle S C, *as*, RIC 747	orthodox	27	6	11.21	3	-
SF 177, 812	unstratified	large altar, *as*, RIC 763	orthodox	29	7	10.96	3	-
SF 782, 2790 L166	4b	large altar, *as*, RIC 763	orthodox	28	6	9.74	2	-
SF 581, 2493 L147	4a	Aequitas, *as*, RIC 482	orthodox	29	6	10.86	3	-

SF 686, 2675 L432	4a	Victory, *as*, RIC 502	orthodox	28	6	9.84	3	-
SF 165, 756 L307	9	Securitas, *dupondius*, RIC 479	orthodox	28	6	11.59	2	-
SF169, 782 L327	4	uncertain, *as*	orthodox	28	6	9.58	8	-
SF 679, 2668 L416	4b	uncertain, *as*	orthodox	29	6	8.68	6	-
SF 445, 2122 L416	4b	uncertain, *as*	orthodox	30	?	9.08	9	-
SF 599, 2463	unstratified	uncertain, *as*	orthodox	28	?	10.51	8	-
SF 534, 2412 F419	7	uncertain, *as*	orthodox	30	7	9.41	9	-
Titus								
SF 690, 2679	unstratified	Pax, *as*, RIC 668	orthodox	28	6	12.54	3	-
Domitian								
SF 579, 2491 L116	5	Moneta, *as*, RIC 354	orthodox	28	6	10.25	2	-
SF 689, 2668 L156	4a	Moneta, *as*, RIC 354	orthodox	28	6	11.52	2	-
SF 781, 2789 L175	4b	Fortuna, *as*, RIC 371	orthodox	29	6	11.09	2	-
SF 692, 2681 L416	4b	Virtus, *dupondius*, RIC 406	orthodox	30	6	10.34	2	-
Nerva								
SF 530, 2408 L392/L396	unphased	Fortuna, *as*, RIC 60	orthodox	29	6	10.03	3	-

6.2 The small finds

by Nina Crummy, with contributions by Martin Henig and Hilary Cool

Introduction

The small finds ranged in date from Bronze Age to modern. The general characteristics of the assemblage are discussed here by period and by type/function. Only a small selection is illustrated and catalogued in detail, as many items are paralleled by other Colchester assemblages (eg Hawkes & Hull 1947; *CAR* **2**; *CAR* **5**; *CAR* **6**), but a tabular catalogue of the full assemblage is contained in the site archive, listed by material and within material by site period.

Most of the Roman metal small finds are not well-preserved, many show signs of burning, and the majority consist of small fragments of featureless sheet metal. These characteristics must largely be the result of the Boudican fire and the subsequent use of part of the site for horticulture, both factors proving inimical to the preservation of small delicate items.

Assemblage characteristics by period (Table 5)

Table 5 shows the small finds, excluding iron nails, by period and by the functional groups defined in *CAR* **2**, *CAR* **5**, and *CAR* **6**. Categories 17 (objects associated with manufacture of ceramic objects) and 18 (miscellaneous) are also omitted; no items from the former were found, and those from the latter are either multi-functional, such as plain rings, or of uncertain or unknown function, such as small fragments of sheet metal. Objects from multi-phased contexts (eg Periods 1-2) are attributed to the earliest period. Similar tables by the individual materials are of little value, as they largely only serve to highlight self-evident truths, ie most dress accessories are copper-alloy, most tools are iron.

Table 5: Head Street small finds by period and function.

Period	Category															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1	4	-	1	6	2	3	-	-	1	4	12	1	6	-	1	-
2	2	1	-	7	1	1	-	-	4	1	4	-	4	-	1	-
3	2	-	-	4	1	-	-	-	4	3	5	-	1	-	-	-
4	11	2	3	7	4	-	2	-	8	1	12	-	-	-	4	-
5	4	-	3	3	3	1	1	-	4	1	3	-	-	1	3	1
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	33	-	3	1	-	-	-	-	1	4	6	-	-	1	2	1
8	43	4	5	3	3	-	2	-	7	13	8	-	-	-	6	2
9	38	1	5	2	3	1	2	2	10	9	10	-	1	-	2	2
u/p, u/s	12	-	1	5	3	-	2	-	1	3	10	-	3	1	2	1

Category definitions as defined in *CAR* **2**, *CAR* **5**, and *CAR* **6** are: 1...dress accessories; 2...toilet or medical instruments; 3...textile-manufacture or textile-working equipment; 4...household utensils and furniture; 5...items used for recreation; 6...weighing and measuring equipment; 7...writing equipment; 8...objects associated with transport; 9...structural material from buildings and services; 10... tools; 11...general fasteners and fittings; 12...objects associated with agriculture, horticulture and animal husbandry; 13...military equipment; 14...religious objects; 15...objects and waste material from metal-working; 16... waste material from bone-working. In the Period column 'u/p, u/s' stands for unphased or unstratified.

As is to be expected on a multi-period urban site, many of the Roman small finds are residual in later contexts. Comparison with the Roman coins suggests that only about half the Roman small finds might be stratified in contexts approximating to their period of circulation (section 6.1 above), and this figure is here exceeded by the bone hairpins, nine out of fourteen of which were residual in post-Roman contexts. This examination of the small finds assemblage by period therefore also looks at objects of similar date residual in later contexts.

Period 1: Two prehistoric objects were found in Period 1 contexts, presumably from soil disturbed by the military activity on the site; one is a Bronze Age awl, the other an Iron Age spindlewhorl. Together with a few pieces of flint and pottery, they suggest that this part of the plateau above the river Colne was occupied sporadically in the prehistoric period. Two, possibly three, brooches were probably also originally deposited before the conquest. They are discussed further below.

Unusually, the high level of residuality shown by many of the Roman coins and small finds does not pertain for the military equipment, most of which derives from Periods 1-3. Only three military items are unphased or unstratified and one was found in the backfill of the 1998 evaluation trench. The pieces found in Period 1 are all small fittings from armour or harness, and include a single plate from scale armour (Fig 23, 63, SF 792). The recovery of only small fragments matches the military equipment from the pre-Flavian fortress at Usk, where it was argued that larger pieces were carried away by the departing legion for later reuse, leaving only small scrap behind (Manning 1995, 1). While this may be true to some extent, sufficiently large items have been found elsewhere in the Colchester fortress for it to be clear that the nature of the occupation on this site has also affected the Head Street military assemblage.

As the Period 2 colony was founded for veterans, the military equipment found in Periods 2 and 3 need not necessarily be residual from Period 1, and again it mainly consists of small fragments (see Period 2).

A substantial proportion of the finds belonging to Category 11 (fasteners and fittings) also comes from Period 1, and, as most are studs and small nails, they too may well derive from military equipment. A group of hobnails listed as Category 1 (dress accessories) should perhaps more correctly also be included among the military equipment as it presumably came from a military boot. The other dress accessories are a finger-ring, of a size more typical of a female finger than a male, and two continental-made brooches, one a Rosette and the other a Simple Gallic (Fig 17, 4, SF 583). The

former is dated to the Augustan period, the latter to the first half of the 1st century AD. Neither type has military associations but both occur on native pre-conquest sites, and they are therefore most likely to have been lost before the conquest. A second Rosette brooch of the same type came from unphased collapse/demolition L494 (Fig 17, 3, SF 715).

A distinctive characteristic of some of the military clay walls is the inclusion of artefacts within their fabric. A copper-alloy ferrule in the form of a bull's head was contained within F794 (Fig 22, 51, SF 787), a bone counter (Fig 19, 31, SF 772) and a probable chain or necklace terminal in F792, a bone hinge fragment in F596, and a military strap-fitting in F825 (Fig 23, 59, SF 750). How far this inclusion was deliberate is difficult to assess. All are quite small, especially the bone counter and the copper-alloy terminal, and may therefore have been incorporated into the clay by accident, but the more substantial bull's head ferrule might be seen as a reference to the ox as a sacrifical animal, as well as being a symbol of strength and fertility, and its inclusion in F794 could therefore have been a deliberate votive act.

While the buildings so far found in the fortress are usually of timber and clay, occasional fragments of decorative stone hint at buildings of higher quality. For example, a piece of wall veneer made from Africano marble was recovered from a Period 1 pit on the Gilberd School (*CAR* **6**, 223, 225, fig 6.24, 211), and a fragment of purple-veined white marble veneer came from L450 at Head Street.

Military food supply and diet is represented by part of a reaping hook (Category 10) from pit F827 (Fig 21, 45, SF 618), a fragment of a lava quern (Category 4) from pit F551, and also perhaps by an iron ox-goad (Category 12) from L518, though it is interesting to note that several goads have been found in association with Roman temple sites, where they were presumably used to drive animals to sacrifice (Wedlake 1982, fig 99, 49; Wheeler & Wheeler 1932, fig 23, 189). Possibly also associated with food supply is a large iron steelyard, of a size that suggests it was used for weighing bulk items such as grain (not illustrated, SF 461), and two possible weights. Both the latter are poorly-preserved copper-alloy and lead objects which are only tentatively identified as weights, they may instead be composite studs from boxes.

Two board game counters were the only recreational items found in Period 1, one being the small bone counter from the clay wall F792, the other a glass counter from L483/L495, and domestic equipment is limited to the quern fragment mentioned above and to fragments of five lamps, all of which derive from pit F561, phased to Periods 1 or 2 and so perhaps belonging to the colony rather than the fortress. Unrepresented categories include toilet and medical instruments, items associated with textile manufacture and working, and religious items such as amulets or figurines.

Period 2: The Period 2 assemblage is not dissimilar to that of Period 1, and some pieces, such as the military equipment, may be residual from the earlier occupation of the site. The only dress accessories from Period 2 are a hairpin and a fragment of a brooch, though too little of the bow of the latter remains for it to be dated accurately and it may possibly be Late Iron Age. The hairpin is not necessarily the earliest female object from the site, as the finger-ring from Period 1 may have belonged to a woman. It is worth noting, however, that there is no marked rise in the amount of specifically female equipment in Period 2 on this site, and the lack of textile-related objects (discounting the Iron Age spindlewhorl) persists throughout Period 2 and Period 3.

Toilet instruments, the use of which does not appear to be confined to women, are represented by a nail-cleaner, and domestic equipment by lamps, a fragment from a metal vessel, and a lava quern fragment. While the Period 1 assemblage (apart from the prehistoric items) almost certainly consists wholly of imported objects or those made within the fortress, the nail-cleaner is of native manufacture and defines the mix of imported and British-made goods found in the new colony that begins to define Colchester's Romano-British character. The same mix is found among the fragments of wall veneer, slightly more numerous than in the fortress, and including both imported stones and some from British sources, Oolitic limestone, sandstone, and Purbeck marble. Imported pieces consist of a cream-coloured marble and a fragment of Cipollino marble, the latter coming from Period 3 redeposited Boudican debris.

A well-preserved section of a timber-lined drain (F736/782) contained several nails used in its construction. All were of Manning's Type 1 (1985, 134), with one example of

subtype 1A, ie longer than 150 mm, and the rest of subtype 1b, less than 150 mm long. The majority of the latter were between 45 and 75 mm long.

The one tool present is a fragment of a saw (Fig 21, 46, SF 608), and there was another fragment, though with teeth of a different shape, from L467, dated to Period 1/2a.

Though objects from Category 18 have not been shown in Table 5 and are not otherwise discussed here, one deserves mention. It is a copper-alloy fitting from military demolition that may be residual from Period 1 (Fig 24, 70, SF 789). Its use has not been identified, and, though it superficially resembles a steelyard with a suspension loop on one side, the thin rectangular section and the finish of the two flat faces show that it was meant to lie flat against a larger object.

Period 3: Like the Cipollino marble veneer fragment mentioned under Period 2, the majority of the objects from Period 3 derive from the occupation of the pre-Boudican colony, and some perhaps from the fortress. Apart from miscellaneous scrap, not shown in Table 5, they are not numerous and the assemblage has no particular functional characteristics. They include a military strap-clasp (Fig 23, 64, SF 643), two possible fragments of water-pipe junction collars, a lamp fragment in a locally-made fabric, and a lid from a copper-alloy lamp (Fig 18, 26, SF 744), though the latter may come from Period 4. A rare item is a lead wedge used in wall construction (Fig 19, 38, SF 802), a larger example of which was found embedded in a Period 4 wall. The tools include a piece of highly-polished flint which appears to have been used as a rubbing stone (Fig 22, 48, SF 904), and a turned bone fitting (Fig 22, 56, SF 492). A fragment of a closely similar fitting from Period 4 (Fig 22, 57, SF 482) must be contemporary with this one.

A particularly important piece, from a Period 3 or 4 context, is a fish-head spout from a strainer bowl, remarkable for its naturalistic style; the few other examples known are highly stylised (Fig 18, 25, SF 786). Strainer bowls are more usually associated with native British sites, though one was found in the ditch of the fortress at Alchester (E Sauer, pers comm).

Period 4: This period is characterised by an increase in the number of dress accessories, the first appearance of both textile and writing equipment, and the absence of military equipment. The assemblage is thus essentially domestic and also, through the evidence for literacy, of reasonably high status.

The latter suggests that there is little residual material present, though two of the five brooches recovered from Period 4 contexts went out of use *c* AD 60/5 (a Hod Hill and a Claudian-Neronian plate brooch), and one is only just beyond its date-range at the start of this period (a Colchester B derivative), and two (both Nauheim derivatives) are unlikely to have survived in use much beyond *c* AD 75.

The other dress accessories include two hairpins, both of unusual form (Fig 17, 54, and Fig 17, 13, SF 444 & 814), a few hobnails, probably from civilian footwear in this period, and two melon beads of turquoise frit, a type common from the conquest into the 2nd century. The toilet equipment consists of a small fragment of a mirror and some tweezers. Two of the three pieces of textile-related equipment are needles, while the third, a fragment of a bone weft-beater, is evidence for weaving in the area.

The items of writing equipment are a possible bone stylus, of quite crude and unusual form but too substantial to be a hairpin (Fig 19, 35, SF 817), and a pen-knife with a handle typical of the 1st century (Fig 19, 37, SF 481). A less elaborately decorated example of the latter came from a rich Flavian burial in Winchester along with other pieces of writing equipment (Biddle 1967, fig 9). A third item, a bone tool in the form of a rectangular plate with perforated lug was probably used as a ruler or wax smoother. It was found in Period 5 but is of 1st-century date (Fig 19, 36, SF 300), and the similarity in date between the handle and the bone tool may indicate that they derive from the same writing set.

Recreation is again represented by game board counters, this time of glass and recycled pot sherds, and domestic equipment by spoons and lamps. A fragment of the suspension fitting from a copper-alloy lamp (Fig 18, 27, SF 703) may perhaps come from the same item as the lid mentioned under Period 3, especially as copper-alloy lamps are rare. The recovery of two complete spoons from the Period 4a dump/make-up layer L193 suggests they may both have derived from a pre-Boudican household.

The fasteners and fittings present are still chiefly nails and studs, but also include part of a large tumbler-lock slide-key. Evidence for metal-working consists of a few fragments of slag, a refrozen lead dribble and a piece of offcut lead sheet. The two latter probably derive from the use of lead fittings in buildings; the slag fragments are very small and are more likely to be residual than evidence for contemporary craft-working, and may even be detritus from the Boudican fire.

A lead wedge used as a tie or to level a stone came from the wall F726, and a distinctive group of material from this period is the worked stone, most of which is Purbeck marble veneer, with the addition of a sandstone moulding and two fragments of imported marble veneer. Some cross-context links can be seen here, with a piece from pit F240 fitting one from L95 (Fig 20, 42, SF 499/913), and one from make-up/cultivation L90 fitting to another from L7, Period 5 occupation (SF 926/892). Two further pieces of the latter may come from the modern rubble layer, L2.

Period 5: There is a decline in the number of small finds generally in this period, though the low number of dress accessories is typical of sites in the region at this time, as the wearing of brooches ceased to be commonplace from the 2nd century onwards. Of the four objects recovered one is a residual Claudian-Neronian plate brooch, though it was repaired in antiquity and may have continued in use beyond its expected date-range (Fig 17, 6, SF 543). There is also a fragment of a possible strap-fitting, a finger-ring, and a 1st- or 2nd-century hairpin; the latter, at least, is also residual.

Textile-related equipment is again present, consisting of two needles and a fragment of a bone spindle, and three pottery counters again represent recreation. A bone implement, probably a ruler or wax smoother, is further evidence for literacy (Fig 19, 36, SF 300), but, as this is a 1st-century form, it is residual here. There are only three pieces of domestic equipment, one a residual picture lamp fragment, another a factory lamp that may just be contemporary with the period, and the third a probable lead plug used to repair a ceramic vessel.

Fragments of a water-pipe junction collar were found *in situ*, and another is residual in Period 8. An iron pivot base probably came from a door. The one tool present is a piece of glass with one fracture reworked to produce a sharp blade-like edge. The reuse of glass sherds as cutting or scraping tools has also been noted on other Colchester sites (*CAR* **8**, 138, 164).

A particular unusual object is a stone weight, more or less triangular in section, with IIV incised on one face (Fig 19, 34, SF 331). As it weighs 2160 g, approximately seven Roman pounds, the inscription must be illiterate for VII. The weight is likely to be residual in Period 5 as it derived from dump or make-up and it has been burnt on two faces but not on the third, suggesting accidental exposure to fire, perhaps during the Boudican destruction of the early colony.

Roman religious belief, so far unrepresented in the assemblage except perhaps by the bull's head ferrule from Period 1, is shown by a fragment of a pipeclay bust of a child. When such busts are found on occupation sites they probably came from a household shrine, perhaps placed there on the death of a child. The only other probable religious items are two bell fragments, one residual in Period 7, and one unstratified. Bells were used in a domestic context on *tintinnabuli*, mobile charms combining bells with apotropaic images such as phalli (Johns 1982, pls 13-14, figs 52, 54). The noise of the bells was intended to drive away evil and protect the household.

Period 6: No small finds phased to Period 6 were recovered, though the mica schist hones from Period 7 and Period 9 may be Late Saxon rather than early medieval (Fig 25, 78, SF 1004).

Period 7: The medieval period is primarily characterised by a large number of dress accessories. Most are the small pins that were commonly used as dress fasteners, but there is also a single lace-end. There are also three residual Category 1 Roman items, a 3rd-century Knee brooch (Fig 17, 11, SF 15), a probable armlet fragment of a black mineral, perhaps shale, and a green glass bead. Two spindlewhorl fragments made from recycled pot sherds are also Roman, as are a needle and a piece of marble veneer from robber trenches.

Other objects which can be specifically dated to the medieval period, rather than being residual scrap, are scarce: a small rotary key from post-hole F122, a knife from pit F82 that belongs to the late medieval or early post-medieval period, and from pit F 336 a delicate roundel with the stump of a projection on one side that may be a box lid (*cf* Egan 1998, 172-4).

Period 8: Again a large number of small pins were found, as well as several lace-ends. A few lead cames from windows represent a technology first introduced in the medieval period though only examples from post-medieval contexts were found at Head Street.

A few of the small pins may by this time have been used for sewing, which is also represented by two thimbles, while two very small fragments of an iron wire mesh object may be from a carding comb. A copper-alloy book-clasp (Fig 25, 76, SF 184) and a goose radius pen are evidence for literacy, and two similar pens were found in a modern context (Fig 25, 77, SF 838). The majority of the objects listed under Tools are small knives, which should perhaps more correctly be placed under Household equipment as many are probably table cutlery.

Evidence for metal-working in this period is primarily shown by the casting waste and mould fragments from pit F106 (section 5.9 above), but a group of offcuts of thin copper-alloy sheet from pit F431 also point to the manufacture of small items. Recent excavations further north on Head Street produced similar offcuts, suggesting that there was a common source nearby (Colchester Archaeological Trust, Harper's, Head Street, 2002.123). A fragment of a ceramic mould from a Period 9 stanchion hole is of uncertain date, but may also be post-medieval (Fig 25, 80, SF 997).

The fashion for wearing wigs in the 17th and 18th centuries is represented by two pipeclay wig-curlers, one of which is illustrated (Fig 24, 74, SF 389), and pipeclay was also used for a mid-17th-century figurine of a knight, parallels for which come from Norwich, Southampton and Waterford (Fig 25, 75, SF 142).

The fittings include two pintles, L-shaped objects used as hinge pivots for wooden shutters, windows, gates etc. They may perhaps be residual from the medieval period rather than post-medieval, as may a fragment of a gritstone mortar.

Residual Roman objects include a Colchester BB derivative brooch (Fig 17, 10, SF 137), dated *c* AD 65-80, two 4th-century armlet fragments, hairpins (including one of jet), a needle, pottery counters and a spindlewhorl, and an olivary probe. The latter might be either a toilet or a medical instrument. Several pieces of Roman veneer and building stone were also found in post-medieval features, as was a rubbing stone similar to that found in Period 3 (Fig 22, 50, SF 908).

Period 9: By the modern period the number of residual items is very high, ranging in date from early Roman to later post-medieval. Of particular interest is an early Roman cavalry harness strap-loop (Fig 23, 65, SF 91), found in the backfill of AOC's 1998 evaluation trench and so possibly stratified in a military context until then. A close parallel came from the Culver Street site (*CAR* **6**, fig 5.57, 1692).

Two Purbeck marble wall veneer fragments are remarkably similar to SF 926/892 from Period 4 and may be part of the same piece, and there are several other Roman veneer fragments.

Two spur fragments are residual from the post-medieval period, when they were worn as much for fashion as for practical use.

Unphased and unstratified: Noteworthy unstratified objects are a silver Roman military buckle fragment, and a silver Roman finger-ring with a palm frond etched onto the bezel (Fig 23, 67 and Fig 17, 17, SF 634 and SF 701). A girdle-plate tie-hook from *lorica segmentata* came from L543, which is unphased (Fig 23, 66, SF 628), and Rosette brooch dated to the first half of the 1st century AD from L494, also unphased (Fig 17, 3, SF 715). An unstratified lead spout from a water-pipe may also be Roman (Fig 18, 25, SF 801), as may be a flint rubbing stone (Fig 22, 49, SF 902).

Catalogue

Bronze Age

A small copper-alloy Bronze Age awl was found in disturbed natural beneath the earliest Roman levels. The upper end of the object was chipped from use. Some awls of this type have a single point, and one single-ended example has been found with a wooden handle (Annable & Simpson 1964, no 420). Others are double-ended, sometimes of different sizes or sections at each end, and sometimes with one end chisel-edged rather than pointed (*ibid*, 415-31; Pendleton 1999, figs 42-3). They were probably primarily used in leather-working to pre-form stitch-holes, but might also have been used as engraving tools on metal-work. When fitted with a handle, they could be used as punches.

Such awls are found throughout the Bronze Age, and can only be more closely dated by the other associated finds. Needham has surveyed the examples known from southern Britain, and has shown that they occur in burials in the Early Bronze Age, but are more common in hoards and on settlement sites in the Middle and Late Bronze Age. They may have continued to be made in the Iron Age, as some have been found with iron examples on sites of that date where they are not likely to be residual (Needham 1986, 141-2). The recovery of the Head Street example, together with a scatter of prehistoric flint and pottery, suggests that the west side of the plateau above the river Colne may have seen at least sporadic occupation at this period.

Fig 17, 1. SF 642. (2616) L593. Disturbed natural. Period 1. Small copper-alloy awl, with chipped upper end. Length 33 mm, maximum thickness 4 mm. The section is rectangular at the top, square at the centre, round towards the tip.

Iron Age

The spindlewhorl is a particularly small examples when compared with those from sites such as Maiden Castle and Danebury (Wheeler 1943, 294; Poole 1984, 401; 1991a, 372; 1991b, 210). The spindle hole is only 3 mm across, which is perhaps the minimum diameter possible for a wooden spindle before it becomes too delicate for pratical use; at Danebury the smallest recorded hole was 4 mm (Poole 1991a, 372).

Fig 17, 2. RF 171. In sample from F725. Pit. Period 1? A small spindlewhorl, chipped on one side. In profile it is a truncated cone, with the bottom edge gently rounded. The fabric is fine and sandy, with no visible tempering, and has been hard-fired to a patchy orange-brown. Diameter 27 mm, height 11.5 mm; spindle hole diameter 3 mm.

Roman

Category 1, dress accessories

Three of the brooches are pre-conquest imports: Fig 17.4, SF 583 is a Simple Gallic brooch, Fig 17, 3, SF 715 is an early type of Rosette brooches which belongs to Feugère's Type 16, dated to the Augustan period (1985, 270-6), and SF 637 is a fragment from a second brooch of the same form. These brooches do not have military associations in Gaul, and the few from Britain stress their use by the native population. Their date-ranges suggest that they are probably residual in their contexts, and they may therefore be an indication of some Iron Age occupation of the site before AD 43. There is, however, some possibility that the Simple Gallic, at least, may have survived in use into the Claudian period, as a similar brooch from Sheepen was found in a post-conquest context.

The other brooches are all of post-conquest 1st-century types, apart from a 3rd-century Knee brooch. Several are of pre-Flavian types but they are in general residual in their contexts. One of the Claudian-Neronian plate brooches is of unusual form, and was repaired in antiquity, which may have prolonged its period of use (Fig 17, 6, SF 543). Most of the hairpins are also residual in their contexts.

Fig 17, 3. SF 715. (2704) L494. Collapse/demolition. Unphased. A copper-alloy Rosette brooch, cast in one piece. The catchplate and pin are missing, but the former had at least three perforations. Parts of the spring-cover and spring are also missing. An iron pin passes through the spring. The spring-cover appears to have been plain. The short humped bow has narrow marginal mouldings and a central rib marked with a row of tiny triangular punchmarks. The central disc

has raised concentric mouldings, with beading in the base of the groove between the two outermost mouldings. The foot is straight-sided and reeded, the central element a wavy line. Length 57 mm. This is Feugère's Type 16a2, which he dates to the Augustan period (1985, 270-76).

Not illustrated. SF 637. (2611) L213. Make-up/disturbance. Period 1. The foot of a Rosette brooch with marginal mouldings and knurled central moulding; the catchplate has two square perforations. Length 30 mm. This fragment is very like Feugère 1985, pl 100, 1306, which belongs to his Type 16 and is dated to the Augustan period (1985, 270-76).

Fig 17, 4. SF 583. (2495) L483. Burning. Period 1. Most of the tapering bow of a decorated Simple Gallic brooch, of low D-shaped section. Down the centre runs a knurled band between two narrow grooves. What remains of the catchplate shows a perforation running right to the back of the bow. Length 73 mm. The form is pre-conquest; its presence in phase 1 and 2 graves at King Harry Lane, Verulamium, but its absence from graves of phase 3 suggest that it died out by *c* AD 40 (Stead & Rigby 1989, 100), though a very similar, almost complete, brooch was found at Sheepen in a post-conquest context (Hawkes & Hull 1947, pl 91, 35).

Fig 17, 5. SF 708. (2697) F183. Pit. Period 4. Fragment of a white-metal plated copper-alloy cruciform plate brooch with incurving sides. The upper part is missing, together with the hinged pin and one side lug. The centre has a hole for a riveted setting, now missing, around which runs a concentric groove between two slight ridges, the base of the groove lined with punched dots. The remaining side lug was round. The ends of the lower double lug are turned outwards, an exaggeration of the more usual simple form. Length 23 mm, width 22 mm. There is a similar brooch in Saffon Walden Museum that may be from Essex (Joseph Clarke Collection, 1894) and one with all four lugs turned out from Hod Hill, Dorset (Brailsford 1962, F5). Colchester has produced three examples of the simpler form from Sheepen (Hawkes & Hull 1947, 325, no 165), and a pair from Culver Street (*CAR* **6**, fig 5.1, 29-30). The type is Feugère's 24b1, dated to the Claudian-Neronian period and probably made in northern Switzerland (1985, 335-47).

Fig 17, 6. SF 543. (2447) L66. Dump/make-up. Period 5. White-metal plated copper-alloy plate brooch showing the bust of a male, probably a deity, on a ground line flanked by two dolphins, one now missing. The surviving dolphin is shown head downwards, holding a sphere in its mouth. The body is coated with raised scales. The pin, made in a different alloy, is hinged on a axial bar between two lugs. The pin may be a replacement, and was certainly adapted to allow continued use when the second dolphin, on the back of which the catchplate was set, broke off. To fit the shorter length, the end of the pin has been forced downwards and the tip returned to rest against the back of the head. Length 21 mm, height 16 mm. This brooch belongs to the same Claudian-Neronian series as SF 708 above. There is a parallel from Besançon, France, and dolphins flanking a vase occur on a brooch in the same series from Yverdon (Hattatt 1987, fig 51, c, f).

Fig 17, 7. SF 766. (2774) L147. Surface. Period 4a. Copper-alloy Nauheim Derivative brooch with narrow flat bow. Unusually, the chord passes in front of the bow rather than behind it. The pin, with tip missing, is detached. What remains of the catchplate is solid. Length 38 mm. The majority of Nauheim Derivatives are post-conquest imports found in pre-Flavian contexts, but there are several examples which suggest that they continued in use up to *c* AD 75 or later (Simpson 1979, 332-4; Mackreth 1994, 289-91, no 13; Stead & Rigby 1986, 123).

Fig 17, 8. SF 761. (2769) L74. Cultivated soil. Period 4. a) Copper-alloy Nauheim Derivative brooch with narrow flat bow. Most of the pin is missing. Length 43 mm. b) Not illustrated. Pin from a second brooch, probably also a Nauheim Derivative.

Fig 17, 9. SF 698. (2687) F234. Pit. Period 4. Copper-alloy two-piece Colchester B derivative brooch (*CAR* **2**, 12). The pin and half of the spring are

missing. The catchplate is solid. The central ridge is plain. Length 40 mm. The type is of British manufacture, and appears to have been in production over the period AD 50-70 (Hawkes & Hull 1947, 311, nos 36-43). This brooch is therefore stratified within its period of use.

Fig 17, 10. SF 137. (682) F394. Pit. Period 8. Copper-alloy two-piece Colchester BB Derivative brooch with a small foot-knob. Most of the pin is missing, though part remains fixed in the solid catchplate. Length 43 mm. Again the type is of British manufacture, and other examples from Colchester occur in post-Boudican contexts (*CAR* **2**, 12; *CAR* **6**, 142). The date-range is probably AD 65-80.

Fig 17, 11. SF 15. (64) L5. Robbing debris. Period 7. Hinged copper-alloy Knee brooch of continental form. Most of the pin and transverse catchplate are missing. The latter was set well above the foot, as Hattatt 1987, fig 81, e, fig 83, 1232. The bow is rectangular in section, but recurved in profile, with a sharp angle at the head. It tapers towards the foot, where it widens agains lightly before terminating in a foot-knob with a diameter less than the width of the foot. Length 37 mm.

Fig 17, 12. SF 46. (214) F78. Pit. Period 9. Bone hairpin with head consisting of three rings beneath a short baluster and single ring. The tip is missing. Length 73.5 mm.

Fig 17, 13. SF 814. (2822) L90. Make-up/cultivation. Period 4. Complete bone hairpin, with an elongated rounded head ringed by two grooves above a baluster, and with three grooves at the top of the shaft. Length 115 mm. The straight shaft suggest this is of late 1st- or 2nd-century date, and the form of the head is similar metal hairpins of Cool's Group 3, subtype A, which belongs to that period (1990, 154, Fig 2, 5).

Fig 17, 14. SF 444. (2121) F298. Pit. Period 4b. Copper-alloy hairpin with the tip missing. The head consists of a round-section kob above a group of square-section mouldings. Length 72 mm.

Fig 17, 15. SF 48. (216) F72. Pit. Period 7. Complete copper-alloy hairpin of Cool's Group 5 (1990, 157), with a two grooves at the top of the head. Length 122 mm. The type, which is the equivalent of Type 2 in bone hairpins (*CAR* **2**, 21), dates to the 1st and 2nd century.

Fig 17, 16. SF 594. (2506) F406. Pit. Period 8. Fragment of a copper-alloy armlet, with central groove and notching along one edge. Probably from an armlet with multiple motifs, a type belonging to the later 4th century (*CAR* **2**, fig 47). Length 34 mm, width 3 mm.

Fig 17, 17. SF 701. (2690). Unstratified (spoil heap). Silver ring in three fragments. The bezel is an expanded oval, into the surface of which is etched a palm frond. Maximum internal diameter 18 mm, bezel 7 mm long & 5 mm wide.

Fig 17, 18. SF 598. (2510) L589. Accumulation. Period 1b. Copper-alloy finger-ring with longitudinal mouldings. Internal diameter 15 by 18 mm, height 4 mm, 1 mm thick.

Fig 17, 19. RF 41. L406. Scorched surface. Period 3. A nicolo gemstone bearing the image of a fly.
Martin Henig has kindly provided the following report on this object.
The intaglio is cut on a nicolo, an onyx with an upper blue surface on a dark ground. The stone is oval with a flat upper face and edges bevelled outwards (shape F4) as is general for intaglios of this material. It measures 9 mm in length, 7 mm in breadth and is 2 mm thick.

The device is a fly, seen from above. The insect is very carefully delineated, showing its large head and prominent eyes, longitudinally grooved body, long legs and veined wings. It can probably be identified as a horsefly. Such naturalism in both manner of representation and scale is not very common on gems which generally portray subjects many times the size of the intaglio. Here the aim of the gem-cutter and his patron might be taken as to deceive the eye of the viewer. The tradition of such deceptions is a long one, and is even used to

show a fly in what is one of the best parallels, a Classical Greek scaraboid of the late 5th or early 4th century BC, now in St Petersburg (Boardman 1970, 292, pl 582).

However, the device is not very common in Roman times. This is the first from Britain and there are no good parallels published from Gaul either. A fly seems to be the subject of two intaglios described as of sard in the British Museum (Walters 1926, 253 nos 2565,2566).and one in Berlin (Furtwangler 1896, 264 no 7076); flies are also shown on a number of moulded glass intaglios such as an example in Munich (eg Schmidt 1970, 218 no 2073)

The reason why this device was chosen, apart from a simple delight in the skill of the cutting, is quite unknown, but it is possible that the wearer had the cognomen *Musca*, 'fly', a sobriquet of the Sempronian gens (Cicero, *De Orat* ii,60). Incidentally Atticus had a freedman called Musca (*ad Att* xii,40).

Category 2, toilet instruments

Not illustrated. SF 770. (2778) F786. Pit. Period 2. Small nail-cleaner from a toilet set, with the suspension loop in the same plane as the blade, and a long notched neck. The points are missing. Length 27 mm.

Not illustrated. SF 720. (2709) L105. Cultivated soil. Period 4. Mirror fragment in two pieces. The longest side has broken along the line of a deep groove or rebate, part of which remains at one corner. The curvature of this line suggests the fragment comes from a round mirror in excess of 220 mm in diameter. Without the rim, the type cannot be identified. Maximum dimensions 68 by 57 mm.

Category 3, textile-manufacture or textile-working equipment

Fig 18, 20. SF 493. (2285) L416. Black silt/ash occupation. Period 4a. End fragment from a bone weft beater, the blunt teeth wide-set and separated by grooves with the inner end rounded. Length 43 mm, maximum width 23 mm. Both surfaces are highly polished. The fractured edges are heat-blackened. The upper edge has a very slight groove of uncertain function, a feature also found on beaters from Mainz (Mikler 1997, Taf 39, 11-13).

Fig 18, 21. SF 832. (2840) F427. Pit. Period 5. Fragment of a bone spindle (in two pieces) with two grooves set close to the flat end. The shaft thickens very slightly towards the broken end. Length 108 mm.

Fig 18, 22. SF 999. (3016) F137. Pit. Period 8. Spindlewhorl made from a grey ware sherd. The edge is ground smooth, the spindle hole is placed centrally and is figure-of-eight shaped, showing it was drilled from each side. Diameter 32 mm, 8.5 mm thick; maximum hole diameter 5.5 mm.

Category 4, household utensils and furniture

Fig 18, 23. SF 491. (2283) L193. Dump/make-up. Period 4a. Round-bowled bone spoon, complete apart from the tip of the handle. Length 110 mm, diameter of bowl 23 mm. This form (*CAR* **2**, 69, Type 1) is of early Roman date.

Fig 18, 24. SF 791. (2799) L193. Dump/make-up. Period 4a. Round-bowled copper-alloy spoon of the same type as SF 491, with traces of tinning on the bowl. Length 116 mm, diameter of bowl 21 mm.

Fig 18, 25. SF 786. (2794) L434. Make-up. Post-Period 3?/4. A fish-head spout, probably from a strainer bowl. Length 32 mm, width 37 mm. There is a small hole for an attachment rivet on the underside. The features of the fish are very rudimentarily, though naturalistically conveyed, but the object is in poor condition and they would certainly have been much sharper when it was new. It is now rough and bubbly from scorching on the upperside but is well-preserved below the lower lip, which suggests that it was probably burnt during the Boudican destruction of the *colonia*. Strainer bowls are essentially Celtic items of the 1st century AD, and in Britain are confined to the eastern region, with the furthest west coming from the ditch of the legionary fortress at Alcester, Oxon (Sealey 1999; E Sauer, pers comm). Both the Alcester bowl and one from

Felmersham, Bedfordshire, have fish-head spouts that are more stylised than this example (Watson 1949, pl. 5, a-b).

Fig 18, 26. SF 744. (2752) L434. Make-up. Post-Period 3?/4. A lid from a copper-alloy lamp. The underside is plain, the upper has concentric mouldings and a central terminal, in which remains a fragment of a chain link, as Loeschke 1919, Abb 38, 1059 (1-2), 1066 and Eckardt 2002a, fig 100, 1759.

Fig 18, 27. SF 703. (2692) L90. Make-up/cultivation. Period 4. Part of the suspension fitting form a copper-alloy lamp, consisting of a fragment of a ring with three lengths of loop-in-loop chain attached and a fourth detached length. The ring is of circular section, thinner at one broken end than the other; internal diameter 20 mm, maximum thickness 2 mm. The attached chain fragments are 26, 29 and 32 mm, long; the separate one 21 mm. More complete examples from London and from Vindonissa, Switzerland, show that lamp was suspended by three short chains which ran up to a ring, which was itself suspended from a longer piece of chain running up to a hook. If the lamp had a lid (as SF 744 above), it too was attached by a further short chain to the ring (Loeschcke 1919, Abb 38, 1059 (1-2); Eckardt 2002a, figs 100-101). Given the cross-context matches between fragments of wall veneer at Head Street, it is possible that the lid SF 744 and this suspension fitting came from the same lamp.

Fig 18, 28. SF 658. (2640) L246. Sandy loam. Period 2. Part of a picture lamp of probable Central Gaulish manufacture, with an eight-petralled rosette design on the discus. Diameter 57 mm. The design is common and is among those used by the Colchester lamp factory (*CAR* **6**, 218, fig 6.14, 149; Eckardt 2002a, 380-82).

Fig 18, 29. SF 936. (2944) L116. Demolition. Period 5. Fragment of the discus of a Lyon ware picture lamp with the design of a fox or monkey dressed as a fowler, trying to catch a bird in a tree top. On this fragment only the tree, bird and the handle of the fowler's net remain. The design is rare, with only three other examples known, two from Gloucester and one from London (Bailey 1980, 46; Eckardt 2002a, 374). Diameter 64 mm.

Fig 18, 30. SF 29. (107) L301. Surface. Period 5b. Factory lamp of Loeschcke Type IXa, with closed channel (1919, 256) made in a micaceous red ware, almost certainly a London product (Marsh 1978). The rear part is missing but the stump of an integral handle remains. The clay around the wick hole is burnt. Length 68 mm.

Category 5, recreation

Fig 19, 31. SF 772. (2780) F792. Clay wall. Period 1. Small bone counter, plain on each face, and with a well-cut bevelled edge. Diameter 15 mm, 3 mm thick.

Fig 19, 32. SF 998. (3015) F137. Pit. Period 8. Very small counter made from a wall sherd from a thick-walled samian vessel. The edge is ground smooth. Diameter 15 mm, 6 mm thick.

Fig 19, 33. SF 996. (3013) L66. Dump/make-up? Period 5. Counter made from a wall sherd of black-burnished ware. The edge is ground smooth apart from a few slight angles. Diameter 30 mm, 5 mm thick.

Category 6, weighing and measuring equipment

Not illustrated, SF 461. (2202) L545. Burnt debris. Period 1. A large slightly tapering iron steelyard, length 502 mm. The terminal at the head end is a disc with central perforation through which is passed a short length of chain, consisting of two elongated figure-of-eight-shaped links that narrow where they fit through the hole. The other terminal appears to be conical. The fulcrum on one side is centred at 120 mm from the outer point of this terminal, and was fitted with an S-shaped hook for suspension. The position of the other fulcrum is uncertain, but would probably have lain midway between this one and the terminal.

Corroded onto the end of the scale arm is a slightly tapering flat plate of iron, measuring 77 and 60 mm at the widest points, with a semicircular notch in the centre of the wider end. This function of this object is unknown and it is probably only fortuitously associated with the steelyard.

Fig 19, 34. SF 331. (1446) L66. Dump/make-up? Period 5. Limestone weight, triangular in section with rounded corners. The surfaces are reasonably smooth but not absolutely flat. Two faces are blackened by heat, and one edge is heat-reddened. On one side the numbers IIV have been cut into the surface. If the face bearing the number had not been blackened, the characters would have been almost invisible. Length 150 mm. Weight 2160 g.

The number certainly stands for VII, and was probably copied directly from a stamp or brand by an illiterate cutter. They are too shallow to have been used as a stamp themselves. The weight confirms this, giving seven *librae* of 308.57 g, well off the standard defined by Grierson (1964, xi-xiv), but closely comparable to the 309.5 g *libra* of the Seven Sisters hoard from Neath, South Wales (Davies & Spratling 1976, 127), and to the *libra* of 308-309 g given by the *sextans* and *triens* from a set of weights from Heidelberg (Nuber 1981, 506). The Neath weight may be based on a Celtic rather than a Roman *libra*, but the Heidelberg weights, which give an overall range for the *libra* from 303.8 g (from the *uncia*) to 314.2 g (from the *semis)* clearly show that in the Roman world an official standard for the *libra* was not rigorously followed.

Category 7, writing equipment

Fig 19, 35. SF 817. (2825) L70. Soil. Period 4. Bone ?stylus, with thick shaft with considerable wear at the tip and an irregularly-shaped head for erasing. One side of this is slightly rough with a patch of cancellous tissue Length 136 mm. The form is crude and lacks the shoulders usually present on the shanks of bone styli, so this identification is far from certain (though see Mikler 1997, Taf 16, 9), but the object is much thicker than contemporary hairpins, the other possible identification.

Fig 19, 36. SF 300. (1273) L75. Clay dump. Period 5. Bone plate with a round perforated lug at one end. The edges are worn. Length 130 mm, width 23-25 mm. The function of these objects has been much discussed, with suggestions ranging from labels to weaving tools (Mikler 1997, 127, Taf 18, 1; Gostenčnik 2000, Abb 1, 15), but recent work has shown that they are found in graves with sets of writing equipment and were probably used as rulers or wax smoothers. This form, with perforated lug, dates to the 1st century (Božič 2001a, 33; 2001b).

Fig 19, 37. SF 481. (2251) L131. Accumulation. Period 4a. Pen-knife with iron blade and copper-alloy handle. The handle has the distinctive cut-out typical of a well-defined group of early Roman penknives (Božič 2001c). Traces of white-metal plating remain in small areas. Most of the blade is missing. The handle has a rounded, bud-like, terminal topped by a small knob. Its junction with the main body of the handle is marked on the sides by slight lugs. The two faces of the handle are decorated with fine incised lines, which were probably cut through the white-metal plating so that the lines were in a contrasting colour to rest of the handle. On the terminal the lines reflect its form, but the main part of the handle bears three panels of feathering. Apart from marginal lines, the decoration below the cut-out is obscured by corrosion. The sides of the handle taper towards the blade, and are decorated with two parallel rows of punched circles separated by a line. The sides of the terminal have marginal grooves but appear otherwise plain. Length 62.5 mm, width 12 mm.

Other examples of the form from Colchester have been found at Balkerne Lane and the Gilberd School (*CAR* **2**, fig 112, 2938; *CAR* **6**, fig 6.25, 251). Greep dates ivory handles of this form to the 1st century (1983, 95), which matches the context of this example.

Category 9, buildings and services

Fig 19, 38. SF 802. (2810) L260. Clay dump. Period 3. A lead wedge for adjusting the level of building stone during wall construction, as Cochet 2000, 53. Possibly from a corner, as the thick (outer) edge is curved. Dimensions 34 by 18 by 36 mm.

Fig 19, 39. SF 495. (2287) F726. Wall. Period 4a-b. A thick lead slab, slightly curved along the long axis and with one long side partly returned. As with the small wedge above, this was used in construction as a tie or to level stones (Cochet 2000, 53). Length 98 mm, witdh 49 mm, thickness 12 mm.

Fig 20, 40. SF 801. (2809). Unstratified. A lead spout from a water pipe. The metal reduces in thickness sharply at the open end, as Cochet 2000, fig 86. Probably Roman.

Fig 20, 41. SF 919. (2927) F802. Pit. Period 4. Fragment of sandstone moulding of elongated quarter-round form. The underside is rough. Length 70 mm, width 73 mm, 43 mm thick.

Fig 20, 42. SF 499/913, (2291) F240/(2921) L95. Pit. Period 4b/Soil. Period 4. Two fitting fragments of Purbeck marble veneer, the corner of a thin slab. The upper surface is patchily burnt, the underside is rough. Maximum dimensions 210 by 159 mm, 13-16 mm thick.

Fig 20, 43. SF 901. (2909) L66. Dump/make-up? Period 5. Fragment of Purbeck marble rectangular block with the stump of a projection on one side, and possibly another opposite. The surviving complete side is notched, and a cross is incised across the face. The back face has broken away. Probably from a small sculpture or relief. Maximum dimensions 53 by 36 mm, 25.5 mm thick.

Fig 20, 44. SF 917. (2925) F64. Stanchion hole. Period 9. Fragment of gastropodic limestone veneer (?Purbeck marble) with three edges surviving. Two are straight but not parallel, with a curved one joining them (one corner is chipped). Both faces are smooth, one has two incised crosses and a line, the other has parallel scratches, perhaps recent. Length 110 mm, width 55 mm (incomplete), 15-20 mm thick.

Category 10, tools

Fig 21, 45. SF 618. (2578) F827. Latrine pit. Period 1. Most of the blade from a reaping hook, with straight sides and short curved tip (*cf* Manning 1985, fig 14). Length 131 mm, maximum width 51 mm.

Fig 21, 46. SF 608. (2568) F786. Pit. Period 2. Fragment of an iron saw blade, with between 3 and 4 teeth in 10 mm. A Type 1b nail adheres to the surface (Manning 1985, 134). Blade length 91 mm, width tapers from 45 to 36 mm. Nail length 52 mm. Another saw fragment came from Period 1/2a (SF 408).

Fig 22, 47. SF 921. (2929) F137. Pit. Period 8. Fragment of a fine-grained calcareous sandstone hone, with a point-sharpening groove along one narrow side. The surviving end has been worn from each side to a point. Length 68 mm, width 22 mm, 15 mm thick.

Fig 22, 48. SF 904. (2912) L442. Scorched surface. Period 3. Small triangular flint rubbing stone, the three sides polished smooth. Maximum dimensions 36 by 22 mm, 16 mm thick.

Fig 22, 49. SF 902. (2910) L527. Demolition. Unphased. Slightly curved flint rubbing stone, the two long sides worn to a smooth polish. Length 120 mm, width ranging from 24-30 mm, 29-31 mm thick.

Fig 22, 50. SF 908. (2916) F105. Cess-pit. Period 8. Triangular rubbing stone of ?basalt. Two of the edges are very worn and polished, the tip between them is worn and rounded. The surfaces are unworked but naturally flat. Maximum dimensions 31 x 19 mm, 13 mm thick.

Not illustrated. SF -. (1467) L66. Dump/make-up. Period 5. Hilary Cool writes: A cylindrical neck fragment from a bottle or flask of blue/green glass, with one edge flaked to form a sharp-edged tool just as one would flake a piece of flint.

Dimensions 37 x 28mm. Such finds are not unusual in Roman glass assemblages (see for example *CAR* **8**, 138, 164) and the re-use of glass in this way was clearly common.

Category 11, fastenings and fittings

Fig 22, 51. SF 787. (2795) F794. Wall. Period 1. Copper-alloy ferrule in the form of a bull's head. The socket is round and has two small nail holes. The head is in the same plane as the socket. The horns are widespread (the tip of one is missing), and have a ring around the base at the junction with the head. The ears are set forward. The mouth is slightly open with the lower jaw extended. The flaring nostrils are shown as concave protuberances. The eyes are two small pellets of blue glass set into small sockets. Length 35 mm, internal diameter of socket 12 mm. Remains of organic material in the socket are likely to be from the wooden shaft to which this would have been attached.

This is rather reminiscent of a cockerel ferrule from Trawscoed, Dyfed, which was identified by Davies as a cart-fitting (1987). The majority of such fittings were fixed to vertical poles and appear to have been used to secure the reins when the cart was stationary, while only a very few were fixed to horizontal poles (Alföldi 1935; Toynbee & Wilkins 1982; Crummy 2000). The Head Street bull's head was certainly intended to lie horizontally rather then vertically, and so is unlikely to have come from a standard, sceptre, or similar vertical pole. It is, on the other hand, more delicate than most vehicle fittings.

Fig 22, 52. SF 762. (2770) L472. Demolition. Period 1. Baluster-shaped stud, with the stump of an iron shank encased in copper-alloy on the underside. Probably a furniture fitting, as Boucher *et al* 1980, nos 346-9. Height 21 mm, maximum diameter 23 mm.

Fig 22, 53. SF 697. (2686) L159. Military demolition. Period 2. Fragment of a copper-alloy boss with concentric mouldings. Probably military. Diameter 27 mm.

Fig 22, 54. SF 644. (2618) L560. Demolition. Period 3. Copper-alloy stud with concentric mouldings and traces of an iron shaft and lead-based solder on the underside. Diameter 34 mm. Possibly military.

Fig 22, 55. SF 741. (2749) L157. Accumulation (cess?). Period 4b. Fragment of a copper-alloy stud with iron shank and lead-based filling beneath the head. Probably from a box, as *CAR* **2**, fig 90, 2179. Diameter 23 mm, length 14 mm.

Fig 22, 56. SF 492. (2284) L167. Surface? Period 3? Turned bone fitting with bead, spool, reel and baluster mouldings. The terminal is an acorn-shaped knob, separated from the main section by a baluster moulding, which has broken across its narrow-waist. The lower end has a drilled perforation 4 mm in diameter and only 9 mm deep; it retains no trace of any insertion. Length 72 mm. There are turned fittings of very similar size and style from Nida-Heddernheim and Augst (Obmann 1997, 137, Taf 46, 1904, undated; Deschler-Erb 1998, 15, 129, Taf 5, 56, 58, possibly as late as 2nd century). Some 1st-century styli have similar acorn-shaped terminals and lengths of turned mouldings, though none as elaborate as here (Mikler 1997, Taf 16, 3-8, Taf 17, 5-6). An important characteristic of both SF 492 and SF 482 is the drilled perforation in the lower end, which suggests that they were decorative terminals rather than handles. This hole also distinguishes them from turned fittings with a rebated projection at either end, which have been identified as dowels from composite wooden and bone hinges (Fremersdorf 1940, Abb 19-20, 22-4; Deschler-Erb 1998, 129). (I am grateful to Dragan Božič of the Inštitut za arheologijo ZRC SAZU, Ljubljana, for providing the parallels from Nida-Heddernheim and Augst.)

Fig 22, 57. SF 482. (2252) F709. Pit. Period 4b. Fragment of a similar fitting, but with a slightly different pattern of mouldings. It is broken at the upper end across a similar narrow-waisted baluster moulding, and at the lower end at the top of the drilled perforation. Length 57 mm.

Category 13, military equipment

Fig 23, 58. SF 632. (2606) L227. Occupation. Period 1a. Copper-alloy strap-end fragment, in the form of a military buckle but lacking any means of attaching a tongue. Length 20 mm, witdh 18 mm.

Fig 23, 59. SF 750. (2758) F825. Clay wall. Period 1. Military fitting consisting of three plain copper-alloy studs riveted into a base-plate (in two pieces). Length 52 mm, diameter of studs 17 mm, space between studs and base-plate 4 mm.

Fig 23, 60. SF 696. (2685) F844. Pit. Period 1. Rectangular copper-alloy fitting with longitudinal mouldings and fine incised lines of feathering on each long edge. There is a dome-headed rivet at each end. Length 73 mm, width 10 mm, 2 mm thick. Probably a cross-piece from a sword scabbard, as Feugère 2002, fig 3, which is of late Republican date.

Fig 23, 61. SF 771. (2779) L224. Burning/occupation. Period 1. Copper-alloy strap-tag with double plates, riveted together at the end, between which are preserved small pieces of leather. The terminal is marked by three grooves before an openwork loop; the ends of the plate are toothed.

Fig 23, 62. SF 633. (2607) F561. Pit. Period 1 or 2. Copper-alloy plate from scale armour, damaged on one corner. There are two holes for attachment on the top and on each side. Length 26 mm, width 14 mm.

Fig 23, 63. SF 792. (2800) F862. Pit. Period 2. Seven fragments of copper-alloy shield binding from a straight edge, only the largest illustrated. Length 185 mm, width 8 mm, depth 9 mm. Mineralised wood is preserved in some of the fragments, but retains no structure to enable identification. A dome-headed rivet remains in one of the lugs on the illustrated fragment, and another is among the other fragments.

Fig 23, 64. SF 643. (2617) L560. Demolition, Period 3. Copper-alloy strap-clasp and hinged strap-plate. The two elements are now folded together but are shown opened out in Fig 000. The clasp has a terminal button above side lobes. The hinge pin is iron. The strap-plate is plain and has four projections, one clenched, for attachment. Length, unfolded, 90 mm, width of strap-plate 23 mm.

Fig 23, 65. SF 91. (522) F301. 1998 excavation trench. Period 9. Fragment of a copper-alloy harness strap-loop, as *CAR* **6**, fig 5.57, 1692, and also similar to one from Gloucester (Webster 1958, fig 5, 101). Length 66 mm.

Fig 23, 66. SF 628. (2602) L543. Cultivated soil. Unphased. Copper-alloy girdle-plate tie-hook from *lorica segmentata*. Indentations from the rim of the attachment studs surround each hole. Length 43 mm, width 13 mm.

Fig 23, 67. SF 634. (2608). Unstratified. Silver cast buckle of typical military peltate form, with an additional bar ending in curlicues framing the inner side. One curlicue is missing. The axis bar of the solid tubular hinge is also silver. Length 20 mm, maximum width 32 mm.

Category 14, religious beliefs and practices

Fig 24, 68. SF 298. (1271) L43. Demolition debris. Period 5b. Fragment from a pipeclay bust of an infant, with only part of the chest, neck, chin and the left ear remaining; the ear is elongated and prominent Height 63 mm, width 60 mm. Cheap portrait busts of this type are particularly widepread in Gaul (Rabeisen & Vertet 1986, 159-61, pls 30-31, 222-30). Production may have started as early as the beginning of the 1st century AD, but in Britain they occur from the mid 1st to the 2nd century. Examples found on occupation sites can be presumed to have come originally from a household shrine, perhaps placed there on the death of a child. They were also used as grave goods, and as votive offerings in sanctuaries (Green 1993, 196). Examples from Colchester include one from the so-called Child's Grave and perhaps also fragments from a cellar at Lion Walk, though the latter may not necessarily represent a child (Eckardt 1999, 65, pl 12B; *CAR* **2**, fig 166, 4260).

Fig 24, 69. SF 287. (1184) F67. Robber trench. Period 7. Two fragments of a cast bell with integral large suspension loop. Maximum height about 45 mm, maximum diameter about 40 mm. Insufficient of the base remains to show if it was subrectangular or round. Some bells were used on *tintinnabuli* hung in domestic houses so that the noise of their chimes would drive away evil (Ward-Perkins & Claridge 1976, nos 196-7, 216; Johns 1982, pls 13-14, figs 52, 54).

Category 18, function unknown or uncertain

Fig 24, 70. SF 789. (2797) L161. Fortress demolition. Period 2b. Copper-alloy fitting of narrow rectangular section with one end widening out and broken across two perforations. The other end rises to a small angular point on one side, and has a large ?suspension loop set back slightly on the other. The face on one side is well-finished and decorated with slight marginal grooves. The other face is quite rough and, apart from the loop, appears to have been fitted against a larger object. Length 147 mm.

Not illustrated. SF 479. (2249) L131. Accumulation. Period 4a. Copper-alloy strip, broken at one end, split and formed into decorative scrolls at the other. Length 59 mm.

Fig 24, 71. SF 822. (2830) F240. Pit. Period 4b. Ivory wedge-shaped object, with a decorative hooked notch at the thin end and mouldings at the thick one. The notch, though delicate, may be functional. Length 114 mm, width 19 mm, maximum thickness 15 mm.

Fig 24, 72. SF 640. (2614) F791. Pit. Period 4. Small copper-alloy ring of lozenge-shaped section, worn down on one side. Internal diameter 12 mm, thickness 4 mm. Probably a suspension ring.

Post-Roman

Category 1, dress accessories

Fig 24, 73. SF 40. (175) F37. Pit. Period 9. Finger-ring made of nine strands of fine gilt copper-alloy twisted wire, plaited in three flat bands. The junction between the sections is a complex series of small knots spread over nearly half the circumference of the hoop. Internal diameter 19 mm. Probably Victorian, and perhaps imitating rings made of human hair.

Category 2, toilet instruments

Fig 24, 74. SF 389. (1927) F384. Pit. Period 8. Pipeclay wigcurler; one end is well-formed, the other is chipped but appears to have been more irregular. Length 43 mm, maximum diameter 18 mm.

Category 4, household equipment

Not illustrated. SF 521. (2399) F122. Post-hole. Period 7. Copper-alloy rotary key with round bow, hollow shank, and simple bit, as Egan 1998, fig 86. Length 34 mm.

Category 5, recreation

Fig 25, 75. SF 142. (688) F415. Pit. Period 8. Fragment of a pipeclay figurine of a knight. The upper part of the figure has broken off at the thighs, and part of the base is also missing. The figure wears a long cloak falling to the ground at the sides and back but open at the front. His knee-breeches have three bands of ruffling**.** His lower legs are covered by greaves and he wears low boots. The underside shows a compass-scribed circle around a small ?dowel hole. Height 58 mm.

This figurine belongs to a group that can be dated both stratigraphically and in some cases by their costume to the 17th century. From a site at Aldgate, London, came a cupid and a man carrying a staff of office, dated from his costume to the mid 1680s (Weinstein 1984, figs 60-61). Parallels to this knight come from Norwich, Norfolk, and Southampton, Hampshire (Margeson 1993, fig 168, 1791; Harvey 1975, fig 249, 1959), and possibly from Waterford, Ireland

(Egan 1990, 204). A wide range of contemporary pipeclay figurines have been found from excavations in Colchester: a pair of dogs from the same mould came from St Giles and Crouch Street; a female rider sitting side-saddle from Long Wyre Street; and a small cockerel from Middleborough (*CAR* **5**, fig 53, 2111-12, 2114-15). The Colchester rider and the London cupid both retain traces of red paint.

Category 7: writing equipment

Fig 25, 76. SF 184. (820) F413. Pit. Period 8. Copper-alloy book-clasp, with a small fragment of leather found between the plates. The front and back-plates were joined by a large rivet at the hooked end and three smaller ones at the other end. The surface is decorated with a pattern of fine incised feathering. Length 47 mm, width 9 mm, width at terminal 24 mm.

Fig 25, 77. SF 838. (2846) L232/F113. Pit. Period 9. Two goose radius pens: i) much of the surface is stained green by contact with copper(-alloy), length 138 mm; ii) small patches of the surface are stained green, length 126 mm. A third goose radius pen came from (1939) L20/F106, a Period 8 pit.

Category 10, tools

Fig 25, 78. SF 1004. (3021) F397. Pit. Period 7. Fragment of a mica schist hone, broken across a suspension hole, and with a new hole drilled lower down. Length 28 mm, width 11.5 mm at the top, increasing to 14 mm at the break, 4.5 mm thick. Mica schist hones were first imported in the Late Saxon period, and trade continued well into the medieval period.

Fig 25, 79. SF 922. (2930) F37. Pit. Period 9. Mica schist hone, very worn on two sides. There is a pont-sharpening groove on one of these faces. Both ends are rough, but may be original. Length 91 mm, maximum section size 26 by 29 mm.

Category 15, metal-working

Not illustrated. SF 262. (1141) L336/F431. Pit. Period 8. a) Five offcuts from thin sheet copper alloy, 1 mm thick: i) triangular, maximum length 37 mm, maximum width 13.5 mm; ii) triangular, slightly curved, maximum length 51.5 mm, maximum width 8 mm; iii) triangular, slightly curved, maximum length 23, maximum width 4 mm; iv) irregular, slightly curved, maximum dimensions 41 x 5 mm; v) irregular, curved, maximum dimensions 25 by 2.5 mm; b) Two fragments of sheet copper alloy, the larger slightly crumpled. Maximum dimensions 47 x 29 mm, 30 x 17 mm. At 1.5 mm these pieces are slightly thicker than the offcuts.

Fig 25, 80. SF 997. (3014) F139. Stanchion pit. Period 9. Fragment of a ceramic mould for the production of a thin metal disc in the form of a floret, with slight indentations on the edge to form the petals and decorated with sunk concentric circles around a central dot and circle. Maximum dimensions 31 by 30 mm, 5.5 mm thick; disc diameter 28 mm. Date uncertain.

Category 16, bone-working

Fig 25, 81. SF 833. (2841) F196. Robber trench. Period 7. Bone trial piece or tally, with roughly cut Is and Xs. Length 79 mm. This may be residual Roman.

6.3 The prehistoric and Roman pottery

by Jane Timby

Introduction

The excavations at Head Street yielded a vast quantity of pottery amounting to some 33,250 sherds weighing 560.5 kg. Whilst the bulk of this dates to the Roman period there is also a small quantity of earlier prehistoric, medieval and post-medieval material represented. Following an initial assessment of the complete assemblage a number of key groups were selected by the excavator for further study. Particular attention was paid to the 1st-century groups which provide some important data for the earliest pottery sequences to be isolated from the military deposits in Colchester and for Periods 1-3 all

the phased contexts were looked at. In total the studied assemblage comprises approximately 34% by sherd count, 36% by weight of the total Roman assemblage. Approximately 25% of the total was recovered from post-Roman horizons. The following report discusses the selected material chronologically using the periods established by the excavator on stratigraphic grounds. This is followed by a general discussion highlighting the new evidence provided by this assemblage.

Colchester has seen a prodigious amount of pottery work over the past 80 years, initiated by May's catalogue of a selection of material from the museum published in 1930 (May 1930). The first more structured attempt to analyse material from a specific excavation was that by C F C Hawkes and M R Hull analysing the material from excavations carried out in the 1930's at Sheepen (Hawkes & Hull 1947). This work, very advanced for its time, established a typological, chronological and quantified study which has withstood the test of time, many of the typological categories being still in common usage today. The Sheepen assemblage comprised some 40 tons of pottery (excluding samian) ranging in date from the later pre-Roman period (late 1st century BC) through to the Flavian period and the work has formed the basis of all subsequent pottery work in Colchester and the surrounding region. Further work carried out at Sheepen in the 1970s broadly confirmed the sequence of occupation suggested by Hawkes and Hull and revealed an industrial area where a range of products was manufactured for use in the legionary fortress and subsequent *colonia*. The pottery from these later excavations was catalogued according to the Hawkes and Hull type series and only groups of particular interest published more fully (Niblett 1985). A very basic fabric series was established expanding Hawkes and Hull's three main categories of 'native', 'Romanising' and 'Roman' into eight fabric groups (A-E) (*ibid*, 52).

Publication of numerous sites excavated within Colchester (Hull 1958) made it clear that not only were there deficiencies in the typological series developed for Camulodunum, in so far as it was difficult to add to the established groups and maintain any coherence to the series, but that it was also inadequate in terms of covering material dating to the later Roman period. As the system could not be changed the new work added numbers in the gaps previously left and extended the numbering sequence up to 508 (*ibid*, 285-92). Hull subsequently published separately the material recovered from all the known kilns in Roman Colchester (Hull 1963). This has left a somewhat erratic system but one entrenched in the literature.

The latest contribution to Roman pottery studies in Colchester is the report recently published by Symonds and Wade (1999) which deals with the pottery excavated by the Colchester Trust between 1971 and 1986, an estimated 15 tonnes. Although all the pottery was catalogued only approximately 38% of this was subjected to detailed analysis. The report is presented as a fabric series each defined fabric with its own type series. One major deficiency in this report is the lack of a catalogue of pottery recovered from features and layers in the town known to be well stratified as this information was not available at the time. To try and establish some coherence across all the various sites and to standardise the data a series of 'Period ending groups' (PEGs) were set up based on stratigraphic, numismatic and pottery information (*cf* Symonds & Wade 1999, 7). The types within each fabric were recorded against these groups. Unfortunately the system cannot take into account the problems introduced by residuality, a phenomenon particularly acute in urban sequences, and Colchester is no exception. Approximately 25% of the present assemblage, for example, comes from post-Roman levels and material of 1st-century origin features throughout the stratigraphic sequence.

The treatment of pottery from Colchester would thus appear to be reasonably exhaustive in terms of the typology, and imported wares although still has much future potential in terms of understanding of the local fabrics. As noted above one area where data is lacking is that from individual sites. Currently it is not possible to extrapolate from the published work the material recovered from any one individual site within the City and look at the relative proportions of fabrics and forms through a site sequence.

From this perspective the assemblage from Head Street is a very valuable addition to pottery studies in Colchester, particularly for the earlier levels. It has allowed a rare opportunity to examine a body of material from a relatively well-defined date. The military levels are of particular value as, with the exception of the earlier prehistoric sherds, there are no problems of the survival of earlier occupation material and many of the deposits are clearly separable. Colchester is also unique in that it is the earliest military

establishment in Britain dating to the point of conquest itself, with the potential to provide some immediate feedback on the presence or otherwise of the military supply system in the first years of conquest.

Bidwell (1999) in his comprehensive summary survey of pottery production and supply at Colchester highlighted two areas demanding attention from further work on new pottery assemblages from the town: first, the relationship between the pottery from Sheepen and that from the fortress and early *colonia*, and second, the products of the Antonine pottery industry at Colchester. Due to various constraints in time and finance, and taking on board the nature of the assemblage recovered, the thrust of the work carried out on the Head Street pottery has been to focus on the early material and address the first of these topics.

Methodology

Following the excavation the complete pottery assemblage was submitted for spot dating. The site recording system used involved labelling each pottery bag with a unique finds number on a daily basis followed by a cut of fill/layer number. One context could have several bags of material under different finds numbers which were boxed in a fairly arbitrary manner. The material was thus recorded by bag/finds number and it was only possible later, once the data had been entered onto a computer spreadsheet, to unite material from single deposits. There was no opportunity during the work to lay out material from single features or layers or to look for cross-context joins.

During the spot dating the material was sorted into broad fabric categories and quantified by sherd number and weight. At this stage the work was carried out without direct consultation with the Colchester fabric series currently housed at Colchester Museums and the codes used were based on the published information in Symonds and Wade (1999) or for named and traded wares, the National Roman fabric series (Tomber & Dore 1998) or generic working codes based on the character of the material. At this stage forms were generally not recorded other than in broad vessel type. All the material was quantified by count and weight. The complete samian assemblage was fully quantified during this process (sherd count, weight and estimated vessel equivalents (EVE)) and then extracted from the main body of material for separate analysis by Joanna Bird (see below). Medieval and later material, along with ceramic building material (brick and tile) and fired clay (bell mould) was also removed from the assemblage. The resulting data were summarised for dating purposes.

The size of the assemblage against the available budget made it impractical to attempt to analyse it in totality and the decision was then made to focus further work on key groups. Following the phasing of the site the excavator identified three types of context considered worthy of further study: key contexts; large or good groups, or parts of a good stratified sequence. These have been divided into five main periods: the legionary fortress *(*Period 1), the *colonia (*Period 2*),* the Boudican period (Period 3*)*, the Flavian period to later 2nd century (Period 4) and the House (Period 5*)* (mid 2nd-3rd century). The material from the key groups was fully quantified by sherd count, weight and estimated vessel equivalents for each excavated context. For the earlier groups where the contexts appear to be clearly identifiable all the stratified assemblage was included to take account of the importance of this material. A duplicate fabric series was made available for this stage of the work to be used in conjunction with the published details in Symonds and Wade. The reanalysed sherds were recorded against this fabric series and the published descriptions. The Camulodunum form types were used for the rimsherds only and then generally for the more distinctive types. It proved impractical in the time to try and classify all of the jar forms and these have been treated more summarily. To try and maximise use of the already existing data from the assessment this was entered onto a spreadsheet in it raw form along with the reanalysed contexts. This means that there is a very basic record for the entire assemblage. The assessed data should allow a more comprehensive overview of the incidence of wares overall but it should be appreciated that this has only been scanned once and that the level of interrogation can only be quite superficial. The absence of a detailed stratigraphic narrative or phase plans during the compilation of this report has meant it has not been possible to discuss or analyse the data spatially or with direct reference to the site report. The tables showing incidence of wares and forms by period are based on the reanalysed material only.

There are at least two major drawbacks with the Symonds and Wade volume which have ramifications on further work. First, the fabric definition and allocation of codes make it difficult to evaluate which vessels are imports and which vessels might be locally produced wares; for example, a single code is used for *terra nigra*-like wares which includes Gallo-Belgic imports as well as fine grey wares clearly from a different source, although typologically identical. Similarly, no distinction is made between imported and local mortaria, oxidised wares or other fine wares such as mica-slipped wares, etc from the codes. A second problem with the volume is the difficulty encountered in terms of trying to recreate an assemblage from any one site at any one time. This prevents comparison with future excavated assemblages in terms of quantification other than through individually selected types except perhaps through the deposited archive.

Fabrics

The fabric series established for the Colchester material by Philip Kenrick was based on a two-letter code to describe the fabric followed by an additional pair of digits to describe clay variants or surface finish. Some 240 separate fabrics had been established by 1982 in this system. The approach was simplified in Symonds and Wade (1999) who retained the two-letter system but dropped the extra two digits. The same codes have as far as has been practicable adopted here. However, the tables are arranged in such a way that it is possible to see which wares are imports and which appear to be local copies and any named traded wares are identified as such even though they might share the same code. For specific details of the fabrics, *cf* Symonds and Wade (1999). Some difficulty was encountered by the author in discriminating the various fine black and grey wares, some of which appear to be determined by form as much as fabric, for example, GQ (East Anglian stamp-decorated and other 'London-type' wares). No real differences could be discerned from the fabric samples provided, suggesting that whilst some of the groups may have internal coherence others were slightly *ad hoc.* On balance for this report, most of the fine black wares were categorised as GP (fine grey and black wares) and the main bulk of the fine grey wares as fabric WC (miscellaneous grey and pale grey ware); there was insufficient time to try and pursue this problem further. The grey ware category (fabric GX) is another slightly anomalous group where it is more than likely that more than one source or tradition has been conflated but can be broadly regarded as grey wares of probable local origin.

Typology

Hawkes and Hull's (1947) typological sequence went from 1 to 275 with some gaps to accommodate later additions, grouped according to broad ware types. The material largely ranged in date from the pre-conquest period through to the Flavian period. Hull (1958) subsequently extended the series, filling in some of the gaps and continuing the sequence up to form 508 using material from the town. The sequence was subsequently republished with slight amendments by Hull in 1963. A few new Cam numbers were added to the system in the Symonds and Wade report. A valuable review of the individual types is drawn together by Bidwell and Croom (1999) in the Symonds and Wade volume summarising the dating evidence. The Cam numbers cited in the present report relate to the established series. As the pottery types have been so well documented elsewhere, drawing has been kept to a minimum in this report. Sherds from the earliest military horizons have been treated more extensively to show the associated types. For the later periods, sherds of intrinsic interest have been selected either because they are examples of first occurrence in this assemblage or are variants of published types.

Prehistoric

The lowest horizons of the site yielded five sherds (61 g) of early prehistoric pottery. A further seven sherds (157g) came from the Period 1 levels and another five sherds scattered through the rest of the strata.

Three main fabrics can be defined:

PREHQT: A moderately soft orange brown ware containing a quartz temper. Represented by a single sherd found in association with grog-tempered pieces. Context: L214.

PREHGR: Red brown, moderately soft fabric with a grey core. The paste has a smooth soapy feel from variable quantities of sub-angular grog represented by nine sherds. Contexts: L189 (x3), L214, L230, L528 (x2), F68, and F828

PREHFL: Orange brown to grey, handmade ware with relatively thick walls. The moderately soft paste contains variable quantities of calcined flint. Most of the pieces contained only sparse inclusions but a thick-walled sherd from L190 contained a moderate to common frequency of calcined flint with fragments up to 2 mm in size. Represented by seven sherds. Contexts: L190, L214, F119, F828, F877, F878 and unstratified.

There are no rim sherds present amongst the material but there are six decorated sherds. These include one piece with an applied thumbed cordon (Fig 26.1), one sherd with a line of pinched decoration (Fig 26.2) and four sherds with random rusticated decoration. Most of the sherds are from thick-walled urn-like vessels (7-15 mm). The single sherd from F828 and one of the sherds from L214 are much thinner (6 mm) probably from globular urns.

The Head Street assemblage would appear to belong to the Middle Bronze Age (Deverel-Rimbury) period. Pottery of this date is quite well documented from the local area and cremation cemeteries with urns of distinctive Deverel-Rimbury type have been found at Sheepen, Lexden, Ardleigh and Chitts Hill (Davies 1992). A complete gazetteer has been compiled by Brown (1995). The bucket urns from Ardleigh are largely tempered with flint although grog and flint and grog examples also feature. A particular characteristic of the Ardleigh urns is the use of all-over finger-tip rustication (Erith & Longworth 1960, fig 2) as seen on some of the pieces from Head Street. This is a particularly distinctive regional style, colloquially referred to as the Ardleigh Group, and further examples are specifically cited from Ackland Avenue, Shakespeare Road and Sheepen Road in Colchester as well as further afield (*ibid*, 192). It is possible that some of the thinner-walled pieces from Head Street come from globular urn and can thus be seen as contemporary with the bucket urn fragments.

Brown (1996) distinguishes two regional groups within Essex. The distinctive horse-shoe handles and rusticated decoration of the Ardleigh Group is mainly confined to NE Essex and SE Suffolk whilst the southern zone in the Chelmer-Blackwater river system and the Lower Thames appears to belong the Ellison's Lower Thames Group (Ellison 1980). Decoration on the southern group is largely confined to single rows in fingertip impressions or applied cordons and fingertip rims. The Head Street assemblage, although very small, could contain elements of both traditions.

Catalogue of illustrated sherds

Fig 26.1 Bodysherd from an urn decorated with an applied thumbed horizontal cordon. Fabric PREHFL. [2347], L230. Period: *prehistoric.*

Fig 26.2 Bodysherd, red-brown in colour with a grey core. Pinched, rusticated decoration as a single line around the girth of the vessel. Fabric PREHGR. [2302], L189. Period: fortress *(*Period 1*).*

Roman

***Period 1*: the legionary fortress** (Table 6)

The pottery recovered from the military phase of the site has been divided into three components: Period 1 for fortress contexts in general broadly dating to the period AD 44-9 with a small number of contexts segregated out identified as belonging to the early fortress (Period 1a) (*c* AD 44-6?) and later fortress (Period 1b) (*c* AD 46?-9). Several contexts could only be attributed to fortress or *colonia* (*1/2*) and these are discussed separately. Contexts allocated to the demolition of the fortress are also discussed and presented separately below.

Key features and deposits from Period 1 yielded a total 2608 sherds of pottery weighing 44.9 kg and with 25.70 EVEs. Material that can be specifically attributed to the *early horizons of the fortress* (Period 1a) comprises some 502 sherds (7543 g) and to *the later horizons* (Period 1b) some 486 sherds (8812 g). The condition of the material is moderately good with an average sherd weight of 14.6 g. This reflects quite fragmented material typical of rubbish deposits but not material that has been subjected to excessive disturbance. There were few whole profiles recognisably present.

Fortress: early period (Period 1a) (Table 6)
The key groups identified as belonging to Period 1a with in excess of 10 sherds are: pits F621 and F1027, post-hole F627, burnt debris L545, and road surface L549. Table 7 summarises the wares and identifiable forms from these five groups. The largest groups came from road surface L549, some 178 sherds, and a layer of burnt debris, L545, with some 102 sherds, 34% and 20% by sherd count of the total Period 1a assemblage respectively. L545 also produced a coin of Claudius 1 associated with the pottery. Pit F1027 produced the next largest group of material with some 73 sherds. The remaining groups are generally quite small distributed across some 12 individual features and layers.

Overall the assemblage identified as coming from the early fortress comprises 20 sherds belonging to Continental imports (fine ware, amphora and mortaria), and 482 sherds from what are presumed to be local sources. The latter can be divided into 85 sherds of fine ware or tableware (flagons, jugs, bowls), 5 of mortaria and 393 coarse wares. The Continental imports include two sherds of South Gaulish samian, one from dump L194 dated 'pre-Boudican' and the other from road surface L549 dated AD 50-65/70. Other sherds from L194 include a sherd of Colchester mortarium (TZ), one small fine oxidised ware (DZ), and local grey coarsewares (GX). The road surface L549 produced one sherd of roughcast early Colchester beaker (EC), single sherds of local Pompeian Red ware (CS), Italian amphora and Dressel 20 amphora, various cream/oxidised table wares, local grey ware and local coarse tempered ware (HZ). Featured sherds include a Cam 140 flagon, necked jars including one with a carinated shoulder (Fig 26.3), a grey ware butt beaker (Fig 26.4), a fine black ware imitation of a Gallo-Belgic platter (Fig 26.5), and a lid. Also of note are six sherds of oxidised coarseware (DJ). The dating of the group cannot be refined on the basis of the wares recovered, but the samian and perhaps Pompeian Red ware could suggest odd sherds were accumulating on the road surface *after the earliest fortress period* (Period 1a).

Continental imports from the other early fortress contexts are represented by ten sherds of Dressel 20, two sherds of Dressel 2-4 amphora, two sherds of Gallic amphora, a single sherd of a Gallo-Belgic *terra nigra* platter (Cam 16) (Fig 26.6) and a fragment of Lyon lamp. A sherd of a highly micaceous oxidised ware with a polished red surface from a closed form from pit F1027 and a whiteware cup (Fig 26.14) may also be imports. Amongst the oxidised tables wares are several examples of Cam type 140 flagons (Fig 26.13) at least one whiteware jug (Cam 170), a jug similar to Hofheim type 131 (Ritterling 1913) (Fig 26.22) and neck sherds of a ring-necked flagon from F1027. One sherd from a whiteware butt beaker came from F637 and a simple rim lid from L549.

Amongst the remaining finewares are ten sherds from *terra nigra*-type platters with examples of copies of the moulded imported form Cam 8 (= Cam 24) (Figs 26.7 and 26.20), of Cam type 13 with an internal offset (= Cam 27) and the curved wall Cam 16 (Cam 30) (Fig 26.21) from L545, L549, L580, F621, F637 and F1022. An early Colchester beaker (Cam 94) with roughcast decoration came from cess-pit L177 (Fig 26.19). There are also a number of fine grey and black wares present including everted rim, beakers probably butt beaker as Cam 119 (Fig 26.12), one with incised diagonal line decoration. Two sherds from a fineware bowl, originally flanged below the rim (as Cam 46) with a brownish colour-coat came from L545. Burnt horizon L545 also produced a sherd of Colchester flanged mortarium (Cam 192) (Fig 26.11).

Several oxidised orange sandy wares with a granular texture were present (DJ), probably representative of military manufacture including a thin-walled jar with a concave rim and ridged shoulder (Fig 26.15) probably of Continental derivation (see discussion below). The base of a large oxidised jar with a grey core from L549 has a large deliberately-made hole in the centre.

Reduced coarsewares make up 60% by sherd count of the Period 1a assemblage. Vessels are largely restricted to necked jars, mainly with rolled rims (*cf* Cam 266) (Fig 26.9). There is at least one example of a pedestalled jar (Cam 204) from L545. Some thinner-walled sherds may come from beakers and L549 produced at least three sherds with diagonal combed impressed decoration. Also present are a number of local coarse-tempered wares mainly from large storage jars with rounded rims (C273). Also of note is a bead rim jar in a shelly fabric (HD) from L545 (Fig 26.10).

Fortress later period (Period 1b) (Table 6)
Wares allocated to the later fortress period on Table 6 include both the contexts identified as *later fortress period* (Period 1b) and those as Period 1a/1b. Amongst the imported finewares are seven sherds of South Gaulish samian, single sherds of *terra nigra* (Cam type 16), Lyon ware, and two lamp fragments, one of Italian origin from L353. The samian is dated pre-Flavian. The amphorae include mainly Dressel 20 sherds, with Rhodian, Campanian Dressel 2-4, and Gallic types also present. Two sherds of a coarseware import are also present with a fabric indicative of a volcanic origin. A whiteware sherd of a Cam 113 beaker was present in L529.

Amongst the local non-indigenous fine wares, colour-coated beakers show an increased presence compared to Period 1a and fine oxidised tablewares are also more prominent. Colchester mortaria and imitation *terra nigra* sherds are present but in small amounts. Ten sherds of early Colchester colour-coated wares were recorded with examples of roughcast beakers (Cam 94) and hemispherical cups (Cam 62) (contexts F514, L595, L191, L466, L482, L563 and L607) and a single sherd of local Pompeian Red ware platter from L583. The oxidised tablewares mainly comprise flagons of Cam type 140. Two sherds of Colchester mortaria are present in the group: a Cam type 194 from L585 and a Cam type 195. Fine grey wares from beakers continue to be present in small quantities including one with fine rouletted decoration from L420.

Coarser oxidised wares (DJ) include the first appearance of a flat rim bowl, Cam type 243/4 from L529, as well as collared flagons (Cam 140) and necked, rolled rim jars (as Cam 267). A small amount of white-slipped oxidised ware includes an everted rim jar with an angular cut rim from L563. Coarse grey wares contribute 37.4% to the Period 1b assemblage, considerably less than Period 1a with local grogged wares adding a further 19.75%. Again jars dominate the coarseware assemblage. Most are plain but stabbed and comb-impressed decoration is present on some sherds from L450.

***Period 1*: other fortress contexts** (Table 6)
The remaining contexts dated to the fortress period produced some 1620 sherds, 28.5 kg, 1611 EVEs. The general incidence of fabrics closely matches with those identified in the Period 1a/1b contexts but shows a slightly different emphasis. Most marked is the presence in the fineware imports of quite a substantial quantity of samian accompanied by small quantities of Gallo-Belgic *terra nigra* (platter) and whiteware (beaker), Lyon ware (Cam 62) (Fig 26.17) and lamp. Samian accounts for 7% by sherd count of the remaining Period 1 assemblage, 93% of the imported finewares (excluding lamp). The same range of amphorae noted above are present with Dressel 20 continuing to be the most frequent. One Dressel 20 handle from L466 shows the edge of a stamp. The rim of a Gallic amphora came from pit F243 (Fig 26.16). In addition there are two sherds of possible imported mortaria (not North Gaulish) in Cam 193 forms (Fig 27.41-42).

Amongst the British products, two sherds of Verulamium region oxidised ware were noted (F737 and L578) and eleven sherds of Colchester mortaria with examples of Cam types 191 (Fig 27.43), 192 and 195 (Fig 27.40). The local finewares include 25 sherds of early Colchester colour-coated ware with further examples of roughcast beakers (Cam 94) and hemispherical cups (Cam 162). All the sherds, with one exception, have a thin brownish colour-coat and roughcast finish. The exception is a sherd from L590 decorated with vertical barbotine lines. *Terra nigra* copies are represented by 15 sherds including copies of platters Cam type 16 (Cam 30) (Fig 26.30), Cam 8 (Cam 24) and Cam 12-14 (Cam 26-28), and cups Cam 56 (Cam 57) (Fig 26.33) and Cam 58 (Cam 59) (Fig 26.18). Other fine grey wares also feature strongly, identifiable beakers being limited to local butt beaker types (Fig 26.35), Cam 105 and Cam 108 (Fig 26.32), the latter with comb-impressed decoration and jars. Five sherds of local Pompeian Red ware, mainly platter forms, came from F794, F680, F610, F1009 and ?L604. The larger assemblage shows a greater variety of forms to those noted above. Oxidised tablewares are again dominated by flagons of Cam type 140 (Fig 26.24-26), but with single rims of examples of Cam 144 (Fig 26.29), Cam 151 (Fig 26.23), Cam 170 (Fig 26.27), an unclassified type (Fig 26.28), and bodysherds from a ring-necked flagon with a three-ribbed strap handle from L342. A jar from post-pad F616 was decorated with bands of white slip (Fig 26.31). White-slipped oxidised wares include a copy of the imported platter form Cam form 14, not dissimilar to that found in the dark grey fine ware (UR).

Amongst the oxidised sandy wares (DJ) are further examples of flat rim bowls (Cam 243/4) with a rim from F1022, lids (Fig 27.45) and jars (Fig 26.39). Reduced coarsewares account for 23.5% by sherd count, and local grogged or organic-tempered wares (HZ) for 9.6%. The latter mainly occur as storage or large jars (Fig 26.36-37, 27.44), but lids are also present from F559 and F696. Coarseware jars dominate the overall assemblage accounting for 42.4% by rim EVEs and a substantial amount of these are in grey reduced wares. Of note is a jar with a ridged neck from cess pit L177 (Fig 26.38). Decoration includes stabbing, comb-impressed and vertical combing. A bowl, possibly a variant of Cam 47, with a thickened rim and a straight wall with a hole in the lower part, came from L587.

***Period 1c*: fortress demolition** (Table 8)
A substantial amount of material was recovered from levels associated with the demolition of the fortress prior to the establishment of the *colonia*. In total, some 788 sherds, 18.8 kg of pottery, can be definitely associated with this event with a further 283 sherds, 5.6 kg, possibly from this phase. The range of material very much reflects that already noted from the preceding fortress levels. The overall average sherd size for the assemblage is particularly good at 23 g. South Gaulish samian is moderately well represented, accounting for 7% by sherd count. Other fineware imports include a small fragment of mica-slipped ware, eight sherds of Lyon ware and one lamp fragment. Quite a variety of amphora types are present, some showing for the first time in the pottery record, although clearly dominated by sherds of Dressel 20. New incidences include the carrot type (Cam 189), London type 555 (Peacock & Williams 1986, class 59), Dressel 7-11 and a Dressel 2-4 in a Catalan fabric indicating their likely use in the early fortress phases. Also present are Campanian Dressel 2-4 and Gallic sherds. Also new in the ceramic record is the presence of North Gaulish whiteware mortaria (Cam 195B) and one Verulamium region mortarium. Four sherds of oxidised Verulamium region ware are also present including a flagon from F183 (Fig 27.50).

The local finewares include types already seen from the fortress levels, notably early colour-coated wares (Cam 94, 62), local Pompeian Red ware, *terra nigra*-type wares and various fine black and grey finewares. The latter include an example of a dish Cam 46/311 with a rouletted rim from F183, a bowl Cam 256 from F723 and various small jars and beakers. Pit F723 also produced one of the two stamped *terra nigra* platters recovered from the site. Only the edge of the centrally-placed stamp survives showing a name beginning with the letter [A...]. A second stamped piece came from shallow cut F491 dated to the Boudican/Flavian period (see below). Mica-slipped ware show a more marked presence, mainly as bobble beakers (Cam 95). Local Colchester mortaria now include an example of a Cam 195. Buff tablewares account for 14.7% by sherd count and include further examples of ring-necked flagons (Fig 27.48-49) alongside the Cam 140s. Local grey wares account for 43.7%. The local grogged wares include a particularly large storage jar (Fig 27.47). Other sherds of note include a small sherd of white-slipped ware from L233 decorated with red barbotine dots, a base sherd from a large storage jar from F183 with a sawn broken edge, and a bodysherd from a grey ware jar with part of a scratched graffiti (Fig 27.46).

***Period 2*: the *colonia* (AD 49-60/1)** (Tables 9-10)
The material identified as coming from the *colonia* amounted to some 1132 sherds weighing 24 kg (Table 10). This is divided into material from the early *colonia* (Period 2a), material from the later *colonia* (Period 2b) and other *colonia*-related levels (Period 2). In addition a further 1038 sherds, 19.6 kg, were recorded from layers designated fortress/*colonia* (Period 1/2*)* (Table 9) where clear attribution was not possible from the stratigraphy. Period 2 equates with Symonds and Wade (1999) PEG 3 which also includes fortress material and with Hawkes and Hull (1947) period IV.

Period 1/2*: fortress/c*olonia (Table 9)
The material from Periods 1/2 came from 21 individual contexts (L164, L191, L192, L208-L209, L238-240, L427, L467, L492, L524, L528, L610; feature post-holes F289, F290, slot/wall F498, wall F540, ditch F544, pit F561 and gravel path F563). The largest groups came from pit F561 with some 239 sherds (4.25 kg), and L427 with 62 sherds.

The range of material present does not differ greatly from that seen in the stratified Period 1 contexts. The fineware imports are dominated by South Gaulish samian accounting for 4.1% by sherd number. Other imported finewares are limited to a single sherd of Gallo-Belgic whiteware, one sherd of Lyon ware (Cam 62) and eight sherds of lamp. Amphorae are very much dominated by Dressel 20 sherds with some Gallic examples present. Another example of a London type 555 amphora came from L492. Amongst the local fine or specialist wares, early Colchester colour-coats are well represented (Cam 62, 94), as are *terra nigra* copies (Cam 30), mortaria and oxidised tablewares. Of particular note is a cup (Cam 62) (Fig 27.56) decorated with applied barbotine decoration and quite crudely incised lozenges below perhaps a direct copy of one or more styles more likely to be found on imports from Spain or Central Gaul. A similar trend is demonstrated in the proportion of different wares with grey ware accounting for 37.1 % by sherd count and coarse tempered ware for 12.3%. Based on rim EVEs the only new forms to be represented compared to the Period 1 assemblage are a cordoned flask (Cam 232) (Fig 27.53) and a flanged hemispherical bowl (Cam 46) although both forms were recognisably present earlier from bodysherds.

The group from pit F561 is perhaps worth describing further. This contained a very typical military complement of wares including at least seven imported lamps and nine sherds of South Gaulish samian (one Neronian stamped Drag 24 cup). A single Colchester mortarium and 25 sherds of Dressel 20 amphora, two unclassified amphora and an amphora lid are present. The group also contains seven sherds of *terra nigra* copies, two jars/beakers in fine grey ware and sherds of flagon with at least one Cam 140. A substantial amount of grey ware, both GX and HZ, is present, 77% by sherd count within which there are several Cam 266 jars. The assemblage thus shows examples of most of the forms and fabrics that could be regarded as typical of the early fortress and with a comprehensive range of vessel forms encapsulating eating, serving, food preparation, storage and cooking vessels as well as lamps for lighting.

***Period 2a* - early *colonia* (*c* AD 49-?55)**

Period 2a produced a very small assemblage of 128 sherds (2556 g) from 10 contexts. The only three features in this period are F817, F840 and F866, which each produced single grey ware jar sherds. A mixed dump of material, L103, contained some 56 sherds and layer L233 produced 88 sherds. In terms of fabrics the same range of wares already documented appear but with a distinct paucity of imported material. There are only two samian sherds and seven sherds of amphora, four of which are Dressel 20. There is perhaps commensurately more early Colchester colour-coated ware, but this may be a reflection of the small sample. There is a single Colchester mortarium (Cam 192). Local grey wares contribute 49% by sherd count.

A further 124 sherds (1739 g) come from contexts phased as *colonia* 1/2 (Period 2a/b*)* essentially reflecting an almost identical pattern of wares in very similar proportions. One jar from F493 has a 'X' cut into the rim (SF 935) (Fig 27.63).

***Period 2b* - later *colonia* (*c* AD ?55-61)**

Contexts allocated to the later *colonia* phase produced 183 sherds of pottery (4241 g) associated with six contexts (L99, L159-L161, L210 and L417). Although there is slightly more samian and amphorae present, 12 sherds and 22 sherds respectively, there are no other imported finewares or imported mortaria. The first example of a recognisable Beltran 1 (Dressel 7-11) amphora came from L159. Locally-made finer wares include nine sherds of early Colchester ware, three *terra nigra*-type wares (Cam 24) and eight other fine grey wares and twenty-six sherds of oxidised tableware. Three sherds of Verulamiun region ware are also present. The early Colchester ware includes vessels decorated with rouletting. The local grey wares feature at least one biconical carinated jar, but otherwise there are no new forms in the repertoire.

***Period 2* - c*olonia* general**

The remaining assemblage from the *colonia* in general amounts to some 697 sherds weighing 15.5 kg. There are several large groups present; of particular note are the groups from pits F241 and F779, dump L198 and layers L451, L461 and L468.

The larger assemblage shows a slightly different trend compared to sub-phases *2a* and *2b*. Samian ware is much better represented accounting for 8.6% of the total

assemblage by sherd count. Other imported finewares are still noticeable by their paucity being represented by a single Lyon ware sherd (Cam 62), one *terra nigra* platter (Cam 16) (Fig 28.65). An unusual fine black polished angular beaker from F779 (Fig 28.72) may also be an import. Amphora sherds are quite prevalent, with Dressel 20s accounting for 71.4% of the total amphora. Other types include Campanian Dressel 2-4, Rhodian and Gallic types. A single sherd of a coarseware import was recovered from L198. At least two open lamps made in local fabrics are present from this period, one from L198 and one from L461 (Fig 28.70).

Buff tablewares continue to be well represented and include the first featured example of a two-handled honey jar (Cam 175) (Fig 28.64). A small amount of locally-made finewares (fabrics EC, CS, UR) and other grey wares continue to be present with a perceptible increase in the number of fine grey wares, mainly featuring as beakers. The Cam 94 beaker appears in grey ware and buff ware (Fig 28.68) as well as the colour-coated ware, and the first recognisable example of a carinated beaker (Cam 120) occurs. Other beakers include one Cam 109 with a carinated shoulder (Fig 28.69), and Cam 108 with diagonal lines of comb-impressed decoration (Fig 27.57-58). Three sherds of mica-slipped ware from a beaker form, probably of British origin, appear for the first time, in L198. Nine sherds of mortaria occur with further examples of Cam 192/5. The proportion of coarser oxidised sandy wares appears to show an increase, and this accounts for 16% of the total assemblage. Forms are mainly restricted to jars (Fig 27.62), flagons and flat or reeded rim bowls (Cam 243/4) (Fig 28.66). Local grey wares are still the commonest ware, accounting for 29.5% by sherd count of the Period 2 assemblage. Again the dominant form is the necked jar, followed by lids and bowls (Fig 27.59. Local coarse tempered wares mainly feature as jars. Of particular note is an example of a Cam 258 variant from F779, decorated with combing and impressed decoration (Fig 27.61). Bowls feature in this local coarse fabric for the first time with a flat rim example from F779.

Pit F779 produced 135 sherds amongst which were four South Gaulish samian sherds, one imported Cam 16 *terra nigra* platter, the possible imported beaker (Fig 28.69), forty sherds of various fine grey wares (forms Cam 94, 120 and 221), and one sherd of Dressel 20 amphora. Oxidised sandy wares (DJ) account for 23% with at least one ring-necked flagon (Cam 155) and a beaker, and local grey wares for 37.8% with jars, flat rim bowls and lids. The coarse wares include the Cam 258 variant jar and a flat rim bowl. Pit F241 had a smaller assemblage of 54 sherds of which 13 sherds are samian. Also of note from this group is a sherd of Verulamium region ware.

***Period 3*: the Boudican period (c AD 60/1-AD 70)** (Table 11)

The Boudican destruction horizons produced a fairly modest assemblage of 1331 sherds, 23.25 kg. The material is more fragmented, compared for example with the material from the fortress demolition levels, with an overall average sherd size of 17.5 g. Whilst some of the material is clearly burnt, this is by no means universal. The pottery recorded comes from 73 individual contexts. Many of the groups are thus quite small with just six contexts producing in excess of 50 sherds (L115, L174, L390, L408, L438 and L514) with just two group with in excess of 100 sherds (L155) with 124 sherds and L401 with 118 sherds.

The samian component of the group is very high at 10.4% by sherd count, 4.9% by weight and 11.8% by weight. This compares to 5.6% by count from all of Period 1 and 6.9% from Period 2. Other finewares imports are negligible with five sherds of Lyon ware (Cam 62, 94), one eggshell ware, two Lyon lamp fragments and one lamp unsourced. Amphora sherds are also not prolific with the normal pattern of Dressel 20 dominating the group accompanied by sherds of Cam 189, Cam 186, Campanian Dressel 2-4 and Gallic sherds. Eight sherds from a North Gaulish mortarium (Cam195A) came from F810/F807.

Local traded wares are restricted to two sherds of Verulamium region flagon and one Verulamium region mortarium. The composition of the local wares mirrors that already documented from the *colonia* levels, with low levels of early colour-coated ware, Pompeian Red ware, fine grey wares and *terra nigra* copies (Cam 26 and 30). A slightly higher number of mica-slipped wares are present with at least three vessels, a small lid (Fig 28.80), a bobble beaker (Cam 95), and a deep flanged bowl from L174, L215 and L244 respectively.

The dominant fabrics are buff tablewares (fabric DZ) accounting for 19.5% of the assemblage and local grey wares (fabric GX) 41.6%. In terms of forms, the tablewares (fabric DZ) appear to show almost equal proportions of ring-necked and collared-rim flagon alongside other unclassified types (Fig 28.77-79) and the first examples of frilled *tazza* (Cam 198). This is form known to be made at Colchester and is documented elsewhere from the fortress levels (Bidwell & Croom 1999, 476). A beaker sherd with barbotine ring decoration came from L390 and a weakly carinated bowl, probably originally with handles, Cam 323/331, from L514 (Fig 28.74). Examples of this latter form were found in the pre-Boudican Bypass kiln (*ibid*, 483). This same form appears in the early (Claudio-Neronian) products of the Brockley Hill kilns (Tyers 1998, fig 2.13) and at Usk (Greene 1993, type 20). Other vessels of note include a locally made closed lamp (Fig 28.81). Lamp production at Colchester has been attested by the Boudican period (*cf* Eckardt 2002b).

The grey wares shows the usual repertoire of necked everted rim jars, flat rim bowls, lids and a few beakers (Cam 108). One example of a carinated bowl (Cam 227) (Fig 28.75) came from L564. With three exceptions, the mortaria is of Colchester type, featured pieces include one example of a Cam 195 from L155.

Other items of note include a grey ware (GX) counter from L474 and three samian sherds with graffiti (L403 SF323; L408, SF 406, and F471. Of particular note is the assemblage recovered from pit F471 which comprised some 13 sherds of burnt samian but no other associated pottery.

There would appear to be a few intrusive sherds within the Boudican group, notably a Colchester colour-coated beaker from L373 with a graffiti (Fig 28.82) and three further sherds from an indented beaker from L390. In addition there are two sherds of BB2 from L382. Thus caution needs to be exercised using the data from these contexts.

***Period 4*: Flavian (AD 70-later 2nd century)** (Tables 12-13)
In total, 9714 sherds weighing 180.8 kg were assessed from contexts subsequently identified as belonging to Period 4. Within this group, 47 contexts were highlighted as key groups and these were analysed in greater detail. The refined group comprised 2986 sherds weighing 50.9 kg, with 3241 EVEs (Table 12). Table 8 provides a broad quantification of all the material recorded from the assessed Flavian material excluding the selected contexts.

Compared to the previous groups a greater diversity of material, with a much greater range of forms, appears in this assemblage, which essentially covers over a century. Some of the material can be placed into more refined groups and three phases (phases 5a-5c) have been identified. No key contexts from phase 5c were identified. The remaining assemblage is designated Period 5. Some material appears as Period 3/4 *or 4/5* and this has been separated out.

***Period 3/4*: Boudican/Flavian**
Of particular note is the group of pottery recovered from shallow cut F491 which may belong to the Period 3 or 4. This is noteworthy because of the quantity of samian present. Out of an assemblage of some 73 sherds, 20 are samian (27%). The same feature produced the one of the two examples of a potter's stamp on a copy of a *terra nigra* platter (SF 947, Fig 29.111).The stamp, which is broken, is centrally placed and appears to be illiterate. Faint background lines might suggest that a wooden rather than a metal die was used. Other wares include a Hofheim flagon (Cam 140), a piece of Colchester mortarium, several necked jars in local grey ware and three sherds of fine grey/black ware.

***Period 4a* (c AD 70-90)**
Some 18 groups were further analysed dating to the early Flavian period, a total of 1442 sherds (16.3 kg). The overall average sherd weight of 11g suggests non-primary rubbish material that has been subjected to some disturbance. The largest single group by far is that from accumulation L131, with some 817 sherds, 56.7% by sherd count, 66.5% by weight of the total Period 4a assemblage looked at. In terms of composition, samian is still well represented accounting for 7.5% by sherd count of the group. Other Continental finewares are restricted to just two sherds of Lyon ware (Cam 62), possibly residual, and two sherds of eggshell *terra nigra* from the assessed material. A single sherd of Central

Gaulish Pompeian Red ware came from gravel wall F274. The amphorae, although still dominated by Dressel 20, shows quite a diversity of other types present, most marked of which are sherds of Cam 189 (AF) (Fig 29.84). Further sherds of London type 555 also appear (Fig 29.83). Several sherds of North Gaulish mortaria are present and two sherds stamped Q. Valerius Veranius were present, one from L216 and one from the assessed material, SF941.

Amongst the regional imports are several pieces from the Verulamium region industries including at least three mortaria, two of which are form Cam 195. The Colchester products include a number of fine wares, notably early Colchester beaker (Fig 29.85), fine grey and black wares, and quite a high proportion of mica-slipped wares. Of particular note amongst the latter are several sherds from a mica-slipped (ON) strainer bowl Cam 322/3. The cream fabric resembles the fabric found on the tablewares (DZ), suggesting that this is a local product. Most of the remaining sherds come from bobble beakers (Cam 95). Mica-slipped wares are well-represented amongst the products of the 1933 and 1959 kilns (Hull 1963, 101). The *terra nigra* platter copies include examples of Cam 26-28 and 30. The early Colchester colour-coated beakers include examples with roughcast decoration as found in earlier horizons, but also a marked number of sherds with trailed barbotine decoration as 'hairpins' or applied barbotine scales perhaps suggesting a greater diversification of decorative techniques in use from the early Flavian period.

Local oxidised and cream tablewares continue to form a significant component of the assemblage at 11.5% by sherd count. Most of the featured flagon sherds appear to be from ring-necked forms. Also present is a globular beaker decorated with cream barbotine dots from L131 (Fig 29.86) and occasional bowl sherds. Of note amongst the assessed material, the base of a cream ware vessel decorated with turquoise paint came from pit F246. The use of the barbotine dot form of decoration also manifests itself on fine black ware beakers.

Local grey wares account for a further 49% continuing mainly to feature as necked jars accompanied by smaller numbers of lids, bowls (Cam 243/4) and beakers (Cam 108). The coarser sandy oxidised wares (DJ) include examples of flagon, flat rim bowls, an example of a Cam 44 bowl with a lid recess (Fig 29.89), lids and open lamps.

Wall foundation F728 produced part of a lamp chimney (Fig 29.92) with cut apertures. The fragment had a considerable amount of mortar adhering perhaps suggesting reuse. There was no evidence of sooting or primary use.

Period 4b **(c AD 90-120)**

Some 80 sherds were recorded in detail from clay wall F248 and wall F726 dated to Period 4a/b. F248 produced some 25 sherds of Dressel 20 amphora, some sherds in friable condition. Of particular note from this small assemblage was a sherd with 'London-style' incised decoration from a bowl Cam 330.

The Period 4b proper material amounted to some 274 sherds, 4479 g. Samian shows a slight decline to 5.5% by sherd count of the assemblage but this could be a reflection of the smaller group. For probably the same reason there is much less diversity of material compared to Period 4a, and mainly the same range of material. The main difference of note is the first presence of sherds of Dorset black-burnished ware from L139 and L154. The sherds all appear to be from flat rim bowls Cam 303. Bidwell and Croom (1999, 481) note one example of this form from PEG 8 (up to AD 125) which would fit with these sherds and numerous examples from contexts of PEG 9 (up to AD 150). Also present are six sherds of Colchester colour-coated ware, small amounts of which have also been previously recorded from PEG 8 (Symonds & Wade 1999, 267).

Other wares or vessels of note include another example of a fine blackware Cam 330 bowl from L162 and a small unguent pot (Cam 389) from L123 (Fig 29.93). Amongst the assessed material is a Cam 312 flanged mica-slipped bowl from F704, a poppyhead beaker (Cam 123) in Highgate fabric C, and a small 'votive' grey ware shouldered jar from F705 (Fig 29.101). The earliest example noted of a Cam 123 beaker at Colchester is PEG 7 (up to AD 110) (Bidwell & Croom 1999, 473), although the form is thought to be current elsewhere from the Neronian-early Flavian period (Tyers 1978).

The Period 4b group also contains two stamped mortaria, one a Colchester product stamped by Sex Valerius Saturninus (Fig 29.94) paralleled by other examples already recorded at Colchester (Hartley 1999); one a North Gaulish mortarium (Fig 29.96).

***Period 4* (AD 70-later 2nd century)**

The remaining selected contexts belonging to Period 4 produced some 1190 sherds of pottery, 27.3 kg. The largest single group of material came from the cultivation soil L105, some 902 sherds (21.2 kg), 75.8% of the entire Period 4 assemblage. The material appears to be quite well-preserved from this horizon with an average sherd weight of 23.5 g.

Samian continues to be well represented, contributing nearly 9% by sherd count. No other imported fine wares came from the selected contexts but a single sherd of Central Gaulish green glazed beaker with barbotine dot decoration came from L150, the first to be noted from the stratigraphic sequence. Amphora continue to be dominated by Dressel 20. Amongst the other examples is a single piece of a Catalan type, and from the assessed material a possible fragment of Biv (AR) (Peacock & Williams 1986, class 36) was recorded from L85. Further North Gaulish mortaria are present including a stamped example from L93 (SF 941) (Fig 29.96). A single sherd of coarseware import came from L105. Amongst the regional wares, Verulamium products show a steady increased presence with examples of lids, flagons and flat rim bowls (as Cam 243/4). A worn Verulamium region mortarium stamped by the potter Secundus came from dump L107 (Fig 29.97). Further sherds of Dorset black-burnished ware flat rim bowls (Cam 303) came from L105.

Local wares are again dominated by fine oxidised tablewares (DZ) and local grey wares at 11% and 56.6% respectively by sherd count. The former includes examples of honey jars (Cam 175), flanged bowls (Cam 46), lids, *tazzae*, globular beaker and flagons (Cam 140 and Cam 155). A single, burnt fineware tripod leg came from L105. The grey wares comprise mainly jars with some bowls and beakers. A spout came from L105. Some sherds from L105 appear to be internally stained with a red dye or paint, perhaps representing vessels used as paint pots.

Fine black and grey wares continue to feature and include several copies of samian forms, notably Drag 29, 30 and 27. Cultivation soil L74 within the assessed material contained several sherds from a Cam 330 bowl with incised decoration (Fig 29.103). Further sherds from similar vessels came from L105 along with two fine black ware copies of samian cup Drag 27 (= Cam 333) (Fig 29.99). A further example came from L126 (Fig 29.100). This latter type appears to be quite rare at Colchester and has been regarded as a Flavian introduction (Bidwell & Croom 1999, 483). Further sherds of poppyhead beaker also occur. Amongst the assessed material are examples of Cam 320 (copies of Drag 30 bowls) and a local grey ware example of a carinated bowl (Cam 227). A complete miniature Verulamium jar (Fig 29.102) came from L92.

Looking at the overall data from Period 4 (Tables 12-13), it is noticeable that samian is particularly well represented, accounting for 10.3% for the amalgamated data. Although quite a variety of wares are present, most of these individually contribute less than 1% of the overall assemblage, with just a few groups dominating, notably local grey wares for nearly half and oxidised fine tablewares for 18.4%. Local grogged and other heavily-tempered wares contribute less by sherd number but more by weight as most of the sherds come from large storage type jars. Similarly Dressel 20 contribute a significant amount by weight. In terms of imports, apart from the samian, there are no major changes compared to the earlier phases. Single sherds of Central Gaulish Pompeian Red ware and Central Gaulish green glazed ware appear for the first time in the ceramic record although these could well be redeposited. Similarly the Lyon ware is likely to be residual. There is no apparent influx of other Continental wares, for example, Central Gaulish colour-coated and white ware and Cologne ware, current at this time and well documented from other urban settlements such as London, Gloucester, Cirencester and elsewhere from the Flavian and Trajanic periods. The assessed data would suggest that sherds of BB2 (GB) and Nene Valley colour-coated ware are starting to appear, presumably towards the end of Period 4. Within the local fine ware industries, mica-slipped wares and fine black wares appear to be the two main components, with less evidence of *terra nigra*-type copies but an increased number of copies of samian forms. Verulamium ware and North Gaulish mortaria also appear more consistently part of the repertoire. The Cam 191-194 mortaria types do not appear amongst the featured sherds from the analysed material, the main mortaria form being Cam 195.

Amongst the new forms appearing in this period, based on rims, are cups Cam 333, poppyhead beakers (Cam 123), flagons with pulley-wheel mouths (Cam 143) and various bowls (eg Cam 303, 330 and 341/2).

***Period 5*: house (later 2nd-3rd century)** (Table 14)
In total 4754 sherds of pottery weighing 61.5 kg were assessed from Period 5 from which three contexts, L66, L81, F285 were identified for further work. These three contexts produced between them some 1083 sherds weighing 15 kg, approximately 23% of the total group. There are clearly quite a few redeposited sherds present in this material although in the case of the samian it is difficult to be certain how much may be curated material. There is nothing new in terms of fabrics and forms amongst the residual material that has not been documented from earlier in the sequence.

Samian contributes markedly less overall to the assemblage compared to earlier figures but is still quite a significant component at 3.8% by sherd count. The complete absence of other imported continental finewares in both the selected and the overall House assemblage is perhaps curious. During the later 2nd-3rd century the sort of imports one might expect to find, especially in an urban context would include Cologne, Argonne, Central Gaulish black slipped and Moselkeramik beakers. These are completely absent here. A single sherd from a Mayen ware jar came from L49. The overall amount of amphorae also shows a decline although this is in keeping with general trends at this time when imports are decreasing. Imported mortaria are restricted to North Gaulish examples, two vessels from the Rhone Valley and one Central Gaulish type. Again one might expect to see some of the other types in circulation at this time particularly from the Rhineland.

The overall paucity seen in the Continental imports is to some extent similarly reflected in the regional imports. Verulamium wares, both oxidised wares and mortaria are well represented in the overall house assemblage but only contribute 1% to the selected contexts. Other regional imports present in the selected contexts include a small amount of Dorset black-burnished ware (BB1 - fabric GA) and one sherd of Highgate fabric C poppyhead beaker from London. Amongst the Colchester mortaria sherds is one with a herring-bone stamp from L66 (Fig 29.107). If the survey expands to the rest of the house contexts, a few more examples of BB1 were recorded during the assessment along with six sherds of Lower Nene Valley colour-coated ware, one Nene Valley whiteware mortarium, one sherd of Oxfordshire colour-coated ware (F31), and one sherd of Oxfordshire whiteware mortarium (F421). Two further sherds of Highgate fabric C were noted as well as a few sherds of Hadham oxidised ware. The Dorset black-burnished wares are very much dominated by bowl forms as opposed to jars with at least two flanged conical bowls dating from the later 3rd-4th century from F172 and F190.

One of the largest changes in the fabric repertoire compared to earlier groups is the rise in the amount of BB2 (fabric GB) and Colchester colour-coated wares which account for 12.7% and 8.4% by sherd count respectively of the sample, 11% and 3% by weight. BB2 was produced at Colchester and at a number of other sites in north Kent and south Essex around the Thames Estuary. L66 in particular produced large quantities of these wares, largely as shallow bowls and dishes Cam 37 and 40, and overall these are the commonest forms found in this assemblage in this fabric. The Cam 37A form with a triangular rim dates from the Trajanic/Hadrianic period to the late 2nd or early 3rd century. This is distinguished from form 37B with a half-round profile dating to the late second to third quarter of the 3rd century. The examples from L66 appear to be largely 37A, mainly with incised/burnished line latticing.

Colchester colour-coated roughcast beakers (fabric CB) start to appear in the Trajanic-Hadrianic period with the production of the main colour-coated types (fabric CZ) taking off from around the middle of the 2nd century until the middle of the 3rd. The vessel forms present from L66 mainly include examples of bag-shaped cornice rim types with roughcast or rouletted decoration (Cam 391) with at least one Cam 407, a later form dating from the second quarter of the 3rd century. Amongst the other fine wares are a few sherds of mica-slipped ware including a plain walled dish (Cam 17) and a lid and several fine black and grey wares. Of particular note amongst the latter is an unclassified dish with a rouletted rim (Fig 29.106), part of a moulded head presumably from a face flagon (Fig 29.105) and a sherd with a graffiti (Fig 29.104).

Grey ware (GX) continue to dominate accounting for just under half the total selected assemblage, largely featuring as necked jars and lids with lesser numbers of flat rim bowl and beakers. Local heavily-tempered wares (HZ) appear to show a marked decline accounting for just over 2%. Tablewares and other fine oxidised wares account for 7.5% with featured examples of ring-necked flagon, *tazzae* and honey jars, some of which is presumably residual.

Other wares of note from Period 5 include a grey ware lid-seated jar (Cam 307) from F416; a red-painted sherd from F427 and beakers with red-painted interiors, a Cam 108 from L44 and a fine grey ware sherd from L81.

Post-Roman

The post-Roman deposits yielded around 8350 sherds of Roman pottery weighing 11.9 kg, indicative of the amount of disturbance that the site has clearly undergone. This pottery spans the entire Roman period. Although only scanned at the onset of the pottery work before the site phasing was available, a number of fabrics were noted within this collection of material that are worth highlighting. A few Continental imports are present not recorded from the stratified sequence although in all cases the sherd count is very low. In particular, one sherd of Campanian Pompeian Red ware lid (Peacock 1977, fabric 1) and a sherd of *terra rubra* (TR3) beaker were noted, probably residual from the 1st-century deposits. Probably also of this date is a rare stamped mortarium from the Allier region (Fig 29.108). Slightly later in date are imported sherds of céramique éponge, Argonne colour-coated ware, Cologne colour-coated ware, Moselkeramik and three further sherds of Mayen ware. Amongst the British regional imports are several sherds from the Oxfordshire industries: parchment ware, colour-coated ware (Young 1977, forms C48, C51, C75, C79, C84 and mortaria), whiteware mortaria (*ibid*, forms M17 and M22 and a red painted spout) and white-slipped ware. Other late Roman regional imports include one Overwey whiteware jar and several sherds of Midlands later Roman shelly ware including jar and flanged bowl. Amongst the local wares the only form of note which is not recognisably encountered elsewhere is an oxidised cheesepress. Two sherds from post-Roman contexts carried graffiti (Fig 29.109-110).

Discussion

The fortress and Sheepen

The timespan of Period 1 (AD 44-49) coincides with Hawkes and Hull's periods II (Claudian) and III (Claudio-Neronian) and with Symonds and Wade's PEG 3 spanning the period AD 49-55. This group thus represents the first assemblage from the military levels where it has been possible to distinguish the earliest phase of military occupation at Colchester although it must be acknowledged that the assemblages from the early and later fortress contexts (Periods 1a, 1b) are quite small and any conclusions reached must bear this caveat in mind. However, taken at face value certain features of the assemblage require highlighting and considering against evidence from elsewhere in Britain for early Roman military and civilian pottery supply. The fortress and succeeding *colonia* were established on a site with no evidence of pre-conquest occupation and thus the assemblages should only contain types current from the conquest period on.

One feature that is particularly noticeable with the fortress assemblages (Periods 1a/1b) is the overall paucity of imported finewares, an absence of imported mortaria and a low incidence and restricted diversity of the amphorae. The small number of imports present do not suggest anything other than baggage items. Even when the overall Period 1 assemblage is looked at the proportion of imported material is quite small. The possible exception is the samian, but again this could represent a single consignment following in the wake of the advancing army as part of the baggage train. The evidence would thus strongly suggest that there was no external supply system in place in the initial years of occupation and in fact there is little evidence of military supply system in place for any finewares other than samian, a feature which perpetuates itself into Periods 2 and 3. One important fact that has come to light in analysing this material is the presence of what appears to be locally made military products from the earliest layers, with examples of Colchester mortaria, colour-coated ware, fine black and grey ware, oxidised cream and orange tableware and coarser oxidised and grey wares with a granular texture (fabrics TZ, EC, UR, ?GP/GQ/WC, DZ, DJ and GX). The repertoire of forms and technology all point to the presence of Continental potters arriving with the

army. The assumption has long been made that military pottery was made by serving soldiers (Breeze 1977; Greene 1993) and it clear from the forms at Colchester that these are potters with firm continental traditions and origins seen in the particular range of forms produced.

Early pottery production at Colchester has been well attested and the production of both Hofheim flagons (Cam type 140) and roughcast colour-coated beakers and cups is seen at kiln 23 (Hull 1963, 147). This was a rectangular kiln discovered during the Sheepen excavations and found containing buff-coloured ring-necked, disc-mouthed and collared flagons, roughcast beakers and hemispherical cups and curved wall dishes (Cam types 62, 94B, 149 or 150, 154, 171 and a single bowl Cam 244) (*ibid*, fig 84). The excavators dated the kiln to the end of the Neronian period (AD 60-61) associating its demise, with the rest of the site, to the Boudican revolt. Hawkes and Hull also note an unfinished kiln nearby (1947, 106, 281ff). They suggested that the pottery industry must have exploited the London Clay which skirts the south side of the Colne Valley, west of Sheepen but also suggest that a chalky boulder clay was used for the kiln flagons which were a soft yellow or brownish buff to almost white in colour with white blemishes. A further three kilns have also been identified dating to the Claudio-Neronian period, kiln 26 (Hull 1963, 157-61) and kilns 34-5 (Swan 1984, mf 287). Kiln 26 produced a number of buff flagons (Cam forms 140, 143, 149 and ring-necked forms Cam 154), honey pots (Cam 175), bowls (Cam ?246). Other wares were associated with the structure but not definitely made there. The rectangular structures of kilns 23, 26 and 34 can be paralleled with military sites on the Rhine, in particular examples are known at Novasium (Neuss), the previous base of Legio XX (Swan 1984, 84-5). The evidence from Head Street would suggest one of two things, either kiln 23 was dated too late, or that there were other earlier kilns in the vicinity established immediately after the arrival of the army.

The pedigree of some of the forms found in the early fortress levels perhaps deserves some attention. Hofheim or single handled collared flagons (Cam 140) are characteristic of the Rhineland where they emerge in the Tiberian period (Greene 1993, 17). The form survives into the Flavian period in Britain when it is overtaken by ring-necked flagon. In Britain the form is often, but not exclusively, associated with military installations and it was made by military potters at Usk (*ibid*), Kingsholm (Hurst 1985) and Wroxeter. Cam types 140 B and C are noted as present from PEG 3 (AD 49-55) from previous work (Bidwell & Croom 1999, 474) and it was the predominant type in use at Colchester in the Claudio-Neronian period.

The roughcast, colour-coated beaker and hemispherical cup were the standard products of the Lyon industry dating back to the Tiberian period. The Lyon beakers are rarely decorated with anything other than roughcast sand whilst the cups generally show a diversity of decoration. The Colchester beakers are also mainly decorated with roughcast sand but also include barbotine 'hair-pin' style decoration and rouletting. The cups show roughcasting and in one unique example from Period 1/2, a mixture of barbotine and incision (Fig 27.56). Rouletted examples are also noted in Symonds and Wade (1999, fig 5.12). The same forms were also made at other pottery producing sites in Central Gaul, such as Lezoux (Greene 1979, 43) where other decorative schemes such as barbotine hairpins were employed. Hemispherical colour-coated cups and beakers were also made in the Lower Rhineland (Greene 1973, 56 ff) with possible production centres at Trier and Köln and undoubtedly others. The vessels are less standardised than the Lyon ware suggesting possibly several centres of production. Decoration includes roughcasting but this is not common on the interior of the cups as is found with the Lyon cups. Similarly the Colchester colour-coated wares do not show the use of roughcasting on the interior of the vessels. The hemispherical cup was also copied by potters at Usk and Wroxeter. The form is relatively rare at Usk and the potters did not apply colour-coating or roughcasting (Greene 1993, 39). Most of the cups and all the beakers at Usk are represented by imported examples, mainly from Lyon. A similar situation prevailed at Kingsholm and Cirencester. The pedigree of the Colchester cups perhaps derives more from the Rhenish sources rather than Lyon itself.

Also within the military fortress assemblage at Colchester there are also a small number of distinctive jars. These can be paralleled with examples from Usk (Greene 1993, types 12 and 13). They are characterised by a high or carinated shoulder and a distinctive ridging on the shoulder. The fabrics are either an orange or grey, fairly hard, granular type fabric at Colchester and examples may have been included in Hawkes and

Hull (1947) type 267 which they describe having a tile red or grey Roman fabric and dating from the Claudian-Flavian periods (periods III-VI). Greene (1993) cites parallels of Augustan to Neronian date from the Upper Rhine/Danube area including East and Central Gaul but notes them as scarce in the Lower Rhineland. In particular, there appears to be some typological links with examples from Augst (Ettlinger 1949, Taf 15.6) and Basle (Ettlinger 1944, 204). Greene (1993, 30 ff) regards this form as a cultural feature rather than having any functional purpose and sees them as having La Tène origins suggesting recruitment of a trained potter, perhaps from Augst, to explain the Usk examples. However, it is clear that similar jars were also being produced at the Novaesium kilns (Filtzinger 1972, Taf. 1-2) and the carinated shoulder and ridging may be more a widespread phenomena than previously recognised although in terms of the British finds are features of continental origin.

Other forms from the early fortress levels for which direct continental parallels can be identified include the bowls with flat or reeded rims, Cam types 243/4. These are well known on military and civilian sites in Germany from the Augustan period. In Britain it is suggested that round bottomed form is exclusively pre-Flavian and that the carinated version is Flavian and later (Bidwell & Croom 1999, 478). The form was made by military potters at Colchester, Usk (Greene 1993, type 19), Wroxeter (Darling 1977, fig 6.6) and Kingsholm (Hurst 1985, fig 30.184-6). Also found on all these sites are open lamps, lids, curved wall dishes or platters and mortaria.

The curved wall platter is common to all the military sites. At Colchester is occurs as the imported *terra nigra* form Cam 16 and as copies of this form (Cam type 30). The curved wall type is also known in Pompeian Red wares where the interior surface is colour-coated. All the Pompeian Red wares found associated with the fortress levels are of local origin. The form was similarly made at Usk (Greene 1993, type 29). The form is well designed for use on a brazier.

Colchester mortaria also feature from the early fortress levels. One of the earliest forms found is Cam type 192 (Fig 29.11). The same form was also made at Usk (Greene 1993, type 30) and Kingsholm (Hurst 1985, fig 27.97-104). Other forms apparently associated with the fortress and locally made include Cam types 191, 194 and 195. The 1970 Sheepen excavations produced some 132 mortaria of which 56% were flanged types and 44% wall-sided types. Of the flanged types 75% were considered pre-Flavian and Hartley observes that it was very likely that mortaria would have been made at Colchester soon after AD 43 (Hartley 1985, 92). Wall-sided mortaria are much rarer in the fortress and early *colonia* and only a single example was noted in the Head Street assemblage.

Most, if not all these forms along with others such as the Cam 108 beakers, Cam 175 honey jars, Cam 198 *tazzae* and handled bowls Cam 323/331, can be paralleled amongst pottery from kilns near the Novaesium fortress (Filtzinger 1972). Also of particular note amongst the material from Novaesium are grey ware bowls imitating samian Drag form 29 with incised and rouletted decoration of the type generally referred to as London style (*ibid*, Taf 31.6-7).

Jars in fabrics GX and HZ formed the bulk of the fortress assemblage. Many of these vessels such as the necked jars and bowls and large storage jars (Cam 271-273) (fabrics GX and HZ) have pre-conquest origins but are well represented in the fortress levels. This would suggest that the army exploited local sources for basic cooking and storage vessels. The necked jar form with the rolled rim (Cam 266) is a type identified by Hawkes and Hull from Sheepen from Period 1 and is a form particularly common in the fortress levels. This ought to be a post-conquest type and it is possible that the form was ill-defined by Hawkes and Hull conflating a native indigenous type with one introduced in a granular grey ware by the military potters. The relatively high levels of local heavily-tempered wares which are undisputedly of native pre-conquest origin amongst the fortress assemblage would suggest the exploitation of local pottery supplies.

Thus in summary, the only imports identifiable from the early fortress levels (Period 1a) are a single Gallo-Belgic *terra nigra* platter (Cam 16) (Fig 26.6), a South Gaulish samian dish (Drag 15/17), a Lyon lamp, a possible colour-coated ware, amphorae (Gallic, Dressel 20, Dressel 2-4), and one possible mortaria. Copies of imported forms include flagons/jugs (Cam types 140, 170 and Hofheim 131 and a ring-necked flagon), platters (Cam types 24, 27), cups (Cam 57), a roughcast beaker, a flanged colour-coated bowl (Cam 46), and mortaria (Cam 192).

The later fortress levels (Period 1b) contribute further examples of samian, one *terra nigra* Cam 16 platter, at least one Italian lamp, other lamp (unsourced), Lyon ware and one Gallo-Belgic whiteware beaker, a coarseware import and the same amphora with the addition of a Rhodian example. Additional local copies include hemispherical cup Cam 62 and mortaria (Cam 194 and 195). The one fineware import which does feature quite prominently is samian. Although barely visible in the separate early and late fortress (Period 1a and 1b) assemblages, it does overall account for 4.6% by sherd count of the total Period 1 assemblage and for 4.1% of the Period 1/2 assemblage.

This presents a very different picture to the range of material recorded from Sheepen. Niblett (1985) undertook a re-analysis of material from primary silts in the Sheepen dyke and from beneath the Sheepen rampart from the 1930s' excavations from original notes. This demonstrated that the commonest form was the butt beaker (57% of total assemblage), of which nearly half were Cam 113 white ware types generally considered to be an imported type. It should be noted, however, that this figure may be biased by the retained sample. Cam 113 beakers are recognisable from very small sherds and are very distinctive, possibly leading to over-representation. Other forms noted included a carinated bowl, bulged neck cordoned jars (Cam 218), and simple, neckless cooking pots Cam 256 and Cam 259. Necked cooking pot (Cam 266), ubiquitous on the *colonia*, was represented by only nine examples in Period 1. Flagons/jugs Cam 161 and 165 were also present. All these forms made up approximately 90% of pottery from primary silt. The remainder included jar forms (Cam 204, 221, 231-232, 254, 258, 260b, 265, 270-271), beakers (Cam 101), flasks (Cam 233), and bowls (Cam 250).

Bidwell (1999) in his survey of pottery production and supply made a number of observations upheld by the recent evidence. He comments that Camulodunum imported a wide range of finewares from Central and Northern Gaul which are almost completely absent or negligible from the fortress levels. This is supported by the evidence from Head Street where the complete recorded assemblage only produced single sherds of *terra rubra* (TR3), Campanian and Central Gaulish Pompeian Red ware and glazed ware and these were residual in post-fortress levels. There were no examples of Central Gaulish coarsewares, or *terra rubra* fabrics TR1-2, and imports of *terra nigra* and whiteware butt beaker are represented by single figures only. It has also been observed that there are no pre-conquest levels at Sheepen that can be identified as definitely containing South Gaulish samian (*ibid*, 489). Bidwell makes the assumption that there should be no difference in the pottery supplied to post-conquest Sheepen and the fortress and early *colonia* and that therefore the same range of material should occur in both locations. It is clear, however, that whilst there is some overlap, particularly in terms of local wares, there is in fact a considerable difference between the imported material seen in Period 1 at Sheepen compared to that from the fortress and early *colonia*; Bidwell (*ibid*) attributes this disparity to a difference in chronology which, if correct, has considerable implications with regard the dates for which certain types ceased to be imported.

The Gallo-Belgic ware in particular is a conundrum. As Bidwell notes, there is a huge disparity between the number of stamps from Sheepen compared to the fortress and early *colonia*. The Head Street excavations have yielded just two stamps, both on *terra nigra* copies, and at least one of these is illiterate (Fig 29.111). The bulk of the Gallo-Belgic wares from the 1970 Sheepen assemblage were described as Claudio-Neronian in date (Rigby 1985, 75). The double-handled flagons (Cam 161-163) and butt beaker (Cam 113) are also conspicuously absent from the fortress and *colonia* but very common at Sheepen and, as evidenced elsewhere, were continuing to be imported after the conquest so a cessation of production of all these types at or immediately before the conquest cannot be sustained. Bidwell offers some explanation for this. First, the native inhabitants at Sheepen maintained its old trading links after the conquest while the army relied on Continental imports from other sources. Bidwell finds this difficult to reconcile with the evidence for other imported goods, glass, mortaria, amphora, Lyon ware which were used by both communities. He also notes that the army were using Gallo-Belgic wares whilst based in the Rhineland and that evidence suggests their use of the products in the Neronian and Flavian periods on other British military sites. The evidence from Head Street to a certain extent contradicts this in so far as there is no evidence that the army were initially relying on other imports, certainly in the fortress period and, apart from samian, appear to be completely self sufficient in terms of specialist wares and

exploiting local sources for domestic wares. The accepted importation period for products such as Lyon ware is generally 40-70 but there is no evidence from this site that such wares featured in any significant way in the pre-Flavian periods. Similarly the Gallo-Belgic wares do not intimate any major influx here in the pre-Flavian period and many of the forms known to be in circulation in the post-conquest period simply do not appear at all.

Assuming again that the Sheepen and the fortress would have used the same range if imported goods Bidwell (*ibid*, 490) suggests that the Gallo-Belgic wares from Sheepen are possibly earlier than first thought and that much of the material is rubbish survival. The conquest may have seen a major disruption of trading patterns. The evidence from recent excavations from Silchester have also suggested a major influx of Gallo-Belgic wares immediately prior to the conquest (Timby 2000) perhaps taking advantage of the newly established markets at the major *oppida* or following in the wake of a wave of immigrants establishing themselves at such sites.

The evidence of the fortress material would suggest that the military potters were producing a range of finewares, tablewares, mortaria and cooking wares almost immediately. Up to now little has been known about the earliest stage of the mortarium industry although it is known that Colchester became an important producer after the Boudican revolt. The examples associated with the early fortress *(*Period 1a*)* contexts suggest that flanged forms were made at a very early date. The relative paucity of wall-sided types supports the suggestion that the greater quantities found at Sheepen may have been pre-conquest imports (Hartley 1985, 92). The absence of any evidence of mortaria production from the kilns described by Hull indicates further kiln sites to be located.

The presence of early Colchester colour-coated ware, Colchester mortaria (Cam types 191 and 192), and *terra nigra*-type wares making imitations of imported platter forms Cam 8 and 16 and various fine grey and black wares would also suggest the establishment of kilns at an early date in the establishment of the fortress.

The assumption is similarly made by Greene (1993, 49ff) that there was a supply system in place for the army at Usk and that the reason pottery was produced at this site was due to the absence of suitable locally available wares. He comments, for example, that the curved wall platters (Usk type 29) with internal colour-coating 'illustrate the high degree of technical competence of the military potters whose production of these vessels would have eased demand for imported *terra nigra* and Pompeian Red ware' (*ibid*, 41). It could be argued that the sort of wares perhaps demanded by a Roman army and ones suited to Roman eating and drinking habits would not have been locally available anywhere in Britain immediately following the conquest, unless imported, and that the army itself recognised this fact, bringing the potting skills needed with them. The recurrent pattern of types associated with all these military sites reinforces the notion that there was in effect a specific range of pottery requirements that should be seen as independent of what was available locally or obtainable on the open market.

Forms

Tables 15-16 summarise the vessel forms by period on the basis of rim EVEs. Table 15 gives some indication of when certain vessels appear in the ceramic record whilst Table 16 shows the relative proportions of vessels by period. An asterisk is added for those forms clearly recognisable by fabric or some other feature, such as decoration or style but missing a rim. Broadly speaking, the data confirms the evidence already established by the work previously carried out and summarised in Bidwell and Croom (1999). In a few instances, perhaps particularly with the earlier levels, the occurrence of forms can be refined or consolidated. In Period 1 the two dominant forms are jars and flagons at 43% and 25.5% EVE respectively. Bowls only contribute 2.5% whilst mortaria, cups, beakers and platters all contribute between 4.5 and 8%. In Period 2, the *colonia* jars and flagons still dominate accounting for 37.5% and 26% of the EVEs. The proportion of bowls shows a slight increase to 6.5% as do amphora, whilst items such as mortaria and cups show a slight decrease. The relative proportions are very similar in Period 3. However, in Period 4, the Flavian period, the pattern completely changes. Whilst jars continue to dominate at 39%, flagons show a very marked decline to just 7%, whilst bowls have more than doubled to 14%. Beakers also show a slight increase compared to a slight drop in Period 3. By Period 5, amphorae, mortaria and lamp cease to feature in terms of

EVEs. Bowls show a dramatic increase to 31.5%, almost matching jars at 32%. Flagons and platters have dropped away to just 2% but beakers show a significant rise to 20.5%.

At London it was also observed that the ratio of jars to bowls changed through time with bowls gaining in importance (Davies *et al* 1994, 167). During the Neronian period, jars exceed bowls, but by the Antonine period they are almost equal. A similar pattern was observed at Verulamium (Wilson 1972).

Regional comparisons

One of the few sites in the south-east to provide detailed data on a period by period basis to use as a valuable benchmark against which to compare the Head Street data is London (Davies *et al* 1994). From the Neronian period onwards, the pottery from the small town at Chelmsford also provides further comparative data (Going 1987). It has been concluded that London was not occupied in the initial conquest period and that one of the strands of supporting evidence for this was based on the lack of early South Gaulish samian types at London as found at Richborough, Fishbourne and Camulodunum (*ibid*, 166). The first substantial deposits of samian appear to occur in Neronian contexts. The absence of other Gaulish fine wares is also cited as evidence for the initial occupation not starting until the AD 50s. This would now seem to be a slightly spurious argument on the basis of the ceramic evidence alone. It is more than likely that the samian and Gaulish imports at Camulodunum and probably at Fishbourne are connected with either pre-conquest or pre-existing trade-links. There are very few Gaulish imports amongst the published material from Richborough. Similarly the greater quantities of Gallo-Belgic imports such as *terra nigra* and *terra rubra* found at sites such as Canterbury and Silchester can be regarded as a pre-conquest phenomenon and not directly connected with the military. The evidence from Head Street suggests that one should not necessarily expect marked quantities of fineware imports to equate with the Roman army but perhaps that commodities transported in amphorae were of greater importance.

Samian does feature quite prominently at Head Street. Overall it accounts for 4.6% by sherd count of the total Period 1 assemblage and for 4.1% of the Period 1/2 assemblage. This rises to 6.9% for Period 2 (*colonia*) and 10.4% for the Boudican phase. By the Flavian period this has risen to 11.4%.

The earliest Roman ceramic phase from London is pre-Boudican, where it is noted that imported wares are more common than in any subsequent period (*ibid*, 167). These imports mainly comprise samian (3% by weight, 17% by EVE), fineware, amphora and mortaria. The finewares include Lyon ware, Pompeian Red ware fabrics 1 and 3, colour-coated wares and Gallo-Belgic whitewares, and contribute 4% by weight, 1% by EVE. This compares with 1.9% samian by weight (5.1% EVE) for Period 1 and around 1% for finewares at Head Street. Like Head Street, Dressel 20 amphorae dominate the amphorae, accounting for nearly 75% of the total amphora. Other types recorded from London at this time include Cam 186, Haltern 70 and Dressel 2-4, Rhodian, carrot (Cam 189) and Gaulish types. The London mortaria also show a more diverse range of imports with a small amount of material from the Rhone and Rhine Valleys and Italy. Although absent from the Head Street assemblage, it should be noted that these wares have been recognised at Colchester (P Tyers, pers comm). London was at this time also receiving significant quantities of products from the Verulamium region kilns and at least one kiln in London itself is known, at Sugar Loaf Court, where the vessels produced, like those at Colchester, suggest the work of a Continental potter. Forms produced at this kiln include collared flagons (Cam 140), jars with carinated shoulders, honey jars, ovoid beakers, carinated flat or reeded rim bowls (as Cam 243/4), plain cups (as Cam 62) and ungritted mortaria (*ibid*, 29 ff). There is a general overlap with the local Colchester wares in terms of vessel repertoire but significant typological differences to suggest a potter(s) from different regional traditions compared to the ones operating at Colchester.

The next ceramic phase identified from London dates to the late Neronian to early Flavian period, broadly equating with Period 3 here and marking a period of reclamation following the Boudican fire. In London at this time it was observed that imports had decreased although a range of forms is still present. The balance between fine wares and samian is approximately equal by weight at London at this time at 3% (wt). This is certainly not the case at Colchester where samian account for 4.9% by weight and other finewares for less than 1%. If local finewares are taken as a substitute, then they

collectively still only account for 2.9%. Most of the non-samian imports at London appear to be Campanian Pompeian Red ware with a small amount of material from North Gaul. At London, local mica-dusted and London wares appear for the first time in the ceramic record; the former appears from the fortress demolition layers at Head Street.

Pottery supply to Chelmsford at this time appears to be overwhelmingly local and it seems to be drawing many of its supplies from Colchester, in particular buff wares (flagons and bowls) and mortaria. Samian contributes less than 2% of the overall assemblage for the period *c* AD 60-80 (Going 1987, 106). A small amount of Verulamium region wares are also documented but other imports are rare.

In London the Flavian period is seen as one of consolidation with most pottery supplied by a few major sources (Davies *et al* 1994), the only one to overlap with Colchester being the Verulamium region industry which similarly features more strongly in the ceramic record from this time. Samian accounts for 4% weight in London (*ibid*, table 2) compared to 6.8% at Colchester for the assessed material, 5% of the key groups. As noted above other fineware imports are rare and the fineware component of the assemblage is mainly provided by local potters. The vessel trend at London is also slightly different, although this may be due in part to the long time frame encapsulated by material allocated to Period 4 at Head Street. In London, flagons remain the second most important form in the Flavian period largely supplied by the Verulamium region potters but show a significant decline by the Trajanic period, whereas in Period 4 here the figure has already dropped. Bowls and beakers are present in near equal proportions in London with beakers thereafter showing a decline, whereas at Colchester they show an increase, again probably due the proximity of local production. Again it would appear that London was drawing its imports from slightly a wider range of sources to Colchester at this time.

The general lack of imports again manifests itself from the material recovered from the house (Period 5*)* although the type of material that might be expected has been documented, albeit in relatively small quantities, from other sites in Colchester (*cf* Symonds & Wade 1999, table 1.6). This could be taken as a possible reflection of the status of the house or this area of Colchester or may simply be a quirk of the sample recovered. Although it could be argued that London was a port and as such receiving large consignments of imported goods, the figures still seem low at Colchester compared to other major Roman towns such as Gloucester.

In summary, the Head Street assemblage has provided a valuable opportunity to record a body of material associated with the early military occupation and the immediately succeeding horizons. The focus of the work on the pottery has been very much on characterising the earlier material. This has highlighted some interesting patterns and contrasts with pre-existing material in the area which may have far wider implications both within Colchester itself and in the larger arena of military supply and trade contacts. It has established that the traditional premise of the imported and local 'Belgic' pottery associated with Sheepen equating with the military/early *colonia* is incorrect and that the Sheepen assemblage should not be used as a benchmark for comparing against other military, or indeed Claudio-Neronian, assemblages in Britain. Instead potters were being brought in from the Rhineland/Rhone Valley presumably by the army, bringing with them new potting traditions. From the start they started making Romanised forms such as flagons, mortaria, roughcast beakers and cups, Pompeian Red ware and *terra nigra*-like platters to be used alongside local indigenous wares, thus meeting the full demands of a military establishment. This marks the starting point for the widespread technological and typological changes seen in the British pottery industry from this time and probably reflects a wider pattern of craftsmen with new ideas, traditions and technology moving into the new province.

Catalogue of illustrated sherds
Fig 26.3-39

3. Wheel-made necked jar with a carinated shoulder. Burnished exterior. Fabric HZ. Road surface L549. Period: early fortress (Period 1a).
4. Beaker with a slightly bevelled rim as Cam 119. Moderately fine grey sandy ware. Fabric GX. Road surface L549. Period: early fortress (Period 1a).

5. Imitation Gallo-Belgic platter, Cam 27. Fine, black slightly micaceous ware with a red-brown core not dissimilar to fabric GP but classified as UR. Road surface L549. Period: early fortress (Period 1a).
6. Curved wall platter, Cam 16. Imported *terra nigra*. Fabric UR. Burnt debris L545. Period: early fortress (Period 1a).
7. Imitation of a Gallo-Belgic platter, Cam 24. Dark grey, slightly matt fabric. Fabric UR. Burnt debris L545. Period: early fortress (Period 1a).
8. Simple rim wheel-made lid with sooted rim edge. Organic-tempered local grey ware, fabric HZ. Burnt debris L545. Period: early fortress (Period 1a).
9. Round-bodied jar with a rolled rim. Slightly micaceous grey ware with grog/clay-pellets giving a lumpy texture. Fabric GX/HZ. Burnt debris L545. Period: early fortress (Period 1a).
10. Small beaded rim bowl. Black, slightly sooted exterior. Cam 259. Fabric HD. Burnt debris L545. Period: early fortress (Period 1a).
11. Colchester mortarium, mid orange in colour. Cam 192. Fabric TZ. Burnt debris L545. Period: early fortress (Period 1a).
12. Sharply everted rim beaker, probably a butt beaker as Cam 119. Moderately fine grey sandy ware with a burnished exterior finish. Fabric GX. Clay wall F800. Period: early fortress (Period 1a).
13. Collared rim flagon, Cam140. Fabric DZ (cream). Road surface L549. Period: early fortress (Period 1a).
14. Fine whiteware ?cup. Probably an import. Accumulation L589. Period: later fortress (Period 1b).
15. Very thin walled, shouldered jar with a slightly concave rim and ridged shoulder. Dark orange, slightly granular, well-fired orange ware. Fabric DJ. Floor L563. Period: later fortress (Period 1b).
16. Gauloise amphora. Fabric AN. Pit F243. Period: fortress (Period 1).
17. Hemispherical Lyon ware cup, Cam 62 with roughcast decoration. Fabric EB. L472. Period: fortress (Period 1).
18. Flanged cup. Cam 59. Burnt, red-brown colour-coated ware. Clay dump L583. Period: fortress (Period 1).
19. Cornice rim Colchester ware beaker with roughcast decoration. Cam 94. Fabric EC. Cess pit L177. Period: early fortress (Period 1a).
20. Imitation of a Gallo-Belgic platter in a dark grey, slightly coarse-textured ware. Fabric UR. Cam 24. Pit F621. Period: early fortress (Period 1a).
21. Curved wall platter Cam 30. Light grey fine sandy ware. Fabric UR. Pit F1022. Period: early fortress (Period 1a).
22. Flagon, probably originally double-handled *cf* Hofheim 131 (Ritterling 1913). Dark orange, hard. fine, slightly laminar fabric. Fabric DZ. Pit F754. Period: fortress (Period 1).
23. Disc-headed flagon, Cam 151. Fabric DZ (cream). Silty clay L466. Period: fortress (Period 1).
24. Collared rim flagon, Cam 140. Fabric DZ (cream). Layer L518. Period: fortress (Period 1).
25. Collared rim flagon, Cam 140. Fabric DZ (cream). Dump/demolition L190. Period: fortress (Period 1).
26. Collared rim flagon, Cam 140. Fabric DZ (cream). Silty clay L466. Period: fortress (Period 1).
27. Cup-mouthed flagon, *cf* Cam 170. Fine white ware. Fabric DZ. The form occurs in kiln 26 (Hull 1963, fig 91.20-21). Dump/make-up L566. Period: fortress (Period 1).
28. Flagon. Light pink, fine, slightly micaceous fabric. Fabric DZ. Dump/demolition L190. Period fortress (Period 1).
29. Pulley-wheel flagon, Cam 144. Fabric DZ (cream). Silty clay L466. Period: fortress (Period 1).
30. Curved-wall platter imitating *terra nigra*. Cam type 30. Fabric UR. Silty clay L466. Period: fortress (Period 1).
31. Round-bodied jar with an everted rim. Decorated with bands of thin white slip on the shoulder and rim interior. Lower body has been burnt. Orange-brown fine sandy ware. Fabric DZ. Post-pad F616. Period fortress (Period 1).

32. Globular beaker with sharp everted rim. Cam 108. Fine light grey ware. Fabric WC. Pit F696. Period: fortress (Period 1).
33. Cup, probably an imitation of *terra nigra* form Cam 56 (= Cam 57). Burnished exterior. Fabric UR. Clay dump L583. Period: fortress (Period 1).
34. Thin-walled necked beaker with rolled rim. Sandy grey ware with an exterior burnish. Fabric GX. Pit F621. Period: fortress (Period 1).
35. Beaker, probably a butt-beaker form, *cf* Cam form 119. Pit F1027. Period: fortress (Period 1).
36. Wide-mouthed, wheel-made jar with rolled rim, as Cam 266. Fabric HZ (grog). Silty clay L466. Period: fortress (Period 1).
37. Necked jar as Cam 266. Fabric HZ (organic). Silty clay L466. Period: fortress (Period 1).
38. Jar with a ridged neck. Very hard, well fired dark grey fabric with a red-brown interior. Fabric GX. Cam 268. Pit F773. Period: fortress (Period 1).
39. Jar with angular rim and ridged neck. Variant of Cam 268. Orange-brown, fairly hard, sandy ware. Fabric DJ. Cess-pit L177. Period: fortress (Period 1).

Fig 27: nos 40-46 fortress (Period 1a); nos 47- 50 fortress demolition/*colonia* (Period 1c/2); nos 51-63 *colonia* (Period 2)

40. Colchester mortarium, Cam 195A. Fabric TZ. Angular trituration grits in the lower basin only. Silty clay L466. Period: fortress (Period 1).
41. Mortarium with a triangular flange. Mid brown, slightly micaceous fabric with sparse quartzite trituration grits. Cam 193. Cess-pit L177. Period: fortress (Period 1).
42. Large buff coloured mortarium-shaped bowl with no trituration grits. Cam 193. The paste contains large fragments of angular orange grog. Silty clay L466. Period: fortress (Period 1).
43. Early wall-sided mortarium. Cam 191C. Light buff fabric tempered with coarse orange, buff and red-brown grog. No obvious trituration grits although some of the grog gives the impression of being so. Pit F844. Period: fortress (Period 1).44. Storage jar with a slight neck bulge. Fabric HZ. Pit F1027. Period: fortress (Period 1).
45. Simple lid. Fabric GX. Silty clay L466. Period: fortress (Period 1).46. Bodysherd from a grey ware jar. Fabric GX. Scratched graffiti on the shoulder. SF 940. Surface or fort demolition L490. Period: fortress (Period 1). 47. Large storage jar Cam 273 with a line of impressed decoration on the shoulder. Fabric HZ. Pit F183. Period: fortress demolition (Period 1c).
48. Ring-necked flagon, Cam 154. Fabric DZ. Pit F183. Period: fortress demolition (Period 1c).
49. Ring-necked flagon, Cam 155. Fabric DZ. Pit F183. Period: fortress demolition (Period 1c).
50. Miscellaneous flagon as Hawkes & Hull (1947, fig 51.13). Fabric: FJ. Pit F183. Period: fortress demolition (Period 1c).
51. Miscellaneous flagon. Fabric DZ (cream). Sandy loam L246. Period: fortress demolition (Period 1c).
52. Carinated, cordoned bowl, Cam 209. Black fine ware with a red core. Fabric ?GP. Daub layer L252. Period: *colonia* (Period 2).
53. Narrow necked, cordoned jar, Cam 232. Originally burnished on the exterior. Fabric GX. Pit F561. Period: fortress/*colonia* (Period 1/2).
54. Miscellaneous jar. Granular orange ware with darker surfaces. Fabric DJ. Dump L191. Period: fortress/*colonia* (Period 1/2).
55. Bowl with triangular rim. Orange sandy ware with some fine mica. Fabric DJ. Demolition debris L233. Period: early *colonia* (Period 2a).
56. Hemispherical cup, Cam 62, with barbotine decoration on the upper zone and scratched in lozenges, slightly irregular in shape on the lower zone. Thin orange-brown colour-coat. Fabric EC. Green cessy soil L467. Period: fortress/*colonia* (Period 1/2).
57. Globular beaker Cam 108, with comb-impressed decoration. Highly burnished shoulder. Fabric GP. Demolition/dump L528 Period: fortress/*colonia* (Period 1/2).
58. Globular beaker Cam 108, with comb-impressed decoration. Burnished shoulder and inner rim. Fabric GX. Dump L103. Period: later *colonia* (Period 1b).

59. Miscellaneous hemispherical bowl with a rolled rim. Burnished. Fabric GX. Pit F779. Period: *colonia* (Period 2).
60. Small necked, cordoned jar burnished on the upper half of the body. Cam 221. Fine black ware with a red core. Fabric ?GP. Pit F779. Period: *colonia* (Period 2)
61. Handmade native storage jar with a sooted rim. Variant of Cam 258. The exterior rim is burnished down to a single lie of irregular impressions. The body had multi-directional combing. The interior rim is also burnished with some cursory burnishing of the interior. Fabric HZ. Pit F779. Period: *colonia* (Period 2).
62. Necked jar with a ridged neck. Sooted exterior. Fabric DJ. Build-up/accumulation L461. Period: *colonia* (Period 2).
63. Necked jar with rolled rim. Fabric HZ. Small cross incised into the burnished rim. Clay wall F493, SF 935. Period: *colonia* (Period 2).

Fig 28 - nos 64-72 *colonia* (Period 2: continued); nos 73-82 Boudican (Period 3)

64. Double-handled honey jar, Cam 175. Fabric DZ. Dump L198. Period: *colonia* (Period 2).
65. Imported *terra nigra* platter, Cam 16. Fabric UR. Pit F779. Period: *colonia* (Period 2).
66. Flat rim bowl, Cam 243. Fabric DJ. Build-up/accumulation L461. Period: *colonia* (Period 2).
67. Bowl with rouletted decoration. Cam 68/329. Fabric WC. Pit F779. Period: *colonia* (Period 2).
68. Plain beaker, as Cam 94. Fabric DZ (cream). Pit F779. Period: *colonia* (Period 2).
69. Beaker with a carinated angular shoulder and impressed comb decoration. Cam 109. Burnished on the exterior rim. Fabric GX. Layer L451. Period: *colonia* (Period 2).
70. Small open lamp. Fabric DZ. Build-up/accumulation L461. SF 937. Period: *colonia* (Period 2).
71. Ring-necked flagon. Cam 154/155. Fabric DZ (cream). Pit F779. Period: *colonia* (Period 2).
72. Beaker with a sharply angular profile. Fine black polished ware, possibly an import. Pit F779. Period: *colonia* (Period 2).

Fig 28 - Boudican pottery

73. Bowl with a flat rim and outward flaring wall (*cf* Cam 241/242). Fabric GX. Make-up L215. Period: Boudican (Period 3).
74. Bowl (*cf* am 323/331). Fabric DZ (orange). Slightly sandy. Collapsed wall debris. L514. Period: Boudican (Period 3).
75. Small carinated bowl, Cam 227 with a burnished exterior. Fabric GX. Demolition/ destruction L564. Period: Boudican (Period 3).
76. Flat rim, slightly shouldered hemispherical bowl. Cam 243/4 type. The interior is burnt. Smooth micaceous grey ware. Fabric GX (in the finer range). Boudican debris L155. Period: Boudican (Period 3).
77. Miscellaneous narrow-necked flagon. Fabric DZ (cream). Make-up L215. Period: Boudican (Period 3).
78. Miscellaneous flagon/jug. Fabric DZ (cream). Redeposited Boudican make-up L401. Period: Boudican (Period 3).
79. Miscellaneous double-handled flagon. Fabric DZ. Demolition/destruction L564. Period: Boudican (Period 3).
80. Mica-slipped lid. Fabric ON. Make-up L215. Period: Boudican (Period 3)
81. Fine orange sandy ware lamp with a partially burnished finish. Possibly a Colchester product. Clay dump L260. Period: Boudican (Period 3).
82. Necked beaker (?Cam 408-410) with a good red-brown colour-coated finish. Fabric CZ. Scratched graffiti. Clay surface remnant L373. Period: ?Boudican (Period 3) (if correct presumably this sherd is intrusive).

Fig 29

83. Amphora, London type 555. Accumulation L131. Period: Early Flavian (Period 4a).
84. Amphora, Cam 189. Fabric AF. Accumulation L131. Period: Early Flavian (Period 4a).
85. Globular beaker. Matt orange-red colour-coat. Fabric EC. Accumulation L131. Period: Early Flavian (Period 4a).

86. Large globular beaker with cream barbotine dot decoration. Cam100. Fabric DZ (creamy orange). Accumulation L131. Period: Early Flavian (Period 4a).
87. Straight-sided flat rim dish with a low carination. Miscellaneous bowl. Fabric GX. Accumulation L131. Period: Early Flavian (Period 4a).
88. Flanged bowl with a champfered base. Miscellaneous bowl. Fabric GX. Accumulation L131. Period: Early Flavian (Period 4a).
89. Dish with a grooved recess for a lid. Cam 44. Fabric DJ. Foundation F746. Period: Early Flavian (Period 4a).
90. Flat rim bowl with rounded body. Miscellaneous bowl. Fabric GX. Dump/make-up L193. Period: Early Flavian (Period 4a).
91. Necked jar. Cam 232. Fabric GP. Burnished exterior. Accumulation L131. Period: Early Flavian (Period 4a).
92. Fragment of lamp chimney with sub-rectangular and rounded apertures. Fine, buff fabric with mortar adhering to the interior. No traces of burning or sooting indicative of use. Wall/foundation F728. Period: Early Flavian (Period 4a).
93. Small unguent flask, Cam 389. Fabric DJ. Make-up/trample L123. Period: Later Flavian (Period 4b).
94. Stamped Colchester mortarium. Cam 195B. Fabric TZ. Double line stamp VALRI/SATVR (Sex Valerius Saturninus). Similar to die S94-5 (Hartley 1999, 202). Make-up L139. SF 949. Period: Later Flavian (Period 4b).
95. ?Jar or jug with pendant lip. Burnished on the rim interior and exterior. Fabric ?GP. Roman cultivation soil L105. Period: Flavian (Period 4).
96. Stamped North Gaulish mortarium. Cam 195. Single-line stamp impressed parallel to the bead. Cultivation soil L105. SF 955. Period: Flavian (Period 4).
97. Stamped Verulamium mortarium. Incomplete stamp of Secundus impressed across the flange. Worn interior. Fabric TD. Accumulation/dump L107. SF 954. Period: Flavian (Period 4).
98. Mica-slipped large beaker or jar with a flattened, expanded rim. Fabric ON. Cream fine fabric with a dark orange inner core. Cultivation soil L105. Period: Flavian (Period 4).
99. Cup copying a samian Dragendorff type 27. Cam 333. Fabric GP. Cultivation soil L105. Period: Flavian (Period 4).
100. Cup. Cam 333. Fabric GP. Burnished on the upper exterior. Accumulation L126. Period: Flavian (Period 4).
101. Complete small shouldered jar, possibly a votive pot. Fabric GX. F705. Period: Flavian (Period 4).
102. Complete miniature jar. Fabric FJ. Soil layer L92. Period: Flavian (Period 4). 103. Semi-complete hemispherical bowl with incised decoration. Cam 330. Fabric GP. Cultivation soil L74. Period Flavian (Period 4).
104. Bodysherd from a fine black ware beaker with part of a scratched graffiti. Fabric GP. Clay dump L73. SF 302. Period: House (Period 5).
105. Part of a moulded head, probably from a flagon. Fine, hard white ware with a roughly burnished exterior. Source unknown. Demolition debris L43. SF 298. Period: House (Period 5).
106. Hemispherical bowl with a wide rouletted rim. Burnished interior. Form: *cf* Symonds and Wade 1999, fig 6.94 no 67 for a less complete example. Fabric GP. Dump/ make-up. L66. Period: House (Period 5).
107. Stamped Colchester mortarium. Cam 195. Incomplete herring-bone stamp across the flange. Fabric TZ. Dump/make-up L66. SF 950. Period: House (Period 5).
108. Imported Central Gaulish mortarium stamped diagonally across the flange. Source probably Coulanges, Allier. Robber trench F432. SF 953. Period: Medieval.
109. Colchester colour-coated beaker, Cam 393, with part of a scratched graffiti. Pit F379. SF 437. Period: post-medieval.
110. Base of a black Roman coarseware jar with a scratched graffiti on the underside. Pit F376. SF 149. Period: post-medieval.

Tables:

Acknowledgements
I would like to thank Dr Paul Tyers for his valuable help during the preparation of this report.

6.4 Samian ware

by Joanna Bird
Abbreviations: SG, CG, EG: South/Central/East Gaul

1. Targeted groups (Figs 30-42)
The samian in the 'Targeted groups' is listed in detail. A number of the decorated bowls have cross-joins between contexts; these bowls are described under the first group number that they occur in, with cross-references given for each subsequent occurrence. Numbers in bold refer to the numbered rubbings. Illustrated bowls marked with an asterisk. The dates of the stamped decorated pieces should be taken from B. Dickinson's report on the stamps.

800.L333	Dr 29, SG. Upper zone scroll with spurred buds. Neronian (**84**)
	Dr 15/ITR or 18, SG, Neronian
	Dr 24/25, SG, Neronian
832.L337	Dr 27, SG, Neronian-early Flavian
841.L333	Dr 29, SG; gadroons in lower zone. *c* AD 50-70
	Dr 29, SG, possibly the same pot as the decorated fragment
	Dr15/17/SG/Neronian
901.L351	Dr 24/25/SG, Neronian-early Flavian
947.F183	Dr 18, part of stamp
	2 x Dr 18, SG, Flavian
	Dr 18R or 15/17R, SG, Neronian-early Flavian
	Dr 27, SG, Flavian
	Dr 35, SG, Flavian
993.L368	Ritt 13 (inkwell), SG, probably Neronian; burnt
1020.L57	Dr 29, SG; fragment of badly smudged upper zone decoration. Early-mid Flavian
	Dr 37, CG. Panel design, probably including a trophy and a caryatid. Antonine (**83**)
	Dr 37, Rheinzabern; top of ovolo. Early-mid C3
	Dr 29, part of stamp
	Dr 37 sherd/CG, Hadrian-Antonine
	Dr 18R, SG/Neronian-early Flavian
	Dr 33, CG, Antonine
	Curie 15, CG, Antonine
1026.F454	Dr 15/17 or 18, SG/Neronian
1029.L376	Dr 29, SG. The upper zone includes a four-petalled rosette and a bird. Neronian (**68**)
	Dr 29, SG; fragment of decoration at base. Neronian
	Dr 27, SG, Neronian
1044.L371	Dr 29, SG. Lower zone volutes and corded stems. The same arrangement is on two stamped Modestus bowls from the 1 Poultry site in London (Bird forthcoming, DS12 and DS64). *c* AD 50-65 (**67**)
1045.L366	Dr 15/17 or 18, SG/Neronian; scorched
	SG sherd, Claudian-Neronian
1046.F456	Dr 29, SG. Lower zone gadroons above wreath of poppy heads. *c* AD 55-65 (= 1153.L353; **85**)
1062.L66	Dr 31R, CG/mid-late Antonine
1105.L380	Ritt 13, SG, mid-later C1; stain, possibly ink, on interior
1110.L66	Dr 37, CG. Ovolo and beads used by Casurius (Stanfield & Simpson 1958, pl 133, no 17). *c* AD 165-200 (**86**)
	Dr 18, SG/Neronian
1142.F471	Dr 18, part of stamp. Part of graffito X under base; burnt
	Ritt 3, SG, Claudian-Neronian; burnt
	Dr 15/17, SG, Neronian; burnt
	Dr 18, SG/Neronian; burnt
	Dr 24/25, SG/Neronian; burnt

1153.L353 Dr 29 (= 1046.F546; **85**)
Ritt 8 probably, SG, Claudian-Neronian; slightly scorched
1192.L376 Dr 29, SG; fragment of decoration, wavy lines and ?small animal in upper zone. Neronian
Dr 29, SG; fragment of ?foliage motif in upper zone. Neronian
Dr 29, SG; gadroons in lower zone. Neronian
3 x Dr 29, probably separate pots; Neronian
Ritt 3, SG/Claudian-Neronian
1206.F460 Dr 18, SG, Neronian
1238.L369 Dr 18, SG, Claudian-Neronian; burnt
1243.F471 Dr 15/17, SG, Neronian; burnt
Dr 24/25, SG, Neronian; burnt
Dr 27, SG, Neronian; burnt
1263.L81 Dr 29, SG, Neronian
Dr 18(R), SG/Neronian; burnt
Dr 22/23, SG, Neronian
Dr 27, SG, Neronian
1269.F243 Dr 29, SG. Upper zone scroll; the lower zone has gadroons above a basal row of palmate leaves. *c* AD 55-75 (**87**)
Dr15/17/SG,Neronian
Dr 15/17 or 18, SG/Neronian; burnt
Dr 18, SG, Neronian
1285.L66 Dr 37, SG. Lower zone tendril above band of ivy leaves. Neronian-early Flavian (**88**)
Dr 33, CG, Antonine
1289.L81 Dr 29, SG. Lower zone scroll with frilled leaves. Neronian (**89**)
Dr 29, SG; palm-branch in upper zone. Neronian-early Flavian
Dr 37, SG; part of lobed leaf at base. *c* AD 70-85
Dr 29, SG/Neronian
Dr 15/17, SG, Neronian
2 SG sherds, one probably from Dr 29
1296.F241 Dr 29, SG. Lower zone band of large arrow motifs (*cf* Knorr 1952, Taf 36, C and D, by Masclus), above festoons with small geese and rosettes, and pedestal pendants. *c* AD 50-70 (= 2192.F791; **7**)
Dr 29, SG. Plain medallion in upper zone, containing a small swan. Neronian (**90**)
Dr 29, SG. Lower zone panels, including a plain medallion with a 'spectacle' scroll and palmette on a tendril. *c* AD 50-65 (**91**)
Dr 29, SG, Neronian-early Flavian
Dr 18, SG, Neronian; burnt
2 x Dr 18R/SG, Neronian-early Flavian
Ritt 12, SG, Neronian
1300.L66 Dr 18, SG, Neronian-early Flavian
Curle 11/Ritt 12, SG, Neronian-early Flavian
SG sherd
*1309.L99 *Dr 29, SG; a small bowl. Upper zone wreath festoons with scrolls and pedestal pendants. The lower zone has a trifid wreath above festoons with rosettes and palmette pendants; the rosette occurs on stamped Ardacus and Aquitanus bowls (Knorr 1952, Tafn 2, C, and 3, C). *c* AD 50-65 (= 571.F398/1660.L131, 2029.L191/2184.L229/2319.L141; may = 517.F394; 4)
Dr 18 or 18R, SG/Neronian
Dr 27, SG, Neronian; burnt
1316.L390 Dr 29, SG. Upper zone panels/a hare and hound and massed arrow motifs. c AD 65-80 (**92**)
Dr 15/17 or 18, SG/Neronian
Dr 15/17R or 18R, SG, Neronian
Dr 18R, SG, Neronian-early Flavian
Dr 27, SG, Neronian; burnt
Dr 33, CG, Antonine
1317.L66 Dr 29, SG, Neronian

1318.L81 Dr 30, SG, Neronian
1325.F454 Dr 15/17, SG, Neronian; burnt
*1339.L105 *Dr 37, SG, in the style of Memor. Panel design with figures and saltires: the figures are Mercury, standing under an arcade supported by tiers of chevrons, and a seated figure leaning on a staff. The Mercury (Hermet 1934, pl 18, no 43) was used by Memor (Mees 1995, Taf 124, no 2); the seated figure is Hermet 1934, pl 22, no 194, with a staff added by hand in the mould. Both figures appear at least twice, and there is a fragment of a possible third figure. The ovolo and the leaves and corded tendril in the saltire are all on Mees 1995, Taf 124, no 1, the bud in the saltire on pl 125, no 3, and a similar chevron on pl.125, no 4. *c* AD 70-85, hole for repair (= 258.F71, 840. F165/1055. L59/1215. L65,1250. F234,1305. L52/Í357. F228,1402. L105/1430.L105; **57**)
Dr 37, SG. Basal band of palmettes. Early-mid Flavian (**93**) /
Dr 15/17, SG/Neronian-early Flavian
Curle 11 probably, SG, Flavian
At least 5 x Dr 18, SG/early-mid Flavian
Dr 27 probably, SG, Flavian
1364.L376 Dr 15/17 or 18, SG/Neronian; burnt
1374.L105 Dr 37/SG. Trident ovolo, rather blurred. Early-mid Flavian (**95**)
2 x Dr 18, SG, Flavian
Dr 27, SG, Flavian
Curle 11 probably, SG/Flavian
2 SG bowl/dish sherds
*1402.L105 Dr 29,SG. Upper zone scroll with spurred buds. *c* AD 65-85 (**97**)
*Dr 37 (= 1339.L105; 57)
Dr 37,SG. Head of hound. Early-mid Flavian (**94**)
Dr 37, SG. Rosette-tongued ovolo above panels, including massed arrow motifs. *c* AD 70-90. (may = 1620.L139, (**105**)) (**98**)
3 x Dr 29, SG, Neronian-early Flavian
At least 5 x Dr 18, SG/Flavian
2 x Dr 27, SG, Neronian-early Flavian
Curle 11, SG, Flavian
2 SG cup sherds, 1 SG sherd probably from Dr 15/17 or 18
1403.L66 Dr 15/17 or 18, SG, Flavian
Dr 18, SG/Flavian
Dr 31 R, CG, mid-late Antonine
Walters 79R, CG/mid-late Antonine
1415.L102 Dr 29, SG; a small bowl. Upper zone festoons with scrolls and bud pendants; the lower zone includes the bud on a tendril and a wreath medallion. Neronian; scorched (**46**)
2 x Dr 29, SG/Neronian-mid Flavian
1427.F183 Dr 29, SG. Upper zone scroll; the triple bud is on signed bowls of Masdus (Mees 1995, Taf 105, nos 1, 2, 5,10) and mould-stamped bowls of Murranus (Mees 1995, Taf 150, no 2). *c* AD 50-65 (**99**)
2 x Dr 15/17 or 18, SG/Neronian-early Flavian
SG sherd
*1430.L105 Dr 29,SG. Upper zone scroll with lily buds. *c* AD 50-75 (**43**)
*Dr 37 (= 1339.L105;57)
Dr 37, SG. Basal band of s-gadroons, apparently (some are incomplete) in two sizes. Early-mid Flavian (**100**)
2 x Dr 18, SG, Flavian
Curle 11, SG, Flavian
1431.L401 2 x Dr 29, SG, Neronian; one burnt
Dr 27, SG, Neronian
Dish/bowl sherd, SG
1448.L66 Dr 37, SG. Figured panels, including a pair of satyrs (Hermet 1934, pl 19, no 80) and possibly a warrior (Hermet 1934, pl 19, no 59), with grass tufts and tendrils. *c* AD 85-100 (**41**)
Dr 27, SG, Neronian-Flavian

1467.L66 Dr 37, SG. Trident ovolo/rather blurred; below are probable foliage motifs. *c* AD 80-95 (**101**)
Dr 15/17 or 18, SG, Neronian
2 x Dr 18, SG/Neronian-early Flavian
1476.L105 Dr 27, SG/Flavian
SG sherd
1477.L105 Dr 15/17, SG/Neronian-early Flavian. 3 x Dr 18, SG, Flavian
2 SG sherds/one a cup
1487.F183 Dr 15/17 or 18, SG, Neronian; burnt
Dr 18, SG, Neronian
1492.L128 Dr 18, SG, Neronian-early Flavian
SG sherd
1509.L403 Dr 37, SG. Scroll with spurred bud and narrow bud, over a divided arcade. For the style, *cf* Knorr 1952, Taf 39, C, stamped by Meddillus. *c* AD 70-85 (**102**)
1514.L105 Dr 18, SG, Neronian
Dr 27, SG, Neronian
1515.L105 Dr 29, SG. Lower zone panels, including a long lozenge-shaped or palmate leaf. Neronian (**103**)
Dr 29, SG/Neronian
Dr 18, SG/Neronian
Dr 18R, SG, Neronian
Dr 27, SG/Neronian
1516.L412 Dr 42 cup/SG/Flavian; burnt
Curle 11, SG, Flavian
1520.L123 Dr 18, SG, Neronian
Dr 18R probably/SG/Neronian
1531.L123 Curle 15, SG, Flavian
1552.L121 Dr 15/17, SG/Neronian
Dr 15/17 or 18, SG, Neronian
Dr 15/17R or 18R, SG, Neronian
Dr 18, SG/Neronian-early Flavian; burnt
1557.F723 Dr 15/17, SG, Claudian-Neronian
Cup sherd, SG/Claudian-Neronian
1565.F489 Dr 27, SG, Neronian
*1570.L105 *Dr 29, SG. Upper zone panels with small figures, arrow motifs and wavy lines/and massed horizontal arrow motifs. The figures are a torchbearer, a small version of Hermet 1934, pl 19, no 98, and a cupid playing a double flute, a small version of Hermet 1934, pl 18, no 39. The coarse details and overall design suggest a very late example of the form, probably *c* AD 80-85 (= 1071.L64,1244.L87,1469.F240; **38**).
*Dr 37, SG. The potter's style is distinctive but anonymous. The ovolo, wreath and, unusually at this period, bead row are on several bowls from London (Bird 1998, fig 147, no 68, and Museum of London collections). The Colchester bowl also has a row of corded sticks above a wreath of curved chevrons. *c* AD 70-85 (= 1611.L105 +.255; **22**)
Dr 29, SG/Neronian-early Flavian
At least 2 x Dr 18, SG, Neronian-early Flavian
Dr 27, SG/Neronian-early Flavian
SG sherd
1573.L438 Dr 29, panel of horizontal leaves as on mould-signed bowls of Murranus (Mees 1995, Tafn 149, no 4,153, no 4). *c* AD 50-65 (= 1429.L92, 1517.F283,1594.L131)
Dr 29, SG/Neronian
2 x Dr 18, SG/Neronian
Dr 22/23, SG/Neronian
SG cup sherd
1579.L436 Dr 15/17R or 18R, SG, Neronian
Dr 18, SG, Neronian
SG sherd

1588.L135 Dr 27, part of stamp
2 x Dr 18, SG, Neronian-early Flavian
1590.L134 Decorated fragment, SG; S-gadroons and vertical wavy lines. *c* AD 65-80
Dr 29, SG, Neronian-early Flavian
1593.L13 Dr 18, SG, Neronian
Dr 24/25, SG, Neronian
SG bowl/dish sherd
1594.L131 Dr 29, SG. Upper zone festoons with bud pendants. *c* AD 50-70 (**24**)
Dr 29(= 1573.L438)
Dr 29, SG, Neronian
Dr 22/23, SG, Neronian
1600.F708 Dr 37, SG. Medallion with hare running to left. *c* AD 70-85; round hole for repair (**104**)
1601.L438 Dr 29, SG, Neronian; scorched
Dr 18, SG, Neronian; burnt
Dr 27, SG/Neronian
1608.L139 Dr 36, SG/Flavian
*1611.L105 *Dr 37 (= 1570.L105; **22**)
Dr 18, SG, Neronian-Flavian
Dr 18R, SG/Flavian
1620.L139 Dr 37, SG. Rosette-tongued ovolo. Early-mid Flavian (may = 1402.L105, (98)) (**105**)
Dr 18, SG, Flavian; internal slip removed and heavily scoured; possible graffito under base
Dr 27, SG, Flavian
1622.L431 Dr 29, SG. Lower zone band of leaf-tips above a scroll with palmate leaves. cAD 60-75 (**106**)
Cup/dish sherd, SG, Neronian
1623.L131 Dr 29, SG. Lower zone scroll with small goose. Neronian (**107**)
Dr 29, SG; gadroons in lower zone. Neronian
2 x Dr 15/17 or 18, SG/Neronian
Ritt 12, SG, Neronian
*1626.L131 *Dr 29, SG/stamped by Pass(i)enus. The upper zone wreath festoons with scrolls and bud pendants are similar to another stamped Pass(i)enus bowl from La Graufesenque (Musée Fenaille collection, Rodez). The lower zone has gadroons (*cf* Knorr 1952, Taf 49, E); the wreath at the base is on Knorr 1919, Taf 63, C. (**21**) (see stamps report for precise date)
Dr 29, stamped by Pontheius, with basal band of palmettes. (**108**) (see stamps report for precise date)
Dr 30, SG, Neronian-early Flavian
2 x Dr 18, SG, Neronian-early Flavian; one burnt
2 x Dr 27, SG/Neronian-early Flavian
1640.L131 Dr 37 variant with spout and handles; blurred trident ovolo Early-mid Flavian (**109**)
Dr 29, SG, Neronian-early Flavian
3 x Dr 18, SG, Neronian
3 x Dr 27, SG, Neronian-early Flavian
2 SG sherds
*1646.L131 *Dr 29, SG. Upper zone scroll with plain and corded trifids, and roundels in the field. The corded trifid and roundel are on a stamped Crestio bowl (Knorr 1952, Taf 18, D). The lower zone has a scroll with waisted cordate leaves and berries; a larger version of the leaf is on a Dr 30 from the Neronian Malaval group at La Graufesenque. *c* AD 50-65 (= 1647.L131, 1764.L466, may = 20.F13**; 15**)
*Dr 29, SG. Upper zone festoons filled with arrows, with rosette pendants. The lower zone has a scroll with cordate leaves over 'spectacle' scrolls with poppy heads. For the poppy head arrangement, *cf* Mees 1995, Taf 155, no 3, by Murranus, though the rest of the bowl is not in his usual style. *c* AD 55-70 (**19**)
*Dr 29, SG. Upper zone scroll with a palmette regularly used by Murranus

(eg Mees 1995, Taf 148, nos 1-3), though the beaded rosette is not his usual one. The lower zone has a scroll of cordate leaves and berries/over an arrangement of narrow leaves and waisted leaves on tendrils. The waisted leaf is a larger version of one used by Albinus (Mees 1995, Taf 4, nos 6 and 7). *c* AD 50-65 (**20**)
Dr 29, SG. Lower zone panels, including a saltire and medallion. The leaf on the tendrils is on a stamped Aquitanus bowl from 175 Borough High Street/Southwark; the leaves in the saltire, poppy heads and a hollow trifid/ are not diagnostic. *c* AD 50-65 (= 787.F157; **74**)
Dr 29, SG; ?arrowhead motifs at base, smeared in finishing. Neronian
Dr 18, SG/Neronian
2 x Dr 27, SG, Neronian
SG dish sherd, burnt

*1647.L131 *Dr 29 (= 1646.L131; **15**)
Dr 29, SG. Lower zone band of corded vertical sticks, with a wreath of leaves at the base. *c* AD 50-70 (**111**)
Dr 30, SG. The figure is probably a dancer or maenad. Neronian (**112**)
Dr 30, SG. Female figure, Hermet 1934, pl 20, no 126. Neronian (**113**)
Dr 29, SG; probable leaf in lower zone. Neronian, burnt
Dr 15/17, SG/Neronian
Dr 15/17 or 18, SG, Neronian
3 x Dr 18, SG, Neronian
Bowl, probably Ritt 12, SG, Neronian

1650.F508 Dr 24/25, SG, Neronian

1651.L450 Dr 18, SG/Neronian
Dr 24/25, SG, Neronian
SG sherd

1652.L451 Dr 29, SG. Upper zone scroll winding over massed leaf-tips; *cf* Mees 1995, Taf 153, no 4, signed by Murranus, which has a similar arrangement in the lower zone. For the rosette/*cf* Mees 1995, Taf 152, no 2. *c* AD 50-65 (= 277.F355, 1655.L451; **76**)
Pedestal foot, probably from a Dr 11 crater though the fabric looks rather late; Claudian. Heavily abraded and scoured on both sides
Dr 22/23, SG, Neronian; scorched
Ritt 12, SG, Neronian

1656.L449 2 x Dr 15/17, SG, Neronian; one burnt
Dr 25/25, SG/Neronian

*1660.L131 *Dr 29 (= 1309.L99; **4**)
Dr 15/17R or 18R, SG, Neronian
Dr 27, SG, Neronian

1662.F718 Dr 29, SG; chevron wreath at base. *c* AD 70-85

1668.F716 Dr 27, SG/Neronian-early Flavian

1669.L403 Dr 15/17, SG, Neronian

1684.L115 Dr 30, SG, Neronian
2 x Dr 18, SG/Neronian

1709.L168 Dr 29, SG; lower zone panel with double medallion and tendril. *c* AD 70-85
Dr 37, SG, Flavian

1711.L451 Dr 29, SG; gadroons in lower zone. Neronian

1715.F517 Ritt 12/Curle 11 probably, SG, Neronian-early Flavian

1718.F183 Dr 15/17 or 18, stamp
Dr 29, SG. Upper zone scroll with narrow pointed leaves; lower zone scroll. *c* AD 60-80 (**115**)
Dr 29, SG. The lower zone has alternate vertical corded sticks and wavy lines. *c* AD 50-70 (may = 1313.L52; **116**)
Dr 15/17/SG/Neronian
Dr 18, SG, Neronian
2 x Dr 27, SG/Neronian-early Flavian
Ritt 12, SG, Neronian
SG sherd

1723.F723 Dr 29, SG; spiral with rosette in upper zone. Early-mid Flavian

Dr 37, SG. Wreath festoon with scrolls, and berry pendants. Early-mid Flavian (**117**)
Dr 15/17 or 18, SG, early-mid Flavian
Dr 18, SG/Neronian-early Flavian
Dr 18R, SG/early-mid Flavian
2 x Dr 27, SG, early-mid Flavian

1733.L162 Dr 27, SG, Flavian

1736.L461 Dr 18, SG, Neronian

1739.L161 Dr 29, SG. Lower zone medallion with ?figure; large pointed leaf on a tendril. *c* AD 70-85 (**118**)
Dr 27, SG/Flavian

1749.L451 Dr 29, SG. Lower zone panels, including a wreath festoon and medallions with palmette tendrils. *c* AD 50-65 (**16**)

1750.F737 Dr 18, SG, early-mid Flavian
Burnt SG sherd

1757.L155 Dr29,SG. Lower zone scroll with fine beaded binding. Neronian(**120**)
Dr 15/17R or 18R, SG, Neronian

1758.L159 Dr 15/17 or 18, SG, Neronian-Flavian

*1761.L408 *Dr 30, SG, in the style of Lupus. Two other 30s from Colchester have the ovolo, vine leaf and binding and the ovolo, corded tendril and binding (Dannell 1999, fig 2.25, nos 377 and 380); the bud is recorded on a mould-stamped Lupus bowl (Mees 1995, Taf 99, no 6). *c* AD 50-70 (= 1549.F246; **26**)
Dr 29, SG/Neronian
2 x Dr 15/17, SG, Neronian
Dr 15/17R, SG/Neronian
Dr 18, SG, Neronian
Dr 22/23, SG, Neronian
Dr 27, SG/Neronian
6 SG sherds

1763.L461 Dr 24/25, SG, Neronian

1764.L466 Dr 29 (= 1646.L131; **15**)
Dr 27, SG, Neronian

1766.L151 Dr 18, SG, Neronian-early Flavian
Dr 27, SG, Neronian

1767.L155 Dr 29, SG/Neronian
Dr 18, SG, burnt

1769.L470 Dr 29, SG, Neronian
Dr 30 probably, SG, Neronian

1774.L414 Dr 18, SG/Neronian-early Flavian

1776.F726 Dr 27, SG, Neronian

1777.L466 Dr 15/17R or 18R, SG, Neronian

1793.L147 Dr 27, SG, Neronian

1797.L490 Dr 18, SG, Neronian-Flavian
2 x Dr 15/17 or 18, SG, Neronian
Dr 24/25 probably, SG, Neronian
Dr 27, SG, Neronian-early Flavian

1809.F477 Dr 30 probably, SG, Neronian

*1815.F183 *Dr 29, SG. The upper zone has medallions/including a hare/and grouped wavy lines. The lower zone is a scroll with frilled leaves, over an arrangement of stems and tendrils with narrow formal foliage motifs. *c* AD 55-75 (**14**)
Dr 15/17R or 18R, SG/Neronian-early Flavian
2 x Dr 18, SG, Neronian-early Flavian
Dr 36 probably, SG, Flavian

1820.L154 Dr 27, SG/Neronian

1829.L472 Dr 29, SG/Neronian
Dr 15/17,SG/Neronian

1837.L468 Dr 15/17, SG/Neronian
Dr 15/17R/SG, Claudian-Neronian

1842.L161 Dr 29, SG. Upper zone panels with massed leaf-tips and scrolls; the lower zone is probably a scroll. Neronian (**11**)
1847.L155 Dr 18R, SG, Neronian
1849.F743 Dr 18, SG, Neronian-early Flavian
1896.L178 2 x Dr 15/17, SG, Neronian; one burnt
1902.L500 2 x Dr 18, SG, Neronian
1905.F539 Dr 15/17 or 18, SG, Neronian
Dr 27, SG, Neronian
1908.L147 Dr 27, SG, Neronian
Curle 15, SG/Flavian; burnt
1911.F750 Dr 27, SG, Neronian
1912.L178 Dr 27, SG, Neronian-Flavian
1917.F743 Dr 27, SG, Neronian
1918.L174 Dr 15/17, SG, Neronian
Dr 27, SG, Neronian-early Flavian
1965.F551 Dr 27, SG, Neronian-Flavian; burnt
1967.L193 Dr 15/17, SG, Neronian
Dr 18, SG, Neronian-early Flavian
1978.F754 Dr 27, SG, Flavian
2001.L177 Dr 15/17, SG, Neronian
Dr 27, SG/Neronian
2004.L521 Dr 27, SG, Neronian
2005.F539 Ritt 12 probably, SG/Neronian
2008.L186 Dr 29, SG. Upper zone medallions in panels. Neronian-early Flavian (**121**)
2013.L194 (empty bag)
*2022.L198 *Dr 37, SG/in the style of Calvus. The ovolo and chevron wreath here at both the top and bottom of the decoration/ are on Mees 1995, Taf 17, no 1. The main design consists of panels with wreath medallions and saltires; the medallions contain an eagle (Hermet 1934, pl 28, no 10) and an archer (Hermet 1934, pl 23, no 264). The tall leaf in the saltire is on a Calvus style bowl from 1 Poultry, London (Bird forthcoming, DS191) and the fat bud is on bowls in his style from Pompeii (Atkinson 1914, pl 10, no 52). The figures are on another Pompeii bowl, though not one attributed to Calvus (Atkinson pl 11 no 55). *c* AD 70-85 (= 2134.L217; **8**)
*Dr 37, SG. Four-pronged ovolo above a row of S-gadroons. The shallow frieze below has a boar (a larger version of Hermet 1934, pl 27, no 46) and a hound (a smaller version of Hermet 1934, pl 26, no 41) separated by two types of trifid leaves on tendrils; the basal wreath is of large looped leaves. The general style recalls the Pompeii Hoard (Atkinson 1914) but the individual elements suggest a slightly later date. *c* AD 75-90 (= 2134.217; **9**)
Dr 15/17R, SG/Neronian
Dr 18, SG, Neronian-Flavian
Dr 36, SG, Flavian
*2029.L191 *Dr 29 (= 1309.L99; **4**)
2034.F561 Dr 30, SG, Small rosette-tongued ovolo. Neronian-early Flavian (**122**)
Dr 29, SG, Neronian
2 x Dr 15/17 or 18, SG/Neronian; one burnt
Dr 24/25,SG/Neronian
2042.L193 2 x Dr 18, SG, Flavian; one burnt
Dr 36, SG/Flavian
2043.L514 Dr 18, SG/Neronian-early Flavian
2080.F546 Dr 27, SG, Neronian-Flavian
2083.F779 Dr 18, SG/Neronian-early Flavian
Dr 27, SG/Neronian-early Flavian
*2134.L217 *2 x Dr 37 (= 2022.L198; 8), *(= 2022.L198; **9**)
Dr 24/25, SG, Neronian
2135.F779 2 x Dr 18, SG, Neronian-Flavian
Dr 18R, Neronian-early Flavian
Dr 27, SG/Neronian-Flavian
2143.L526 Dr 27, SG, Neronian

2162.L167 Dr 15/17 or 18, SG, Neronian
Dr 27, SG, Neronian
Dr 31R/CG, mid-late Antonine
2163.L221 Dr 18 probably, SG, Flavian
2169.L103 Dr 24/25, SG, Neronian
2171.F790 Dr 15/17, SG, Neronian
2173.L210 Dr 27 probably, part of stamp
2182.L190 Dr 29, SG. Lower zone scroll with delicate leaves and berries. The leaf is not complete but is close to one on another bowl from Colchester which also has berries and a similar beaded binding (Dannell 1999, fig 2.13, no 193). *c* AD 50-65 (**6**)
Dr 27, SG, Neronian
*2184.L229 *Dr 29 (= 1309.L99; **4**)
2192.F791 Dr 29 (= 1296.F241; **7**)
Dr 37, SG. Frieze with foliage motifs above festoons with spurred buds. Early-mid Flavian (**123**)
2 x Dr 18, SG/Neronian-early Flavian
Dr 27, SG/Neronian
Dr 42 dish with barbotine leaves, SG, Flavian
2 SG sherds
2222.L569 Dr 29, SG. Massed overlapping leaves in the lower zone. *c* AD 50-70 (**3**)
Dr 27, SG, Neronian
2226.L193 2 x Dr 18, SG, Neronian-early Flavian
2265.L573 Dr 29, SG. Upper zone scroll, lower zone gadroons. *c* AD 50-70 (**124**)
Dr 18R, SG/Neronian
2268.L545 Dish, SG, Neronian probably; burnt
2310.L578 SG sherd
*2319.L141 *Dr 29 (= 1309.L99; **4**)
2321.L246 Dr 18, SG, Neronian
*2322.L590 *Dr 29, SG. Upper zone panels of massed arrow motifs and animals. The arrows are on bowls of such potters as Felix (Bird 1988, fig 98, no 333) and Crestio (G B Dannell, pers comm), usually with panels of birds or hares and hounds. Here the panels include groups of at least four small geese in opposed pairs, and groups of at least three fish. The lower zone consists of gadroons. *c* AD 50-70 (= 2103.F567; **2**)
2325.L225 Decorated fragment, SG; bird in festoon or small medallion. Neronian
2 x Dr 18, SG/Neronian-early Flavian
Dr 27, SG/Neronian-early Flavian
2332.L249 Ritt 9, SG, Neronian
2338.L233 2 x Dr 15/17, SG, Claudian-Neronian; one burnt
2339.L240 Dr 15/17, SG, Neronian
2365.L249 Dr 15/17, SG, Neronian; burnt
2378.L564 Dr 18, SG/Neronian
Dr 27, SG, Neronian
Bowl/dish, SG/Neronian-early Flavian
2419.F862 2 x Dr 18, SG, Neronian-early Flavian
2426.F845 Dr 24/25, SG/Neronian
2430.F859 Dr 15/17, SG/Neronian
2480.F786 2 x Dr 27, SG/Neronian-early Flavian; burnt
2482.L603 Dr 29, SG; gadroons in lower zone. *c* AD 50-65
2485.F862 Dr 15/17R, SG, Neronian; burnt
Dr 27, SG, Neronian; burnt
Ritt 12, SG/Neronian; burnt
2514.F845 Dr 29, SG, Neronian
*2515.F862 *Dr 29, SG. Lower zone panels with saltires and wreath festoons. The large leaf is on several Dr 30 bowls from the Neronian Malaval group at La Graufesenque/ in scrolls of similar but not identical bifid leaves. The details - leaves/buds, small leaves and rosettes – are delicately moulded. *c* AD 50-65 (**1**)
Dr 15/17R, SG, Neronian; burnt

	Dr 27, SG, Neronian; burnt
2516.F786	Dr 36, SG, Flavian
2518.L604	Dr 24/25, SG, Neronian
2524.L566	Dr 29, SG; arrowheads in lower zone. *c* AD 50-65
	Dr 29, SG; lower zone scroll with lobed leaves. *c* AD 50-65
	Dr 29, SG, Neronian
2534.F863	Dr 30, SG/Neronian
2540.F861	Dr 27, SG, Neronian
2543.F696	Ritt 9 probably/SG, Neronian
2547.F786	Dr 15/17, SG/Neronian-early Flavian
	Dr 27, SG, Neronian
	Dish sherd/SG, Neronian-Flavian
2560.L549	Cup sherd, SG
2586.F1022	Dr 15/17, SG/Neronian
2590.F1009	Ritt 12 probably, SG, Neronian

2. Other groups

With the exception of the stamped pieces from 773.F143, 1244.L87, 1424.F240 and 1572.L130, the samian in these groups is not listed in detail; source and latest date are given, and the presence of any decorated ware, stamps (see Brenda Dickinson's report) and unusual forms is noted. The more significant decorated pieces are shown on the rubbings (bold nos in brackets); brief descriptions are given for the remainder, and cross-joins noted where they have been observed.

11.F13	SG, Neronian. Dr 29 (= 805.F158; 73). Dr 29, upper zone festoon
15.F10	SG, CG, Antonine. Dr 37 (81). Dr 37 (**82**)
20.F13	SG, Neronian. Dr 29 with fragmentary upper zone scroll (may = 1646.L131,**15**)
25.F3	SG, early-mid Flavian. Dr 29, lower zone panel with medallion and tendrils
29.F20	SG, Neronian-early Flavian
35.F22	SG, Flavian
40.F28	CG, mid-late Antonine
55.F23	SG, early-mid Flavian. Dr 37 (125), with round hole for repair
60.F38	SG, Neronian-early Flavian
74.F24	CG, Antonine
76.L5	SG, CG/mid-late Antonine
104.F301	SG, Neronian-early Flavian; one burnt
122.F59	SG, Neronian-early Flavian. Dr 29 upper zone, festoons with large poppy head pendants
132.F64	CG, mid-late Antonine
134.u/s	EG, early-mid C3; burnt
136.F63	SG, Flavian. Dr 37, scroll with pinnate leaves
144.F65	SG, early-mid Flavian. Dr 29 (**79**). Dr 37 (**80**)
145.F65	SG, Neronian-early Flavian. Dr 29, gadroons in lower zone
146.F38	SG, early-mid Flavian. Dr 29, hare in lower zone. Sherd Hermet form 23
147.F38	SG, Neronian-early Flavian
158.F68	SG, Neronian
161.F317	SG, Flavian. Dr 37, toothed foliage
166.F68	SG, Neronian. Dr 29 (**128**)
181.F337	SG, Neronian
182.F330	SG, Neronian-early Flavian
183.F69	CG, mid-late Antonine
187.F71	SG, Neronian-early Flavian. Dr 29, upper zone panels with arrow motifs and festoons
188.F68	SG, Flavian. Dr 29 (= 1373.L92; **49**)
195.F71	SG, CG, mid-late Antonine
196.F71	SG, CG, Hadrianic. Dr 29, lower zone scroll. Dr 29, lower zone with hares. 2 x Dr 37 with trident ovolos
204.F338	SG, Neronian
209.F78	CG, mid-late Antonine
213.F78	SG, early-mid Flavian. Dr 29, lower zone panels with saltires

237.F71 SG, Neronian; burnt
239.F71 SG, Neronian-early Flavian. Dr 29 (= 1372.F272, 2598.F283; **50**)
242.F82 SG, Neronian. Dr 29 (**78**)
243.F34 CG, mid-late Antonine
244.F85 SG, Neronian
254.F40 SG, Neronian
257.F78 SG, early-mid Flavian
*258.F71 SG, Flavian. Dr 29, upper zone with palmettes. *Dr 37 (= 1339.L105; **57**)
259.F65 SG, Flavian
260.F82 SG, Neronian-Flavian
273.F65 SG, CG/Antonine
275.F89 SG, Flavian
277.F355 SG, CG/Hadrianic-early Antonine. Dr 29, upper zone scrolls winding over leaves
279.F364 SG, early-mid Flavian
284.L12 SG, Flavian
285.F354 SG, Neronian
295.L11 SG, CG/Hadrianic-early Antonine. Dr 29, lower zone medallion with cupid
309.F335 SG, Flavian
310.F362 SG, Flavian
313.F43/45 SG, Neronian
317.L12 SG, early-mid Flavian
319.F91 SG, Flavian
339.F105 EG, first half C3
341.F355 SG, CG, EG, early-mid C3. Dr 29, upper zone scroll over arrows. Dr 37, Rheinzabern. Spout/Hermet form 23. (Two sherds not samian)
345.F362 SG, Neronian
347.F369 SG, Neronian-early Flavian
362.F106 SG, Neronian
368.L12 SG, Neronian-early Flavian
369.F375 SG, Neronian; one burnt
372.F376 SG, Neronian
373.F108 SG, Neronian
386.F379 SG, Neronian
390.L307 SG, EG, first half C3
392.F378 SG, CG, early-mid Antonine. Dr 37, Lezoux, figured panel
393.F375 SG, Neronian. Dr 29 (**75**)
394.F353 CG, mid-late Antonine
396.F102 SG, Neronian-Flavian
399.F109 SG, Neronian-early Flavian
403.F353 SG, Neronian
422.F369 SG, EG, late C2-early C3
432.F102 SG, Flavian. Dr 37, four-pronged ovolo
437.F384 SG, Neronian
446.F113 Stamp
455.F385 EG, first half C3
461.F97 SG, Neronian-early Flavian
474.F117 SG, Neronian. Dr 30, figure as (**113**) but probably different pot
477.F379 CG, mid-late Antonine
478.F376 SG, Neronian-Flavian. Stamp
479.F353 SG, Neronian
505.F120 SG, early-mid Flavian. Dr 29, upper zone scroll with spurred buds, *cf* (**84**). Dr 29, upper zone scroll with lily buds, lower zone probable medallion. Dr 29, lower zone saltire with vertical chevrons
507.F379 SG, CG, EG, first half C3. Dr 29, upper zone scroll with berries
513.F376 SG, Neronian-early Flavian. Dr 29, scroll over arrow motifs
516.F388 CG, Antonine. Dr 37, leaf scroll
517.F394 SG. Neronian. Dr 29, smudged. Dr 29 (may = 1309.L99, **4**)
523.F117 SG, Neronian

552.F382 CG, mid-late Antonine. Dr 37, trophy and heavy wavy line border
558.F367 SG, Neronian; burnt
564.F127 CG, EG/first half C3. Dr37R
568.F401 EG, first half C3
*571.F398 SG, Neronian. *Dr 29 (= 1309.L99; **4**)
573.F121 SG, Neronian
578.F396 SG, CG, Antonine. Dr 37, arrow motifs and wavy lines
585.F405 SG, Neronian
586.F126 SG, Neronian
589.F132 SG, Neronian-early Flavian. Dr 29, lower zone saltires and vertical arrows
590.F411 EG, late C2-early C3
591.F412 CG, EG/first half C3
593.F395 SG, Neronian. (One sherd not samian)
596.F106 SG, Flavian
618.F117 SG, Neronian
627.F130 CG, Antonine. Dr 37, leaf scroll
628.F133 SG, Neronian-early Flavian. Dr 29, upper zone scroll
630.F399 SG, Neronian
631.F394 SG, Neronian
633.F87 EG, early-mid C3
635.F414 (Oxfordshire)
637.F127 SG, Flavian. Dr 29, upper zone scroll with rosettes and trifids
643.F416 EG, late C2-early C3. Dr 37, ovolo
647.L310 SG, Neronian; one burnt
653.F139 SG, CG, Hadrianic-early Antonine
658.F410 (Empty bag)
690.F379 CG, later C2. Dr 45 with lion-head spout, Lezoux, *c* AD 170-200 <144>
697.F144 SG, Neronian
700.F379 CG, Antonine
701.F399 SG, Neronian
703.F137 CG, EG, early-mid C3. Dr 37, Trier, edge of ovolo
709.F141 SG, Neronian
710.F149 SG, Neronian-Flavian
711.F138 SG, Neronian
713.F142 CG, lateC2
714.F140 SG, Neronian
718.F418 SG, Neronian; one burnt
719.F137 EG, first half C3
720.F137 CG, mid-late Antonine
721.F152 SG, EG/first half C3
722.F152 SG, CG, mid-late Antonine; one burnt
724.F417 SG, Flavian-Trajanic. Knorr 78, saltire with poppy heads.
725.F422 (Oxfordshire)
727.F379 CG, Antonine
730.F406 SG, Neronian-early Flavian
734.F88 SG, Neronian-early Flavian. Dr 29 (**131**)
739.F154 SG, early-mid Flavian
740.F67 SG, early-mid Flavian. Dr 29, upper zone opposed rows of chevrons. Dr 37, top of ovolo
769.F67 SG, Neronian-early Flavian. Dr 29, upper zone rows of vertical wavy lines
770.F421 CG, Hadrianic-Antonine
773.F143 SG/CG, Hadrianic-early Antonine.
Dr 37, SG. Chevrons above a row of shallow festoons and a basal wreath of trifid leaves. The festoons contain a small bird and possibly a mould-stamp. Flavian (**132**); *possible mould-stamp*
Dr 37, CG, saltire with cordate leaf
775.F137 CG/EG, late C2-early C3
779.F151 SG, Flavian. Dr 37, scroll over arrows, probably the end of the design
780.F142 SG, Neronian
787.F157 SG, Neronian-early Flavian. Dr 29 (= 1646.L131; **74**). Dr 30 (**133**). Dr 29,

	lower zone gadroons
790.F1	SG, Neronian
792.F136	SG, CG, Hadrianic-Antonine
794.F162	SG, CG/Hadrianic-early Antonine. Dr 37 (**135**). Dr 37, ovolo and leaves
799.F340	SG, Neronian; one burnt
805.F158	SG, Neronian-early Flavian. Dr 29 (= 11.F13; **73**)
830.F158	SG, Neronian
833.F28	SG, Neronian-early Flavian
836.F162	SG, Flavian. Dr 37, s-gadroons over panels with berries
*840.F165	SG, Flavian. *Dr 37 (= 1339.L105; **57**). Dr 37 (**72**). Dr 42 dish handle, Flavian
842.F335	SG, CG, Antonine. Dr 29, upper zone scroll
843.F338	SG, Neronian-Flavian. Ritt 3, Claudian-Neronian
847.F73	CG, Antonine
851.F427	SG, Neronian
852.F170	SG, Flavian. Dr 29, upper zone scroll with bird
854.F427	SG, Neronian; burnt
863.F436	SG, Neronian-early Flavian
867.F355	SG, Neronian-early Flavian; one burnt
871.F158	SG, Neronian
874.F84	SG, Neronian-early Flavian
876.F174	SG, Neronian
879.F167	CG, late C2
884.L41	SG, CG, mid-late Antonine
890.F427	SG, Neronian
893.F171	*Stamp*
895.F176	SG, CG, Antonine
902.F375	SG, Neronian
903.F442	SG, Neronian-early Flavian
905.F180	CG, Antonine
912.F58S	SG, Neronian. Dr 29 (**136**). Dr 29 (**137**)
915.F174	SG, Neronian
919.F175	EG, late C2-early C3
926.L10	EG, first half C3
927.F431	SG, CG, Antonine
928.F445	EG, first half C3
931.F181	SG, Neronian-early Flavian
932.F166	SG, CG/EG/to mid C3. Déch 67, vertical wavy lines
933.F174	SG, Neronian
934.F188	SG, CG, Antonine. Dr 29, upper zone panels with arrow motifs and hare
936.F182	CG, mid-late Antonine
937.F412	CG, Antonine
941.F184	SG, Neronian
942.F184	SG, Neronian-early Flavian
948.L49	CG, mid-late Antonine
950.L51	SG, Neronian-Flavian; burnt
955.F174	SG, Neronian
961.F445	SG, Neronian
962.F445	SG, Neronian
963.L7	SG, CG, Antonine
964.L43	SG, Flavian
965.L45	CG, Antonine
969.F190	SG, Neronian-Flavian
970.F421	SG, CG, EG, Antonine. Dr 37, ovolo over ?chevrons. Dr 37, arrow motifs and chevron wreath
971.F196	SG, Neronian. Dr 29 (**69**). Dr 29, spurred bud in upper zone
988.F433	SG, Flavian
989.F198	SG, Neronian. Dr 29, arrow motifs at base
992.F63	SG, early-mid Flavian. Dr 37 (**71**)
996.L302	SG, Flavian. *Stamp*. Dr 37(**138**)

999.F186 SG, Neronian-Flavian
1000.L52 SG, Flavian. Dr 37, ovolo
1001.F192 SG, Neronian
1002.F201 SG, Neronian
1016.L59 SG, CG, Hadrianic-Antonine
1021.F203 SG, Flavian. Dr 37, scroll
1025.F108 SG, Flavian. Dr 37, scroll with pinnate leaf
1034.F186 SG, CG/Hadrianic-early Antonine; one burnt. Dr 37, Lezoux, including figures
1043.F433 SG, Neronian
1049.L54 SG, Flavian
1050.L64 Neronian. Ritt 3, Claudian-Neronian
*1055.L59 SG, Flavian-Trajanic.*Dr 37 (= 1339.L105; **57**)
1057.F485 SG, Neronian-early Flavian
1058.F373 SG, Neronian. Dr 29 (**66**)
1060.F205 SG, Flavian
1063.F208 SG, Flavian
1064.F210 SG, Neronian-Flavian
1066.L55 SG, Neronian-Flavian
1067.L55 SG, Neronian-Flavian
1069.L64 SG, Flavian. Dr 37, basal wreath, *cf* (**79**). Knorr 78, style of Germanus; ovolo and berries
*1071.L64 SG, Flavian. *Dr 29 (= 1570.L105; **38**)
1072.L63 SG, Neronian
1085.L55 SG, Neronian-Flavian
1086.L67 SG, Flavian. Dr 30, panels with saltires
1092.L301 SG, CG, Hadrianic-early Antonine
1100.F416 SG, Neronian
1102.L73 SG, Neronian. Dr 30 (**139**)
1107.F84 SG, early-mid Flavian. Dr 29, lower zone gadroons
1112.L79 SG, Neronian-early Flavian
1131.L76 SG, Flavian. Dr 37, four-pronged ovolo and trifid wreath
1149.F85 SG, Neronian-early Flavian
1189.F220 SG, Flavian
1191.F419 SG, Neronian
1193.F217 CG, Hadrianic-early Antonine
1195.F219 SG, Neronian
1200.L75 SG, Neronian. Dr 30, ovolo with thin straight tongue
1201.L75 SG, Neronian
1204.L69 SG, Neronian-early Flavian
1207.F160 SG, Neronian
1213.L53 SG, CG/Antonine; one Neronian sherd burnt
*1215.L65 SG, Flavian. Dr 29, probable lower zone scroll with frilled leaf and trifid. *Dr 37 (= 1339.L105; **57**)
1216.L69 SG, Neronian-early Flavian
1221.L74 SG, Neronian-early Flavian. Dr 29 (**140**)
1222.L74 SG, early-mid Flavian; few burnt. Dr 29 (**62**). Dr 29 (**63**). Dr 29 (**64**). Dr 29 (**141**). Dr 29, upper zone festoons with small geese, tassel pendants. Dr 30 (= 1359.L86; **52**). Dr 37 (**65**); probable second sherd has four-pronged ovolo and lion's tail. Dr 37, s-gadroons below scroll
1223.L80 SG, Neronian-early Flavian; some burnt
1226.L74 SG, Neronian-early Flavian; one burnt. Dr 29 (**60**). Dr 29 (**61**). Dr 29 (**142**). Dr 29, lower zone saltire with formal leaves, badly smudged. Dr 29, lower zone scroll with pinnate leaves. Large Ritt 8
1230.L89 SG, Neronian
1232.L385 SG, Neronian. Dr 29, upper zone scroll, lower zone gadroons
1236.L75 SG, Neronian
1240.F166 SG/EG, first half C3
1241.F230 SG, Neronian
*1244.L87 SG, early-mid Flavian. *Two stamps*

	*Dr 29, SG, stamped in the base by Fedotus. Upper zone scroll with spurred buds and small frilled trifid leaves, and perching birds. The lower zone has a row of fan-shaped leaves above panels with a hare and hound and massed arrow motifs; a band of chevrons runs around the base. The motifs are all characteristic of early-mid Flavian 29s (see stamps report for precise date). (= 1301.F240, 1469.F240, 1481.F240 <337>, 1488.F240; **37**).
	*Dr 29 (= 1570.L105; **38**). Dr 37, trident ovolo, panels including a hare.
	Dr 37, lance-shaped leaves on stems round base
1249.L74	SG, Neronian. Stamp. Dr 29 (**59**)
*1250.F234	SG, later Flavian. *Dr 37 (= 1339.L1056; **57**), hole for repair. Dr 37 (**58**)
1251.L82	SG, Neronian-early Flavian
1252.L80	SG, Neronian-early Flavian. Dr 29, upper zone panel with animals
1253.F238	SG, Neronian
1254.F235	SG, Flavian. Dr 37, s-gadroons below panels including a saltire
1256.L80	SG, Neronian-early Flavian. Stamp. Dr 29 (**56**)
1257.F234	SG, early-mid Flavian. Dr 37, trident ovolo over scroll of spurred leaves. Dr 37, faint relief; small panels with animals/chevron wreath
1258.F465	SG, Neronian. Pedestal foot, possibly Hermet's decorated form 12
1260.F234	SG, Neronian. Dr 29, upper zone festoons with scroll, straight pendant
1262.L39	SG, early-mid Flavian. Dr 37 probably, grass and foliage motifs
1264.F160	SG, Neronian. Dr 29 (54). Dr 29 (55)
1266.L388	SG, Neronian
1280.L90	SG, CG, Hadrianic-Antonine. Dr 29, upper zone scroll with berries, lower zone wreath scroll. Dr 29, upper zone festoons with corded pendant. Déch 67, panels including a wreath medallion with eagle.
	Ritt 1, SG/Claudian-Neronian
1282.L96	SG, Neronian
1283.L92	SG, Neronian-early Flavian
1286.F244	SG, Neronian
1287.L93	SG, Neronian-early Flavian. Dr 37, rosette ovolo, scroll with poppy heads
1288.L93	SG, Neronian-early Flavian
1290.L82	SG, Neronian-early Flavian. Dr 29 (**53**)
1292.F452	SG, Neronian. Dr 29, upper zone scroll
1299.F246	SG, Neronian-early Flavian
*1301.F240	SG, early-mid Flavian.*Dr 29 (= 1244.L87; **37**)
1302.L85	SG, early-mid Flavian
1303.L95	SG, early-mid Flavian. Dr 35, no rim decoration
*1305.L52	SG, early-mid Flavian. Dr 29, upper zone scrolls with spirals. *Dr 37 (= 1339/L105;**57**)
1306.F239	SG, Flavian
1307.L74	SG, Neronian. Dr 29, upper zone scroll
1310.L52	SG, Neronian probably; burnt
1311.L100	SG, Neronian-early Flavian
1311.L100	SG, Neronian-early Flavian; mostly burnt. Ritt 1, Claudian-Neronian
1313.L52	SG, Neronian-early Flavian. Dr 29, upper zone scroll with spurred buds. Dr 29 (may = 1718.F183; **116**). Dr 37, rosette ovolo. Fragment with spiral
1314.F250	SG, early-mid Flavian
1315.L93	SG, early-mid Flavian; one burnt. Dr 37 (**51**)
1320.L93	SG, Neronian-early Flavian
1324.L92	SG, Neronian-early Flavian
1341.F84	SG, Neronian-early Flavian
1342.F86	SG, early-mid Flavian. Dr 29, basal wreath of arrow motifs
1344.F216	SG, early-mid Flavian. Dr 29, upper zone panels with cupid and arrow motifs with wavy lines
1345.F419	SG, early-mid Flavian
1346.L52	SG, Neronian-early Flavian. Dr 29, upper zone scroll with spurred buds
1348.F246	SG, Flavian-Trajanic. *Stamp*
1354.L70	SG, Neronian-early Flavian. Dr 29, upper zone festoons with spurred buds and palmette pendant
1355.L95	SG, Flavian

1356.L95 SG, Flavian. Dr 37, panels including saltire
*1357.F228 SG, Flavian. *Dr 37 (= 1339.L105; **57**)
1358.F247 SG, Neronian
1359.L86 SG, Neronian-early Flavian; some burnt. Dr 30, probably one pot (= 1222.L74; **52**)
1360.L51 SG, Neronian-early Flavian. Dr 29, leash or similar motif hand-drawn in mould, upper zone
1362.F227 SG, Neronian
1363.F277 SG, Flavian
1367.L386 SG, early-mid Flavian. Dr 29, scroll fragment
1368.F136 SG, early-mid Flavian. Dr 29, upper zone scroll with spurred buds
1369.F452 SG, Neronian
1372.F272 SG, Neronian-early Flavian. Dr 29 (= 239.F71, 2598.F283; **50**). Dr 29, palmate wreath in lower zone. Dr 29, small festoons at base
1373.L92 SG, Neronian-early Flavian. Two stamps. Dr 29 (= 188.F68; **49**)
1375.L98 SG, early-mid Flavian. Dr 37, trident ovolo, chevron wreath
1376.L97 SG, Neronian-early Flavian; one burnt. Stamp.
Dr 29, upper zone scroll. Dr 29, upper zone festoons. Dr 30 (**143**)
1394.F457 SG, Neronian
1398.L97 SG, early-mid Flavian. Dr 29, upper zone wreath festoons with bird. Dr 37 (**48**)
1400.L377 SG, Neronian-early Flavian
1401.F486 SG, Neronian. Dr 29 (**145**)
1404.L389 SG, Neronian-early Flavian
1413.L113 SG, Neronian
1414.L101 SG, Neronian-early Flavian. Dr 29 (**47**)
1416.F246 SG, Neronian
1417.F280 SG, Flavian. Dr 29 (**44**). Dr 37 (**45**)
1418.F276 SG, Neronian
1419.L114 SG, Neronian
1424.F240 SG, Flavian.
Dr 29, with end of stamp in base. The surviving decoration consists of a small medallion with corded tendrils; the medallion probably contains a small pedestal motif. Flavian. Stamp (see stamp report for precise dating). (**144**).
Dr 29, upper zone circles with hare and bifid pendant. Dr 29, lower zone panels including wreath medallion and saltire. Dr 29, lower zone row of arrow motifs. Dr 37, trident ovolo/scroll and basal wreath of trifids; probably one pot
1425.F272 SG, Neronian-early Flavian
1426.L97 SG, Neronian
1429.L92 SG, Neronian. Dr 29 (= 1573.L438). Dr 29, lower zone panels with spirals
1432.L91 SG, Neronian probably; burnt. Stamp
1437.L39 SG, Neronian
1438.F491 SG, Neronian-early Flavian. Dr 29 (**42**)
1454.F420 SG, Neronian-early Flavian
1455.L117 SG, early-mid Flavian. Dr 37 (**39**). Dr 37 (**40**)
1459.L107 SG, Neronian-early Flavian
1461.L108 SG, early-mid Flavian
1465.F283 SG, early-mid Flavian; one burnt
1466.F284 SG, Neronian
1468.F465 SG, early-mid Flavian
*1469.F240 SG, early-mid Flavian. Dr 29 (**35**). *Dr 29 (= 1244.L87; **37**). *Dr 29 (= 1570.L105; **38**). Dr 29 (**146**)
1474.L92 SG, early-mid Flavian; some burnt. Dr 37, scroll with bird. Dr 37, panel with medallion and tendril
1475.L92 SG, early-mid Flavian
1482.L116 SG, Neronian-early Flavian
*1488.F240 SG, early-mid Flavian. Dr 29 (**34**). Dr 29 (**36**). *Dr 29 (= 1244.L87; **37**). Dr 37, scroll with palmettes, row of rosettes, row of chevrons; very badly smudged
1489.F298 SG, early-mid Flavian

1490.F298 SG, early-mid Flavian
1491.F284 SG, Neronian-early Flavian; one burnt. Dr 29, lower zone gadroons
1494.F298 SG, Neronian. Dr 29 (**32**). Dr 29 (**33**)
1496.L117 SG, early-mid Flavian. Knorr 78, lattice of wavy lines
1504.L92 SG, Neronian-early Flavian. Dr 29 (= 1505.L92; **31**). Dr 29, panel with tendrils
1505.L92 SG, Neronian-early Flavian. Dr 29 (- 1504.L92; **31**). Dr 29, lower zone scroll with formal leaf
1507.L117 SG, Neronian-early Flavian
1511.L396 SG, early-mid Flavian
1513.L124 SG, Neronian
1517.F283 SG, Neronian probably; one burnt. Dr 29 (= 1573.L438)
1518.F236 SG, Neronian-early Flavian
1527.L109 SG, Neronian-early Flavian. Dr 29 (**30**). Dr 30, scrollery
1529.L129 SG, Neronian
1533.F108 SG, Neronian-early Flavian
1538.L117 SG, Neronian-early Flavian
1539.F292 SG, Neronian. Dr 29, lower zone scroll with pinnate leaves. Dr 30, wreath scroll and tendrils
1544.F298 SG, early-mid Flavian. Dr 29 (**29**). Dr 29, lion and hound in upper zone. Dr 30 (**28**). Dr 37, trident ovolo, scroll
1545.F704 SG, Neronian-early Flavian
1546.F704 SG, Neronian-early Flavian
1547.L126 SG, Neronian-early Flavian
1548.L126 SG, early-mid Flavian. Small Dr 37 (**27**), hole for repair
*1549.F246 SG, Neronian. *Dr 30 (= 1761.L408; **26**)
1550.F495 SG, Neronian-early Flavian
1551.L432 SG, early-mid Flavian. Dr 37, part of ovolo
1558.L116 SG, Neronian-early Flavian
1560.L109 SG, early-mid Flavian. Dr 37, trident ovolo, chevron wreath
1561.L433 SG, early-mid Flavian
1568.L416 SG, early-mid Flavian
1571.L111 SG, Neronian-early Flavian
1572.L130 SG, Neronian. Dr 37, SG, with mould-stamp of Iustus; the surviving motifs are all recorded on other Iustus bowls. The upper zone has a running stag, as Mees 1995, Taf 95, nos 8-9; the lower zone scroll has a pinnate leaf, as Taf 94, no 1, and Taf 95, nos 1-2. *c* AD 70-85 (see stamp report for precise dating). (**25**)
1574.L108 SG, early-mid Flavian; one burnt
1577.F106 CG, Antonine
1581.L137 SG, Neronian probably; burnt. Dr 29, gadroons in lower zone
1582.L106 SG, early-mid Flavian. Stamp. Dr 37 (**147**)
1583.L110 (Empty bag)
1584.F274 SG, Flavian. Dr 37, trident ovolo, wreath of four-bladed leaves
1585.F298 SG, early-mid Flavian. Dr 37, arrow motifs above wreath of ivy
1589.F216 SG, Neronian-early Flavian. Dr 29, arrow motifs in upper zone
1591.L142 SG, early-mid Flavian
1595.F273 SG, early-mid Flavian. Dr 29 (23). Dr 29, upper zone scroll
1607.L136 SG, early-mid Flavian; one burnt. Dr 29, bird in upper zone
1619.L429 SG, Neronian. Dr 29, lower zone gadroons
1621.L108 SG, early-mid Flavian
1634.L110 SG, Flavian; some burnt. Dr 29, festoons in upper zone. Dr 29, scroll in upper zone
1635.F220 SG, early-mid Flavian
1637.L445 SG, Neronian-early Flavian
1641.L439 (Empty bag)
1642.F298 SG, Flavian-Trajanic. Dr 29, upper zone scroll with bird. Dr 37, trident ovolo, scroll with palmate leaves. Dr 37, trident ovolo, berry trees and stags. Dr 37, four-pronged ovolo and animal
1648.L149 SG, early-mid Flavian. Dr 29, arrow motifs in upper zone, lower zone panels with animals

1649.L109 (Empty bag)
1672.L111 SG, Flavian. Dr 42 dish with barbotine leaves
1676.L150 SG, Neronian-early Flavian
1677.L148 SG, Neronian; burnt
1681.F709 SG, Flavian. Dr 42 dish, no apparent decoration
1685.F718 SG, Neronian-early Flavian. Dr 30 (**18**)
1717.F298 SG, Neronian-early Flavian
1719.F298 SG, Neronian-early Flavian
1720.L156 SG, Neronian-early Flavian
1726.L156 SG, Neronian-early Flavian
1727.L156 SG, Neronian-early Flavian
1740.L156 SG, Neronian
1746.F190 SG, Neronian
1765.L122 SG, Neronian-early Flavian
1771.L156 SG, Neronian-early Flavian
1775.F731 SG, Neronian probably; burnt
1778.F434 SG, early-mid Flavian. Dr 30 (**13**). Dr 37, S-gadroons at base
1789.F500 SG, Neronian
1823.L173 SG, Neronian-early Flavian
1826.F745 SG, Neronian
1827.L164 SG, Neronian
1828.L434 SG, Flavian. Dr 37, trident ovolo
1830.L427 SG, Flavian
1831.L175 SG, Neronian-early Flavian
1832.L170 SG, Neronian-Flavian
1838.L126 SG, Flavian. Déch 67 (**12**). Dr 29, lower zone gadroons
1899.L467 SG, Neronian
1900.F278 SG, Neronian-early Flavian; one burnt. Dr 29 (**10**). Ritt 3, Claudian-Neronian
1901.F199 SG, Neronian-early Flavian
1907.L70 SG, Neronian-early Flavian. Ritt 3, Claudian-Neronian
1909.L182 SG, Flavian. Dr 37, scroll with little goose; hole for repair
1923.F745 SG, Flavian
1924.L388 SG, Neronian-early Flavian
1950.L511 SG, Neronian-early Flavian
1957.L70 SG, Neronian-early Flavian
1972.F506/F507 SG, Neronian
1973.L187 SG, Neronian-early Flavian
1998.F531 SG, Neronian
2017.L523 SG, Neronian
2038.L527 SG, early-mid Flavian
2063.F457/F465 SG, Neronian-early Flavian
2066.L133 SG, Neronian-early Flavian
2079.L543 SG, Neronian
2082.L193 SG, Neronian
2102.L527 SG, Neronian
*2103.F567 SG, Neronian. *Dr 29 (= 2322.590; **2**)
2187.F113 SG, Neronian; burnt
2204.F383 SG, CG, EG, early-mid C3
2223.F383 EG, early-mid C3
2269.L541 SG, Neronian
2282.L218 SG, Neronian probably; burnt
2311.L588 SG, Neronian, Dr 29 (**5**)
2318.F247 SG, Neronian-early Flavian
2371.L598 SG, Neronian-early Flavian
2373.L219 SG, Neronian-early Flavian. Dr 30, straight-tongued ovolo, chevron wreath
2374.L597 SG, Neronian
2382.L598 SG, Neronian; burnt
2546.L610 SG, Neronian. Dr 29, short gadroons m lower zone; smudged
2587.F1035 SG, Neronian. Dr 29 (**149**)
2598.F283 SG, Neronian. Dr 29 (= 239.F71,1392.F272; **50**)

2725.L74 SG, early-mid Flavian. Knorr 78, resting stag
3032.F116 SG, Neronian
3043.F704 SG, Neronian-early Flavian
3047.F779 SG, Neronian-early Flavian
3067.L182 SG, Flavian. Dr 37, scrollery
3068.L164 SG, Neronian. Dr 29 (**150**)
3073.L225 SG, Neronian-early Flavian
3085.L410 SG, Neronian-early Flavian

3. Unstratified

The unstratified samian is recorded in the same way as in **2. The other groups**.

3 SG, CG, Hadrianic-Antonine
17 SG, Neronian. Dr 29, upper zone panels with arrow motifs and wavy lines, and a lion
51 SG, Flavian
89 EG, late C2-early C3
97 EG, later C2-early C3
119 SG, Neronian
130 SG, Neronian-early Flavian
133 SG, Neronian-early Flavian
148 SG, CG, Hadrianic-early Antonine
154 SG, Flavian. Dr 37, scroll
159 EG, first half C3. Dr 54, Trier, no apparent decoration; slip incomplete on interior
171 EG, first half C3
178 SG, CG/Antonine. Dr 37, part of ovolo
179 EG, later C2-early C3
190 SG, Flavian. Decorated fragment with ?leaf
206 CG, Antonine
223 SG, Neronian
227 SG, Neronian
228 CG, Antonine
249 EG, late C2-mid C3
265 SG, Neronian
296 SG, CG/Hadrianic-Antonine; one burnt
304 SG, CG, Hadrianic-early Antonine
305 SG, Neronian. Dr 29 (**151**)
323 SG, Neronian-Flavian
346 SG, Neronian; one burnt
416 SG, CG/Antonine
500 EG, later C2-mid C3
600 SG, EG, first half C3
804 SG, Flavian
834 SG, Flavian
877 SG, CG/EG, later C2-early C3
994 SG, Flavian-Trajanic
1674 SG, Neronian-early Flavian; some burnt
1748 SG, Flavian. Dr 37, scroll over bird on ?arrow motifs
1821 SG, Neronian-early Flavian
*2558 SG, early-mid Flavian. Dr 29, lower zone gadroons over ?chevron wreath *Dr37(= 1570.L105;**22**)
2646 SG, Neronian-early Flavian
2647 SG, Neronian-early Flavian
2713 SG, Neronian-early Flavian. Stamp. Dr 29, lower zone panels
2714 SG, Neronian
2726 SG, Neronian-early Flavian

6.5 Samian potters' stamps (Figs 31-42)

by Brenda Dickinson

Each entry gives: excavation number, potter (i, ii etc, where homonyms are involved), die, form, reading, published example (if any), pottery of origin, date.

Superscript a, b and c indicate:

a A stamp attested at the pottery in question.
b Not attested at the pottery, but other stamps of the same potter used there
c Assigned to the pottery on the evidence of fabric, distribution, etc.

Ligatured letters are underlined.

1 1656/– L449 Abitus 8b 15/17 or 18 ΛBIII retr. La Graufesenque[a]. *c* AD 45-65.

2-3 1348/– F246, 1423/322 F240 Albanus ii 1b' [FAL]BANI, FALBANI (Polak 2000, pl 1, A24 La Graufesenque[a]. *c* AD 65-85.

4 1959/402 L505 Albus i 9a 29 [ALBV]S·FE (Polak 2000, pl 1, A37) La Graufesenque[a]. *c* AD 50-65.

5 2735/728 L74 Annius ii 2a 27g Λ II La Graufesenque[c]. Neronian.

6 1441/325 F471 Aquitanus 21a 24 ΛCVITΛ La Graufesenque[a]. AD 50-65. Heavily burnt.

7 1443/328 L55 Bassus ii 4a 27g IBASSI (Ettlinger 1978, 18-22) La Graufesenque[a]. *c* AD 55-75. The earliest examples read OFBASSI.

8 2731/724 L188 Bassus ii 15f 27g BASS[I] (Polak 2000, pl 3, B33) La Graufesenque[a]. *c* AD 45-65.

9 1371/326 L66 Borillus i 10e 31 BO RILLIM Lezoux[a]. *c* AD 155-175.

10 1432/– L91 Calvus i 5b 15/17 or 18 (burnt) [OFCALV]I, in a frame with swallow-tail ends (Bechert & Vanderhoeven 1988, 40, 95) La Graufesenque[a]. *c* AD 70-85.

11 1718/– F183 Calvus i 5ii 15/17 or 18 OF·CΛLVI (Polak 2000, pl 5, C18) La Graufesenque[a]. *c* AD 70-85.

12 1380/318 F272 Cantirrius 2a 15/17 or 18 CΛ TIRRII La Graufesenque[b]. *c* AD 50-65.

13 1339/– L105 (A?) Cosius Iucundus 1a 15/17 or 18 OF[C]O·IVC La Graufesenque[a]. *c* AD 75-110.

14 1444/329 L93 Cotto ii 6a 29 COTON retr. La Graufesenque[b]. *c* AD 70-85.

15 1403/– L66 Divicatus 1a 80R or TxR DIVICΛTIM Lezoux[a]. An early variant of the form. *c* AD 150-165.

16 1481/337 F240 Fedotus 1a 29 EDOTVS retr. La Graufesenque[a]. *c* AD 60-70.

17 1305/– L52 Felicio i 5a 15/17 or 18 FE[LICIOVA] La Graufesenque[a]. *c* AD 55-70.

18 1142/– F471 Felix i 14a 18 (burnt) FEL[ICISO] (Polak 200, pl 9 F13) La Graufesenque[a]. *c* AD 50-70.

19 1226/– L74 Firmo ii 11a DishR [O·FIR]MONIS La Graufesenque[a]. *c* AD 60-80. Riveted through the base.

20 1726/– L156 Germanus i 28b 15/17 or 18 GERMA[NI] La Graufesenque[b]. *c* AD 70-90.

21 1778/– F434 Iustus i 8a 15/17 or 18 [I]V TI La Graufesenque[a]. *c* AD 60-80.

22 1572/– L130 Iustus i 15a 29 IIVST (Dickinson & Hartley 2000, fig 13, 59) La Graufesenque[a]. *c* AD 70-85. Stamped in the upper zone of the mould.

23 1372/– F272 Labio 1a 15/17R or 18R [OF.LΛBIO]NIS (Hermet 1934, pl 111, 72) La Graufesenque[a]. *c* AD 55-75.

24 309/– F335 Labio 6a'' 27 <O>FLΛB<I> La Graufesenque[a]. *c* AD 45-70.

25 2736/729 F427 Laurus 2a 27g L·AVR·IO (Hawkes & Hull 1947, 197, 89) La Graufesenque[a]. *c* AD 40-65.

26 1761/– L408 Licinus 20a 15/17 or 18 [OF.LI]CNI (Hawkes & Hull 1947, 197, 96) La Graufesenque[a]. *c* AD 40-65.

27 893/– F171 Logirnus 10a 15/17R or 18R [LOGIR]NM (Polak 2000, pl 12, L23) La Graufesenque[a]. *c* AD 70-80.

28 1404/– L389 Manduilus 18a 15/17 or 18 [MΛN]DV· La Graufesenque[a]. *c* AD 60-85.

29 2038/– L527 Manertus 3a 27g MA ERTVs·F La Graufesenque[c]. *c* AD 50-65. From a die also used later at Lezoux.

30-31 1660/– L131, 1764/– L466 Marinus i 8a 27g (2) [MA]RIN, MARIN La Graufesenque[a]. *c* AD 50-65.

32-33 1460/333 L107, 1718/– F183 Modestus i 9a' 27g (2) [ ]FMO[I], FMOI (Laubenheimer 1979, fig 11, 135) La Graufesenque[a]. *c* AD 60-70. (9a OFMOD.)

34 2029/– L191 Modestus i 21a 27g [MODE]ST·F (Polak 2000, pl 14, M87) La Graufesenque[a]. *c* AD 45-65.

35 2601/627 F284 Mommo 11d' 27g ·I·I·ΛΛO (11d OFMO) La Graufesenque[b]. *c* AD 60-80.

36 1256/– L80 Moni— 1a 15/17 or 18 [MO]I (Polak 2000, pl 15, M105) La Graufesenque[a]. *c* AD 45–65.

37 2034/– F561 Murranus 8b 24 OF·MVRRAN La Graufesenque[a]. *c* AD 50-70.

38 1439/323 L403 Murranus 16b 27g [OF]MVR La Graufesenque[b]. *c* AD 50-65. Graffito]IXIX inscribed on the outer wall, after firing.

39 1143/263 F471 Nestor 2a 16 NE TOR[FEC] (Hartley & Dickinson 1982, fig 41, 28) La Graufesenque[a]. *c* AD 50-65.

40 1626/– L131 Pass(i)enus 5a 29 OFPA ENI (Polak 2000, pl 16, P5) La Graufesenque[a]. *c* AD 65-85.

41 1582/– L108 Pass(i)enus 26a' Ritt. 9 P[ASS]EN (26a PASSENI) La Graufesenque[a]. *c* AD 55-70. (NB sherds marked L006 and L106.)

42 1907/– L70 Pass(i)enus 33a' 15/17 or 18 [PASS]E La Graufesenque[a]. *c* AD 60-75. (33a PASSEN.)

43 1406/320 F63 Pass(i)enus 63c 27 PASSI[E] La Graufesenque[b]. *c* AD 45-65.

44 11/– F13 Pater ii 2a 33 PATER·F (Hartley 1972, fig 82, 101) Lezoux[a]. *c* AD 125-155.

45 1758/– L159 Peregrinus i 3a 18 [PEREG]RIV (Laubenheimer 1979, fig 11, 178) La Graufesenque[a]. *c* AD 65-85.

46-47 1570/– L105, 1626/– L131 Ponteius 1a 18, 29 OFOP T–EI (Polak 2000, pl 17, P70) La Graufesenque[a]. *c* AD 70-85.

48 1405/319 L388 Pontus 8a 18 OF.PONTI La Graufesenque[a]. *c* AD 70-95.

49-50 2738/731 L126, 1249/– L74 Pontus 8h 27g, 24 or 27 O NTI, [O] ONTI (Dickinson 1986, 193, 3.154) La Graufesenque[a]. *c* AD 65-90.

51 2739/733 L192 Primulus i 4g 15/17 or 18 [P]RI· ·V[I] (Ettlinger 1978, Taf 2, 142), La Graufesenque[a]. *c* AD 60-80.

52 1480/336 F491 Primulus i 4h 18 PRIMV I (Durand-Lefebvre 1963, 189, 584) La Graufesenque[a]. *c* AD 60-80.

53 2744/736 L598 Quintus iii 9b Ritt. 8 QVI La Graufesenque[a]. *c* AD 50-65.

54 2173/– L210 + 1280/– L90 Rufinus iii Uncertain 1 27? OF[.RVFII] La Graufesenque[a]. *c* AD 65-85.

55 2740/734 L472 Sabinus iii 33a'' 24 =ISABINII La Graufesenque[a]. *c* AD 50-60.

56 2737/730 L376 Secundus ii 25a 15/17 or 18 SECVNDVSF (Polak 2000, pl 22, S99) La Graufesenque[a]. *c* AD 65-65.

57 2600/626 L117 Secundus ii 31b 18 SECVN·F (Polak 2000, pl 22, S100) La Graufesenque[a]. *c* AD 60-85.

58 2732/725 F567 Senus i 3b 24 SE I La Graufesenque[b]. *c* AD 50-65.

59 658/732 F410 Severus iii 7e 15/17 or 18 [OF].SEVER+ La Graufesenque[b]. *c* AD 70-90.

60 1315/– L93 Severus iii 7p 15/17R or 18R OF[SEVERI] (F in O) (Polak 2000, pl 22, S134) La Graufesenque[a]. *c* AD 75-100.

61 1360/– L51 Severus iii 7t 15/17 or 18 OFSEVERI (F in O) (Polak 2000, pl 22, S143) La Graufesenque[a]. *c* AD 70-85.

62 1583/– L110 Silvanus i 3a 29 OF IL[VΛN] La Graufesenque[b]. *c* AD 60-80.

63-64 1433/– L107, 1376/– L97 Silvinus ii 8a 15/17 or 18, 18 [SIL]VI I[F], SI[(Polak 2000, pl 23, S168) La Graufesenque[a]. *c* AD 70-90.

65 1244/– L87 L. Ter(tius) Secundus 6a 18 [L· TR·SE]CV (Polak 2000, pl 22, S107) La Graufesenque[a]. *c* AD 75-100.

66 1020/– L57 Tertius ii 11c' 29 [TERTIV]S·F La Graufesenque[a]. *c* AD 45-60.

67 1307/– L74 Vanderio 1a 29 VΛNDE[RIo] (Knorr 1919, Taf 80, A) La Graufesenque[a]. *c* AD 65-80.

68 2734/727 L564 Vitalis i 6 – 24 FVITΛ La Graufesenque[b]. *c* AD 45-65. The reading is clear, but the die has moved during stamping, so that the stamp cannot be assigned to a known die.

69 1311/– L100 Vitalis ii 23b' 18 VITALISF<E> (Hartley 1972, fig 82, S107) La Graufesenque[a]. *c* AD 60–80.

70 2713/– U/S]S+? on form 15/17 or 18, South Gaulish. Neronian.

71 1244/– L87 ATT[on form 24, South Gaulish. Neronian.

72 1588/– L135]RI on form 27g, South Gaulish. Neronian.

73 996/– L302]SI on form 27, South Gaulish. Neronian.

74 1445/330 L79 OFPA[(?) on form 15/17 or 18, South Gaulish. Neronian or early Flavian.

75 1373/– L92]IVS(?) on form 15/17 or 18, South Gaulish. Neronian or early Flavian.

76 1245/– F233]I[on form 15/15R or 18R, South Gaulish. Neronian or early Flavian.

77 1226/– L74] I(?) on form 18, South Gaulish. Neronian or early Flavian.

78 1424/– F240]V on form 29, South Gaulish. Neronian or early Flavian.

79 1287/– L94 CA[on form 18, South Gaulish. Early Flavian.

80 1348/– F246 OIII[or]IIIO on form 27, South Gaulish. Early Flavian.

81 1373/– L93]C(?) on form 29, South Gaulish. Early Flavian.

82 2741/735 L80]MIC or]MVRIC on form 29(?), South Gaulish. Early Flavian.

83 1477/– L105 I[or]I on form 15/17, South Gaulish. Flavian.

84 446/– F113 OFCELSI[(?) on form 15/17 or 18, South Gaulish. Flavian.

85 947/– F183]ERI (?) on form 15/17 or 18, South Gaulish. Flavian.

86 1012/– F453 O[or]O on form 27g, South Gaulish. Flavian.

87 1442/327 L10 I· on form Ritt. 8, South Gaulish. Neronian.

88 1649/– VΛ\[on form Ritt. 9, South Gaulish. Neronian.

89 1461/– L108 II[on form 15/17 or 18, South Gaulish. Neronian or early Flavian.

Illiterate etc

90 1438/– F91 IΛF on form 27g, South Gaulish. Neronian or early Flavian.

91 1379/317 F246 /VΛVΛ[on form 27g, South Gaulish. Neronian or early Flavian.

92 1407/321 L51 I·IIIII on form 27g, South Gaulish. Flavian.

93 2733/726 L64..\\\\\\.. on form 27, South Gaulish. Flavian or Flavian-Trajanic.

94 1641/– L439 Illegible stamp on form 27, South Gaulish. Flavian or Flavian-Trajanic.

95 1963/406 L408 Dish, South Gaulish. No surviving stamp, but graffito >I< inscribed inside the footring, after firing. Claudio-Neronian.

96 1960/403 L156 + 1935/– F13 Form 18/31, Central Gaulish. No surviving stamp, but graffito] [inscribed inside the footring, after firing. Hadrianic.

Summary

Of the 93 stamped samian sherds listed here, 90 (97%) come from South Gaul, almost certainly all from La Graufesenque. The remaining three (3%) were made at the Central Gaulish kilns at Lezoux. The South Gaulish potters represented are ones familiar on British sites. The only stamps of particular note are nos 25 and 26, which could in theory have arrived before the Claudian invasion, and nos 6 and 18, both burnt, which may have been casualties of the Boudican rebellion.

The sample of identified stamps (69) is perhaps rather too small to be significant, but it is interesting to note that the histogram in archive hints at disruption of the samian supply which must have followed the Boudican destruction and at its resumption on the rebuilding of the site, during the next decade.

6.6 Clay tobacco pipes (Fig 43)

by Nina Crummy

Contexts and dating

The archive list was prepared using the typology for Colchester established in *CAR* **5** (47-66). No stem bore measurements were recorded. Types 2, 4, 6, 7, 8, 9, 11, and 12 were represented, as well as other forms not given a type number.

Many of the pipes came from modern contexts, and, where datable bowls were present, they were often residual. For example, the modern levelling layer L12 contained four bowls dated to 1600-40 (Type 2), and the modern construction cut F362 contained bowls dated to between 1670 and 1740 (Types 7 and 9).

However, some pit groups were present, pointing to a main deposition period in the late 17th century: pit sequence F377, pit F384, pit F395, and pit F399.

F377 contained 60 Type 7 bowls and only four Type 6 bowls, providing a date for the feature of between 1670 and 1700, with only 6 per cent of the assemblage residual.
F384 is similarly dated by 31 Type 7 bowls, but also contained a greater proportion of residual bowls, a Type 4 (3 per cent) and five Type 6 (14 per cent). This feature also contained a lump of pipe stems embedded in iron corrosion, probably corroded mould fragments or piercing rods and wasters from a kiln. Both kilns and containers for holding the pipes during firing were sometimes made from wasters (Gant 1960, 44).
F395 contained a much smaller assemblage of seven bowls, but all were of Type 7, again providing a date of 1670-1700.
F399 is later, with 17 Type 9 bowls, and one of Type 8, giving a date range of 1700-40. Nine of the Type 9 bowls had the initials TA in relief on the side of the foot (Fig 43.2), confirming the tentative reading of these initials on two pipes from Lion Walk (*CAR* **5**, 63). The initials of Elizabeth (or Edward) Bland were on three Type 9 pipes (*CAR* **5**, 63), and one Type 9 provided evidence of a new maker with the first name initial A; the surname initial is blundered (Fig 43.1).
This emphasis on activity on the site in the later 17th century is reflected across the assemblage as a whole, with 137 of 218 pipes (63 per cent) being Type 7. The next closest are the immediately earlier and later Types 6 and 9, both nine per cent.

Marks and identifications

Of the Type 2 pipes, one may have an incuse stamp on the underside of the foot, but it is very worn. Early pipes (Types 1-3) found in Colchester are probably London products, but from Type 4 onwards they are usually made locally.

A Type 4 bowl has an unusual fan of short rouletted lines on the base of the foot (not illustrated). A foot fragment probably from a Type 7 pipe is marked on the underside by a circular stamp with the design in relief, probably one or more initials above a group of pellets, similar to *CAR* **5**, fig 55, 2634.

Apart from the unknown makers with the initials TA and A-, and Elizabeth (Edward) Bland on Type 9 bowls from F399, there is also a Type 9 from the modern feature F362 with the initials IA, many examples of which were found during excavations at Long Wyre Street and Lion Walk. This maker, who has not been convincingly identified, probably used a kiln found on the corner property at the junction of Maidenburgh Street and Head Street (*CAR* **5**, 63). An unstratified Type 8 bowl fragment has the initials WB in relief on the sides of the foot, and they are also on a stem fragment from a modern layer. The maker William Battly manufactured Type 8 and Type 9 pipes (*CAR* **5**, 63-4). Three examples were found of Type 8 pipes marked on each side of the foot with a crowned flower in relief (*CAR* **5**, 64), and this mark is probably also represented by a small unstratified fragment with the flowers only surviving.

The initials of the later pipemaker Stephen Chamberlain occur on Type 11 and Type 12 pipes, while blundered initials on an unidentifiable fragment read either SC or SR, the latter being Chamberlain's nephew, Stephen Chamberlain Rand. A bowl similar to *CAR* **5**, fig 59, 2907 also had the initials SC, but this is probably a product of Stephen Rand, who continued to use SC for a time after taking over his uncle's business. A fragment from F354 with SC on the foot is either a Type 12 or another example as *CAR* **5**, fig 59, 2907.

The initials JP on a bowl with relief decoration of oak leaves set alternately up the front seam of the bowl represent one of the two or three pipemakers called James Pettitt who were working in the early and mid 19th century (*CAR* **5**, 64). This particular seam design has not previously been recorded (Fig 43.3).

A complete bowl decorated with transverse ribs alternating with pelleted zigzags is also 19th century in date. The base of the bowl has geometric and plant decoration which continues for a short way onto the stem. This is a complete example of a stem fragment from the Dutch Quarter (*CAR* **5**, fig 64, 2983).

6.7 Daub

by Nina Crummy

Just over 35 kg of daub were collected. Both daub blocks and pieces from wattle-and-daub walls were recovered, but the majority of fragments were small and plain, often with no original surface remaining, and thus could not be closely identified. The fragments are listed in archive. Most come from 1st-century contexts.

Large plain fragments with no wattle holes probably derived from daub blocks, though only in a few cases did contiguous surfaces remain to confirm this. Daub blocks placed on timbers resting on shallow mortared plinths are a characteristic construction technique of the Roman fortress of *c* AD 44-49 (*CAR* **3**, fig 11, 2; *CAR* **6**, fig 3.14), and the early contexts of most of these fragments is consistent with their having derived from walls of this type. Alternatively, some may derive from internal walls of blocks placed between studs (*CAR* **6**, fig 3.35).

A few fragments of the daub from wattle-and-daub walls had voids from the wattles, most being about 15 mm in diameter, and a very few about 20 mm. The limited range of diameters is evidence for the use of coppiced wood. Most pieces with wattle voids date to the period of the fortress and/or early colony. Some fragments were decorated with roller-stamped designs, the most common being a lozenge pattern and hatching, both often found elsewhere in the town in the pre-Boudican period (*CAR* **3**, fig 11, 1d, fig 13). The hatching may be additional lines applied over a lozenge design. A few impressions of sticks were also found, presumably guide lines for applying the roller-stamped decoration. A very few fragments from the burnt collapsed wall F545 also had a thin skim of white or dirty-grey plaster.

Two fragments are of particular interest. Both show a flat rebated surface with the impression of wood grain from a sawn timber. The daub adjacent to the one surviving

edge turns downwards at an angle, so the timber rested exposed on the outside of the daub. The lack of the opposite edge makes interpretation difficult; but the most likely position for such a piece is probably a door or window frame.

6.8 Roman vessel glass (Fig 44)

by H E M Cool

Introduction

The excavations at Head Street produced 463 fragments of Roman vessel glass from conventional hand-excavation, and a further 163 fragments were retrieved from samples. Generally vessel glass recovered from samples is not very informative as the pieces are often so small that all that can be done is to identify colour, and sometimes not even that is possible. This was the case here and so in what follows attention is concentrated on the hand-recovered material, though material from the samples is included where additional diagnostic features are present and the fragments are recorded in the archive.

Table 17 shows the vessel glass according to colour and phase. There is a noticeable rarity of polychrome cast vessels of any type and strongly coloured monochrome vessels are only represented by three deep blue pillar-moulded bowl fragments (nos 1-3) representing only 0.7% of the assemblage. This is unusual on intra-mural sites at Colchester where substantial amounts of excavation have been undertaken. At Culver Street, for example such fragments formed 2.3% of the assemblage, at Lion Walk 1.4% and at the Gilberd School site 1.3% (*CAR* **8**, 10, table 1.2). Apart from this, however, the colour and technique profile of the assemblage is normal for Colchester with a notable presence of polychrome blown glass (nos 16-22) and the strong colours (nos 23-25) typical of the mid 1st century as well as three different mould blown vessels (nos 13-15). The rarity of 4th-century material may also be noted (greenish colourless bubbly).

Table 17: Roman vessel glass by colour and phase.

Colour	1	2	3	4	5	6	7	8	9	0	Total
Polychrome pillar moulded bowl	1	-	-	-	-	-	-	-	-	-	1
Monochrome pillar moulded bowl	1	-	-	2	-	-	-	-	-	-	3
Blue/green pillar moulded bowl	18	3	-	1	3	-	-	1	-	-	26
Cast Colourless	-	-	-	-	-	-	1	-	-	-	1
Mould blown	-	-	1	1	-	-	-	1	-	-	3
Polychrome	1	-	-	8	3	-	-	1	-	-	13
Deep blue	-	1	1	7	4	-	-	-	-	-	13
Purple	-	-	-	-	1	-	-	-	-	-	1
Yellow/brown	1	-	2	5	6	-	-	1	-	1	16
Yellow/green	-	1	-	6	5	-	1	-	-	-	13
Light or pale green	3	-	2	2	4	-	-	-	-	-	11
Colourless	-	-	2	2	30	-	2	-	-	-	36
Blue/green (non bottle)	16	10	16	91	45	1	10	13	5	10	217
Blue/green (bottle)	1	1	5	73	13	-	6	3	2	4	108
Greenish colourless bubbly	-	-	-	-	-	-	-	1	-	-	1
Total	41	16	29	198	114	1	20	21	7	15	463

The report is divided into three parts. In the first the types present are summarised. In the second what the vessels are telling us about occupation on the site is considered. The third and final part consists of the catalogue with typological references and dating. Many of the forms present have often been found during earlier excavations at Colchester and have been extensively discussed in *CAR* **8**. For this reason, extended typological discussion is unnecessary for most of the pieces. Where the vessel type can be identified, this identification is included at the end of each catalogue entry together with the date when it would have been current and the relevant reference to *CAR* **8** or other works if more appropriate. The catalogue gives the assigned periods but for the tables a simplified periodisation has been used where context phased to more than one period are put in the latest one. Thus Period 4/5 becomes Period 5 in the tables.

The pieces illustrated have been chosen because they are either forms that were present in *CAR* **8**, or are of intrinsic interest.

The vessels present

Mid 1st-century vessels that would have been in use in the pre-Boudican period are represented by the deep blue/pillar moulded bowl fragments (nos 1-3), a mould-blown ribbed cup (no 13), several Hofheim cups (nos 38-39; 53-57), a *cantharus* (no 58) and a cased vessel that could have been a either a Hofheim cup or a *cantharus* (no 16). The precise form or forms the deep blue fragments with opaque white marvered decoration (nos 17-22) came from is unknown but they are most likely to have been in use during the pre- or immediately post-Boudican period. Other vessels can also be assigned to this early group by virtue of their contexts even though typologically their form is known to continue in use longer. In this category fall the blue/green pillar-moulded bowls nos 4-5 and 11, the jugs nos 27 and 29 and the bottles nos 98 and 103 together with the vessels represented by the less closely identified fragments (nos 15, 64, 72, 79 and 85-86). It might also be suspected that the pillar-moulded bowl no 7 and the jug handle no 67 might also have been in use at the time of the Boudican rising as both are very heavily burnt and are types that would have been in use at that time.

The mould-blown fragment no 15 is of particular interest as it seems to belong to a mould blown vessel type not previously noted from Colchester, and which I have not been able to parallel elsewhere. The profile is similar to that seen on the lower body of a sports cup (*CAR* **8**, 43-8) but on those the rib marking the carination is plain and not formed into a band of cells as here. The band of moulded crosses below the carination is similar to those found in a similar position on some chariot cups such as the one found at Mainz now in the Corning Museum (Whitehouse 2001, 59 no 530; see also Rütti *et al* 1987, 38-9 models A3, A4). The design above the carination, however, clearly does not come from a scene from the circus or arena. The ribs are much more closely allied to ribbed cups such as no 13. These have sometimes been found where the ribs are combined with another pattern on the lower body. At Vindonissa (Berger 1960, 55 no 141 Taf 9) and Castleford (Cool & Price 1998, 154 no 39) this took the form of an ivy leaf scroll, and on a second cup from Vindonissa the ribs were combined with bosses (Berger 1960, 55 no 142). These cups generally have a more smoothly curving profile than is seen here, and so such an identification for no 15 does not appear compelling. At present, therefore, this fragment has to remain unidentified. The vessel it comes from was clearly in use during the mid 1st century as the fragment was found in the Period 3 debris.

Other 1st-century vessels which may have been in use during the middle of the 1st century but whose typological date would extend into the later part of the century include the other blue/green pillar-moulded bowls (nos 6, 8-10) and the strongly coloured jugs (nos 24-25), a deep blue base almost certainly from a collared jar and an indented beaker (no 30).

Forms that came into use during the late Neronian period include a cast colourless bowl (no 12), an almond-knob beaker (no 14), and a facet-cut beaker and other externally ground colourless vessels (nos 43-46). The almond-knob beaker is a particularly gratifying find as this later Neronian to mid Flavian mould-blown form has hitherto been curiously absent from Colchester, which in other respects has always appeared to have been very well supplied with the latest glass fashions in the 1st century. The cast bowl could have been in use at any time up till the mid 2nd century, and a similar date range is appropriate in general for externally ground vessels but the

facet-cut beaker (no 43) has a style of cutting that would be more appropriate for the earlier part of that period.

There are also the normal range of blue/green and lightly coloured tablewares for which a floruit in the second half of the 1st century to the mid 2nd century can be suggested. These include several tubular-rimmed bowls (nos 26, 32-33, 59-61) and jugs of the tall-necked Isings Forms 52 and 55 variety (nos 28, 40, 66, 68-69). Bottles are also numerous (see Table 18). The cylindrical examples would have gone out of use in the early 2nd century, but the square examples are known to have continued in use into the mid 3rd century (Cool forthcoming). Table 18 shows that few fragments entered the archaeological record prior to AD 60/1 and strengthens the conclusion drawn from earlier excavations at Colchester (*CAR* **8**, 190) that it was during the Flavian period that use of this form became widespread even though the form was in use earlier.

Table 18: Distribution of bottle fragments.

Bottle type	1	2	3	4	5	7	8	9	0	Total
Cylindrical	-	-	1	21	-	-	-	-	1	23
Hexagonal	-	-	-	3	-	1	1	-	-	5
Square	-	-	-	10	2	2	1	-	1	16
Prismatic	1	-	4	27	8	2	1	1	2	46
Uncertain	-	1	-	12	3	1	-	1	-	18
	1	1	5	73	13	6	3	2	4	108

Material that can be securely attributed to the 2nd century or later is much rarer than that of the 1st to 2nd centuries. There is a possible fragment of a wheel-cut beaker (no 48) of the later 1st to mid 2nd century, and fragments from at least one and possibly two colourless cylindrical cups (nos 50-52) of the later 2nd to mid 3rd centuries. There is also a rim fragment (no 106) of a globular flask of the later 3rd to mid 4th centuries. The body fragment no 41 from a Period 5 context may contemporary. It has a very distinctive pattern of wheel-cutting consisting of large circular rings. This style of decoration has been noted on globular flasks like no 106 (see for example Fremersdorf 1967, 109, Tafn 110, 112), but it also occurs on some late 2nd- to 3rd-century bath flasks (*ibid*, 113, Taf 119). In the later case, however, the bath flasks are normally made of colourless glass and so the former option seem more likely for no 41.

Glass use on the site

What will be clear from the summary given above is that though vessel glass was being found stratified throughout the mid 1st- to later 3rd-century period (see Table 17), there has to be the suspicion that most is associated with the fortress/*colonia* occupation of the pre-Boudican period and with the occupation of the Flavian house. The glass that would have been in use in the Antonine house is virtually absent from the record. The cylindrical cup(s) nos 50-51, for example, might be a candidate for belonging to the Antonine house judged by its date range and the phase of the context but they were found in a dump/make-up layer and the form had come into existence whilst the Flavian house was still in use. The scarcity of material likely to be associated with the Antonine house is probably the result of different rubbish disposal mechanisms on the site. Table 19 shows the quantity of glass fragments from different context types. For the Period 4 contexts 45% of the glass comes from contexts such as pits, accumulations and surfaces whereas only 22% of the Period 5 assemblage comes from similar contexts. There is a distinct possibility therefore that rubbish from the Flavian house may have remained in the vicinity, whereas that from the Antonine house was removed elsewhere. With the disposal of the broken glass an additional mechanism may have come into play as well. It is noticeable that some of the fragments recovered are quite large. The rim fragment of a tubular-rimmed bowl from a Period 4 context (no 59) retains 40% of its circumference whilst another unstratified one (no 26) retains 25% of the circumference. There is an impression that collecting the glass for recycling was not important during Period 4, but it may have become more important during Period 5, and help account for

the disappearance of the antonine house assemblage. There would have been a market for cullet in Colchester by the early 2nd century at the latest as glass-blowing waste was found in a context of the mid 1st to mid 2nd century at Culver Street (*CAR* **8**, 209), but the history of the Colchester glass blowing industry is currently not well understood.

Table 19: Quantities of glass (fragment count) from different types of contexts.

Period	accumulation	demolition	dump/ make-up	pit	surface	wall line	other	Total
1	5	1	24	10	1		1	42
2		3	1	4	3	1	4	16
3	2	11	8		7		1	29
4	27	6	54	44	19	4	44	198
5	3	7	62	16	6	6	13	113
Total	37	28	149	74	36	11	63	398

Allowing for the fact that we are effectively looking at glass use on the site from the mid 1st to later 2nd centuries, it is possible to show the changing profile of vessel glass use on the site. Table 20 summarises the different types present and they have been assigned to the fortress/*colonia* or Flavian house both on contextual information and the typological considerations discussed in the previous section. The first three columns can be regarded as tablewares, the last three as more utilitarian containers. As can be seen the pre-Boudican assemblage is dominated by tablewares whereas the later assemblage shows the increasing role for containers. This table is quantified by EVEs and though the material from the earlier excavations was quantified in a different way, the same general pattern was noticeable there too (*CAR* **8**, tables 15.2, 15.4, 15.6). There may be hints here that the Colchester pattern of use of the later 1st to 2nd century may have been slightly different to that of other urban centres where there seems to have a lower interest in containers and presumably whatever was in them (Cool & Baxter 1999, 84).

Table 20: The glass vessels by functional type.

Period	Cups/ beakers	Bowls	Jugs	Jars	Flasks	Bottles	Total
Pre-Boudican	220	300	70	28	20	56	694
Flavian House	240	200	42	28	120	238	868
Total	460	500	112	56	140	294	1552

Finally the presence of an almost complete blue/green pillar-moulded bowl found in the Period 1 make-up layer L578 deserves special notice (no 4). Seventeen fragments were found in that layer and another fragment was found in a Period 2 pit that cuts the layer. The breaks are sharp and it seems very likely that it was very recently broken when it was initially deposited, or it was deposited whole and broken by the Period 2 pit digging. Generally when complete or virtually complete glass vessels are found this is either because they have been deposited as grave goods or as part of some special structured deposition such as rites of termination. Pillar- moulded bowls have been found as grave goods at Colchester. A polychrome example was found with a Neronian cremation burial at Sheepen (Charlesworth 1985, mf 3: F2, fig 80.11). A complete and intact blue/green bowl (Colchester Museums Accession no 10.62) was found in the banks of the Colne

(Anon 1962, 31). Given the extra-mural location, this might also have come from a grave though no further details are known about the circumstances of deposition. At Head Street, however, a funerary context for no 3 seems unlikely. The possibility that we are looking at some form of structured deposition such as a foundation deposit should be considered, though its location does not appear to be like other foundation deposits that have been found at sites such as the Co-op (Howard Brooks, pers comm). That some unusual process led to its deposition, however, should not be doubted as it is highly unusual to find such a virtually intact piece. Normal rubbish-disposal at this period at Colchester leads to much smaller fragments being recovered, as a glance at figures 2.3-2.6 in *CAR* **8** will show.

Catalogue

Pillar-moulded bowls

These all have wheel-polishing on the interior and exterior of the rim; the exterior of the body is fire-polished and the interior wheel-polished. Pillar-moulded bowls are discussed in *CAR* **8**, 15-88. They are a very common 1st-century form. The polychrome and deep blue bowls were in use in the middle years of the century, blue/green examples continued in use into the later part of it.

Polychrome

1 Rim and upper body fragment; two narrow ribs. Opaque white spiral set in translucent dark yellow/brown ground. Present height 44 mm. EVE 0.4 3008; L594; 1

Deep blue

2 Rim and upper body fragment; lacking edge of rim and retaining part of one rib. Dimensions 30 x 16 mm. EVE 0.4. 2271; L571; 1b.

3 2 body fragments, each retaining part of 1 rib. 1896; L178; 4a.

Blue/green

4 Virtually complete bowl in 18 joining fragments lacking small areas of rim and body. Slender ribs dying out towards centre of flat base. Two wheel-cut lines on interior of lower body. Rim diameter 130 mm, height 59 mm. EVE 100. (17 fragments from 2983; L578; 1. 1 fragment from 2034; F561; 2).

5 Rim and upper body fragment retaining part of one very thick rib. Rim diameter 170 mm, present height 40 mm. EVE 0.4. 1309; L99; 2b.

6 Rim and upper body fragment. Upper part of one rib remaining. Rim diameter 170 mm, present height 40 mm. EVE 0.4. 325; F96; 8.

7 Rim and body fragment. Retaining parts of two ribs. Melted and distorted. Dimensions 47 x 38 mm. EVE 0.4. 3001; F283; 4.

8 Pillar-moulded bowl; lower body fragment retaining part of one rib and internal abraded band. Dimensions 20 x 14 mm. EVE 20. 1376; L97; 5.

9 Pillar-moulded bowl, lower body fragment retaining part of one rib. Dimensions 31 x 18 mm. EVE 0.2. 991; L47; 5b.

10 Body fragment retaining one rib. Dimensions 35 x 20 mm. EVE 0.2. 1361; F14; 5.

11 Lower body or base fragment retaining edges of two ribs. Dimensions 30 x 15 mm. EVE 0.2. 1309; L99; 2b.

Cast

12 Wide-rimmed bowl ; rim fragment; colourless; all surfaces ground and polished. Wide everted rim with overhang; top surface ground to leave raised ridge by overhang and at rim side junction. Rim diameter 160-170 mm. EVE 0.2. 514; F397; 7. For the type see *CAR* **8**, 37, nos 212-25. Introduced *c* AD 65-70 continuing in use until the mid 2nd century.

Mould-blown

For mould-blown glass generally see *CAR* **8**, 42-55

13 Ribbed cup; lower body fragment. Blue/blue. Convex-curved lower body with parts of 8 vertical ribs and plain area below. Dimensions 37 x 26 mm, wall thickness 3-4.5 mm. EVE 0.2. 618; F117; 8. For the type see *CAR* **8**, 51-53. Mid 1st century.

14 Almond knob beaker; rim fragment. Pale green. Vertical rim, edge cracked off and ground; straight side. Wheel-cut line below rim edge; upper end of one almond knob. Rim diameter 80 mm, wall thickness 2 mm, present height 22 mm. EVE 0.4.1908; L147; 4a. Isings Form 31; Berger 1960, 52 Type a; for discussion see Manning *et al* 1995, 150-51. Later 60s to 80s.

15. Cup or beaker; mould blown body fragment. Blue/green. Straight side with carination to lower body. Straight side retains parts of 4 vertical ribs; carination has band of approximately hexagonal cells; lower body has part of a diamond-shaped lattice. Dimensions 20 x 19 mm, wall thickness 1.5 mm. 2325; L225; 3. Unusual form discussed above.

Blown

Polychrome

For early polychrome blown glass see *CAR* **8**, 56-60

16 Body fragment retaining curved carination. Cased - dark yellow/brown with opaque white internally. Dimensions 40 x 31 mm. 3005; L186; 1. For cased vessels see *CAR* **8**, 59-60. Mid 1st century.

17 Conical jug (?). 6 body and one (?) base fragment. Deep blue with opaque white marvered spots. Carinated body with lower body sloping into edge of ?open pushed in base ring; base fragment has possible edge of open pushed-in base ring. Dimensions (largest fragment) 48 x 40 mm, wall thickness 1 mm. 3003; L131; 4a. The fragments are consistent with coming from a jug of Isings Form 55 (see *CAR* **8**, 120-23). This combination of colours and technique is a mid 1st-century phenomenon (for discussion see *CAR* **8**, 59) but exceptionally some vessels made like this were still in existence, if not active use, in the early 80s (Cool 1992 in Caruana 1992, 67 nos 5-7)

18 Body fragment. Deep blue with marvered opaque white spots. Convex-curved body fragment with single rib. Dimensions 24 x 22 mm. 1211; L79; 5b. See no **17**

19 Body fragment. Deep blue with opaque white marvered spot. 1401; L401; 4. See no **17**

20 Body fragment. Deep blue convex-curved fragment with traces of marvered trail. 1464; L66; 5. See no **17**

21 Deep blue with opaque white spots. 969; F190; 5. See no **17**

22 Deep blue with opaque white marvered spots. 775; F137; 8. See no **17**

Deep blue

23 Collared jar or jug; lower body and base fragment. Convex-curved side; outer part of open pushed-in base ring. Base diameter 60 mm, wall thickness 1 mm, present height 24 mm. EVE 0.28. 2344; F791; 4. This form of lower body is common to collared jars (see *CAR* **8**, 106-7) and globular jugs (see *CAR* **8**, 120-23). The thinness of the glass probably indicates this piece comes from a jar. The colour indicates a mid to later 1st century (*c* AD 80s) date.

24 Jug; handle fragment. Upper part of angular ribbon handle with central rib; upper attachment trailed up cylindrical neck (small fragment remaining), then bent over and down with small return trail. Handle section 26 x 4.5 mm. EVE 0.28. 1494; F298; 4b. The handle form is normal for conical jugs of Isings Form 55 and is also found on the globular Isings form 52 (see *CAR* **8**, 120-23). The colour indicates a mid to later 1st century (*c* AD 80s) date.

Dark yellow/brown

25 Jug. Cylindrical neck fragment. EVE 0.14. 1900; F277/F278; 5. The colour indicates a mid to later 1st-century (*c* AD 80s) date.

Light yellow/brown

26 Tubular-rimmed bowl, rim fragment. Rim bent out and down; vertical rim. Rim diameter 170 mm, present height 23 mm. EVE 0.2 2985; U/S; 0. See *CAR* **8**, 94-6. Second half 1st century to early 2nd century

27 Jug; rim and neck fragment. Rim bent out, up, in and flattened; cylindrical neck with fragment of return trail from upper handle attachment. Rim diameter 44 mm, present height 14 mm. EVE 14. 3004, L535; 3. Probably from a jug of Isings Form 52 or 55 – see *CAR* **8**, 120-23. Second half 1st century to early 2nd century

28 Jug handle fragment. Angular reeded handle. Section 25 x 5 mm. EVE 0.14. 1286; F244; 5b. As **27**.

29 Globular jug; handle and shoulder fragment. Lower part of ribbon handle with 5 narrow sharp ribs, simple lower handle attachment with ends of ribs drawn out onto convex-curved shoulder. Handle section (excluding ribs) 37 x 4.5 mm. EVE 0.14. 2988; F737; 1. For type see *CAR* **8**, 120-23. Second half 1st century to early 2nd century

Yellow/green

30 Indented beaker; lower body and base fragment. Convex-curved side curving into closed pushed-in base ring; base missing. Base of one indentation. Base diameter 35 mm, wall thickness 1.5 mm, present height 20 mm. EVE 0.2. 1476; L105; 4. For type see *CAR* **8**, 69. Second half of 1st century.

31 Cylindrical beaker? Lower body fragment. Light yellow/green. Straight side broken at junction with base. Two abraded bands. Present height 43 mm; 1466; F284; 4b/5.

32 Tubular-rimmed bowl. Outbent rim, edge bent out down and in. Rim diameter 160 mm. EVE 0.2. 2999; L430; 2. For type see *CAR* **8**, 94-6. Mid 1st to mid 2nd century.

33 Tubular-rimmed bowl, rim fragment. Tubular rim bent out and down. Rim diameter approx 160 mm. EVE 0.2. 1033; F198; 7. As **32**.

34 Base fragment. Side curving into flat base. Dimensions 37 x 24mm. 2344; F791; 4.

35 Body fragment. Ribbed. 2163; L221; 4a.

36 Body fragment; ribbed. 1510; L411; 4c.

37 3 ribbed body fragments. 2724; F232; 4-5.

Light green

38 Hofheim cup; 2 joining body fragments and one lower body fragment. Slightly convex-curved side curving into base. Wide wheel-cut groove on upper body. Dimensions (largest fragment) 47 x 44 mm, wall thickness 2 mm, EVE 0.4. 2062; F773; 1. For the type see *CAR* **8**, 64-6. Mid 1st century.

39 Beaker or cup; rim fragment. Vertical rim, edge cracked off and ground; wide wheel-cut groove below. Present height 9 mm. EVE 0.2. 1320; L93; 5. Either from a Hofheim cup (see **37**) or the related beaker form see *CAR* **8**, 68. Mid 1st century

40 Jug; handle fragment. Straight ribbon handle with central rib. Length 63 mm, section (excluding central rib) 22.5 x 4 mm. EVE 0.14. 1527; L109; 4a. The handle form is normal for conical jugs of Isings Form 55 and is also found on the globular Isings form 52 (see *CAR* **8**, 120-23).

41 Globular flask; body fragment. Convex-curved side. 2 wheel-cut lines with parts of two circular wheel-cut motifs below - one of a circular channel with groove on either side and smaller wheel-cut circular groove centrally; other 2 circular lines without central channel. Dimensions 37 x 35 mm, wall thickness 3 mm. 2987; L64; 5. For discussion see above.

42 Concave base fragment with large yellow green impurity patch. Dimensions 44 x 31 mm. 2163; L221; 4a.

Colourless

43 Facet-cut beaker; rim fragment. Vertical rim, straight side. Exterior ground. Groove below rim edge; horizontal zone below rim ground away to leave slight ridge below; parts of two large diagonal facets below. Present height 30 mm, wall thickness 3 mm. EVE 0.4. 2163; L221; 4a. For the type see *CAR* **8**, 71-4. This example may have come from the rare variant where the junctions between the facets are ground away to leave sinuous curving facets (for discussion see *CAR* **8**, 72 no 396). Another possibility is that the tops of the facets are the beginnings of diagonal channels running around the body. The general dating of facet-cut beakers runs from the Flavian period to mid 2nd century (Cool *et al* 1995, 1566 - *contra* the dating advanced in *CAR* **8**), but the sinuous curving facet variant clearly belongs to the earliest stage of production.

44 Beaker; lower body fragment. Straight side with carination to lower body; externally ground to leave rib at carination. Dimensions 18 x 14 mm. EVE 0.2. 1066; L55; 5. For general type see *CAR* **8**, 71-4. *c* AD 60s to mid 2nd century.

45 Convex-curved side curving into slightly concave base. Exterior ground with circular groove cut around edge of base. Base diameter approx 45 mm, present height 10 mm. 926; L10; 5b. See **44**.

46 Chips from sample; possibly showing external grinding. 1280; F480; 4c. <25>. See **44**.

47 Beaker; lower body and base fragment. Green-tinged colourless. Convex-curved lower body; pushed-in closed base ring; broken domed base. Base diameter 30 mm, wall thickness 1 mm, present height 22 mm. EVE 0.2. 739; F154; 7. This sort of base is used on indented beakers (see **30** above) and wheel-cut beakers (see **48** below). A later 1st- to 2nd-century date is appropriate.

48 Wheel-cut beaker(?); body fragment. Straight side with two wheel-cut grooves. Dimensions 29 x 21 mm, wall thickness 1 mm. 2725; L74; 4. This probably, rather than certainly, comes from a wheel-cut beaker – for the type see *CAR* **8**, 79-80. Later 1st century to mid 2nd century.

49 Chips from sample; 1 retaining 3 wheel-cut lines. 0; L138; 4b. <33>

50 Cylindrical cup; rim and side fragment. Vertical rim, fire-rounded edge thickened internally; straight side. Rim diameter 95 mm, wall thickness 1 mm, present height 36 mm. EVE 0.4. 1062; L66; 5. (NB 50 probably comes from this vessel.) For the type see *CAR* **8**, 82-4. Later 2nd to mid 3rd century.

51 Cylindrical cup; two rim, 16 body fragments and 6 joining fragments forming complete base. Vertical slightly incurved rim; straight side; wide lower body; applied pad and base ring centrally; no obvious pontil scar but central area much fragmented. Base diameter 39 mm. EVE 0.6; 1317; L66; 5. (NB **50** probably comes from this vessel). See **50**.

52 Cylindrical cup; lower body fragment (?). Part of carination with edge of trail. Dimensions 20 x 11 mm. 1319; L62; 7. As **50** especially *CAR* **8**, 85 no 466.

Blue/green

53 Hofheim cup; rim fragment. Slightly incurved rim, edge cracked off and ground; vertical side. Abraded band below rim edge. Rim diameter 80 mm, wall thickness 2 mm, present height 25 mm. EVE 0.4. 1491; 84; 4b/5. For the type see *CAR* **8**, 64-6. Mid 1st century.

54 Hofheim cup; body fragment. Vertical upper body curving through carination to lower body; three abraded bands - on upper body and above and below carination. Dimensions 47 x 28 mm. EVE 0.4. 1466; F284; 4b/5. See **53**.

55 Hofheim cup; rim fragment. Slightly inbent rim, irregularly cracked off; straight side. Two abraded bands below rim edge. Present height 26 mm, wall thickness 1 mm. EVE 0.4. 996; L302; 4. See **53**.

56 Body fragment. Wide wheel-cut groove. Dimensions 16 x 12 mm, wall thickness 1 mm. 1633; L443; 0. Either from a Hofheim cup (see **38**) or the related beaker form see *CAR* **8**, 68. Mid 1st century

57 Body fragment. Straight side with wide wheel-cut groove. Dimensions 18 x 12.5 mm, wall thickness 1.5 mm. 0; F243: 3/4. <86>. Either from a Hofheim cup (see **38**) or the related beaker form see *CAR* **8**, 68. Mid 1st century

58 *Cantharus*; rim fragment. Stepped rim with fire-rounded edge; fragment of glass from handle on underside of step. Rim diameter 130 mm, wall thickness 2.5 mm. EVE 0.2. 1469; F240; 4b. For the type see *CAR* **8**, 57 no 253 and p 100. Mid 1st century.

59 Tubular-rimmed bowl; rim fragment (40% extant). Outbent rim, edge rolled out and down. Rim diameter 195 mm. EVE 0.2. 2986; L150; 4. For type see *CAR* **8**, 94-6. Mid 1st to mid 2nd century.

60 Tubular-rimmed bowl; rim fragment. Outbent rim, edge bent out and down. Rim diameter 200 mm, wall thickness 2 mm, present height 16 mm. EVE 0.2. 1648; L149; 4. See no **59**.

61 Tubular-rimmed bowl; rim fragment. Outbent rim, edge bent out and down. Rim diameter 230 mm. EVE 0.2. 2134; L217; 4a. See no **59**.

62 Jar or jug; base fragment. Side curving into open pushed-in base ring. Base diameter 50mm, wall thickness 2 mm, present height 11 mm EVE 0.14. 1073; F209; 1-5. This form of lower body is common to collared jars (see *CAR* **8**, 106-7) and globular jugs (see *CAR* **8**, 120-23). Later 1st to early 2nd century.

63 Jar or jug; base fragment. Outer edge of open pushed-in base ring. Base ring diameter 55 mm, wall thickness 3 mm. EVE 0.14. 0; F704: 4b. <163>. See no **62**.

64 Jar or jug; base fragment. Outer part of open pushed-in base ring. Dimensions 30 x 20 mm, wall thickness 4 mm. 2325; L225; 3. See no **62**.

65 Jar (?) ; rim fragment. Out-turned rim, edge fire rounded. Rim diameter approx 60-70 mm, wall thickness 1 mm. 1677; L148; 4b. For the type see *CAR* **8**, 113-14. Mid 1st to early 2nd century.

66 Jug; handle fragment. Narrow angular ribbon handle attached to fragment of narrow cylindrical neck and bent back with return trail. Handle section 12 x 4 mm. 1191; F419; 0.

67 Jug; three handle fragments. Angular ribbon handle with central rib; melted and distorted. Width of handle approx 30 mm. EVE 0.14. 369; F375; 8. The handle form is normal for conical jugs of Isings Form 55 and is also found on the globular Isings form 52 (see *CAR* **8**, 120-23). Mid 1st to mid 2nd century.

68 Jug; handle fragment. Edge of straight handle with at least one prominent rib. Length 43 mm. 1291; F245; 4. Probably from a conical or globular jug (see *CAR* **8**, 120-23). Mid 1st to mid 2nd century.

69 Conical jug; body fragment. Straight side with parts of 5 diagonal ribs. Dimensions 41 x 33 mm, wall thickness 2 mm. EVE 0.14. 28; F10; 0. For the type see *CAR* **8**, 120-23. Mid 1st to mid 2nd century.

70 Jug; handle. Curved D-sectioned handle with simple lower attachment retaining small fragment of body. Handle section 12 x 6 mm. 1359; L86; 4.

71 Conical or discoid unguent bottle, lower body and flat base fragment. Present height 22 mm, wall thickness 3 mm. EVE 0.2. 514; F397; 7. For the type see *CAR* **8**, 161. Later 1st to 2nd centuries.

72 Jug or flask. Cylindrical neck fragment. Present length 25 mm. EVE 0.2. 1591; F142; 3.

73 Flask; rim and neck fragment. Outbent rim, edge fire-rounded; cylindrical neck. Rim diameter approx 28 mm, present height 22 mm, wall thickness 2 mm. EVE 0.4. 1385; F246; 4a.

74 Neck and shoulder fragment. Cylindrical neck curving out smoothly to carinated shoulder. Dimensions 54 x 45 mm. EVE 0.4. 2192; F791; 4.

75 Flask or unguent bottle; cylindrical neck fragment. Length 39mm. 1677; L148; 4b.

76 Flask; cylindrical neck fragment. 1466; F284; 4b/5.

77 Flask; cylindrical neck fragment. 2103; F567; 0.

78 Flask (?); two joining base fragments; many small bubbles. Side curving into shallow concave base without pontil scar. Base diameter approx 50 mm. 1374; L105; 4.

79 Base fragment. Vertical side curving into concave base. Base diameter 40 mm, wall thickness 2 mm, present height 16 mm. 1195; F219; 5 or 7.

80 Concave base fragment without pontil scar. Base diameter 60 mm, wall thickness 1 mm. 2424 ; L258 ; 2.

81 Concave base fragment. Dimensions 21 x 11 mm. 1376 ; L97 ; 5.

82 Flat base fragment with side curving up. 1419; L114; 4/5.

83 Base fragment. High pushed-in base ring. Base diameter 65 mm. 946; L48; 5b.

84 Base fragment. Tubular pushed-in base ring and (probably) kicked base. Base diameter 75 mm. 1305; L52; 4.

85 Base fragment. Slightly concave base with broken solid base ring. 2325; L225; 3.

86 Body fragment. Straight-sided. 2 abraded bands. 2029; L191; 1b/2.

87 Body fragment. Carinated with terminals of two ribs. 1468; F465; 4.

88 Body fragment. Optic blown ribs. 2082; L193; 4a.

89 Body fragment. Convex-curved with terminal of rib. 2344; F791; 4.

90 Body fragment. Convex-curved with tip of rib. 931; F181; 8.

Blue/green bottles

For the type see *CAR* **8**, 179-91. Cylindrical bottles were in use during the later 1st- to early 2nd-century period. Prismatic (square, hexagonal) bottles had a longer life extending into the 3rd century, though hexagonal bottles went out of use earlier than square bottles.

91 Rim fragment of large wide mouthed bottle. Rim edge bent out and down, up and in. Rim diameter 120 mm. EVE 0.14. 1273; F339; 1-4.

92 Rim fragment of wide-mouthed bottle. Rim bent out, up and in; inner edge tooled. Rim diameter 110 mm. EVE 0.14. 3006; F465; 4.

93 Rim fragment. Edge bent out, up, in and flattened. Rim diameter 90 mm. EVE 0.14. 3000; F717; 4.

94 Bottle; rim and neck fragment (complete). Rim edge bent out, up and in; cylindrical neck tooled at junction with shoulder; scar on neck and underside of rim from attachment of missing handle. Rim diameter 53 mm, present height 60 mm. EVE 0.28. 1071; L64; 5.

95 Complete rim and neck fragment. Rim bent out, up and in; cylindrical neck; scar of handle attachment on neck and underside of rim. Rim diameter 43; present height 46 mm. EVE 0.28. 1304; F246; 4a.

96 Rim and neck fragment. Rim bent, out up and in; cylindrical neck. Rim diameter 40 mm, present height 37 mm. EVE 0.28. 1386; F246; 4a <33>.

97 Rim and neck fragment. Rim bent out, up and in, outer edge broken and missing; cylindrical neck tooled at base. Present height 50 mm. EVE 0.28. 1414;L101; 4.

98 Rim and neck fragment. Rim bent out, up and in with narrow triangular profile; cylindrical neck. Rim diameter 60 mm, present height 21 mm. EVE 0.28. 1153; L353; 1.

99 Square bottle; edge of lower body and base fragment. Base design - three concentric circular mouldings with central dot; flaw on inner edge of two of the circles. Original width of base 66 mm. EVE 0.28. 1477; L105; 4.

100 Square bottle. Lower body and base fragment. Base design - 4 concentric circular mouldings, outer one very wide, central one similar to central dimpled pellet. Width of base 80 mm, width of outer circle 80 mm, present height 52 mm. EVE 0.42. 1478; F284; 4b/5.

101 Prismatic bottle; centre of base. Base design - at least two concentric circular mouldings. Dimensions 16 x 16 mm. 852; F170; 8/9.

102 Prismatic bottle base. Base design - at least three concentric circles. Very heavily burnt. Dimensions 49 x 18 mm. EVE 0.14. 1466; F284; 4b/5.

103 Prismatic bottle; edge of side and base fragment. Base design - at least two concentric circular mouldings. Diameter of outer moulding approx 35 mm; width of base approx 55 mm. EVE 0.28. 1316; L390; 3.

104 Cylindrical bottle. Side curving into flat base. Present height 27 mm. EVE 0.28. 1488; F240; 4b.

105 Cylindrical bottle; body fragment. One band of 3 abraded lines, second band represented by one similar line. Dimensions 53 x 52 mm, wall thickness 3 cm. 1258; F465; 4. Probably from the rare form of decorated cylindrical bottle in use during the late Neronian and Flavian periods. For the type see *CAR* **8**, 199.

Pale greenish colourless

106 Globular flask; rim fragment. Vertical rim, edge cracked off and probably ground but not much strain cracked and obscured; two abraded bands below rim edge. Rim diameter 30 mm, wall thickness 2 mm. EVE 0.2. 934; F188; 8. For the type see *CAR* **8**, 153. Mid 3rd to mid 4th century.

6.9 Analysis of 17th-century alloys

by David Dungworth (English Heritage Centre for Archaeology)

Introduction

The site at Head Street, Colchester (TL 9936 2508), excavated by Colchester Archaeological Trust in 2000, produced evidence for Roman occupation which was disturbed by post-medieval pits and foundations. One of these pits (F106) contained waste from 17th-century copper alloy casting, including ~300kg of mould debris, slag and amorphous lumps of copper alloy. Some mould fragments included the impression of the letter M (used by the Gray family of bell casters who were active in the 1630s). Some of the mould fragments appeared to be for the manufacture of bells while others appeared to be for the manufacture of vessels. Samples of slag and metal were submitted for analysis to investigate the nature of the copper alloys being cast. Bells were usually cast from high tin bronzes (Tylecote 1986, table 23) while vessels were usually cast from mixed alloys, often with high levels of antimony and arsenic (Werner 1976).

Selection and preparation of samples

Seven samples from Pit F106 were selected for examination (Table 21) from each of the three principal layers (L21, L22 and L30) and from a large (~300mm high) lump of slag (from L22). The excavator (Howard Brooks, pers comm) suggested that the three layers may represent three different casting episodes.

Table 21: List of samples selected for examination and analysis.

Sample	Feature	Layer	Bag	Material
1	F106	L21	1876	Slag
2	F106	L21	1876	Slag with attached ceramic
3	F106	L22	1875	Slag
4	F106	L22	1875	Metal
5	F106	L22	2659	Slag
6	F106	L30	1577	Slag
7	F106	L30	1577	Metal

The samples were all mounted in cold-setting acrylic resin and polished to a 1-micron finish. The samples were examined with light and electron microscopes, before and after etching with ferric chloride. Chemical analyses were carried out on areas and spots using the energy dispersive detector attached to the scanning electron microscope (SEM-EDS).

Description of samples

Each of the samples is described below and illustrated where appropriate. The chemical analyses are gathered in Tables 22 (metal) and 23 (slag and ceramic).

Sample 1

This slag is glassy, porous and contains a high proportion of silica inclusions (probably sand), numerous antimony bronze droplets and occasional copper sulphide inclusions (Plate 1). The antimony bronze droplets have a sufficiently high antimony content for a second phase to be present. The analysis of the copper sulphide inclusions (see Table 22) shows the sulphide to be Cu_2S (analysed atomic ratio of Cu to S of 2.05).

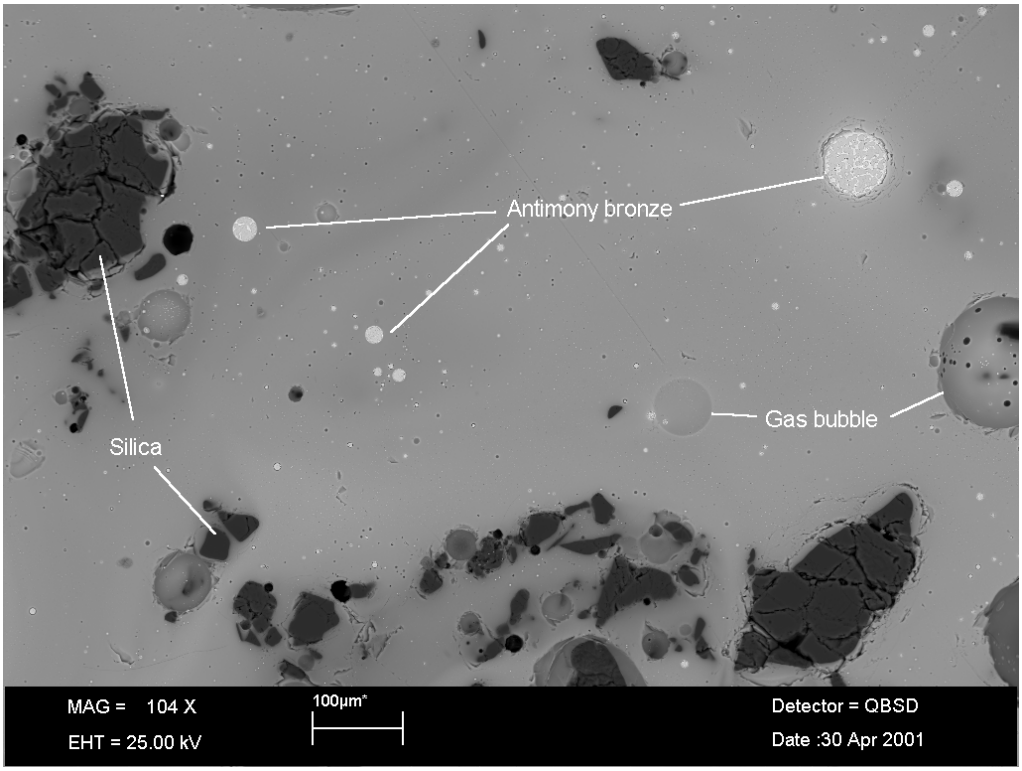


Plate 18 SEM image of sample 1 showing glassy slag with silica inclusions, gas bubbles and antimony bronze droplets.

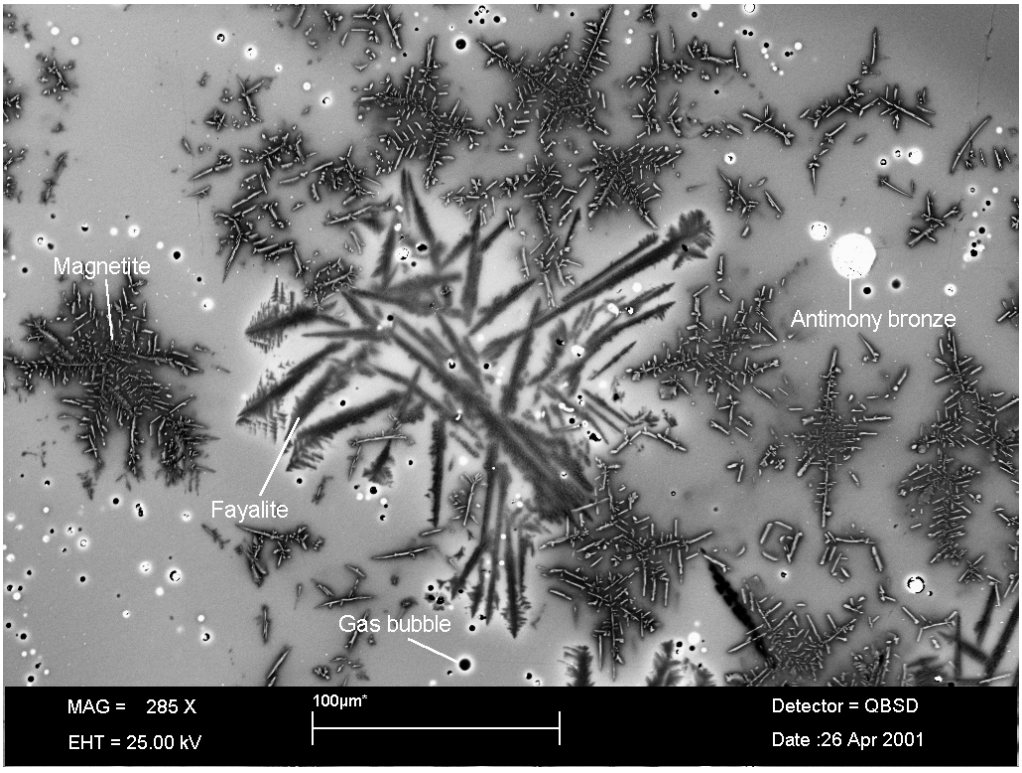


Plate 19 SEM image of sample 2 showing droplets of antimony bronze (bright), dendrites of magnetite (grey) and laths of fayalite (dark grey).

Sample 2
This sample consists of highly vitrified ceramic material with attached slag. The ceramic may be part of the wall of a hearth or furnace, or part of a mould ingate. The slag is glassy but it does contain a number of crystalline phases (laths of fayalite and dendrites of magnetite) as well as lead-rich and antimony bronze droplets (Plate 2). The lead-rich droplets also contain antimony and oxygen and approximate to $PbSb_2O_7$. The antimony bronze droplets usually have sufficient antimony for a second phase to be present.

Sample 3
This slag is glassy, porous and contains numerous silica inclusions (probably sand) as well as droplets of copper, copper oxide and antimony bronze (Plate 3). Analysis of the copper oxide shows that it is probably Cu_2O (atomic ratio of Cu to O of 1.95). As before, the antimony bronze shows two phases.

Sample 4
This metal is a rather porous antimony bronze, which contains an antimony-rich second phase as well as copper sulphide and lead-rich inclusions. Analysis of the antimony-rich second phase indicates that this is approximately Cu_2Sb (atomic ratio of Cu to Sb of 2.07), ie the β phase (Scott 1991, 128).

Sample 5
This slag is glassy and contains numerous silica (probably sand) inclusions as well as droplets of copper, copper oxide and antimony bronze (*cf* sample 3).

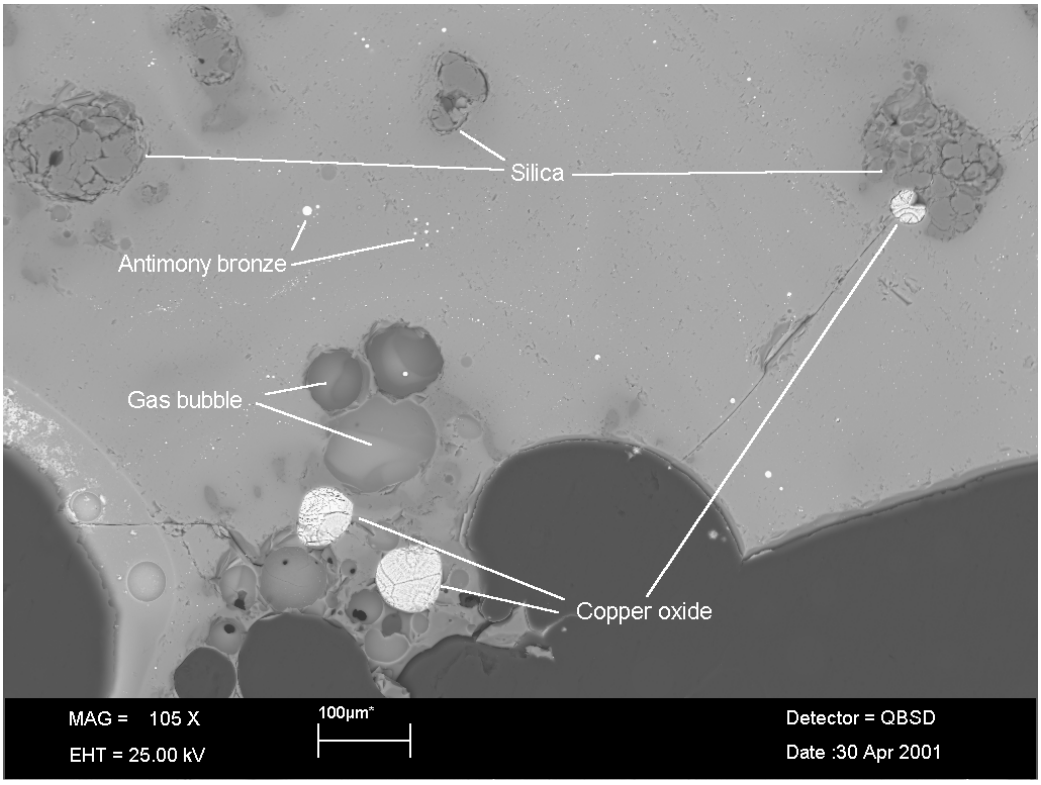


Plate 20 SEM image of sample 3 showing copper oxide and antimony bronze inclusions.

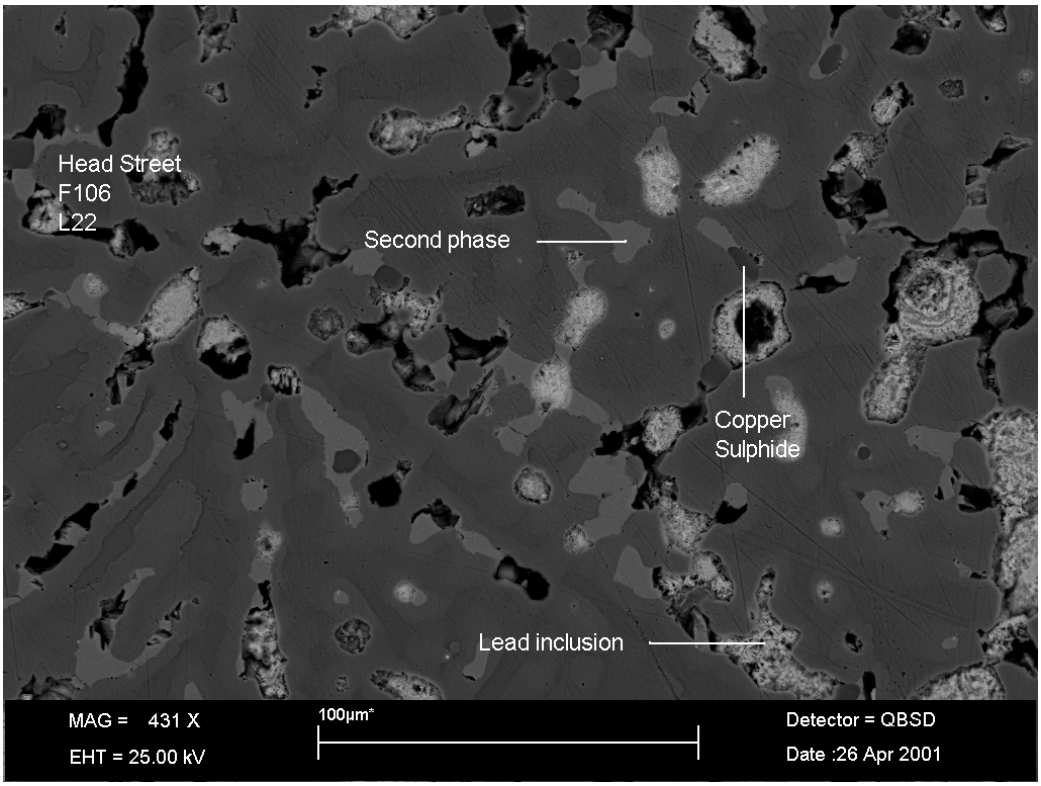


Plate 21 SEM image of sample 4 showing second phase (β), copper sulphide and lead-rich inclusions.

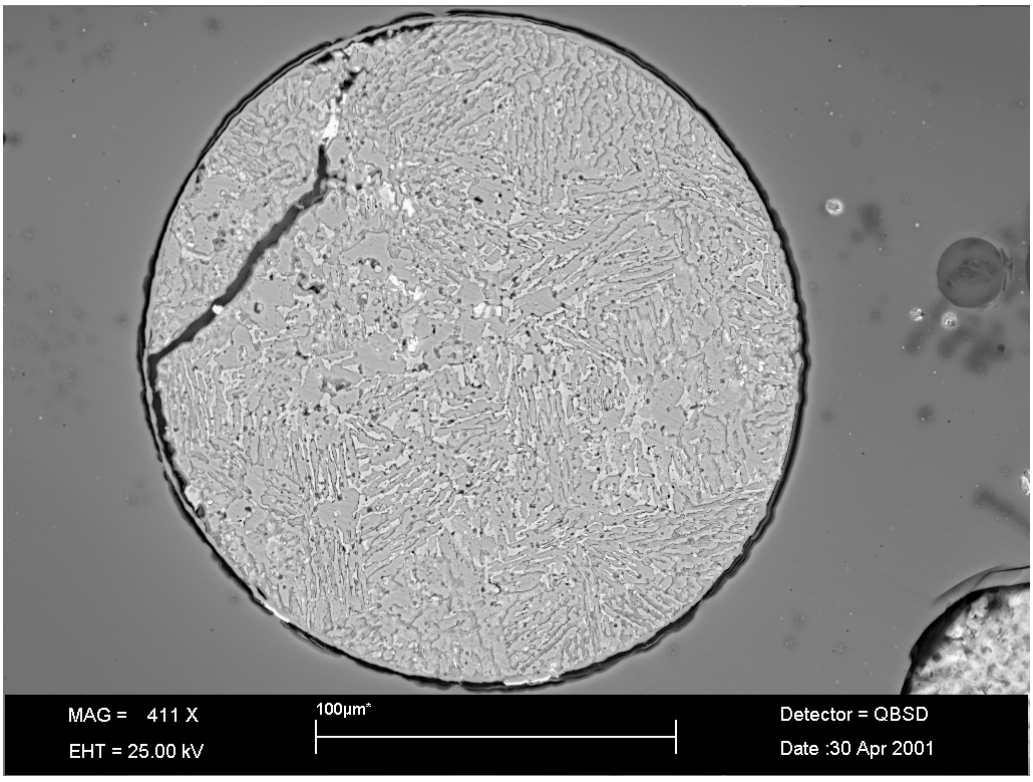


Plate 22 SEM image of antimony bronze droplet in sample 6.

Sample 6
This sample consists of a glassy slag with silica inclusions and antimony bronze droplets (Plate 5).

Sample 7
This sample consists of an extremely porous antimony bronze which contains an antimony-rich second phase as well as copper oxide, copper sulphide and lead-antimony inclusions (*cf* sample 4).

Chemical analysis
The SEM-EDS analyses were carried out on areas (up to 100 microns across) for the analysis of slag and droplets of metal, or spots (~1 micron in diameter) for the analysis of specific phases (sulphides, etc).

The seven samples examined and analysed fall into two groups: waste metal and slag. The two samples of metal are similar to each other (high antimony bronze containing some lead, tin and arsenic). The five samples of slag are a little more variable but mostly consist of a glassy slag with numerous silica inclusions and antimony bronze droplets. The antimony bronze droplets within the slag have lower lead and sulphur contents than the bulk metal. However, the slag often also contains discrete lead-rich and copper sulphide droplets. In a few cases the lead-rich droplets are actually a mixture of lead and antimony and when present in the slag are occasionally oxidised.

Table 2: Analyses of metal.

Sample	Cu	Sb	Sn	Pb	Zn	Fe	Ni	As	S
1 droplet in slag	61.7	23.0	6.6	4.7	nd	0.6	0.6	1.3	nd
1 copper sulphide	77.6	0.6	nd	nd	nd	0.4	nd	nd	20.1
2 droplet in slag	67.3	18.6	7.4	3.9	nd	0.7	0.3	0.7	nd
3 droplet in slag	74.9	18.2	1.6	2.9	nd	nd	0.4	0.9	nd
5 droplet in slag	75.9	20.8	0.8	0.1	nd	0.4	0.3	0.4	nd
6 droplet in slag	65.7	20.5	2.2	2.3	0.6	0.8	0.3	1.6	nd
6 droplet in slag	70.9	7.7	14.1	2.8	0.3	nd	0.3	nd	nd
4 bulk	66.9	10.0	1.2	15.2	nd	0.1	0.1	1.3	0.9
4 antimony-rich phase	51.2	47.3	0.4	nd	nd	nd	0.1	0.1	nd
7 bulk	74.3	10.9	2.0	5.4	nd	0.1	0.1	1.8	0.9

Table 3: Analyses of slag.

Sample	Na_2O	MgO	Al_2O_3	SiO_2	P_2O_5	K_2O	CaO	TiO_2	Fe_2O_3	CuO	ZnO	SnO_2	Sb_2O_3	PbO
1 matrix	0.5	0.9	10.5	45.4	0.9	2.0	1.3	0.7	7.5	0.8	nd	5.6	0.2	23.6
2 ceramic	1.4	1.8	16.3	62.0	1.4	3.2	1.7	1.0	10.0	nd	nd	nd	nd	nd
2 matrix	0.6	0.6	7.8	37.8	0.7	1.5	3.1	0.4	20.6	0.2	0.5	3.6	nd	23.1
3 matrix	0.8	1.0	11.3	65.5	1.0	2.8	3.2	0.7	9.9	1.6	nd	nd	0.4	1.3
5 matrix	0.7	0.8	12.1	58.3	0.7	4.5	2.5	0.8	12.3	0.2	nd	0.7	nd	6.2
5 matrix	0.7	0.8	9.8	46.6	0.7	2.0	3.2	0.6	16.4	0.2	nd	2.4	0.7	16.1
6 matrix	2.5	1.7	7.6	33.8	2.6	1.7	7.7	0.6	12.1	0.2	12.4	2.3	nd	14.1

Discussion
The analysis of the spilt metal and slag associated with bell and vessel mould from F106 shows that alloy being used was an antimony bronze. Analyses of late medieval artefacts has shown that alloys containing appreciable amount of antimony were often used in the manufacture of large vessels (Blades 1995; Werner 1976). Unfortunately much less is known about post-medieval copper alloys. Blades' (1995) study of copper alloys from AD 400 to 1600 includes four 16th-century vessels, two of which have appreciable levels of antimony (Table 24).

Table 24: Analyses of two 16th-century vessels (source: Blades 1995).

Ref	Site	Object	Cu	Sb	Sn	Pb	Zn	Fe	Ni	As	S
535	Deansway	Vessel rim	62.6	3.9	6.0	17.8	0.1	0.1	0.1	0.6	0.1
553	Deansway	Vessel foot	66.3	2.7	1.0	10.7	0.1	0.1	0.1	0.8	0.2

All of these antimony bronzes may have been smelted from *fahlerz* ores, tetrahedrite and tennantite $(Cu,Fe)_{12}(As,Sb)_4S_{13}$ which are well-known from Cornwall and Germany (Blair *et al* 1986). The copper smelted from these sources would contain substantial proportions of arsenic and antimony unless great efforts were taken to remove them (Yazawa & Azakami 1969). Such an alloy would be unsuitable for many uses: it would be too brittle for the manufacture of sheet or wire. However, such an alloy would have a low melting point which would make it ideal for casting. Werner has suggested that these antimony bronzes may instead have been formed by mixing copper with *speiss* (a by-product of smelting complex non-ferrous ores, such as *fahlerz* ores) which has a variable composition but usually contains substantial amounts of antimony and arsenic (Werner 1976). However, analyses of *speiss* usually show relatively high iron contents (Werner 1976, table 2; Bachmann 1982, 29) which are not seen in the antimony bronzes analysed for this report, or in those analysed by Blades (1995).

There are many potential sources for the antimony bronze cast at Head Street. Relatively little copper was mined and smelted in Britain in the late medieval period and most copper appears to have been imported from the Continent (Blair *et al* 1986). During the 16th century, German miners were brought over to England but large-scale working did not commence until the end of the 17th century (Crossley 1990, 197-8). During this period large quantities of copper were mined and smelted in Germany, and antimony bronzes were exported (Werner 1976). The recovery of large quantities of 16th- and 17th-century German stoneware from the site (N Crummy, pers comm) may support the idea that the antimony bronze was imported from Germany.

Conclusion

The composition of the spilt metal and the metal droplets in the slag is consistent with the manufacture of vessels, and cannot be used to support the suggestion that bells were being cast. Examination of the 13,000 13th- to 16th-century mould fragments and spilt metal from the Bedern foundry in York indicated that the principal products were small cauldrons (Richards 1993). Nevertheless, the main products of bell founders were often 'cauldrons and skillets . . . and these vessels accounted for the vast majority of the discarded mould material [in Exeter]' (Blaylock 1996, 72).

Appendix

Note by Howard Brooks

After David had completed his report, another item possibly connected with bronze casting was found among the small finds. This was sent to David, whose report is given here.

SF 793. Mould. This is definitely a ceramic mould used for casting copper alloy objects. The form matches the legs of medieval and post-medieval cauldrons. This confirms the scientific work I did for you. The only illustrated published example I know of is Blaylock (2000); I will include a photocopy of parts of this publication. The Head Street example is a little odd: it appears tolerably well fired and has corroded copper alloy adhering, but is not broken as would be essential to retrieve the casting. Normally, a fragment like this would be whole but show no signs of having been used *or* it would show signs of having been used and would be broken to remove it from the cast cauldron. I can only guess that the casting process went wrong, the mould started to fill with metal, and then a crack developed somewhere and the mould emptied? An X-radiograph was taken, but it didn't appear to show much [36].

[36] X-radiograph in site archive

6.10 Worked flint (Fig 56)

by Hazel Martingell

Fifty-six pieces of flint were retained for study from the excavations. One came from a prehistoroic pit, the others are residual in later contexts, mainly early Roman. The table below gives bag numbers and contexts.

The material

The artefacts are made on various types of flint. The unretouched pieces tend to be on light grey flint, stained brown, this includes an oblique arrowhead (fig 0.864). The retouched pieces are mostly on dark grey flint. Scraper *54* is fire crackled

The artefacts

Of these 56 pieces, 14% (8) were retouched to form specific tools (the gunflint is not included here). The interesting aspect of this group is that they all appear to belong to the latter part of the Neolithic/Early Bronze Age. This includes the four scrapers, two of which are illustrated here (Figs 00.*54* and 00.*863*), the piercer, the knife and one of the retouched pieces. The four scrapers and the retouched flake are considerably worn. This suggests that they were all part of the same tool kit (ie for leather processing) - this could include the piercer. The oblique arrowhead (Fig 00.*864*) is rather roughly made, it is of the same date as the tool kit and may belong with these artefacts, but it is more likely to have been lost during a hunting expedition. It is of the type identified by Green (1980, 114-116, 191) as British Oblique Form d-e. These arrowheads are associated with Grooved Ware pottery and date between 2000 and 1500 BC (Green 1980, 236). Oblique arrowheads are not common in Essex. Three were recovered during excavations at Lion Point, Clacton (Wainwright 1971); one is reported at Newport (Essex Naturalist 1945), and one at Elms Farm (Martingell 2001).

Another identifiable group consists of the ten good blades and the blade core rejuvenation flake. These form 19% of the group. It is possible that these constitute a mesolithic presence here, or, more likely, they were collected and assimilated into the later Neolithic/Early Bronze Age tool kit. The two large artefacts are not period-specific, and are impossible to date. The large flake is unlikely to be earlier than neolithic, likewise the attempted core/hammerstone. This latter is made of unusually black and shiny flint which looks almost volcanic in origin.

Finally there is a gunflint, which is a complete, small commercially made one of probably 19th-century date.

Considering the location of this site, within the Roman town walls, it is remarkable that there are no later prehistoric or Roman flint artefacts. This suggests that though the artfacts may be redistributed, they belong to only one phase of the prehistoric occupation of Colchester.

[note by HB. The absence of a prehistoric/Roman topsoil on this site indicates that the Romans cleared the old land surface before building. Therefore the soil contexts which may have held later prehistoric artefacts have been removed from this site. Likewise, in some areas, some Roman strata have been removed, so some of the contexts which may have carried residual prehistoric material are absent].

Worked flint catalogue

Note: in sketch column, one asterisk = sketched in archive (here), two asterisk = drawn for publication).

Table 25: worked flint catalogue.

sketch	small find number	bag number	context	period; context type	quant	description
**	054	219	F8	9; 1934 trench	1	Scraper, end- and side-, on flaker, twisted profile, secondary. Fig 56.1
*	394	1932	F353	8; pit	1	Piercer on distal end of blade, retouched at distal end on both edges to form a point. Tertiary blade with one patinated surface.
	395	1933	u/s	0	1	Flake, piercer, scraper, fragment, secondary, tertiary, fragment.
	501	2303	L189	1; disturbed natural	1	Flake, secondary, slightly worn smooth surfaces.
	501	2303	L189	1; disturbed natural	1	Flake, secondary.
	839	2847	u/s	0	1	Large triangular-sectioned flake, with flaked and utilised butt end. Looks like a 'proto handaxe', but is much later. Neolithic? 135 mm long.
	840	2848	L528	1b/2; dump	1	Blade, tertiary, triangular section. 50 x 13 mm. Complete.
	840	2848	L528	1b/2; dump	1	Waste fragment.
	841	2849	L192	1/2; clay floor	1	Flake fragment, secondary, 'salami' type.
*	842	2850	L582	1-3; accumulation	1	Knife, flake with cortex backing. Ventral flake removal bisects flake removals along left edge.
	843	2851	F633	1; pit	1	Flake, trimming, tertiary, good.
*	844	2852	F596	1a; clay wall	1	Scraper fragment, secondary, slight burning.
*	845	2853	L612	1; disturbed natural	1	Core rejuvenation flake. Platform of blade core, good black flint.
	846	2854	L251	1a; sand dump	1	Scraper roughout? Flake fragment, secondary.
	846	2854	L251	1a; sand dump	1	Flake, secondary.
	846	2854	L251	1a; sand dump	1	Natural piece.
*	847	2855	L568	2; destruction debris	1	Retouched flake, retouched along both sides, hinged termination, facetted butt, good black flint.
	849	2857	L186	1; make-up	1	Flake, secondary, good.
*	850	2858	L105	4; cultivation soil	1	Blade, tertiary, good, punch struck, some fine retouch on left edge, worn.
	851	2859	L526	1; occupation and floor	1	Flake, secondary, wide platform, oblique angled platform.
	852	2860	u/s	0	1	Flake, tertiary, very thin in section, thinning flake.
	852	2860	u/s	0	1	Flake, tertiary, converging.
	852	2860	u/s	0	1	Flake fragment.
	853	2861	L587	1; accumulation/surface	1	Blade, tertiary, complete. 40 mm long.
	853	2861	L587	1; accumulation/surface	1	Flake, secondary.
	854	2862	F828	0; pit	1	Flake, secondary, converging.
	855	2863	F561	2; pit	1	Flake, secondary, converging.
	855	2863	F561	2; pit	1	Flakelet, trimming, tertiary.
	856	2864	L566	1b/2; dump/make up	1	Flake, secondary, light grey flint.
	858	2866	L600	1a; occupation/disturbance	1	Flake, trimming, secondary, very thin in section.
	858	2866	L600	1a; occupation/disturbance	1	Flake fragment, tertiary, very thin in section
	859	2867	L268	1; disturbed natural	1	Flake fragment, secondary.
	860	2868	F696	2/3; pit	1	Flake fragment, large, tertiary, waste but good.
	861	2869	L580	1a; disturbed natural	1	Flake, secondary, trimming.
	862	2870	F877	1; construction cut	1	Flake, secondary, 'salami' type.
*	863	2871	L580	1a; disturbed natural	1	Side scraper, classic tertiary, good. Fig 56.3

sketch	small find number	bag number	context	period; context type	quant	description
*						
* *	864	2872	L580	1a; disturbed natural	1	Oblique arrowhead. British oblique, Green form d-e. Later Neolithic - Early Bronze Age. Fig 56.2
	867	2875	L607	1b; accumulation/surface	1	Blade, secondary, 52 x 25 mm, 4 dorsal removals.
	868	2876	L512	1; silty sand	1	Retouched and worn flake, tertiary. Discontinuous fine retouch along left edge.
	869	2877	F335	9; construction cut	1	Gun flint, small, good, fine retouch along top and bottom edge.
	870	2878	F354	9; pit	1	Attempted core? Hard nodule of glossy black flint with some flake removals. Hammerstone final use?.
	871	2879	L116	5; dump	1	Flake, tertiary, good.
	872	2880	L251	1a; sand dump	1	Flake, secondary, waste.
	872	2880	L251	1a; sand dump	1	Waste fragment, secondary, tertiary, fragment.
	872	2880	L251	1a; sand dump	1	Flake fragment, tertiary.
	874	2882	L161	2; fortress demolition	1	Blade fragment, secondary, brown stained clear flint.
	875	2883	L195	1a; dump/demolition	1	Blade flake, 45 x 24 mm, secondary, good.
*	877	2885	L189	1; disturbed natural	1	End scraper on a flake, grey matt flint with inclusions, tertiary, double faceted platform.
	877	2885	L189	1; disturbed natural	1	Blade, tertiary, hinged distal end.
	877	2885	L189	1; disturbed natural	1	Flake, secondary, broken.
	879	2887	F320	8; pit	1	Crested fragment, burnt.
	879	2887	F320	8; pit	1	Retouched fragment, tertiary.
	882	2890	L250	2; sandy layer	1	Flake, secondary, trimming.
	882	2890	L250	2; sandy layer	1	Blade fragment, tertiary.
	883	2891	L186	1; make up	1	Flake, tertiary, double faceted platform.
	884	2892	L190	1; dump demolition	1	Blade, converging, tertiary, 26 mm long.
			total		56	

6.11 Faunal remains

by Julie Curl (Norfolk Archaeological Unit)

Introduction

A total of 114.952kg of faunal remains were recovered from excavations at 29-39 Head Street, Colchester. The majority (98.45%) of the bone was hand-collected, the remaining 1.55% (by weight) was collected from sieved samples. In terms of fragments, there are a total number of 11,433 pieces in this assemblage, of which 2,673 were retrieved from sieved samples.

The butchered remains of the main domestic animals (cattle, sheep/goat and pig) accounted for the majority of the assemblage and included a relatively high number of juveniles or neonatals indicating both local breeding and higher status. A wide range of wild species were also recovered throughout the assemblage, these included deer, hare, badger, otter, brown bear, rodents and several species of bird. The assemblage also produced a variety of butchering and evidence of bone and antler working.

Methodology

The mammal bones were recorded using a modified version described in Davis (1992). Bone that could be identified to species was recorded and included in the species total; exceptions are rib fragments, tooth and shaft fragments which are often difficult to identify to species anyway and could give very misleading results. The counting of all identifiable species remains was decided to give a much clearer picture of the species and quantities present at Head Street; often when only the 'countable' bones are considered then some species are not included, even when present in significant quantities. Certain elements are classed as 'countable' following English Heritage/AML

guidelines; these elements are listed below. Separate totals for all bone identifiable to species and 'countable' elements are included in this report so it is clear what species were recovered and what quantity can be classed as countable for the purposes of studies of MNI and for reference by other faunal specialists.

Bone that could not positively be identified to species or was not classed as 'countable' was usually recorded as 'No ID' although in most cases these were fragments of large mammal bone. Avian or fish bone that could not be properly identified to species was recorded as 'birdbone' or 'fish' to distinguish this from the unidentifiable mammal bone.

The following were always recorded: all upper and lower teeth, scapula (glenoid articulation), distal humerus, distal radius, proximal ulna, distal metacarpal, carpal 2-3, pelvis, distal femur, distal tibia, calcaneus, lateral part of the astragalus, cuboid, distal metatarsal, the proximal end of phalanges 1,2 and 3. For all of these bones, at least 50% of the given part had to be present.

For the birdbone, the following was always recorded: distal tarso-metatarsus, distal tibio-tarsus, distal femur, distal humerus, proximal coracoid, proximal ulna, proximal carpo-metacarpus and scapula (articular end).

Measurements (listed in the appendix) were taken, generally following Von Den Dreisch (1976). Humerus BT and HTC and metapodial "a" and "b" are recorded as suggested Davis (1992).

Wear stages for all P4's, Dp4's and molars were recorded for cattle, sheep/goat and pig following Grant (1982) and these appear in a separate table in the appendix.

Horncores were recorded when present and the following measurements were taken: greater length, maximum base width and minimum base width. The horncores were only measured when at least one of the complete measurements could be taken; these measurements also appear in separate tables in the appendix.

Any butchering was also recorded, noting the type of butchering, such as cut, chopped or sawn. A note was also made of any burnt bone. All recognisable pathologies were also recorded with the type of injury or disease, the element affected and the location on the bone. Other modifications were also recorded, such as any possible working or animal gnawing.

Weights and total number of pieces counts were also taken for each context and these appear in the appendix.

The appendix includes table for the number of 'countable elements' as suggested by Davis (1992) and listed at the beginning of this section. A table for the total number of all bones identifiable to a species is also included, and that takes into account the fragments, such as horn, that can be positively identified but not included in the count as these totals can vary considerably. In both tables, each species is quantified to a phase, rather than to separate groups or contexts.

The discussion on the species present is divided into a general summary for each species, estimated ages at death, butchering and other modifications, abnormalities and pathologies and canid and rodent gnawing.

Summary of faunal remains by phase

Military phase

The military phase produced 22.755kg of bone, 19.8% of the total weight for the assemblage. Fewer species were identified than in other phases; apart from galliformes, the only other species of bird was woodcock. Mammal bone included red deer, canid, hare and fox. Remains of bank vole and badger were also recovered from the sieved samples from the Military phase. There were a lower number of neonatals in the Military phase, which may possibly suggest that at least some of the livestock were kept elsewhere at this time. Butchering during this phase included probable working of sheep horn, marrow extraction, skinning, antler working and the butchering of a large canid – which may have been wolf.

Table 26: military contexts. Total quantities of species identified and quantities of measurable and countable elements for each species.

Species	Total number of pieces identified	Measurable elements	Countable elements
GALLIFORMES…..Gallus/Numida /Phasianus	11	6	11
WOODCOCK…..Scolopax rusticola	1	1	1
BIRD (No species ID)	21	0	0
TOTAL NUMBER OF BIRDBONES IN MILITARY CONTEXTS	33	7	12
CATTLE…..Bos taurus	95	16	48
PIG/WILD BOAR…..Sus scrofa	26	4	19
SHEEP/GOAT…..Ovis/Capra	93	21	62
RED DEER…..Cervus elephas	19	2	5
EQUID……Equus	1	0	0
CANID (Dog/Wolf)…..Canis	2	2	1
HARE…..Lepus europaeus	2	1	2
FOX…..Vulpes vulpes	1	0	1
TOTAL NUMBER OF MAMMAL IDENTIFIED IN MILITARY CONTEXTS	239	47	138
Total number of identifiable, measurable and countable bones in Military contexts	**272**	**54**	**150**

Colonia and Boudican phase

A total of 18.461kg of bone was recovered from the *colonia* and Boudican phase and this represented 16.05% of the total weight. Fourteen species were identifiable in this phase and these included the only identifications of raven (Corvus corax) and butchered badger (Meles meles). Other species include the main domestic mammals and birds, red and roe deer, fox (Vulpes vulpes) and hare (Lepus europaeus). Neonatals of both sheep and pig were present suggesting local breeding early on in the Roman period. Apart from a variety of butchering with the domestic species, chopping or cut marks were noted on both species of deer, hare and badger. Antler and probable bone working were also present in the *colonia* and Boudican phase and this phase produced the only evidence of cattle hornworking.

Table 27: *colonia* and Boudican contexts. Total quantities of species identified and quantities of measurable and countable elements for each species.

Species	Total number of pieces identified	Measurable elements	Countable elements
GALLIFORMES…..Gallus/Numida /Phasianus	22	11	22
GOOSE…..Anser sp.	2	0	2
DUCK sp…..Anas sp.	1	0	0
MALLARD…..Anas paltyrhynchos	2	2	2
RAVEN…..Corvus corax	1	0	1
BIRD (No species ID)	19		
TOTAL NUMBER OF BIRDBONES IN COLONIA & BOUDICA CONTEXTS	47	13	27
CATTLE…..Bos taurus	118	20	66
PIG/WILD BOAR…..Sus scrofa	26	4	24
SHEEP/GOAT…..Ovis/Capra	79	21	19
RED DEER…..Cervus elephas	4	2	2
ROE DEER…..Capreolus capreolus	2	1	2
EQUID…..Equus	1	0	1
HARE…..Lepus europaeus	1	0	1
FOX…..Vulpes vulpes	1	0	1
BADGER…..Meles meles	2	0	2
SMALL MAMMAL (No species ID)	1	0	0
TOTAL NUMBER OF MAMMAL BONES IN COLONIA *& BOUDICAN CONTEXTS*	235	48	120

General Roman phase

A total of 71.957kg of bone was recovered from the General Roman phase and accounted for 62.6% of the total weight for the assemblage. At least thirty species were identifiable and included a good range of wild mammals and birds as well as domesticated species. Bird taxa present in this phase include woodcock, snipe, lapwing, jay, godwit and little owl as well as a range of fowl and duck. Non-domestic mammals include fox, hare, deer, rat and otter. Single bones from rabbit and brown bear were also recovered from the General Roman phase. Evidence of primary and secondary butchering is present during this phase along with skinning of both domestic species such as deer and otter and the working of antler and sheep horn.

Table 28: general Roman contexts. Total quantities of species identified and quantities of measurable and countable elements for each species.

Species	Total number of pieces identified	Measurable elements	Countable elements
GOOSE Anser sp.	23	5	18
BLACKBIRD Turdus merula	1	0	1
DUCK sp…..Anas	2	5	5
GALLIFORMES….. Gallus, Numida/Phasianus	178	76	173
GODWIT…..Limosa	6	4	4
JAY…..Garrulus glandarius	1	1	1
LAPWING…..Vanellus vanellus	2	1	2
LITTLE OWL…..Athene nocuta	1	0	1
MALLARD…..Anas platyrhynchos	9	5	9
Plover…..Pluvialis	3	1	3
SNIPE…..Gallinago gallinago	1	1	1
TEAL…..Anas crecca	1	0	1
WOODCOCK…..Scolopax rusticola	7	5	7
WADER sp…..Scolopacidae	1	0	1
BIRD(no species ID)	150		
TOTAL NUMBER OF BIRDBONES ID IN GENERAL ROMAN CONTEXTS	*388*	*101*	*227*
CATTLE…..Bos taurus	324	69	257
PIG/WILD BOAR…..Sus scrofa	206	27	122
SHEEP/GOAT…..Ovis/Capra	190	69	159
RED DEER…..Cervus elephas	18	5	8
ROE DEER…..Capreolus capreolus	28	7	20
EQUID…..Equus	8	6	2
CANID (Dog/Wolf)…..Canis	35	5	17
HARE…..Lepus europaeus	23	0	14
OTTER…..Lutra lutra	3	0	3
WOODMOUSE…..Apomedeus sylvaticus	3	0	3
BROWN BEAR…..Ursus arctos	1	0	1
CAT…..Felis cattus	2	0	2
FOX…..Vulpes vulpes	1	0	1
RABBIT…..Oryctolagus cuniculus	1	0	1
BLACK RAT…..Rattus rattus	1	0	1
COMMON FROG…..Rana temporaria	5	0	4
FISH (unidentifiable)	10		0
TOTAL FISH & HERPETOFAUNA IN GENERAL ROMAN CONTEXTS	15	0	4
TOTAL MAMMAL BONE IN GENERAL ROMAN CONTEXTS	843	184	615
Overall total of identifiable, measurable and countable bones in General Roman contexts	**1246**	**289**	**850**

Distribution and condition of bone

The faunal remains in all phases derive from a wide variety of contexts and features. While small quantities of bone were yielded from such contexts as walls, post-holes, and foundations, larger amounts of bone were recovered from pit fills and general accumulation.

Table 29: Distribution of faunal remains showing quantities, weights and percentages of the total for the three main phases at Head Street and includes separate figures for the faunal remains recovered from sieved samples.

	Quantity	% of Total Quantity	Weight	% of Total Weight
***colonia* and Boudican phase**	1303 pieces	11.40%	18.461kg	16.05%
general Roman phase	5200 pieces	45.48%	71.957kg	62.60%
Military phase	2257 pieces	19.74%	22.755kg	19.80%
bone from samples (All phases)	2673 pieces	23.38%	1779kg	1.55%
TOTALS:	11433	100%	114.952kg	100%

Study of the distribution between phases shows that almost 63% of the bone was retrieved from the General Roman contexts, of which most can be attributed to the Flavian house period. Around half of the bone in the general Roman phase was recovered from accumulation and pit fills. The Military phase produced nearly 20% of the remains; the vast majority yielded from Fortress/Fortress 1 and Fortress demolition contexts. Material from the Military phase was derived from a variety of contexts although most bone was retrieved from pit fills and silty clay contexts. The *colonia* and Boudican phase totalled just over 16% of the assemblage; around 54% of the bone was from the Boudican period.

The condition of the bone was generally good in all phases. Most of the bone was fragmentary; fragmentation was mostly due to butchering and taphonomic reasons, some due to gnawing. The gnawing can be the result of feeding domestic animals or due to the activity of scavengers (unrestrained dogs, wolves, foxes and cats). Scavenger activity can mean that at least some of the gnawed bone may have been moved and not in the primary deposit. Gnawing was more notable in the general Roman phase, probably due to the larger quantity of bone; it was observed more frequently on cattle bone although some deer, pig and goose had been eaten by canids. Only low numbers of sheep bones had been gnawed in the *colonia* and Boudican and military phases.

The degree of fragmentation did vary slightly between phases. Bone from the Military phase was more far more fragmented than either the general Roman or the *colonia* and Boudican phase. Burnt bone was recorded in all phases but was recorded more frequently in both the Military and *colonia* and Boudican phases.

Analysis of anatomical parts and division of elements between phases

Although this assemblage is too small to allow any really detailed analysis, differences have been noticeable with the main domestic food species (cattle, sheep/goat, pig and galliformes) and deer. These species were the most commonly recovered; other species were found in much lower numbers and analysis would be meaningless. Some differences in the frequency of body parts can be attributed to taphonomic and recovery biases. For example, many juvenile/neonatal limb bones are very fragile and either do not survive or they are not identifiable to species whereas the juvenile/neonatal mandibles often survive and are identifiable leading to more mandibles than limb bones being recorded.

With all domestic food species most parts of the body was recovered, this, and the butchering to the bones, suggests multiple uses for the animals and processing of the whole carcass at this site. The presence of both primary and secondary butchering waste at the same site was also found in a 3rd-century midden at Cirencester (Luff 1993; Maltby 1984) and Balkerne Lane, Colchester. There were some differences between species, which are detailed below:

Cattle
Most parts of the animal was recovered in all phases. There was a greater number of metapodials, phalanges and mandibles recovered from all phases, which may indicate a greater interest in the skins at this site and/or that at least some good cuts of meat were consumed elsewhere. Horncores (chopped) were only recovered from 1st- to early 2nd-century deposits in the *colonia* and Boudican period. It is possible that the absence in other phases is due to the keeping of only female cattle during these phases or that the horn was taken away for working elsewhere. Hornworking in another area is quite possible as the hornworking process creates an unpleasant smell that would probably not be acceptable in a residential area.

Sheep/Goat
Roughly equal numbers of most parts of the body were recovered. In all phases mandibles were more frequently recorded; however, many of these belong to young juveniles or neonatals whose mandibles survive better (and are more identifiable) than their limbbones. Horncores of sheep were recovered (albeit in small numbers) in all phases, including chopped horns from both the General and Military contexts. It is interesting that there were no positively identifiable remains of goat at this site, although this is not that surprising as this species is rare on Iron Age and Roman sites throughout Britain (Albarella 1997).

Pig
Most parts of this animal were recovered. As with sheep, more mandibles were recorded, again these were neonatals. No metapodials or phalanges were identified from the Military contexts which could mean that the feet were used/discarded elsewhere or that the skins were removed and the footbones left with the hide.

Galliformes
Most parts of the galliformes were found in both the *colonia* and Boudican and General Roman phases. Parts include lower limb and wing bones showing that the birds were processed on site. Far fewer bones were recovered from the Military contexts which probably indicates that they were less commonly used for meat and/or eggs during this phase.

Deer
Elements recorded include metapodials, antlers, mandibles, femur and scapulae, suggesting that whole animals were utilised at this site, although not in large numbers.

Analysis of species recovered, butchering and pathologies
At least 35 species of faunal remains were recovered from excavations at Head Street. Most (33 different species) were retrieved by hand excavation methods, additional smaller species were identified in the sieved material. The greatest variety of species was present in the General Roman contexts (a total of 30 species) suggesting a much richer diet during this phase and certainly when compared to the Military phase which only produced 10 identifiable species. The table below gives details of all species recovered at Head Street and gives totals for the number of bones identified to species, the number of 'countable' bones (see methodology) and the number recovered from sieved samples.

Table 30: Quantities of all species recovered from excavations at 29-39 Head Street, Colchester. Numbers are given for the main three Roman phases and for the bone retrieved from sieved samples.

Species	general Roman		*colonia* and Boudican		Military		Samples	Totals for whole assemblage	
	Identified	Countable	Identified	Countable	Identified	Countable	Identified	Identified	Countable
Cattle	324	257	118	66	95	48	6	543	371
Sheep/Goat	190	159	79	19	26	19	24	319	197
Pig/Wild Boar	206	122	26	24	93	62	12	377	208
Red Deer	18	8	4	2	19	5	-	41	15
Roe Deer	28	20	2	2	-	-	3	33	22
Equid	8	6	1	1	1	0	-	10	9
Hare	23	14	1	1	2	2	3	29	17
Canid (Dog/Wolf)	35	17	-	-	2	1	5	42	18
Cat	2	2	-	-	-	-	-	1	1
Fox	1	1	1	1	1	1	-	3	3
Badger	-	-	2	2	-	-	2	4	2
Otter	3	3	-	-	-	-	-	3	3
Brown Bear	1	1	-	-	-	-	-	1	1
Black Rat	1	1	-	-	-	-	-	1	1
Bank Vole	-	-	-	-	-	-	3	3	3
Woodmouse	3	3	-	-	-	-	-	3	3
Mouse	-	-	-	-	-	-	7	7	7
Rabbit	1	1	-	-	-	-	-	1	1
Galliformes	178	173	22	22	11	11	14	225	206
Goose	23	18	2	2	-	-	-	25	20
Duck sp./Mallard	11	11	3	2	-	-	-	14	13
Teal	1	1	-	-	-	-	3	4	4
Woodcock	7	7	-	-	1	1	4	12	12
Wader sp.	1	1	-	-	-	-	-	1	1
Plover sp.	3	3	-	-	-	-	1	4	4
Snipe	1	1	-	-	-	-	-	1	1
Lapwing	2	2	-	-	-	-	-	2	2
Godwit	6	4	-	-	-	-	-	6	4
Raven	-	-	1	1	-	-	-	1	1
Jay	1	1	-	-	-	-	-	1	1
Little Owl	1	1	-	-	-	-	-	1	1
Blackbird	1	1	-	-	-	-	-	1	1
Fish (no species ID)	10	-	-	-	-	-	4	14	-
Fish - Perch	-	-	-	-	-	-	7	7	-
Common Frog	5	4	-	-	-	-	3	8	4
TOTALS	**1094**	**842**	**262**	**145**	**251**	**150**	**101**	**1748**	**1155**

Cattle

Most parts of the animals were recovered, suggesting that whole live animals or complete carcasses were brought to the site for butchering. It is probable, given the size of the animals, that they were brought 'on the hoof' (alive) as this would have been far easier than transporting dead animals. There are a higher number of metapodials, phalanges and mandibles present, this would suggest that either raw hides were brought to the site or that hides were kept and some of the better cuts of meat were consumed and discarded elsewhere. Very little horncore was present in this assemblage and was only found in the *colonia* and Boudican phase. The horncore which was found belonged to the typical Celtic Short-Horn type of cattle and had been chopped, suggesting it was worked. The lack of horncore could be explained if the cattle present at Head Street were only female or a hornless type, but this is unlikely. More feasible is that horns were removed at the primary butchering stage and sold or simply taken elsewhere for working.

Most of the cattle found at Head Street were adults with an average age of 4 – 6 years. Some cattle were more mature with an age of around eight years and older. The older ages indicate a life of working and breeding before eventually being eaten; cattle would have almost certainly been used as traction animals in the Roman period. Some juvenile remains were recovered from the General Roman contexts; this was a phase where a far richer diet was eaten and included many juveniles of other species. However, there were far fewer juvenile cattle present than there were of sheep or pig and no evidence of neonatal cattle; there is no evidence that calves were being taken from their mothers in order to exploit the mother for her milk supply.

Butchering of the cattle was most commonly in the form of chopping with an instrument such as a cleaver. Chopping with a larger heavy instrument would have been necessary for animals as large as cattle. Chops were noted on most elements, such as at the rear of the mandible, the articular end of the scapulae and close to acetablum of the pelvis and would indicate dismembering of the carcass and production of separate joints of meat. Chopping was also noted on several metapodials and could have been done to facilitate the removal of the marrow. Fine knife-cut marks were observed on metapodials, the calcaeneus and phalanges and were almost certainly part of the skinning process. Cuts were also seen on several inner mandibles and on hyoid (tongue) bones and show that removal of the tongue was popular; the tongue usually produces in excess of a pound of good quality meat. Some knife cuts were seen on larger cuts of meat but these probably occurred when the meat was removed from the bone rather than as part of the butchering process. The General Roman phase produced at least one scapulae that bore a cut hole in the blade which suggest hanging for smoking. Scapulae also showed cuts along the spine of the blade, which would probably have occurred with filleting. Similar butchering of cattle was also recovered at Roman Scole in Norfolk (Baker, 1998). As already mentioned, there seems to be little interest in cattle horn at Head Street, although some was removed. It is possible that most hornworking activities occurred elsewhere.

Plate 23 Cattle horncore, chopped for hornworking. (Short-Horn type cattle, *colonia* and Boudican phase; context L473, finds no 1987.)

Few cattle pathologies were noticed. Some arthritis was present which is not surprising given that the majority of the cattle were adult or mature. Cases of periodontal disease were also noticed, again, this is expected with older animals.

Sheep/Goat

Although goat may have been present in some form at Head Street, no positive identifications of goat were made in this assemblage. Sheep/Goat can be very difficult to differentiate, although no obvious goat bones, such as horncores, were noticed. It has been previously noticed that the goat was scarcely found in Roman to post-medieval assemblages (Luff.1993;, Albarella.1997). All parts of the sheep were recovered and, as with the cattle, this indicates that whole animals were butchered/consumed and discarded at this site rather than hides or meat being brought in or taken away. It is probable that sheep were kept nearby and the probability of local breeding is supported by the relatively high number of neonatals in this group. Sheep had many uses in the Roman period including for wool, hide, breeding, mutton, lamb and milk from sheep was drunk rather than cattle milk. Sheep present at Head Street were a small, slender horned-type like the present day Soay sheep which were common in Iron-Age and Roman Britain.

The ages of the sheep at Head Street varied considerably. Several neonatals and very young juveniles were recovered, especially from the General Roman phase. While some of these lambs may have died natural deaths (or as the result of scavengers such as foxes or wolves), some bore cut marks that show they were eaten. Lambs were also frequently killed between 3 and 6 months. Juveniles may have sometimes been killed at a young age so that the mother could be exploited for her milk supply. Many sheep however were kept until they were between 4-8 years or older. This older age would have allowed breeding and lambs for meat, milk supplies and of course, wool. Mature animals, once killed, would have also had uses for such things as horn, fat and bone for working. A high number of juvenile sheep has been found at other Roman sites such as at Orton Hall Farm near Peterborough (King 1996) suggesting that meat production and exploitation of the milk supply was a primary use of many sheep.

Many of the sheep bones had been chopped, although, due to the smaller size, not as extensively as the cattle. Chopping had occurred all over the body; that the back of the head, through the vertebrae, across the pelvis, the articular end of the scapulae and on most of the limb bones. Fine knife cuts were noticed on lower limb bones such as the calcaeneus, metapodials and phalanges; these probably are as a result of skinning the sheep in the primary butchering stage. Cuts were also noted on inner mandibles; as with the cattle, these are likely to have occurred when the tongue was removed. Sheep skull fragments were also found which had been chopped in half, presumably to allow the removal of the brain for food. Butchering was noted on neonatal and juveniles as well as adults showing that neonatals were used for food and not simply natural deaths discarded with other waste.

As with the cattle, there are few sheep pathologies. Two cases of overcrowded teeth were observed where the P4 and 1st molar are ‘crammed’ with the 1st molar overlapping the pre-molar. One sheep horncore from the Flavian period showed a ‘thumbprint depression’ which is a result of re-absorption of the horncore. This condition can be caused by over-breeding (and the need to regain some lost calcium), over-crowed conditions or being fed on a poor diet.

Pig/Wild Boar

Overall with this assemblage most parts of the pig were recovered. One exception was with the Military phase; no metapodials or phalanges were recorded, only the mandibles and the main meat bearing bones such as the humerus, ulna and scapula. It is possible that only good meat producing cuts of meat were wanted during this phase or that the pig trotters were taken for consumption elsewhere or that the pigs were skinned and the feet were left on the hides and processed at another site. Pig were the second most common species recovered at Head Street, although there were only a few more ‘countable’ elements than sheep. In terms of ‘countable’ bone, the pig was only slightly more common than galliformes in the whole assemblage and actually less frequent than galliformes in the General Roman phase.

Ages of pig ranged mostly from neonatal to a mature adult. One mandible was recovered from the *colonia* and Boudican period with tooth wear that gave an estimated age of approximately 8 years at death. The majority of pigs however were aged approximately 1 year or younger at death and many of these were less than six months. The lower age at death for pigs is expected as pigs, unlike cattle and sheep, have no economic importance other than for their meat and hides. Several neonatals (of one month or much less) were recovered. It is possible that some of these neonatal pigs were simply natural piglet deaths as many piglets do die of natural causes within their first month; however, some neonatal pig remains were butchered so clearly at least some of the neonatals and juveniles were utilised for meat.

Deer

Two species of deer were found, Cervus elephas (Red) and Capreolus carpreolus (Roe). Both species are indigenous and would have occurred in wooded areas around Colchester. While the majority of the deer remains were from primary butchering and working waste, some butchered meat producing bones were recovered. There was clearly an interest in the hides and antler of both species.

Red deer were retrieved in all phases; elements present were mostly mandibles, metapodials, phalanges and antler, suggesting primary butchering waste. A chopped femur was produced from a Military, 1st- to 2nd-century road surface. Chops and cuts were noted on most bones and it is probable the animals were skinned and they were undoubtedly eaten. One complete lower leg was recovered from a late 1st- to early 2nd-century demolition fill; the metacarpal showed fine knife cuts which indicate skinning of the animal. A sawn antler tine was retrieved from a mid 2nd- to early 3rd-century make-up.

Plate 24 Two fragments of red deer antler. (Found with other fragments of antler; sawn - ?working waste; mid 2nd to early 3rd century; context L211; finds no 2075.)

Roe deer were found in two Roman phases. Most of the remains were recorded in the General Roman phase while a further two pieces of bone were identified in the *colonia* and Boudican phase; three pieces of roe deer were retrieved from sample material. In terms of 'countable' material they were more frequent than red deer. As with the red deer, most elements identified were from primary waste, although some secondary meat-producing bones were found. Adult and juvenile mandibles and metapodials which had been chopped and/or cut were the most common. A chopped and cut scapula was

yielded from a 2nd-century pit fill and a chopped roe tibia was found in a 1st-century *colonia* dump, so clearly the roe deer meat was eaten here. Several cuts marks were recorded that suggests that the deer were skinned. A heavily chopped roe antler was recovered from a late 1st- to 2nd-century Boudican context and another chopped antler was found in a 2nd-century pit fill. Possible bone-working evidence was noted in on Boudican context which is a metatarsal which has been chopped and has a hole in the proximal end, it may be an unfinished handle.

Plate 25 Roe deer antler.
(Chopped from skull and tines removed; Boudican period; context L390, finds no 1316.)

Hare

Brown hare was recorded in all Roman phases at Head Street. The majority of the hare remains were retrieved from the General Roman phase. Most parts of the hare were recovered although most of the foot bones were absent, this however could be due to a recovery bias rather than their absence at this site and certainly some phalanges were found. While hares were not found in particularly large numbers at this site their numbers did exceed those of equids, other small mammals and deer in some phases. It is clear that they did add to the local diet and they were probably used for their skins/fur. It is possible that the hares also provided sort for the Romans with coursing, it is also possible that they were farmed in Colchester in special enclosed leporaria (Baker, 98).

Most of the hare remains were adult and present in the General Roman phase and over half of the bone found in this phase bore butchering marks. Butchering of the hare consisted of chopping and finer knife cuts on some of the bones. Most parts of the body exhibited butchering; chops were observed on mandibles, humeri, tibias and ulnas, presumably when the hares were dismembered. Finer knife cuts were noted on some chopped elements and on main meat bones such as the scapula.

Equids

Few bones from equids were recovered from this assemblage. Eight bones were identified in the General Roman phase and single bones were recovered from other phases. While equids were undoubtedly present and used locally they were clearly disposed of elsewhere in most cases. The few equid bones that were recovered did include a chopped and cut scapula and a chopped and cut calcaeneus; the meat is not always popular for human consumption but it may have been used for feeding dogs, indeed the calcaeunus itself had been gnawed.

Canids
A total of thirty-five canid bones were identified, with seventeen classed as 'countable'. Most canid bone was retrieved from the General Roman phase and this phase produced a variety of canid remains, no canids were identified from the *colonia* and Boudican phase and only a two bones were identified from the Military phase. The general Roman phase yielded both large and small canid remains; the small sized bones were of small 'lap-dogs' while the larger remains are of larger hunting-type dogs or possibly of wolf. Wolf and domesticated dogs are difficult to distinguish and the possibility of wolf being present cannot be ruled out. Dogs were almost certainly kept here for hunting, possibly for livestock management (such as cattle dogs) and as pets. The majority of the remains were of mature adults, one young adult and one juvenile were also found. Two mandibles from the Flavian period, one mature adult and one young adult, were identified with butchering present. One mandible had been chopped, the other bore fine knife cuts on the outer mandible. It is probable that these two canids had been skinned and certainly if they were wolf their pelts would have been quite desirable.

Cat
Only two adult cat bones were identified at Head Street, a humerus and a pelvis. Cats are not particularly frequent in the Roman assemblages. It is probable that some were kept for vermin control and/or as pets. The two bones recovered from this assemblage do not offer any other information other than that cats were present.

Otter
Three otter mandibles were yielded from accumulation deposits in the Flavian period. Otters do not widely feature in bone assemblages of any date and few have been recorded from the Roman period. One otter bone (distal femur) was recovered from a roman deposit in Exeter (Maltby 1979). Otters would have undoubtedly been present in Roman Colchester, inhabiting areas around rivers or lakes. All three bones from Head Street are mandibles, one adult and two separate juveniles. Mandibles belonging to one juvenile and the adult bore fine knife cuts at the rear of the jaw. Knife marks such as these strongly suggest skinning and it is likely that these otters had been hunted for their fur.

Fox
Single bones of fox were recovered from all three Roman phases. The remains from Head Street are too few to make a clear interpretation, particularly as there is o evidence of butchering with this species. It is probable that foxes scavenged around rubbish in the area and they may have been killed for such activities or for killing livestock. It is also possible that they could have been killed for their fur.

Badger
Two bones from badger were recovered from contexts in the Boudican period. A young adult skull was found along with a chopped adult femur. A further two bones, a vertebrae and a phalange, were recovered from sieved samples from the Military phase. Badgers naturally occupy a wide range of habitats and will they often ignore human occupation. They are unlikely to have been used for food, but may have been hunted for their pelts. They have been discovered at several Romans military sites in this country (Maltby, 1979 and from some other Roman occupation sites such as Scole in Norfolk (Baker, 1998).

Rabbit
A single rabbit scapula was identified from a mid 2nd- to early 3rd-century context. While it is certainly possible that this is a more modern intrusive find, the increasing number of rabbits being recorded from Roman contexts does suggest that this species may have been introduced by the Romans and not by the Normans as previously thought. The Romans were certainly responsible for the spread of the rabbit out of Spain and they did keep them in enclosures (Clutton-Brock 1981). Given that the Romans introduced so many other species to Britain, it is quite possible that they brought rabbits to Colchester too.

Brown Bear
A single Brown Bear (Ursus arctos) metapodial was discovered in a late 2nd-century Flavian context. This context, L74, finds number (1221), did produce a wide range of mammal bone including red and roe deer, equid, canids, hare, cattle, pig and sheep, most of which had been butchered. It is possible that this bear bone was from a trophy or from animals used in bear-baiting as this species has been infrequently found in southern Roman Britain (Luff 1993, 82). As the bone recovered is a metapodial, it is quite possible that it was present as part of a bear skin.

Bears were native to this country and the Romans did export them to Italy for entertainment. Bears (and lions) have appeared on Roman pottery found in Colchester (Scullard 1979) and a jet bear was also recovered from excavations in Colchester (Scullard 1979) so there was clearly interest in this species locally during the Roman period.

Rodents
Four species of rodent were found at Head Street. A femur of a Black rat was recovered from a 2nd-century accumulation fill. A bone thought to belong to the Black rat was also recovered from Scole in Norfolk and this species is now thought to have been introduced by the Romans (Baker 1998). Three bones from a Woodmouse (Apodemus sylvaticus) were produced from a mid-2nd- to early 3rd-century context. Bank Vole remains were recovered from a sieved sample from the fortress period and House Mouse (Mus musculus) were also produced from a sieved sample from the Flavian period. All of the rodents are commonly found in areas of human habitation and would have commonly been found around any rubbish and food supplies.

Fish
Few fish bones were recovered and clearly they did not contribute a great deal to the diet at Head Street. The only identifiable remains were those of a Perch which came from a sample from the Flavian period.

Herpetofauna
A total of eight herpetofauna bones were recovered. Three bones were found in samples from 1st- to 2nd-century pit fills and five bones were recovered from a 3rd- to 4th-century pit fill. All herpetofauna remains were identified as Common Frog.

Frogs obviously do not live far from areas of water although they do hibernate quite deep into the ground and some distance from their breeding pools. It is possible that some of the frogs remains were from individuals that had colonised the ornamental pool discovered at Head Street.

Birdbone
Fourteen species of bird were identifiable in the assemblage from Head Street. By far the most common species was the galliformes (chicken/pheasant/fowl) which represent 76% of the birdbone identified. Several wild species were recorded, although only in small numbers. It is probable that wild birds did not contribute a great deal to the economy or diet in this part of Roman Colchester, although they can provide additional information about the habitats in and around Colchester during the Roman occupation.

Galliformes
The dominant group of birds in this assemblage is the galliformes, which totalled 76% of the identifiable birdbone. In the General Roman phase the ‘countable’ galliforme bones exceeded those of both pig and sheep. Most of the galliformes are from a range of domestic fowl; one spurred tarsometatarsus from the 1st to 2nd century (context L80) was very large and may be from a peacock. The galliformes at Colchester would have had a variety of uses; eggs would have been produced in larger numbers in their first year (egg production decreases after about a year old) and then they could have been killed for meat. Fowl also provide feathers and a good quality manure and are also useful for keeping down the numbers of insect pests.

The majority of the domestic fowl were adults; some juveniles with unfused and porus bones were present suggesting on site breeding. Many male birds were present as indicated by the presence of spurs; however, it is possible that a male may not have

spurs, particularly when younger, so more males may have been at Head Street. The relative abundance of male birds at Head Street that cock-fighting was probably an entertainment in Roman Colchester. It seems however that at least some males may have been prevented from fighting by having their spurs removed. Two tarsometatarsus from late 1st- to E 2nd-century contexts in this assemblage show the spur removed leaving a small stump, one of which appears to have healed slightly which indicates that the individual did survive the operation. An almost identical bone has been discovered before at Culver Street, Colchester which could indicate that this practice may have been carried out regularly in Colchester. Other pathological fowl were retrieved at Head Street; one tibia was recovered with a swelling in the middle of the shaft, the cause of which is uncertain, possibly due to osteoporosis. One spurred tarsometatarsus (see Fig 1) was found with a large swelling at the proximal end and further slight swelling just below the spur; it is probable that this swelling was as a result of an infection or osteoporosis.

Plate 26 Domestic fowl tarsometatarsus with swelling at proximal end and further swelling below spur (context F20, finds no 1424; pit fill, 2nd century).

Plate 27 Domestic fowl tarsometatarsus with abnormal bending of shaft, probably due to rickets (context L79, finds no 1211; 2nd century).

A female (unspurred) tarsometatarsus was produced from a 2nd-century context that exhibits an abnormal bending of the shaft (see Fig 2) that has the appearance of rickets. Modern chickens certainly do get rickets, especially those kept in crammed conditions and fed a poor or unsuitable diet. It is therefore possible that some of the domestic fowl at Colchester could have been kept in cramped, overcrowded conditions and with a poor supply of food, maybe for managed egg production. Modern birds kept for fast meat production are also known to develop bowed leg bones as their leg bones are unable to support their excessive weight. If excessive weight is responsible for the bowed leg of the fowl from Roman Colchester then this again could be attributed to a 'factory-farming' style of keeping chickens.

Butchering of the galliformes largely consisted of chops to the tarsometatarsus, tibiotarsus, and various wing bones, all of which would have been made when the bird was trimmed before cooking. Cuts were observed on some of these bones which may just be different, less brutal methods for preparing the birds. Fine knife cuts were noted on bones such as the femur which would have occurred when the meat was removed.

Other birdbone

It appears that other birds were not kept on the same scale as the galliformes at Head Street during the Roman period. Only twenty 'countable' goose bones were recovered from the whole assemblage, compared to 173 of galliformes. A variety of wild birds were also obviously available in the surrounding area, although it seems, relatively few were caught. Several wetland species do appear in this assemblage. Goose and woodcock were the most of these and the other species would have added variety to the Roman diet.

Geese
A total of twenty-five goose bones were identifiable, twenty of which were classed as 'countable' and they accounted for just over 8% of the identifiable birdbone. Geese were mainly found in the General Roman phase, a further two bones recorded from the *colonia* and Boudican phase; no goose was recovered from Military contexts or from samples. The relatively low numbers of geese at Head Street are consistent with findings at other Romans sites such as Exeter (Maltby 1979). The Romans were thought to have domesticated the Graylag goose and it is likely that at least a small number of the birds were kept on site at Head Street to provide a supply of eggs and feathers before being killed for meat.

All remains were of adults and the elements present suggest that the whole bird were processed at the site. Much of the bone bore some form of butchering; some elements had been chopped to remove wings and limb bones and cut marks were observed on more of the bones, presumably from the removal of the meat. Larger geese, either Graylags or a domestic goose were present; one cut bone was from a smaller species such as Brent Goose, which suggests utilisation of the wild species. One pathology was noted with the goose bone; a tibia was noted with a swelling near the distal end of the bone, possibly as a result osteoporosis.

Duck
At least two species of duck were present at Head Street. The most common species was mallard which was found in the general Roman and the *colonia* and Boudican phases, but not recovered from the Military occupation. As with the geese, all remains were from adult birds. Primary and secondary waste elements were noted and some remains showed knife cuts. Sparse remains of teal were also recovered. It is probable that ducks present in the assemblage had been caught wild and it is evident that they did not contribute a great deal to the diet at this site.

Waders
A minimum of five species of wader/wetland birds (not including goose and duck species) were discovered in this assemblage, indicating areas of marsh, mudflats and wooded swamp in the area in the Roman period. All of the species of waders were recovered from the General Roman Phase; it seems that although these species would have been available at other times, little effort was made to obtain them for food use except for during the general occupation phase. The most common species of wader is the woodcock, a bird of wet woodland and, like other waders, popular for food. Unlike many other waders which may be only winter visitors, the woodcock is present all year round, which may account for it occurring more frequently. Several elements from a godwit were also found, along with remains of lapwing, plover and snipe. Clear signs of butchering were only seen on the plover bones, which had been cut. It is unlikely that such small birds would have needed a great deal of butchering, so it is possible that the other birds were consumed as well.

Other birds
Most of the other birds were also recovered from the General Roman phase. Single bones from both Jay and Blackbird were recovered, these are very likely to be accidental inclusions, although the possibility that they were caught for food cannot be ruled out. The Little Owl is interesting; normally these birds live in quite open countryside and often near buildings, so it is possible that they were living at the edge of urban areas. The reason for the presence of the owl at Head Street is difficult to determine, it may have been a chance inclusion or possibly killed for superstitious reasons; the Romans detested owls and they (although probably more often barn owls) were thought to be harbingers of death. One raven bone was recovered from the *colonia* and Boudican phase; although they are rarer in this country now, the raven was widespread during the Roman period. The species are quite commonly found on Roman sites and may have been attracted as a scavenger. Another explanation for the raven at Head Street is that it was a pet; the Romans are known to have taught ravens to talk and these easy to tame birds were often kept as companion animals.

Table 6: Summary of all identified birdbone.

Species	General Roman		*colonia* and Boudican		Military		Samples	Totals for whole assemblage	
	Identified	Countable	Identified	Countable	Identified	Countable	Identified	Identified	Countable
Blackbird	1	1	-	-	-	-	-	1	1
Duck sp./Mallard	11	11	3	2	-	-	-	14	13
Galliformes	178	173	22	22	11	11	14	225	206
Godwit	6	4	-	-	-	-	-	6	4
Goose	23	18	2	2	-	-	-	25	20
Jay	1	1	-	-	-	-	-	1	1
Lapwing	2	2	-	-	-	-	-	2	2
Little Owl	1	1	-	-	-	-	-	1	1
Plover sp.	3	3	-	-	-	-	1	4	4
Raven	-	-	1	1	-	-	-	1	1
Snipe	1	1	-	-	-	-	-	1	1
Teal	1	1	-	-	-	-	3	4	4
Wader sp.	1	1	-	-	-	-	-	1	1
Woodcock	7	7	-	-	1	1	4	12	12

Butchering, and meat consumed during the Roman period

Table 7: Types of butchering recorded on the main food animals.
Codes: '+' = present
'o' = not recorded
'*' = frequently recorded
't' = tongue removed
'm' = marrow extraction
'h' = hung (smoking)

Species	Type of butchering														
	Primary			Secondary			Skinning			Horn/ Antler			Other		
	Col. & Boud.	*Military*	*Gen.Roman*	*Col. & Boud.*	*Military*	*Gen. Roman*	*Col. & Boud.*	*Military*	*Gen. Roman*	*Col. & Boud.*	*Military*	*Gen. Roman*	*Col. & Boud.*	*Military*	*Gen. Roman*
Cattle	*	+	+	*	+	+	+	*	*	+	o	o	T,M,H	T,M,H	T* M, H
Sheep/Goat	+	+	+	+	+	+	+	+	+	?	+	+	M*	T,M+	T,M
Pig	+	+	+	+	+	+	+	+	+					M	H
Red Deer	+	+	+	+	o	+	o	+	+	o	+	o			M
Roe Deer	+	o	+	+	o	+	+	o	+	+	o	+			M

Most of the intensive butchering occurred with the cattle; this is not surprising given the size of the animals, more work would be needed to dismember the carcass and produce cuts of meat. There seemed to be a lot of interest in both cattle and sheep tongue, numerous fine cuts were observed on inner mandibles of both species. Further cuts were noted on the hyoid bones of the cattle, which would have occurred when the tongue was cut into pieces. Skulls of sheep in particular had been chopped in a cranial – caudal direction, presumably to remove the brain, which would have been a recognised food.

The long bones of the larger food mammals had been chopped and sometimes split lengthways to facilitate extraction of the marrow. Fine knife cuts were observed on lower limb or foot bones of cattle, sheep, pig and deer that suggests a continued interest in the skins of these species. Additional species that were sought for skins at Head Street include canids, badger, hares and otters, all of which bore butchering evidence consistent with skinning. The hare certainly would have been used for meat, the meat of canids, badger and otters is not known to be used for human consumption, it may have been used to feed working or pet dogs. It is probable that at least some of the cattle scapulas had been hung, suggested by a cut hole in the blade, possibly for smoking. Several of the larger mammals had also been chopped into sections of, on average, 8 to 12 cm; it is probable that these were used preparation of stocks and soups. The lack of pig metapodials and phalanges in the Military phase could indicate that the pigs' trotters were consumed elsewhere in Colchester.

Some of the longbones were chopped or broken into quite small sections. While this may have been to extract marrow or for cooking in stews/soups, it may have also been for the production of glue. This type of fragmentation of the long bones has been observed before at Roman sites such as Tort Hill, Cambridgeshire (Albarella 1997).

This assemblage has produced numerous neonatals and juveniles, particularly of sheep and pigs and the young of both species had been butchered. With the sheep it is likely that the Romans were not only interested in the meat of the lambs. It is probable that the young lambs were taken for meat and to allow the mother to be exploited for her milk as sheep's milk was the favoured milk at the time. With the pig/boar the juveniles were only taken for meat and suckling pig was a popular dish.

Deer did not contribute a great deal to the diet. There was clearly an interest in the skins and antlers of both red and roe deer, however, little of the meat producing bone was present in this assemblage. Some meat bearing bones of roe deer were identified with butchering so some deer meat was consumed. It is possible that at least some of the deer present at Head Street had been brought in as skins with head and lower limb bones still attached.

There was not a considerable amount of butchering evident on any of the birdbone. Little butchering is needed to dismember the birds once cooked and so most of the chops and cuts occur in the primary butchering stage when the birds are prepared for sale and/or cooking. Chops and cuts were observed on the lower limb and wing bones of both galliformes and geese which would have occurred when the birds were trimmed. Fine knife cuts were seen on the main meat bearing bones such as the femur and show that the meat was, at least sometimes, removed with a knife. Few wild birds showed any butchering.

Conclusions

The vast majority of the faunal assemblage from Head Street represents the primary and secondary butchering and exploitation of the main domestic species of animal. While the cattle, sheep and pig clearly all provided meat and hides at this site, the cattle and sheep would have also provided milk, traction, wool, fat and horn for working. It is possible that the main traction animals at this site were cattle as there are few horse remains in this assemblage. The assemblage suggests that all of the ovicaprine needs were fulfilled by sheep and that goats were not present at this site during the Roman period. It appears from the number of juveniles and neonatals present that the main three domestic animals were bred on or close to the site and the culling of these young would have supplied the locals with milk.

Other domesticated animals did not appear in any great number. Dog and cat were present; small dogs and cats may have been kept as pets or for rodent control. Larger dogs would have probably been used for hunting; some of the larger canid remains may also be wolf. Butchering marks do suggest that the larger canids were utilised for their furs.

Wild animals did not contribute a great deal to the diet or economy at this site, although deer, hares and probably wild pig were caught. Wild birds were caught in small numbers, the most frequent being the popular meat bird, the woodcock. The presence of the butchered badgers and otters probably represent small scale hunting for furs; this could also apply to at least some of the hares. The rabbit may be intrusive, but could have been imported by the Romans for it's meat and fur. The need for furs could explain

the fox remains but equally it could simply be a scavenger at the site. The evidence for Brown Bear is interesting, it may be another animal culled for its fur or an animal used for fighting, whatever its use at this site, it would have undoubtedly been a prized specimen.

Fish seem to be insignificant at this site; although present in small numbers, there was little evidence that they contributed much to the local diet. The presence of herpetofauna is quite interesting at this site. Although frogs may be intrusive, the remains at Head Street may be associated with the ornamental pool discovered at this site.

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Appendix 1: Tooth wear stages

Tooth wear stages (Payne, 1973):

Eruption stage:
Erupted = e
Not erupted = ne
Not fully erupted = nfe

TWS	Suggested Age
A	0-2 months
B	2-6 months
C	6-12 months
D	1-2 years
E	2-3 years
F	3-4 years
G	4-6 years
H	6-8 years
I	8-10 years

Table 33: tooth wear stages.

Context	Finds no	Period	Taxa	Tooth no	Eruption	TWS	Est. Age
	1269	Roman	bos	P4	e	G	6-8yrs+
	1269	Roman	bos	M1	e	F	6-8yrs+
	1269	Roman	bos	M2	e	G	6-8yrs+
	1269	Roman	bos	M3	e	F	6-8yrs+
L73	1102	Roman	o/c	P4	e	H	4-6yrs+
L73	1102	Roman	o/c	M1	e	H	4-6yrs+
L73	1102	Roman	o/c	M2	e	G	4-6yrs+
L73	1102	Roman	o/c	M3	e	E	4-6yrs+
L74	1307	Roman	sus	P4	e	A	c 6mths
L74	1307	Roman	sus	M1	e	F	c 6mths
L74	1307	Roman	sus	M2	e	B	c 6mths
L75	1200	Roman	sus	Dp3	e	A	Neo
L75	1200	Roman	sus	Dp4	e	A	Neo
L75	1200	Roman	sus	M1	n/e		Neo
L80	1223	Roman	sus	Dp4	e	A	c 3mths
L80	1223	Roman	sus	M1	e	A	c 3mths
L80	1256	Roman	o/c	Dp4	e	B	neo
L80	1256	Roman	o/c	M1	n/e		neo
L80	1256	Roman	sus	Dp4	e	E	<3mths
L80	1256	Roman	sus	M1	e	A	<3mths
L81	1263	Roman	o/c	Dp4	e	C	<3mths
L81	1263	Roman	o/c	M1	nfe	A/B	<3mths
L81	1263	Roman	o/c	M2	ne		
L84	1050	Roman	o/c	Dp3	e	E/F	c3mths
L84	1050	Roman	o/c	Dp4	e	E	c3mths
L84	1050	Roman	o/c	M1	ne		c3mths
L86	1359	Roman	o/c	Dp4	e	A	Neo
L86	1359	Roman	o/c	M1	ne		Neo
L92	1505	Roman	o/c	Dp4	e	M	c6mths
L92	1505	Roman	o/c	M1	e	H	c6mths
L92	1505	Roman	o/c	M2	e	G	c6mths
L95	1283	Roman	o/c	P4	e	K	6-8yrs+
L95	1283	Roman	o/c	M1	e	J	6-8yrs+
L95	1283	Roman	o/c	M2	e	H	6-8yrs+
L95	1293	Roman	o/c	M3	e	G	6-8yrs+
L100	1311	Roman	sus	Dp4	e	F	<6mths
L100	1311	Roman	sus	M1	e	C	<6mths
L100	1311	Roman	sus	M2	e	A	<6mths
L100	1311	Roman	sus	M3	ne		<6mths
L105	1402	Roman	sus	P4	e	A	c 6mths
L105	1402	Roman	sus	Dm1	e	K	c 6mths
L105	1402	Roman	sus	M2	e	E	c 6mths
L105	1402	Roman	sus	M3	nfe		c 6mths
L108	1574	Roman	o/c	Dp3	nfe	<A	neo
L108	1574	Roman	o/c	Dp4	nfe	<A	neo
L108	1574	Roman	o/c	M1	ne		neo
L105	1574	Roman	sus	Dp3	nfe	<A	neo

Context	Finds no	Period	Taxa	Tooth no	Eruption	TWS	Est. Age
L105	1574	Roman	sus	Dp4	nfe	<A	neo
L105	1574	Roman	sus	M1	nfe		neo
L108	1582	Roman	sus	P4	e	A/B	6-12mths
L108	1582	Roman	sus	M1	e	G	6-12mths
L108	1582	Roman	sus	M2	e	C	6-12mths
L109	1521	Roman	o/c	Dp3	e	B	<2mths
L109	1521	Roman	o/c	Dp4	e	B/C	<2mths
L110	1634	Roman	o/c	Dp3	e	C	<3mths
L110	1634	Roman	o/c	Dp4	e	C	<3mths
L123	1520	Roman	sus	P4	e	A	c 6mths
L123	1520	Roman	sus	M1	e	E	c 6mths
L123	1520	Roman	sus	M2	e	A	c 6mths
L123	1520	Roman	sus	M3	nfe		
L131	1646	Roman	o/c	Dp3	e	E	Neo
L131	1646	Roman	o/c	Dp4	e	E	Neo
L131	1646	Roman	o/c	M1	ne		Neo
L131	1646	Roman	cac	P4	e	E-F	1-2yrs
L131	1646	Roman	cac	M1	e	D	1-2yrs
L131	1646	Roman	cac	M2	e	D	1-2yrs
L131	1646	Roman	cac	M3	e	C	1-2yrs
L131	1640	Roman	sus	Dp3	e	B	Neo
L131	1640	Roman	sus	Dp4	e	B	Neo
L131	1640	Roman	sus	M1	e	A	Neo
L531	2141	Roman	bos	P4	e	E	3-4+
L531	2141	Roman	bos	M1	e	E	3-4+
L531	2141	Roman	bos	M2	e	G	3-4+
F235	1254	Roman	o/c	P4	e	H	4-6yrs+
F235	1254	Roman	o/c	M1	e	J	4-6yrs+
F235	1254	Roman	o/c	M2	e	G	4-6yrs+
F235	1254	Roman	o/c	M3	e	F	4-6yrs+
F240	1424	Roman	o/c	Dp3	e	D	<6mths
F240	1424	Roman	o/c	Dp4	e	E	<6mths
F240	1424	Roman	o/c	M1	e	D	<6mths
F240	1469	Roman	sus	P4	e	A/B	6-12mths
F240	1469	Roman	sus	M1	e	E	6-12mths
F240	1469	Roman	sus	M2	e	C	6-12mths
F240	1469	Roman	sus	M3	nfe		6-12mths
F246	1348	Roman	o/c	P4	e	A	c 6mths
F246	1348	Roman	o/c	DM1	e	E	c 6mths
F246	1348	Roman	o/c	DM2	e	F	c 6mths
F246	1348	Roman	bos	Dp4	e	L	6-12mths
F246	1348	Roman	bos	DM1	e	H	6-12mths
F246	1348	Roman	bos	DM2	e	G	6-12mths
F246	1348	Roman	bos	M3	nfe	A	6-12mths
F247	1297	Roman	bos	P4	e	H	4-6yrs+
F247	1297	Roman	bos	M1	e	G	4-6yrs+
F247	1297	Roman	bos	M2	e	F	4-6yrs+
F247	1297	Roman	bos	M3	e	F	4-6yrs+
F283	1465	Roman	o/c	P4	e	K	6-8yrs+

Context	Finds no	Period	Taxa	Tooth no	Eruption	TWS	Est. Age
F283	1465	Roman	o/c	M1	e	I	6-8yrs+
F283	1465	Roman	o/c	M2	e	H	6-8yrs+
F283	1465	Roman	o/c	M3	e	H	6-8yrs+
F283	1517	Roman	sus	Dp4	e	B/C	<2mths
F283	1517	Roman	sus	M1	e	A	<2mths
F284	1466	Roman	sus	Dp4	e	B/C	<2mths
F284	1466	Roman	sus	M1	e	A	<2mths
F284	1466	Roman	sus	M1	e	H	c 1yr
F284	1466	Roman	sus	M2	e	E	c 1yr
F284	1466	Roman	sus	M3	ne		c 1yr
F284	1466	Roman	sus	Dp4	e	G	2-6mths
F284	1466	Roman	sus	M1	e	C	2-6mths
F284	1466	Roman	sus	M2	ne		2-6mths
F284	1554	Roman	o/c	Dp3	e	B	c 1mth
F284	1554	Roman	o/c	Dp4	e	C	c 1mth
F284	1554	Roman	o/c	M1	ne		c 1mth
F383	2204	Roman	cac	Dp4	e	F	
F383	2204	Roman	cac	M1	e	D	
F383	2204	Roman	cac	M2	e	B	
F707	1614	Roman	cee	Dp4	e	G	
F707	1614	Roman	cee	M1	e	F	
F707	1614	Roman	cee	M2	ne		
F726	1776	Roman	o/c	Dp3	e	A	<1mth
F726	1776	Roman	o/c	Dp4	e	A	<1mth
F726	1776	Roman	o/c	M1	ne		<1mth
F791	2192	Roman	sus	M2	e	E	c 1yr
F791	2192	Roman	sus	M3	e	A	c 1yr
F791	2192	Roman	sus	Dp3	e	D	<3mths
F791	2192	Roman	sus	Dp4	e	E	<3mths
F791	2192	Roman	sus	M1	e	A	<3mths
L155	1757	Col & Boud	bos	Dp4	e	N	c 1-2yrs
L155	1757	Col & Boud	bos	M1	e	H	c 1-2yrs
L155	1757	Col & Boud	bos	M2	e	G	c 1-2yrs
L155	1757	Col & Boud	bos	M3	e	c	c 1-2yrs
L215	2105	Col & Boud	sus	P4	e	A	c 1yr
L215	2105	Col & Boud	sus	M1	e	D	c 1yr
L215	2105	Col & Boud	sus	M2	e	B	c 1yr
L215	2105	Col & Boud	sus	M3	ne		c 1yr
L351	2023	Col & Boud	sus	P4	e	J	8yrs+
L351	2023	Col & Boud	sus	M1	e	L	8yrs+
L370	1210	Col & Boud	sus	Dp3	e	A	<1mth
L370	1210	Col & Boud	sus	Dp4	e	B	<1mth
L370	1210	Col & Boud	o/c	Dp3	e	K	4-6mths
L370	1210	Col & Boud	o/c	Dp4	e	H	4-6mths
L370	1210	Col & Boud	o/c	M1	e	C	4-6mths
L390	1316	Col & Boud	sus	Dp3	e	A	<1mth
L390	1316	Col & Boud	sus	Dp4	e	A	<1mth
L390	1316	Col & Boud	sus	M1	ne		<1mth
L241	1296	Col & Boud	cee	P4	e	D	

Context	Finds no	Period	Taxa	Tooth no	Eruption	TWS	Est. Age
L241	1296	Col & Boud	cee	M1	e	G	
L241	1296	Col & Boud	cee	M2	e	E	
L241	1296	Col & Boud	cee	P4	e	D	
L241	1296	Col & Boud	cee	M1	e	G	
L241	1296	Col & Boud	cee	M2	e	E	
L241	1296	Col & Boud	cee	M3	e	D	
L164	1827	Military	o/c	P4	e	H	6-8yrs+
L164	1827	Military	o/c	M1	e	J	6-8yrs+
L164	1827	Military	o/c	M2	e	H	6-8yrs+
L164	1827	Military	o/c	M3	e	F	6-8yrs+
L420	1629	Military	sus	Dp4	e	C	c1mth
L420	1629	Military	sus	M1	nfe		c1mth
L420	1629	Military	sus	M2	notformed		c1mth
L466	1764	Military	o/c	P4	e	H	c6yrs
L466	1764	Military	o/c	M1	e	G	c6yrs
L466	1764	Military	o/c	M2	e	F	c6yrs
L466	1746	Military	o/c	M3	e	D	c6yrs
L466	1746	Military	o/c	Dp4	e	H	6-12mths
L466	1746	Military	o/c	M1	e	H	6-12mths
L466	1746	Military	o/c	M2	e	F	6-12mths
L466	1746	Military	o/c	M3	ne		6-12mths
L467	1899	Military	bos	P4	e	K	c6yrs
L467	1899	Military	bos	M1	e	H	c6yrs
L467	1899	Military	bos	M2	e	G	c6yrs
L467	1899	Military	bos	M3	e	G	c6yrs
L467	2144	Military	o/c	Dp4	e	D	<3mths
L467	2144	Military	o/c	M1	nfe	B	<3mths
L467	2144	Military	o/c	M2	ne		<3mths
L573	2265	Military	o/c	Dp4	e	M	2-6mths
L573	2265	Military	o/c	M1	e	H	2-6mths
L573	2265	Military	o/c	M2	nfe	A/B	2-6mths
F561	2034	Military	o/c	Dp4	e	K	2-6mths
F561	2034	Military	o/c	M1	e	H	2-6mths
F561	2034	Military	o/c	M2	e	F	2-6mths
F561	2034	Military	o/c	M3	ne		2-6mths
F845	2514	Military	bos	P4	e	G	6-8yrs+
F845	2514	Military	bos	M1	e	K	6-8yrs+
F845	2514	Military	bos	M2	e	J	6-8yrs+
F845	2514	Military	bos	M3	e	F	6-8yrs+

Appendix 2: Bone measurements

Parts of skeleton (element – [ELEM]) are coded as follows:

HC	horncore
HU	humerus
MC	metacarpal
MT	metatarsal
MP	metapodial
PE	pelvis
FE	femur
TI	tibia (tibiotarsus in birds)
AS	astragalus
CA	calcaneum
PH	phalange
CU	cuboid
COR	coracoid
UL	ulna
RA	radius
TMT	tarso-metatarsus
CAM	carpo-metacarpus

Bones are fully fused/adult unless coded:

U = unfused; UE = unfused epiphysis; PF = part-fused; J = juvenile (for birds)

Taxa (species) are coded as follows:

BBos		(cattle)
O	Ovis/Capra	(sheep/goat)
OVA	Ovis aries	(sheep)
SSus	scrofa	(pig)
EQ	Equis	(horse)
ORC	Oryctolagus cuniculus	(rabbit)
LEP	Lepus lepus	(hare)
CEE	Cervus elephas	(red deer)
CAC	Capreolus capreolus	(roe deer)
CAF	Canis familiaris	(dog)
FEC	Felis catus	(cat)
VUV	Vulpes vulpes	(fox)
MEM	Meles meles	(badger)
RAR	Rattus rattus	(black rat)
LUL	Lutra lutra	(otter)
URA	Ursus arctos	(brown bear)
APS	Apodemus sylvaticus	(woodmouse)
MUM	Mus musculus	(mouse)
LIL	Limosa	(godwit)
PL	Plover sp.	
ATN	Athene noctuta	(little owl)
GAG	Gallinago gallinago	(snipe)
SCR	Scolopax rusticola	(woodcock)
TUM	Turdus merula	(blackbird)
GAR	Garrulus glandarius	(jay)
GN	Gallus/Numida	(domestic/guinea fowl)
GNP	Gallus/Numida/Phasianus	(domestic fowl/guinea fowl/pheasant)
VAN	Vanellus vanellus	(lapwing)
ANS	Anserinae	(goose)
ANB	Anser branta	(small goose)
ANA	Anas platyrhynchos	(mallard)
ANC	Anas crecca	(teal)

Table 34: bone measurements.

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	Gl	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
L80	1302	Roman	ana	f	cmc	58.5	7.1												
F236	1453	Roman	ana	f	fe	54.5	11.9								4.99				
F298	1544	Roman	ana	f	hu	95.1	14.9								7.82				
L111	1571	Roman	ana	f	tmt	48.6	10.1								4.45				
L102	1415	Col & Boud	anp	f	cmc	56.3													
L500	1902	Col & Boud	anp	f	tmt		9.4	10.3							5.34	19.5			
L116	1508	Roman	anp	f	tib	79.2	8.59	9.29							4.42				
F383	2203	Roman	anp	f	tmt		8.84								4.27				
L217	2170	Roman	anp	f	tmt	42.4													
F172	1107	Roman	ans	f	hu		24.3								11.5				
L193	2042	Roman	ans	f	hu														
L95	1355	Roman	ans	f	hu	177	25								12				
L131	1626	Roman	ans	f	ra	148	10.9								5.52				
L80	1256	Roman	ans	f	tib		17.4	15.96							9.8				
L466	1777	Military	aries		hc														
L473	1987	Col & Boud	bos		hc														
F241	1296	Col & Boud	bos	f	mc						48.6	51.23	24.05	24.41					
L155	1757	Col & Boud	bos	f	mc						45.9	51.6	24.5	25.1	29.2				
L390	1316	Col & Boud	bos	f	mc						46.1	49.65	23.99	28.53					
L451	1749	Col & Boud	bos	f	mc	170					45	49.31	23.37	23.21	27.5	8.88			
L461	1736	Col & Boud	bos	f	mc						50.8	58.07	28.04	27.82					
L473	1987	Col & Boud	bos	f	mc						46								
F779	2135	Col & Boud	bos	f	mt						44.4	44.64	21.93	20.61					
L155	1757	Col & Boud	bos	f	mt						42.9	46.9	21.1	23.1	25				
L155	1757	Col & Boud	bos	f	mt						45.5	46.2	22.5	21.4	29.5				
L159	1971	Col & Boud	bos	f	mt						46	49.25	23.1	23.95					
L199	2189	Col & Boud	bos	f	mt						47.2	52.43	24.78	24.14		18.3			
L438	1601	Col & Boud	bos	uf	mt						42.8								

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
L438	1601	Col & Boud	bos	f	mt						46.2	49.62	23.03	23.79					
L449	1656	Col & Boud	bos	f	mt						50.2	54.91	25.5	26.25					
L473	1987	Col & Boud	bos	f	scap														
L785	2097	Col & Boud	bos	f	ul	245	62.3								37.2				
F220	1189	med/Rom	bos	f	ast	61.8													
F220	1635	med/Rom	bos	f	mc						52.8	57.25	26.82	27.44					
F637	2416	Military	bos	f	ast	55.8													
F637	2416	Military	bos	uf	mc	126					38.5				21				
F786	2516	Military	bos	f	mc						46.7	50.1	24.35	23	31.2				
L466	1764	Military	bos	f	mc						47.6	48.03	22.48	22.64					
L466	1777	Military	bos	uf	mc						49.7								
L466	1777	Military	bos	f	mc						46.3	49.34	22.94	23.37					
F221	1234	Military	bos	f	mt						43.4	45.48	22.04	20.29	26.4				
L466	1764	Military	bos	f	mt						42.4	46.91	23.23	21.45					
L466	1764	Military	bos	f	mt						43.5	46.5	20.95	22.48	25.7				
L466	1777	Military	bos	f	mt						51.4	54.25	26	24.74	34.3				
F637	2416	Military	bos	f	tib		52.6				38.5				21				
F773	2062	Military	bos	f	tib		53.3				34.8								
F234	1257	Roman	bos	f	ast	67.6													
F240	1424	Roman	bos	f	ast	56.9										11			
F246	1416	Roman	bos	f	ast	49.2										11.5			
L105	1402	Roman	bos	f	ast	60.4													
L131	1640	Roman	bos	f	ast	67.8													
L92	1475	Roman	bos	f	ast	57.4													
F234	1257	Roman	bos	f	calc	124													
F465	1258	Roman	bos	f	calc	93.7										18.2			
F752	1999	Roman	bos	uf	calc	115										11			
L90	1280	Roman	bos	f	calc	116										14.2			
F233	1259	Roman	bos	f	mc						50.1	55.19	26.57	25.94					
F234	1257	Roman	bos	f	mc						52.2	54.35	26.3	26.51					

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
F238	1253	Roman	bos	f	mc						50	53.17	25.48	24.72	31				
F298	1494	Roman	bos	f	mc								23.3		29.3				
F707	1614	Roman	bos	uf	mc						52.4								
F791	2192	Roman	bos	f	mc						48.2	53.85	25.69	25.83					
F791	2192	Roman	bos	uf	mc	141					44.9				26.9				
F791	2192	Roman	bos	f	mc						48.6	53.53	24.96	25.97					
F791	2192	Roman	bos	f	mc						49.1	53.11	24.66	24.23					
F791	2192	Roman	bos	f	mc						47.8	47.19	23.25	21.33					
L105	1574	Roman	bos	f	mc						47.3	52.44	25.5	25.08					
L109	1527	Roman	bos	f	mc						44.9	48.78	22.68	23.52	22.9				
L131	1584	Roman	bos	f	mc						48.8	47.72	22.15	23.15					
L131	1640	Roman	bos	f	mc						51.6	53.69	24.24	26.38	28.3				
L131	1640	Roman	bos	f	mc						46.4	50.38	24.13	24.07					
L150	1676	Roman	bos	f	mc						52.1	57.35	27.55	27.02					
L70	1907	Roman	bos	f	mc						46.7	50.19	23.09	24.08					
L70	1957	Roman	bos	f	mc						46.9	51.58	24.02	24.64					
L73	1101	Roman	bos	f	mc						49.7	56.81	27.41	27.35					
L73	1102	Roman	bos	f	mc						49.1	53.53	26.2	25.21					
L74	1249	Roman	bos	f	mc						41.1	50.27	23.38	33.37				26.98	
L92	1505	Roman	bos	f	mc						50.7	52.63	26.95	25.6					
F233	1259	Roman	bos	f	mt						47.7	50.86	23.47	24.51					
F240	1424	Roman	bos	f	mt						53.6	57.23	27.68	26.6					
F246	1348	Roman	bos	f	mt						46.3	51.97	25.75	24.14					
F284	1466	Roman	bos	f	mt						46	51.26	24.09	24.98		17			
F383	2223	Roman	bos	uf	mt						49.8				23.9				
F465	1258	Roman	bos	f	mt	192					48.4		24.55						
F791	2192	Roman	bos	f	mt						48.9	51.84	24.09	24.86	28.1				
F791	2192	Roman	bos	f	mt						46.3	46.33	21.13	22.01					
L117	1455	Roman	bos	f	mt						43.4	47.27	22.96	21.91					
L131	1626	Roman	bos	f	mt						46.3	47.72	21.81	22.8					

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
L131	1640	Roman	bos	f	mt						46.8	49.98	24.49	22.82	28.3				
L145	1631	Roman	bos	f	mt						45.9	47.95	21.85	23.43	27.1				
L156	1771	Roman	bos	f	mt						50.1	53.95	24.84	26.01	29.1				
L73	1102	Roman	bos	f	mt								22.78						
L74	1249	Roman	bos	f	mt						44.8	47.93	22.02	22.86					
L86	1312	Roman	bos	f	mt						44.8	51.19	24.05	25.07	27.1				
L86	1359	Roman	bos	f	mt						46.5	49.96	22.71	22.74					
L90	1280	Roman	bos	f	mt						45.9	48.55	23.55	21.91					
L92	1475	Roman	bos	f	mt						42.6	46.03	21.16	21.5	23.8				
L97	1426	Roman	bos	f	mt						47.9	49.12	24.03	22.97					
F234	1250	Roman	bos	f	tib	301	64.7								36.4				
F246	1416	Roman	bos	f	tib	268	43	32.86							26.3				
F791	2192	Roman	bos	f	tib		59.2									8.05			
L92	1475	Roman	bos	f	tib		53												
L94	1281	Roman	bos	f	tib		40.7	53.54											20.79
F707	1614	Roman	bos	f	ul		58.3								42.4				
L70	1354	Roman	bos	f	ul	306	69								44.3		17.36		
L86	1312	Roman	bos	f							45.1	49.01	23.13	23.7					
F383	2204	Roman	cac	uf	calc	38.7										20.9			
L386	1367	Roman	cac	f	calc	56.1													art.43.79
F246	1416	Roman	cac	f	mc	156					14.2	14.49	3.35	3.53	6.59				
F221	1197	Military	caf	f	fe		36.2	35.95							16				
L108	1574	Roman	caf	f	fe	148	26.8								12.8				
L73	1200	Roman	caf	f	hu	143				11.5					11.9				
L74	1249	Roman	caf	f	hu				19.2	12.4									
	1269	Roman	caf	f	hu	158			19.4	11.6					12		act.20.95		
L108	1574	Roman	caf	f	tib	142	18.7								10.3				
L95	1303	Roman	caf	f	tib	96.6	16.8	11.97							10.7				
	1269	Roman	caf	f	ul	183													
L512	2040	Military	cee	f	mc						47.3	51.39	24.83	24.46					

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
L512	2040	Military	cee	f	mt						46.2	49.07	23.49	22.11	31				
L443	1637	Roman	cee	f	calc	75.4													
L111	1643	Roman	cee	f	mc	285					44.7	44.63	20.91	28.69					
L52	1305	Roman	cee	f	mc						44.5	49.1	23.92	23.22					dic10.37
L111	1643	Roman	cee	f	pph	58.1	22.5								21.3				
L111	1643	Roman	cee	f	pph	59.8	20.7								21.3				
L66	1403	Roman	cee	f	pph	58.7	20.1	16.46											
L73	1200	Roman	cmc	f	cmc	60													
F283	2223	Roman	eq	f	mt						37.4	38.07			25.9				
F283	2223	Roman	eq	f	pph	64.7	32.3												
L66	1321	Roman	gag	f	cmc	30.3	4.61												
L233	2388	Col & Boud	gal	f	cmc	37.1	7.54												
L390	1316	Col & Boud	gal	f	fe	73	14								6.31				
L159	1971	Col & Boud	gal	f	hu	64.3	12.6								6.68				
L215	2105	Col & Boud	gal	f	hu										7.97				
L225	1315	Col & Boud	gal	f	hu										7.48		16.91		
L244	2331	Col & Boud	gal	f	hu										6.58				
L244	2331	Col & Boud	gal	f	ra	71.5	7.48								3.9				
L225	1315	Col & Boud	gal	f	tib		11.9	11.77							6.58				
L564	2378	Col & Boud	gal	f	tib		11.5	12.87							7.34				
L99	1309	Col & Boud	gal	f	tib	117	11.4								6.27				
L370	1210	Col & Boud	gal	f	tmt	78	12.9								6.13				
F220	1189	med/Rom	gal	f	ra	70.4	7.01												
F796	2516	Military	gal	f	cor	47.4													
F862	2419	Military	gal	f	hu	75.8									8.15				
F786	2516	Military	gal	f	tib	101	10.1	10.15							5.13				
F786	2547	Military	gal	f	tib		10.5	11.05							6.08	35.1			
F792	2519	Military	gal	f	tib		9.22	10.37							5.22				
F862	2419	Military	gal	f	tib	99	10.1	9.89							5.63				
F718	1685	Roman	gal	f	cmc	41.3	8.46												

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
F791	2192	Roman	gal	f	cmc	41.6	8.09												
L111	1410	Roman	gal	f	cmc	33.7	7.18												
L131	1593	Roman	gal	f	cmc	35.1	7.29												
L131	1584	Roman	gal	f	cmc	41	8.18												
L66	1300	Roman	gal	f	cmc	33.3	5.6											38.04	
L66	1317	Roman	gal	f	cmc	36.2													
L92	1283	Roman	gal	f	cmc	39.2													
F283	1517	Roman	gal	f	cor	55.8													
L105	1476	Roman	gal	f	cor	49.3													
L131	1593	Roman	gal	f	cor	50.2													
L182	1909	Roman	gal	f	cor	57.8													
L182	1909	Roman	gal	f	cor	54.3													
L221	2163	Roman	gal	f	cor	51.8													
L66	1300	Roman	gal	f	cor	52.3													
L66	1448	Roman	gal	f	cor	51.2													
L73	1102	Roman	gal	f	cor	52.7													
F217	1193	Roman	gal	f	fe	88.2	17								7.81				
L117	1538	Roman	gal	f	fe	70.9	12.6												
L131	1640	Roman	gal	f	fe	70.4	13.3								6.35				
L131	1647	Roman	gal	f	fe	67.4	12.6												
L66	1300	Roman	gal	f	fe	71.4	13.3								7.7				
L66	1448	Roman	gal	f	fe	72.4	13.6								6.4				
F236	1518	Roman	gal	f	hu	66.5	13.8								6.44				
F272	1372	Roman	gal	f	hu	67	13.9								7.08				
F84	1341	Roman	gal	f	hu		14.8								7.6				
L110	1634	Roman	gal	f	hu	69	14.6								6.87				
L126	1547	Roman	gal	f	hu	64	13.2								6.43				
L131	1640	Roman	gal	f	hu	71.8	15.1								7.3				
L139	1608	Roman	gal	f	hu	66.8	14.1								6.58	12.2			
L182	1909	Roman	gal	f	hu	72.2	15.7							8.07	20.3				

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
L66	1110	Roman	gal	f	hu	13.7									6.44				
L66	1464	Roman	gal	f	hu	64.5	14								7.61				
L66	1448	Roman	gal	f	hu	72.6	15.4								7.61				
L73	1102	Roman	gal	f	hu		13.8								6.59				
L74	1222	Roman	gal	f	hu	69.4	14.8								6.91				
L75	1201	Roman	gal	f	hu	74.1	13.9								5.82				
L217	2134	Roman	gal	f	ra	65.4										18.1			
L75	1201	Roman	gal	f	scap	67.3													
F236	1453	Roman	gal	f	tib	107	9.86								5.41				
F236	1518	Roman	gal	f	tib		13.7	11.65											
F727	2082	Roman	gal	f	tib		11.1	12.77							6.33	13.4			
L100	1311	Roman	gal	f	tib	118	11.2								6.49				
L117	1455	Roman	gal	f	tib	100	10.3	10.34							5.54	17.8			acet.22.91
L123	1520	Roman	gal	f	tib		13.5	11.57							6.39				24.74
L131	1626	Roman	gal	f	tib	103									5.77	19.9			
L131	1640	Roman	gal	f	tib	109	10.6								6.15				
L131	1640	Roman	gal	f	tib		11.1	12.2											
L66	1464	Roman	gal	f	tib		12.1	13.46							7.7				
L66	1448	Roman	gal		tib	11.4	11								6.09			35.48	
L66	1448	Roman	gal		tib		10.3	11.4							6.05				
L66	1467	Roman	gal		tib	10.2	12.1								5.8				
L69	1295	Roman	gal	f	tib	121	11.9								6.52				
L90	1280	Roman	gal	f	tib		12	13.12							7.03				
L95	1355	Roman	gal	f	tib	112	12.9	10.66							6.07				
F246	1348	Roman	gal	f	tmt	67.8	12.5								6.24				
F283	1465	Roman	gal	f	tmt	79.6									6.37				
F283	1465	Roman	gal	f	tmt	69.5	11.4								5.51				
L108	1574	Roman	gal	f	tmt	74.7	12.2								6.54	19			
L116	1508	Roman	gal	f	tmt	81.9	14.2								6.68	11.4			
L131	1593	Roman	gal	f	tmt		11.3								5.94	12			

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	Gl	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
L131	1626	Roman	gal	f	tmt	75.4	12.8								7.01				
L217	2134	Roman	gal	f	tmt	79	13								7.18				
L445	1637	Roman	gal	f	tmt	82.1	12.9								6.43				
L73	1102	Roman	gal	f	tmt	81.7	14.8								7.19				
L73	1102	Roman	gal	f	tmt	67.8	12.3								5.6		23.59		
L75	1108	Roman	gal	f	tmt	73.6	11.9								58.3				
L92	1283	Roman	gal	f	tmt		12.1								5.7				
F84	1341	Roman	gal	f	ul	66.7													
L100	1311	Roman	gal	f	ul	82													
L105	1574	Roman	gal	f	ul	77.7	6.68								4.93				
L131	1584	Roman	gal	f	ul	77													
L131	1626	Roman	gal	f	ul	76													
L66	1448	Roman	gal	f	ul	72.1	10.3								5.24				
L75	1201	Roman	gal	f	ul	69.3									3.33				
L79	1211	Roman	gal	f	ul	68.7	9.88								5.5				
L91	1432	Roman	gal	f	ul	71.7	9.64								5.18				
L97	1426	Roman	gal	f	ul	81.8	14.7												
F217	1193	Roman	gar (J)	f	tib	58.8	6.32								30.3				
L178	1912	Roman	lil	f	cmc	34.7											21.36		
L178	1912	Roman	lil	f	tmt	57.1	6.65								2.81				
L178	1912	Roman	lil	f	ul	66.8													
L178	1912	Roman	lil	f	ul	68.3													
L95	1303	Roman	mt								51.9	55.34	25.66	26.85					
L103	2169	Col & Boud	o/c	f	ast	25.5													
L103	2169	Col & Boud	o/c	f	ast	22.3													
L198	2027	Col & Boud	o/c	f	ast	27.1													
F782	2081	Col & Boud	o/c	f	calc	45.3													
L198	2027	Col & Boud	o/c	f	calc	56.7													
L468	1837	Col & Boud	o/c	f	cor	53.6													
L225	2325	Col & Boud	o/c	f	hu				25.8	13.8					14.9				

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
L373	1059	Col & Boud	o/c	f	hu				22.8	15.7									
L246	2301	Col & Boud	o/c	f	mc						28	27.28	12	12.15					
L376	1192	Col & Boud	o/c	uf	mc	78.3					19.2				9.72	44			
L449	1656	Col & Boud	o/c	f	mc	109					21.4	21.75	10.09	9.71	11.4				
L99	1309	Col & Boud	o/c	uf	mc	69.1					17.8				8.41	21.9			
L155	1847	Col & Boud	o/c	uf	mt	108									10.5				
L461	1736	Col & Boud	o/c	f	mt						19.7	19.9	8.94	9.4	9.48				
F761	2039	Col & Boud	o/c	f	tib		25.1	19.34											
L103	2169	Col & Boud	o/c	uf	tib		20.5	14.54											
L103	2169	Col & Boud	o/c	f	tib		22.5	17.77											
L451	1749	Col & Boud	o/c	f	tib		22.1	17.2						11.79					
F761	2039	Col & Boud	o/c	f	ul		23.2								13.9				
F220	1189	med/Rom	o/c	uf	mc	85.2					17.6	9.71							
L528	2071	Military	o/c	f	ast	27.2													
L604	2518	Military	o/c	f	fe		31.3	36.68											
F780	2138	Military	o/c	f	hu				22.7	11.8					12.5				
F780	2138	Military	o/c	f	hu				23.8	12.1									
L466	1764	Military	o/c	f	hu				24.2	11.7									
L545	2160	Military	o/c	f	hu				25	13.2									
L590	2322	Military	o/c	f	hu				23.8	12.1					12.7				
F780	2138	Military	o/c	uf	mc	115					20.3				12				
L563	2178	Military	o/c	uf	mc	105					19.4				10.5				
F743	1804	Military	o/c	uf	mt	93.7					22.3				12.9				
L461	2009	Military	o/c	f	mt						22.7	22.59	9.89	9.94					
L466	1764	Military	o/c	uf	mt	112					18.9				10.2				
F780	2138	Military	o/c	uf	ul	125									13.9				
F465	1258	Roman	o/c	f	calc	66.8													
F727	2082	Roman	o/c	f	calc	45.5													
F791	2192	Roman	o/c	uf	calc	62										17.7			
L110	1634	Roman	o/c	f	calc	48.9													

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
L73	1102	Roman	o/c	uf	calc	66.1													
L193	2161	Roman	o/c	f	fe		35.4	43.43							15.1				
L94	1281	Roman	o/c		hc														
F273	1595	Roman	o/c	f	hu				26.4	12.3					12.9				
L117	1507	Roman	o/c	f	hu				21.9	11.7									
L160	1716	Roman	o/c	f	hu				22.7	14.3									
L92	1505	Roman	o/c	f	hu				23.3	11.7					11.3				
L92	1475	Roman	o/c	f	hu				23	12.2									
F277	1900	Roman	o/c	f	mc						27.7	27.22	12	12.64					
L100	1311	Roman	o/c	uf	mc	103					22.3				13.3				
L105	1515	Roman	o/c	uf	mc	93.2													
L123	1520	Roman	o/c	f	mc						22.9	22.97	10.77	10.25					
L126	1548	Roman	o/c	uf	mc	75.5					21				12				
L131	1626	Roman	o/c	f	mc	101					24.2	24.78	11.53	11.02	14.2				
L131	1640	Roman	o/c	f	mc	113					21.7	22.27	10.24	9.44				28.16	
F202	1023	Roman	o/c	f	mt						20.4		10.46		10.3				
F202	1023	Roman	o/c	f	mt						21.4	22.34	10.47	9.44	10.6				
F240	1424	Roman	o/c	uf	mt	73					16.7					9.1			
L109	1521	Roman	o/c	uf	mt						20.3				9.94				
L110	1638	Roman	o/c	f	mt	137					21.5	21.77	9.85	9.72	12.7				
L131	1553	Roman	o/c	f	mt	126					20.5	20.11	8.58	9.71	10.4				
L131	1640	Roman	o/c	uf	mt	105					19.7				11.2				
L136	1607	Roman	o/c	uf	mt	75.9					15.4				8.13				
L145	1631	Roman	o/c	uf	mt						19.6				10.3				
F277	1900	Roman	o/c	f	pel														
L74	1222	Roman	o/c	f	pelvis														
L131	1640	Roman	o/c	uf	scap														
L74	1222	Roman	o/c	f	scap														
L80	1256	Roman	o/c	f	scap														
F202	1048	Roman	o/c	f	tib		24.4	17.84							12.4				

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
F277	1900	Roman	o/c	f	tib		27	21.59											
F791	2192	Roman	o/c	flv	tib		23.7								13.3				
F791	2192	Roman	o/c	f	tib		26.7								15				
L147	1908	Roman	o/c	f	tib		21.2	17.92							13.1				
L74	1221	Roman	o/c	f	tib		23.6	18.4							14.2				
L89	1230	Roman	o/c	f	tib		22.5	16.05							12.9				
L110	1638	Roman	o/c	f	ul	75.1													
L172	1897	Roman	o/c	f	ul		24.2								14.4				
L93	1288	Roman	o/c	f	ul	129									13.4				
L95	1303	Roman	o/c	f		22.8	17.8								12.7				
L89	1230	Roman	oa	f	hc											19.5			
F862	2419	Military	orc	f	hu		12.7		6.24	6.8					7.75				
L110	1634	Roman	pl	f	hu		7.7								3.5				
F696	2543	Military	scr	f	tmt	37.1									3.13				
F284	1491	Roman	scr	f	cmc	37	4.71												
L123	1564	Roman	scr	f	cmc	38.6	51.5												
L93	1288	Roman	scr	f	cmc	36.6													
L55	1110	Roman	scr	f	hu	59.2	9.27								4.22				
L131	1623	Roman	scr	f	tib		6.36	6.23							3.3				
L110	1634	Roman	scr	f	tmt	37.6	6.82								3.3				
L564	2378	Col & Boudican	sus	f	hu				22.4	18.7									
F220	1189	med/Roman	sus	f	fe		44.3	55.43											
F746	2106	Military	sus	f	ast	41										12.6			
F1009	2590	Military	sus	f	hu				33	21.6									
F696	2543	Military	sus	f	hu		28.3	19.91											
F286	1475	Roman	sus	f	ast	41.7													
F791	2192	Roman	sus	f	ast	38.6													
L136	1607	Roman	sus	f	ast	44.1										17.7			
L109	1521	Roman	sus	f	calc	68.9										5.83			
L92	1474	Roman	sus	uf	calc	63.7													

Ctxt	Finds no	Phase	Taxa	Fusion	Elem.	GI	Bd	Dd	BT	HTC	BatF	Bfd	A	B	sd/sc	Bp	Bwmax	Bwmin	Other
F709	1587	Roman	sus	f	hu				30.2	18.6					16.4				
F791	2192	Roman	sus	f	hu				31.6	23.3						16.9			
L109	1521	Roman	sus	f	hu				27.9	17									
L126	1548	Roman	sus	f	tib		28.1	23.97							18.8	19.7			
L131	1593	Roman	sus	f	tib		26.8												
L94	1287	Roman	sus	f	tib		29.1	24.79							20.2				
L105	1574	Roman	sus	uf	ul	92.7	24.2								14.3				
L92	1505	Roman	sus	f	ul		28.5								18.6				
L193	2161	Roman	sus	f					30.1	19.3									
L116	1508	Roman	van	f	tib		6.53	5.88							3.11				26.01

6.12 Fish bones

by Alison Locker

A small assemblage of fish bones was recovered from sieved samples primarily of Roman date. The following species/families were identified; elasmobranch indet., eel (*Anguilla anguilla*), herring (*Clupea harengus*), Clupeidae, Salmonidae, whiting (*Merlangius merlangus*), mackerel (*Scomber scombrus*), plaice (*Pleuronectes platessa*), plaice/flounder (*Pleuronectes platessa/Platichthys flesus*), *cf* dab (*Limanda limanda*), sole (*Solea solea*) and indeterminate flatfish.

Tables 35-42 show the identifiable fish from each context. In the 'Indeterminate' category only those bones potentially identifiable have been included, featureless fragments and nonspecific fin rays have not been counted. The assemblage is discussed by period followed by a general discussion on the biology of the fish.

Period 2: the fortress

Table 35 shows the small number of identifiable fish from this early phase, with a single Clupeid vertebra (herring family) and the rest are flatfish. A flatfish dentary from F290 (posthole) was in poor condition and not identifiable to species. The indeterminate vertebra from F845 (pit) was burnt. From the burnt patch (L497) an indeterminate vertebra was not burnt and comparatively 'fresh' in appearance, which suggests it could be intrusive.

Table 35: the fish from Period 2, the fortress (AD 44-49).

	F 243	F 290	F 845	L 497	total
Clupeid	0	0	1	0	**1**
Plaice	1	0	0	0	**1**
Flatfish	0	1	0	0	**1**
Indet*	0	1	1	1	**3**
Total	**1**	**2**	**2**	**1**	**6**

Period 3: the *colonia*

From this period just two species were identified from single bones from a pit as shown below.

Table 36: the fish from Period 3, the *colonia* (AD 49-60/1).

	F 241
Eel	3
Mackerel	1
Indet	4
Total	**8**

The eel included an articular from a fish of approximately 30 cm in length, the indeterminate, but potentially identifiable bones comprised vertebrae and a pharyngeal. Two sea urchin spines were found in F779 (pit) and may be fossil.

Period 4: Boudican

The four contexts included floor levels and a burnt occupation layer (L225) and some of the identified fish from this feature were burnt.

Table 37: Period 4, Boudican (AD 60/1-*c* AD 70).

	L225	L397	404	L550	Total
Eel	2	0	1	0	**3**
Herring	1	0	0	0	**1**
Plaice	1	0	0	0	**1**
Plaice/flounder	0	0	1	1	**2**
Flatfish	1	1	0	0	**2**
Total	**5**	**1**	**2**	**1**	**9**

Again a limited number of species is represented; eel, herring and the most common flatfishes, plaice and/or flounder. These two closely related fish are difficult to separate on many elements. The 'scorched clay layer' (L 397) also included a partially burnt fragmentary first anal pterygiophore of flatfish, the 'scorched floor' (L404) a lightly burnt eel vertebra and from the 'burnt floor' (L550) a burnt plaice/flounder vertebra.

Period 5: Flavian

Fish were identified from contexts described as Period 5, while others were attributed as 5a, 5b and 5c. The general Period 5 contexts are shown in Table 38 below.

Table 38: Period 5, Flavian (AD 70-later 2nd century.

	F233	F234	F791	L105	Total
Eel	0	9	1	2	12
Salmonid	0	0	2	0	2
Whiting	0	0	1	0	1
Mackerel	2	0	0	0	2
Plaice/flounder	1	3	0	1	5
Dab	0	0	1	0	1
Total	**3**	**12**	**5**	**3**	**23**

The first three contexts are pit and L105 a soil level. None contained many fish, though the Flavian period as a whole had the largest sample of fish. The two salmonid vertebrae from L791 are closer to trout (*Salmo trutta*) than salmon (*Salmo salar*) and from a fish around 22 cm total length. The eel dentaries from F234 are from fish around 20-25 cm in length. The plaice/flounder vertebra from pit 233 was burnt and encrusted with a mineral deposit, the latter suggesting the decay of organic matter within this feature. This condition is often found in cess material. An eel vertebra from 105 was also burnt and encrusted.

In Table 40, contexts L109, L131, L182, L416, L423 and L518 are accumulation/dump deposits. F240, F284 and F704 are pits and L166 an occupation layer. In the small samples available from each context there seems to be no meaningful difference between the fish found in different types of context. The largest samples, found in 5b: L138, L158 and L166 are dominated by eel, herring and plaice/flounder, the latter is the most significant group of fish from the whole site. The two salmonid vertebrae from L182 were also small and may be trout.

More evidence of encrustation was also seen in 704 on plaice/flounder vertebrae, also in 138 (in which one vertebra showed signs of compression, typically seen in cess material) and 166, all dated to Period 5b.

Table 40: Periods 5a (Flavian), 5b (late 1st to mid 2nd century) and 5c (mid to later 2nd century).

	5a	5a	5a	5a	5a	5a	5a	5b	5b	5b	5b	5c	
	F246	**L109**	**L 131**	**L 182**	**F 416**	**F 240**	**F 284**	**F 704**	**L 138**	**L 158**	**L 166**	**L 423**	**Total**
Elasmobranch	0	0	0	0	0	0	0	0	0	0	1	0	**1**
Eel	3	0	0	1	2	4	0	2	14	3	1	10	**40**
Herring	0	0	1	0	8	0	0	1	1	12	7	0	**30**
Clupeid	0	0	0	0	0	0	1	0	0	0	0	0	**1**
Salmonid	0	0	0	2	0	0	0	0	0	0	0	0	**2**
Whiting	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Mackerel	0	1	0	0	0	1	0	0	0	3	0	0	**5**
Plaice	0	0	0	0	0	1	1	1	0	0	0	0	**3**
Plaice/flounder	1	3	0	0	0	2	0	3	14	19	15	0	**57**
Sole	0	0	0	0	0	0	0	1	0	0	0	0	**1**
Flatfish	0	0	0	0	0	0	0	2	6	0	0	0	**8**
Indet	1	0	0	0	0	0	0	1	0	0	0	0	**2**
Total	**5**	**4**	**1**	**3**	**10**	**8**	**2**	**11**	**35**	**38**	**24**	**10**	**151**

Period 6: house
Only two bones from this period, one of the flatfish vertebrae was encrusted.

Table 41: Period 6, house (later 2nd-later 3rd century).

	F466
Plaice/flounder	2

Period 8: medieval
A very broadly dated context echoing the earlier exploitation of flatfishes. The herring vertebra was stained green by contact with copper or bronze.

Table 42: Period 8, medieval (12th-16th century).

	F336
herring	1
Sole	3
Flatfish	2
Indet	1
Total	**7**

Discussion
Colchester is situated just 4 miles from the Colne estuary, the river running through the city and about 8 miles to the sea to the south east. The Stour estuary is about 8 miles away to the north east, and the source of the migratory and marine species identified here could all be local.

The numbers of bones from each context are too small to compare and even between periods the number of bones is low, except for Period 5 to which the majority of the contexts are dated. There was some burning on bones as noted above and in some cases the bones were encrusted, which can be found among cess material, though only one of the bones was distorted, a possible sign of passage through the gut.

The only true fresh water species may be trout, from Period 5, though these 4 small vertebrae have been classified as salmonid, since separation between trout and salmon vertebrae can be problematic. These vertebrae are all from small fish.

Migratory species include eel, which metamorphose from larvae into elvers in freshwater and in river mouths, later returning to the sea to spawn. The fish are caught in traps or speared in large numbers during their migration and have a high oil content and calorie value. They have been a valued food fish through both prehistory and historic times eaten both fresh and salted. The other migratory species is salmon, which spawns in freshwater, though the small salmonid vertebrae are closer to trout as described above.

Of the marine species the elasmobranchs (which includes sharks and rays) were only represented by a single small vertebra from L166 in Period 5b. None of the dermal denticles from rays were found and this vertebra cannot be positively attributed to ray or small shark. Both could have been caught in inshore waters.

Herring were seasonally available in local waters as part of an autumnal migration of the southerly 'Downs' group of herring moving towards the Channel. This group supported the important East Anglian herring fishery, most famously centred on Great Yarmouth during the medieval period. Herring have a high oil content and are also rich in calories and may have been eaten both fresh and salted. The category Clupeid denotes the herring family and probably belongs to this species.

Whiting, a small gadid averaging 35 cm in length, is often found in relatively shallow waters and can be caught in some numbers. It was the only member of an important group of white food fishes which include cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*) to be found in this assemblage and only identified from a few vertebrae in Period 5.

Mackerel, another oily fish found in inshore waters in the summer when it schools in large numbers. Also found in the Mediterranean with a close relative the spanish (or

chub) mackerel (*Scomber japonicus*) it was commonly eaten by the Romans. Mackerel deteriorates very quickly when fresh and it was also used in the many forms of preserved fish, salted or as fish sauce stored in amphorae. Spanish mackerel heads were found in an amphora originating in Antibes at Winchester Palace, London (Locker 1983 and Yule 1989), though there is no evidence of that use here.

The remaining species are all flatfishes most commonly plaice and or flounder. These were variable in size from 15-40 cm. Of the two flounder can be found more commonly in estuaries, even in to fresh water as immature fish and both these fish are easy to trap along the shoreline as they feed at high tide. Dab, tentatively identified, can also be found inshore in the summer while sole have a wide range of habitats from 10 to 100 metres (Wheeler 1979, 364).

This small assemblage is typically Roman in that it does not include evidence for a deep water fishery. There are no large food fishes such as cod which, with herring, was the mainstay of fish consumption in the medieval period. All the fish identified here could have been caught close to shore. Other larger fish assemblages from Colchester include Culver Street (Locker 1992) where mullets, gurnards and sea breams were identified and cod and haddock were present but few. A smaller sample from Gilberd Street was also mainly eel, herring and flatfishes, but no mackerel was identified.

6.13 Charred plant macrofossils and other remains (Figs 57-64)

by Val Fryer (Church Farm, Sisland, Loddon)

Introduction

Although parts of the excavated area at Head Street had been badly disturbed by post-medieval and modern ground works and building construction, a considerable depth of Roman stratigraphy was still intact including, most importantly, a heavily burnt level associated with the Boudican destruction of AD 60/1.

Over two hundred samples were collected from Roman features/layers of Period 1 (Fortress) to Period 4/5 (Later Flavian to Antonine) date. Of these, sixty were recommended for full quantitative analysis. The aims of the study were:

1. To define the overall nature of the deposits and pinpoint any areas which may have served specific functions.
2. To highlight evidence of how this area of the town functioned immediately before the destruction of AD 60.
3. To pinpoint evidence for domestic and/or other economic activities, for example storage, food preparation and food waste disposal.
4. To establish parallels with other Boudican deposits which have been studied elsewhere in Colchester.

Methods

Because of the disturbed nature of the deposits, bulk samples rarely exceeded 5 litres volume, and those from the Boudican floor levels rarely attained 3 litres volume. Most assemblages were, therefore very small.

The Boudican floor deposits were sampled using a 0.5 m-square grid. All samples were assessed, and those containing moderate to high densities of plant macrofossils (fourteen samples) were automatically selected for analysis. Additional samples (sixteen in number) containing low to moderate densities of material were selected to ensure that each room within the building was represented. A further ten samples were randomly selected to provide a control.

The samples were processed by manual water flotation/washover, collecting the flots in a 500 micron mesh sieve. The dried flots were sorted under a binocular microscope at magnifications up to x 16. The plant macrofossils and other remains noted are listed on Tables 43-56, in which counts of cereal grains refer to whole grains or embryo ends. Identifications were made by comparison with modern reference specimens, with material divided as follows: cereals and other food plants, herbs, wetland plants, trees/shrubs and other plant macrofossils. The presence of animal macrofossils and other material types was also noted. Nomenclature within the tables follows Stace (1997). Unless otherwise stated, preservation of the plant material was solely by charring.

Food plants

Food plants formed the major component of many of the assemblages studied. The range of plants identified for each period of site occupation is summarised in Table A. Preservation was generally moderate to good, although a large proportion of the cereal grains had become puffed and distorted during charring and many remains were highly fragmented.

Cereals

Barley (*Hordeum* sp.) and wheat (*Triticum* sp.) grains were present in contexts from all major periods of the occupation of the site, with wheat being predominant. Elongate grains typical of spelt (*T. spelta*) were common throughout, but wheat chaff was comparatively rare; double-keeled spelt glume bases were recorded from only fourteen samples, most notably in the Boudican material from Room 5. These latter deposits also produced the only examples of emmer (*T. dicoccum*) glume bases, distinguishable by their single prominent keel. Asymmetrical lateral grains of six-row barley (*Hordeum vulgare*) were noted from contexts F787 (Period 2 robber cut) and F284 (Period 4b/5 pit). Oat (*Avena* sp.) grains were found as single specimens in six samples and were moderately common in Room 5, but in the absence of the diagnostic floret bases, it is not possible to ascertain whether cultivated or wild types are present. A single rye (*Secale cereale*) grain was noted in pit F284 (Period 4b/5 - 2nd to 4th century).

Pulses

Pulses were not common, and most were poorly preserved. None retained an intact hilum. A rounded seed, probably a pea (*Pisum sativum*), was recovered from Flavian pit F233 and an indeterminate cotyledon fragment of a large pulse was recorded from Period 4b/5 pit F284.

Fruit and nuts

Hazel (*Corylus avellana*) nutshell fragments were common throughout, especially in the Boudican floor levels, where in some instances they formed the major component of the assemblages. Seven fragments of elongated, smooth surfaced kernels were recovered from Period 4 pit F791. These are almost certainly of stone pine (*Pinus pinea*), and are paralleled by finds elsewhere in Colchester (P Murphy, pers comm) where they are indicative of the importation of goods from the Mediterranean area. The remaining fruit/nut macrofossils were all recovered from Period 2 contexts, most notably from the Boudican floor deposits within Room 5. They include bramble (*Rubus* sect. *Glandulosus*), fig (*Ficus carica*), sloe (*Prunus spinosa*), damson/bullace (*P. domestica* spp. *insititia*), apple/pear (*Malus/Pyrus* sp.) and walnut (*Juglans regia*). Culinary herbs, namely dill (*Anethum graveolens*) and pepper (*Piper nigrum*) were also found in the Room 5 deposits. A small number of flax (*Linum usitatissimum*) seeds were noted on the floor of Room 4. These are edible, if carefully roasted to remove the toxins, and may therefore be additional food residues.

Sample composition

Full lists of identifications are given on Tables 43-56.

Period 1: fortress (Table 43)
The density of material from these samples is extremely low. The assemblages contain a mixture of cereals, weed seeds and charcoal which are all probably derived from a variety of sources and cannot, therefore, be easily interpreted. Such background scatters of refuse are seen at most sites within Colchester (*cf* Murphy 1992).

Period 2: *colonia* (Tables 44-52)
The majority of samples from this period were taken from the floor levels of a building/buildings destroyed during the Boudican uprising. Seven rooms have been identified, and although it was originally supposed that all belonged to one structure, it now appears that Room 5 and possibly part of Room 4 formed the rear rooms of a separate building situated on the Head Street frontage.

The assemblages from Rooms 2, 3, 4 and 6 are dominated by grasses, grassland plants (including dock (*Rumex* sp.), sheep's sorrel (*R. acetosella*), knotgrass (*Polygonum*

aviculare) and buttercups (*Ranunculus acris/repens/bulbosus*)) and wetland plants (most notably sedge (*Carex* sp.) and spike rush (*Eleocharis* sp.). Similar assemblages were noted at the nearby Culver Street and Gilberd School excavations (Murphy 1992, 282 and 288). Whilst the Culver Street deposits have been interpreted as fodder crop residues, largely because of their association with animal dung, the Gilberd School material may be indicative of the use of hay as a domestic floor covering. The Head Street assemblages are also probably derived from flooring waste, as cattle appear not to have been housed in the vicinity of the site.

The floor deposits within Rooms 1 and 7 contain very low densities of all plant materials (with the exception of charcoal fragments) which may indicate that the western end of the main building was little used.

The composition of the assemblages from Room 5 and sample 117 at the eastern end of Room 4, appears to indicate that this area served as a rear kitchen for a second building situated adjacent to the Head Street frontage. Cereals, fruits, herbs and spices are common, as are the larger seeds of cereal crop contaminants such as corn cockle (*Agrostemma githago*), brome (*Bromus* sp.) and corn gromwell (*Lithospermum arvense*). As these seeds were too large to separate from the grain by winnowing (requiring removal by hand at a later stage of processing) they may be residues of the final sorting on site of imported batches of semi-cleaned prime grain. Flooring materials again appear to be present within the assemblages, with, in addition, fragments of bracken (*Pteridium aquilinum*) fronds. Whilst these may also have been used for flooring, it is equally likely that they are fuel residues, as bracken burns readily giving an even temperature.

A small number of samples (Table 52) were taken from other features of Period 2 date. Of these, the assemblage from feature F787 contains a comparatively high density of wheat and barley grains, a proportion of which show distinct convex transverse fractures typically indicative of gristing or milling. Although sprout fragments are absent, a number of the grains are concave in profile and may have been deliberately germinated during malting. It would, therefore, appear most likely that this material is derived from a store of malted grain, which became incorporated into the robber trench when the wall was demolished. A similar deposit was recorded from Culver Street (Murphy ibid., 282). A single small fragment of walnut shell was recovered from this same deposit.

Period 4: Flavian (Tables 53-55)

Of the material studied from deposits of late 1st- to 3rd-century date, two contexts are of especial interest. Dump L137 contains a moderate density of cereal grains and possible flooring materials, and the composition of the assemblage is consistent with a small deposit of domestic refuse, possibly derived from hearth waste. Although the assemblage from pit F791 is small, it does contain fragments of whole charred figs and stone pine kernels. Both would have been imported as 'exotics' from the Mediterranean.

The remaining deposits of Flavian date appear to contain little more than scattered refuse, with insufficient material for accurate interpretation.

Period 4b/5: later Flavian to Antonine (Table 56)

Although only three samples of this date were studied, all three appear to indicate that some small scale cereal processing may have been taking place on or near the site. The assemblages are all small (0.1 litre or less), but contain common cereal grains, chaff and some segetal weed seeds. The samples also contain small quantities of ferrous globules, which may possibly be indicative of nearby industrial activity.

Conclusions

In summary, although plant foodstuffs (including cereals, fruits, nuts, spices, herbs and pulses) form a major component of many of the assemblages studied, in most instances the material is present as a scatter of refuse, providing little data about specific on-site activities. Notable exceptions include a deposit of kitchen waste from Room 5 of the easternmost *colonia*-period building, a small quantity of malted and milled grain probably destroyed during the Boudican uprising and discrete deposits of domestic waste including exotic imports of Flavian date.

Perhaps the most striking feature of many of the assemblages from Head Street (particularly the Boudican deposits) is their marked contrast (in terms of composition)

with contemporary material recovered from the Culver Street excavations situated close by to the south-east). Here, materials of all categories (including plant foodstuffs, bone, fish bone, faecal material, eggshell and mollusc shells) were generally abundant, whilst at Head Street, the assemblages are much smaller and more limited. This may, in part, be due to the high temperatures at which the Head Street material appears to have been burnt. Such fierce combustion will have destroyed many of the more delicate remains, including chaff elements and small seeds, and may have created an artificial bias within the assemblages. But it would appear that the main reason for the low density of material recovered, particularly from the *colonia* deposits, may be that the site appears to have been at least partly derelict at the time of the AD 60/1 uprising. The archaeology suggests that some wall lines within the western building were partly demolished, and certainly the plant macrofossil evidence indicates that most rooms were little used, with only scatters of flooring refuse recovered.

Table A: food plants summarised by period.

Key
X = 1- 10 specimens xx = 10- 100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

		Period 1	Period 2	Period 3	Periods 4/5
Cereals					
Avena sp.	(oat)		x	x	x
Hordeum sp	(barley)	x	x	x	x
H. vulgare	(6-row barley)		x		x
Secale cereale	(rye)				x
Triticum sp.	(wheat)	x	x	x	x
T. spelta	(spelt)	x	x	x	x
T. dicoccum	(emmer)		x		
Pulses					
Pisum sativum	(pea)			x	
Large *Fabaceae*	(pea/bean)				x
Fruits/nuts					
Corylus avellana	(hazelnut)		x	x	x
Rubus sect. *Glandulosus*	(bramble)		x		
Ficus carica	(fig)		x		
Prunus spinosa	(sloe)		x		
P. domestica spp. *insititia*	(damson/bullace)		x		
Juglans regia	(walnut)		x		
Malus/Pyrus sp.	(stone pine)			x	
Herbs/Spices					
Anethum graveolens	(dill)		x		
Piper nigrum	(pepper)		x		

Table 43: Charred plant macrofossils and other remains from Period 1 contexts.

Key
X = 1- 10 specimens xx = 10- 100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		86	147	193
Context no		F243	F575	F584
Context type		Pit	Pit	Pit
Cereals and other food plants	**Common name**			
Cereal indet. (grains)		5+xfg	3	2+xfg
Hordeum sp. (grains)	Barley	9		
Triticum sp. (grains)	Wheat	16	2	1
T. spelta L. (glume bases)	Spelt wheat		3	2
Herbs				
Bromus sp.	Brome	1fg		1
Chenopodiaceae indet.			2	
Small Poaceae indet.	Grasses			1
Rumex sp.	Dock			1
R. acetellosa L.	Sheep's sorrel			1
Wetland plants				
Eleocharis sp.	Spike-rush			1
Ranunculus parviflorus L.	Small flowered buttercup		1	
Other plant macrofossils				
Charcoal <2mm		xxx	xxx	xxx
Charcoal >2mm		xx		x
Charred root/rhizome/stem				x
Indet. buds			1	
Indet. seeds		3m	2	
Animal macrofossils				
Bone		x		
Small mammal/amphibian bones		x		
Other materials				
Ferrous globules		x		
Tufaceous concretions		xxcf		
Sample volume (litres)		6	5	2
Volume of flot (litres)		<0.1	<0.1	<0.1
% of flot sorted		100%	100%	100%

Table 44: Charred plant macrofossils and other remains from the Boudican floor deposits within Room 1.

Key
X = 1- 10 specimens xx = 10- 100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		7	15	17
Context no		L393	L393	L333
Herbs	**Common name**			
Small *Poaceae* indet.	Grasses			2
Rumex/carex sp.	Dock		1	
Wetland plants				
Eleocharis sp.	Spike-rush		2fg	3+2fg
Trees/shrubs				
Coryllus avellana L.	Hazel			1fg
Other plant macrofossils				
Charcoal <2mm		xxx	xxx	xxx
Charcoal >2mm		x		
Indet. buds				1
Indet. seeds				2
Other materials				
Black porous 'cokey' material		xx	x	
Black tarry material		x	x	x
Burnt/fired clay			x	
Siliceous globules		x	x	x
?slag				x
Small coal fragments		x	x	
Sample volume (litres)		4	0.5	2
Volume of flot (litres)		0.1	<0.1	<0.1
% of flot sorted		100%	100%	100%

Table 45: Charred plant macrofossils and other remains from the Boudican floor deposits within Room 2.

Key
X = 1- 10 specimens xx = 10- 100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		27	29	34	36	38	39
Context no		L402	L402	L408	L408	L409	L409
Cereals	**Common name**						
Cereal indet. (grains)			1				2fg
Triticum sp. (glume base)	Wheat					3	2
Herbs							
Bromus sp.	Brome						1
Small Poaceae indet.	Grasses	5	7	4+2fg	23	50	35
Large Poaceae indet.						1fg	1
Polygonaceae indet.						1	
Ranunculus sp.	Buttercup		2cf			1	
R. acris/repens/bulbosus		1				1	5+1fg
Rumex sp.	Dock					10	8
R. acetosella sp.	Sheep's sorrel					1	5
Rumex/Carex sp.	Dock/sedge		1			1	1
Stellaria sp.	Chickweed						1
S. media (L.) Vill.						1fg	
Vicia/Lathyrus sp.	Vetch/vetchling					1	1
Wetland plants							
Caltha palustris L.	Marsh marigold						1
Carex sp.	Sedge					6	8
Eleocharis sp.	Spike-rush	2fg	2	1+3fg	3	13+3fg	11
Lychnis flos-cuculi L.	Ragged robin						1cf
Ranunculus parviflorus L.	Small flowered buttercup					1	
Trees/shrubs							
Coryllus avellana L.	Hazel	1fg	6fg	3fg	34	58	67
Rubus sect.*Glandulosus* Wimmer & Grab	Bramble type						1
Other plant macrofossils							
Charcoal <2mm		xxx	xxx	xxx	xxx	xxx	xxx
Indet. buds						1	
Indet. seeds		2fg		1	15	10	7
Other materials							
Black porous 'cokey' material							x
Black tarry material		x					
Siliceous globules						x	
Small coal fragments			x		x		x
Vitrified material							x
Sample volume (litres)		0.2	0.5	0.5	1.5	1.5	2
Volume of flot (litres)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
% of flot sorted		100%	100%	100%	100%	100%	100%

Table 46: Charred plant macrofossils and other remains from the Boudican floor deposits within Room 3.

Key
X = 1- 10 specimens xx = 10- 100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		40	43	46	53	57	61	62
Context no		L406	L407	L407	L405	L405	L405	L405
Cereals and other food plants	**Common name**							
Prunus spinosa L.			1cffg					
Triticum sp. (glume base)	Wheat	1			1			
Herbs								
Bromus sp.	Brome			1fg	1fg			
Chenopodiaceae indet.		1						
Plantago lanceolata L.	Ribwort plantain							1
Small Poaceae indet.	Grasses	4	19	11	2+2cf	2	1	3
Large Poaceae indet.				1				
Polygonum aviculare L.	Knotgrass		1cf					
Polygonaceae indet.				2				
R. acris/repens/bulbosus	Buttercup		1	1fg				
Rumex sp.	Dock		3		1cf			
R. acetosella sp.	Sheep's sorrel	1		4cf				
Sherardia arvenis L.	Field madder			1cf				
Stellaria media (L.) Vill.	Chickweed				1			
Vicia/Lathyrus sp.	Vetch/vetchling			1coty			1coty	
Wetland plants								
Carex sp.	Sedge		3					1+2fg
Eleocharis sp.	Spike-rush	1cf	7	3+3fg	1cf		1	
Trees/shrubs								
Coryllus avellana L.	Hazel	27fg	48fg	37fg	32fg	7fg	12fg	24
Rubus sect.*Glandulosus* Wimmer & Grab	Bramble type						1	
Other plant macrofossils								
Charcoal <2mm		xxx	xxx	xxx	xxx	xx	xx	xxx
Charred root/rhizome/stem		xxx	x	x				
Indet. buds				1				
Indet. seeds		2	5		5		2	2
Other materials								
Black porous 'cokey' material			x					
Burnt/fired clay		x						
Ferrous globules					x			
Siliceous globules		x						
Small coal fragments							x	
Sample volume (litres)		0.5	1.2	0.75	0.5	0.5	0.3	0.5
Volume of flot (litres)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
% of flot sorted		100%	100%	100%	100%	100 %	100%	100%

Table 47: Charred plant macrofossils and other remains from the Boudican floor deposits within Room 4 (first part).

Key
X = 1- 10 specimens xx = 10- 100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		74	83	86a	97	99
Context no		L395	L395	L395	L397	L397
Cereals	**Common name**					
Cereal indet. (grains)				xfgs		
Herbs						
Chenopodiaceae indet.				1		
Medicago/Trifolium/Lotus sp.	Medick/clover/trefoil			1cf		6
Small Poaceae indet.	Grasses	1		1	7+1cf	2fg
Large Poaceae indet.						
Rumex sp.	Dock	1		1	2+1fg	1
R. acetosella sp.	Sheep's sorrel				2cffg	
Solanum sp.	Nightshade			1cg		
Wetland plants						
Carex sp.	Sedge	1fg		1cffg		1
Eleocharis sp.	Spike-rush	3fg		1+3fg		2
Trees/shrubs						
Coryllus avellana L.	Hazel	15	5cf	30	12fg	112
Other plant macrofossils						
Charcoal <2mm		xx	xx	xxx	xx	xxx
Charred root/rhizome						x
Indet. seeds			1	3	4	8
Animal macrofossils						
Bone				xb		
Other materials						
Black porous 'cokey' material		x	x			
Black tarry material				xx		
Burnt concretions				xx		
Ferrous globules				x		
Siliceous globules				x		
Sample volume (litres)		0.2	0.2	2	0.3	1
Volume of flot (litres)		<0.1	<0.1	<0.1	<0.1	<0.1
% of flot sorted		100%	100%	100%	100%	100%

Table 48: Charred plant macrofossils and other remains from the Boudican floor deposits within Room 4 (second part).

Key
X = 1-10 specimens xx = 10-100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		100	102	108	110	117
Context no		L397	L397	L397	L397	L404
Cereals and other food plants	**Common name**					
Avena sp. (grains)	Oat	1cffg				
Cereal indet. (grains)		1			13	1
(rachis internode fragments)						1
Hordeum sp. (grains)	Barley					1
Linum usitatissimum L.	Flax	2fg	3			
Prunus sp.	Plum type					1fg
P. spinosa L.	Sloe	6cffg				
Triticum sp. (glume base)	Wheat				1	6fg
(rachis internodes)						1
(spikelet bases)						1
T. spelta (glume bases)	Spelt wheat					5
Herbs						
Agrostemma githago L.	Corn cockle					1
Brassiaceae indet.						1
Bromus sp.	Brome					3
Chenopodium album L.	Fat Hen					2
Chenopodiaceae indet.		1				
Medicago/trifolium/lotus sp.	Medick/clover/trefoil					1cf
Persicaria maculosa/lapathifolia	Redshank					1fg
Plantago lanceolata L.	Ribwort plantain		1		2	
Small Poaceae indet.	Grasses	1	15	1+2fg	9	13
Large Poaceae indet.		3fg	1fg			
Polygonum aviculare L.	Knotgrass					6+2fg
Ranunculus sp.						1
R. acris/repens/bulbosus	Buttercup				1	2
Raphanus raphanistrum L. (siliqua fragments)	Wild radish					1
Rumex sp.	Dock	1cf	3		5	9+2cf
R. acetosella sp.	Sheep's sorrel	3cf	3			
Verbena sp.	Vervain					1
Wetland plants						
Carex sp.	Sedge		4cf			4+1cf
Eleocharis sp.	Spike-rush	2	1		1+1fg	11+3fg
Ranunculus parviflorus L.	Small flowered buttercup				1	
Trees/shrubs						
Coryllus avellana L.	Hazel	45	98	28	18	44
Quercus sp.	Oak	1cf				
Rubus sect.*Glandulosus* Wimmer & Grab	Bramble					1
Other plant macrofossils						
Charcoal <2mm		xxx	xxx	xx	xxx	xxx
Charcoal >2mm						xx
Charred root/rhizome/stem		x				
Indet. buds		1				
Indet. seeds		12	26	1	5	19
Indet. thorns (*Prunus* type)						2
Other materials						
Black porous 'cokey' material					xxx	
Black tarry material		x			xx	x
Burnt/fired clay					x	
Siliceous globules					x	x
Vitrified material			x			
Sample volume (litres)		1.5	2.5	0.5	1.5	1.5
Volume of flot (litres)		<0.1	<0.1	<0.1	<0.1	<0.1
% of flot sorted		100%	100%	100%	100%	100%

Table 49: Charred plant macrofossils & other remains from Boudican floor deposits in Room 5 (part 1).

Key
X = 1- 10 specimens xx = 10- 100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		119	120	121	122
Context no		L550	L550	L550	L550
Cereals and other food plants	**Common name**				
Anethum graveolens L.	Dill		10+6fg		1
Avena sp. (grains)	Oat	1			6+2cf
(awn fragments)		1		1	
(floret bases)				7fg	
Cereal indet. (grains)		44+xxfg	32	4	15
(sprout fragments)		7	1		
(rachis internode fragments)		6			
Hordeum sp. (grains)	Barley	3+2fg	2	1	13
(sprouted grains)		1			
Malus/Pyrus sp.	Apple/pear	2+2cffg		1cffg	
Piper nigrum L.	Black pepper		4cffg		
Prunus sp.	Plum type	2fg	26fg		2fg
P. domestica ssp. *insititia* (L.) Bonnier & Layens	Bullace/damson		1+2fg		2fg
P. spinosa L.	Sloe		3fg		
Triticum sp. (grains)	Wheat	4	1		2
(glume bases)		24	15	23	32
(rachis internodes)		1	1	1	2
(spikelet bases)		5		2	1
T. dicoccum Schubl. (glume bases)	Emmer wheat	6cf			2cf
T. spelta L. (glume bases)	Spelt wheat	68	25	15	55
(spikelet forks)		1			
Herbs					
Agrostemma githago L.	Corn cockle	4		12tf	5+1tf
Apiaceae indet.		3			1
Arenaria sp.	Sandwort				1cf
Brassicaceae indet.				1	
Bromus sp.	Brome	10+7fg	4+1cf	8+4fg	7+28fg
Caryophyllaceae indet.					1
Chenopodium album.	Fat hen		1fg		
Hyoscamus niger L.	Henbane			1	
Lamium sp.	Dead-nettle				2
Lithospermum arvense L.	Corn gromwell	1cf	1		
Medicago/Trifolium/Lotus sp.	Medick/clover/trefoil	1cf	1	1	
Plantago lanceolata L.	Ribwort plantain		2cf		
Small Poaceae indet.	Grasses	41	11	23	36
Large Poaceae indet.		2fg			
Polygonum aviculare L.	Knotgrass	4+2fg	2+5fg	132	4
Polygoniaceae indet.				17	4
Prunella vulgaris sp.	Selfheal			1cf	1
Ranunculus sp.	Buttercup				1cf
Raphanus raphanistrum L. (siliqua fragments)	Wild radish			2	
Rosaceae indet.			3		2
Rumex sp.	Dock	17	39	10	12
R. acetosella	Sheep's sorrel			4	1
Solanum sp.	Nightshade	1			
Stellaria sp.	Chickweed			1cf	
Vicia/lathyrus sp.	Vetch/Vetchling	1coty			
Wetland plants					
Carex sp.	Sedge	1+3cf		2	2
Eleocharis sp.	Spike-rush	3	3+2fg		2+2fg
Filipendula ulmaria L.	Meadow sweet			1cf	
Montia fontana L.	Blinks			1	
Ranunculus parviflorus L.	Small flowered buttercup	1			
Typha sp.	Bulrush		1		
Trees/shrubs					
Coryllus avellana L.	Hazel	48fg	32fg	76fg	110fg
Rubus sect. *Glandulosus* Wimmer & Grab	Bramble type	7+2fg	5+1cf	1	2

Table 50: Charred plant macrofossils & other remains from Boudican floor deposits in Room 5 (part 2).

Key
X = 1-10 specimens xx = 10-100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		**119**	**120**	**121**	**122**
Context no		**L550**	**L550**	**L550**	**L550**
Other plant macrofossils	**Common name**				
Charcoal <2mm		**xxx**	**xxx**	**xxx**	**xxx**
Charcoal >2mm		**xx**	**xx**	**x**	**xx**
Charred root/rhizome/stem		**x**	**x**	**xx**	**x**
Pteridum aquilinum (L.) Kuhn (pinnule fragments)	Bracken	**1fg**		**10**	**1**
Indet. buds				**4**	
Indet. culm nodes		**1**	**8**	**16**	**1**
Indet. fruit stone fragments		**1**	**2**		
Indet. seeds		**2**		**11**	
Indet. thorns (Prunus type)		**18**	**12**	**9**	**15**
Animal macrofossils					
Bone			**x**		**xb**
Faecal concretions			**x**		
Small mammal/amphibian bones			**xb**		
Other materials					
Black porous 'cokey' material		**xxx**	**xx**	**x**	
Black tarry material		**x**			
Burnt concretions		**x**		**x**	
Siliceous concretions			**x**	**x**	**x**
Sample volume (litres)		**2**	**2.5**	**3.5**	**1.5**
Volume of flot (litres)		**0.1**	**0.4**	**0.1**	**0.1**
% of flot sorted		**100%**	**50%**	**100%**	**100%**

Table 51: Charred plant macrofossils and other remains from the Boudican floor deposits within Room 6.

Key
X = 1-10 specimens xx = 10-100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		**65**	**71**	**72**
Context no		**L394**	**L394**	**L394**
Cereals and other food plants	**Common name**			
Cereal indet. (grains)		**1**		**xfgs**
Triticum sp. (glume bases)	Wheat			**1cf**
T. spelta L. (glume bases)	Spelt wheat			**1**
Herbs				
Plantago lanceolata L.	Ribwort plantain	**1cf**		
Small Poaceae indet.	Grasses			**13**
Rumex acetosella L.	Sheep's sorrel			**1**
Wetland plants				
Carex sp.	Sedge	**1**		
Eleocharis sp.	Spike-rush	**1**		
Trees/shrubs				
Coryllus avellana L.	Hazel	**8**		**12**
Other plant macrofossils				
Charcoal <2mm		**xx**	**xx**	**xxx**
Charred root/rhizome/stem				**x**
Indet. seeds		**2**		**1**
Animal macrofossils				
Bone			**x**	**xb**
Other materials				
Black porous 'cokey' material			**x**	**x**
Brick/tile			**x**	
Siliceous concretions			**x**	**x**
Sample volume (litres)		**0.3**	**0.2**	**0.7**
Volume of flot (litres)		**<0.1**	**<0.1**	**<0.1**
% of flot sorted		**100%**	**100%**	**100%**

Table 52: Charred plant macrofossils and other remains from the Boudican floor deposits within Room 7.

Key
X = 1-10 specimens xx = 10-100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		203	208b	216	218	223	226	230
Context no		L164	L164	L164	L164	L164	L164	L164
Cereals	**Common name**							
Cereal indet. (grains)			x		x			x
Hordeum sp.	Barley							1
Herbs								
Rumex sp.	Dock		1					
Trees/shrubs								
Coryllus avellana L.	Hazel				1	4		
Other plant macrofossils								
Charcoal <2mm		xxx	xxx	xxx	xxx	xxx	xxx	xxx
Charcoal >2mm		x	xx	x		xx	xx	
Charred root/rhizome/stem						x	x	
Indet. buds						1		
Indet. fruit stone fragments						1		
Animal macrofossils								
Bone				xx				
Other materials								
Black porous 'cokey' material			x		x		x	
Siliceous globules						x		
Sample volume (litres)		0.7	5.5	1.2	1.2	6.5	2.5	2.5
Volume of flot (litres)		<0.1	0.2	<0.1	<0.1	0.4	0.3	0.2
% of flot sorted		100%	100%	100%	100%	100%	100%	100%

Table 53: Charred plant macrofossils and other remains from Period 2 contexts.

Key
X = 1-10 specimens xx = 10-100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		35	88	97	187
Context no		F241	L247	F290	F787
Context type		Pit	Demol deb	Post hole	Robber cut
Cereals and other food plants	**Common name**				
Cereal indet. (grains)		7+xfg	xfg	3+xfg	23+xxxfg
(gristed grains)					14
(detached embryos)					2
Hordeum sp. (grains)	Barley	1			18
(gristed grains)					1
H. vulgare L. (asymmetrical lateral grains)	Six-row barley				3
Juglans regia L.	Walnut				1fg
Triticum sp. (grains)	Wheat	17	1	1	134
(gristed grains)					8
Herbs					
Agrostemma githago L.				1	5
Apiaceae indet.			1		
Asteraceae indet.					1
Bromus sp.	Brome		1	2cffg	4
Caryophyllaceae indet.			7		
Chenopodiaceae indet.			4		
Fabaceae indet.			3fg		
Gallium aparine L.	Goosegrass		6+4fg		
Lamiaceae indet.			2		
Papaver sp.	Poppy		1		
Small Poaceae indet.	Grasses		4		2
Large Poaceae indet.			1d. emb.		
Ranunculus sp.	Buttercup			1	1
Rumex sp.	Dock				1
Stellaria sp.	Chickweed		4		
Wetland plants					
Eleocharis sp.	Spike-rush				2
Trees/shrubs					
Coryllus avellana L.	Hazel				3
Rubus sp.	Bramble type		1		
Other plant macrofossils					
Charcoal <2mm		xxx	xxx	xxx	xxx
Charcoal >2mm		xx	xx		x
Charred root/rhizome/stem			x	x	
Indet. buds			3		
Indet. fruit stone fragments			2	1	
Indet. seeds		1	10	3m	3
Indet. thorns (Prunus type)			1		
Animal macrofossils					
Bone		x			xb
Small mammal/amphibian bones				x	
Other materials					
Black porous 'cokey' material		x		x	
Black tarry material				x	x
Burnt concretions				x	
Siliceous concretions					x
Small coal fragments			x		
Tufaceous concretions		xxcf			
Vitrified material					
Sample volume (litres)		3	2.5	3.5	4
Volume of flot (litres)		<0.1	<0.1	<0.1	<0.1
% of flot sorted		100%	100%	100%	100%

Table 54: Charred plant macrofossils and other remains from Period 4 contexts (part one).

Key
X = 1-10 specimens xx = 10-100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced d.emb = detached embryo coty = cotyledon
b = burnt tf = testa fragment

Sample no		5	8	25	31	37
Context no		L105	L105	F480	L137	L168
Context type		Dump	Dump	Hearth	Dump	Layer
Cereals and other food plants	**Common name**					
Avena sp. (grains)	Oat					1cf
Cereal indet. (grains)		9+xfg	4+xfg	3	6	4
(detached embryos)		1			1	
Hordeum sp. (grains)	Barley	1+2cf	1	1	26	1cf
Triticum sp. (grains)	Wheat	7	7		22	3
T. spelta L. (glume bases)	Spelt wheat		1		2	
Herbs						
Bromus sp.	Brome	2cf			6+2cf	
Fabaceae indet.						2
Small Poaceae indet.	Grasses				18	
Rumex sp.	Dock			2+1cf	4+2cf	
Stellaria sp.	Chickweed				1cf	
Vicia/lathyrus sp.	Vetch/Vetchling				1coty	
Wetland plants						
Carex sp.	Sedge				2	
Eleocharis sp.	Spike-rush				24	
Trees/shrubs						
Coryllus avellana L.	Hazel			26fg		3fg
Other plant macrofossils						
Charcoal <2mm		xxx	xxx	xxx	xxx	xxx
Charcoal >2mm		xx		x	xx	x
Charred root/rhizome/stem		x				x
Indet. buds					1	1
Indet. seeds			1m	3	18	
Animal macrofossils						
Bone				x xb		
Fish bone				x		
Small mammal/amphibian bones		x xb	x	xb	x	x
Other materials						
Black porous 'cokey' material		x	x		x	x
Black tarry material				x		x
Ferrous globules				x		x
Burnt concretions					x	
Tufaceous concretions		xxcf	x			
Small coal fragments				xx		x
Vitrified material		x	x	x		x
Sample volume (litres)		5.5	5.5	5	5	5.5
Volume of flot (litres)		0.1	<0.1	<0.1	0.2	<0.1
% of flot sorted		100%	100%	100%	100%	100%

Table 55: Charred plant macrofossils and other remains from Period 4 contexts (part two).

Key
X = 1-10 specimens xx = 10-100 specimens xxx = 100+ specimens
cf = refer to fg = fragment m = mineral replaced

Sample no		74	79	82	167	192
Context no		F233	F234	F240	F715	F791
Context type		Pit	Pit	Pit	Pit	Pit
Cereals and other food plants	**Common name**					
Cereal indet. (grains)		xfg	1	8+xfg		3+xfg
Ficus carica L. (fruit fragments)						2
Hordeum sp. (grains)	Barley			1		3
Pinus pinea L.	Stone pine					7fgs
Pisum sativum L.	Pea	1cf				
Triticum sp. (grains)	Wheat	1	4	2		3
(glume bases)		1				
Herbs						
Agrostemma githago L.	Corn cockle					1
Brassicaceae indet.		1				
Bromus sp.	Brome					1cf
Plantago lanceolata L.	Ribwort plantain			1		
Small Poaceae indet.	Grasses	2				
Large Poaceae indet.			1fg			
Stellaria sp.	Chickweed		1cf			
Trees/shrubs						
Coryllus avellana L.	Hazel					1fg
Other plant macrofossils						
Charcoal <2mm		xxx	xxx	xxx	xxx	xxx
Charcoal >2mm			x	x		xx
Charred root/rhizome/stem				x		
Indet. buds			1	1		
Indet. fruit stone fragments			1			
Indet. seeds		1m	3	1	26m	2
Animal macrofossils						
Bone		x		x		
Fish bone		x				
Marine mollusc shell fragments		x				
Mineral replaced arthropods			x		xx	
Small mammal/amphibian bones		x	x			x
Other materials						
Black porous 'cokey' material			x			x
Black tarry material			x			x
Mineralised concretions					x	
Tufaceous concretions		xcf				
Siliceous globules				x		
Small coal fragments			x			
?slag			x			
Sample volume (litres)		4.5	5.5	5.5	5	7
Volume of flot (litres)		<0.1	<0.1	<0.1	<0.1	<0.1
% of flot sorted		100%	100%	100%	100%	100%

Table 56: Charred plant macrofossils and other remains from Period 4/5 and later contexts.

Key
X = 1-10 specimens xx = 10-100 specimens xxx = 100+ specimens
cf = refer to fg = fragment coty = cotyledon tf = testa fragment

Sample no		92	93	95
Context no		F284	F284	F284
Context type		Pit	Pit	Pit
Cereals and other food plants	**Common name**			
Avena sp. (grains)	Oat	1	1	1
Cereal indet. (grains)		11+1fg	6+1fg	5
(detached embryos)			1	
Large Fabaceae indet.		1cotyfg		
Hordeum sp. (grains)	Barley	15	5	12
H. vulgare L. (asymmetrical lateral grains)	Six-row barley		2	1
Secale cereale L.	Rye	1		
Triticum sp. (grains)	Wheat	25	19	21
(sprouted grains)		1		
(glume bases)			3	1
(rachis internodes)			1	1
(spikelet bases)		2		
T. spelta L. (glume bases)	Spelt wheat		6	2
Herbs				
Apiaceae indet.				1
Bromus sp.	Brome	3		2cf
Fabaceae indet.			1+1cotyfg	1
Foeniculum sp.	Fennel			
Lamiaceae indet.		1		
Persicaria maculosa/apathifolia.	Redshank			
Small Poaceae indet.	Grasses	3		
Ranunculus sp.	Buttercup	2cf		
Rumex sp.	Dock	1		
Vicia/lathyrus sp.	Vetch/Vetchling			
Wetland plants				
Carex sp.	Sedge	1		
Eleocharis sp.	Spike-rush	2	2	
Trees/shrubs				
Coryllus avellana L.	Hazel	2fg	1fg	
Other plant macrofossils				
Charcoal <2mm		xxx	xxx	xxx
Charcoal >2mm		x	x	x
Charred root/rhizome/stem		x	x	x
Indet. buds			2	
Indet. culm nodes			1	
Indet. seeds			2	
Animal macrofossils				
Bone		x		
Fish bone		x		
Small mammal/amphibian bones		x	x	x
Other materials				
Black porous 'cokey' material				
Black tarry material			x	
Ferrous globules		x	x	x
Small coal fragments				
Vitrified material		x		
Sample volume (litres)		3.5	3.5	3
Volume of flot (litres)		0.1	0.1	<0.1
% of flot sorted		100%	100%	100%

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8 Abbreviations and references

8.1 Abbreviations

BA	Bronze Age
BA	British Archaeological Reports
BMC	*British Museum catalogue of coins of the Roman Empire*
CAR **1**	P Crummy, 1981, *Aspects of Anglo-Saxon and Norman Colchester*, Colchester Archaeological Report 1/CBA Research Report 39 (London)
CAR **2**	N Crummy, 1983, reprinted 1995, *The Roman small finds from excavations in Colchester 1971-9*, Colchester Archaeological Report 2
CAR **3**	P Crummy, 1984, *Excavations at Lion Walk, Balkerne Lane, and Middleborough, Colchester, Essex*, Colchester Archaeological Report 3
CAR **4**	N Crummy (ed), 1987, *The coins from excavations in Colchester 1971-9*, Colchester Archaeological Report 4 (Colchester)
CAR **5**	N Crummy, 1988, *The post-Roman small finds from excavations in Colchester 1971-85*, Colchester Archaeological Report 5 (Colchester)
CAR **6**	P Crummy, 1992, *Excavations at Culver Street, the Gilberd School, and other sites in Colchester, 1971-85*, Colchester Archaeological Report 6 (Colchester)
CAR **8**	H E M Cool & J Price, 1995, *Roman vessel glass from excavations in Colchester 1971-85*, Colchester Archaeological Report 8 (Colchester)
CAR **9**	N Crummy, P Crummy & C Crossan, 1993, *Excavations of Roman and later cemeteries, churches and monastic sites in Colchester, 1971-88*, Colchester Archaeological Report 9 (Colchester)
CBA	Council for British Archaeology
CCI	Celtic Coin Index
CK	R A G Carson & J P C Kent, 'Part 2: bronze Roman imperial coinage of the Later Empire AD 346-498' in Carson, Hill & Kent 1972
Col Archaeol	*The Colchester archaeologist* magazine
COLEM	Colchester Museum

EAA	East Anglian Archaeology
HBMCE	Historic Buildings and Monuments Commission (England)
HK	P V Hill & J P C Kent, 'Part 1: the bronze coinage of the House of Constantine AD 324-346' in Carson, Hill & Kent 1972
LAMAS	London and Middlesex Archaeological Society
LIA	Late Iron Age
Mitchiner	M Mitchiner, 1988 *Jetons, medalets and tokens 1: the medieval period and Nuremberg* (London)
North	J J North, 1980 *English hammered coinage* (London)
Peck	C W Peck, 1970 *English copper, tin and bronze coins in the British Museum 1558-1958* (London)
RIC	*Roman imperial coinage*
RRCSAL	Report of the Research Committee of the Society of Antiquaries (London)
VA	R D van Arsdell, 1989, *Celtic coinage of Britain*

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CAT Report 268
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List of figures

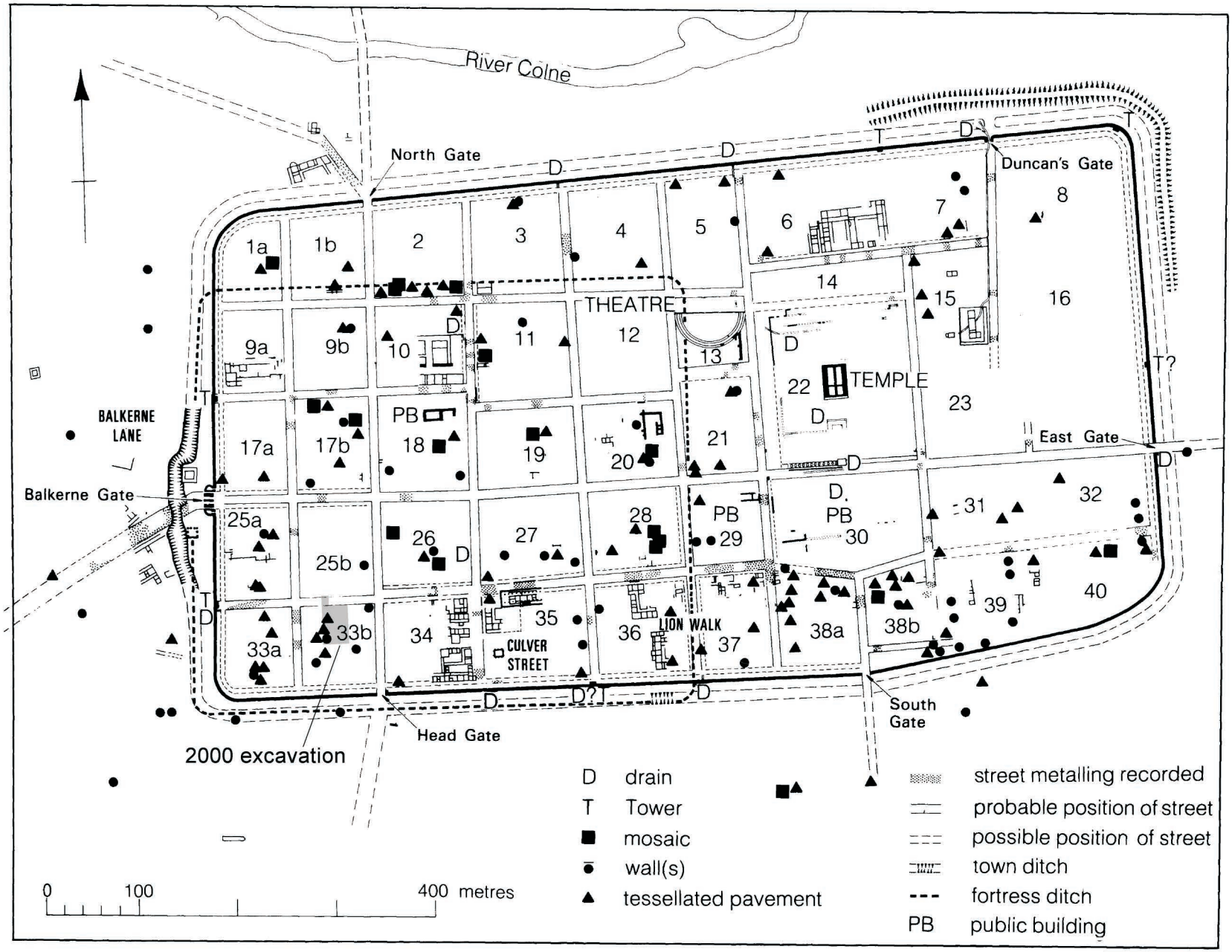

Fig 1 Location of the 2000 excavation in the Roman town.

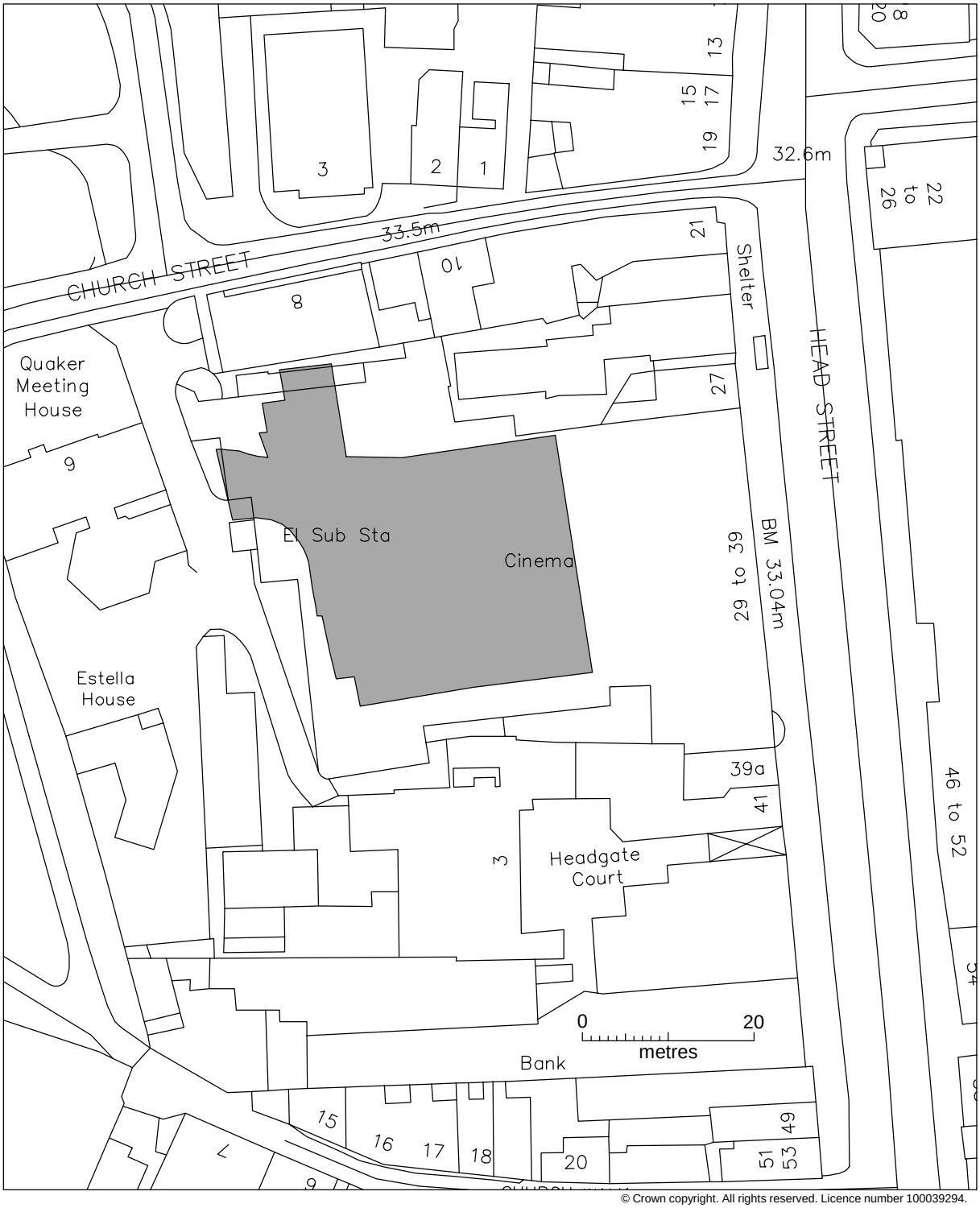

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Fig 2 Location of the 2000 excavation (shaded) in Head Street.

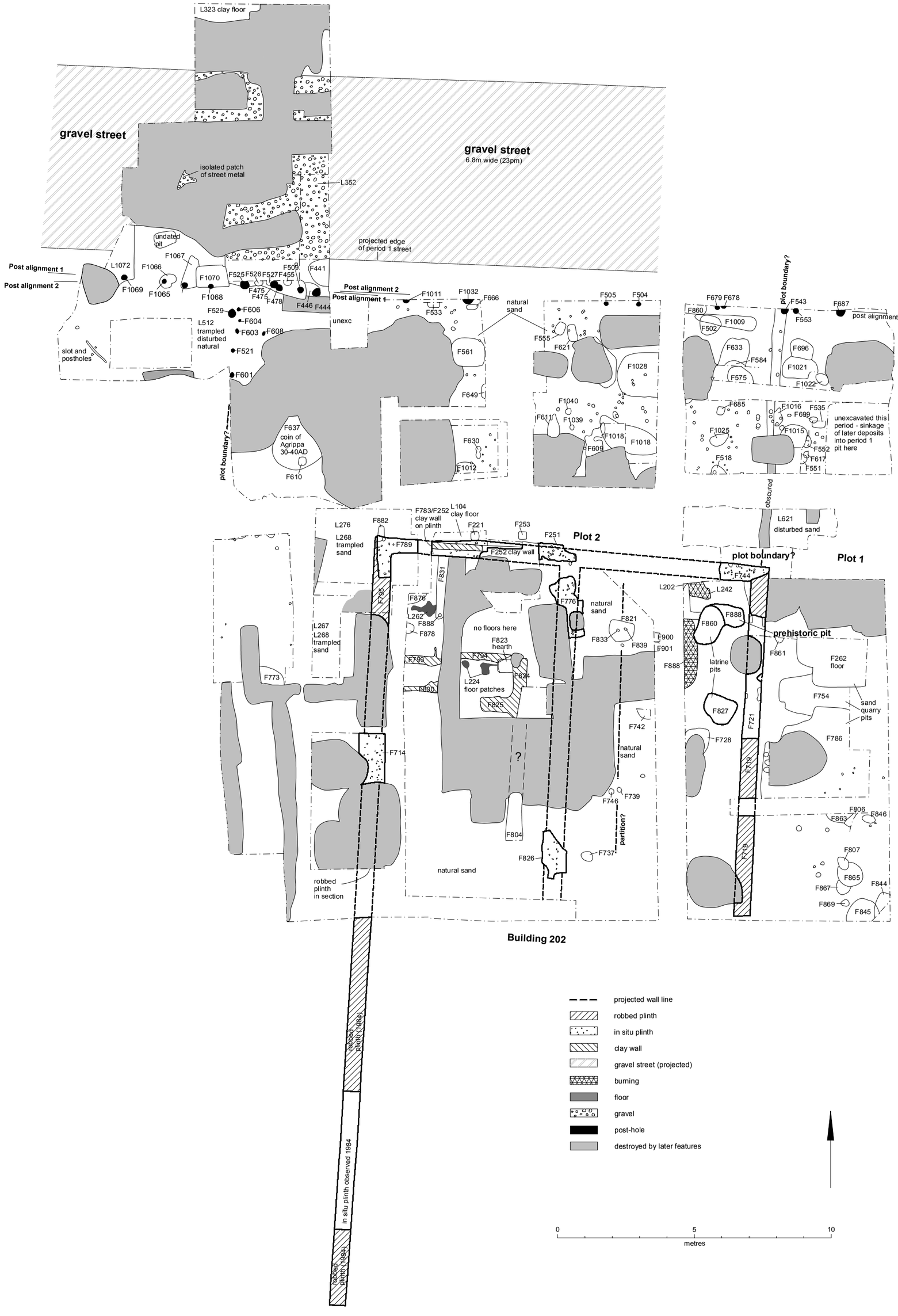


Fig 3 Period 1a (early fortress): Building 202 (with prehistoric feature).

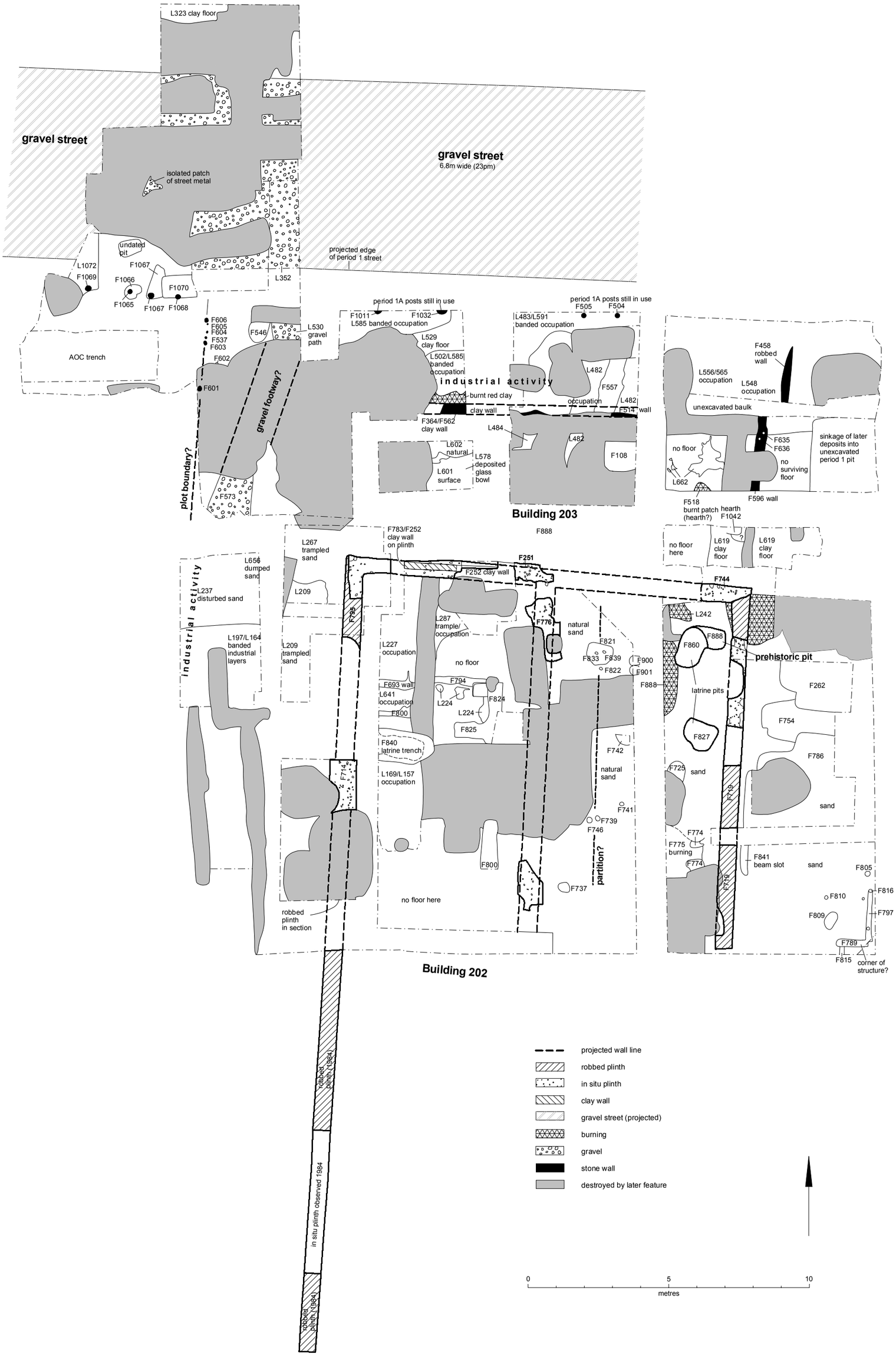


Fig 4 Period 1b (later fortress): Buildings 202 and 203.

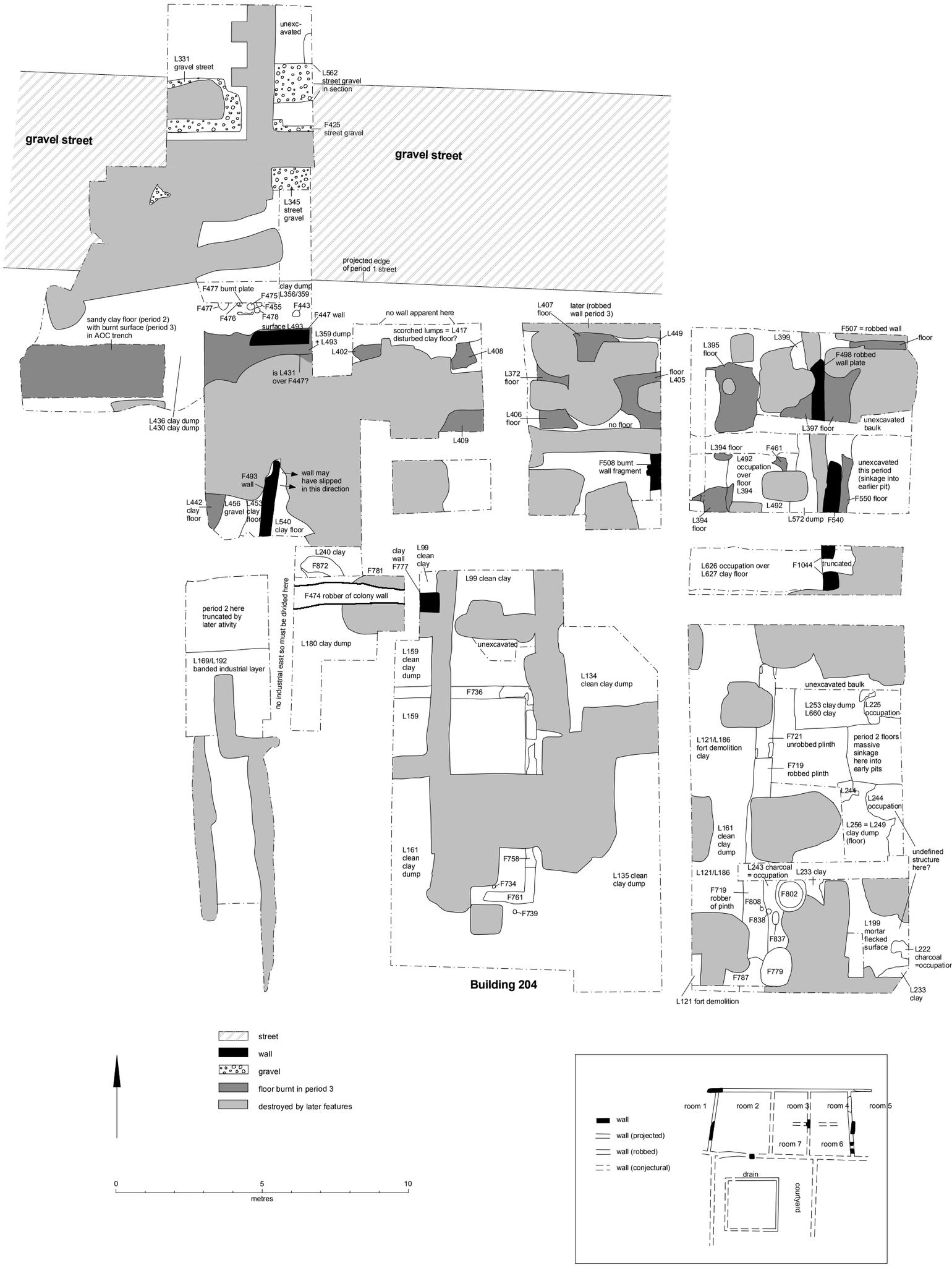


Fig 5 Period 2 (*colonia*): Building 204, showing floor surfaces burnt in period 3 (Boudican).

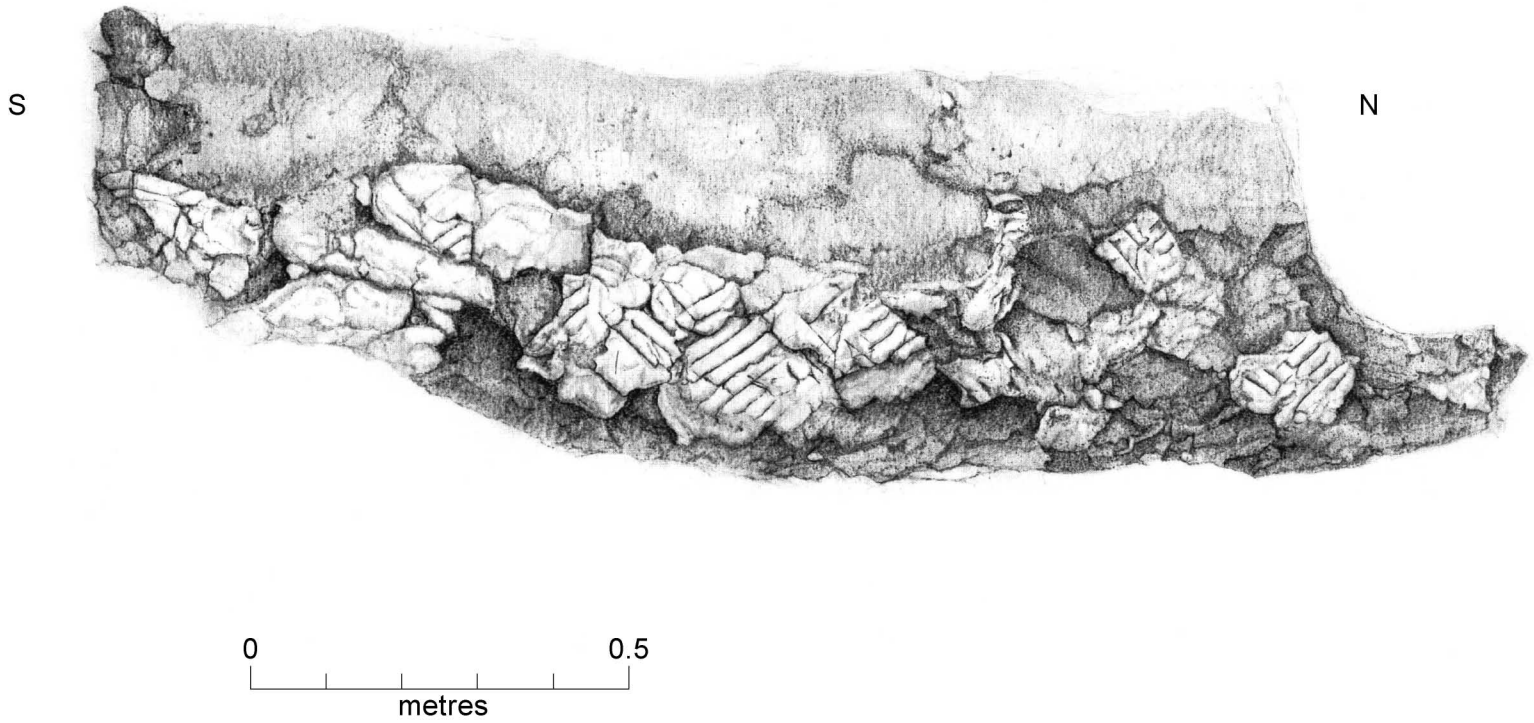
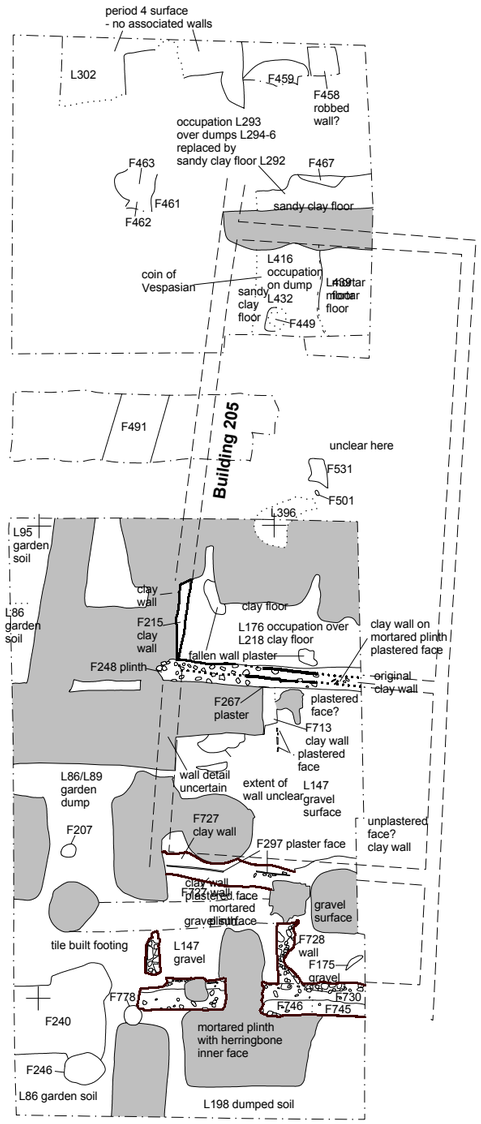
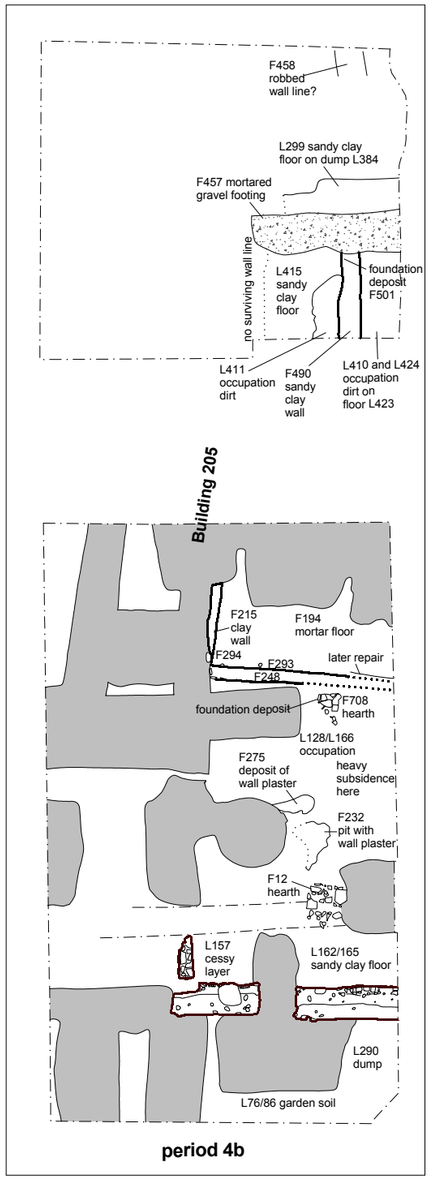
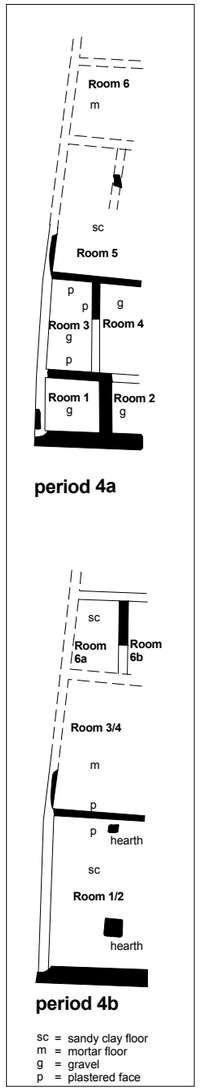


Fig 6 East face of period 2 wall F540, showing chevron decoration.







interpretation of
Building 205

Fig 7 Period 4a (Flavian): Building 205 with period 4b (inset) and interpretation (inset).

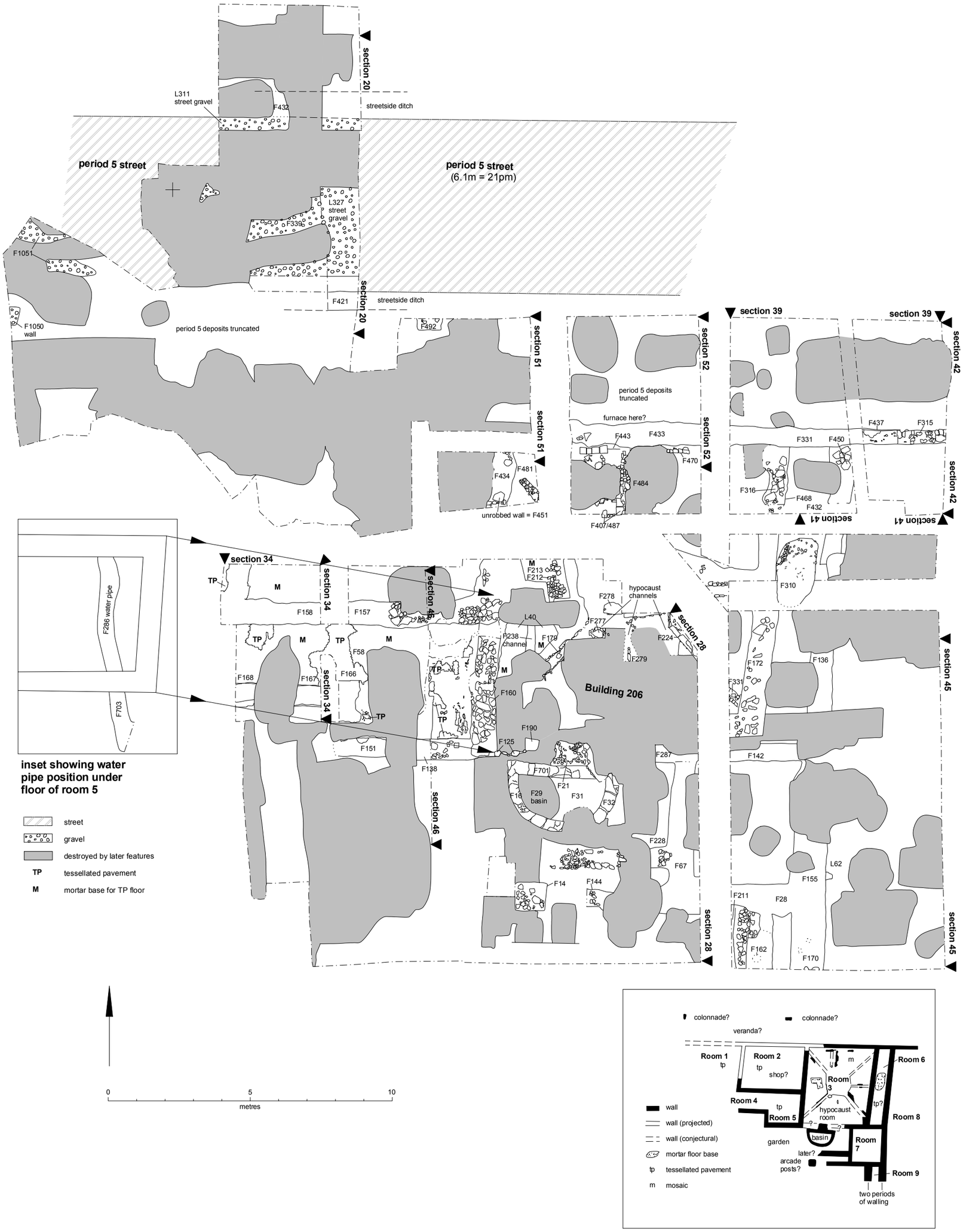


Fig 8 Period 5 (late 2nd-late 3rd century): Building 206, with interpretation (inset) and position of sections.

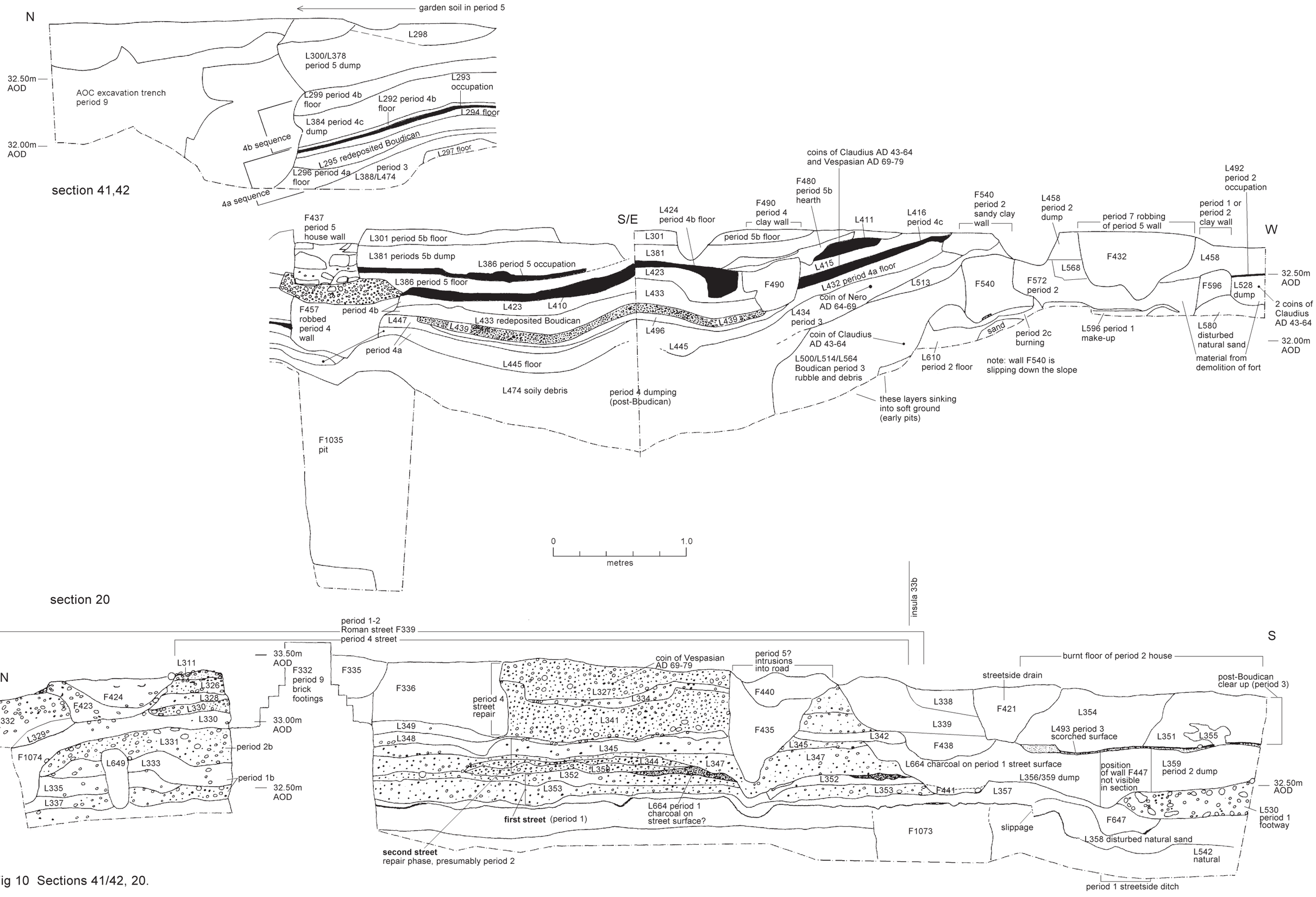


Fig 10 Sections 41/42, 20.

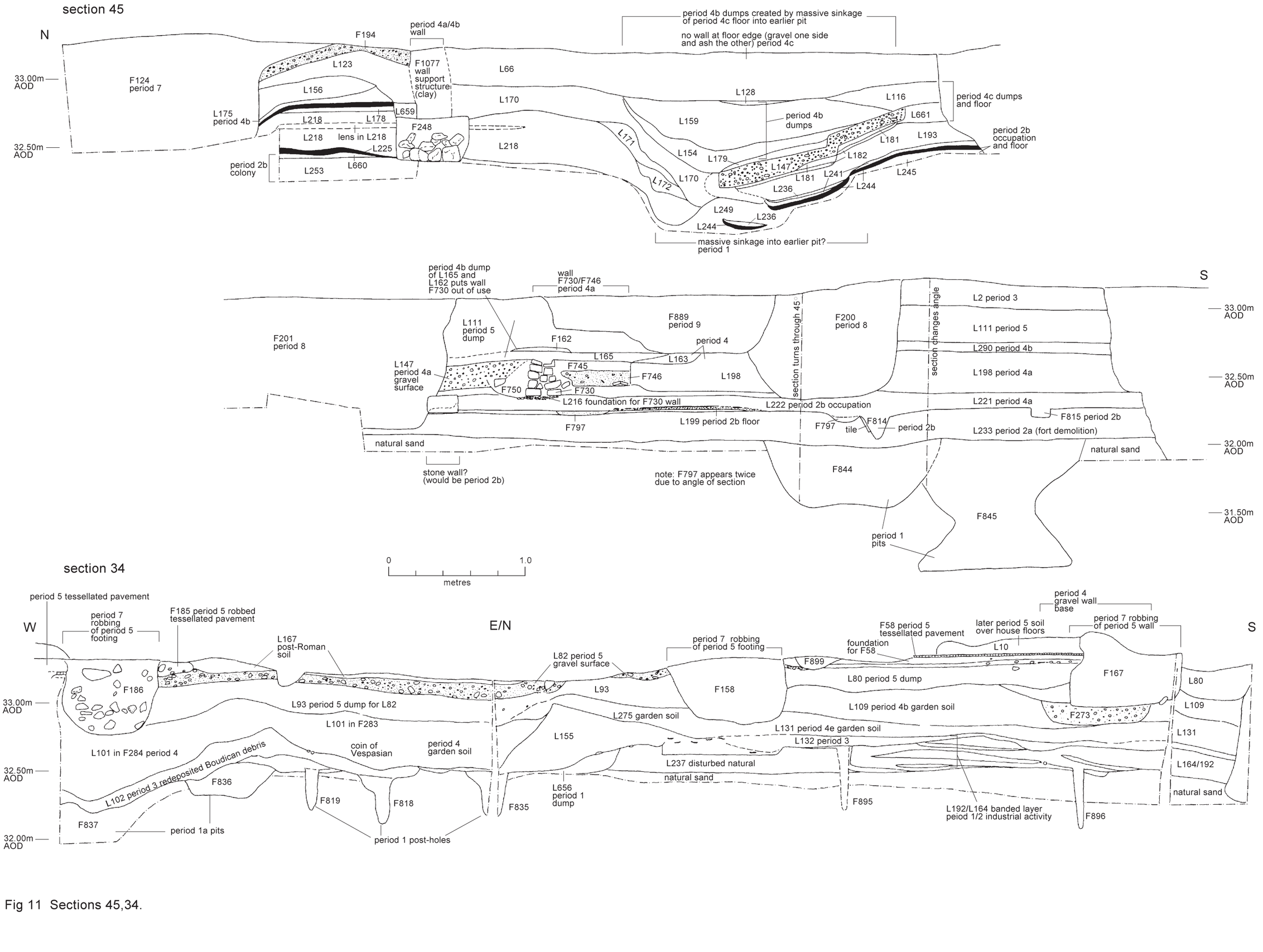
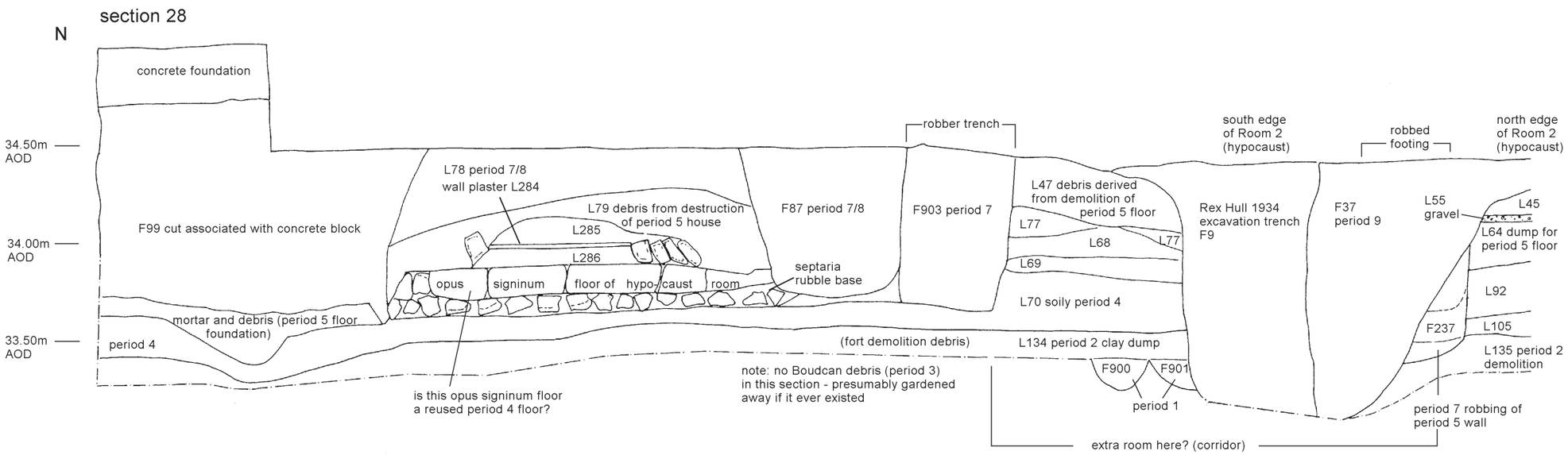


Fig 11 Sections 45,34.



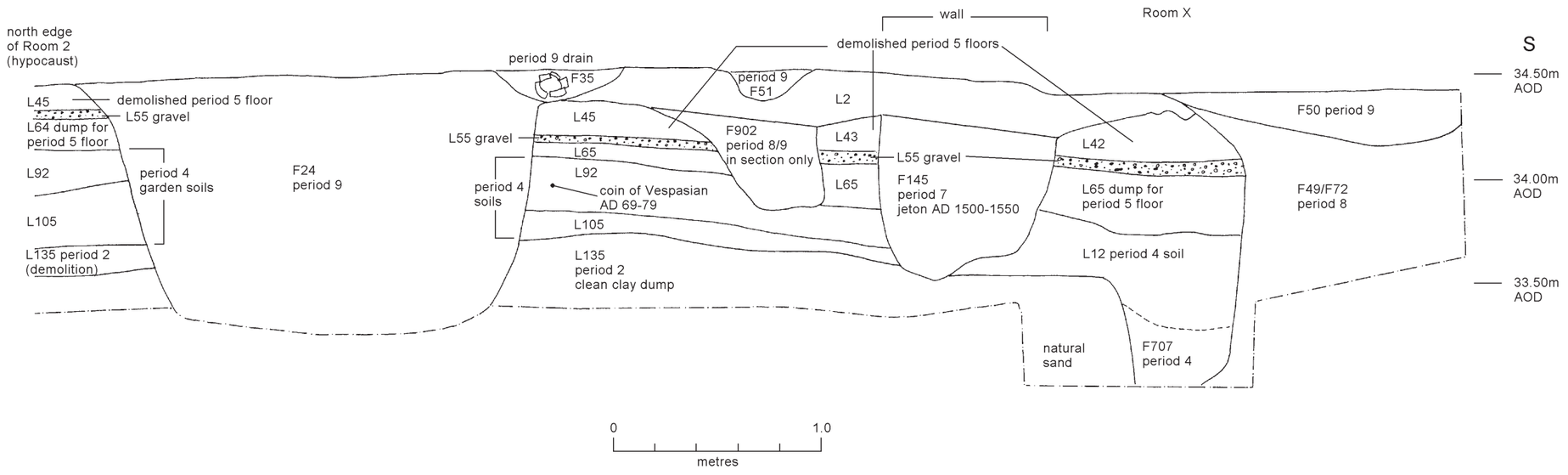


Fig 12 Section 28.

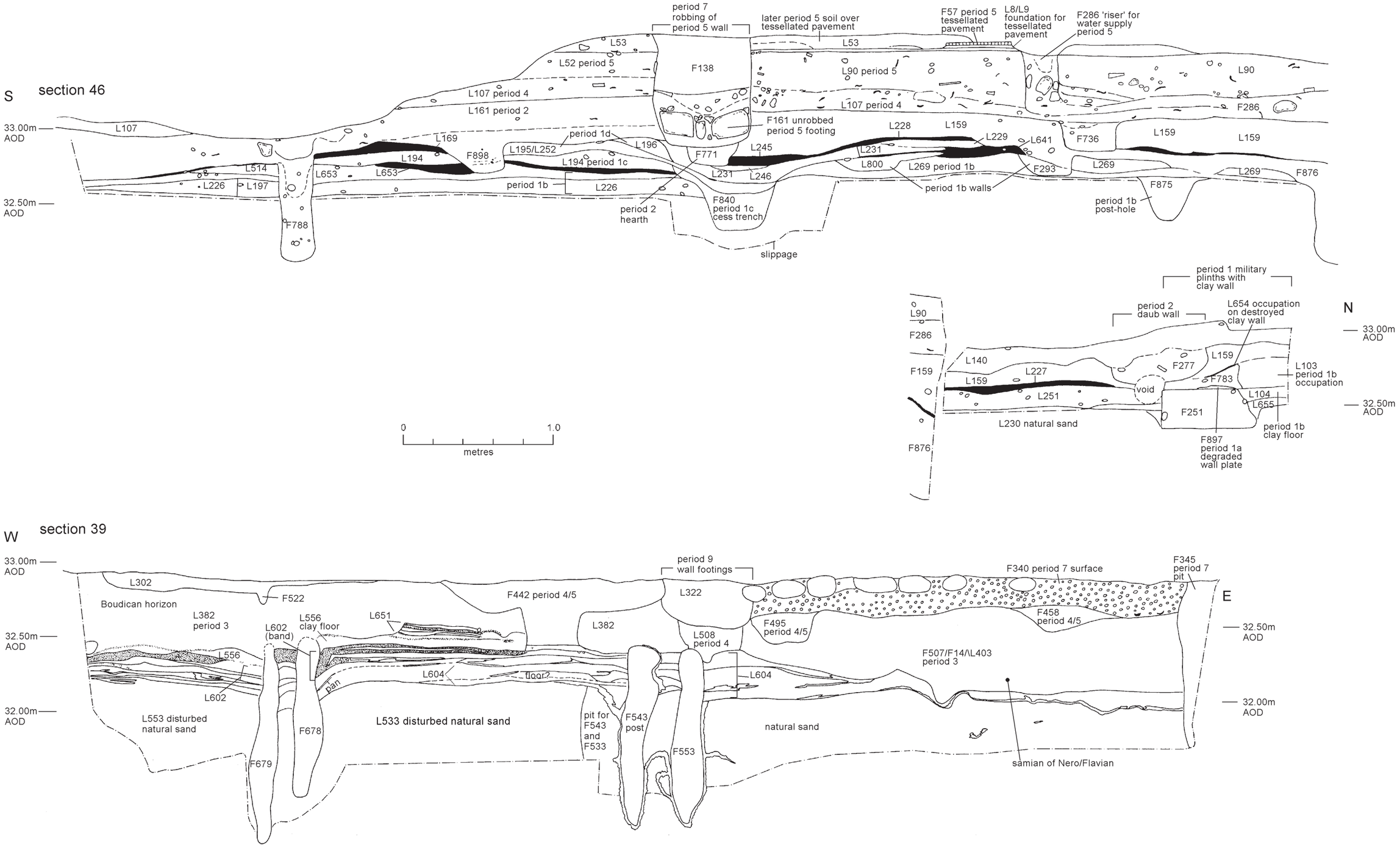


Fig 13 Sections 46,39.

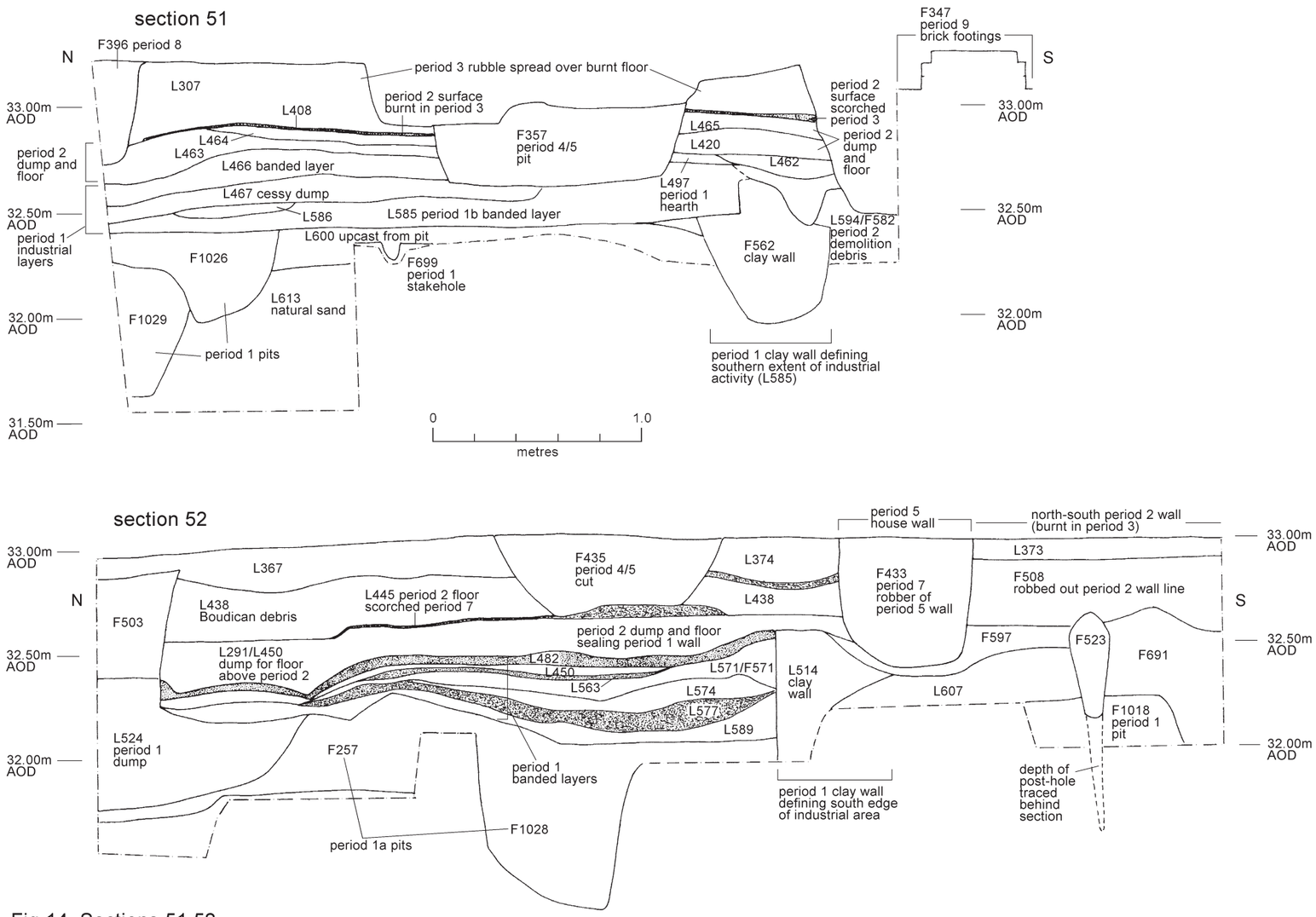


Fig 14 Sections 51,52.

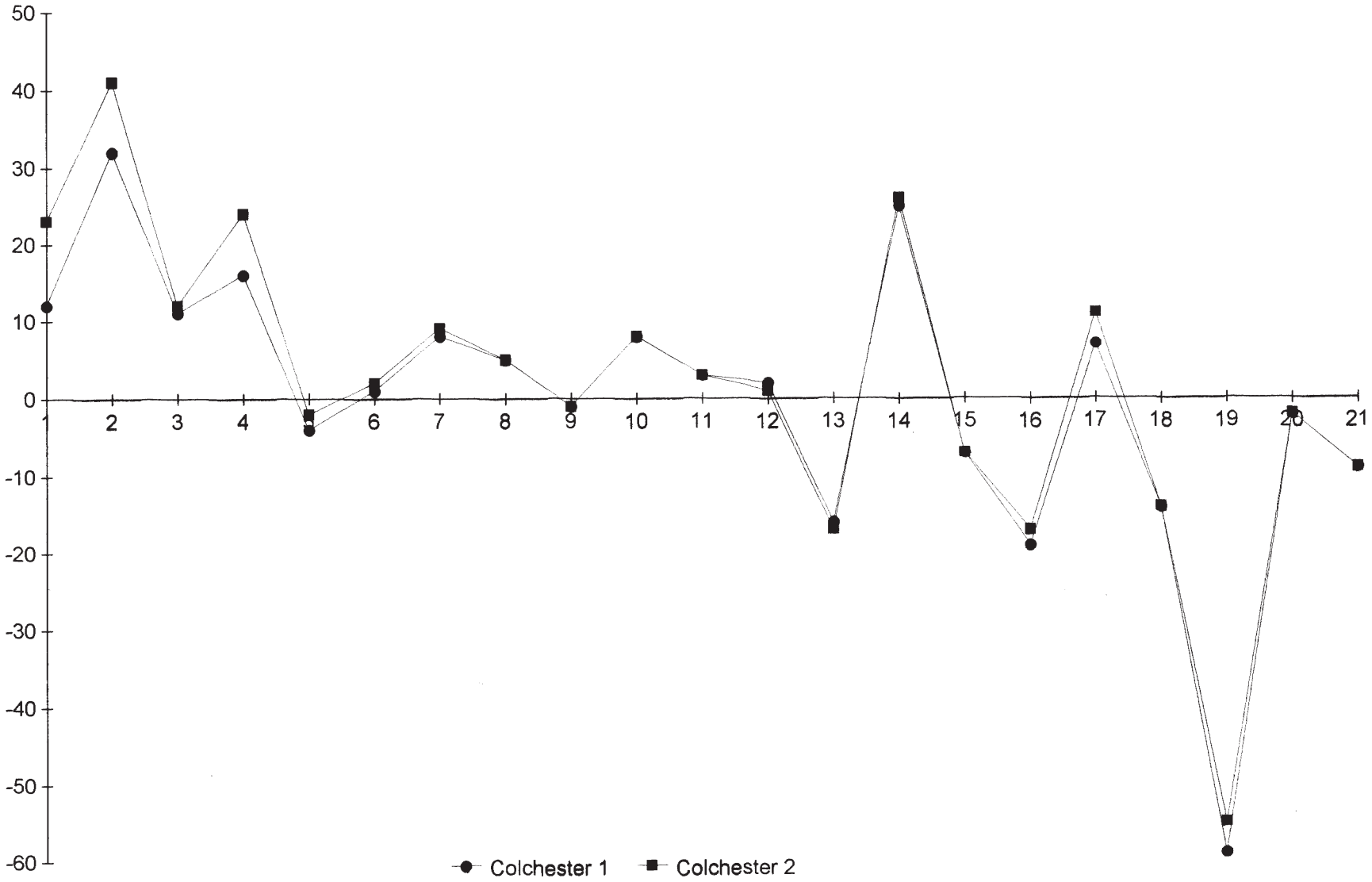


Fig 15 Coin loss from the 2000 excavation, on Colchester 1970s-early 1980s sites and at the Gilberd School site, set against the British mean.

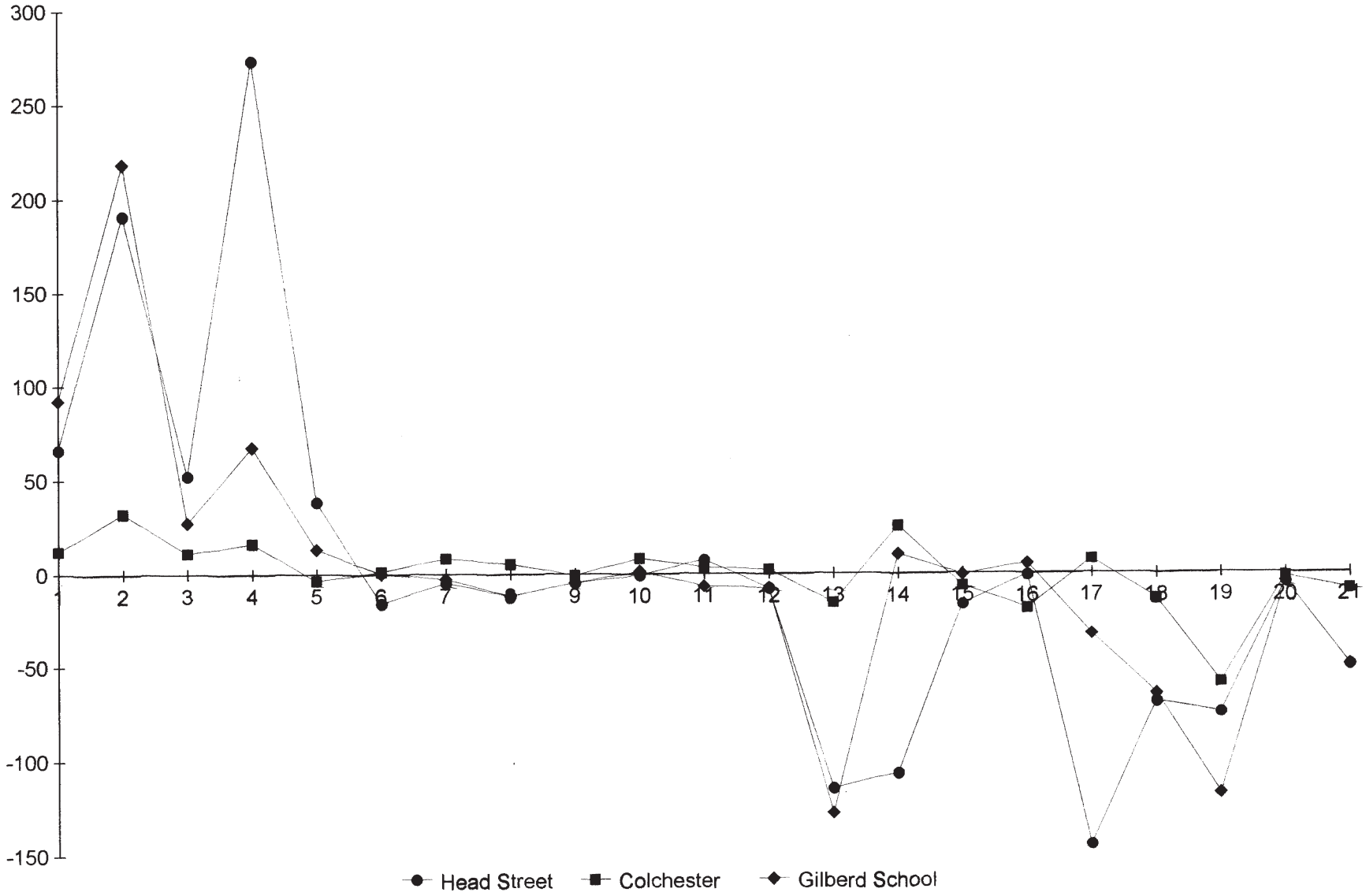


Fig 16 Coin loss for Colchester 1970s-early 1980s sites (Colchester 1) and for the same sites plus the 2000 excavation and the Gilberd School (Colchester 2), set against the British mean.

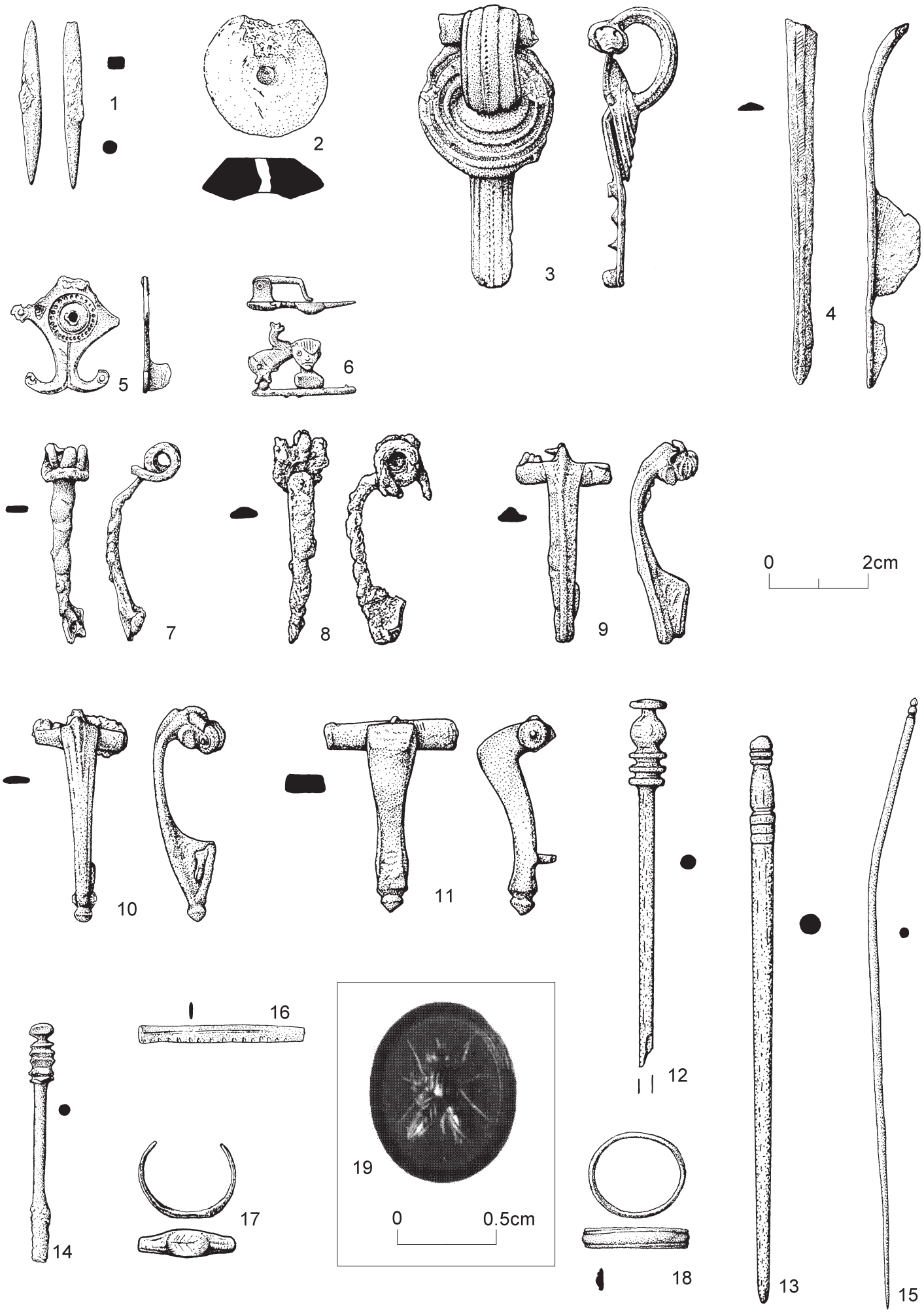


Fig 17 Prehistoric finds (1-2): Category 1, dress accessories (3-19).

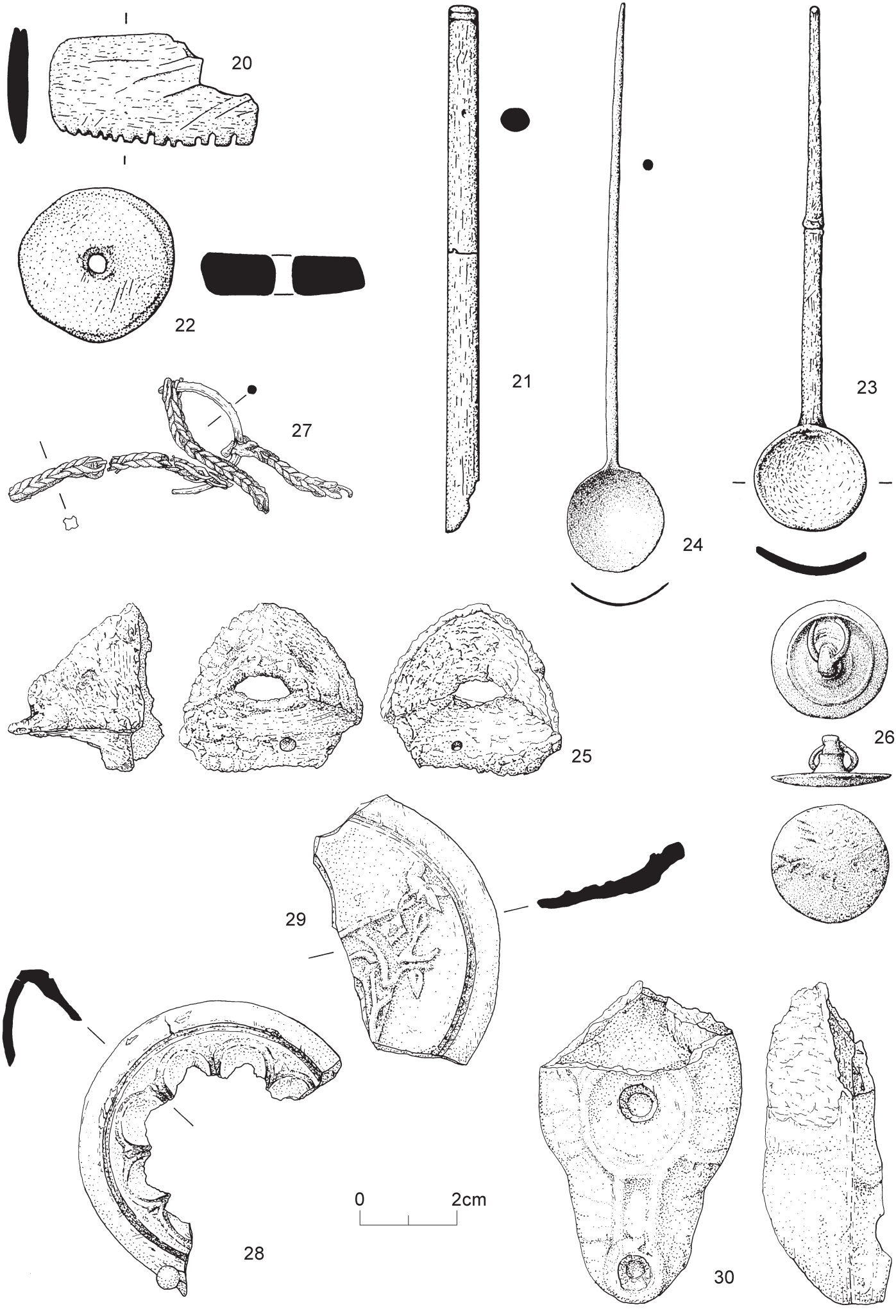


Fig 18 Roman finds: Category 3, textile manufacture or textile-working equipment (20-22); Category 4, household utensils and furniture (23-30).

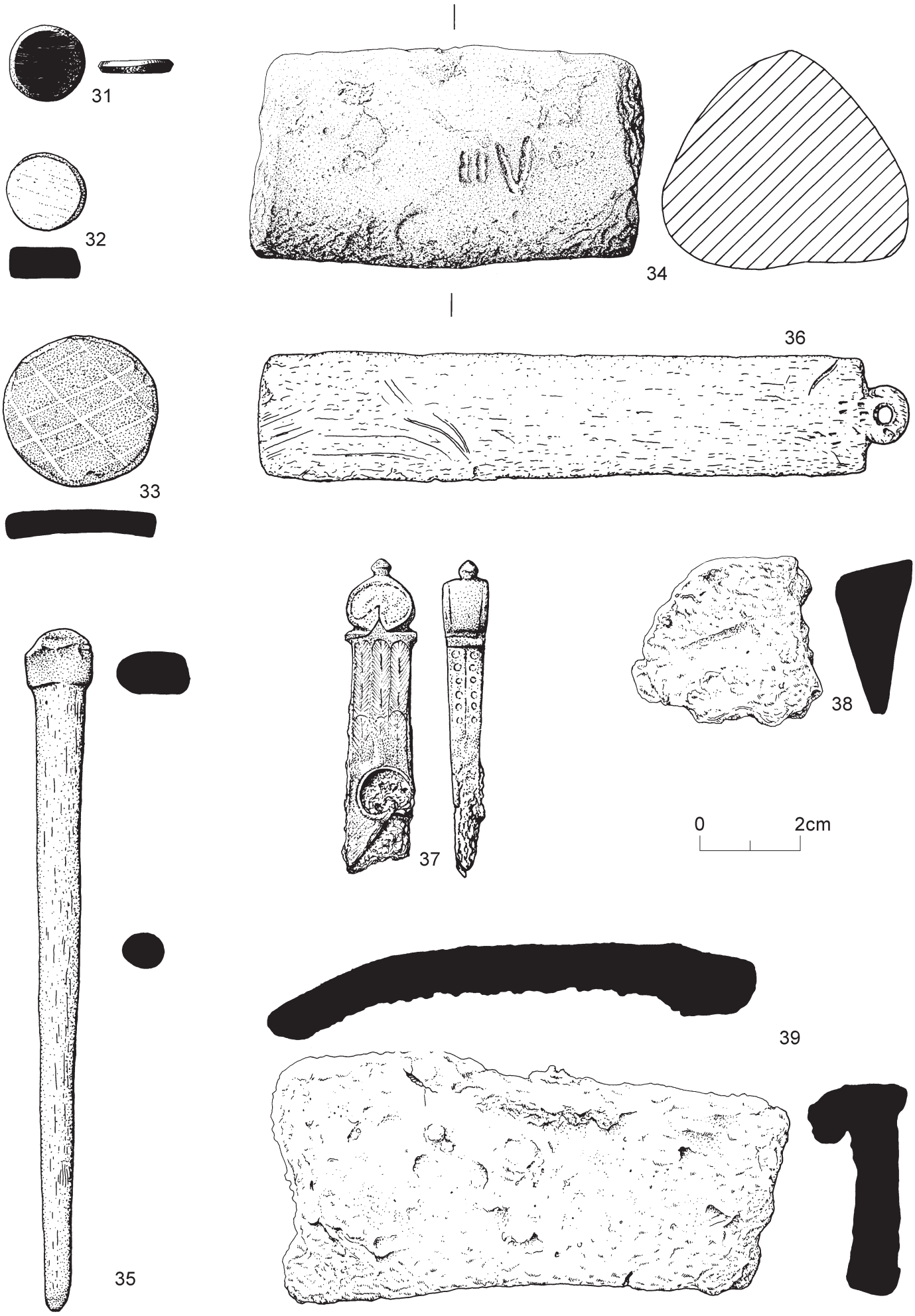


Fig 19 Category 5, recreation (31-33); Category 6, weighing and measuring equipment (34); Category 7, writing equipment (35-37); Category 9, buildings and services (38-39).

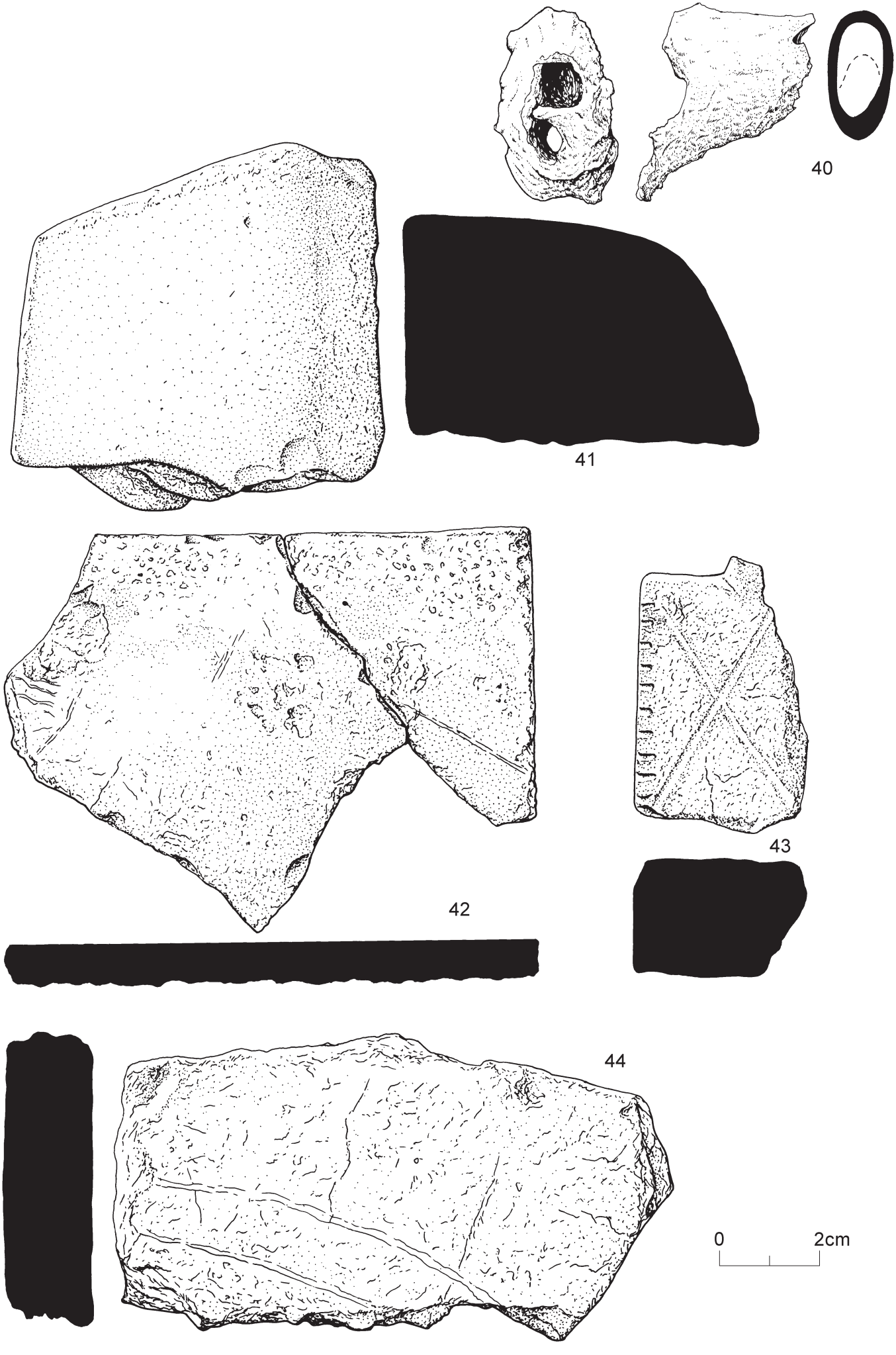


Fig 20 Category 9, buildings and services (continued) (40-44).

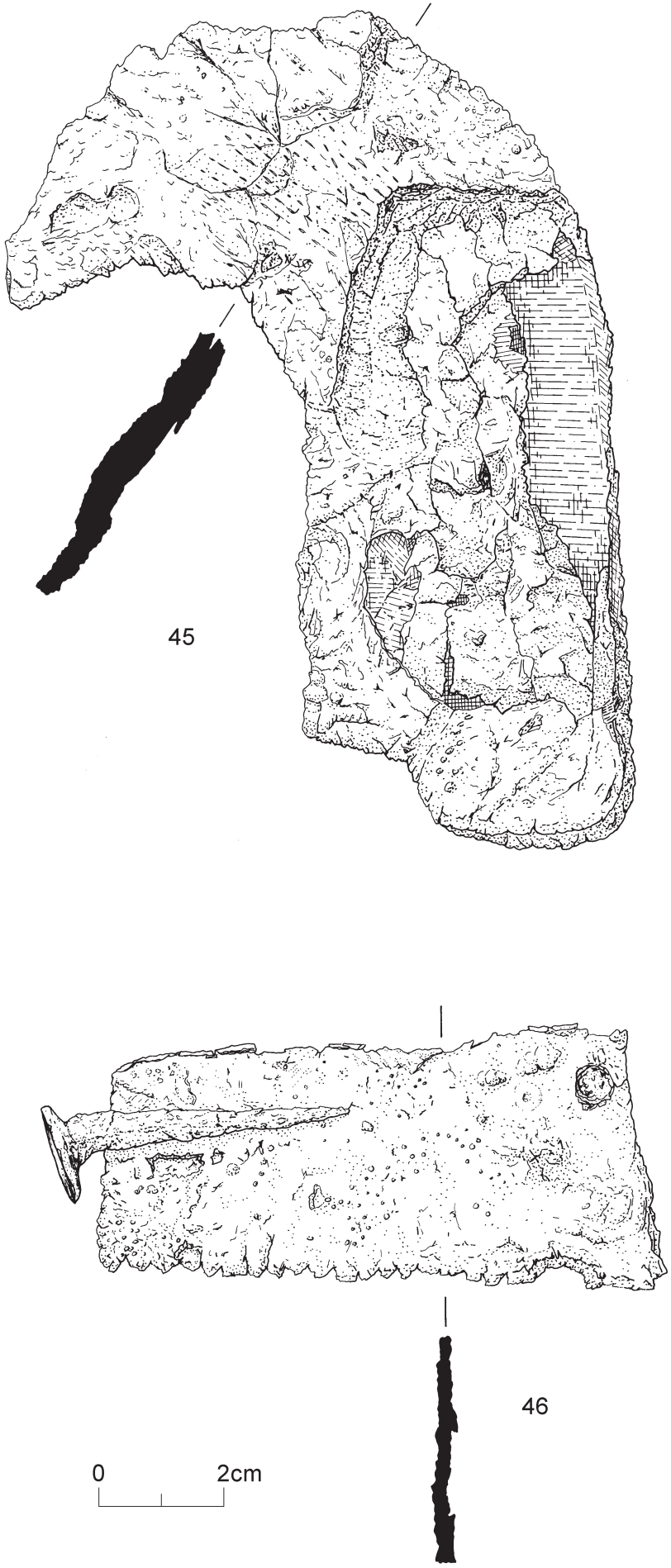


Fig 21 Category 10, tools (45-46).

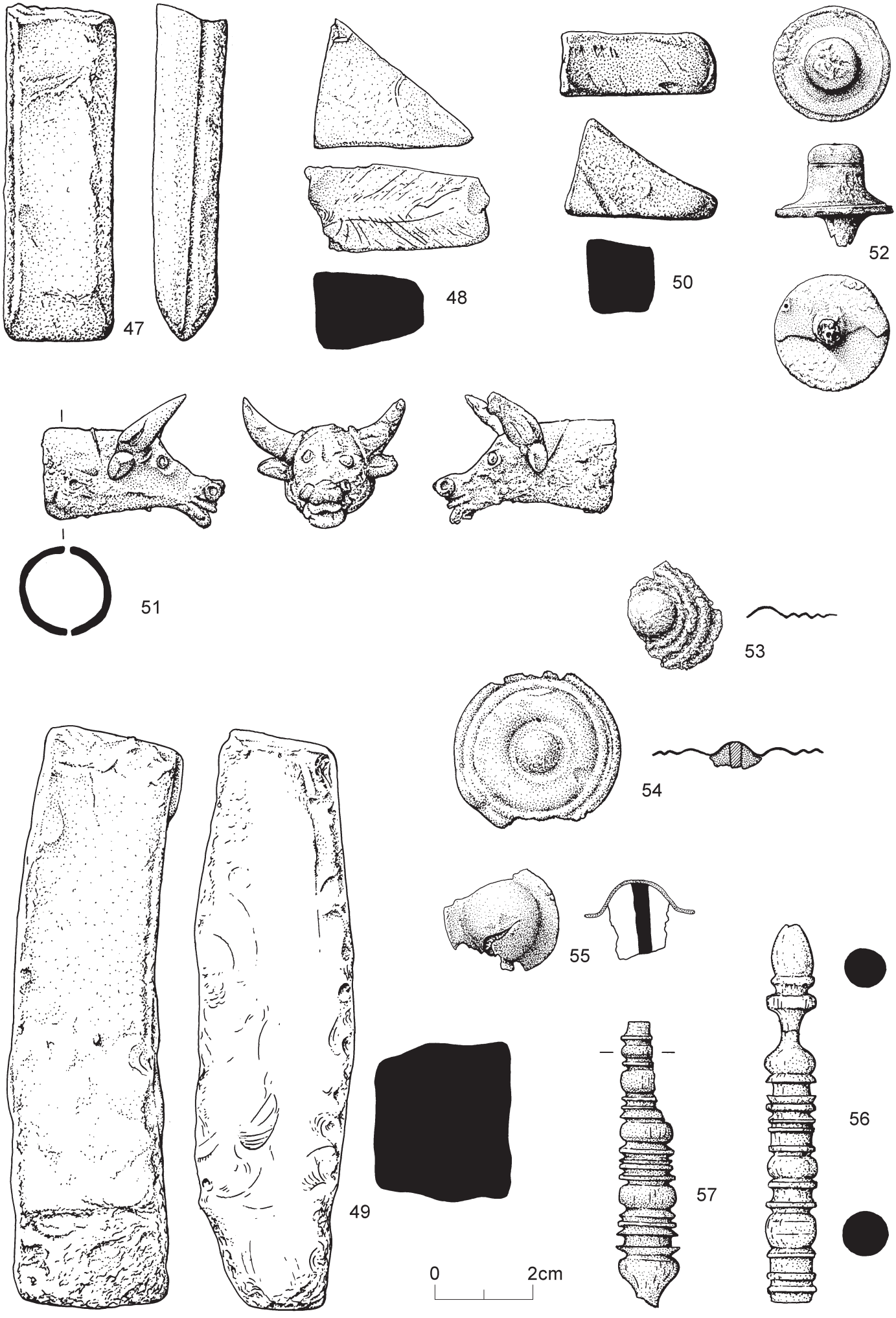


Fig 22 Category 10, tools (continued) (45-50); Category 11, fastenings and fittings (51-57).

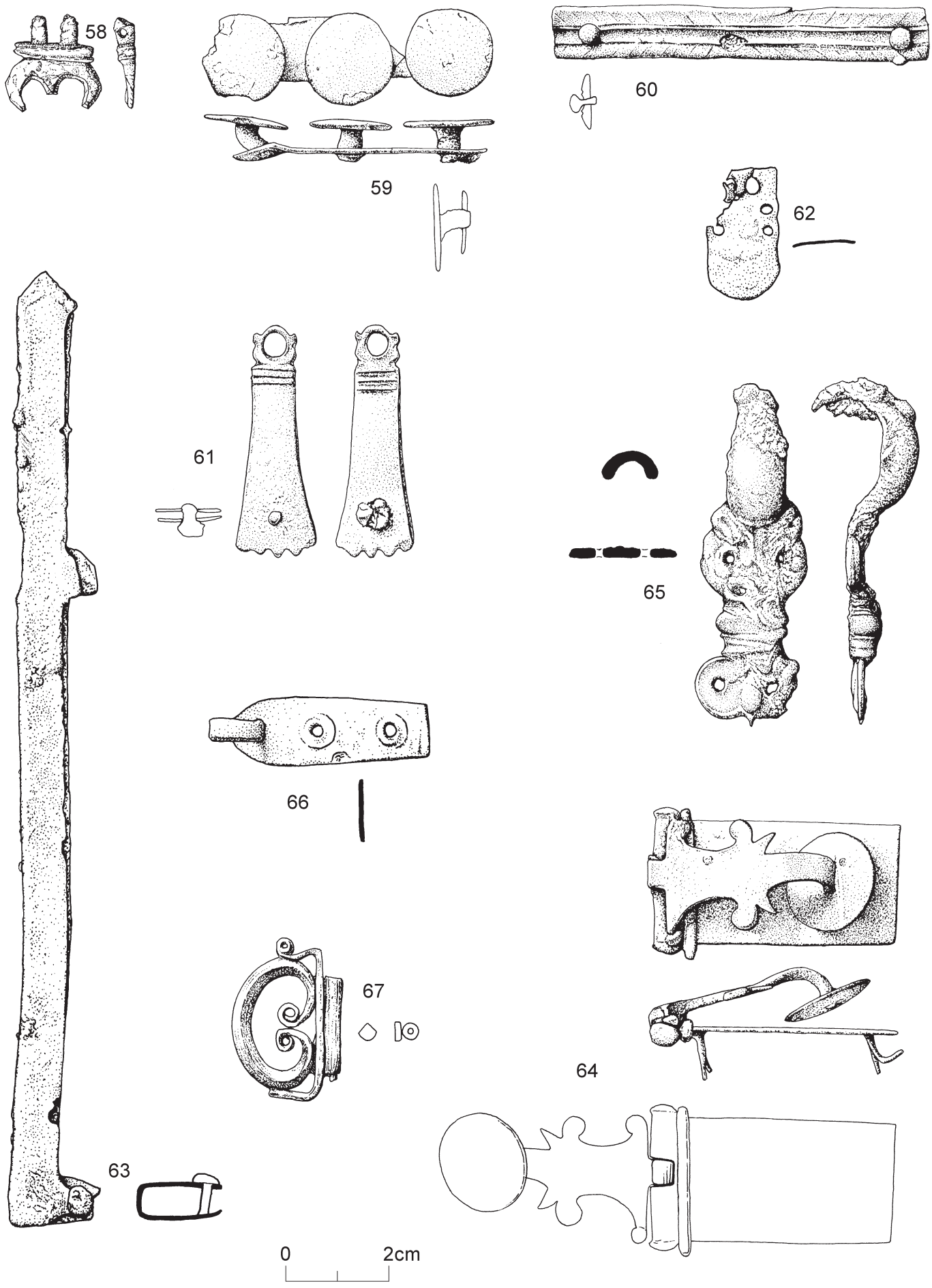


Fig 23 Category 13, military equipment (58-67).

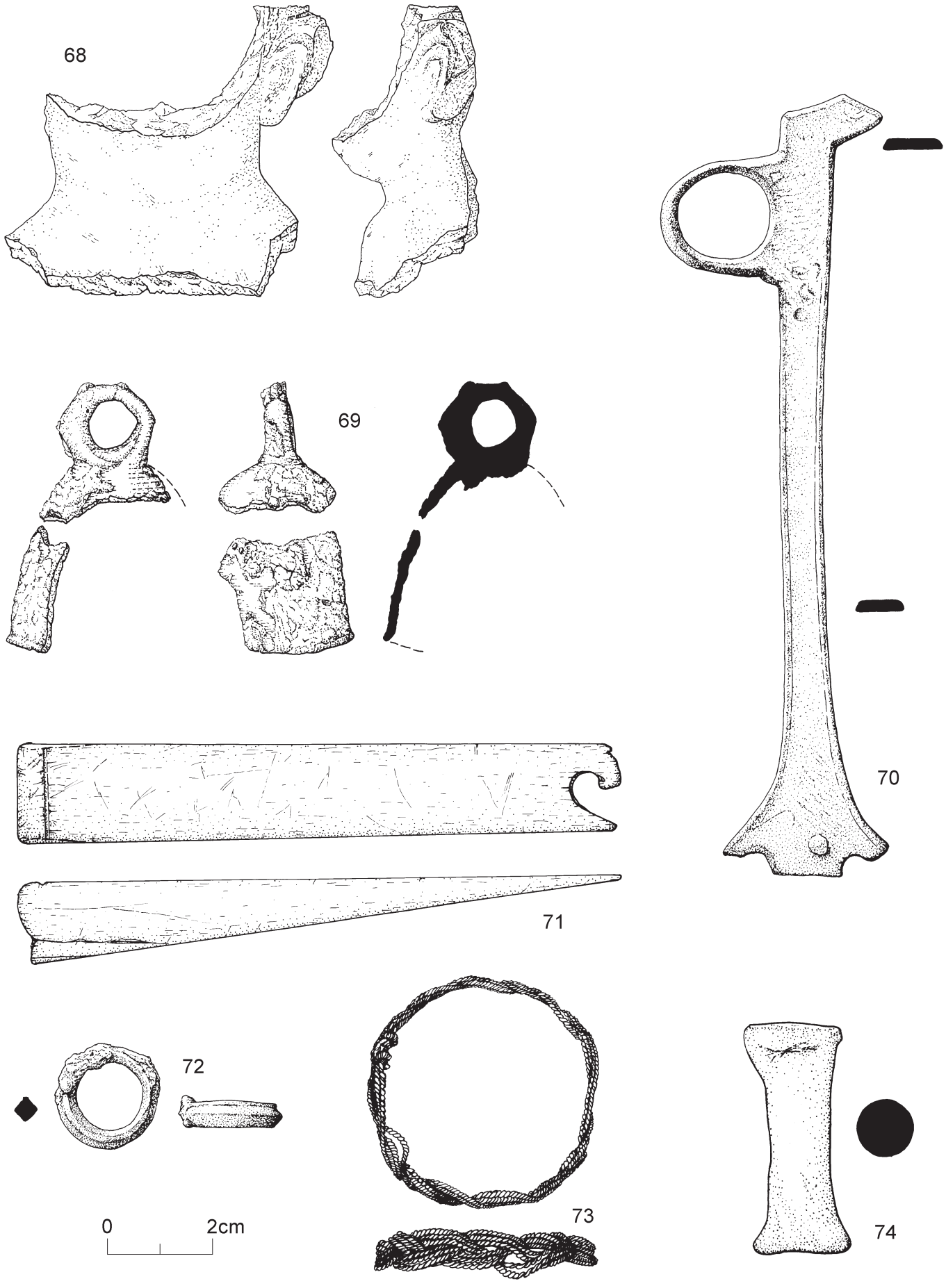


Fig 24 Category 14, religious beliefs and practices (68-69); Category 18, function unknown (70-72) - post-Roman finds: Category 1, dress accessories (73); Category 2, toilet instruments (74).

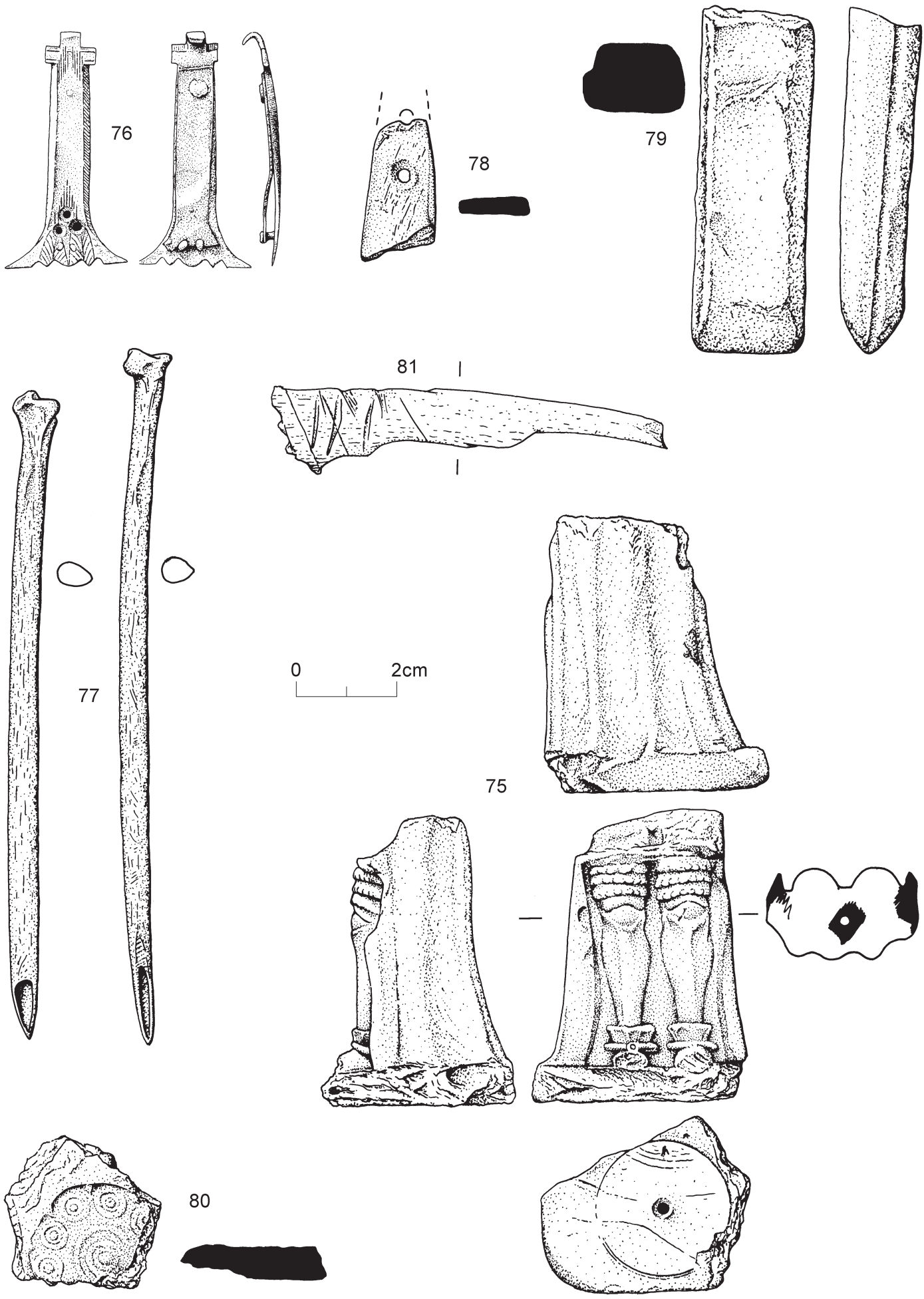


Fig 25 Post-Roman finds (continued): Category 5, recreation (75); Category 7, writing equipment (76-77); Category 10, tools (78-79); Category 15, metal-working (80); Category 16, bone-working (81).

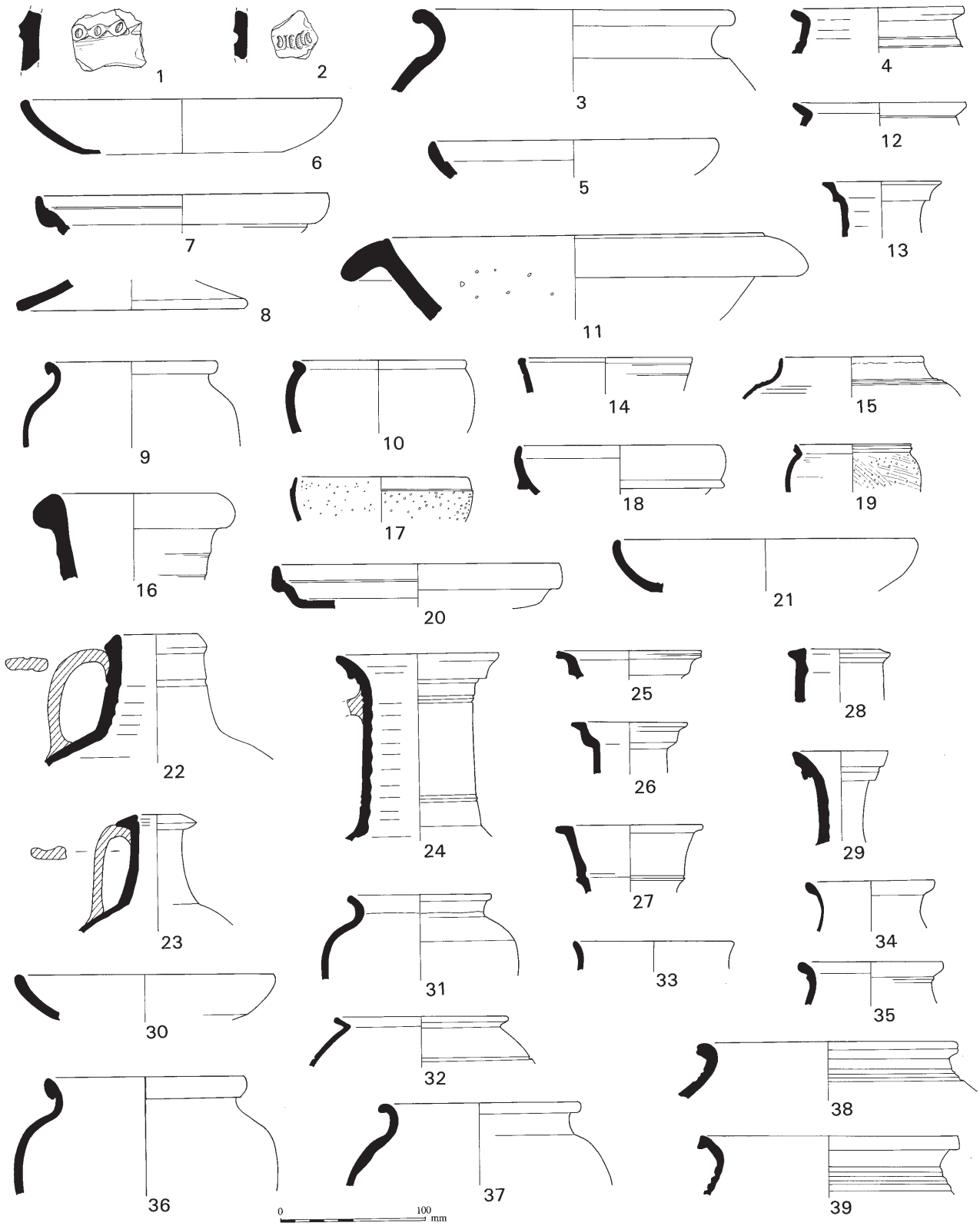


Fig 26 Prehistoric pottery (1-2) - Roman pottery: Period 1 (3-39).

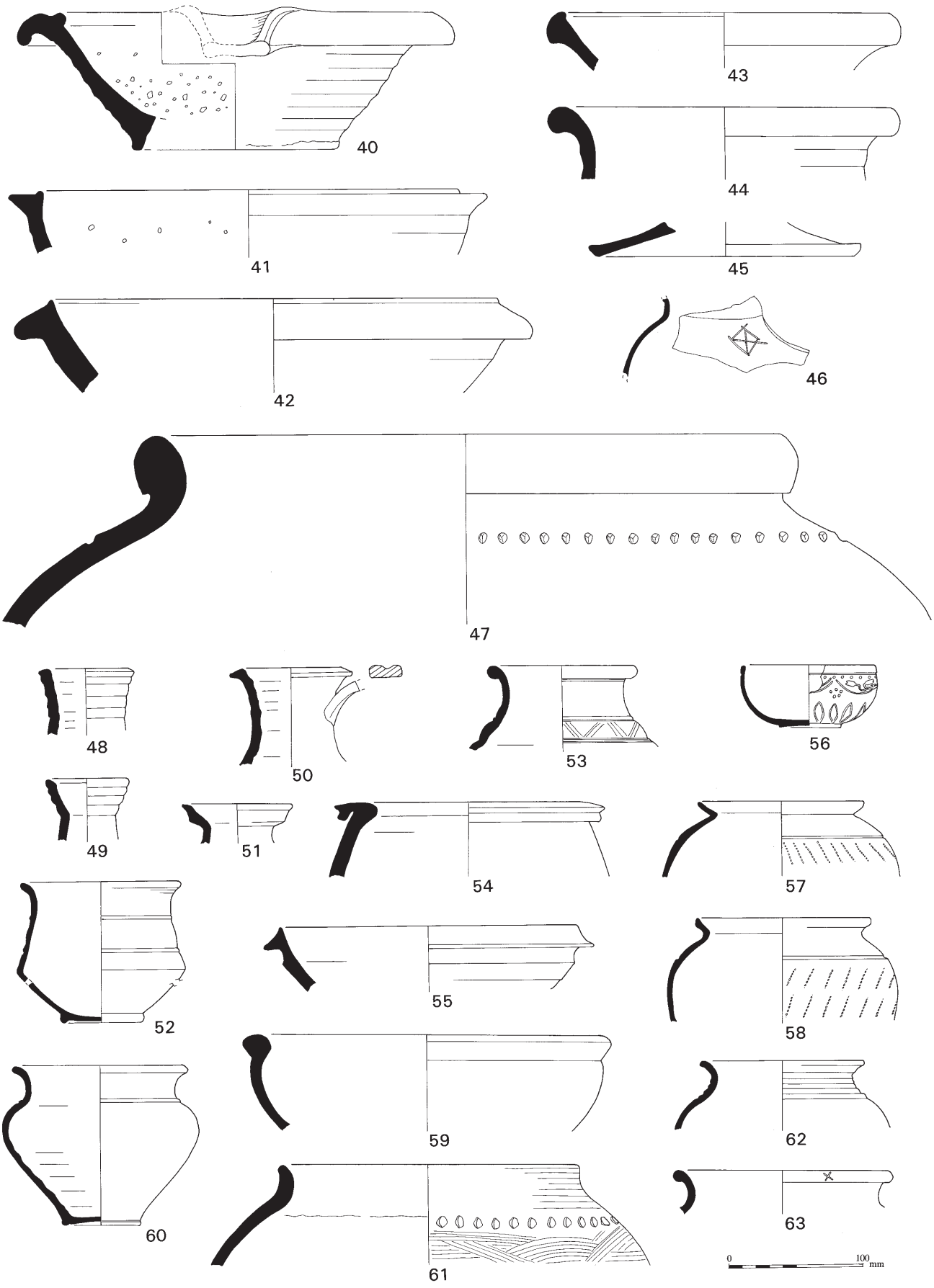


Fig 27 Periods 1 and 2: pottery (40-63).

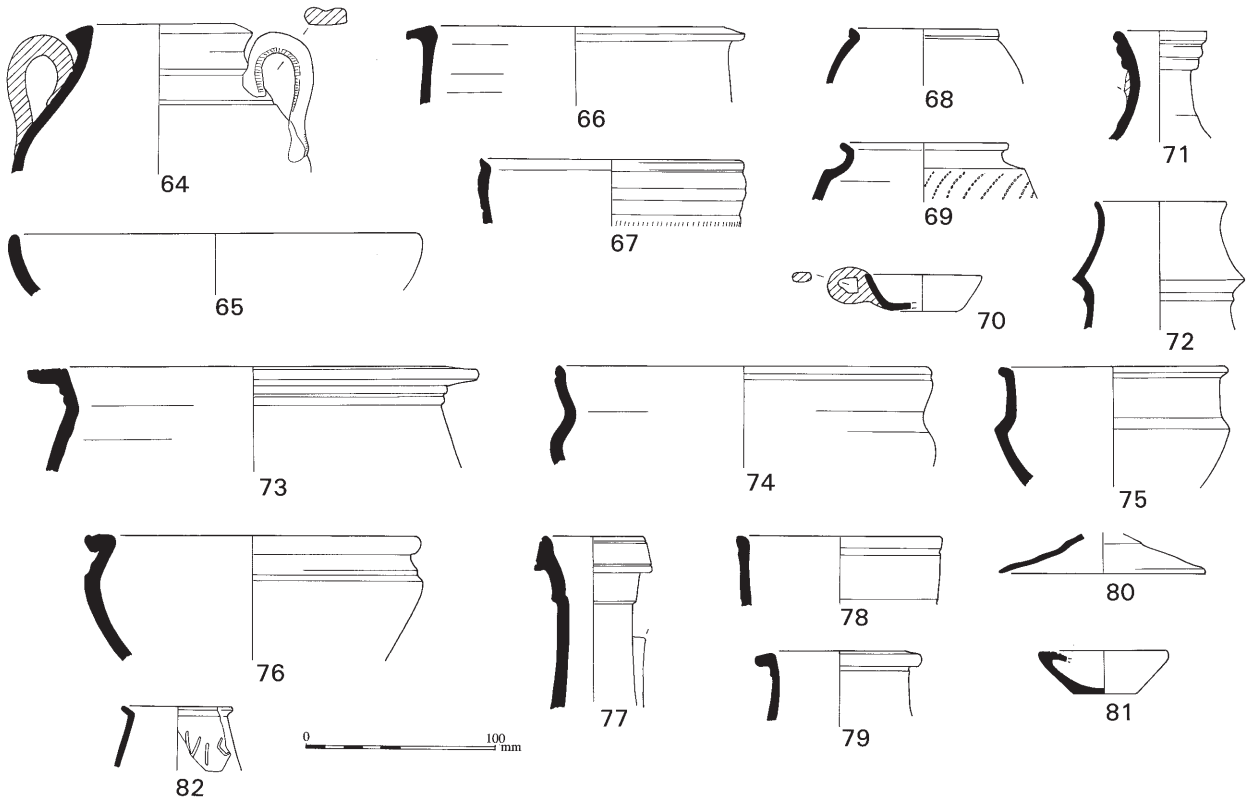
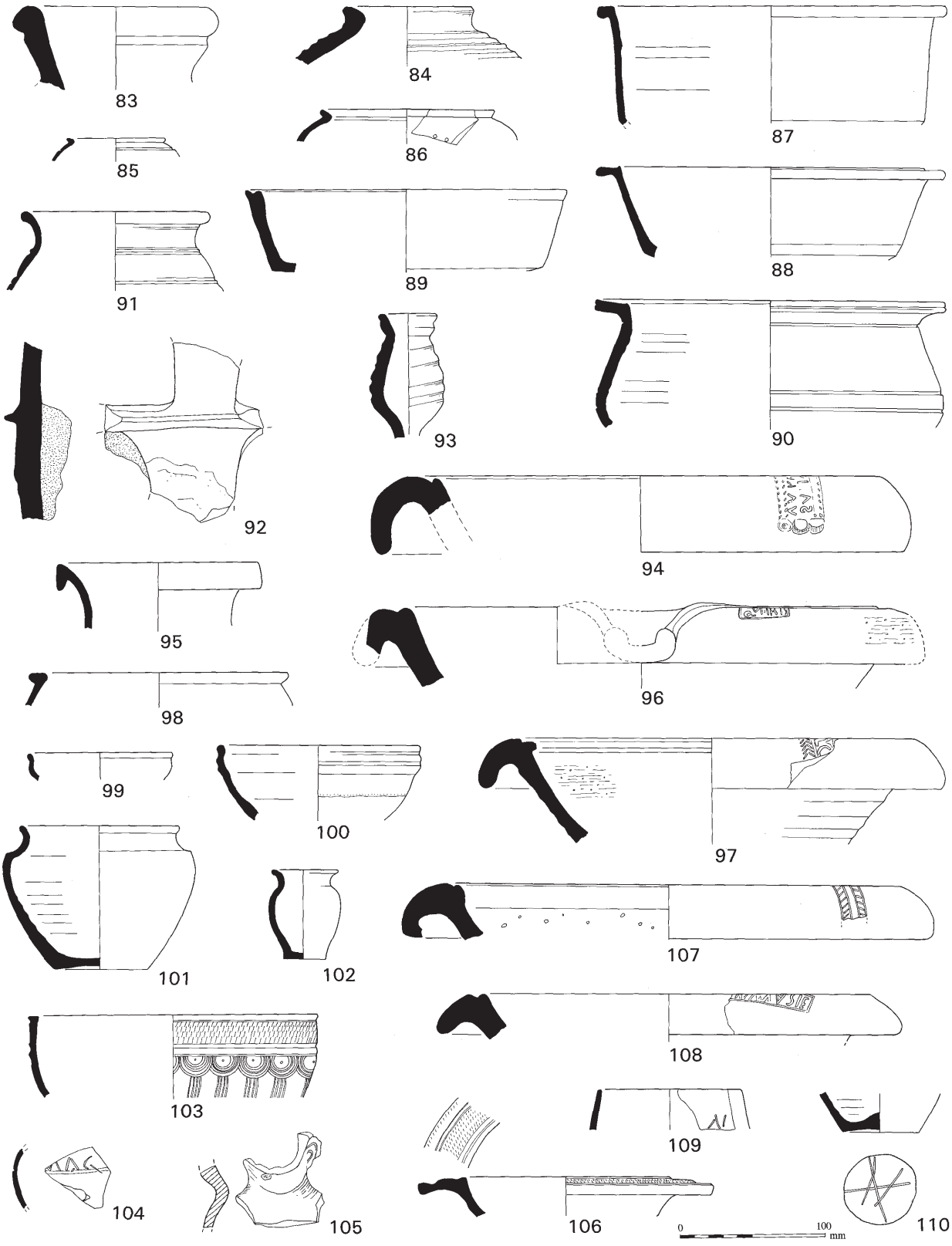


Fig 28 Periods 2 and 3: pottery (64-82).



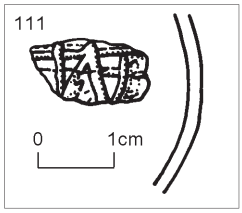


Fig 29 Periods 4 and 5: pottery (83-111).

Fig 30 Samian rubbings 1-7, 10-12.

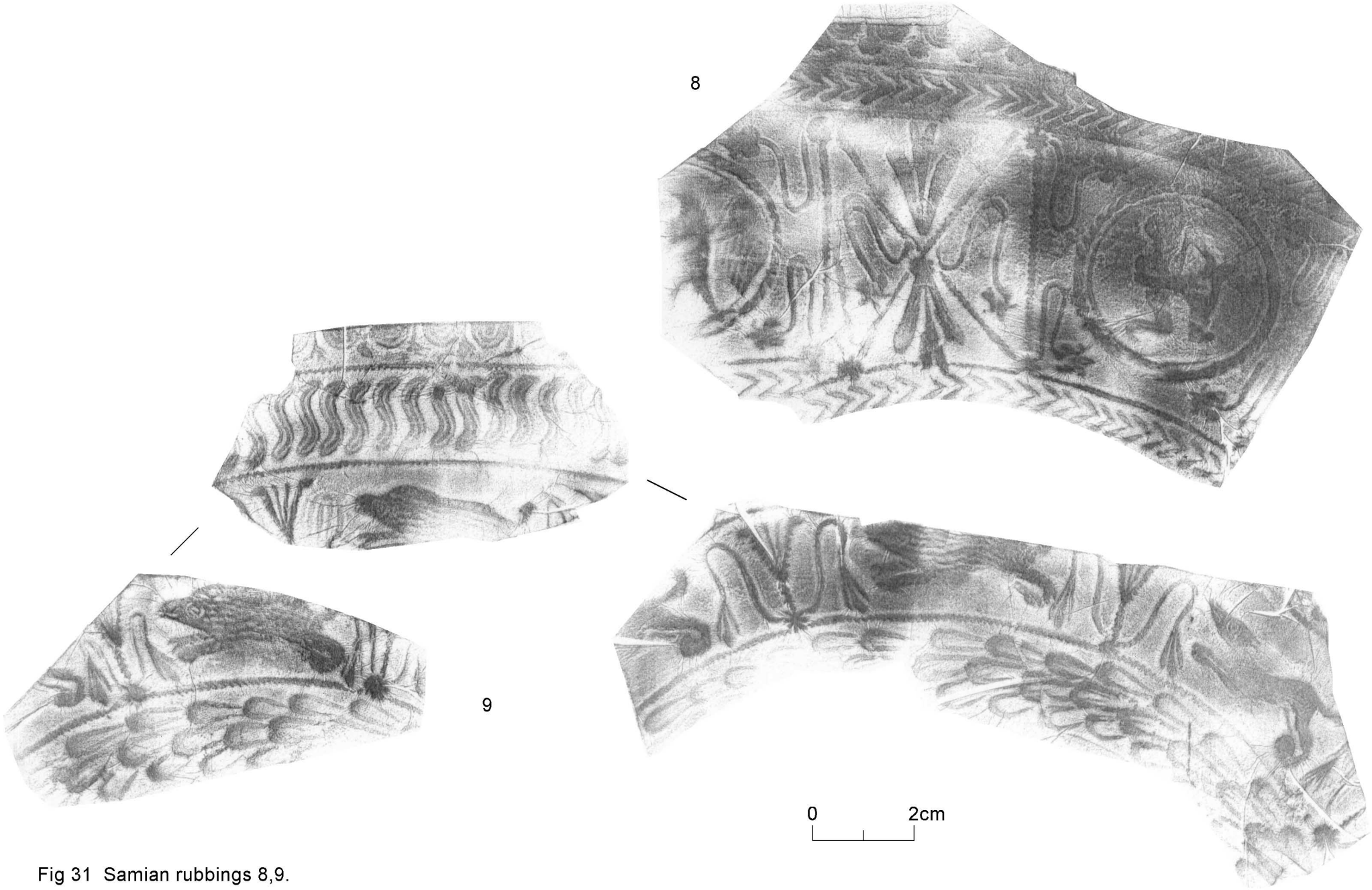


Fig 31 Samian rubbings 8,9.

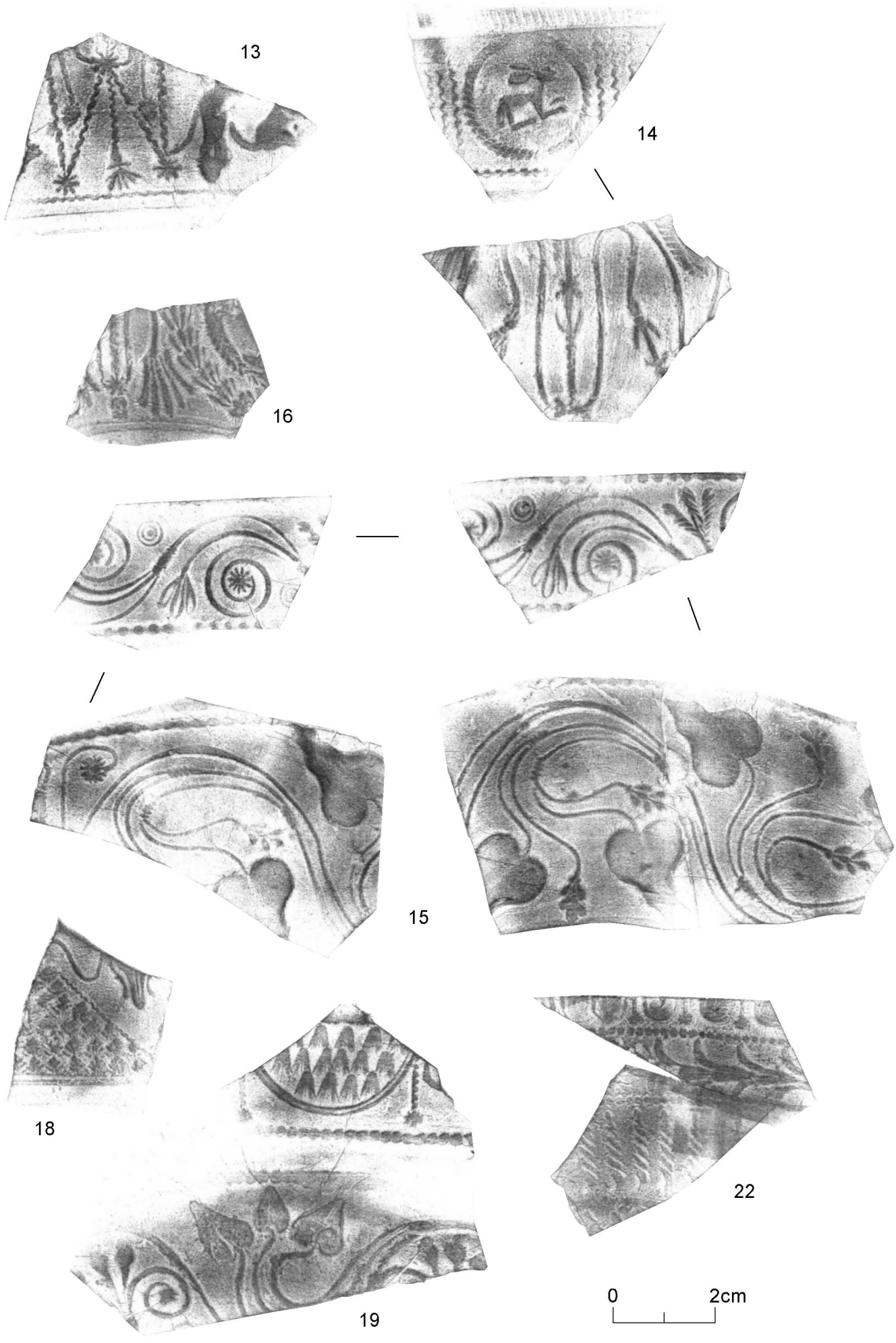


Fig 32 Samian rubbings 13-16, 18-19, 22.

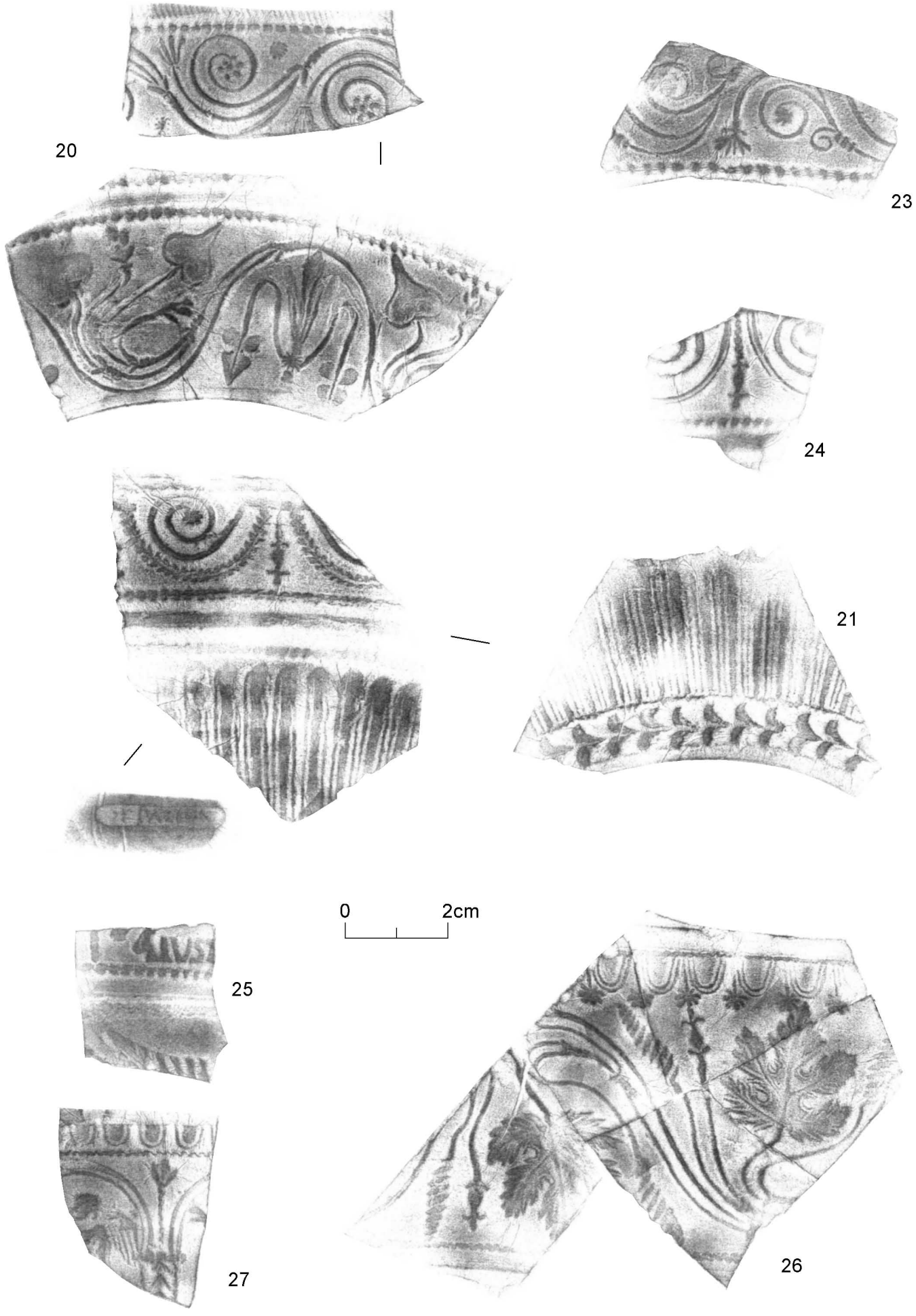


Fig 33 Samian rubbings 20-21, 23-27.

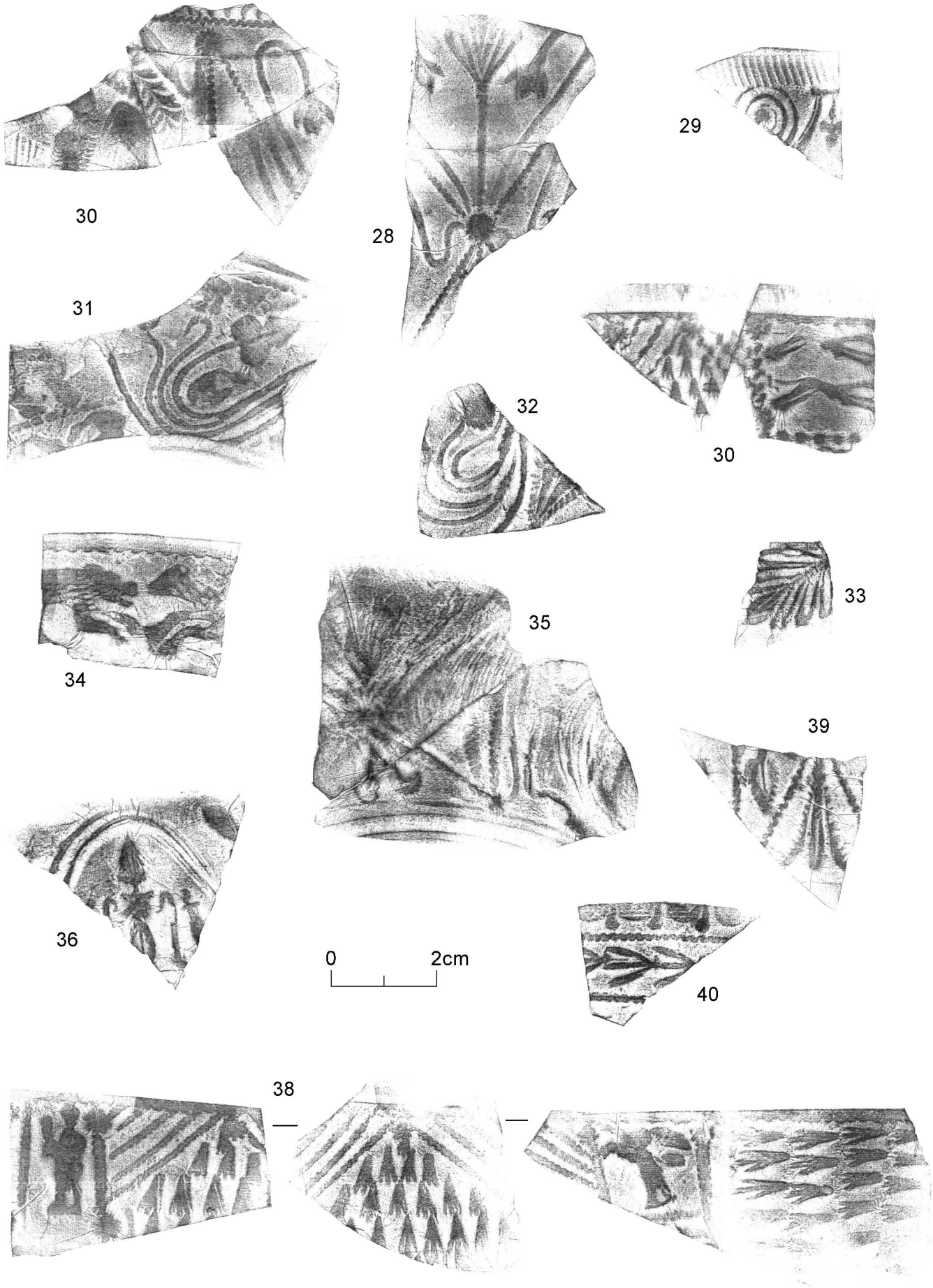


Fig 34 Samian rubbings 28-36, 38-40.

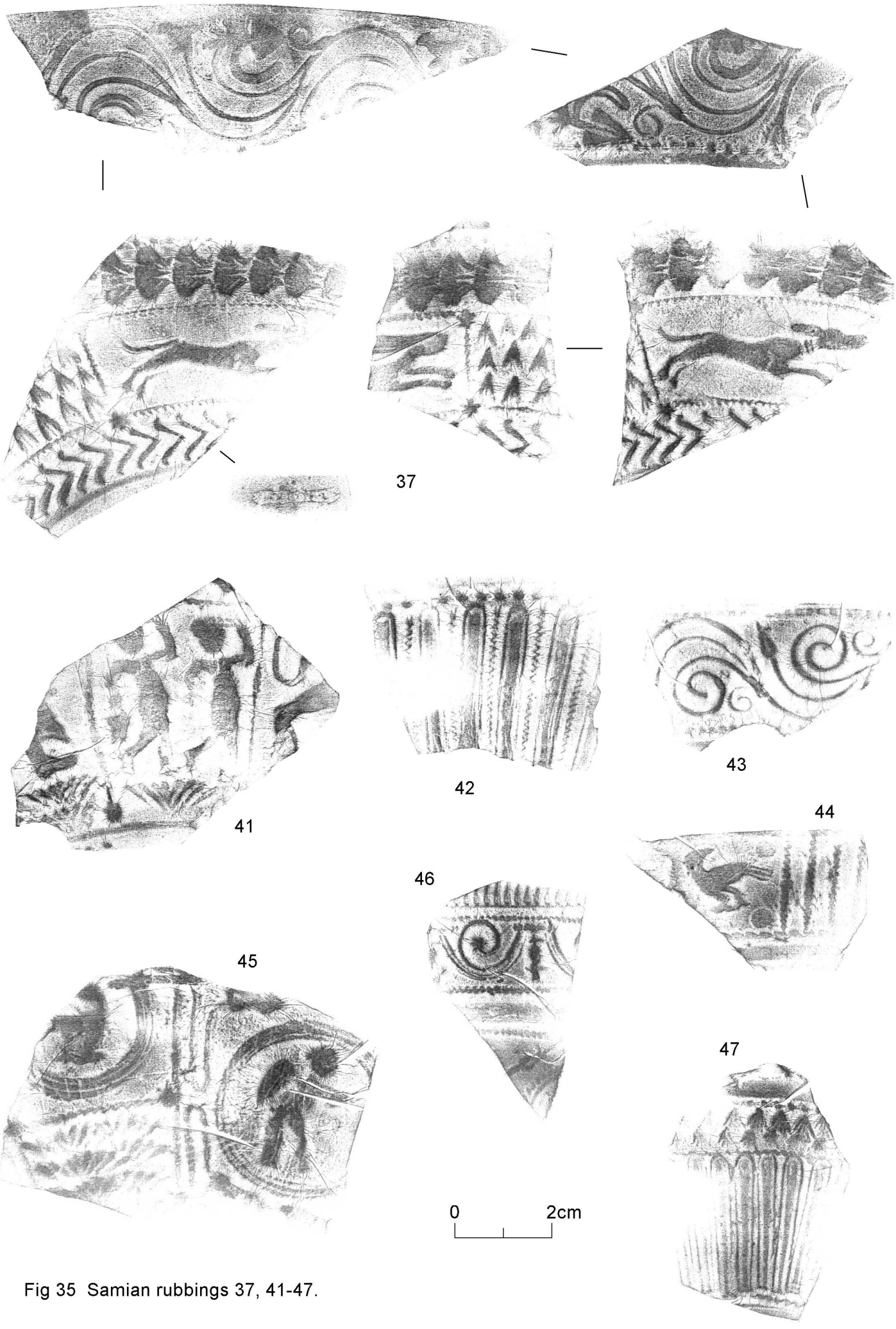


Fig 35 Samian rubbings 37, 41-47.

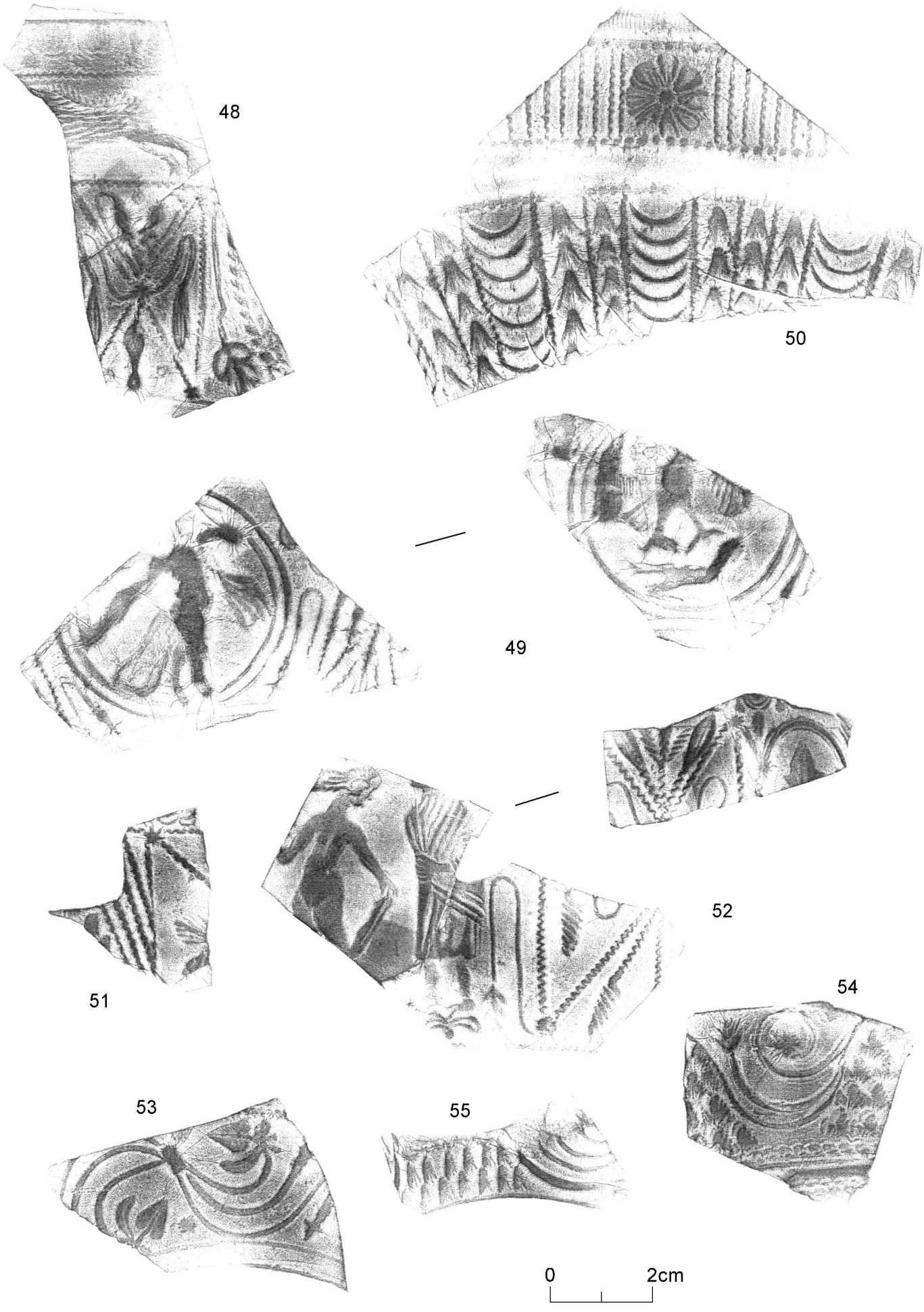


Fig 36 Samian rubbings 48-55.

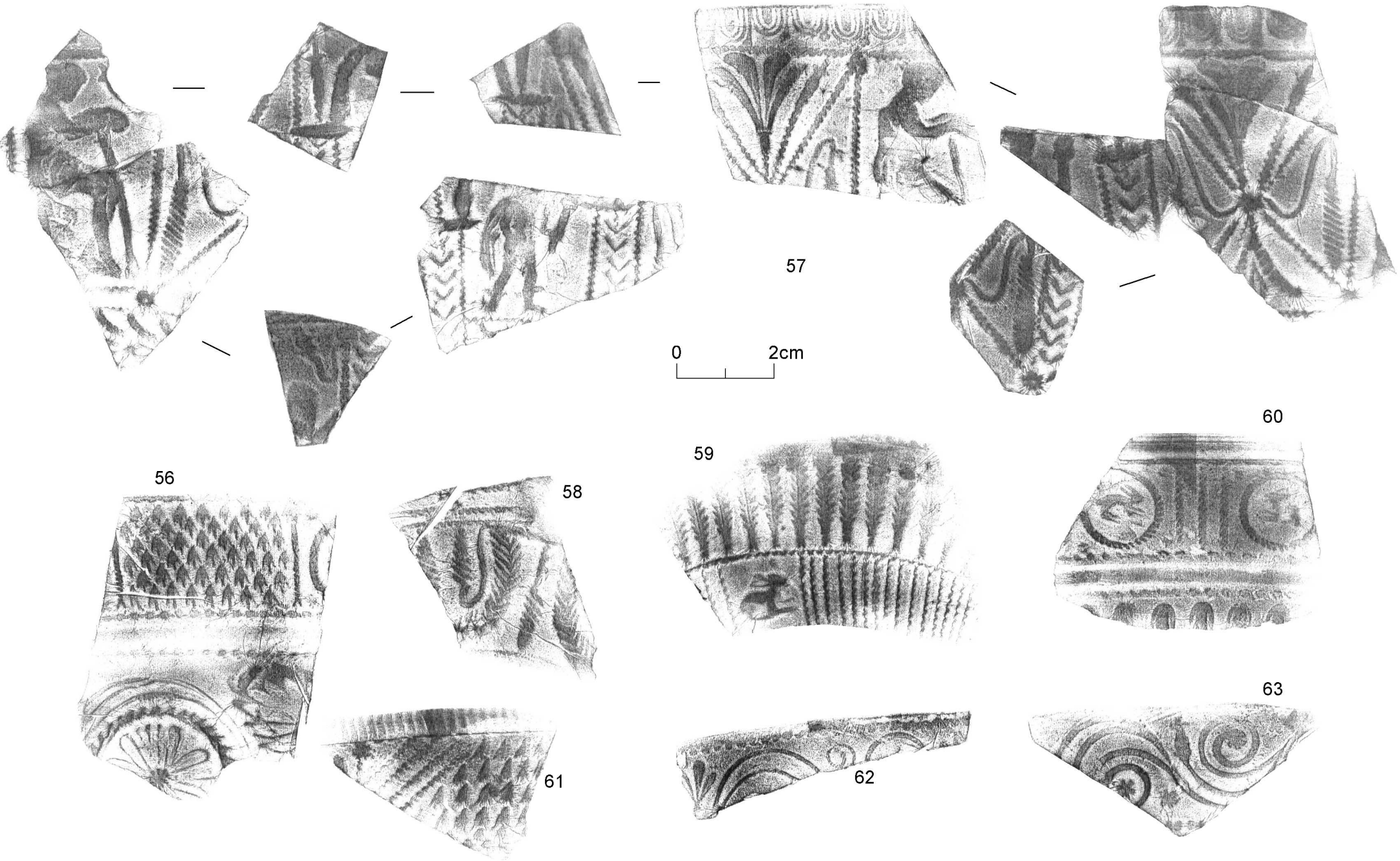


Fig 37 Samian rubbings 56-63.

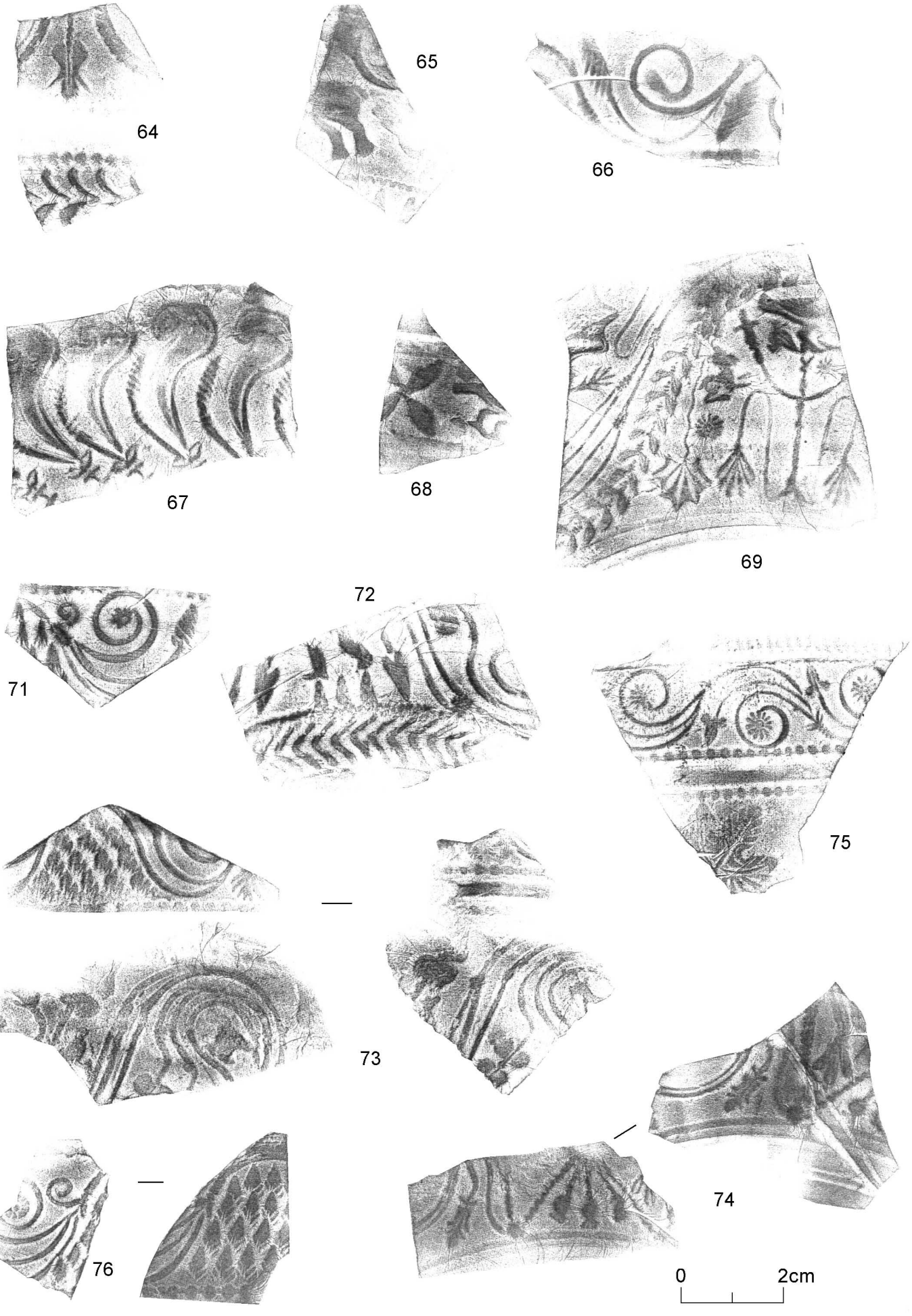


Fig 38 Samian rubbings 64-76.

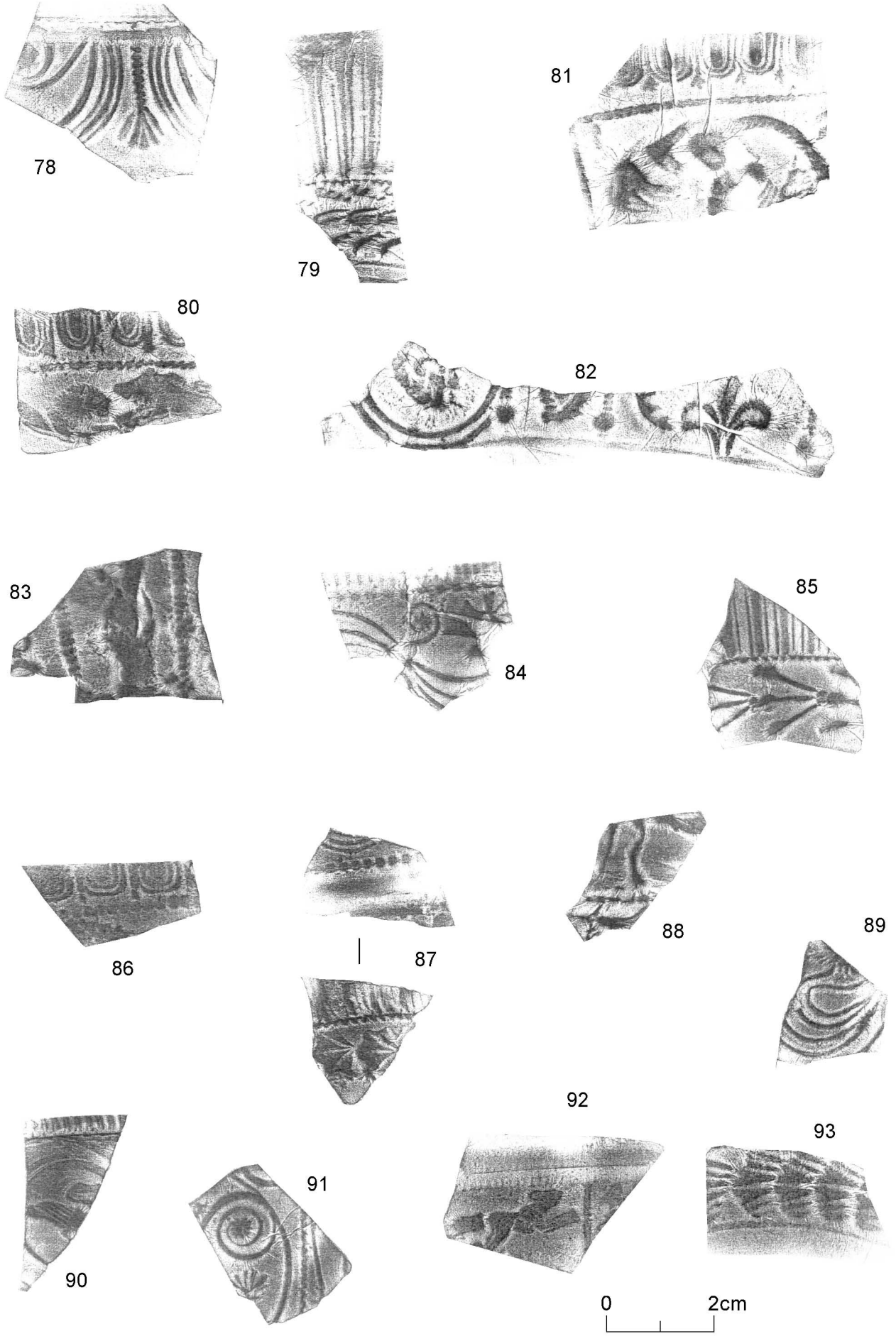


Fig 39 Samian rubbings 78-93.

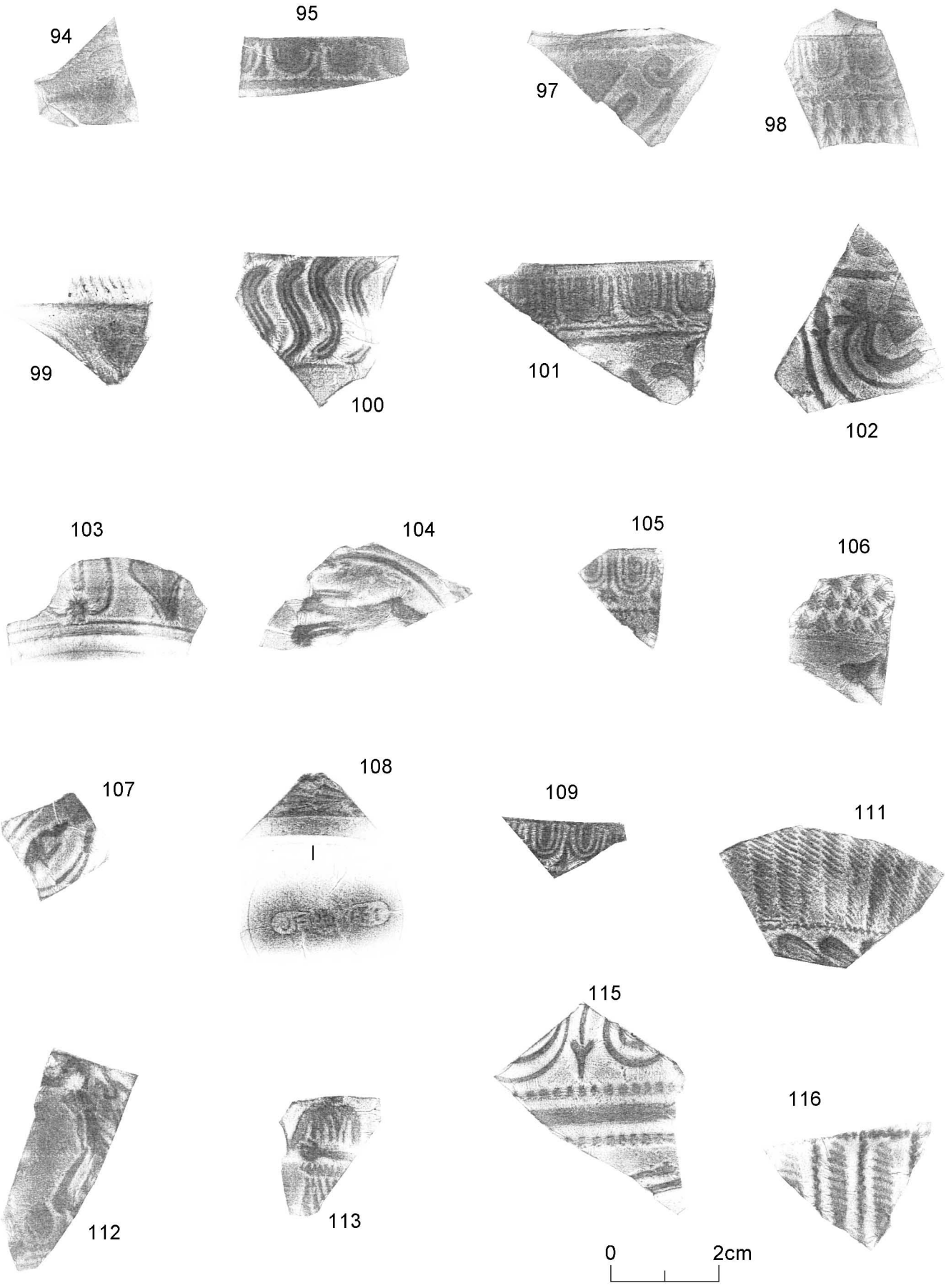


Fig 40 Samian rubbings 94-116.

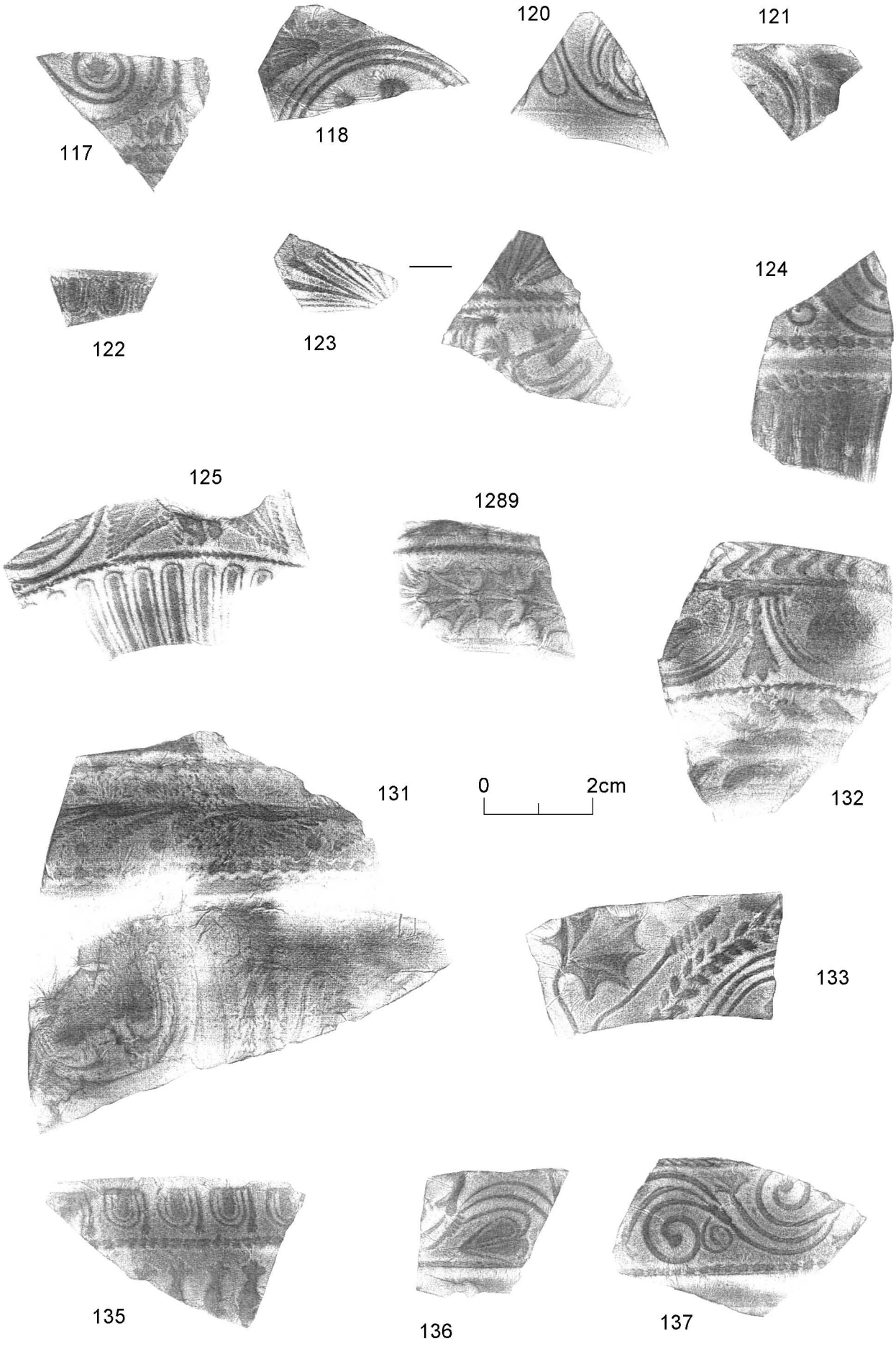


Fig 41 Samian rubbings 117-137.

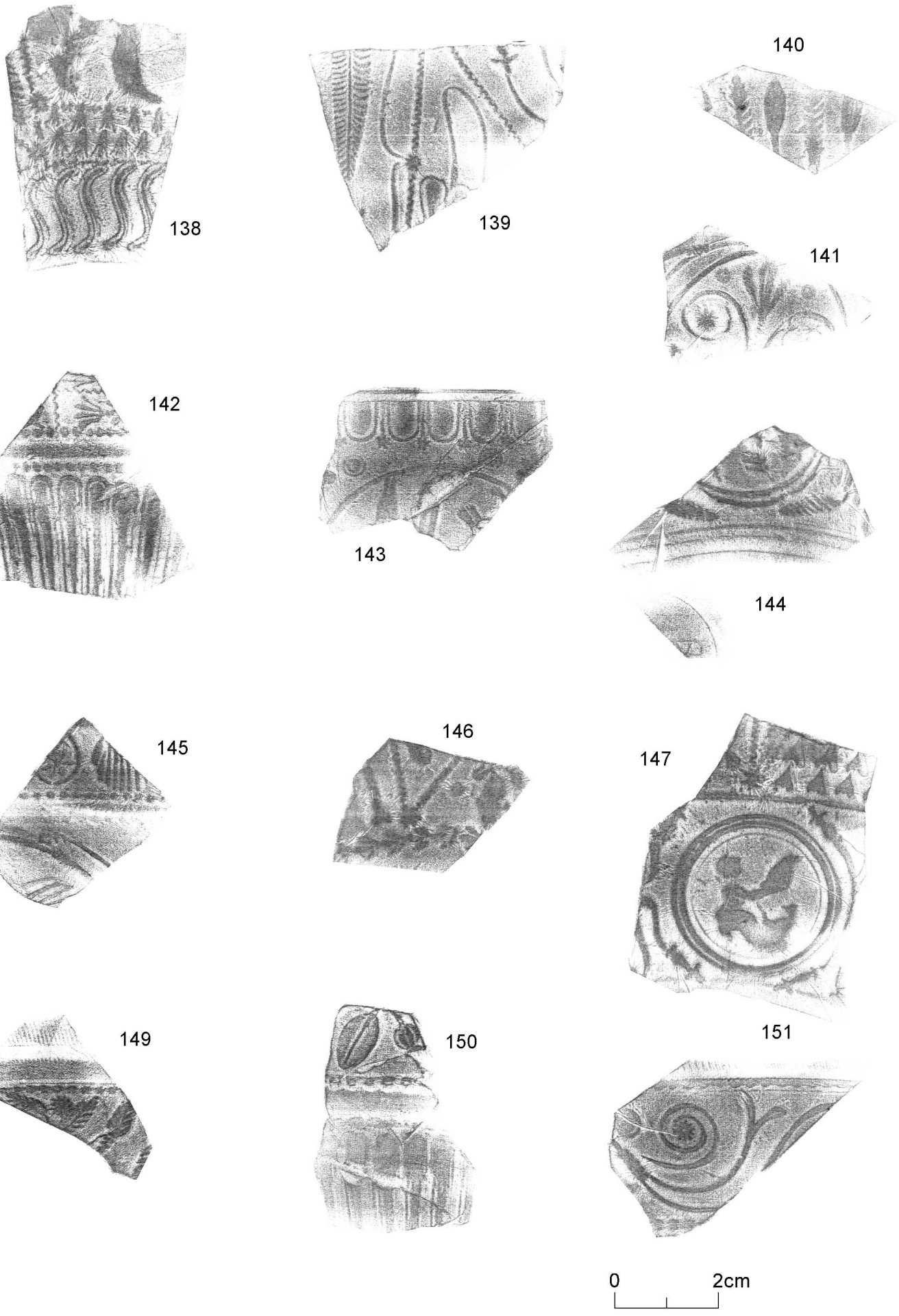


Fig 42 Samian rubbings 138-151.

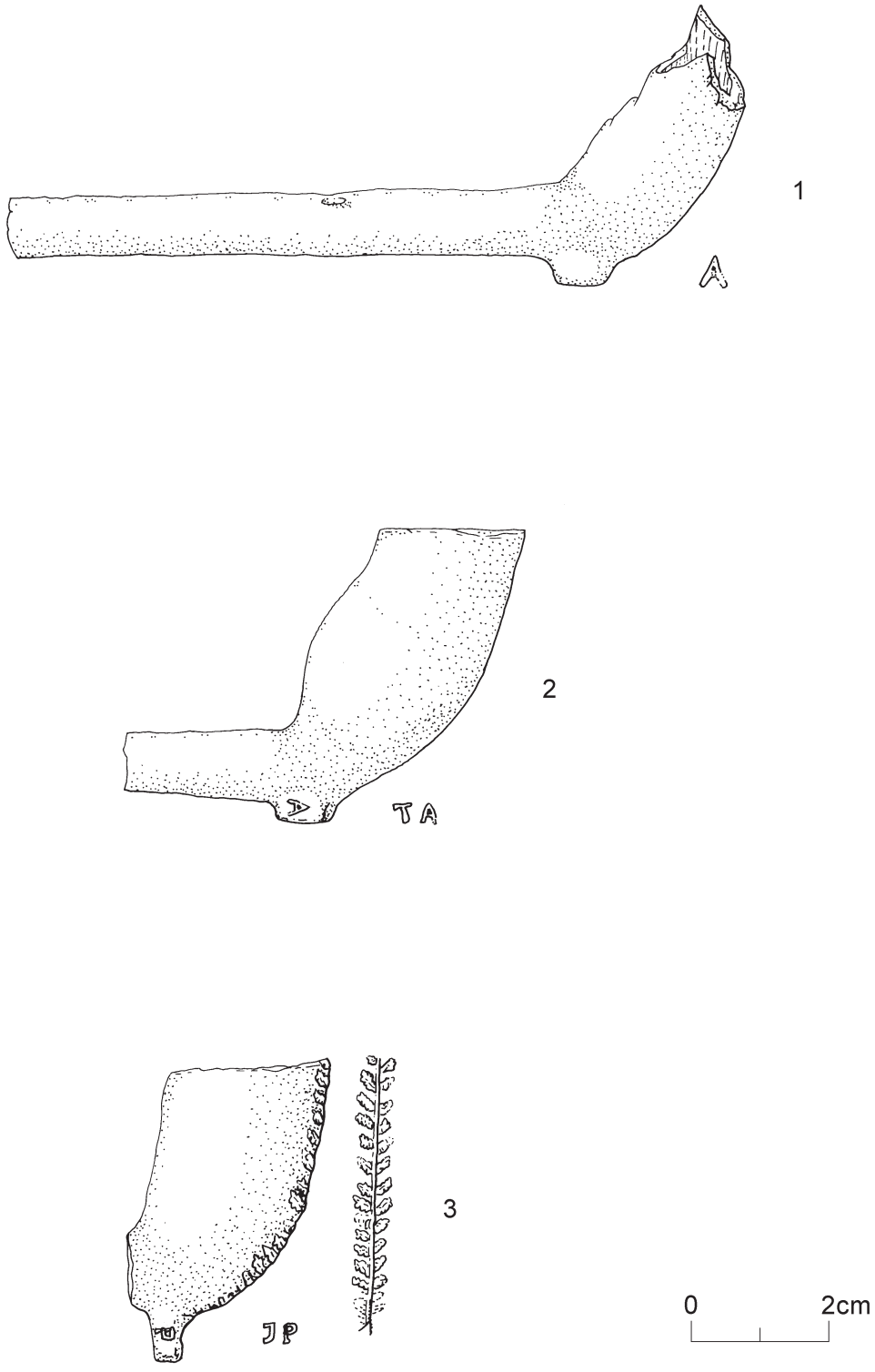


Fig 43 Clay tobacco pipe.

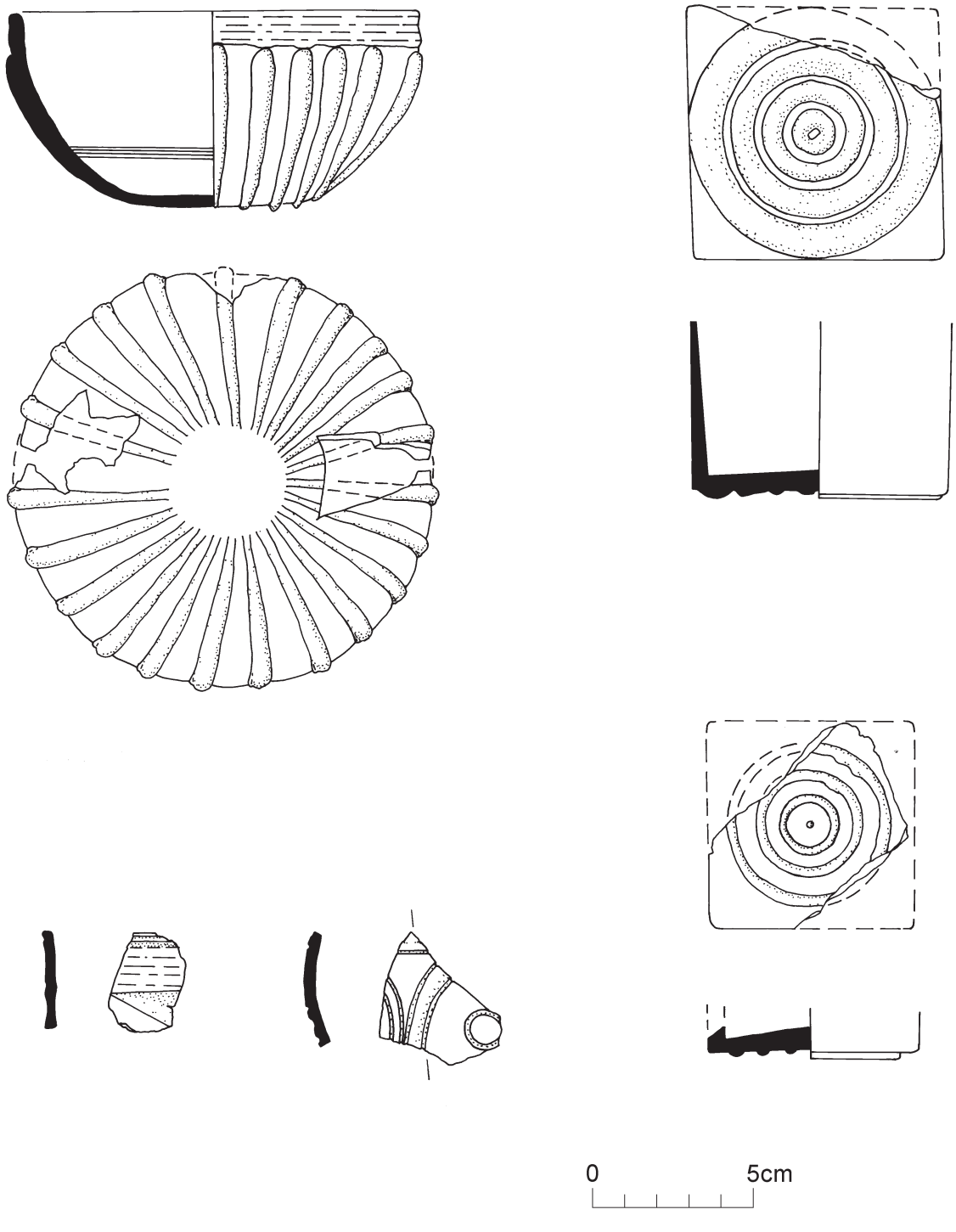


Fig 44 Roman glass.

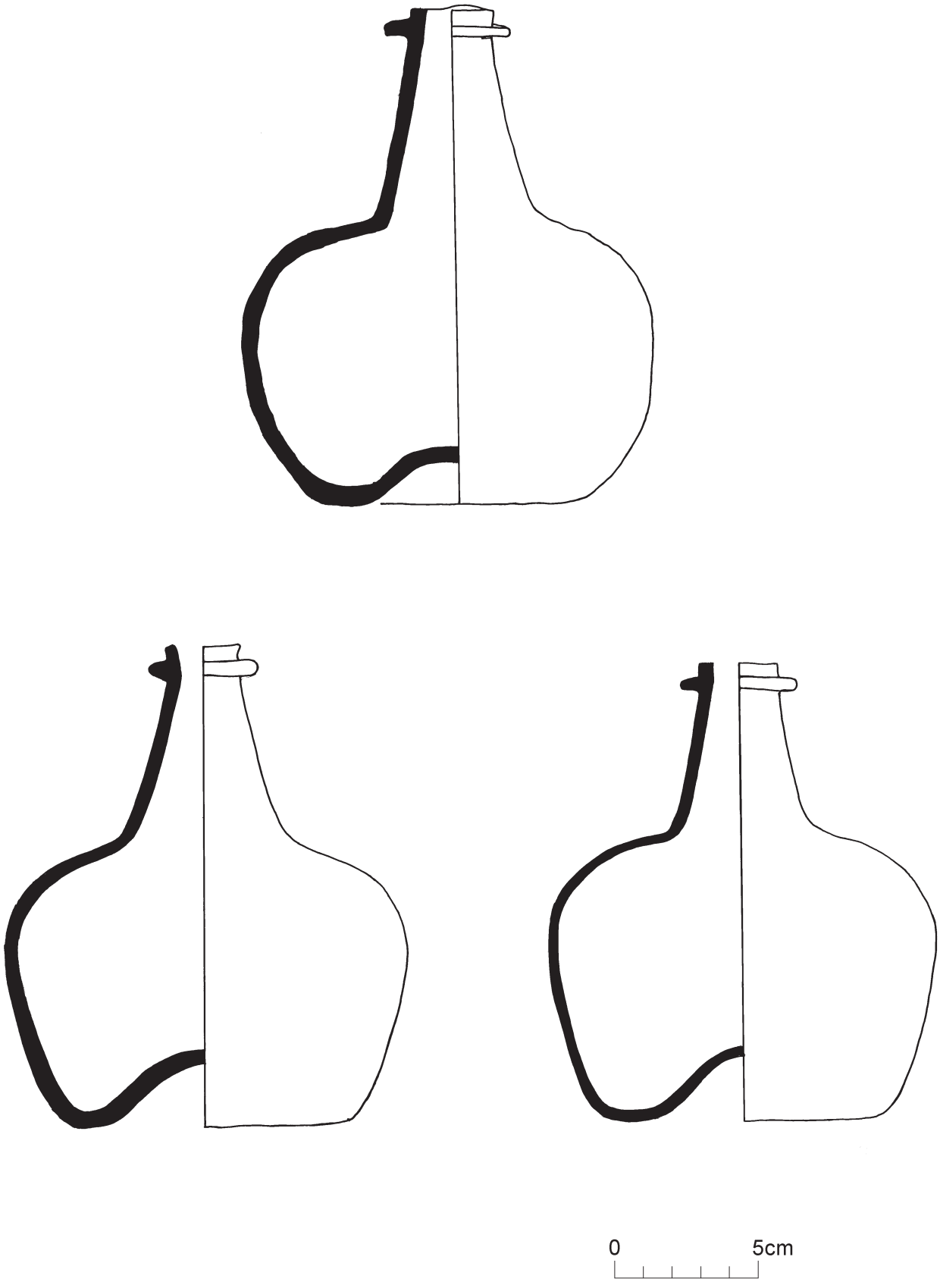


Fig 45 Post-medieval glass from pit F384.

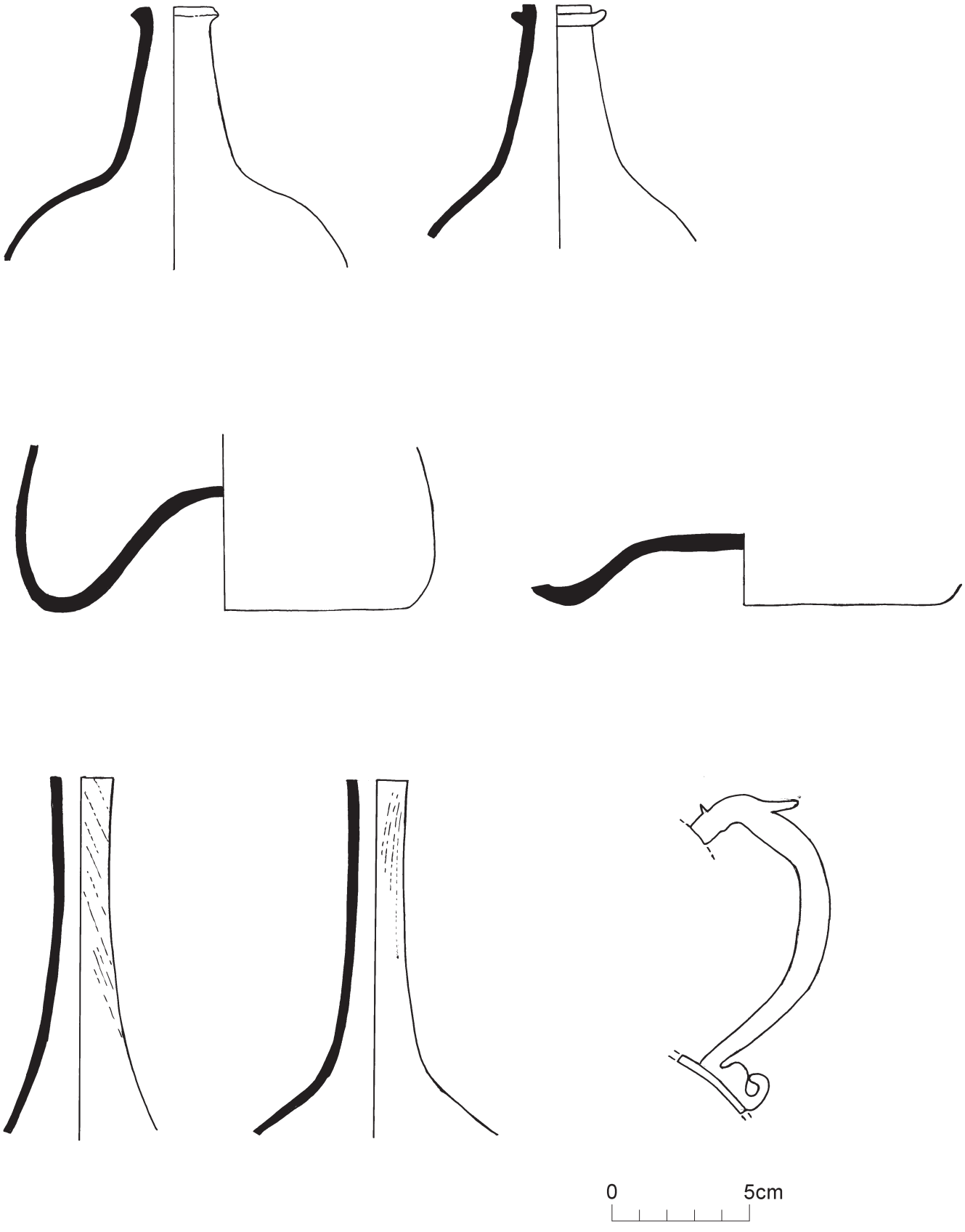


Fig 46 Post-medieval glass from pit F399.

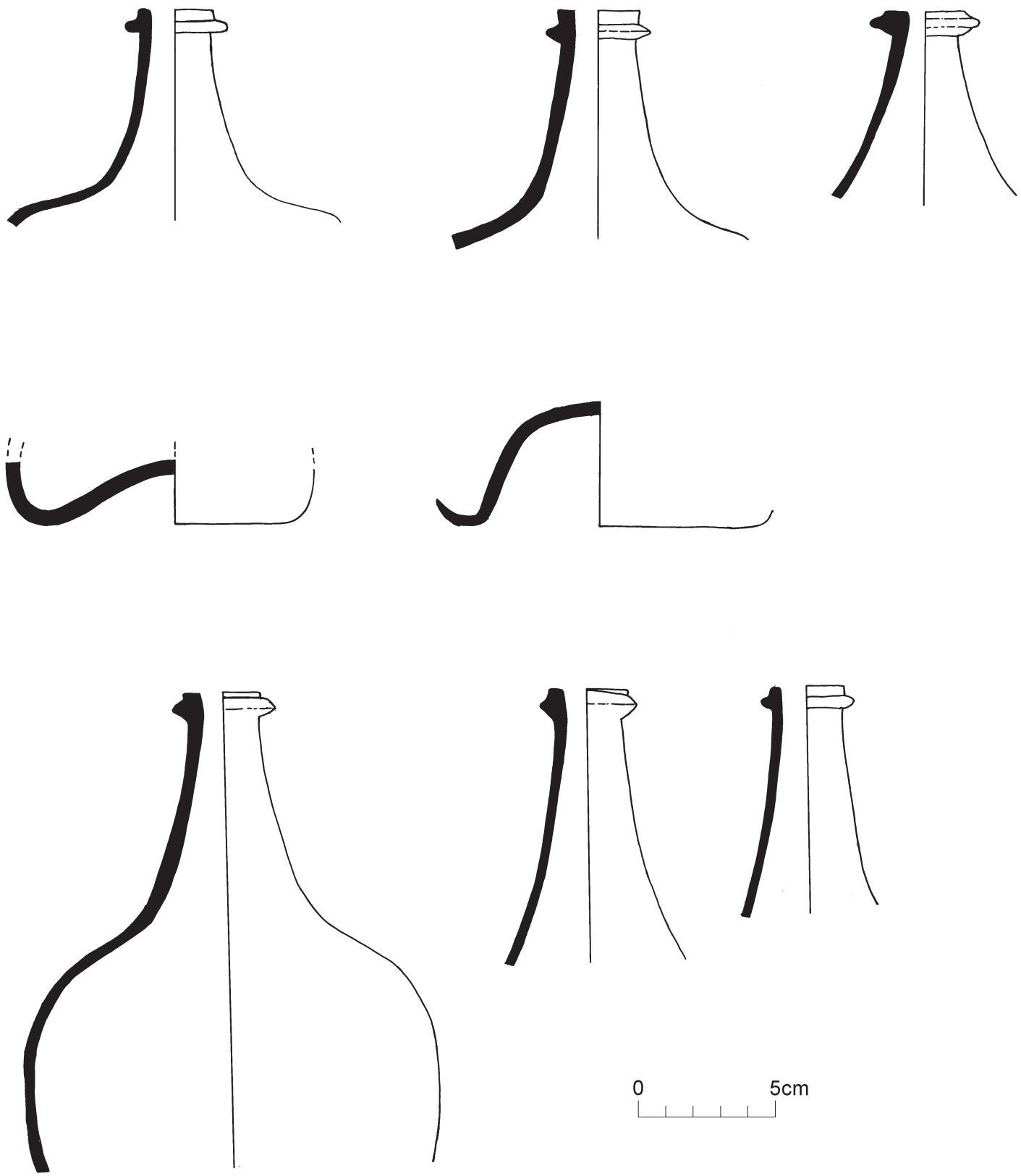


Fig 47 Post-medieval glass from pit F399.

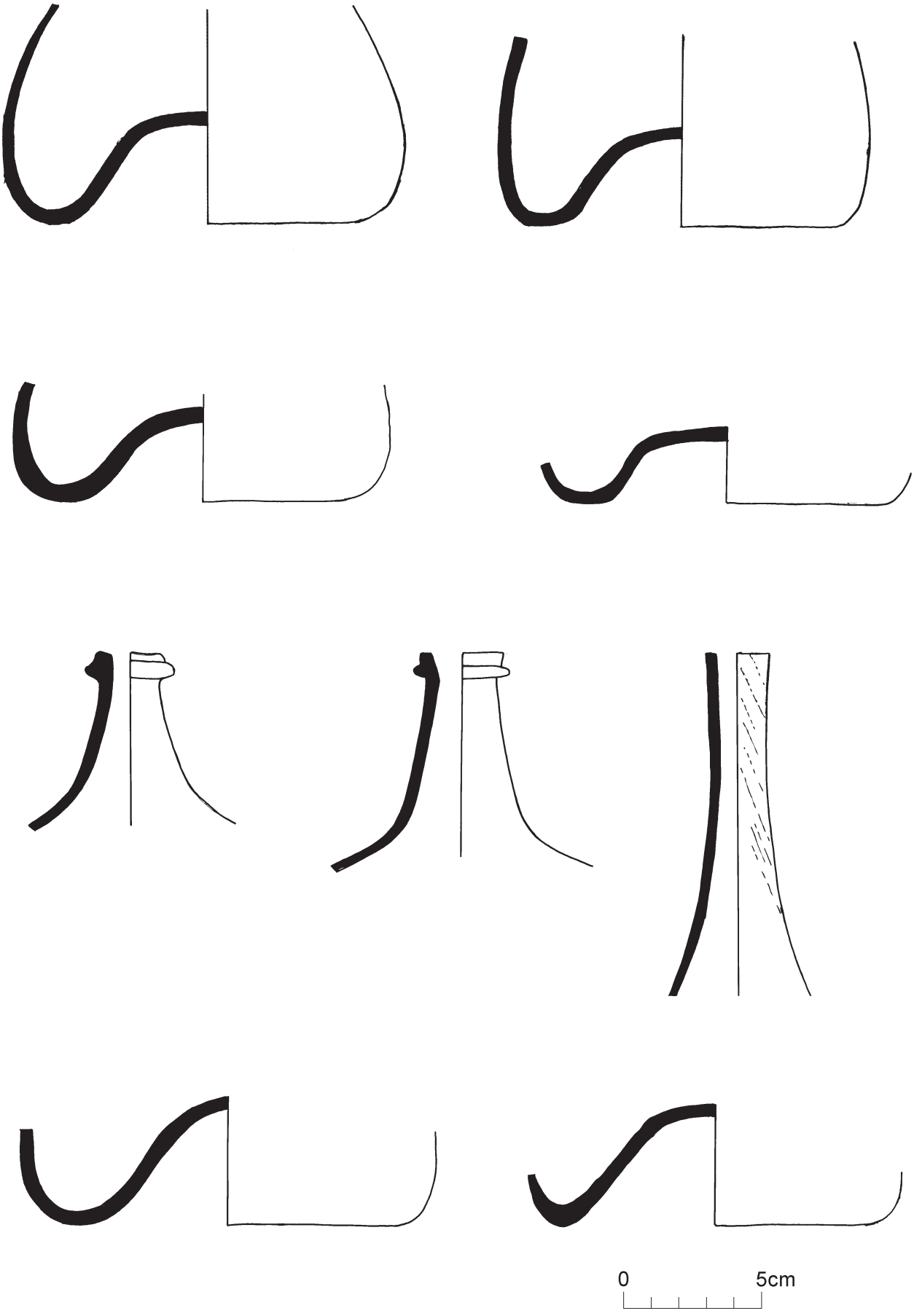


Fig 48 Post-medieval glass from pit F399.

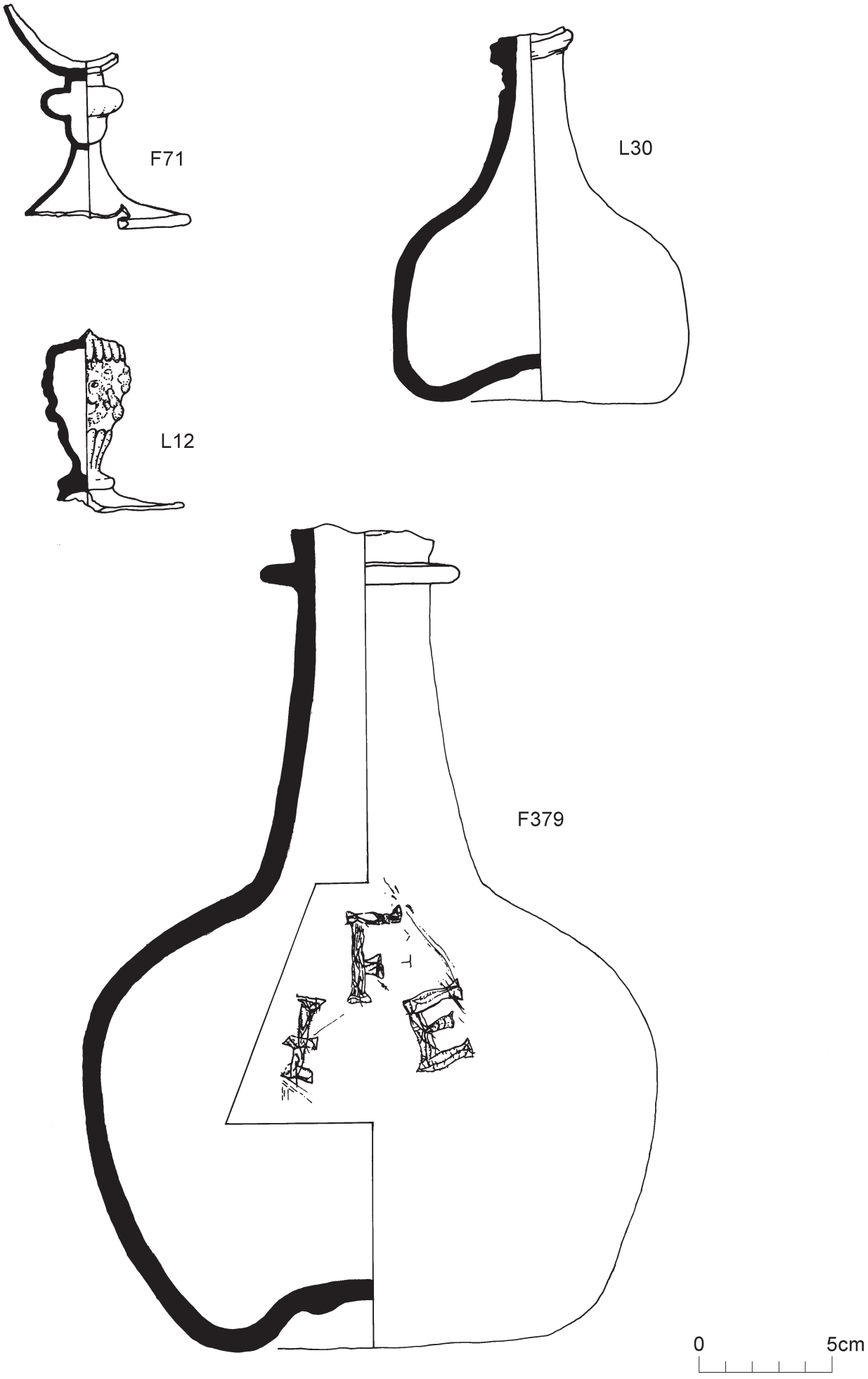


Fig 49 Post-medieval glass from pit F71, L12, L30, F379.

Fig 50 Gorgon head antefix.

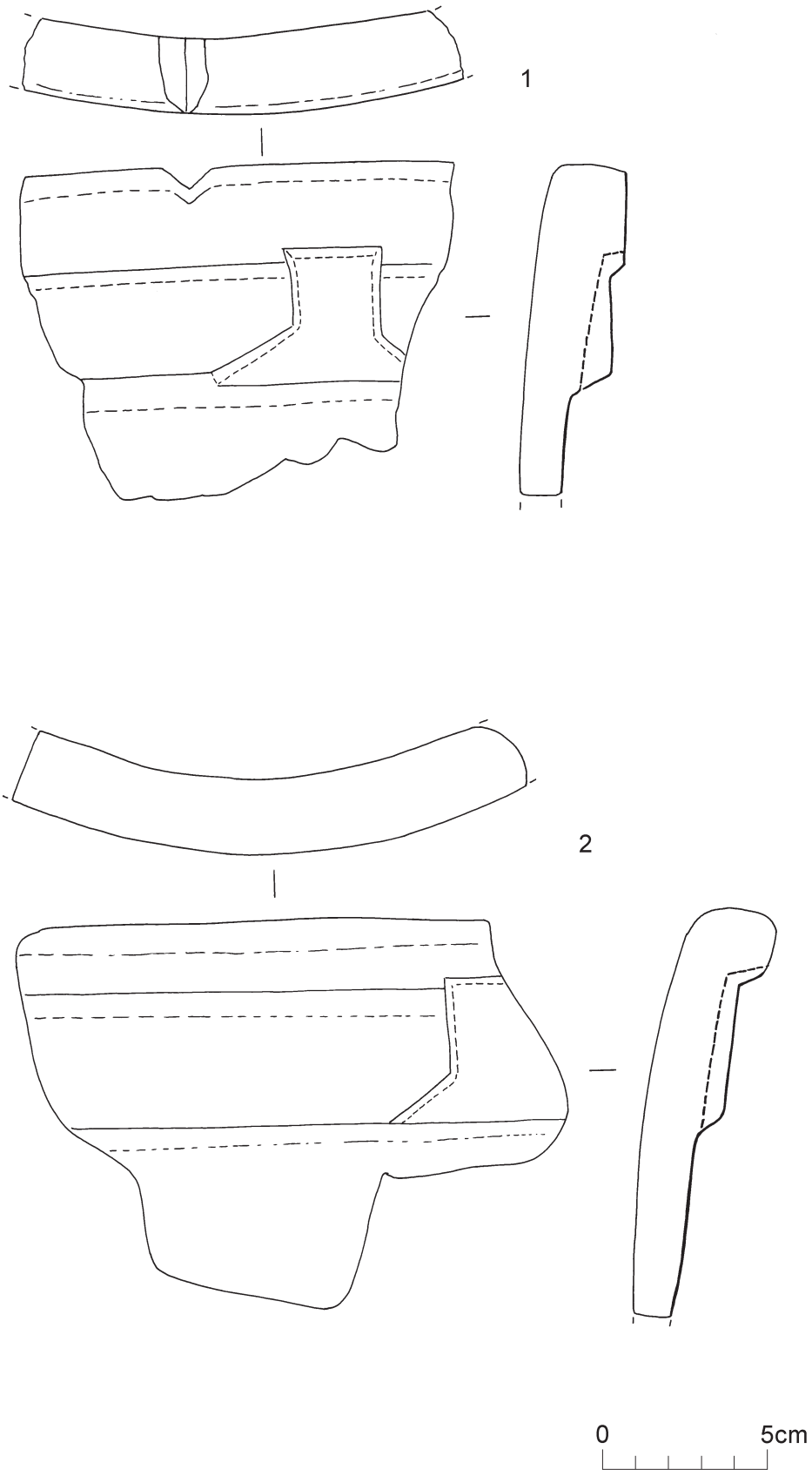


Fig 51 Mould fragments: rims (1-2).

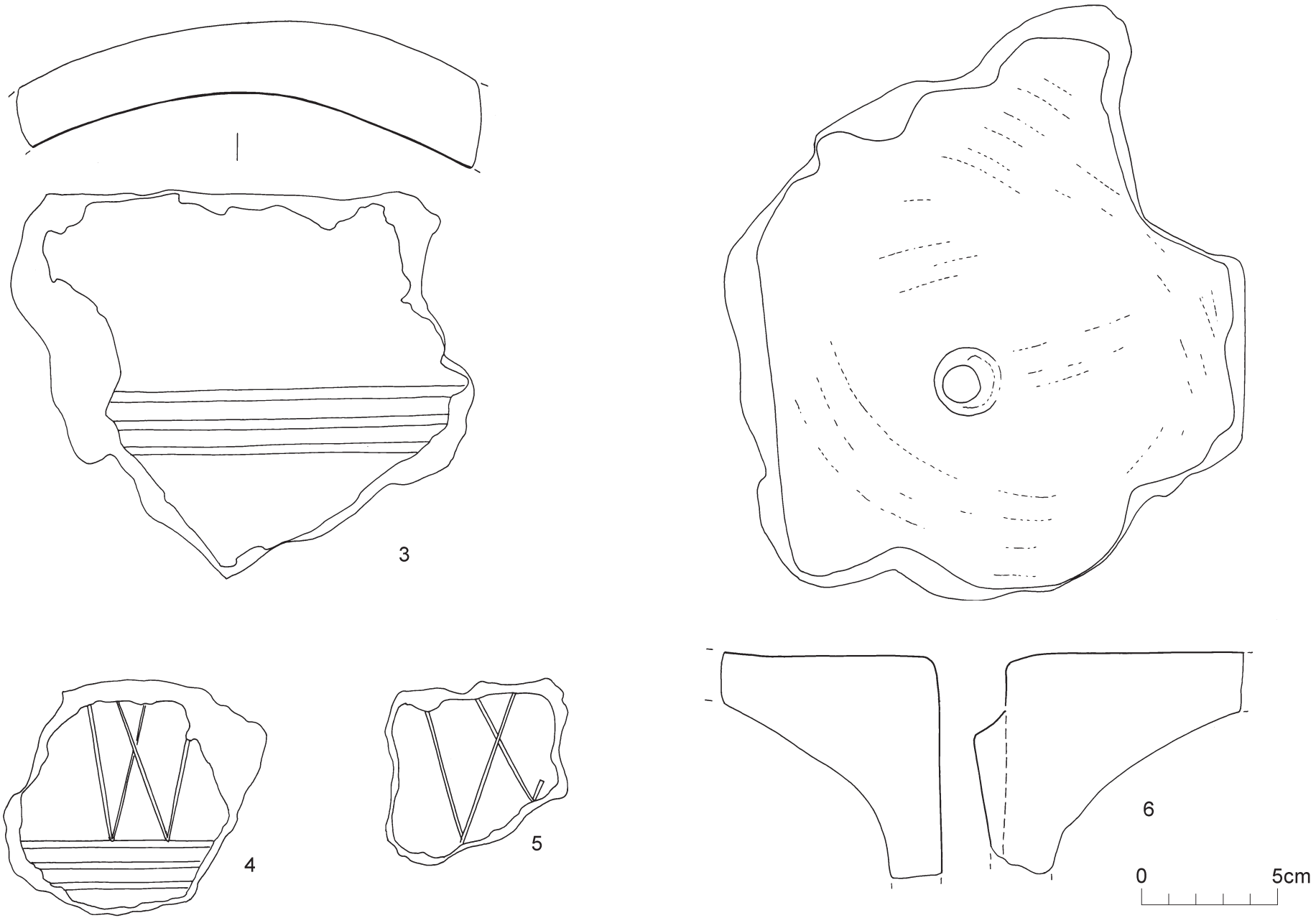


Fig 52 Mould fragments: moulding wires (3) and VV inscriptions (4, 50), inner face with spout (6).

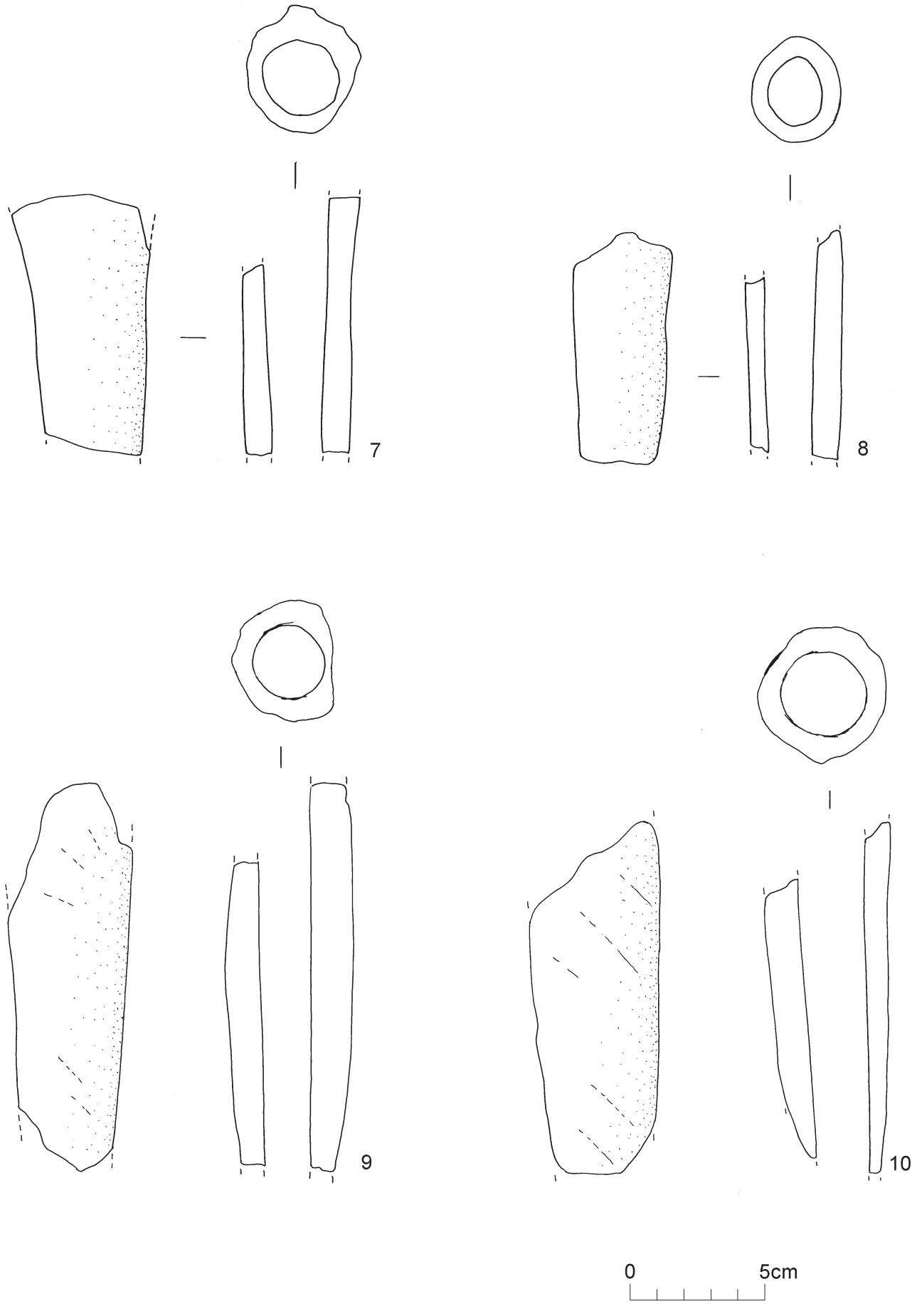


Fig 53 Mould fragments: legs (7-10).

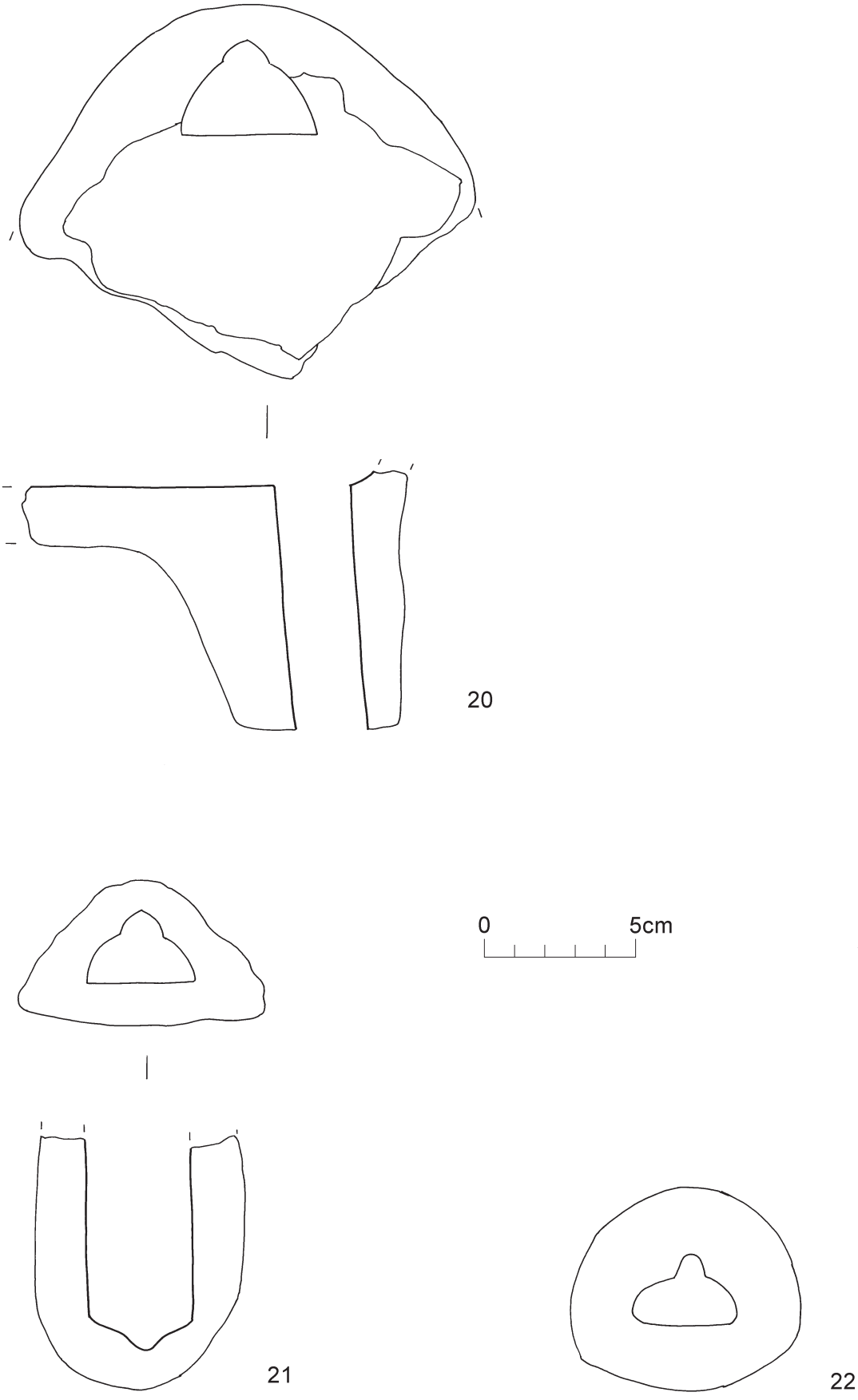


Fig 54 Mould fragments: legs (20-22).

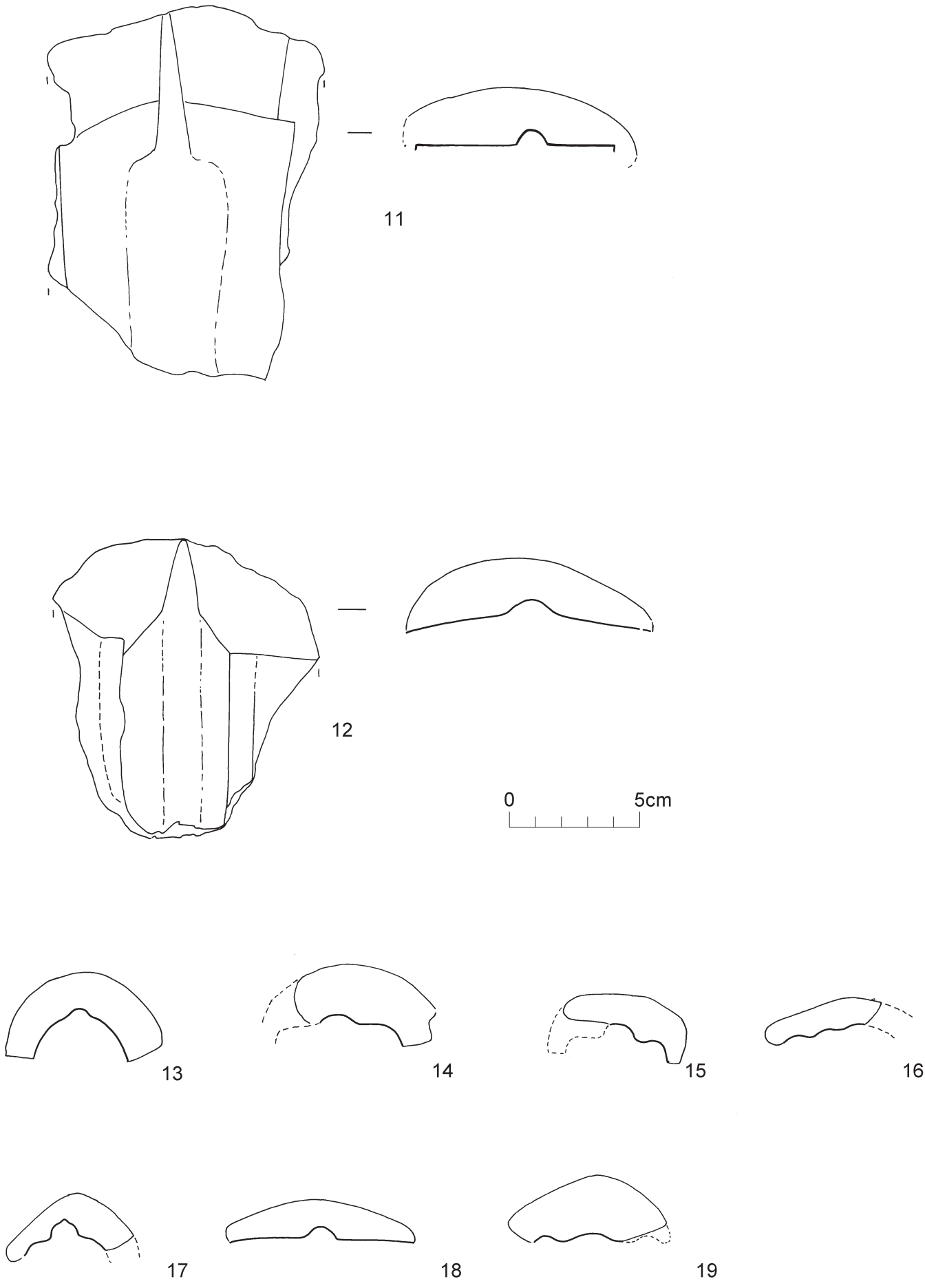


Fig 55 Mould fragments: handles (face and profile 11-12, profile 13-19).

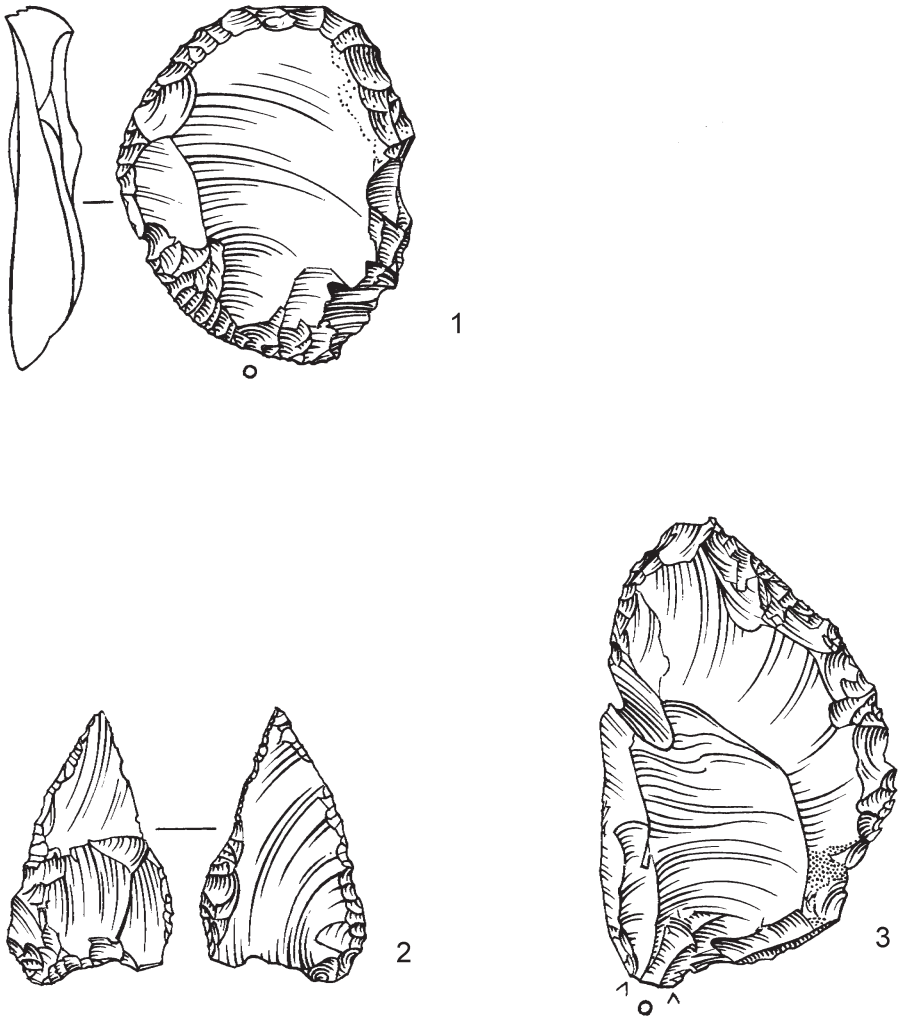


Fig 56 Worked flints.

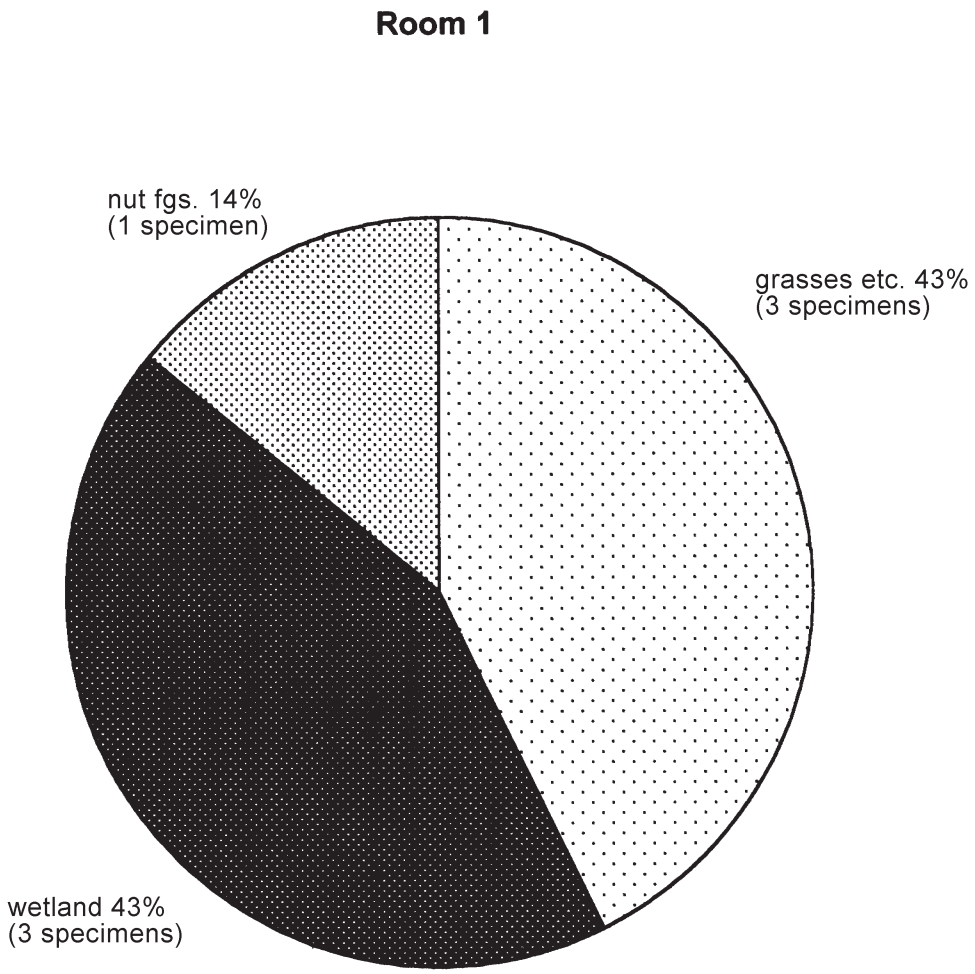


Fig 57 Room 1 samples.

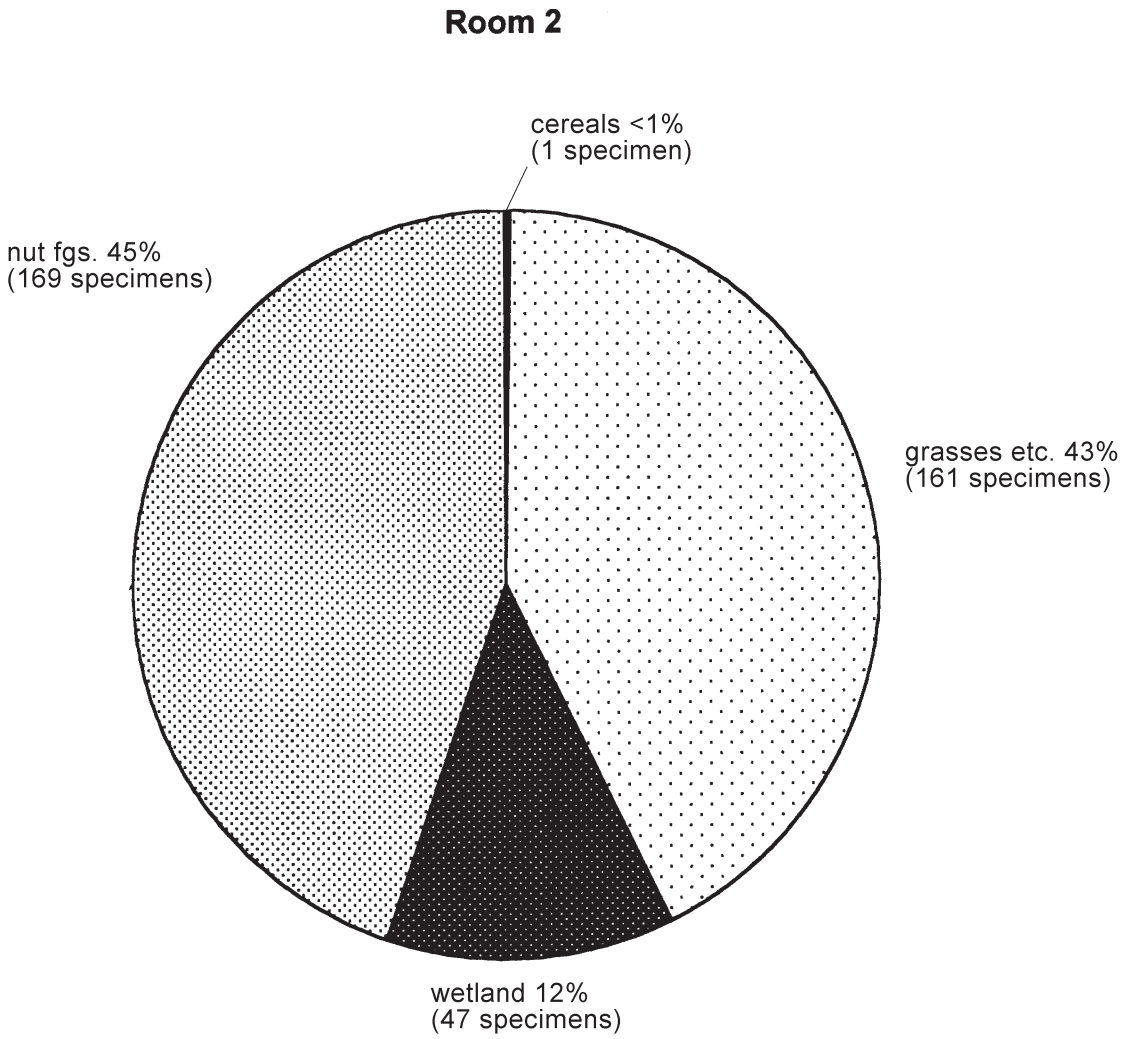


Fig 58 Room 2 samples.

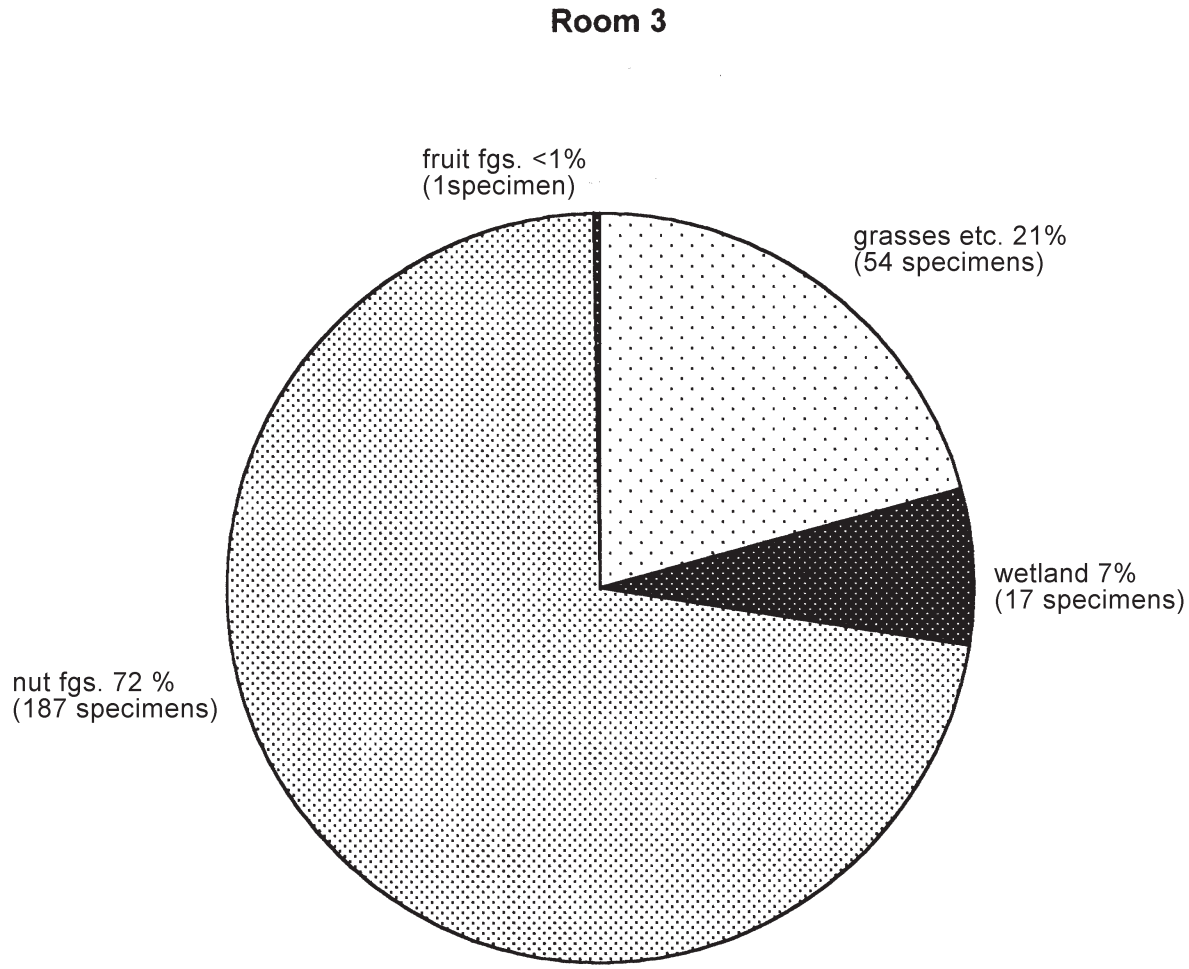


Fig 59 Room 3 samples.

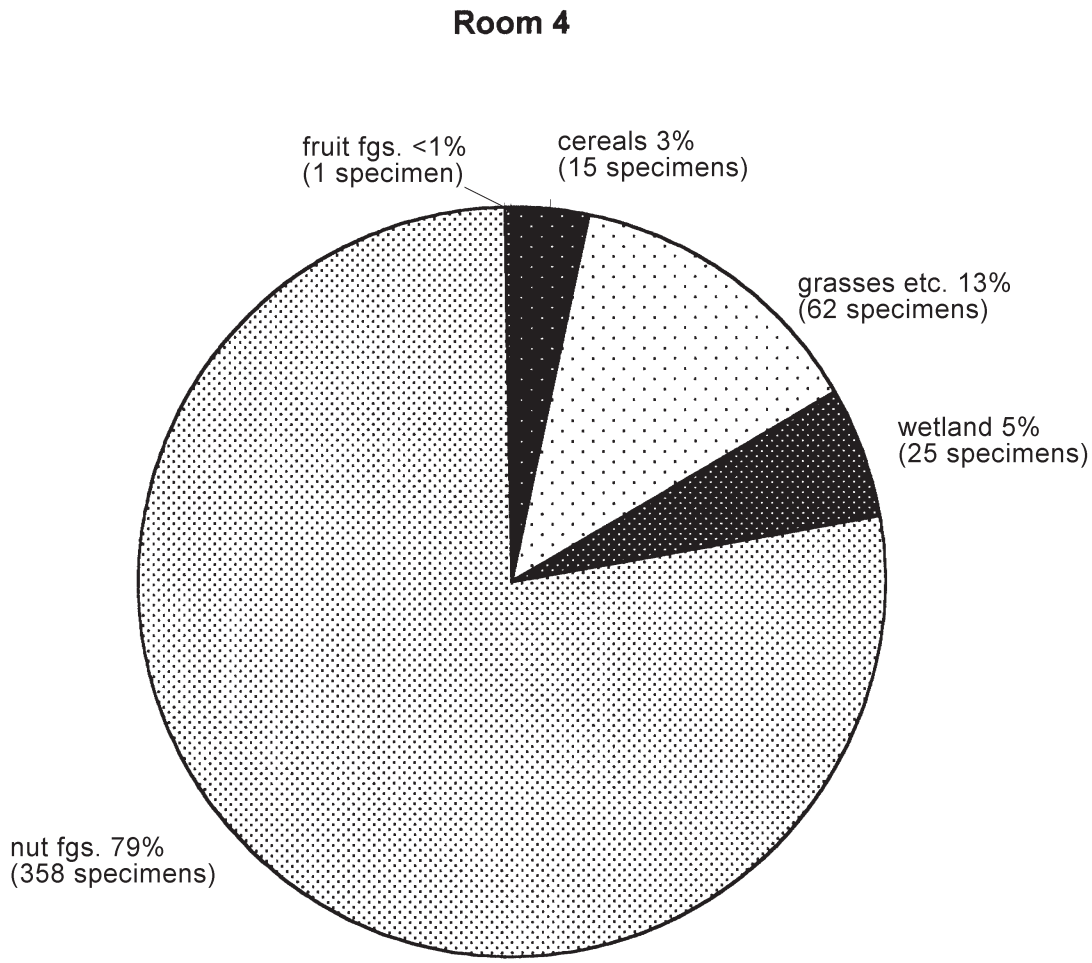


Fig 60 Room 4 samples.

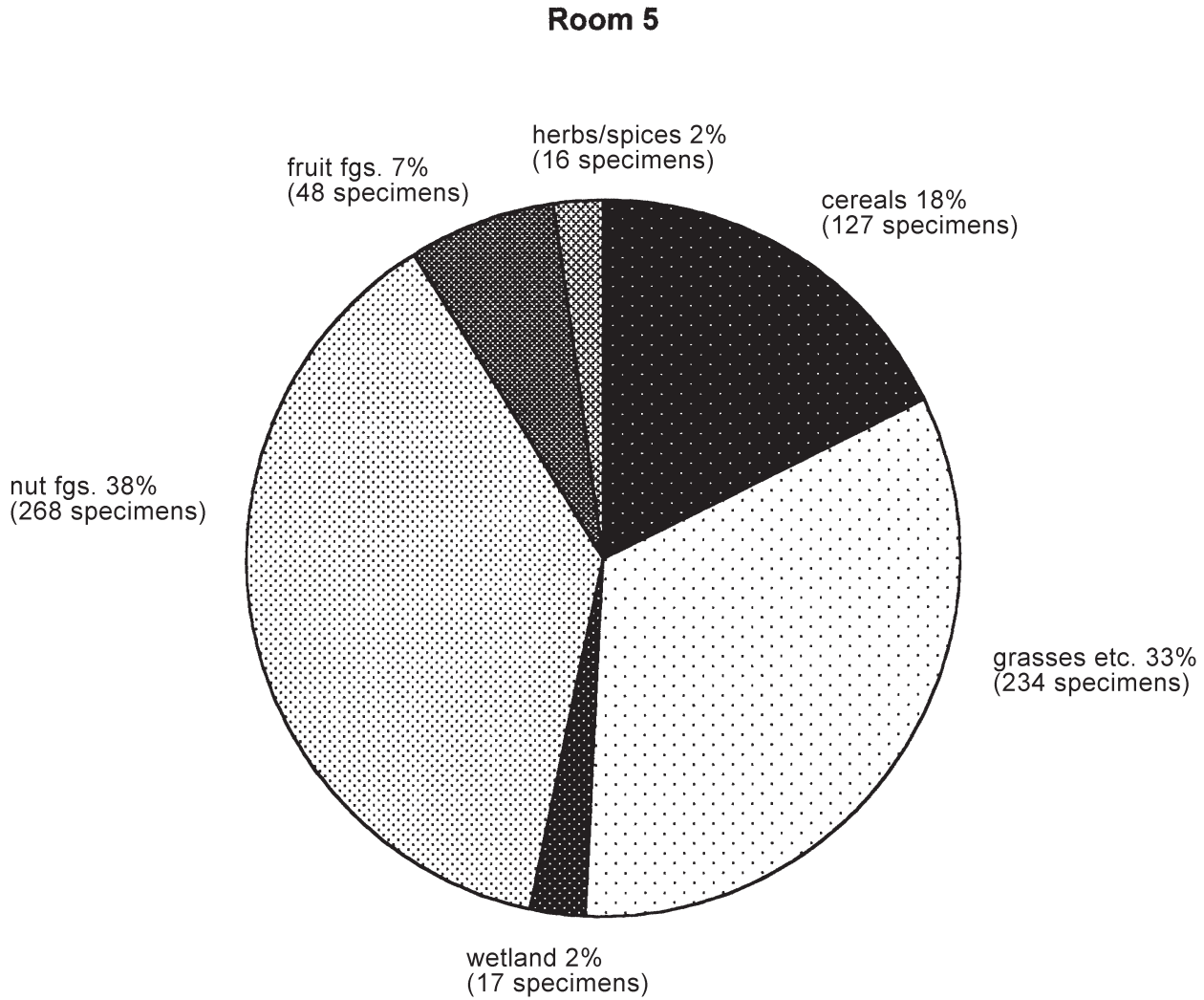


Fig 61 Room 5 samples.

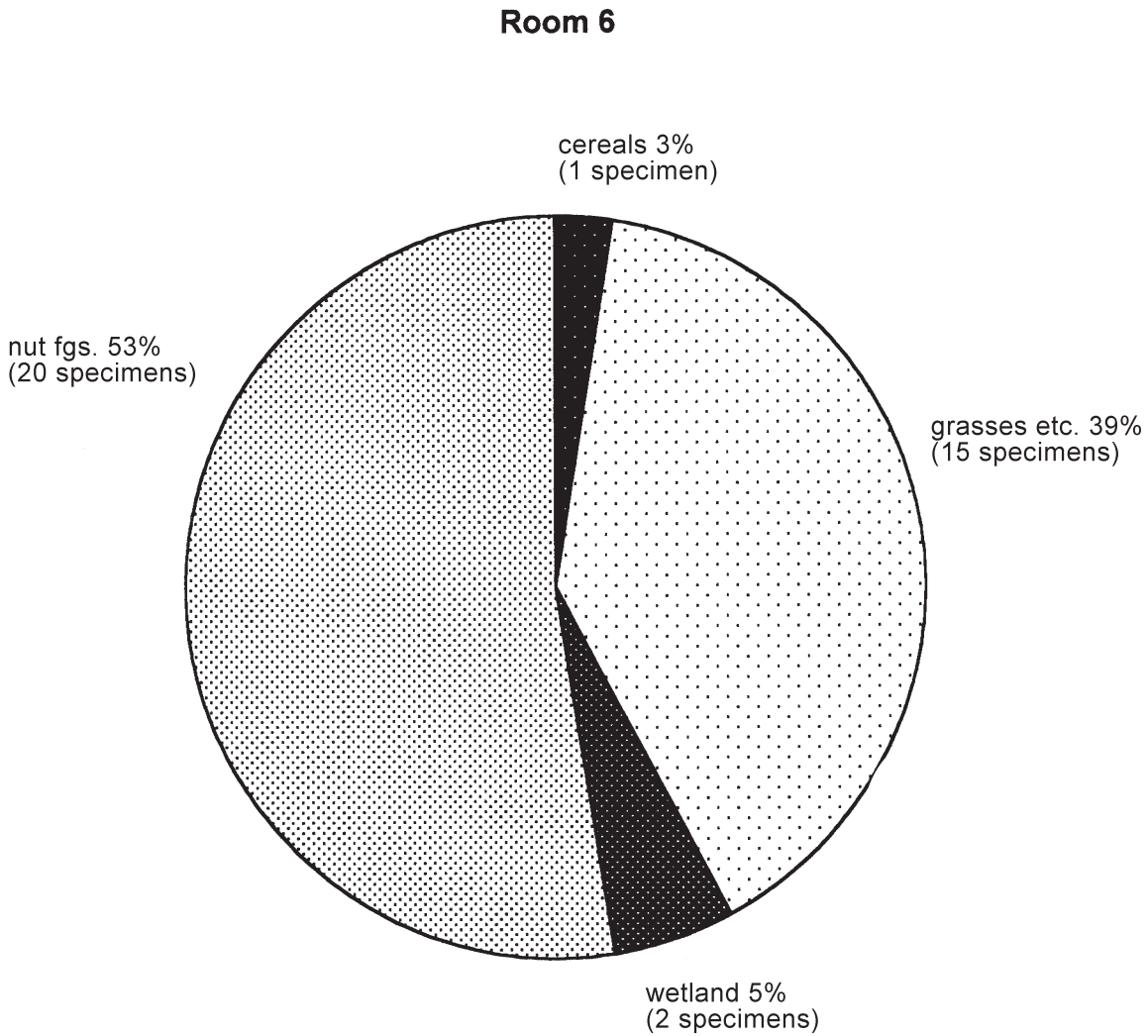


Fig 62 Room 6 samples.

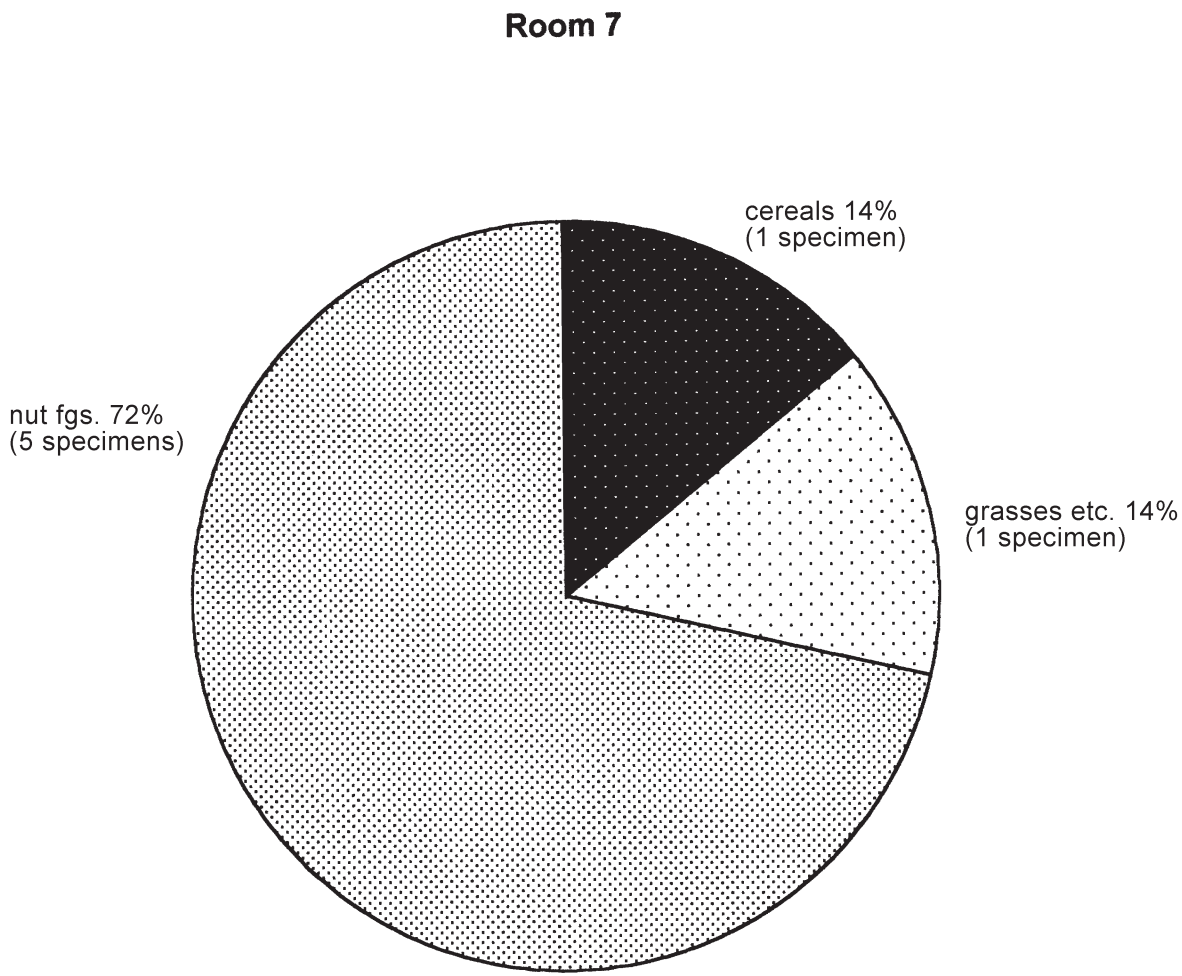


Fig 63 Room 7 samples.

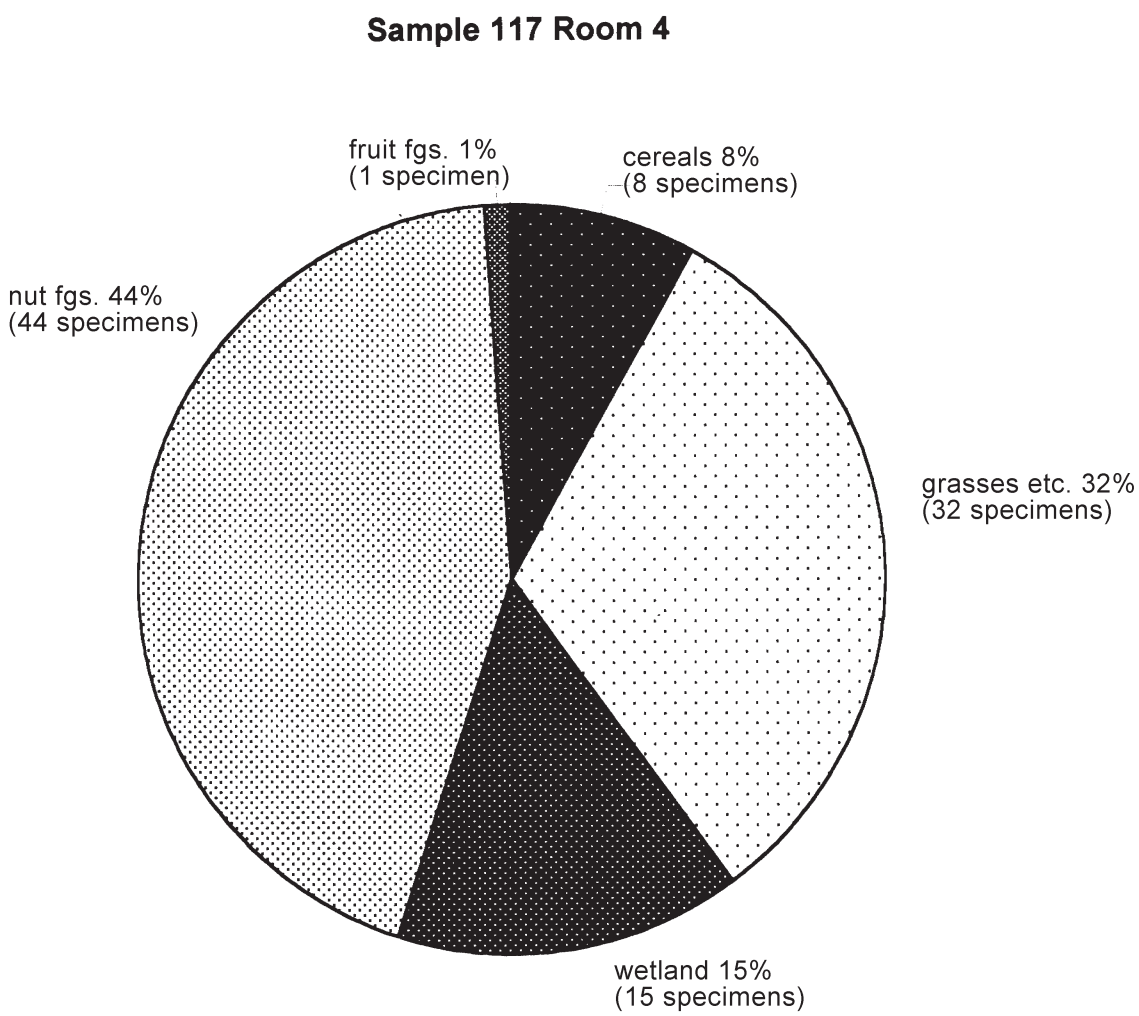


Fig 64 Room 4, Sample 117.