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Sheepen: an early Roman industrial site at Camulodunum

by Rosalind Niblett

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Acknowledgements

The 1970 Sheepen excavation lasted from June to September during which time up to 60 people were working on the site at a time, to ail of whom I take this opportunity of expressing my sincere thanks. The large number of people involved on the site meant that much responsibility devolved on the supervisors, Philip Crummy, Robert Niblett, Nick Smith, and Christopher Young, on Christine Couchman and Jane Hales who dealt with the finds on the site, and on Rosemary Richardson and Deirdre Parker who took over the day-to-day administration and catering. I am glad to be able to set on record my special thanks to all these. The preliminary excavation (site iv, p.20) on the site was undertaken by John Blyth and the Archaeological Research Group (Colchester) and to these also I would like to express my gratitude. I am also grateful to Dr A Clark of the Ancient Monuments Laboratory of the Department of the Environment who undertook the geophysical (fluxgate gradiometer) survey of the site, and to Dr M Tite who carried out a preliminary survey.

The excavation was financed by a generous grant from the Department of the Environment, and the burden of administration was shouldered by the officers of the Colchester Excavation Committee (now the Colchester Archaeological Trust) with their customary sympathetic and good-natured efficiency.

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This report owes a very great deal to the researches of the specialists who have provided contributions, and to all of whom I am happy to be able to express my gratitude.

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The arrangement of the report

The report is in three main sections, two printed and the third in microfiche. The opening section describes and discusses the excavation and includes a feature catalogue in which all the excavated features are listed, together with their associated finds; the catalogue includes appropriate figure references and references to the detailed descriptions of individual finds in the specialist reports in the microfiche section.

The second section consists of brief general discussions by specialists of the different categories of finds: ceramics, metalwork, glass, and fauna. The drawings of the finds are to be found with each specialist report.

The third section, which is on microfiche, contains the detailed specialist reports and catalogues of the finds. There are four microfiches, each of which is arranged in a grid 14 frames across (1-14) and 7 frames down (A-G). References to microfiche frames are in the form M1:A6, which refers to frame A6 on microfiche 1.

There are 14 section drawings which are to be found on pp 44-7, and a plate section on pp 155-76. Since the brevity of the specialist reports in the printed text precludes mention of all the illustrated finds, individual illustrated objects can be identified by referring to the catalogues in the appropriate specialist report in the microfiche section.

The only figures to be found in the microfiche are those relating to the report on the fauna where the detailed discussion in the printed text is complemented by tabular matter and diagrams on fiche 4.

The excavation

Introduction

Early in 1970 permission was granted by the Colchester Borough Council for 5 hectares (13 acres) over the lower part of Sheepen Hill to be terraced to provide school playing fields. The area lay 0.75 km north-west of the Roman *colonia Claudia Victricensis* (Colchester), and was sited just above the flood plain of the river Colne. Most of the threatened area lay within the line of the Sheepen dyke, the innermost of the Camulodunum dykes, and was included in regions 3 and 4 of Hawkes' and Hull's excavation in the 1930s (Fig 1; Hawkes & Hull 1947). This area was clearly one of major archaeological importance and a rescue excavation, financed by a grant from the Department of the Environment, was mounted by the Colchester Excavation Committee.

The available time and money made it impossible for the whole area to be examined and a geophysical survey was undertaken to establish which areas should be given priority. It was decided to concentrate on areas within the dyke as the defences themselves had been the subject of detailed examination in the 1930s and it was considered unreasonable to devote the considerable amount of time required for further sections to be cut. With the aid of the geophysical survey (Fig 2) five sites were laid out, covering areas where the most pronounced and frequently occurring anomalies were recorded, all of which were confined to Hawkes' and Hull's region 4 (sites i, ii, iii, iv, and vi, Figs 2 and 3). In addition to these, site v, in the northern part of the threatened area, and site vii, over the filled-in Sheepen dyke, were both examined.

The entire area was found to have been severely affected by gravel-working. The eastern side of the area available for excavation in 1970 overlay the edge of a large Roman gravel quarry found in the 1930s, and much of the central part of the threatened area had been quarried away in the post-medieval period, as was demonstrated by the presence of clay pipe stems found at low levels within the back-filled quarry pit.

In addition to the destruction caused by quarrying, the site as a whole was found to be very much denuded. Ploughsoil was only 0.4m deep over most of the site, and generally rested directly on the surface of the natural sand or gravel with no intervening stratification.

The excavation lasted for ten weeks in the summer of 1970; the ploughsoil was removed mechanically, and the subsequent work was carried out entirely by student volunteers.

Chronology and summary

The excavations revealed an industrial area where a range of products was manufactured for use in the legionary fortress and subsequent *colonia* at Colchester, 0.75 km south-east of the site. The site had been occupied in the immediately pre-Roman period, but evidence of this occupation was virtually confined to material surviving as rubbish in later features.

The erosion of the hillside meant that very few stratified levels remained to be found in 1970 and the site basically consisted of a large number of pits, many of them intersecting one another, and very few structures. Nevertheless the association of material from the pits and similar features suggested that some could be arranged chronologically, enabling a sequence of occupation on the site to be deduced. All the pits and their contents are listed in the feature catalogue (see pp 28-43).

Many of the pits contained a wide range of imported material and there was also a large quantity of finds, dating from the first half of the 1st century AD, spread across the site in the ploughsoil. Amongst this material, however, there was nothing necessarily later than the Neronian period.

Nearly all of the 150 pits excavated contained material which could be shown to date after AD 43, although they also contained a proportion of pottery which probably survived from somewhat earlier. An early Neronian date is indicated for about 40 features by the samian and Gallo-Belgic ware contained in them, or in features which they cut. About 40 others contained Claudian material, but nothing that need necessarily be later than the early 50s AD, despite the considerable amount of Claudian/Neronian material on the site. This suggests that these features had been filled in before the appearance of specifically Neronian pottery.

There is little or no evidence to suggest that any of the features on the site predated the Roman conquest of AD 43, in spite of the large quantities of pre-conquest finds surviving as rubbish in later features. Four small pits have been assigned to the pre-conquest period, however, on the grounds that they contained only early material, and they might be expected to include some of the abundant post-conquest pottery had they remained open later.

Groups of purely Claudian or earlier material tended to be found in shallow scoops, hollows, or small pits associated with evidence for the working of copper alloys, or from postpits and palisade slots. In contrast, groups including specifically Neronian samian or Gallo-Belgic ware came from large rubbish pits or from denuded floor levels.

The sequence of occupation suggested by this evidence can be matched to the periods distinguished by Hawkes and Hull from their excavations on the same site in the 1930s. The dating of features in the 1970 excavation was not derived from Hawkes' and Hull's sequence, but was independently established, in particular by reference to samian and Gallo-Belgic wares (see feature catalogue). Nevertheless, for convenience, and to avoid confusion, the same period numbers as those used by Hawkes and Hull have been given to the sequence established in 1970, as set out in Table 1.

It should be noted that Hawkes and Hull dated

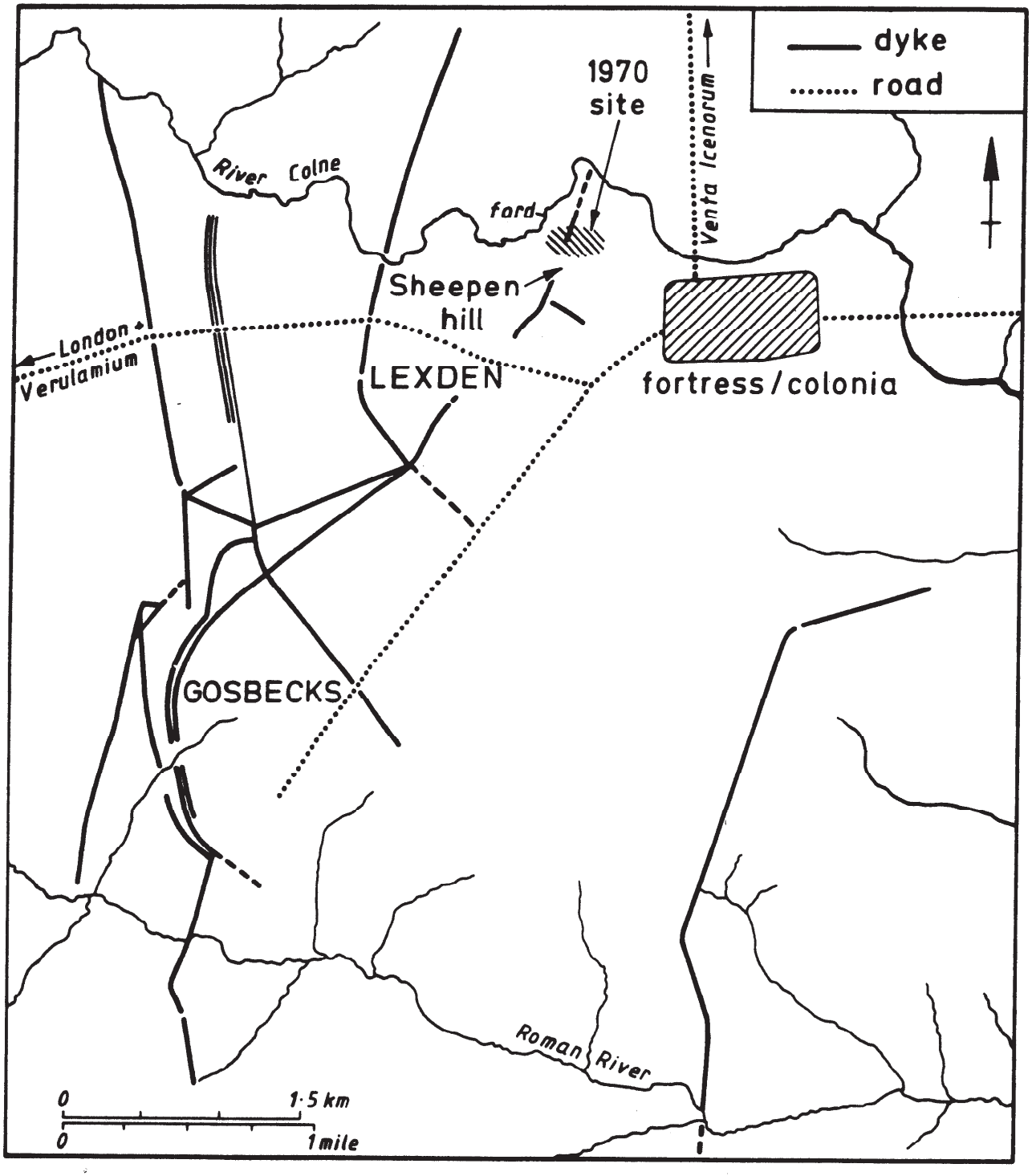


Fig 1 Plan of Camulodunum: the Sheepen site in relation to Gosbecks, Lexden, and the colonia

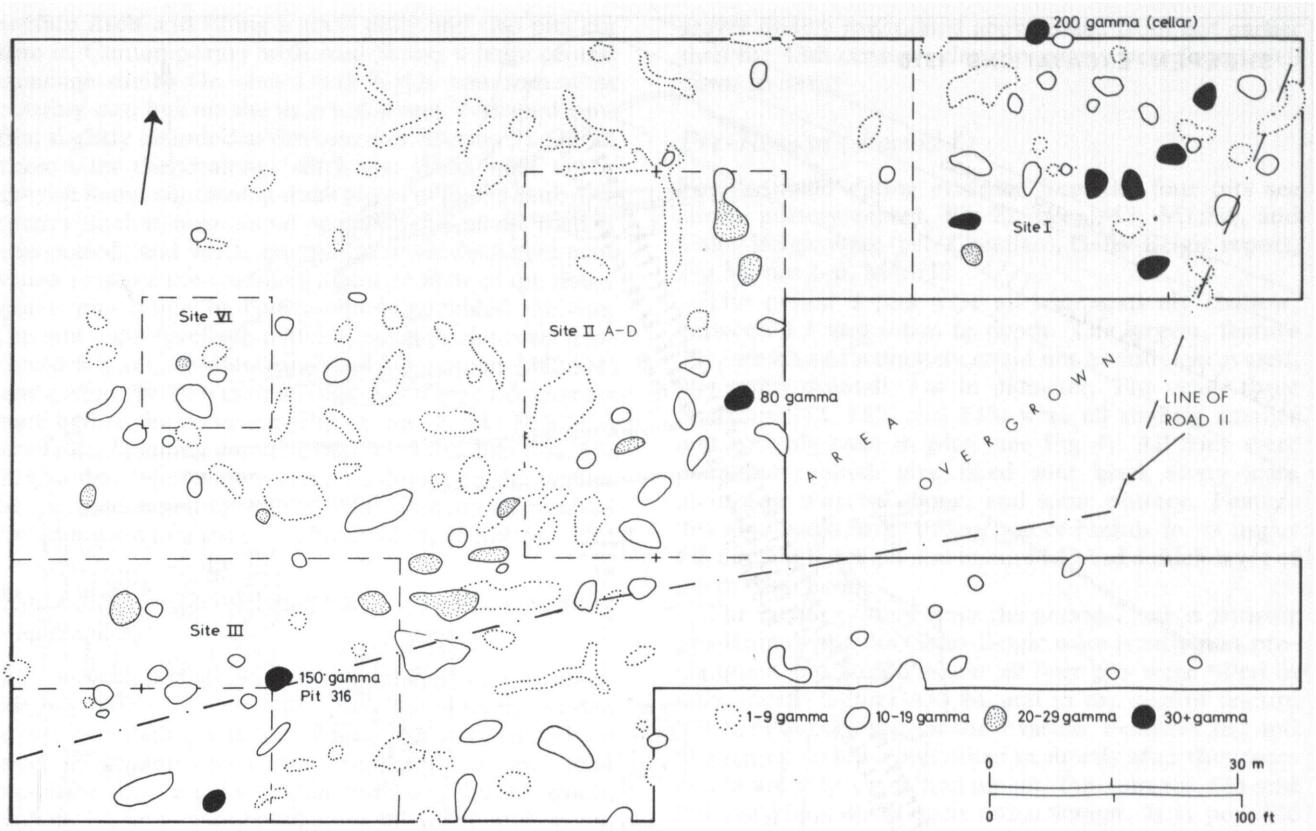


Fig 2 Plan of anomalies recorded by the geophysical survey

period I to *c* AD 10-43, the initial date being based on samian from the site which included forms present at Haltern, but which did not include pieces dating from the 1st century BC. At the time of the publication of the Camulodunum report it was thought that Haltern was not abandoned until AD 14/16. Now that the final date for Haltern has been taken back to *c* AD 9 however (von Schnurbein 1974; 1982), the initial date for Camulodunum period I can also be taken back a few years to *c* AD 5. The problem posed by the presence of Dressel 1 amphoras on the site was not resolved by the 1970 excavations (see below, p 99).

Hawkes and Hull did not distinguish a specifically Neronian period. Features from the 1970 excavation which contained specifically Neronian material have been classified as period IVb.

The site report

In the following account detailed descriptions of the individual layers and features have been omitted. The reader is referred to the catalogue of features and their contents which can be found below, pp 28-43, where all stratified deposits, pits, and features are listed, together with their contents. For ease of reference an index is included (pp 26-8) where layers and features are listed numerically with the catalogue page numbers. Only material of special interest or significance is referred to in the text of the site report below.

Table 1

1970 period	*Hawkes and Hull period*	*Suggested date*	*Sources*
I Pre-conquest	I	AD 5-43	
II No evidence	II	AD 43-4	Dio LX 21
III Claudian	III	AD 44-9	Tacitus, *Annales* XII, 32
IV Claudian/ Neronian	IV	AD 49-61	Tacitus, *Annales* XII, 32
IVb Neronian (with specifically Neronian material)		AD 54-61	
V Boudiccan (little evidence)	V	AD 61	Tacitus, *Annales* XIV, 32
VI Post-Boudiccan	VI	AD 61-5	

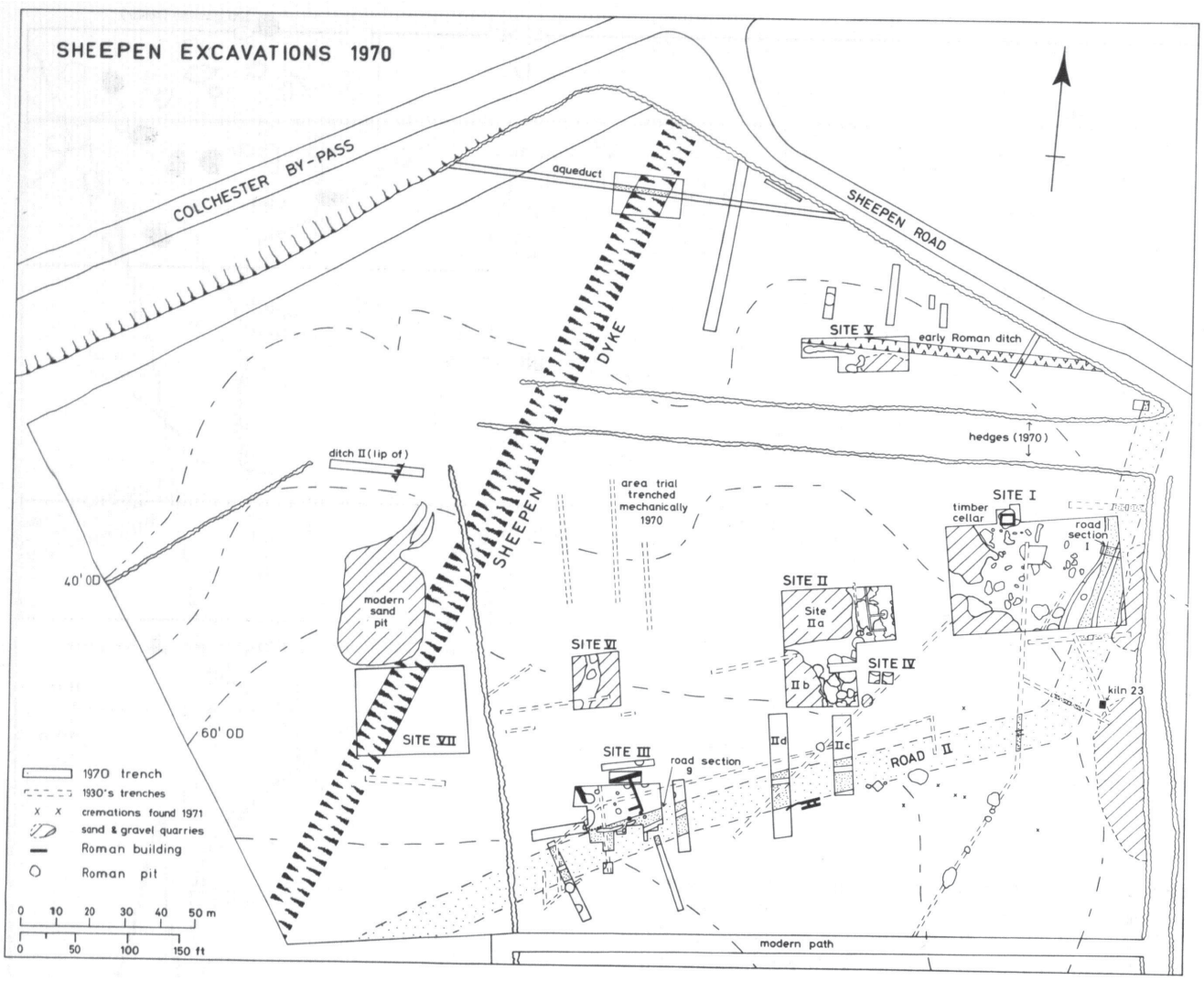


Fig 3 General plan of the 1970 excavation

The Roman road

The 1930s excavation revealed two Roman roads crossing the lower part of Sheepen Hill; the first, dating from immediately after the conquest, lay outside the area of the 1970 excavation, but the second, road II, ran across that area, following the line of the pre-Roman trackway that led from an entrance through the Sheepen Dyke in the direction of the temple area on the other side of Sheepen Lane (Fig 3; Hawkes & Hull 1947, 96-8).

Road II was picked up at several points in 1970 but only sections 1 and 9 on sites i and iii respectively were excavated to natural subsoil. Both sections were designed to correlate the road surfaces with the features found beside them. Where road II was revealed elsewhere in 1970 only its primary surface was exposed and its central drainage ditch excavated.

The trackway beneath road II (Sections 1 and 9; Fig 10)

Sections 1 and 9 both revealed a hard surface of fine gravel set in a grey, sandy clay matrix lying on the natural surface. The gravel surface presumably corresponds to the early trackway found in the 1930s beneath the road in this region, which was then assigned to the pre-Roman period (period I). No pottery or other finds were found in this deposit in 1970 but on site iii it was cut by slot 314, 2 which was dated to the Claudian period (III). The precise edges of the trackway were difficult to define as the gravel gradually petered out rather than stopping on a definite line.

Road II, the first surface (Sections 1 and 9; Figs 4 and 10; P1 1)

The trackway was sealed by a sandy levelling layer. Above this was the metalling of the road which consisted of fine rammed gravel producing an extremely hard surface. On site iii it was particularly well cambered. This surface showed distinct signs of wear and on site i metalworking activities in the area had encroached over a strip approximately 1 m wide on the west side of the road, leaving a layer of charcoal containing numerous bronze droplets, scorching the road

surface itself and filling a small gully and two pits cut into it. Contemporary with road II was a large central drainage ditch. On sites i and ii this was somewhat roughly cut, but on site iii it had a neat V-shaped profile, slightly rounded at the base (see Section 9). On all three sites the drainage ditch was filled with sandy greyish loam, containing small pieces of burnt daub. No quarry ditches were found on either side of the road at this period, and while the central ditch doubtless provided some of the metalling, some at least of the many gravel pits found in 1970 probably provided the rest. On site i the levelling material beneath the road produced a piece of Claudian/Neronian samian (M2:D4) and a fragment of a carinated bowl of a type not current here before the conquest (Fig 25, no 72, Ml :B12). On site iii the levelling material filled the Claudian slot, 314 2. Claudian/Neronian pottery was found on the surface of the road together with a small quantity of residual pre-conquest pottery (Fig 25, nos 73-4, Ml :B13).

Road II, the second surface (Sections 1 and 9; Figs 6 and 11)

The second surface was very weathered and in many places, particularly on site i, had been largely eroded away. The earlier surface of road II was covered by a layer of orange sandy clay on which the final road rnetalling had been laid. A discontinuous quarry ditch, feature 302 and (possibly) feature 303 was found on site iii on the northern edge of road II, and the gully (feature 2) on the west side of the road on site i is probably also contemporary with this latest surface. No datable material was found in the make-up for this road surface, but on site iii it postdated the Boudiccan destruction.

Site i

The largest single area stripped was site i, in the north-east corner of the 1970 excavations, where an area 30 m x 47 m was cleared. The geophysical survey (Fig 2) showed a number of high intensity anomalies here and excavation revealed that post-Roman sand and gravel digging had affected only the south and west margins of the site. A disturbance on the east margin of the site was almost certainly part of the large gravel quarry found in the 1930s on the east edge of the field and assigned to the Roman period (Hawkes & Hull 1947, 107-8). The natural gravel subsoil lay 200-300 mm below the modern surface, and apart from those found in pits stratified layers did not survive. In a few places the surface of the natural gravel undulated slightly, and in the resulting hollows was a deposit of sandy, grey clay, possibly the equivalent of layer 7 on site iii (see p 15), which was interpreted as the pre-Roman soil.

Site i was relatively sheltered, owing to a slight ridge which ran north-east 70 m west of site i and protected it from the prevailing wind. The more exposed positions of sites ii and iii were very noticeable to those working on the excavation. Two pre-Flavian phases were distinguished, both associated with metalworking activities. After this the site was disused until the later 3rd century, when its western half formed part of an inhumation cemetery (see p 22 and Ml:A14-B4). The gravel quarry mentioned above dated from not earlier than the 18th century; clay pipe stems were found well down in its fill.

Pre-Roman (Period I)

For the main dating evidence from the four pits see coarse pottery report, Fig 22, nos 1-17, M1:B4, and Gallo-Belgic ware (pre-Claudian), Gallo-Belgic report, Fig 36, nos 1-6, M1:F12.

The period I pits were all comparatively shallow, between 1.1 and 0.6 m in depth. The largest, feature 291, which unfortunately could not be fully excavated, was approximately 3 m in diameter. The other three (features 282, 183, and 143) were all slightly smaller and roughly oval in plan (see Fig 4). All four were domestic rubbish pits, filled with black stony loam including charcoal, bone, and some pottery. Feature 291 also had a large proportion of humus in its upper fill, and both this pit and feature 143 had a thick layer of silt in their bases.

The coarse pottery from the period I pits is entirely pre-Roman but the Gallo-Belgic ware is only just pre-conquest and suggests that all four pits were filled in only shortly before AD 43, and in the case of feature 291 at about the time of the invasion. Features 282 and 183 appear to have been filled in shortly after they were cut, since they contained no silt, but features 143 and 291 may have been open rather longer. It is possible that feature 183 was not in fact pre-conquest, since it contained little pottery all of which may be residual, and an iron bolt with a copper alloy terminal (Fig 77, no **2,** M3:D7).

The complete absence of specifically Claudian material from these pits suggests that they were filled in at the start of the Roman occupation of the site, if not before.

The Claudian period (Period III, AD 44-8)

Parts of what appear to be two compounds were found within the Claudian occupation of site i, the eastern one containing traces of metalworking. There were also two latrine pits (Fig 4).

Compound 1 (Figs 4 and 5)

For main dating evidence from postpits and the metalworking features see coarse pottery report, Fig 22, nos 18-20, M 18:B6; Tiberian/Claudian and Claudian samian, decorated samian report, Figs 45, 48, nos 76, 112-59, M2:C7-13; pre-Flavian brooches, Figs 73, 75-6, nos 3, 30, 37, and 41, M3:C4-9; and Claudian coin, Roman coin catalogue no 1, M3:B4.

The boundary of compound 1 was defined by three small pits (features 133, 139, and 148), all about 0.8 m deep and 1 x 0.75 m across. These dimensions suggest that they were postpits, although no trace of post impressions was found. They were filled with brown loam with occasional flecks of charcoal and small lumps of fawn coloured clay. These lumps are probably the disturbed remains of clay and turf packing, but it is possible that they are derived from pottery kilns. The clay blocks are reminiscent of the clay baked turves

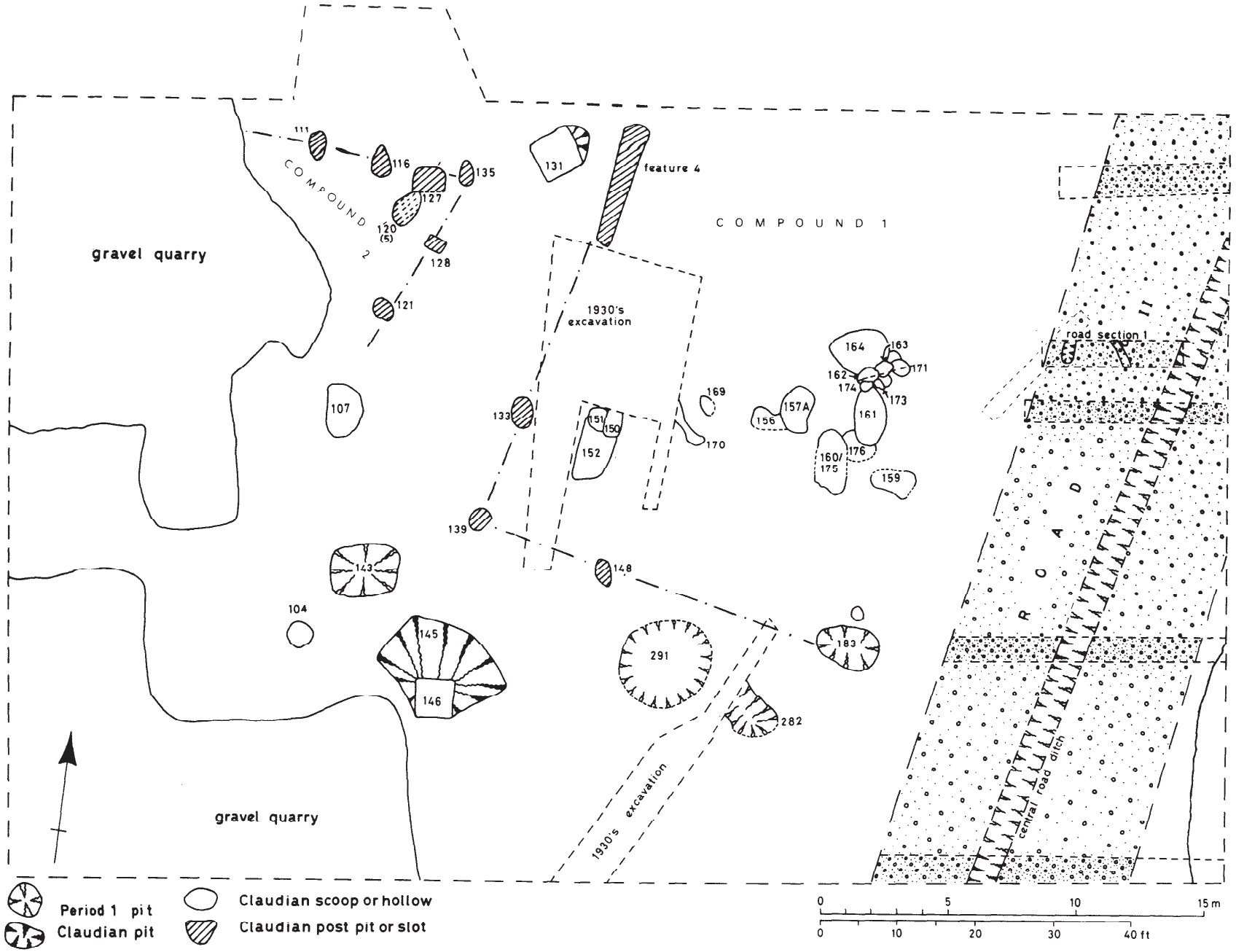


Fig 4 Site i: periods I-III

used in the kilns at Rushden (Woods 1974, 265-8). Features 139 and 133 were roughly in line with feature 4 (Fig 4), a slot filled with rather heavy clayey loam.

In spite of the incomplete plan it is clear that the postpits and slot were not part of a building and they are best interpreted as supports for a substantial fence around an open compound. It seems unlikely that such a compound would have reached east to the pre-Roman trackway which was probably still in use in period III, and it is possible that feature 183 belongs to this boundary since it is in line with features 139 and 148. Feature 4 and the three postpits all produced small amounts of Claudian pottery and metalwork (see feature catalogue, pp 29-30).

Within the suggested compound (ie north and east of the postpits), in an area unusually free of rubbish pits, traces of metalworking activities were found. The earliest metalworking features were features 176 and 164 (Fig 5) and these had been cut by successive small, round, or oval scoops and hollows, varying in diameter from 2.25 m to 0.5 m, which were only 0.1-0.3 m deep (features 161-3, 171, and 173-5; Fig 5). South and west of this complex a further seven small pits and hollows were found (features 150-2, 156, 157a, 169, and 170). Two very similar hollows, features 166 and 157b, probably also belong to the same complex, but may have remained open slightly later.

On excavation all these features were found to be very similar. The walls were sloping and the floors gently shelving with a filling of pale brown, sandy loam with occasional flecks of charcoal. A few features (157a, 162-3, and 175) were almost entirely filled with charcoal and features 151, 161, and 163 also produced small pieces of burnt daub. None of the features showed any sign of heat discolouration, so the burnt material must all have been cool when deposited; there was no sign of burning *in situ*. All the features produced tiny fragments of copper alloy, and in some cases these amounted to hundreds of pieces. Generally these were simply minute specks, but feature 157a yielded part of a bronze ingot, and features 133, 150, and 156 contained fragmentary objects including broken items of Roman military equipment (see copper alloy report, Fig 62, nos 2-6, M3:B6). In a few cases (features 148, 156, 157a, and 164) copper alloy waste was found. This consisted of pools or blobs of molten metal (bronze or less commonly brass) and in feature 148 of fuel ash slag with copper alloy blobs (see p 112 where this material is discussed in detail).

On plan these features look like small furnaces and at first it was thought that they were bowl furnaces. The absence of any sign of intense burning in or around the features themselves, and the total lack of iron smithing slag, argue against such an interpretation. On the other hand the large number of tiny fragments of copper alloy in the hollows is reminiscent of, although not exactly paralleled by, the wooden trays or tubs that were placed beneath the workbenches in the metalworkers workshops at Verulamium to collect bronze lathe trimmings and filings (Frere 1972, 18). While it seems certain that copper alloys were worked in compound 1 at this date, the metalworkers hearths must have been surface features that have been weathered away. The small pits and scoops may have been dug near the hearths and charcoal and waste dropped or raked into them. An area of burnt clay, feature 159 (Fig 4), may be the remains of a hearth, but it may equally well have been a later feature, especially as it had a Neronian mortarium on its surface.

Compound 2 (Fig 4; Pls 2-4)

For main dating evidence from the postpits see coarse pottery report, Fig 23, nos 21-30, M1:B7-8; Gallo-Belgic wares, mainly Claudian, Gallo-Belgic report, M1:F12-14 samian (Tiberian/Claudian), decorated samian report, Figs 41, 44, no 32, M2:B11,C3; pre-Flavian brooches, Figs 73-4, nos 6, 22, M3:C4-10.

Compound 2 was also defined by a series of postpits. It lay in the western part of site i and had been much disturbed by gravel extraction. Seven postpits survived, two of which, both at the north-west corner of the area, may have been replacements. The postpits were features 121, 128, 135, 120,5, 127, 111, and 116 (Fig 4). The filling of all the postpits was very similar, being brown/grey loam with some clay and with occasional small pebbles and flecks of charcoal. Postpits 121 and 116 had faint traces of clay packing with a darker loam core. With the exception of the rectangular feature 128, which was completely sterile, all the postpits produced varying quantities of Claudian and earlier material together with some animal bone (see feature catalogue, p 30); the copper alloy scrap which was so common a feature in compound 1 was noticeably absent (Section 2, Pls 2-4).

Most of the interior of compound 2 had been removed by the large post-medieval gravel quarry that occupied most of the north-west part of site i, so it is impossible to say what the area was used for. The line of postpits was not found south of feature 121, but there is no evidence to suggest that the posts formed part of a building and another open compound seems more likely. Even in cases where some clay packing survived, the original dimensions of the posts themselves could not be established, but the average depth of the postpits, 0.7 m, would allow for posts standing to about 2 m above ground, and it must be remembered that at least several centimetres from the upper parts of the postpits must have been removed by erosion.

The latrines (Fig 4)

Two features, 131 and 145/6, were found in the strip of ground outside compounds 1 and 2, and probably date from the Claudian period initially. Both features, and feature 138 of slightly later date, had been constructed in the same way. A large pit had been dug with steeply sloping sides. A timber frame was then constructed against one side of the construction pit which was then filled in, leaving a timber-lined pit. The features were thus closely similar to Hawkes and Hull s type 1 well (Hawkes & Hull 1947, 126 and fig 37), which had four corner posts retaining horizontal planks laid against the face of the well shaft; indeed, faint traces of timber uprights were found in the corners of features 138 and 146, while in 138 slight traces of the horizontal timbers were detected. Although an interpretation as wells was reasonable for the structures found in the 1930s, it does

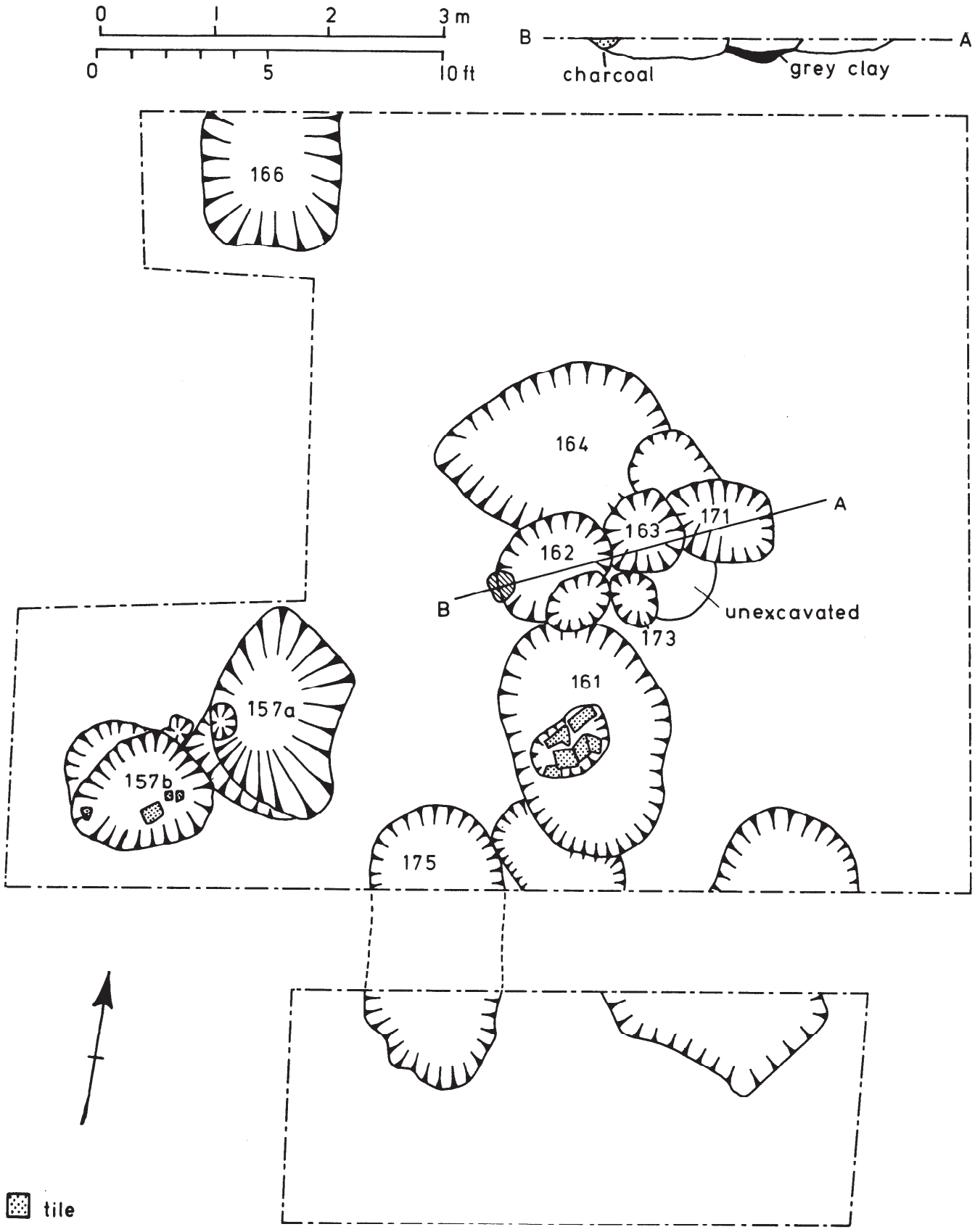


Fig 5 Site i: period III metalworking features

not provide a convincing explanation for the comparatively shallow features found in 1970. These did not penetrate to the modern water table, and even if, as seems likely, the early Roman water table was higher, a depth of less than 3 m seems hardly adequate. The 1970 features are therefore interpreted as latrines rather than wells. A further possibility, given the evidence for leatherworking on the site in period III, is that these timber-lined pits were used as tanning vats. They may even have served a dual purpose. In the absence of firm evidence, however, they are described in the report as latrines.

The dating of the compounds

The posts delimiting the compounds were removed during the Claudian period. The majority must have been deliberately withdrawn, since except for features 116 and 121 in compound 2 there were no traces of the posts themselves, while the funnel-shaped mouths of some of the postpits may have resulted from the rocking of the posts as they were pulled out. The filling of the postpits must therefore date the removal of the posts rather than their erection. This filling contained exclusively Claudian and earlier material; in view of the large quantity of early Neronian pottery that was found strewn over site i, it is almost inconceivable that any specifically Neronian material would not have found its way in to the filling of any of the postpits had they been open in the Neronian period (for the contents of the individual pits see feature catalogue, pp 29-30).

The filling of the metalworkers scoops produced assemblages closely similar to those of the postpits and totally consistent with a Claudian rather than a Neronian date (see feature catalogue p 29). Although a few of the scoops may have remained open into the succeeding period, the total absence of specifically Neronian pottery in their fill suggests that on the whole they belonged to period III, and that metalworking, presumably under military auspices, was well established at Sheepen before the establishment of the colonia in AD 49.

The Claudian/Neronian period (Periods IV and IVb, AD 49-60) (Fig 6).

In contrast to the shallow pits and scoops with metalworking debris and Claudian samian, twelve rather larger pits were found on site i, five of which contained specifically Neronian samian and Gallo-Belgic ware (features 102, 112, 132, 134, and 153, period IVb). Of the remaining seven, one (feature 120) was stratigraphitally later than a postpit in compound 2 (feature 120,5) but the rest contained material which could date from any time from *c* 40 to 65. These features however (features 101, 119, 149/284, 289, and the partially excavated 140 and 290) were totally different in character to the features that were more firmly dated to the Claudian period, but were very similar to features containing specifically Neronian material. On these grounds they have been assigned to period IV.

The filling of all twelve pits was found to be very similar; large quantities of humus were normally present, with domestic and industrial refuse and charcoal flecks. Some of the pits may originally have been dug as sand and gravel pits; features 101, 102, and 153 had the usual humic fill in the upper parts, but the primary levels consisted of tips of sand and gravel, doubtless slippage from the pit walls, suggesting that those pits had stood open for a while after being cut. In most of the other pits rubbish began to accumulate as soon as they were dug. Feature 112 had been lined with pale clay, and although it was cut by a late Roman grave and the post-medieval gravel quarry, appears originally to have been rectilinear in plan. Both these pits invite comparison with the clay and timber-lined period I pits found in the 1930s, which may have been intended as storage pits (Hawkes & Hull 1947, 100-1). For the main dating evidence for these pits see the feature catalogue, pp 31-6, for coarse pottery see coarse pottery report, Figs 23-5, nos 38-77, M1:B9-14 and Figs 27-8, nos 123-172, M1:D6; for Neronian samian see plain samian catalogue, M2:D6, and decorated samian catalogue, Figs 41, 44-7, nos 31, 47, 99, 108, and 119, also nos 8, 11, and 38 for Tiberian and Tiberian/Claudian survivals, M2:B13-C14; for Gallo-Belgic wares (Claudian/Neronian and Neronian) see Gallo-Belgic catalogue, Figs 35-40, nos 55-96 and 159-202, M1:G3-13; for coins nos 7-8 and 11, see Roman coin catalogue, M3:B4. The shafts of three latrines (features 136, 138, and 146) contained material that suggested a period iv date, and in the case of 138 and 146 this included forms of coarse pottery and decorated samian that indicated a Neronian date (see feature catalogue, pp 32, 36).

The timber-lined cellar (Feature Z5; Fig 7; Section 5; P1 5)

For dating evidence see coarse pottery report, Fig 32, nos 237, 240, M1:D2; decorated samian, Fig 42, no 20, M2:B14.

The largest anomaly revealed by the geophysical survey lay near the north-west corner of site i (Figs 2 and 7). excavation uncovered a large pit with vertical walls cut 1.5 m into the gravel in which a rectangular structure 2.8 x 4.5 m had been erected. Against the north and south walls remains of six upright posts survived, while a seventh at the north-west corner was marked by a posthole. The surviving posts were all completely carbonized. They were D-shaped in section and were between 100 and 150 mm across. They survived up to 600 mm above floor level, and were sunk 500-600 mm below it. The lower ends of the posts had been squared off rather than pointed. Between the upright posts and the wall of the construction pit were the remains of horizontal retaining planks. These were best preserved on the north side, near the north-east corner, where two rows and traces of a third survived; like the uprights they had all been burnt. The horizontal planks were 40-60 mm thick and 200 mm broad; it was not possible to tell whether they had been sawn or simply split. The longest horizontal plank, at the base of the wall near the north-east corner, was 2.3 m long, while three other planks measured 2.1, 1.8, and 1.45 m in length. Shorter lengths of planks found on the south side were probably incomplete. It is likely that further upright posts were necessary to retain this planking, but as no further postholes existed, any further uprights must have

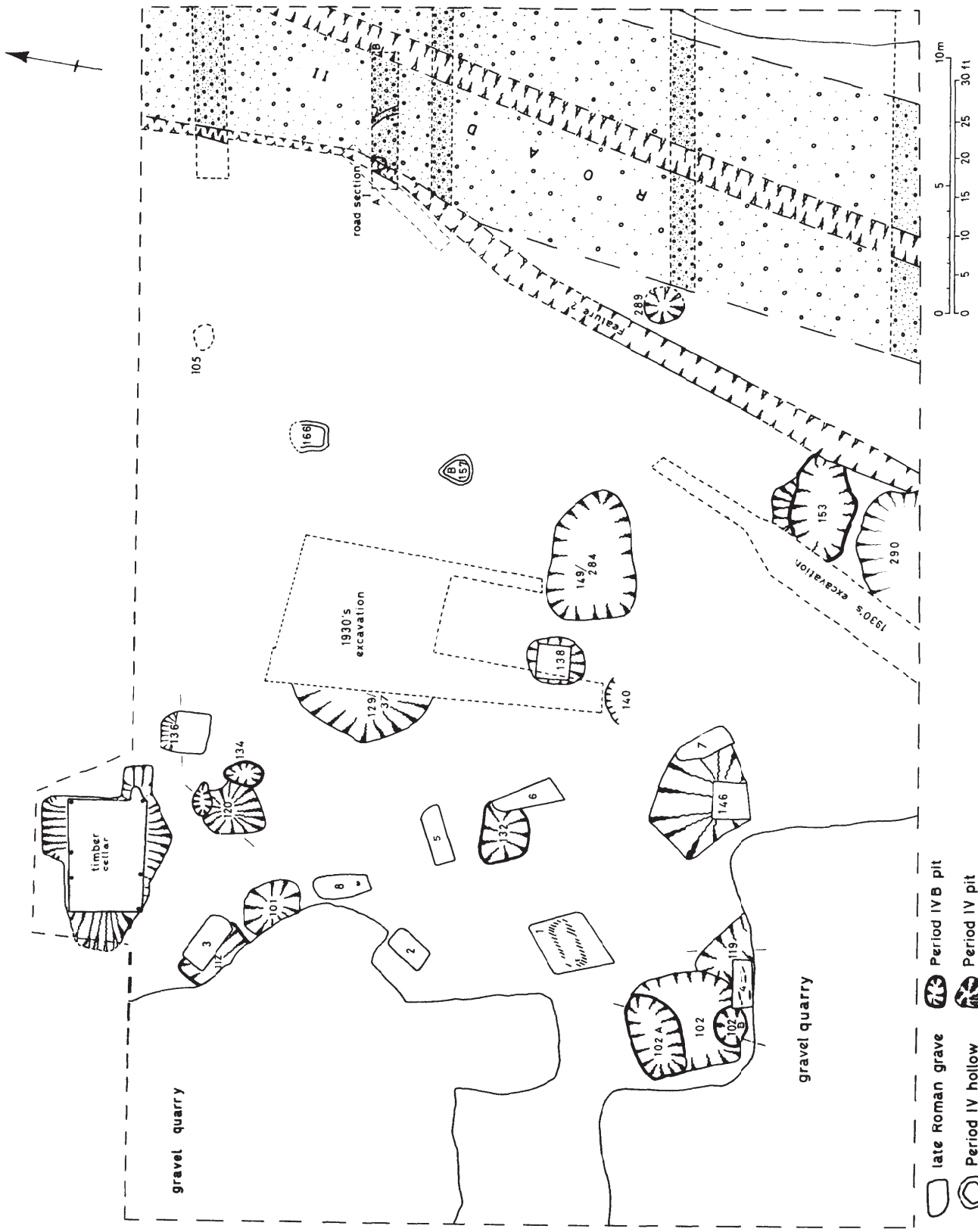


Fig 6 Site i: period IV, IVb, and later features

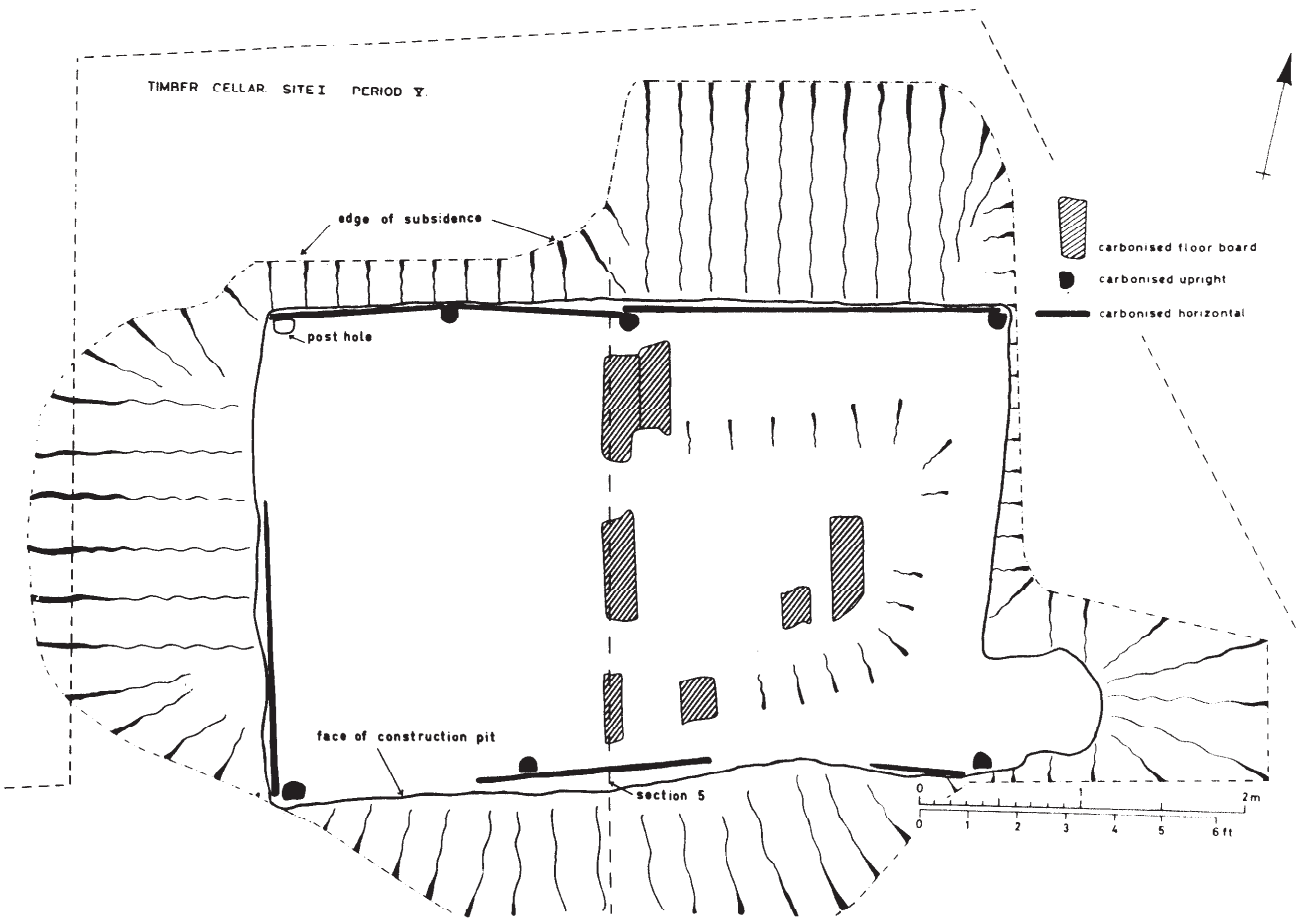


Fig 7 Site i: timber cellar

simply rested on the ground, braced by the floor boards. The six surviving uprights were irregularly spaced, distances varying from 2.8 m apart to 1.05 m.

The cellar floor had been planked with floor boards, laid north-south. Carbonized remains of at least four boards were found. They were 40 mm thick except for one which was only 20 mm thick. All the boards were between 190 and 250 mm wide, with one, probably incomplete, exception which measured only 120 mm across. The floor of the construction pit where the floor boards survived was slightly uneven, being hollowed out to a depth of 100-150 mm in places. The floor boards had collapsed into the hollows during the destruction of the cellar.

The entrance to the cellar was in the south-east corner where remains of a gravel ramp were found. The ramp sloped at too steep an angle (in excess of 45°) and the gravel would have provided too unstable a surface for the ramp to have formed the floor of an entrance passage. It must have been the base for timber steps, no trace of which survived.

None of the surviving timbers had been nailed. The horizontal wall-retaining planks had simply been wedged between the vertical posts and the wall of the construction pit. It followed that the numerous nails found in the filling must have come from some other part of the building.

Although the structure was largely filled with burnt daub and charcoal there were tips of clean sand and gravel near its base (see Section 5). The edges of the construction pit were vertical for only the lowest 0.70 m; above this they sloped fairly gently up to the natural level of the gravel. It seems likely that as the cellar burned, the upper parts of the walls collapsed and the upper edge of the construction pit slipped in, forming the tips of sand and gravel found near the base of the cellar. The overlying building then collapsed into the void and is represented by the thick deposit of burnt daub.

Much of the burnt daub in the cellar fill showed impressions of wattle on one side, and some showed well-executed pargetting on the other side. Apart from the fallen daub and the recovered nails, no sign of this building was found, and as the surviving uprights in the cellar were too slight to have supported the building themselves, it must have rested either on sills or on sleeper beams set in slots or postholes. It is possible that traces of these walls were destroyed when the edges of the cellar pit slipped into the cellar void, but this would presuppose that the main walls of the building were within a few centimetres of the walls of the cellar, thus putting extra strain on the cellar walls; a more reasonable explanation would be that the walls were set further back from the cellar.

As already mentioned the site had been heavily eroded; no floor levels or structures apart from the bases of the metalworkers scoops and hollows of period III survived. Sleeper beam slots could well have been

completely eroded away in such conditions, and had the building simply rested on sill beams laid on the early Roman-surfaces, all traces would have vanished with those surfaces.

Both the cellar and the overlying building had been destroyed by fire. Very few finds of any description were found associated with the cellar, but the small amount of pottery found in the burnt daub includes pieces of Neronian date (coarse pottery report, Fig 32, no 240, M1:D2; decorated samian, Fig 42, no 20, M2:B14).

One of the few finds provided a clue to the use of the building. A fine bronze stamp, apparently used for embossing leather, was found on the cellar floor, near the north-west corner. No other objects were found on the floor and it may be that the contents of the cellar were removed before the destruction, this one stamp being dropped (Pl 14; copper alloy report, Fig 66, no 61, M3:B11). It is worth considering the remarkable feature site A4 that was found in the 1930s beside road II in region 3. Here a large, irregular pit associated with massive carbonized timbers was interpreted as a furnace used by the colonists for the production of weapons in AD 61 (Hawkes & Hull 1947, 91-3, fig 20). The discovery of the timber-lined cellar in 1970 however raises the question whether site A4 was not also the remains of a collapsed cellar used by metalworkers in period IV and destroyed by fire.

The character of the period IV occupation on site i

Although no tangible evidence in the form of furnaces or hearths was found, the evidence suggests that the working of copper alloys flourished on site i throughout period IV. A very large quantity of copper alloy scrap was found in the pits, together with crucibles, mould fragments, layers of charcoal and burnt daub in the fill, and numerous pieces of scrap and waste metal (see metalwork report, p 112, and copper alloy report, Figs 61-3, nos 8-19, M3:B6-7). The layers of charcoal and copper alloy scrap on the surface of road II belong to this phase of the site s life, and it is safe to assume that most of the large amount of metal fragments that were found strewn over the entire site in the ploughsoil date from this period. Much of the metalworking debris, however, came from the rubbish pits which were concentrated on the eastern part of site i, avoiding a strip 2-3 m wide alongside the road. This strip was probably the area in which the metalworking took place, either in the open air or in timber workshops, with the debris swept into rubbish pits behind.

It is clear that many deposits had been removed by erosion. It has already been demonstrated that there must have been a building above the timber cellar, but that all traces of this had been eroded away. The effectiveness of this erosion even at the bottom of the hill means that it is highly likely that other structures had been equally well removed. The area between road II and the period IV rubbish pits may well have contained timber workshops, and the latrines probably originally had timber structures round them.

While metalworking must have been the main industry carried out on this particular part of Sheepen in period IV, the rubbish pits also produced evidence of other activities on the site. Some of the pits may originally have been dug for gravel. Pottery is known to have been produced nearby in the pre-Flavian period, and evidence for this industry is seen in features 102, 146, and 153 (all Neronian pits), and overfired roofing tiles were found scattered all over site i.

The end of occupation on site i (Periods V and VI)

Apart from the graves in a small, late Roman cemetery, there were no features on site i that produced anything later than c AD 65, nor was any such material found in the ploughsoil. The only structure that survived the erosion of the site had been destroyed by fire. Similar evidence for widespread destruction at about this time, and for the abandonment of the site by c AD 65, was found in the earlier excavations. It seems reasonable therefore to attribute the end of occupation on the site to the effects of the Boudiccan revolt in AD 61.

Site ii (Figs 8 and 9)

Site ii, divided into iia (15 x 15 m) and iib (17 x 18 m), was laid out over an area north of road II, which had produced a number of medium density anomalies in the geophysical survey (Fig 2). Excavation showed that the area had been riddled with pits, but no structures were found. The subsoil here was clean gravel and lay within 0.15 m of the modern surface. At a depth of just over 1 m the gravel was replaced by sand. Later in the excavation two smaller strips (sites iic and iid) were opened, between the main area of site ii and road II (Fig 3).

Site iia (Fig 8)

For the main dating evidence see coarse pottery report, Figs 25, 30, nos 78, 208-210, M1:B13,C12; Tiberian/Claudian and Claudian Gallo-Belgic ware, Gallo-Belgic report, nos 43-8, M1:G1; Claudian and Neronian decorated samian, Figs 42, 44, 47, nos 23, 29, 46, and 9, with Tiberian/Claudian survival no 3, M2:B11-C4; pre-Flavian brooches, Figs 74-5, nos 12, 17, 24, and 31, M3:C4-7; and coins, 1 Camu/Cam, 1 Antonia, 1 Claudian copy, M3:B1-4.

The north-west part of site iia (Fig 8) had been disturbed by a large post-medieval gravel pit, but in the eastern half a mass of pits was encountered. The pits were characterized by steep sides and flat bases, and all stopped when natural gravel was replaced by sand. From this is clear that the pits were originally dug as gravel pits although they were almost immediately used to deposit rubbish. As on sites i and iii this material incorporated large amounts of metal waste, scrap metal, charcoal, misfired tiles, pottery, and animal bones.

Many of the pits on site iia had been repeatedly recut, particularly features 203 and 205, and the material in them had consequently become very mixed. It was not possible to isolate distinct groups of pottery to the extent that it was on sites i and iii, nor to date the majority of the pits more precisely than to within the

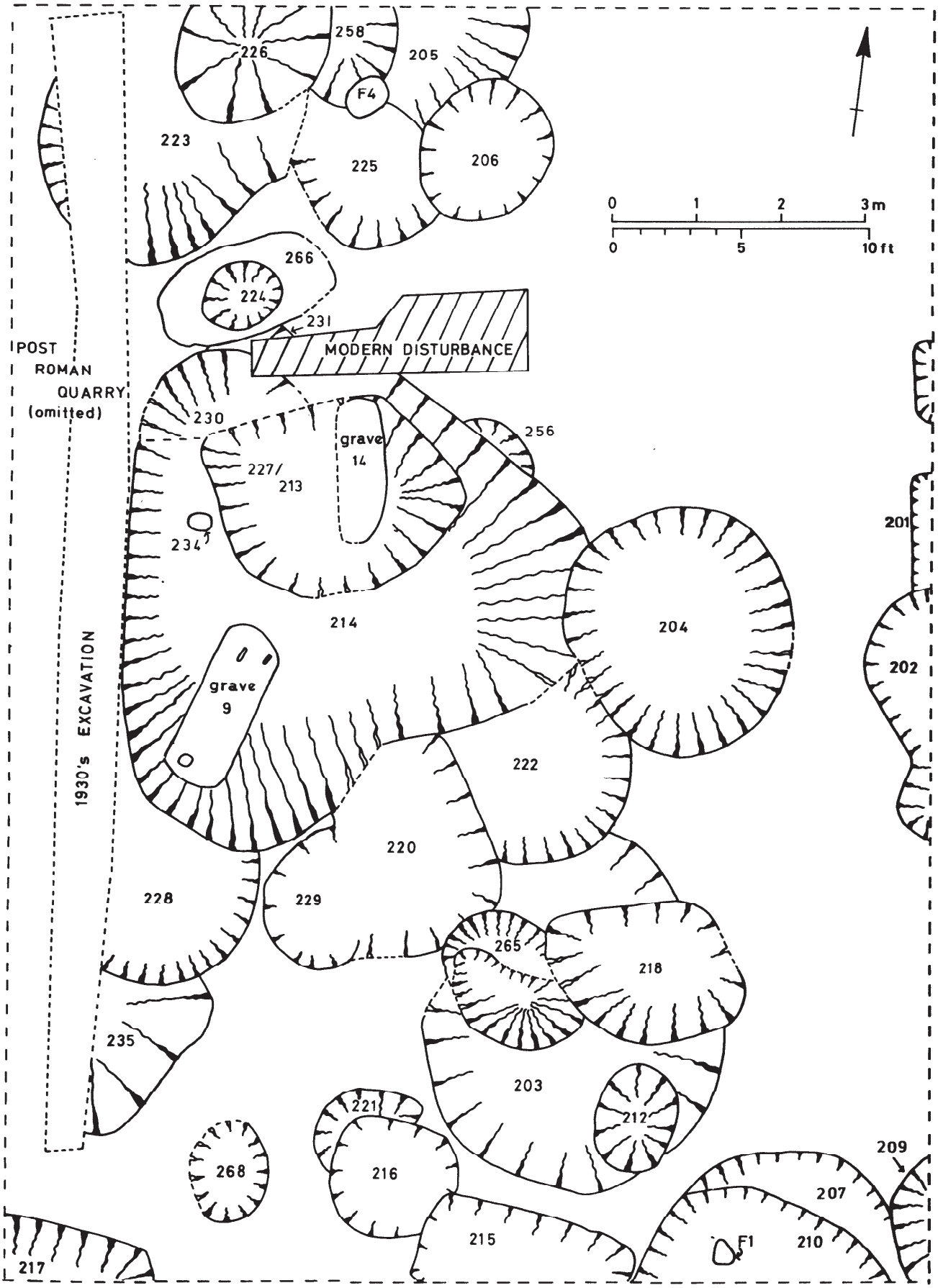


Fig 8 Site iia: periods III-IVb

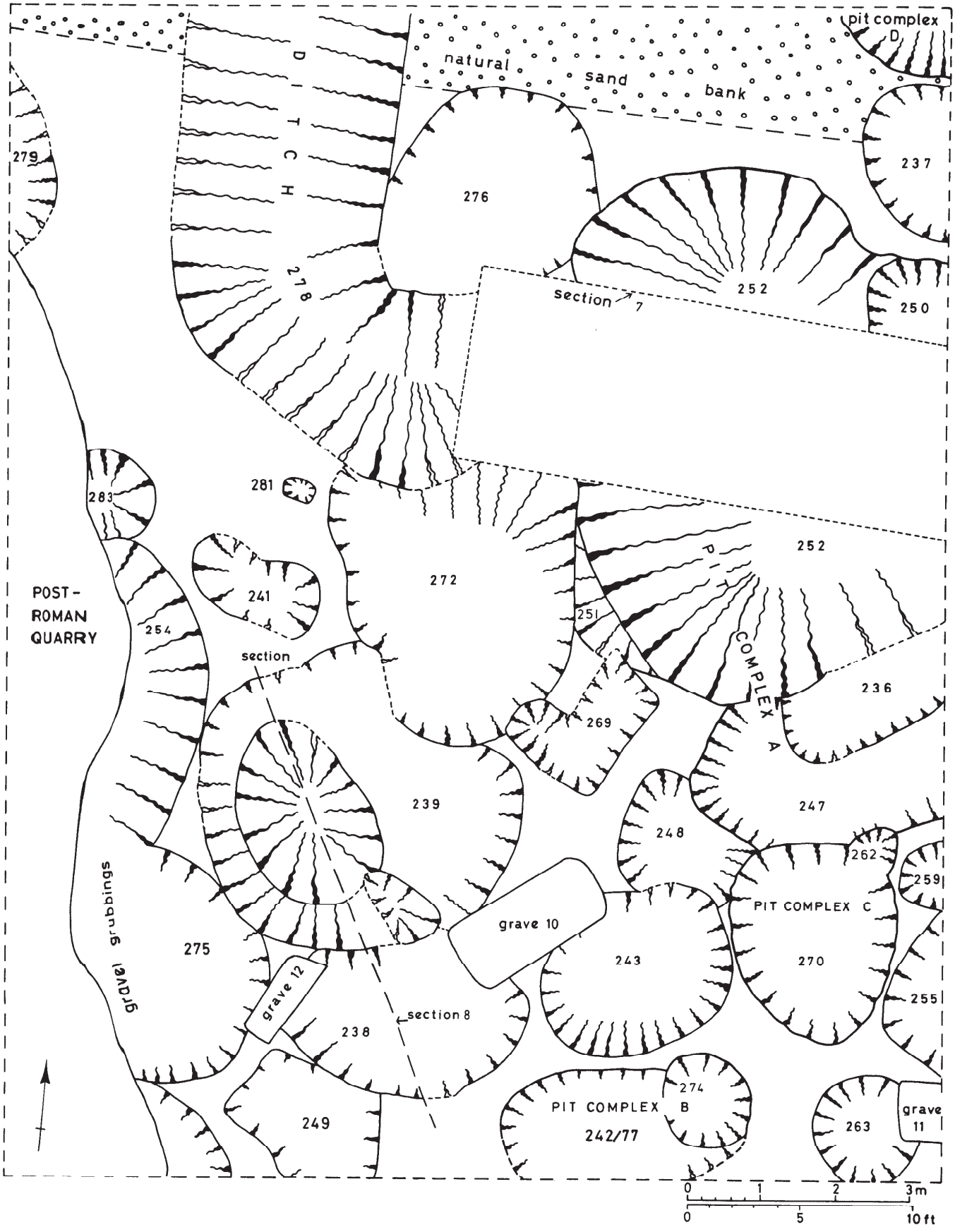


Fig 9 Site iib: periods III-IVb

Claudian Claudian/Neronian period (periods III/IV). The exceptions were features 203, 207, 228, and 235 which produced only Claudian and earlier material which may belong to period III (see feature catalogue, p 31); features 2 14, 2 19/230, 222, 231, and 256 are also probably pre-Neronian (feature catalogue, pp 32-3). Two small postholes, F1 and F4, had been cut through the filling of features 210 and 258 respectively, but their dates could not be established.

Site iib (Fig 9)

For the main dating evidence see coarse pottery report, Fig 31, nos 211-19, M1:C13; Claudian/Neronian Gallo-Belgic wares, Gallo-Belgic report, Fig 40, nos 224-315 and 362 433, M1:G14,2:A12; decorated samian, Figs 41-8, nos 19, 29, and 33 (Claudian), 82 and 113 (Neronian), 4, 7, and 25 (Tiberian/Claudian survivals), M2:B11-C13; pre-Flavian brooches, Figs 73 6, nos 10, 11, 18, and 29, M3:C4-7.

The pits in this area were concentrated at the south-east part of the site and were even more closely packed than on iia, with consequently more intersecting and recutting. The largest group of recut pits, pit complex A, centred round the large feature 252, which cut through and had almost completely obliterated at least five earlier pits including features 247 and 236. Other similar complexes of recut pits were pit complex B (features 242, 245, and 274), pit complex C (features 270, 257, and 262), and pit complex D (features 217, 271, and 267). As on iia these pits were interpreted primarily as gravel pits (although in places feature 252 penetrated 2 m into the underlying sand and so may have been a sand quarry as well) and all were quickly filled in with domestic and industrial rubbish (see feature catalogue, pp 37, 40-1, Pl 6). This interpretation is supported by the presence of a natural bank of clayey sand which replaced the gravel over a strip running east-west across the north end of iib and which was marked by an almost complete absence of pits.

In the centre of iib was an area of shallow gravel grubbings centred around features 239, 238, 275, and 282. These repeatedly cut into one another and had resulted in the removal of almost all the gravel in the area. The shallow scoops had lain open long enough for a layer of stony silt to accumulate in them before the familiar deposit of rubbish was dumped in them. In places this rubbish had been piled up to form a dump, particularly around features 238 and 239, where the tip lines suggest a sizeable mound although ploughing and erosion have removed the top (see Section 8).

The presence of Neronian samian from pit complexes A and C and from features 213, 247, 250, and 251 (see plain samian report, M2:D7) indicates a comparatively late date for these features. Feature 236 in pit complex A produced the stamped brass sheet (see copper alloy report, M3:C2, and P1 18), and further evidence for metalworking was found in features 243, 252, and 277 (see feature catalogue, pp 37-42, and technological report, M3:D11).

A small ditch, running east-west for 10m across iib and then turning almost at right-angles to run northwards, was a post-medieval agricultural feature.

Sites iid and iic (Fig 3)

Two strips 5 m wide were excavated, cutting both surfaces of road II and extending 15 and 12.5 m to the north of it. It was hoped that these strips would expose structures flanking the road, comparable to those found in the earlier excavations (Hawkes & Hull 1947, 104-5, pl CIX) and on site iii, but neither strip produced either features or finds. The natural gravel in both iic and iid was overlain by a thin layer of pebbly clay, similar to layer 4 on site iii where traces of a timber building survived. It is possible that a similar structure once stood on iic and iid but that the erosion so active elsewhere on the site removed it. The pits, so densely packed on iia and iib, were completely absent from iic and iid, which may indicate that this area was occupied by something else.

Site iii (Figs 10 and 11)

Site iii had been extremely weathered, but the geophysical survey (Fig 2) showed extensive anomalies of medium to high intensity, so an area approximately 13 x 21 m was stripped on the north side of the road. The subsoil here was sandy and hence the area was not disturbed by the gravel pits found on the other sites.

The Claudian period (Period III) (Fig 10)

For the main dating evidence see coarse pottery report, Fig 23, nos 31-4, M1:B8; Tiberian/Claudian Gallo-Belgic wares, Gallo-Belgic report, Fig 36, nos 49-54, M1:G2; Tiberian/Claudian decorated samian, Fig 41, no 6, M2:B11; and a piece of Claudian plate, plain samian catalogue, M2:D3.

The subsoil on site iii consisted of a mixed deposit of sandy gravel, rather different from the gravel subsoil of site i and the sand and gravel banks of site ii. Immediately overlying the subsoil on site iii was layer 7, a sticky grey/brown loam which was doubtless the original topsoil. It contained few finds apart from the occasional fleck of daub or charcoal or splinter of bone that had been trampled into it. Cut into layer 7 and sealed by all the later features of the site was a pit, feature 307, and three palisade slots, features 338, 343, and 314,2; the only other features presumed to be of this date were some two dozen stakeholes, 0.05 to 0.07 m in diameter and 0.1 to 0.15 m deep. The were concentrated at the west end of the site and formed no intelligible pattern.

The palisade slots

These were all very similar. They were cut through layer 7 and approximately 1 m into the subsoil with vertical sides and flat bases 0.5 m wide. It must have required specialized tools to dig them. The filling of all three slots consisted of clean, pale, clayey loam; over the central portion of slot 338 the darker fill of postholes set contiguously in the filling of the slot could be detected. Shortage of time at the end of the excavation meant that the complete plan of the layout of the slots could not be recovered. Nevertheless the total length of each slot appears to have been comparatively short. Slot 338 was not found in its expected position between features 307

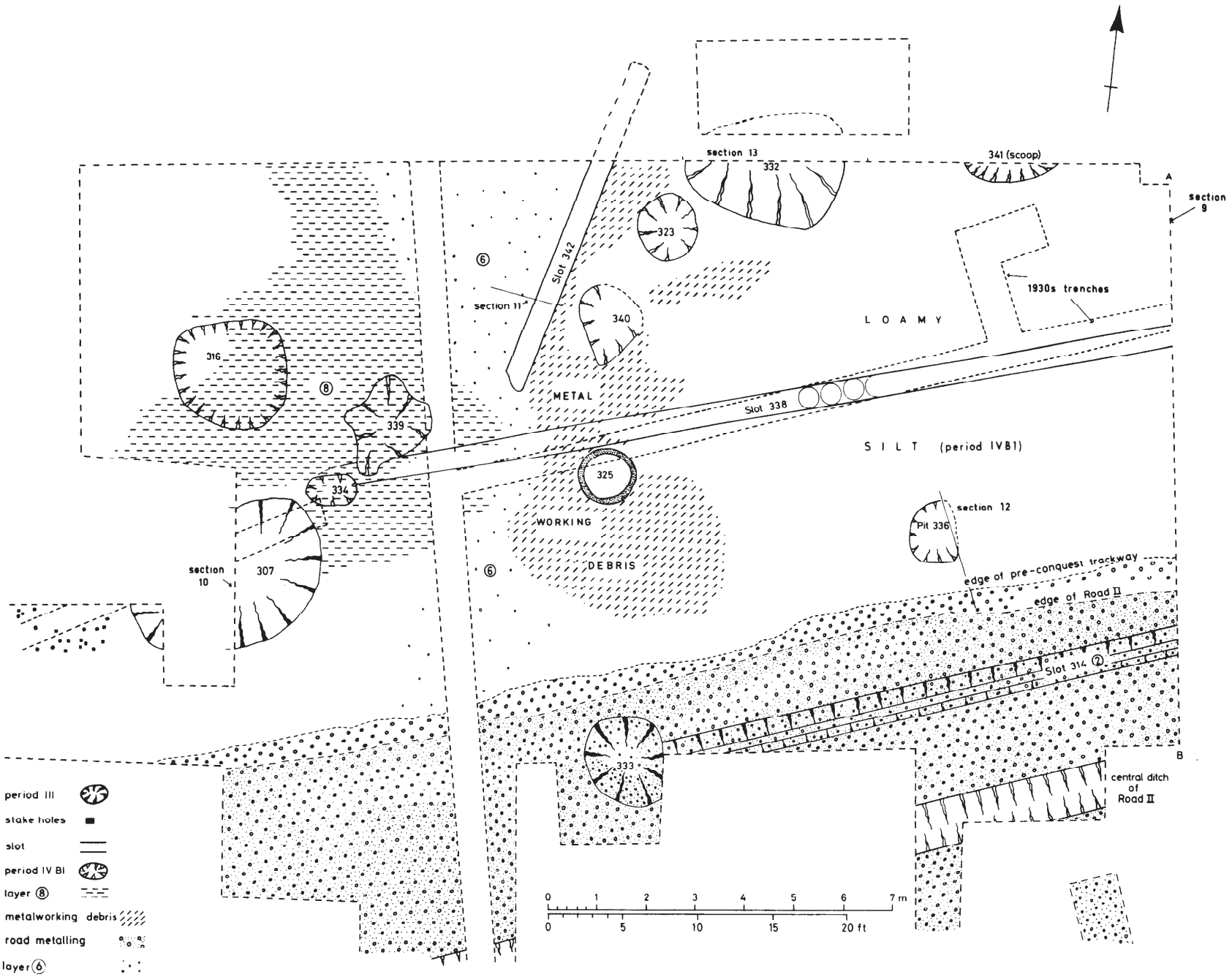


Fig 10 Site iii: periods III-IVb1

and 316 and its actual end is presumed to have been disturbed by the later pit 334. Nor was slot 338 found in the trial trench that was cut 3 m east of the main area of site iii (Fig 3). Consequently the total length of slot 338 can only have been between 14 and 16 m. Slot 342 however was only about half this length since its south end was excavated but there was no trace of the slot in the trial trench cut 3.4 m north of the main excavation (Fig 3). Time did not allow for the location of the east end of slot 314,2, but a massive postpit, feature 333, contemporary with the slot, stood at its west end.

All three slots were presumably palisade slots. Their purpose is uncertain since time did not allow for the complete layout of the slots to be ascertained, but small compounds or stockades of conquest period date seem the likeliest explanation for them. Although similar in concept to the site i compounds, the site iii structures were much more massive. The suggestion of contiguous posts in slot 338 (presumably a similar arrangement of posts originally existed in the other slots) is in marked contrast to the flimsier posts of site i, while the large postpit, feature 333, indicates a very substantial upright at the west end of slot 314,2. Their apparently stronger construction suggests that the site iii compounds were put to a different use from those of site i, possibly being stockades to protect valuable stores or livestock. It is worth noting that a similar slot was found in the earlier excavations in region 1, area F, which was interpreted as a palisade slot but dated to period V (AD 61) (Hawkes & Hull 1947, 64 and fig 5).

The slots produced little datable material: a body sherd from a coarse cooking pot or storage jar from 338, sherds from two jars, Cam form 218 from 333, two pieces of period I pottery from 342 (coarse pottery report, Fig 23, no 34, M1:B8), and from 314,2 a handful of body sherds from cooking pots or storage jars, Claudian samian, and a coin of Cunobelin (see feature catalogue, p 31, plain samian report, M2:D3, and Belgic coin catalogue, no 2, M3:B2). Slot 314,2 and feature 333 were cut through the period I trackway and were sealed by the earliest make-up of road II, which was laid out in period IV (p 4). It therefore seems likely that features 314,2 and 333 dated from the Claudian period, while the close similarity between all three slots strongly suggests that they were contemporary.

Pit 307 (Section 10)

Approximately 0.7 m west of the presumed western end of slot 338 was feature 307, a vertical sided pit, 1.6 m in diameter but widening out at the mouth, filled with sterile grey clay. It was excavated to a depth of 4 m at which point the unstable sand subsoil made further work unsafe, although auguring showed that it continued straight down for at least another metre. The pit filling produced little in the way of finds: a glass rim, a handful of body sherds in coarse fabric, a coin of Cunobelin (Belgic coin catalogue, no 1, M3:B2) and small fragments of copper alloy and iron (see feature catalogue, p 31). The metal items included a fragmentary mount which was definitely Roman in style and suggests that the shaft was filled in after the conquest, but since the base of the pit was not reached, its initial date and purpose is not known (see copper alloy report, Fig 61, no 7, M3:B6). The size and depth of the feature suggests that it was a well or shaft similar to feature 341 (p 19) although the possibility cannot be ruled out that it housed a massive post standing near the end of slot 338 as the counterpart to feature 333 at the west end of slot 314,2. The funnel-shaped mouth of 307 and its clean and surely deliberate fill might have resulted from the withdrawal of the post.

The early Neronian period (Period IVb1)

(Fig 10)

For the main dating evidence see coarse pottery report, Fig 26, nos 79-109 (Claudian/Neronian and earlier), Ml :B13-C3; Tiberian/Claudian and Claudian Gallo-Belgic wares, Gallo-Belgic report, Fig 38, nos 112-158, M1:G7-9; Claudian/Neronian and Neronian samian, plain samian catalogue, M2:D4; pre-Flavian brooches, Figs 74-5, nos 13, 33, M3:C5-7.

The next event on the site was the construction of the road, road II, along the line of the earlier trackway. In the early Neronian period the north side of the road was occupied by blacksmiths while on the western part of the site a rubbish dump of metalworking debris and domestic refuse gradually encroached eastwards. The common occurrence of iron-rich slag provides positive evidence that the metalworking carried out here was predominantly iron smithing. Slots 314 and 228 were now sealed but the metalworking debris was partially bounded by slot 342 which suggests that this still formed a boundary (section 11).

The rubbish dump (layer 8) (Section 10)

Over the north-west part of the site were the weathered remains of an untidy, sprawling dump, originally made up of tips of charcoal, ash, and humus. It also produced domestic refuse, mainly animal bone, but with a small amount of pre-conquest and early Roman pottery (see coarse pottery report, Fig 26, nos 83-92, M1:B14 C1; iron report, Fig 70, no 20, M3:D9; and feature catalogue, p 33). This material survived in patches over an area approximately 8 m across, and so must once have been of substantial size. Three pits, features 316, 334, and 339 were filled by it and therefore must have been open shortly before the rubbish dump started to accumulate. The three pits produced a few pieces of Neronian samian (see plain samian catalogue, M2:D5).

The metalworking dump

Immediately east of the rubbish dump was a rough pebble surface (layer 6) possibly a path or lane. East of this surface were three shallow pits, features 325, 323, and 340. On excavation feature 325 proved to be very different from the general run of pits on the site. A ring of charcoal fragments was found 1.2 m in diameter, 100-150 mm broad, and sunk 30-50 mm into the unburnt, natural sandy clay that formed the flat base of the feature. The charcoal contained hundreds of minute flecks of copper alloy and copper alloy powder, while the mixture of dark soil and burnt debris that filled the feature produced fragments of iron smithing furnace bases, one of which incorporated a tuyere (see

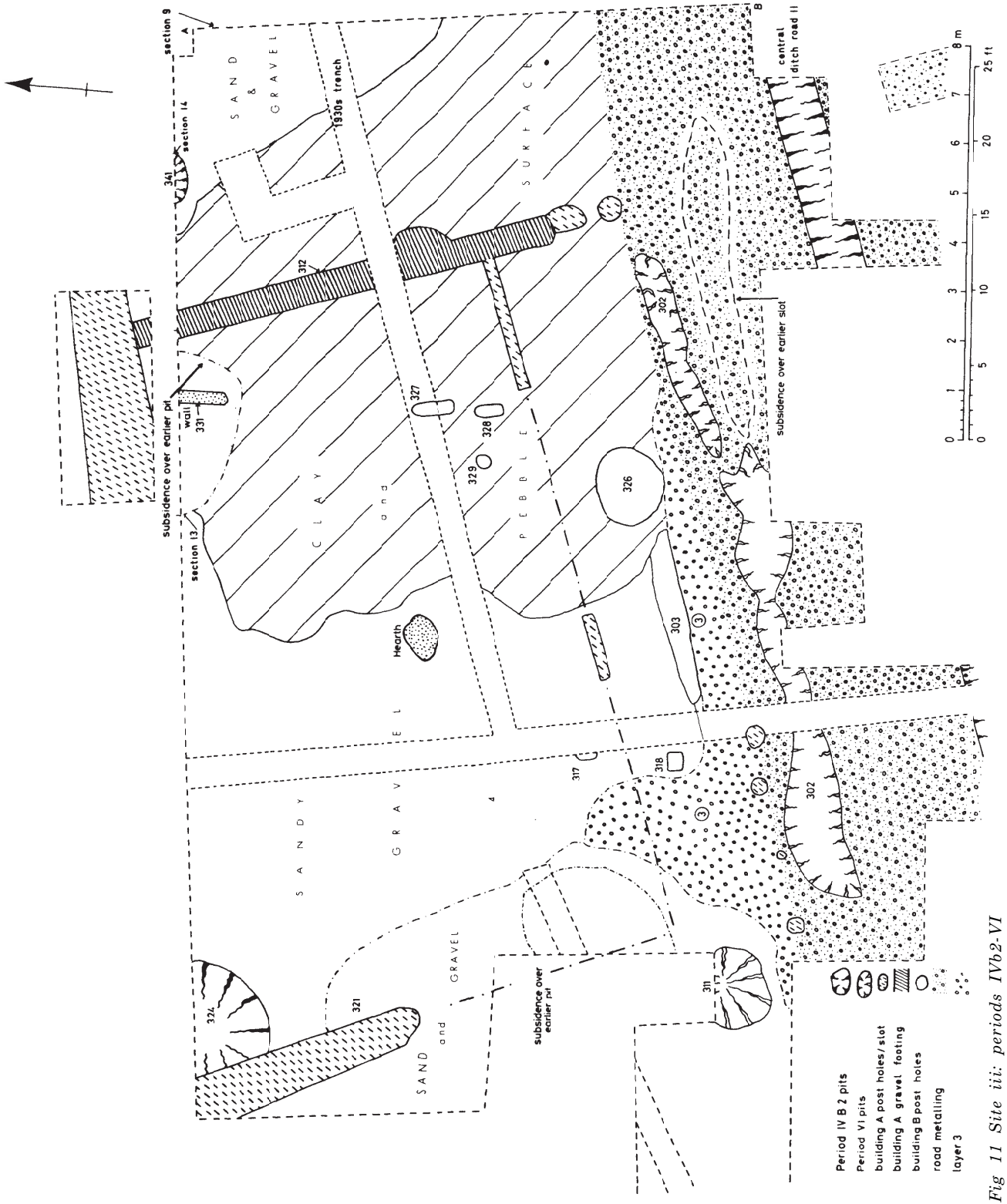


Fig 11 Site iii: periods IVb2-VI

technological report, M3:D11). Clearly both copper alloy working and iron smithing were going on here and presumably feature 325 had a highly specialized function (P1 7). All three pits, features 323, 325, and 340, were filled by dark soil containing a high proportion of charcoal with small crumbs of burnt daub, flecks of copper alloy, and numerous pieces of iron-rich smithing slag which included several fragments of furnace lining. This material sealed the pits and spread from them to cover a strip approximately 9 x 4 m over the centre of site iii. The metalworking dump therefore occupied a fairly restricted area, leaving the eastern part of the site largely free both of rubbish and pits. Here the early layer 7 was sealed by a deposit of loamy silt which followed the natural contours of the ground, sloping down slightly to the east. This deposit appeared to have resulted from natural weathering, which suggests that at this period this part of the site was unroofed. It produced few finds and the only features associated with it were features 336 and (probably) 332.

Feature 336 (Section 12; P18)

This was a large pit with vertical sides filled with tips of clay and gravel, including some burnt material. The unstable subsoil made it impossible to excavate the feature completely but, like feature 307 of the previous phase, feature 336 was probably either a well or latrine.

Feature 332 (Section 13)

This was a large rubbish pit partly filled with tips of burnt material and dark earth. When this filling had accumulated to a depth of only 0.75 m the pit had been deliberately filled in with clean, yellow clay.

Although the features just described produced a certain amount of pre-conquest material (see coarse pottery report, nos 87, 95, and 102, M1:B14-C2, and Gallo-Belgic report, nos 112-158, M1:G7-9, for Tiberian/Claudian groups), the presence of scraps of Neronian samian in the primary fill of features 316 and 334 (plain samian catalogue, M2:D5), both of which were sealed by the rubbish dump, firmly dates this phase as Neronian at the earliest.

The Neronian period, second phase (Period IVb2) (Fig 11)

For the main dating evidence, see coarse pottery report, Fig 27, nos 110-122, M1:C3-4 (Claudian/Neronian and earlier); fragments of Lyon ware, fine ware report, Ml:D6; Claudian/Neronian decorated samian, decorated samian catalogue, Fig 45, no 64, M2:C7; plain samian catalogue, M2:D5, for fragment of a Neronian vessel.

The earlier Neronian pits were now filled in and the rubbish and metalworking dumps levelled. Over the western part of the site a new surface was laid, consisting of a rather rough layer of pebbles, set in brown loam (layer 4) and sealing all earlier features, while on the east end the earlier silty deposit was levelled up with a new surface of clay and pebbles. A small pit, feature 324, was cut into layer 4 (Fig 11) but must have been quickly filled in.

Cut into these gravel/pebble and clay surfaces were the eroded traces of a timber building. A discontinuous beam slot marked the front wall, with a row of postholes cut into the edge of road II presumably representing an open verandah. The east wall was clearly marked by a shallow slot (312) filled with clean, rammed gravel. The back and west walls were not so clearly defined but may be represented by slot 321 and a further feature which was picked up in a trial trench north of the main excavation. This crossed the end of slot 312 but time did not allow it to be fully excavated. It was not traced in the north-west corner by slot 321, which may suggest that the building extended further from the road at this point (Fig 11).

There is some evidence for rebuilding. A deposit of loose sand (layer 3) covered the verandah postholes and reached to a further post (303) and a pit (326) between them and the beam slot at the front of the building. A length of clay wall, fired brick red and standing to a height of 0.35 m, was found in the subsidence over the earlier pit 332 near the north end of the east wall, inside the building but at a different angle to it. This wall may be the displaced remains of an internal partition, or it could possibly have collapsed from the east wall. It appeared, however, to be in position, and if so it lines up with postholes 327 and 328 which, like feature 317 and 318, were associated with this phase (Fig 11).

The gravel/pebble and clay surface associated with the building sealed all earlier features, including features 316, 334, and 339 which contained a small proportion of Neronian material. None of the material from the site is later than the Neronian period but the small amount of material found in layer 4 or within the rammed gravel of slot 321 included Neronian samian (plain samian catalogue, M2:D5) and a Neronian flagon (Cam form 150; see feature catalogue, p 34). The building is therefore dated to period IVb.

The only other feature associated with this phase was feature 341 (Fig 11; Section 14) which lay outside the building just described and which proved to be a third vertical-sided shaft in this case cutting through an earlier shallow scoop. Shaft 341 was over 3 m deep and filled with earth and burnt daub producing Claudian/Neronian material (see feature catalogue, p 35).

The destruction of the Neronian building (Period V) (Fig 11)

For the main dating evidence see coarse pottery report, Fig 32, nos 223-236, M1:C14-D2 (Claudian/Neronian with some pre-conquest types); fragments of Lyon ware, fine ware report, M1:D7; Gallo-Belgic wares (Tiberian/Claudian and Claudian/Neronian), Gallo-Belgic report, nos 433-443, M2:B4-5; decorated samian, (Claudian/Neronian) nos 34 and 54, (Neronian) nos 24,53 (the latest piece on the site dated c AD 55-?70), and 83, Figs 42, 45-6, M2:C6; Neronian plain samian, catalogue of plain samian, M2:D10; pre-Flavian brooches, Figs 73-4, nos 4 and 14, M3:C4-5; coins of Marc Antony (1), Tiberius (1), and Claudius (3, all copies), Roman coin catalogue, nos 19-23, M3:B5.

The Neronian building described above and its associated features were covered by a weathered layer of burnt daub (layer 2). Although very much eroded it was clear that this daub had once extended over the entire site north of road II, and that the Neronian building had been burnt. The short stretch of wall found over feature 332 had been fired hard and red and was masked on both sides by burnt daub which also filled shaft 341, pit 326, and all the postholes and slots of period IVb2. The surface of layer 4 had itself been scorched in many places, but the roughly oval patch of intense burning near the centre of the building (Fig 11) may be evidence of a hearth here. Contained in the burnt daub were numerous roofing tiles, some of them burnt, and also quantities of iron nails which, together with a fragment of roller stamped daub, throw interesting light on the construction of the building. It was from the burnt daub layer (layer 2) that many of the small finds from site ii originated, including items of domestic and military equipment (see copper alloy report, Figs 66-7, nos 62-74, M3:B12), the fine cameo (P1 20; p 136), two gilt bronze rings (P1 15), and the two dice and bronze dice shaker (P1 16). The pottery from layer 2 included Neronian types of coarse ware (Cam forms 146, 154, and 246) and Neronian plain and decorated samian which date the burning to that period. In view of the widespread evidence elsewhere for burning at Sheepen at this time the destruction on site iii was attributed to the revolt of Boudicca in AD 61.

The last phase of occupation (Period VI) (Fig 11)

Road II was resurfaced after the destruction of the Neronian building and the quarry ditches for this resurfacing were cut through the burnt daub on the north side of the road. The small rubbish pit (feature 311) 0.5 m north of this may also have been contemporary with the final phase of the road. Both features contained pottery from earlier phases of the site but as no other features were found later than the burnt daub deposit it is probable that the site was now deserted. The coin of Vespasian found in topsoil must be a stray as there was no other material from the site that could be dated after c AD 65.

Site iv (Fig 3)

For the main dating evidence (Claudian/Neronian and earlier coarse pottery), see coarse pottery report, Fig 23, nos 35-7, M1:B9; Claudian/Neronian decorated samian, nos 15, 43-4, 58, 71, 77, Neronian, no 102, and a Tiberian/Claudian survival, no 13, Figs 42, 45-7, M2:B13-C12.

Site iv was a small area opened up before the main excavation by the Archaeological Research Group, Colchester, under the direction of Mr J D Blyth; it lay 4 m east of site iib. Two gravel pits, filled with domestic refuse and with fragments of fuel ash slag, were found (see technological report, M3:D12, and feature catalogue, p 28).

Site v

This site was much disturbed by post-medieval quarrying, which accounts for the fact that only a few, low-density anomalies were detected by the geophysical survey. Nevertheless, an area 29 x 8.75 m was examined with interesting results. No layers survived over the area as a whole, since the ploughsoil, 0.3 m thick, directly overlay the gravel subsoil. The northern part of the Sheepen site (site v) was not threatened to the same extent as other parts, since the lower slope was to be buried by the terracing for the playing fields, rather than being dug away.

The ditch (Fig 12; Section 15)

Running almost due east-west across the site was a ditch (feature 1). It had a wide, V-shaped profile cut 1.2 m into the natural gravel subsoil. In its base was a weathered, flat-based slot 0.4 m deep and 0.8 m wide, giving it every appearance of a military ditch. Apart from the dark primary silt in the base, the ditch was filled with tips of clean gravel and earth. No trace of a bank was found either to the south of the ditch or in the trial trenches cut north of it (Fig 3). In spite of extensive trial trenching (Fig 3) the ditch was not picked up further west, and since no such ditch appeared in any of the areas excavated to the south it seems likely that it turned north, since only in this way could it have avoided the trial trenches. To the east a trial trench located the ditch continuing in a straight line towards the modern road. The precise date of the ditch is uncertain since its filling did not produce much datable material (see feature catalogue, p 42); apart from a late Roman grave, however, all the pottery from site v, including the numerous pieces from ploughsoil, is pre-Flavian, and it is likely that the ditch dates from period III/IV.

Other pre-Flavian features (Fig 12)

For the main dating evidence, see coarse pottery report, Figs 29, 31, nos 173-5 and 220-2 (Claudian/Neronian with some earlier material), M1:C9,14; Lyon ware, fine ware report, M1:D9; Pompeian red ware, Gallo-Belgic report, M2:B5; Claudian/Neronian samian, decorated samian report 67, Fig 45, M2:C8.

The remaining features from site v (apart from a late Roman grave and the post-medieval gravel quarry) comprised a timber-lined well or latrine, feature 502, and three rubbish pits, features 501, 503, and 504. All these features produced pre-Flavian pottery, oyster shell, and animal bones. There was no evidence of industrial activity from site v.

The aqueduct Fig 3)

A trench was opened 47.5 m north-west of site v in order to ascertain the relationship between the Sheepen Dyke and the aqueduct found in the 1930s (Hawkes & Hull 1947, 73-6, fig 13 ditch 3). This trench confirmed the deduction made then that the aqueduct must have been cut through the filled-in Sheepen Dyke. The aqueduct, a slot 1.2 m wide and filled with grey clay, clearly cut across the brown sandy filling of the Dyke. Neither the Dyke nor the aqueduct were excavated in 1970 since time and resources were pressing. Although

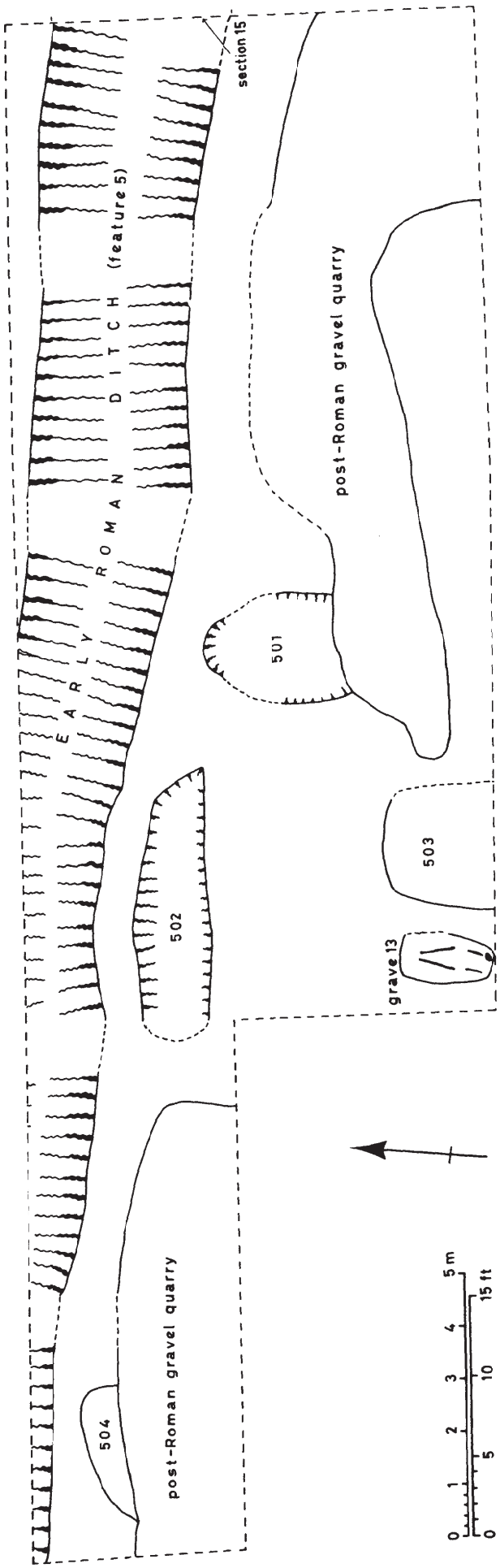

section 15
EARLY ROMAN DITCH (feature 5)
post-Roman gravel quarry
501
502
503
grave 13
504
post-Roman gravel quarry
0 1 2 3 4 5m
0 5 10 15 ft

Fig 12 Site v

interpreted as an aqueduct in the earlier excavations, it should be remembered that the purpose for which this feature was intended has never been satisfactorily established. The sections of the aqueduct drawn in the 1930s look remarkably like those of the period III slots found on site iii in 1970, and it is possible that, in spite of the sinuous course of the so-called aqueduct west of the Sheepen dyke (Hawkes & Hull 1947, pl CVII) in region 2, it was in fact another palisade slot.

Site vi

The geophysical survey picked up a few medium to high intensity anomalies halfway down the slope on the western side of the excavation and an area 12 by 15 m was stripped.

The subsoil on site vi was clean gravel and, where not removed by later gravel working, was within 0.3 m of the modern surface. Excavation showed, however, that the whole site had been very much disturbed by post-medieval gravel quarrying and all that survived were four early Roman pits. Two of these pits were sterile, and filled with stony loam; the third (pit 601) produced a large quantity of pottery and domestic refuse.

Feature 601 (Fig 3)

This pit (0.3 x 0.5 m diameter, 1.4 m depth) may well have started life as a gravel pit, but after a small amount of primary silt had accumulated it was filled with tips of rubbish, including some fragments of burnt daub and charcoal, but with no definite traces of the metalworking found 20 m to the south on site iii. The rubbish produced a large amount of pottery (coarse pottery report, nos 177-190, Fig 29, M1:C9-10), Claudian and Neronian samian (decorated samian, Fig 46, no 70, and plain samian, M2:D8), and fragments of a Belgic coin mould (technological report, M3:E5).

Feature 604 (Fig 3)

This was a small, shallow, irregularly-shaped feature, probably originally a gravel pit, but disturbed by roots or burrowing animals.

Site vii

An area 30 by 27 m was stripped over the line of the levelled Sheepen ditch and rampart, 75 m north of the main entrance through it. The aim was to discover whether or not any post-conquest structures had been built over the Dyke, similar to those found on the south of the entrance in the 1930s excavations (Hawkes & Hull 1947, 59, 61, 80). No trace of any occupation was found here, however, either pre- or post-conquest, and the total absence of any finds confirmed the lack of occupation in the vicinity. The area was therefore abandoned, and resources concentrated elsewhere (Fig 3).

The burials and cremations

In the later 3rd and 4th centuries AD sites i, ii, and v fell within the limits of a previously unsuspected inhumation cemetery. Fourteen graves were found, aligned at random and producing a few late Roman grave goods (Fig 21, M1:B11). In most cases the skeletons had not survived. A detailed description of the cemetery can be found in the microfiche archive (M1:A14-B4).

Contractor s earthmoving operations that took place after the archaeological work revealed five pre-Flavian cremation groups. These lay approximately 50 m south of site i, on the south side of road II. The conditions under which the material was recovered were far from ideal, but there was some indication that the five groups may have lain within an enclosure delimited by a ditch, or possibly even a robbed-out wall (Philip Crummy, pers comm). The samian found with the groups suggests a Neronian date for the cremations which are chiefly remarkable for the wealth of the grave goods, notably the glass (P1 10) and a fine wood and leather burial casket embellished with brass studs in the form of lions heads, an ornamental lock plate, and decorative brass rings with paste beads (P1 11). See M1:A4-8 for a detailed description of the cremation groups and M1:A8-13 for a discussion of the burial casket (Figs 14-20).

Since there is no summary of the finds from these burials and cremations in the finds section, Figs 14-21 are to be found on pp 53-60, before the coarse pottery drawings.

Discussion

The pre-Roman phase (Period I)

The area covered by the 1970 excavation lay within the Sheepen dyke on the lower, north-facing slope of Sheepen Hill. This relatively sheltered and well-drained position, just above the marshy valley floor, could be expected to have attracted early settlement. During the 1930-39 excavations, remains from the Bronze Age and earliest Iron Age were found concentrated on the top of Sheepen Hill, 0.5 km south of the area excavated in 1970, and a scatter of sherds and a few metal objects of similar date were found lower down the slope in Hawkes and Hull s regions 3 and 4 (Philip Crummy, pers comm). The 1930s excavations also revealed the pre-Roman trackway that ran north-east across the site from an entrance through the Sheepen dyke some 110 m south-west of the 1970 excavations (p 4). Added to this, period I rubbish pits were found in 1934 under the North-East Essex Technical College immediately east of the site. At the start of the 1970 excavation traces of La Tene III occupation, if not earlier remains, were expected.

The results of the 1970 excavation did not fulfil these hopes. The discovery of scraps of early Bronze Age pottery (M3:A14) supported the evidence found earlier of Bronze Age occupation in the vicinity but nothing of early or middle Iron Age date was found. Apart from the trackway already referred to, the only period I features found in 1970 were the four small rubbish pits excavated on site i, and even these were probably filled in only shortly before AD 43, if not actually at the time of the conquest itself (p 5). Nevertheless, sufficient quantities of pre-conquest material were found in early Roman contexts to demonstrate beyond doubt that

originally more extensive period I deposits had existed (see, for instance, feature 252 on site iib, where a large pit with Neronian samian produced quantities of pre-conquest material, feature catalogue, p 37). The pre-conquest material from the site, however, includes only a very small proportion of types that might have been current in the 1st century BC, and all of these are types that seem to have continued to be used in the 1st century AD. Thus most, if not all, of the pre-conquest coarse pottery probably dates to period I *(c* AD 5-43) rather than earlier (p 5), while the samian and Gallo-Belgic ware does not include much material earlier than *c* AD 25 (pp 75, 83).

This brings us to the question posed by the Dressel 1 amphoras which are currently dated to the 1st century BC. Fragments from five different Dressel 1b amphoras were found in 1970, but the excavation failed to provide supporting evidence of occupation on the site at such an early date. During the 1930-39 excavations 46 Dressel 1 amphoras were found, although the identification of a few of these has since been questioned (Paul R Sealey, pers comm). Most of the 1930s Dressel 1 amphoras that still survive in the Colchester and Essex Museum, however, were found in Hawkes and Hull s regions 1 and 2 on the valley floor. The 1970 excavations were virtually confined to Hawkes and Hull s region 4, which in limited trial trenching in the 1930s produced no Dressel 1 amphoras. The Gallo-Belgic ware found here in 1970 did not include the Augustan and Tiberian forms found at Sheepen in 1930-39; similarly samian ware earlier than *c* AD 25 was very scarce in 1970 (M2:B11-D2).

At first sight the coarse pottery found in 1970 shares many characteristics with pre-Roman assemblages from Skeleton Green (Partridge 1981, 59-61, figs 23-5.75-6, fig 35.80, fig 38.84, figs 41-2), and indeed the pre-conquest groups from Sheepen site i (see coarse pottery report, Fig 22, nos 1-17, M1:B4-6) would not look out of place at Skeleton Green. The main distinction between the pottery from the two sites is the scarcity of certain common Camulodunum forms at Skeleton Green (notably the carinated bowls, Cam forms 212-16 and the inbent rim jars, Cum forms 251-8) although this is probably due to geographical rather than chronological factors. The evidence of the ceramic material as a whole suggests that the part of Sheepen excavated in 1970 was contemporary with only the latest phase of the pre-conquest occupation at Skeleton Green (phase IV, *c* AD 30-40). There was certainly earlier period I occupation on the valley floor at Sheepen (Hawkes and Hull s regions 1 and 2) and it may have been here that the Augustan/Tiberian, and possibly even earlier, settlement was centred since the Dressel 1 amphoras found at Sheepen must derive from earlier occupation somewhere in the vicinity (p 99, where the whole question of Dressel 1 amphoras at Sheepen is discussed in detail, and p 102 for the use of the term amphoras rather than amphorae).

Apart from its date, the nature of the period I occupation needs to be considered. In 1970 most of the period I coarse pottery (as well as all the pre-Claudian samian) came from post-conquest features where it survived as rubbish. Only a small amount came from features assignable to period I. The problems posed by the period I coarse pottery are discussed in detail below (p 48) and it is sufficient to say here that the statistics tend to be distorted by the large numbers of butt beakers found, especially *Cum* form 113 (fine, rouletted beakers in pale-buff fabric). This imbalance is also reflected in the pottery figures from the 1930s excavation when fragments from over 2500 butt beakers were noted. Although no period I kilns have yet been recognized, the numbers of butt beakers and their stereotyped appearance suggest that they were produced on the site (p 5 for possible kiln material in a period III postpit). It is tempting to see Sheepen Hill as a trading post and an industrial area before the conquest; the area was a pottery production centre in Roman times, and its natural advantages for the purpose-the supply of suitable clay, timber, and water-may also have attracted similar industries here in the immediately pre-Roman period. Butt beakers could have been produced and stockpiled here, awaiting either a local use or a wider distribution via the Colne. There is evidence suggesting that the Colne was navigable up to Sheepen ford as late as the 2nd century AD (Philip Crummy, pers comm) so other local products too could have been exported direct from Sheepen. Equally, imports such as the Dressel 1 amphoras and the Tiberian samian and Gallo-Belgic ware could have been unloaded here. In this case the subsequent use of the site as an industrial and trading area serving first the legionary fortress and then the *colonia* would be rooted in a pattern established well before the conquest.

The importance of salt in the local economy has long been recognized (Dunnett 1975, 125-8), and it was suggested by the earlier excavators that salt was produced at Sheepen both before and after the Roman conquest (Hawkes & Hull 1947, 2, 48, 346-7). During the 1970 excavations part of a pedestal of the type used in local red hills for salt production was found in ploughsoil on site ii (Fig 34, no 3, M1:D11). If the Colne was navigable as far as Sheepen as late as the 2nd century AD it is quite likely that the river was tidal at least up to this point, and Sheepen in the 1st century AD could have been an ideal site for salt production.

In summary, period I activity at Sheepen was limited to slight traces of occupation, perhaps amounting to no more than a trading post dealing in luxury goods, concentrated round a nearby quayside.

The Claudian phase (Period III, AD 44-9)

The main period of activity on the particular part of Sheepen excavated in 1970 dated from between c AD 43 and 65. In the Claudian period this activity was represented by pits, traces of metalworking, and fenced compounds on sites i and iii. Compound 1 on site i enclosed a series of shallow scoops, hollows, and small pits, themselves unburnt but containing layers of charcoal with numerous minute flecks of copper alloys and spilt blobs and dribbles of molten metal; these may be the equivalent of the trays that were placed beneath the metalworkers benches at Verulamium, to catch filings and trimmings (Frere 1972, 18). Analysis has

shown that the alloys from compound 1 are both bronze and brass, and although denudation had removed all convincing traces of hearths, there can be no doubt that the purpose of compound 1 was for the working of copper alloys (p 112 and technological report, M3:D11-E12). Compound 2 to the west of compound 1 had been largely destroyed by gravel digging and no traces of metalworking were found in the small area of it that survived. On site iii, a third compound of the same date but of stronger construction cut through the edge of the pre-Roman trackway. This compound also produced no evidence of any industrial activity and its greater strength certainly suggests a different use. It may have been intended to protect livestock, wagons, or stores from a doubtless light-fingered and resentful native population.

It can now be shown, however, that metalworking started at Sheepen shortly after the conquest, and not, as was previously thought, only in period IV (Hawkes & Hull 1947, 38-40, 53-6). Period III at Sheepen (AD 44-9) was roughly contemporary with the occupation of the legionary fortress on the neighbouring hill, and it is therefore highly likely that there was some form of military supervision. Among the few recognizable objects found in the compound 1 pits were items of military equipment (see Fig 61, nos 1-6, M3:B6) but since these were fragmentary they should be seen as scrap awaiting reuse rather than as products of the metalworkers, In the absence of moulds and objects that were obviously newly made or even unfinished, it is impossible to say what was being produced here. The use of military objects as scrap is no proof that fresh military objects were being manufactured, although this seems quite likely at this period (see p 114 where Dr Webster discusses the likelihood of civilian craftsmen supplying the legionaries from a workshop area outside the fortress).

Evidence of leatherworking in the Claudian period was provided by the very large quantities of animal bone recovered from the site. The soil at Sheepen is not conducive to the preservation of bone, and it was only in features that had a high humus content that bone survived. The 150 rubbish pits from the 1970 excavation produced all the animal bone found, comprising over 1500 kg (p 143). Analysis of this material has shown that cattle were the most important animals in the economy but that their numbers showed a marked decrease at the end of period II I. Since the animals were butchered on the site, and were normally of an age which suggests they had not been killed for their meat, it is probable that they were killed to help meet the army s continual demand for leather. If this was the case, the withdrawal of the army at the end of period I II could account for the decline in the numbers of cattle bones in the period IV pits (see p 146 for a detailed discussion and p 9 for possible tanning vats).

The Claudian/Neronian phase (Period IV, AD 49-61)

The Claudian compounds were demolished before the appearance of any Neronian material on the site, and by the early years of the reign of Nero metalworking activities had spread from site i to cover sites ii, iii, iv, and vi. It is to this period that the bulk of the large collection of scrap metal, smithing slag, and other metalworking debris belongs (M3:D11, where the material is described in detail). This change in the occupation of the site must have taken place at about the same time as the withdrawal of the legionary garrison from North Hill and the establishment of the *colonia* in its place (Tacitus, *Annales,* xii 32; Dunnett 1975, 35-6; Crummy 1977, 65-105).

The area excavated was crossed by road II which earlier excavations showed had been laid out at the start of period IV (Hawkes & Hull 1947, 34, 96-8). It followed the line of the period I trackway which had probably continued in use in period III, in spite of encroachment on it by a period III compound on site iii. The metalworking activities were concentrated in a band alongside this road. On site iii the blacksmiths seem to have worked in the open air initially (p 19), although later a timber building was erected. This structure rested on sleeper beams and fronted on to the road through an open verandah in a purely Roman manner. A similar building was found on the other side of road II in region 4 in the 1930s excavation and was dated to period IV, while a third timber building of similar plan was found, also in the 1930s, in region 3 where it fronted onto the south edge of the road, and was associated with Claudian material (Hawkes & Hull 1947, 89-91, 99, fig 19). It has been suggested that the 1930s buildings were pre-conquest native structures (Rodwell 1978, 34, 38) but on the evidence of the Neronian date for the 1970 building and the dating evidence published by Hawkes and Hull for the 1930s buildings, all three buildings are best interpreted as rectilinear structures with verandahs along the road built in the early Roman period and in a Roman style. It is likely that more such buildings once flanked road II as it crossed sites i and ii. It is noticeable that the rubbish pits of this date were not on the whole found within the 10-15 m wide band along the northern and western side of the road, whereas elsewhere in the area they tended to be densely packed. This suggests that the ground nearest the road was occupied during period IV by other features, probably either open-air working places or timber workshops since destroyed by erosion, but whose resulting debris was found in the rubbish pits. On site i the timber-lined cellar belonging to a building otherwise completely weathered away emphasizes the damaging effects of erosion, even at the foot of the hill. The site i latrines doubtless also originally had timber structures surrounding them.

A large amount of copper alloy objects was found strewn over the entire excavated area, both in stratified contexts and in ploughsoil. This material included domestic articles, such as brooches and chatelaines, and numerous fittings for boxes, carts, or furniture, but the most striking feature was the large quantity of broken items of military equipment-buckles, cuirass hinges, shield bindings, and helmet fittings. These were not necessarily the objects that were being manufactured on the site; they were nearly all fragmentary and are best interpreted as scrap metal waiting reworking. Fragmentary military equipment was also found during the 1930s excavations, much of it in a large pit in region 3 (Hawkes & Hull 1947, 53-6, 91-3, fig 20). This was

interpreted by Hawkes and Hull as evidence of a frantic last-minute effort by the colonists in 61 to collect old military equipment and melt it down to make new weapons, an operation that was halted by the arrival of the rebels. In 1970, however, the widespread occurrence of similar material in contexts dating from throughout period IV showed that military scrap metal was used habitually and not simply as an emergency expedient in the face of the Boudiccan revolt.

Scrap metal was only one source of raw material available. A Neronian rubbish pit, feature 236 (site iib, Fig 9), produced a large sheet of high grade brass weighing 9.358 kg (20 lb 10 oz; Pl 18) and part of a bronze ingot was found in a period III context on site i. Both objects must have been raw material imported on to the site (see technological report, M3:E10). Numerous pieces of fuel ash slag, fragments of furnace linings and more rarely tuyeres, mould fragments, and crucibles were found on sites i, ii, iii, iv, and vi both in stratified contexts and in ploughsoil. Analysis of this material has shown that both blacksmithing and the working of copper alloys was going on throughout period IV. It is possible that the ditch that runs along the centre of road II is not the central drainage ditch that the previous excavators took it to be but a leat, possibly originally timber- or clay-lined, bringing water for use in the metalworking areas. (I am grateful to Mr Fitzpatrick for this suggestion; see Shonberger 1978.)

As in the previous phase it is not known what objects the metalworkers were producing, since newly made articles were naturally not left lying around and the few moulds, crucibles, and casting sprues found produced only limited information (see M3:E1-6 for a detailed discussion of this material). In the absence of positive evidence as to what objects were being made, it is safer to suggest that in periods III and IV Sheepen was occupied by civilian craftsmen supplying first the legionary fortress and subsequently the colonia, possibly with a certain amount of specifically military equipment, but also with more day-to-day requirements such as fittings for furniture and carts, domestic items, toilet articles, and brooches (see pp 112-14 for these suggestions).

Metalworking, including enamelling (see technological report, M3:E13), was obviously of major importance, but it was by no means the only activity on the site in period IV. The cellar produced a fine bronze stamp decorated with a circle of six animals chasing each other. The design was executed in high relief and, since experiments have shown that the figures are too undercut for the object to have been used as a stamp on clay or wax, it has been identified as a stamp for embossing leather (P1 14, Fig 66, see also M3:B11). The presence of this stamp suggests the continuation of leatherworking on the site in period IV, although the reduction of the numbers of cattle bones in period IV pits compared to those of period III implies that leatherworking was now carried on on a much reduced scale (see bone report, pp 143-7).

In spite of the large number of animal bones found in the rubbish pits, the almost total absence of worked bone from these same pits is a striking and remarkable feature. Nevertheless the scarcity of certain bones (metapodials of goat/sheep) may be the result of boneworking nearby (see bone report, p 144).

Roman tile and pottery kilns have previously been found on Sheepen Hill (Hawkes & Hull 1947, 281-4 for kiln 23 and 71 for tile kiln; Hull 1963, 157-61 for kiln *26; J Roman Stud,* 50, 184-5 for kilns 33-4), and while no further kilns were found in 1970 tile and pottery wasters were found in period IV pits. On site i pottery wasters were found in features 102, 146, and 153 and a dump of 34 flagons from a latrine (feature 146) were all of the type produced in kiln 26, 25 m south of the latrine. Since the flagons were not wasters, they may represent a batch from the kiln which were accidentally broken and dumped in the shaft. Large numbers of roofing tiles were found strewn over the entire site, a small proportion of which were misfired examples. While some of these tiles may have been used to roof the timber workshops, the numbers are so great that most must have derived from stockpiles awaiting use in the *colonia* (Hawkes & Hull 1947, 37).

Altogether the evidence found in 1970 indicated a considerable variety of industries all flourishing at Sheepen in period IV, and most, if not all, primarily supplying the needs of the new *colonia.*

One of the most interesting aspects of the contents of the pits, however, is the light they throw on the life of the inhabitants of Sheepen. Samian, fine glass, Gallo-Belgic wares, and amphoras were abundant, while coins, small bronzes, and brasses were not uncommon. Finds of similar quality from the floor of the Neronian building on site iii included two bronze dice, a dice shaker, two gilded finger rings, and a fine cameo (Pls 15, 16, and 20; Figs 67-9; M2:B12). These argue for a fairly high standard of living, certainly much higher than that apparent from the small huts found along the line of the filled-in Sheepen dyke in the 1930s. It was argued then that the inhabitants of Sheepen were downtrodden and enslaved native corvées forced to work supplying the new *colonia* (Tacitus, *Annales,* xiv, 31; Hawkes & Hull 1947, 38). Although such an element presumably existed in the Sheepen population, the impression given by the 1970 excavation is rather one of independent craftsmen successfully exploiting the opportunities provided by the new market.

Where these craftsmen originated is a matter of speculation but it is interesting to note that fragments of 135 amphoras from the 1970 excavations indicate the use of Italian and provincial wine, fish sauce, and nearly 1400 litres of olive oil. The large number of such vessels compared with what is normally found on native sites gives a picture of a cuisine that was much more Roman than British and may well imply the presence of immigrants from abroad.

Finally, bird bones from a period IV rubbish pit on site i (feature 120, Fig 5) give an interesting glimpse of the contemporary environment---one of marshes interspersed with woody meadowland. The remains of a brown bear from site iii, however, may be the relics of a dancing bear or evidence of bear baiting, rather than a hunting trophy (p 148).

After the end of the excavation five cremation groups were found during contractors excavations. These dated from the Neronian to early Flavian period and thus must slightly postdate the main occupation of the

site. The most striking thing about them, however, is the high quality of the grave goods, including imported glass and an ornate brass-mounted wood and leather casket. The wealth of the graves compares well with the impression given by the finds from the Neronian workshop and rubbish pits (Pls 10 and 11; Figs 14-20).

Site v

This area was found to have been crossed by a previously unsuspected ditch running almost due east-west (Fig 3). Site v was much disturbed and there was no trace of any bank to go with the ditch. The ditch was filled with clean sand and gravel which produced virtually no finds (see feature catalogue, p 42). The scattered finds from site v were entirely early Roman in date, with little earlier material, and, apart from one late Roman grave, no later material either. It therefore seems likely that the ditch dates from the Claudian/Neronian period and, in view of the absence of finds from its fill, from the conquest period itself. If the ditch had been open in period IV some of the abundant period III/IV material found in the ploughsoil would have been expected in its fill.

There remains the question of the function of the ditch. Its profile, with a small slot in its base (section 15), appears military, and the lie of the land does not suggest that this was simply a drainage work. It is noteworthy that road II and what has been interpreted as a small aqueduct (Hawkes & Hull 1947, 24, 34, 52) both head for this area, and it is possible that there was a small fort here policing the Sheepen ford. The failure either to trace the ditch for any length or to locate it in other trenches must raise the question as to whether it was ever completed.

The Boudiccan revolt (Period V, AD 61)

Since only a few structures were found, traces of destruction were bound to be slight. Both buildings standing at the end of period IVb, however, were destroyed by fire, while the pottery and coins from the site come to an abrupt end in pre-Flavian times. There is therefore every indication that here, as elsewhere on the Sheepen site, destruction in AD 61 was total.

Period VI

Apart from clearing up operations and the remetalling of road II, no evidence for post-Boudiccan occupation was found. Occasional coins and scraps of pottery must be strays from the pottery kilns operating elsewhere on Sheepen Hill in the 2nd century, while in the 3rd and 4th centuries the site was available for use as a small, and somewhat impoverished, inhumation cemetery.

Index of features

With a few exceptions, all of which are noted in the index below, features 1-183 are from site i, 201-283 from site ii, 301-341 from site iii, 501-5 from site v, and 601-4 from site vi.

Date of periods

Period I	pre-conquest
Period II	AD 43-4 (not represented)
Period III	AD 44-8
Period IV	AD 49-60
Period IVb	AD 54-60 (IVb1 early, IVb2 later)
Period V	AD 61
Period VI	AD 61-c 65

Features

Site i

146	III/IV-V	36
147	later Roman grave	
148	III	29
149	IV	32
284		
150	III	29
151	III	29
152	III	29
153	IVb	36
155	IV [road II]	32
156	III	29
157 a(2)(6)	III	29
157 b(3)-(5)	IV	31
158	III	29
159	III	29
160 } 175 }	III	30
161	III	29
162	III	29
163	III	30
164	III	30
166	III/IV	31
168	IV	31
169	III	30
170	III	30
171	III	30
173	III	30
174	III	30
175	III	30
160		
176	III	30
182	I	28
282		
183	I	28
289	IV	32
291	I	28
Feature 1	post-medieval	
Feature 2	post-medieval	
Feature 3	post-medieval	
Feature 4	III	29
Z5 (timber cellar)	IV-V	42

Site ii

201	III/IV	39
202	III/IV	39
203	III	31
204	III/IV	39
205	III/IV	39
206	III/IV	39
207	III	31
208	later Roman grave	
209	III/IV	39
210	III/IV	39
211	post-medieval	
212	III/IV	39
213 (cuts 214)	IVb	36
214	early IV	32
215	?III/IV disturbed	39
216	III/IV	39
217	III/IV	39
218	III/IV	39
219 (part of 230)	early IV	33
220	IVb	37
222 (cut by 214)	IV	33
223	III/IV	39
224 (part of 226)	III/IV	39
225	III/IV	39
226 (part of 224)	III/IV	40
227 (recut of 214)	IV	33
228	III	31
230 (tip in 214)		33
231 (214)	I/IV	33
232 (Part of 260)	late Roman grave	
233	III/IV	40
234 (cut into 214)	III/IV ?disturbed	
235	III	31
236	IVb	37
237	III/IV	40
238	III/IV	40
239	III/IV	40
240 (part of 253)	III/IV	41
242 (part of 245,274)	III/IV	40
243	III/IV disturbed	40
244 (part of 238)	III/IV	40
245 (part of 242)	III/IV	40
246 (part of 252)	IVb	37
247 (part of 252)	IVb	37
248	III/IV	40
249	III/IV	40
250 (part of 252)	IVb	37
251 (part of 252)	IVb	37
252	IVb	37
253 (part of 240)	III/IV	41
256 (cut by 214)	IV	33
257 (part of 270)	IVb	38
260	later Roman grave	
261	later Roman grave	
262 (part of 270)	IVb	37
263	III/IV	41
266 (part of 252)	IVb	41
267	III/IV	41
270 (part of 257)	IVb	37
271	III/IV-?IVb	41
273 (part of 239)	III/IV	40
274 (part of 242)	III/IV	40
275	post-medieval	41
276	III/IV	42
277 (part of 242)	III/IV	42
278	post-medieval	
283	III/IV	42
289 (site i)	IV	32
290 (site i)	IV	32
291 (site i)	I	28

Site iii

Layer la	V	42
Layer 2	V	42
Layer 3	IVb2	35
Layer 4	IVb2	34
Layer 6	IVb1	34
Layer 7	III	31
Layer 8	IVb1	33
301	VI	43
302	VI	43
303	IVb2	35
307	III	31

307,2	V	
311	VI	43
312	IVb2	34
314,1	V	
314,2	III	31
315	IVb2	35
316 (8) (7a)	IVb1	33
316 (2) (3) (4)	V-VI	
317	IVb2	35
318	IVb2	35
319	VI	43
320	V	43
321	IVb2	34
323	IVb1	34
324	IVb2	34
325	IVb1	34
327	IVb2	35
328	IVb2	35
331 layers 1-3	V	43
332 layers 4-9	IVb1	34
333	III	31
334	IVb1	34
335	IVb	35
336	IVb1	34
338	III	31
339	IVb1	34
340	IVb1	34
341	IVb2	35
342	III	31

Site iv

	IV	33
2	IV	33

Site v

1 (ditch)	III/IV	42
2-4	post-medieval	
501	III/IV	42
502	III/IV	42
503	IVb	38
504	III/IV	42
505	later Roman grave	

Site vi

601	IVb	38
603	III/IV	42
604	III/IV	42
605	III/IV	42

Catalogue of pre-Flavian features and their contents

All the excavated features from the site are included in this catalogue. The features are grouped according to period (I-VI). Within each period grouping the features are listed according to site (i-vii). Features from each site are listed numerically, except for the features from periods III-IV on site i where they are grouped according to compound.

All the finds from each feature are listed with references to the appropriate specialist report in the microfiche archive; illustrated items are marked with an asterisk.

The coarse pottery is listed under the form numbers of the Camulodunum type series (Hawkes & Hull 1947). To enable comparison with the 1947 report Hull s suggested dating of particular pottery forms is added in Roman numerals in brackets thus: *Cam* form 253 (I-IV, rs-VI) = Camulodunum form 253, current in periods I-IV, surviving as rubbish to VI. This information is omitted in cases where Hull considered that the form was current throughout the main occupation of the Sheepen site. It must be emphasized that the coarse pottery has not been used to date the site. This has been done on the basis of imported material as listed in this catalogue. Arabic numerals after the Camulodunum form numbers denote the minimum numbers of the particular form present, and italicized numbers refer to early forms of coarse pottery as discussed below, p 48. F in front of the catalogue number of amphoras indicates that the vessels were subjected to petrological analysis.

Period I: be-conquest

Site i

Feature 291 rubbish pit

Coarse pottery forms	*Cam 113, 115*(2), 217*(I-IV), 221*, 222*,* 253*(I-IV, rs-VI), 258, pottery report 1-5, Fig 22, M1:B4
Amphoras	Dressel 1, amphoras report 3*, Fig 53, M3:A9

Feature 282 rubbish pit

Coarse pottery forms	*Cam 21*, 115a*(2), 212*(I-IV), 254*(2),* 256*(I-III, rs-VI), 259*, 270(2), pottery report 6-11, Fig 22, M1 :B5

Feature 143 rubbish pit

Coarse pottery forms	*Cam 113, 115/16*, 234*(2)(I-III/IV), 253** (I-IV, rs-VI), *256a*,* 264*, lid fabric B4, pedestal base fabric A, pottery report 12-17, Fig 22, M1:B5-6
Gallo-Belgic wares	Gallo-Belgic report 2*-3*, just pre-Claudian, Figs 35-6, M1:F12. Stamp GB69, M1:F6
Other finds	Iron strip, iron report 1*, Fig 77, M3:D7

Feature 183 rubbish pit

Coarse pottery forms	*Cam 113*
Gallo-Belgic wares	Tiberian/Claudian, could be just pre-conquest, M1:F2

Other finds	Iron bolt with a copper alloy terminal*, iron report 2, Fig 77, M3:D7

Period II: AD 43-4

Not represented

Period III: AD 44-9 (Claudian)

Site i, compound 1

Feature 133 postpit

Coarse pottery forms	*Cam 98, 259.* Fragment of beaker in Lyon ware, fine ware report, M1:D5. All pottery very fragmentary
Gallo-Belgic wares	Conquest period, GB9, M1:F12-13
Mortaria	Mortaria report 121, 1st century, incomplete rim section, M2:G4
Amphoras	Haltern 70, amphoras report 73; Beltràn I, 110*; Fig 59, M3:A11, 13
Other finds	Brooches, brooch report 30*, Bagendon type; 37*, Camulodunum type XVIIIB, AD 40-65; Fig 75, M3:C7. Pendant*, copper alloy report 1, Fig 61, M3:B6

Feature 139 postpit

Coarse pottery forms	*Cam* 218, *221,* 271
Samian	Stamp 10, Bassus, AD 45-60, M2:E3
Other finds	Small fragment of iron

Feature 148 postpit

Coarse pottery forms	*Cam 45a* (tripod bowl), 113(2), 218, *221,* 242(II-VI), 266, 272 (II-VI). The coarse pottery looks comparatively late on Hull s dating, but as it comes from the filling of the pit, it dates from the end of the period, or after the compound went out of use. Beaker in Lyon ware, fine ware report, M1:D5
Gallo-Belgic wares	Claudian. Stamps GB83, Fig 35, M1:F9
Amphoras	Dressel 2/4, amphoras report 17*; Cam 189, 125*; Figs 53,60, M3:A9,14
Samian	Claudian. Decorated samian report 76, AD 35-50; 112*, AD 45-60; Fig 48, M2:C9,13. Samian stamp 41, Volus, c AD 25-55, M2:E5.
Other finds	Three minute fragments of copper alloy. Copper alloy blobs, fuel ash slag with copper alloy, hearth lining, technological report, M3:D12. Fragment of crucible, technological report, M3:E2. Iron nails

Feature 4 ?slot

Coarse pottery forms	*Cam* 56, 108(II-VI), *113,* 154(III-VI), 163(I-VI, rs-VI), 244(IV-VI), 266, lid. NB As with feature 148 the pottery is comparatively late
Amphoras	Dressel 20, amphoras report 88 (not illustrated), M2:A12
Samian	1 piece Claudian, 1 piece 1st century, M2:D3
Other finds	Brooch report 3*, Camulodunum type III, AD 1-70; 41*, plate brooch; Figs 73, 76, M3:C4,9. Iron disc*, iron report 3, Fig 77, M3:D7. Iron nails. Small fragments of copper alloy, iron, and lead

Feature 150 a very shallow weathered scoop

Coarse pottery forms	*Cam* 266(7)
Samian	Plain samian, Claudian, M2:D3
Other finds	Brass ring*, copper alloy report 2, Fig 61, M3:B6

Feature 151 a shallow scoop (some lumps of burnt daub in the fill)

Coarse pottery forms	*Cam* 266, body sherds of flagon
Samian	1 piece of Claudian, M2:D3
Glass	Glass report 49*, mid 1st century, Fig 81, M3:F7
Other finds	Fragments of iron nails

Feature 152 a small scoop (tile fragments in fill)

Coarse pottery forms	Cam 113, 140, 266
Other finds	Small fragments of iron, ?corroded nails

Feature 156 a small patch of white clay, possibly the weathered remains of a surface

Coarse pottery forms	*Cam 211*(I,* rs-IV), 212*(I-IV), 246 (III/IV-VI), 266, pottery report 18-20, Fig 22, M1:B6. NB The pottery comes from the surface of the feature and cannot be regarded as sealed.
Coin	Claudius, Roman coin catalogue 1, M3:B4
Other finds	Fragments of copper alloy sheet*, buckles*, and hinge*, copper alloy report 3-6, Fig 61, M3:B6. Over 50 minute scraps of copper alloy, some iron fragments mixed with it. All the metalwork came from within the white clay of the feature; it included blobs, pools, or dribbles of molten bronze. Technological report, M3:D14

Feature 157a a small pit, clay-lined with layers of charcoal in the fill

Finds	10 small scraps of copper alloy; fragment of bronze ingot; technological report, M3:D14

Feature 158 small patch of clay, possibly remains of a surface

Coarse pottery forms	*Cam* 108(II-VI)
Mortaria	Mortaria report 55, AD 40-65, M2:F9
Samian	Decorated samian report 59*, AD 40-55, Fig 45, M2:C7

Feature 159 patch of burning (?hearth associated with period III, or with later activities)

Coarse pottery forms	*Cam* 270
Mortaria	Mortaria report 113*, AD 50-85, Fig 52, M2:G2 (from the surface of the feature)
Other finds	Small copper alloy rivet. Large quantities of minute scraps of copper alloy

Feature 161 a small area of burnt clay

Coarse pottery forms	*Cam 113,* body sherds of coarse storage jars
Samian	1 piece of Claudian, M2:D3
Coins	2 intelligible 1st century, Roman coin catalogue 2 and 3, M3:B4
Other finds	Fragments of iron and copper alloy. Small drip of lead

Feature 162 small scoop with charcoal in fill

Glass	Glass report 95, mainly AD 70-130, M3:F10
Other finds	A few scraps of iron and copper alloy

Feature 163 small depression with charcoal

Coarse pottery forms	*Cam 213* (III-IV), 272 (II-VI)
Other finds	Minute scraps of copper alloy and small fragments of copper alloy hinges

Feature 164 shallow scoop filled with clay and charcoal

Coarse pottery forms	*Cam* 218, 259
Coins	4th century intrusive, Roman coin catalogue 27, M3:B5
Other finds	2 copper alloy hinges. Many small scraps of copper alloy, iron, and lead. Small dribble of brass, technological report, M3:D14. Perforated base of cooking pot. ?Spindle whorl

Feature 169

Sterile

Feature 170

Sterile

Feature 171

Coarse pottery forms	Body sherds from coarse cooking pots or storage jars

Feature 173 small scoop

Finds	A few minute scraps of copper alloy

Feature 174 small hollow

Coarse pottery forms	Body sherds from a coarse storage jar

Feature 175/160 small clay-filled depression

Coarse pottery forms	*Cam* 108(II-VI), *113,* 218, 266
Other finds	Small scraps of copper alloy. Small fragments of iron

Feature 176

Sterile

Site i, compound 2

Feature 121 postpit

Coarse pottery forms	*Cam* 270
Gallo-Belgic wares	Claudian/Neronian

Feature 128 postpit

Amphoras	*Cam* 184, amphoras report 56F*, Fig 55, M3:A11

Feature 135 postpit (P12)

Coarse pottery forms	*Cam* 113
Gallo-Belgic wares	Conquest period
Samian	Tiberian/Claudian (1 vessel), Claudian (1 vessel), M2:D3

Feature 120
layer 5 postpit (Section 2, layer 5)

Coarse pottery forms	*Cam* 78, 91c, *113(2),* 149 (mainly IV), 218, 242 (II-VI), 258, 266, 270
Samian	Tiberian/Claudian and Claudian, decorated samian report l*, c AD 25-40; 32*, c AD 15-30; Figs 41, 44, M2:B11, C13
Gallo-Belgic wares	Claudian to Claudian/Neronian, Gallo-Belgic report 22*-23*, Figs 35-6, M1:F13. Stamps GB6, 49, M1:E1,F6
Other finds	Iron nails

Feature 127
layer 3 (Section 2, layer 3)

Coarse pottery forms	*Cam 113, 115/16,* 218, *221*, 232*, 233** (I-III/IV), 234*(I-III/IV, rs-VI), 241 (II-VI), 254*, 266*, 271*, pottery report 21-6, Fig 23, M1:B7
Gallo-Belgic wares	Conquest period, Tiberian/Claudian
Mortaria	Mortaria report 42, AD 20-55, M2:F8
Samian	Provincial Arretine, plain samian report, M2:D3

Feature 116 postpit (P13)

Coarse pottery forms	*Cam 112(I-IV* rs-VI), 113*(at least 5), 245, body sherds of storage jars, flagons, fragment of a strainer. See note, M1:D3-4. Coarse pottery report 27-8, Fig 23, Ml :B7
Amphoras	Haltem 70, amphoras report 76*, Fig 57, M3:A12

Feature 111 postpit (P1 4)

Coarse pottery forms	*Cam* 21, *113(2),* 216(2)(I-IV, rs-VI), base of storage jar
Gallo-Belgic wares	Conquest period, M1:F14
Glass	Glass report 15* (millefiori), 44*; drip of blue glass, 97; Figs 80-1, M3:F4, 7
Other finds	Iron brooch*, Carnulodunum type III, first three-quarters of 1st century AD, brooch report 6, Fig 73, M3:C4

Feature 145 construction pit for latrine 146

Coarse pottery forms	*Cam 115/16,* 117(III), 241(II-VI), 259
Gallo-Belgic wares	Could be pre-conquest, M1:F14

Feature 131 timber-lined latrine

Coarse pottery forms	*Cam 57, 113(3), 115/16,* 118 (very rare, may be only period I), *204, 323, 259, 260B,* 271, 272(II-VI), lid
Gallo-Belgic wares	Tiberian/Claudian. Stamp GB 28, Fig 35, M1:E8
Amphoras	*Cam* 184, amphoras report 64, M3:A11
Samian	Tiberian/Claudian, Claudian, M2:D3
Other finds	Slag

Feature 104

Coarse pottery forms	*Cam* 28, 57, *119,* 230, *264(2),* 271, lid
Gallo-Belgic wares	Pre-Claudian she rd, M1:G1

Feature 107 ?surface

Coarse pottery forms	*Cam 113,* 242*(II-VI), 266*, lid, body sherds of storage jar, coarse pottery report 29-30, Fig 23, M1:B8
Gallo-Belgic wares	Claudian
Mortaria	Rim fragment, AD 30/40-60/65
Other finds	Brooch*, Camulodunum type X and XI, AD 1-70, brooch report 22, Fig 74, M3:C6

Site ii

Feature 203 large gravel/rubbish pit (site iia)

Coarse pottery forms	*Cam* 108(II-VI), *115/16,* 203(I surviving rarely to VI), *204(I-IV,* rs-VI), 215(I-III/IV), 218(2), 219, 229b(I-III, rs-VI), 266, 270(3), 272 (II-VI)
Gallo-Belgic wares	Pre/post-conquest, M1:G1
Other finds	Copper alloy fitting

Feature 207 large gravel scoop (site iia)

Coarse pottery forms	*Cam* 218, *259,* 266 (fabric C), weathered body sherds of flagon. Lyon ware body sherd, fine ware report, M1:D5
Gallo-Belgic wares	Tiberian/early Claudian. Stamp GB 27, Fig 35, M1:E8
Samian	Claudian (1 vessel), M2:D3
Other finds	Iron fragment. Lamp fragment. Roman tiles

Feature 228 large gravel/rubbish pit (site iia)

Coarse pottery forms	Cum *113, 259,* sherds from storage jars and cooking pots
Samian	Claudian (1 vessel), M2:D3
Other finds	Nails. 1 piece Roman tile

Feature 235 pit cut by 228 (site iia)

Pottery	Lyon ware body sherds, fine ware report, M1:D5
Gallo-Belgic wares	Claudian/Neronian, M1:G2

Site iii

Layer 7 buried ground surface

Coarse pottery forms	Weathered body sherds of flagon
Samian	Decorated samian report 6*, AD 25-40, Fig 41, M2:B11
Other finds	Small iron fragment, ?part of nail

Feature 307 excluding layer 2 (Section 10)

Coarse pottery forms	*Cam 113*(3), 115/16,* 218(2), 241*(II-VI), 256, 264(I-III/IV), 266, lid, storage jar body sherds with rosette stamps as Fig 30, no 209, pottery report 3l-3, Figs 23, 30, M1:B8
Gallo-Belgic wares	Pre/post-conquest, Gallo-Belgic report 49*, 53*; stamp GB 22; Figs 35-6, M1:G2
Mortaria	Mortaria report 48*, c AD 20-55, Fig 50, M2:F9
Amphoras	Dressel 2/4, amphoras report 24*, Fig 54, M3:A10
Glass	Pillar moulded bowl fragment, glass report 71
Coins	Belgic coin catalogue 1, M3:B2
Other finds	Decorative mount*, copper alloy report 7, Fig 61, M3:B6. Small fragments of copper alloy

Feature 338 palisade slot (Section 9)

Coarse pottery forms	Coarse sherds in B5 fabric

Feature 342 palisade slot (Section 11)

Coarse pottery forms	*Cam 256a* in B5 fabric, body sherd in fine white/buff fabric with red, mica-dusted surfaces, pottery report 34, Fig 23, M1 :B8

Feature 314, 2 slot (Section 9)

Coarse pottery forms	*Cam* 266 in B5 fabric
Samian	Claudian (1 vessel), M2:D3
Coins	Belgic coin catalogue 2, M3:B2

Feature 333 large postpit

Coarse pottery forms	Cum 218(2)

Period IV: AD 49-61

Site i

Feature 157b recut of small pit 157a (Period III)

Coarse pottery forms	*Cam* 108* (2)(II-VI), 202*(I, rs-VI), *211(I,* rs-IV), *228*,* 266, pottery report 38-41, Fig 23, M1:B9
Samian	Claudian (2 vessels), pre-Flavian (1 vessel). A Neronian piece from burnt daub overlying the feature probably dates from the Boudiccan revolt, M2:D4
Glass	Fragment of millefiori, glass report 12, M3:F2
Coins	Illegible 1st century, Roman coin catalogue 4, M3:B4
Other finds	Scraps of copper alloy

Feature 166 small scoop with charcoal

Coarse pottery forms	*Cam* 148*(IV-VI), 154(III-VI), 163, 218*(2), 242*(II-VI), 266, lid, coarse pottery report 42-7, Fig 24, M1:B9-10
Samian	Claudian/Neronian (1 vessel), M2:D4
Glass	Part of a millefiori bowl, from the same vessel as fragments found in feature 201, glass report 3, M3:F2
Coins	2, both Claudian copies, Roman coin catalogue 5 and 6, M3:B4
Other finds	Small scraps of copper alloy. Iron nails

Feature 168 small hollow

Coarse pottery forms	*Cam 221,* 272 (II-VI)
Glass	Fragment of cased glass, glass report 32, M3:F5

Feature 101 small pit

Coarse pottery forms	*Cam* 58, *112, 113, 115,* 140, 258, 259, 266, 270, coarse lid
Gallo-Belgic wares	Claudian/Neronian
Amphoras	Dressel 20, amphoras report 90
Samian	Ateius B fabric, Tiberian/Claudian (1 vessel), M2:D3
Other finds	Small scraps of copper alloy

Feature 119 pit (Section 4, layers 2, 3)

Coarse pottery forms	*Cam 113(2), 115/16, 165*(I-IV), 204*(I-IV,* rs-VI), *211*(I,* rs-IV), *214a,* 218, *220b** (I-III/IV, rs-VI), 241*(II-VI), 253* (I-IV, rs-VI), 256*(I-III, rs-VI), 258, *259*, 260b**, 265*, 270a*, 270, 271*, coarse pottery report 56-71, Figs 24-5, M1:B11-12
Gallo-Belgic wares	Pre-conquest, Claudian, Gallo-Belgic report 58*-59*, Fig 36, M1:G3
Amphoras	Haltern 70, amphoras report 75*; Dressel 20 (pre-conquest), amphoras report 80*, Fig 57, M3:A12; Beltràn I/II, amphoras report 117, M3:A13
Samian	Pre-Flavian, M2:D3

Other finds	Brooch*, Camulodunum type XVII (probable), brooch report 26, Fig 75, M3:C7. Pendant*, copper alloy report 9, Fig 62, M3:B6. Copper alloy fragment. Several iron nail fragments

Feature 120
layers 2 and 6 recut of earlier feature 120 (Period III) (Section 2)

Coarse pottery forms	*Cam* 92a(2), *113(5),* 148, 163*, 175*, 218, 229* (I-IV), 242(II-VI), 266*, 268 (just appearing at the end of the occupation at Sheepen), 271(4), *272(2)* (II-VI), coarse pottery report 48-55, Fig 24, M1:B10-11. The coarse pottery looks comparatively late; there are few early forms and the cooking pot form 268 is definitely a late form at Sheepen, although common in the *colonia*
Gallo-Belgic wares	Claudian and Claudian/Neronian, Gallo-Belgic report 61*-64* and 69-70*; stamps GB 7-8, 24, 46, 98, 100; Figs 35, 37, M1:E2-F11, G3-4
Mortaria	Mortaria report 11*, 22*, both c AD 20-55, Fig 49, M2:F5-6
Amphoras	Dressel 1, amphoras report F4*, Fig 53, M3:A9; Dressel 2/4, amphoras report 16, M3:A9
Samian	Tiberian/Claudian, Claudian, and Claudian/Neronian. Stamp 37, Sentrus 2a, c AD 45-65, M2:D3, E5

Feature 149/284 pit

Coarse pottery forms	*Cam 113,* 246 (III/IV-VI), 258
Mortaria	Mortaria report 137, 2nd century (?intrusive), M2:G5
Coins	Belgic coin catalogue 3, M3:B2
Other finds	Minute scraps of copper alloy

Feature 289 pit

Coarse pottery	Small fragments of body sherds from cooking pots in B4 fabric
Other finds	Minute scraps of iron and copper alloy. Smithing slag, fuel ash slag, metallic iron, copper alloy dribble, technological report, M3:D13

Feature 290 pit

Coarse pottery forms	*Cam* 108(II-VI), *113,* 218, 259, 272 (II-VI)
Mortaria	Mortaria report 107, *c* AD 55-85, M2:G2
Samian	Decorated samian report 66*, AD 40-55, Fig 45, M2:C7

Feature 155
layers 2, 4, 5, 7 metalling of road II (Section 1)

Coarse pottery forms	*Cam* 140, 241 (II-VI), 246 (III/IV-VI), coarse pottery report 72, Fig 25, M1:B12. Lyon ware, fine ware report, M1:D5
Gallo-Belgic wares	Stamp GB 96, Fig 35, M1:F10
Glass	Fragments of green bowls, glass report 51-2, M3:F7
Samian	Claudian/Neronian, M2:D4

Feature 155
layers 1, 3 debris on surface of road II (Section 1)

Coarse pottery forms	*Cam* 118, 140, 231(2), 242*(II-VI), 259 (I-III/IV, rs-VI), 266, many weathered body sherds in fabrics B1 and B4, coarse pottery report 73-4, Fig 25, M1:B13. Lyon ware, fine ware report, M1:D5
Mortaria	Mortaria report 63*, c AD 30/40-65, Figs 50-1, M2:F11
Other finds	Iron ferrule*, iron rings*, iron tang*, iron report 4-6, Fig 77, M3:D7. Pedestal or fire bar, Fig 34.3, M1:D11. Mould fragment, technological report M3:E5

Feature 136 ?latrine (Section 3)

Coarse pottery forms	*Cam 113(5),* 136(III/IV, rs-VI), 218, 231, 241 (II-VI), 242(II-VI), 246 (III/IV-VI), 259, 258, 266(5), 272(II-VI), lids. Lyon ware cup, fine ware report, M1:D5
Gallo-Belgic wares	Claudian. GB stamp 53, Fig 35, M1:F2
Mortaria	Mortaria report 39, AD 20-55, M1:F8
Amphoras	Dressel 2/4, amphoras report F48*, Fig 55; *Cam* 184, 62*, Fig 55; Haltern 70, 78*, Fig 57; Dressel 20(pre-Claudian), 79*, Fig 57, M3:A10
Samian	Claudian (7 vessels), Claudian/Neronian (9 vessels), 1 vessel possibly pre-Claudian. Stamp 38, pre-Flavian, M2:D4, E5
Coins	Belgic coin catalogue 4, M3:B2
Other finds	Two copper alloy fragments. Iron nail. Roman tile waster

Feature 138 latrine

Coarse pottery forms	*Cam* 92, 104, 108*(7)(II-VI), 113(5), 140(2), 148(IV-VI), 154(III-VI), 163 (I-IV, rs-VI), 214(III-IV), 221, 232, 241(II-VI), 242(II-VI), 245, 256(I-III, rs-VI), 262* (note M1:D9), 271, 272(2)(II-VI), coarse pottery report 75-7, Fig 25, M1:B13. Fragment of Lyon ware beaker and fragments of 2 vessels in imitation Lyon ware, fine ware report, Ml :D5
Gallo-Belgic wares	Claudian/Neronian; Claudian and earlier survivals; Pompeian red ware; Gallo-Belgic report 87*-88*, Fig 38, M1:B5, G5
Mortaria	Mortaria report 62* and 87, both c AD 30/40-65, Fig 50, M2:F11, 13
Amphoras	Haltern 70, amphoras report 78; Dressel 20, 95; Beltràn I, 104, 107,110; Dressel 28, F130
Samian	Claudian (4 vessels) and Claudian/Neronian (7 vessels), decorated samian report 24*, AD 50-65 (part of the same vessel found in feature 149); 40*, AD 45-60; 68*, AD 25-40 (part of the same vessel found in feature 106); 85, AD 50-65; 98*, AD 45-65; 109*, AD 40-55; Figs 43-5, 47, M2:B1 4-C13
Glass	Glass report 33, M3:F6
Coins	2 Claudian copies, Roman coin catalogue 7, 8, M3:B4
Other finds	Large quantities of copper alloy scrap, including fragments of domestic, industrial, and military equipment, copper alloy report 10*-15*, Fig 62, M3:B7. Brooch*, probably Camulodunum type XVII (Aucissa), c AD 1-75, brooch report 28, Fig 75, M3:C7. Fragments of crucible, technological report, M3:E1. Fragment of clay mould, technological report, M3:E6. Small fragments of iron. A few Roman tile fragments. Small piece of pudding stone

Site ii

Feature 214 large rubbish/gravel pit (site iia)

Coarse pottery forms	*Cam 113* (at least 5), *115/16(3), 211,* 217 (not certain if this appears before the conquest), 218(8), *221a,* 230(2)(I-IV, rs-VI), *231,* 246

	(III/IV-VI), 250(I-II/VI), 255(I-IV/VI), 256 (I-III, rs-VI), 258(2), 259, 266(8), 270b, 271(3), pottery report 78, Fig 25, M1:B13. With the exception of the bowl, 246, the coarse pottery from this pit is early, and the pit has consequently been placed in this period, together with the pits associated with it, and pits cut by it. Lyon ware body sherds, fine ware report, M1:D6
Gallo-Belgic wares	Claudian/Neronian. Stamp GB 26, Fig 35, M1:E8, G6
Amphoras	Dressel 1, amphoras report F5*; Cam 184, F55*; Cam 189, 124; Figs 53, 55, M3:A9-14
Mortaria	Mortaria report 38, c AD 20-55, M2:F8
Coins	Claudian copy, Roman coin catalogue 9, M3:B4
Other finds	Iron object*, iron report 7, Fig 77, M3:D7. 3 iron nails. Spindle whorl. 1 Roman tile. Lumps of burnt daub

Feature 219 an early tip in feature 214

Coarse pottery forms	*Cam* 218, 266(2)
Samian	1 piece of Claudian, M2:D9
Other finds	Fragment of Roman tile

Feature 227 recut of feature 214

Coarse pottery forms	*Cam* 85, *221, 232a* 256(I-III, rs-VI), body sherds of flagon, storage jar
Gallo-Belgic wares	Pre/post-conquest. GB stamp 18, Fig 35, M1:E5, G6
Other finds	Iron nails. Slag. Roman tile waster

Feature 230 an early tip in feature 214

Coarse pottery forms	*Cam* 259, 270
Amphoras	Dressel 2/4, amphoras report F42*, Fig 54, M3:A10
Mortaria	Mortaria report 3*, AD 10-40, Fig 49, M2:F4

Feature 231 cut by feature 214

Coarse pottery forms	*Cam 113,* 266
Coins	Copy of Caligula, Roman coin report 10, M3:B4
Other finds	Brooch*, brooch report 17, Fig 74, M3:C5. Small fragments of copper alloy

Feature 256 rubbish pit cut by feature 214

Coarse pottery forms	*Cam 113,* 246(III/IV-VI), 255(I-IV/VU), 266, body sherds of flagons and storage jar in B4 fabric. Cup in Lyon ware, fine ware report, M1:D5
Gallo-Belgic wares	1 piece ?Neronian (burnt), M1:G6
Glass	Millefiori bowl, Isings form 1, glass report 7; fragments of 2 pillar moulded bowls in natural green glass, glass report 68 and 73; M3:F2, 9
Other finds	Copper alloy ring. Iron nails

Feature 222 pit cut by feature 214

Coarse pottery forms	*Cam 115/16,* 266 in B4 fabric, body sherds of flagons

Site iv

Feature 1

Coarse pottery forms	*Cam* 218, pottery report 35, Fig 23, M1:B8. Cup and beaker in Lyon ware, fine ware report, M1:D6
Amphoras	*Cam* 184, amphoras report 62
Samian	Claudian, stamp 31-2, Scolvus(?) la, pre-Flavian, M2:E4
Glass	Fragments of 2 pillar moulded bowls in natural green glass, glass report 65 and 79, M3:F9

Feature 2

Coarse pottery forms	*Cam 115, 221,* lid, pottery report 36-7, Fig 23, M1:B9. Ring and dot beaker; 3 beakers in Lyon ware; fine ware report, M1:B9
Gallo-Belgic wares	Stamp GB 55, Fig 35, M1:F2
Mortaria	Mortaria report 23 and 30, both c AD 20-55, M2:F6-7
Amphoras	Dressel 2/4, amphoras report 9F*, 22 ; Haltern 70, 78F*; Beltràn I, 103F; Figs 53, 57, 58, M3:A9
Samian	Decorated samian report 13*, AD 25-40; 15*, AD 50-65; 43-4*, AD 45-60; 77*, AD 45-60; 96* and 102*, AD 50-65; Figs 42, 45-7, M2:B13-E12. Plain samian, Tiberian/ Claudian, Claudian. Stamp 12, Cantus 2c, c AD 35-50, stamp 33, Scotnus 5a, c AD 45-60; M2:E2
Other finds	Jug handle*, copper alloy report 21, Fig 63, M3:B7. Ceramic object, Fig 34-5, M1:D11. Fuel ash slag, technological report, M3:D12

Period IVb1: Early Neronian

Site iii

Layer 8 rubbish dump

Coarse pottery forms	*Cam* 104, 108(II-VI), *113(3), 114(2),* 140 140a/b(2)*, 141b*(III-IV/VI), 144(III-VI), 161*, 218, *220b(I-III/IV),* 241*(II-VI), *255a*(I-IV/VI),* 259*, 266(4), 267a*, 270a*, 272(II-VI), pottery report 83-92, Fig 26, M1:B14-C1
Gallo-Belgic wares	Stamp GB 76, Fig 35, M1:F7
Mortaria	Mortaria report 2*, 8, 47-8, all c AD 20-55; 95*, AD 40-65; Figs 49, 51, M2:F4. Mortaria 48 is from the same vessel as one from feature 307
Amphoras	Haltern 70, amphoras report 71*, Fig 56, M3:A11
Glass	Fragment of pillar moulded bowl in natural green glass, glass report 77; small balls of Egyptian blue glass, glass report 98-9, but see also technological report, M3:E6, and M3:F9
Other finds	Copper alloy spike and stud. Iron spokeshave*, iron report 20, Fig 79, M3:D9. Roman tile fragments

Feature 316(8) large pit filled by layer 8 (Section 10)

Coarse pottery forms	*Cam* 75, 108(II-VI), *113(5), 114(3),* 136(III-IV, rs-VI), 140, 218, *231, 254*,* 256*(2)(I-III, rs-VI), 266(3), 270(3), 271, 272(3)(II-VI), pottery report 79-81, Fig 26, M1:B13-14
Gallo-Belgic wares	Possibly pre-Claudian, the earliest group of any size from the 1970 excavations, Gallo-Belgic report 116*, 120*-2*, Fig 38, M1:G7
Mortaria	Mortaria report 4, 5, 46*, all *c* AD 20-55, Fig 50, M2:F4.8
Amphoras	Dressel 2/4, amphoras report F38*; Dressel 20, 90; Fig 54, M3:A9-12
Samian	1 Claudian, 3 Neronian, M2:D4
Other finds	Brooch, Camulodunum type XII* (Langton Down) and Camulodunum type XVIIIb*, brooch report 13, 33, Figs 74-5, M3:C5-7. Copper alloy stud. Iron object, iron rod. A little slag. Fragments of human skull

Feature 334 small pit

Coarse pottery forms	*Cam 113, 116,* 136(III-IV, rs-VI), 218*(2), 241(II-VI), 259(3), 270, lid, pottery report 82, Fig 26, M1:B14
Gallo-Belgic wares	Tiberian/Claudian, Gallo-Belgic report 128*, 130*-1*, Fig 38, M1:G8
Samian	1 piece Neronian, M2:D5

Feature 339 small pit

1 sherd of imitation Gallo-Belgic ware

Feature 323 small pit

Coarse pottery forms	*Cam 113,* 218, 266, 270, body sherds of flagons
Amphoras	Dressel 2/4, amphoras report 20*; Beltràn I, 111*; Figs 53, 59, M3:A9, 13
Samian	Tiberian/Claudian (1 vessel), Claudian (1 vessel), M2:D5
Coins	Cuno/Cam, Belgic coin catalogue 5, M3:B2
Other finds	Iron object. Minute fragments of copper alloy. Smithing slag

Feature 325 pit with charcoal (P1 7)

Coarse pottery forms	*Cam 113(2),* 114, 219, 136*(III-IV, rs-VI), 155(III/IV-VI), 218(2), 220(I/11-III/IV), 266*(5), 270,272(II-VI). All the pottery from this feature came from the mixed burnt filling of the pit and was very fragmentary. Coarse pottery report 93-7, Fig 26, M1:C1
Gallo-Belgic wares	Pre/post-conquest, Gallo-Belgic report 135*-9*, Fig 38, M1:G8
Amphoras	Dressel 2/4, amphoras report F14*, Fig 53, M3:A9
Mortaria	Mortaria report 44, c AD 20-55, M2:F8
Samian	2 pieces in Ateius B fabric, M2:D5
Other finds	Large quantities of minute scraps of copper alloy. Iron hinge, iron object, Iron-rich fuel ash slag, hearth lining, tuyére. Technological report, M3:D11

Feature 340 small pit

Coarse pottery forms	*Cam 113(5), 230* in B4 fabric, 232, 266 in B5 fabric, 270 in D fabric, lid. The pottery from this feature was extremely weathered
Gallo-Belgic wares	Pre-conquest, M1:G9
Amphoras	Haltern 70, amphoras report 74*, Fig 57, M3:A11
Samian	Proto-South Gaulish (1 vessel), ?Ateius B fabric (1 vessel), Tiberian/Claudian (1 vessel), M2:D5
Coins	Gaulish, Belgic coin catalogue 6, M3:B2
Other finds	1 piece of copper alloy with tinning

Layer 6 loamy silt with pebbles

Coarse pottery forms	*Cam 113,* 270, a few body sherds in fabric A
Samian	1 piece of Claudian, M2:D5

Feature 336 shaft (P18, Section 12)

All finds from layer 1

Coarse pottery forms	*Cam 115/16,* 218*, 258, 266*, 270, pottery report 98-101, Fig 26, M1:C2
Gallo-Belgic wares	1 piece pre-conquest, M1:G9
Sarnian	1 piece Claudian/Neronian, M2:D5
Glass	Fragment of a square bottle, Isings form 30, glass report 94, M3:F10
Other finds	Copper alloy stud and pin. Small fragments of copper alloy and iron

Feature 332 sealed by period IVB2 building (Section 13)

Finds from layers 4, 7, and 9

Coarse pottery forms	*Cam* 84*, 108(II-VI), *113, 114*,* 115*(4), 204(3), *210d,* 218*(3), 241(II-VI), 246(III/IV-VI), 250*, 254, 262*, 264(I-III/IV), 266(2), 270(2), 271(2), pottery report 102-9, Fig 26, M1:C2-3; for note on 262, M1:D9. Strainer bowl, Fig 33, no- 1, M1:D3
Gallo-Belgic wares	Pre-conquest, post-conquest, Claudian, Gallo-Belgic report 151-4, Fig 39, M1:G9
Amphoras	Dressel 2/4, anaphoras report F14*; Dressel 20, 89, 97; Beltràn I, 106*, 108*; Cam 189, 121-2; all from layer 4; Figs 53, 59, M3:A9-14
Mortaria	Mortaria report 14, c AD 20-55; 66, c AD 30/40-55; M2:F5, 11
Samian	2 pieces Claudian/Neronian, M2:D5
Other finds	Small fragments of copper alloy and iron, layer 4. Slag, layer 4. Spindle whorl, layer 9. Early Bronze Age sherd, layer 7, M3:A14

Period IVb2: Neronian

Site iii

Layer 4 fine cobble surface

Coarse pottery forms	*Cam 113(5), 115*(4),* 161* *204(3), 216*,* 218(2), 241(2)(II-VI), 255(I-IV/VI), 259*(3), 266*(5), 271(2), 272(2)(II-VI), body sherds of flagons, cooking pots, and storage jars, pottery report 110-116, Fig 27, M1:C3. All the pottery from this layer was very fragmentary and weathered
Gallo-Belgic wares	Stamps GB, 1, 25, 56, Fig 35, M1:D13, E7, F3
Amphoras	*Cam* 184, amphoras report F55*; Haltern 70, 74*; Beltràn I, 1 10*; Figs 55, 57, 59, M3:A11
Samian	Pre-Claudian (1 vessel), Claudian (2 vessels), Claudian/Neronian (3 vessels), piece of burnt Neronian, M2:D5
Coins	Two coins Cuno/Cam, Belgic coin catalogue 7 and 8, M3:B2
Other finds	Copper alloy stud, needle, hinge. Tinned S-shaped mount in leaded bronze* (P1 12), copper alloy report 22*, Fig 63, M3:B8. Iron bar*, iron report 21*, Fig 79, M3:D9. Small fragments of copper alloy and iron. Lead fragment. Smithing slag and hearth lining, technological report, M3:D11. Small fragments of Roman tile

Feature 324 small pit

Coarse pottery forms	*Cam* 136 (III-IV, rs-VI), 271
Other finds	Iron waste, smithing hearth lining, technological report, M3:D11

Feature 312 slot

Coarse pottery forms	Body sherds of flagon, storage jars in A fabric
Amphoras	Dressel 20, amphoras report 88
Samian	Claudian (3 vessels), M2:D5
Other finds	Small fragments of Roman tile and piece of septaria

Feature 321 slot

Coarse pottery forms	*Cam 113, 114,* 150(VI), 167, 266. NB rarity of late flagon form 150 at Sheepen
Amphoras	Haltern 70, amphoras report 73
Samian	Claudian (1 vessel), Claudian/Neronian (1 vessel), M2:D5

Feature 327 posthole

Sterile

Feature 328 posthole

Sterile

Feature 303 ?slot

Coarse pottery forms	*Cam 220*(I-III, rs-VI), 246(III/IV-VI)
Amphoras	Dressel 2/4, amphoras report 21*, Fig 53, M3:A9; Beltrán I, 107*, 102, Fig 59, M3:A13
Samian	Claudian (2 vessels), M2:D5
Other finds	Small fragments of copper alloy and lead

Feature 315 small posthole

Coarse pottery	Body sherds of flagon and cooking pot

Feature 317 posthole

Sterile

Feature 318 posthole

Sterile

Layer 3 gravel surface

Coarse pottery forms	*Cam* 218
Other finds	Brooch, Camulodunum type III*, *c* AD 1-75, brooch report 8*, Fig 73, M3:C4. Lump of haematite, technological report, M3:E6

Feature 341 shaft (Section 13)

Finds from daub and loam filling

Coarse pottery forms	*Cam* 108(II-VI), *113, 216,* 242(II-VI), *256*(I-III, rs-VI), 266(4), 271, 272(2) (II-VI), lid, coarse pottery report 119-21, Fig 27, M1:C4
Samian	Claudian/Neronian (6 vessels), M2:D5
Other finds	Buckle plate*, copper alloy report 23*, Fig 63, M3:B8. Small chip of lava

Feature 335

Coarse pottery forms	*Cam 113*(2), 140, 218, 241(II-VI)(2), 255, 272(II-VI), coarse pottery report 122, Fig 27, M1:C4
Samian	Decorated samian report 64*, *c* AD 40-65, Fig 45, M2:C7
Other finds	Fuel ash slag, smithing hearth base, technological report, M3:D12

Period IVb: Neronian

Site i

Feature 102 large rubbish pit, layers 2, 3, 3a, and 4 (Section 6)

Coarse pottery forms	*Cam* 16b, 46*, 61* (eggshell ware), 108(5)* (II-VI), *113**(2), *125/16**(3) 139* (II-IV/VI), 140(4), 141(2)(III/IV-VI), 143 (IV-VI), 144*(2)(III-VI), 154*(III-VI), 155*(III-VI), 163*(I-IV, n-VI), 166 (I-III/IV), 168*(III-IV), 215(I-III/IV), *216**(3)(I-IV), 218*(3), *229*(3)(I-III/IV, n-VI), *230*(I-III, rs-VI), *231c,* 241*(6)(II-VI), 243(II-VI), 245*, 246* (III-IV/VI), 249*, *253**(2)(I-IV, n-VI), *256**(3)(I-III, rs-VI), 258c*(I-IV, rs-VI), *259**(2), 264(I-III/IV), 265(2), 266*(19), 267b*(VI), 271(3), 272(II-VI), 275*(V-VI), coarse pottery report 123-164, Figs 27-8, M1:CP8. Cups and beakers in Lyon ware, imitation Lyon ware, and Lower Rhineland ware, fine ware report, M1:D6
Gallo-Belgic wares	Claudian/Neronian, Gallo-Belgic report 159*-163*, Fig 39, M1:G10
Mortaria	Mortaria report 25*, *c* AD 20-55; 60*, *c* AD 50-60; 73*, c AD 30/40-65, from Mayen area of Lower Germany; Figs 49-51, M2:F6-10. See note, p 93
Amphoras	Dressel 2/4, amphoras report 14*, 21, 25*, 28, Fig 53; Haltern 70, 76-8*, Fig 57; Dressel 20, 85*, Fig 57, 88*, 91-4; Beltrán I/II, 117*, Fig 60; *Cam* 189, 124-5*, Figs 58, 60, M3:A9-14
Samian	Decorated samian report 47*, 89*, both *c* AD 50-65; 63*, *c* AD 45-60; 99*, c AD 45-65; Figs 45-7. Plain samian, ?Tiberian/Claudian (1 vessel), Claudian (4 vessels), Claudian/Neronian (15 vessels), Neronian (6 vessels). Samian stamp 28, Primus 111, *c* AD 45-65, M2:C5-12, D6, E4
Glass	Fragment of millefiori bowl, glass report 14; fragment of marvered beaker, 17*; marvered base, 23*; marvered fragment, 26*; unmarvered fragments, 27-9*; coloured fragments, 34*, 36*, 54*, 55, parts of two-handled flasks, Isings form 15; fragment of small bowl, Isings form 12, 85*; fragments of a two-handled flask; Figs 80-3, M3:F2-4, 9
Other finds	Brooch, Camulodunum type III*, c AD 1-75, brooch report 2, Fig 73, M3:C4. Fragments of domestic and military equipment, copper alloy report 24*-34*, Fig 63, M3:B8. Iron spokeshave and knife, iron report 8*-9*, Fig 77, M3:D8. Iron nails, M3:D10. Strip of lead. Crucible, technological report, M3:E4. Fragment of lamp. Fragment of whetstone. Bone needle

Feature 102
layers 7-8 primary silt in gravel pit (Section 6)

Coarse pottery forms	*Cam 229A,* body sherds of storage jars

Feature 112 rubbish pit

Coarse pottery forms	*Cam* form *113* (several), *115/16,* 161, 163(I-IV, rs-VI), 164(I-IV, rs-VI), *204*(I-IV, rs-VI), *216*(I-IV), 218, *219*(I-III/IV, n-VI), *220*(I/III, n-VI), *229*(I-III, n-VI), 242(I I-VI), 246(III/IV-VI), *253*(I-IV, rs-VI), 258(I-IV, rs-VI), *259,* 260a(III, very rare), 266(2), 272(II-VI), pottery report 176, Fig 29, M1:C9. 2 beakers in Lyon ware, 1 base in local imitation of Lyon ware, fine ware report, M1:D7
Gallo-Belgic wares	Claudian/Neronian and some earlier residual material. Stamp GB 23, Fig 35, M1:E7, G11-12
Mortaria	Mortaria report 22*, *c* AD 20-55, Fig 49, M2:F6. Same vessel as one from feature 120, layer 1
Amphoras	Dressel 2/4, amphoras report 14*; *Cam* 184, 50*; Figs 53, 55, M3:A9-10
Samian	Decorated samian report 8*, Tiberian, ?Arezzo, Fig 41, M2:B11. Plain samian, provincial Arretine (2 vessels), M2:D6
Other finds	Brooch, Camulodunum type III*, *c* AD 1-75, brooch report 7, Fig 73, M3:C4. Cart or bucket mount*, copper alloy report 35, Fig 64, M3:B9. Small fragments of iron and copper alloy. Roman roofing tile

Feature 132 small rubbish pit

Coarse pottery forms	*Cam 113,* 140. 1 beaker in Lyon ware, fragments of 2 vessels in Lower Rhineland fine ware, fine ware report, M1:D7
Amphoras	Dressel 2/4, amphoras report F11*, Fig 53; Dressel 20, 91, M3:A9, 12
Samian	Decorated samian report 9*, *c* AD 25-40, Fig 41, M2:B13. Plain samian, Claudian, Claudian/Neronian, M2:D6
Coins	Belgic coin Cuno/Cam, Belgic coin catalogue 11, M3:B2
Other finds	Domestic and military equipment, copper alloy report 36*-39*, Fig 64, M3:B9. Small fragments of iron and copper alloy. Crucible, technological report, M3:E4. Small fragment ? of lamp

Feature 134 small rubbish pit

Coarse pottery forms	*Cam 113,* 114, 140, 212, 218, *259,* 271, 272(II-VI). Beaker in Lyon ware
Gallo-Belgic wares	Conquest period. Stamp GB 15, Fig 35, M1:E4, G12
Amphoras	Dressel 2/4, amphoras report F35*, Fig 54, M3:A10
Samian	Plain samian, Claudian (1 vessel), M2:D6

Feature 146 latrine

Period III, filled in during period IVb, or at the time of the Boudiccan revolt. The pottery and the finds come from this final filling.

Coarse pottery forms	Cam 104(VI), 108(2)(II-VI), *115/16,* 140*(2), 141*(III/IV-VI), 154* (at least 35)(II-VI), 155*(III/IV-VI), 157*(VI), 161*, 163(I-IV, rs-VI), 171*(2)(IV-VI), 218, *221, 229*(I-III/IV, rs-VI), *231,* 241(II-VI), 242(II-VI), 244(IV-VI), 245*(I-VI), 246(5)(III/IV-VI), 264(2) (I-III/IV), 266(5), 268 (just appearing by 60, and common in the *colonia),* 271, 270(2), 272(4)(II-VI). The inclusion of forms such as 157 and 268 makes this one of the latest stratified groups found at Sheepen. Coarse pottery report 191-207, Fig 30, M1:C11. 1 cup and 1 beaker in Lyon ware, fine ware report, M1:D7
Gallo-Belgic wares	Pre/post-conquest, Gallo-Belgic report 202-9*, Fig 40, M1:E1. Stamp GB 4, Fig 35, M1:G13
Amphoras	Dressel 2/4, amphoras report F36*; Dressel 20, 88, 99*-100, Figs 54, 58, M3:A10
Mortaria	Mortaria report 43*, *c* AD 20-55; 69*, AD 30/40-65; 113*, 133, both *c* AD 50-85; Figs 50, 52, M2:F8, 12, G2, 5
Samian	Decorated samian report 89*, *c* AD 50-65, Fig 46, same vessel as one in feature 102. Plain samian, Claudian (2 vessels), Claudian/Neronian (2 vessels), Neronian (8 vessels). Stamp 14, Celer ii *(c* AD 30-60); stamp 20, Licinius, *c* AD 45-60; M2:D6, E4
Coins	Belgic coin Tasc Dias/Ver, Belgic coin catalogue 12, M3:B2
Other finds	Brooch, Camulodunum type XVIIIB, brooch report 31*, Fig 75, M3:C7. Small fragments of copper alloy, including military equipment. Large quantities of Roman roofing tile. Small piece of septaria

Feature 153 large rubbish pit cut into an earlier gravel pit

The pottery and finds come from the recut; the primary gravel pit was sterile.

Coarse pottery forms	*Cam* 108(2)(II-VI), 140, 141*(3) (III/IV-VI), 144*(III-VI), 166(I-IV, rs-VI), 167*(III/IV-VI), 218, *229*(I-III/IV-VI), *250*(II-IV, true range may be I only), *264*(I-III/IV), 266(10), 267(III-VI, mainly VI), 270, 271, 272(II-VI), lids, coarse pottery report 165-172, Figs 28-9, Ml :C8-9.1 vessel in Lyon ware, 1 in local imitation Lyon ware, 1 in Lower Rhineland fine ware, fine ware report, M1:D7
Gallo-Belgic wares	Claudian/Neronian. Stamp GB 72, Fig 35, M1:F2, 2:B8
Amphoras	Dressel 2/4, amphoras report F6*, 49; *Cam* 184, 50*; Dressel 20, 81*, Figs 53, 55, 57, M3:A9-12
Samian	Decorated samian report 12*, 117*, both *c* AD 40-55; 108*, *c* AD 40-?60; 38*, *c* AD 35-50; 75*, *c* AD 45-60; 31*, 74*, 119*, all *c* AD 50-65; Figs 41, 44, 46-7. Plain samian, Claudian (7 vessels), Claudian/Neronian (7 vessels), Neronian (1 vessel probable). Samian stamp 1, Acutillus, *c* AD 45-65; stamp 24, Murranus, c AD 50-65; M2:B13-C14, D6, E1
Glass	Fragments of marvered glass, glass report 22*, Fig 80, 57; natural green glass fragments 80-1) 86, M3:F3, 9
Coins	Caligula, Roman coin catalogue 11, M3:B4
Other finds	Fragments of domestic and military equipment, copper alloy report 40*-55*, Pi 13, Figs 64-6, M3:B10, Iron fitting*, chisel*, and ferrule*, iron report 14-16, Fig 78. Fragment of *lorica segmentata**, iron report 17, Fig 78, M3:D8. Fragment of *lorica hamata,* iron report 18, Pl 19. Over 80 small fragments of iron and copper alloy. Casting sprue, technological report, M3:D14. Fuel ash slag, hearth lining, and smithing slag, technological report, M3:D12. Fragments of crucibles, technological report, M3:E1. Fragment of pellet of Egyptian blue, technological report, M3:E6, and also glass report 99, M3:F11. Small piece of sandstone. Lamp fragment, Fig 34.2, M1:D11. Small lumps of burnt daub, ?kiln or furnace material

Feature Z5 timber cellar

See under Period V

Site ii

Feature 213 gravel pit filled with rubbish, cut into feature 214 (site iia)

Coarse pottery forms	*Cam 112, 113, 115/16,* 218(3), *232, 259,* 266(3), 272(5)(II-VI)
Gallo-Belgic wares	Claudian/Neronian. One fragment from this pit matches with one from feature 220, M1:G13
Amphoras	*Cam* 184, amphoras report 56*, 61*, 65*, Figs 55-6; Cam 189, 124; 1 unidentified, 134*; Fig 60, M3:A11, 14
Mortaria	Mortaria report 90*, *c* AD 30/40-65, Fig 51, M2:F13
Samian	Decorated samian report 23*, 107* both *c* AD 50-65; 29*, *c* AD 30-45; Figs 42, 44, 47; parts of the latter vessel also come from features 252, 238, and 204. Plain sarnian, Tiberian/Claudian (1 vessel), Claudian (2 vessels), Claudian/Neronian (5 vessels), Neronian (2 vessels), M2:B14-15, C12, D8
Glass	Fragment of marvered glass, glass report 18*, Fig 80, M3:F2
Coins	Camu/Cam, Belgic coin catalogue 9; Antonia, Roman coin catalogue 12; M2:B2, B4
Other finds	Brooch, Camulodunum type X-XI, *c* AD 1-75, brooch report 24*, Fig 74, M3:C5. Small fragments of copper alloy and iron

Feature 220 pit cut by feature 214 (site iia)

Coarse pottery forms	Cam 267
Gallo-Belgic wares	Claudian/Neronian, M3:G13

Pit complex A, features 252, 236, 247, 250, 251 (site iib)

Feature 252

This is a large rubbish pit which cut through earlier pits 236, 246, 247, and 251, three of which contained Neronian samian. 252 must therefore also belong to the Neronian phase. See Section 7. All the finds from feature 252 are from layers 1-2.

Coarse pottery forms	*Cam* 96*(2), *113, 115/16*(2), 140(3), 141(III/IV-VI), 143(IV-VI), 154(III-VI), 161(3), 163(I-IV, rs-VI), 218(8), 266(16), 270*(12), 272(5)(II-VI), lid, coarse pottery report 216-19, Fig 31, M1:C13-14. Beaker in Lyon ware, fine ware report, Ml :D7
Gallo-Belgic wares	Claudian/Neronian, Gallo-Belgic report 247*-8*, Fig 40. Stamps GB 3, 17, 19, 21, 29-30, 41, 52, 61, 67, 70, 93, Fig 35, M1:D14-F10 Pompeian red ware, M1:D7
Amphoras	Dressel 2/4, amphoras report 38*, 44*, 49, Fig 54; *Cam* 184, 50*, 52*, 55*, 65*, F69*, Figs 55-6; Beltrán I, 102*, Fig 58; Beltrán I/II, 117*, Fig 60; *Cam* 189, 122, 124, Richborough 527, 128*, Fig 60; Dressel 28, 130, M3:A9-13
Mortaria	Mortaria report 12, *c* AD 20-55; 91*, *c* AD 30/40-65; M2:F5,13
Samian	Decorated samian report 7*, 25*, 27*, *c* AD 25-40; 11*, *c* AD 30-45, part of the same vessel found in features 236 and 272; 29*, *c* AD 30-45, part of the same vessel found in features 204, 213, and 238; 33*, *c* AD 40-55; 115*, *c* AD 35-50, part of the same vessel found in feature 249; 82*, *c* AD 50-65; Figs 41, 43-4, 46, 48. Plain samian, Arretine (1 vessel), Claudian (8 vessels), Claudian/Neronian (9 vessels), Neronian (1 vessel). Samian stamp 6, Atepomarus, *c* AD 30-55, M2:B12-C14, E1
Glass	Fragment of marvered glass, probably Isings form 17, ?same vessel found in features 261 and 153, glass report 20*, Fig 80, M3:F3
Coins	Belgic coin catalogue 10; Marc Antony, Roman coin catalogue 13; halved 1st century sestercius, Roman coin catalogue 14; M3:B2,4
Other finds	Brooch, Camulodunum type III*, *c* AD 1-75, brooch report 11; Bagendon type*, pre-Flavian, brooch report 29; Figs 74-5, M3:C4, 6. Copper alloy mount*, copper alloy report 57, Fig 66, M3:B11. Copper alloy strap hinge. Fragment of *lorica segmentata**, copper alloy report 58, Fig 66, M3:B11. Numerous small fragments of copper alloy and iron. Smithing slag, hearth lining, and bottom, technological report, M3:D11. Small fragment of lamp. Numerous small fragments of Roman roofing tiles

Feature 236 (pit complex A)

Coarse pottery form	*Cam 113*(2), *115/16,* 136(III-IV), 140, *204* (I-IV, rs-VI), 215(I-III/IV), 218(2), *232,* 241(2)(II-VI), 266, 270(5), 272(2)(II-VI)
Gallo-Belgic wares	Stamps GB 2, 14, 35, 75, Fig 35, M1:D14-2:A5
Amphoras	Dressel 2/4, amphoras report 23*; *Cam* 184, 55*, 62*; *Cam* 189, 121; 1 unidentified; Figs 53, 55, M3:A10-13
Samian	Decorated samian report 4*, *c* AD 25-40; 11*, *c* AD 30-45; 14*, 41*, 95*, all *c* AD 35-50; 49*, *c* AD 45-60; Figs 41, 42, 44, 47, M2:B11. Plain samian, Claudian (8 vessels), Claudian/Neronian (4 vessels), South Gaulish (2 vessels), Neronian (1 vessel). Samian stamp 1 3, Capito, *c* AD 45-65, M2:D7, E2
Other finds	Brooch report 32*, Fig 75, M3:C7. Brass sheet, copper alloy report 112, Pl 18, M3:C2. Copper alloy bolt, copper alloy report 56*, Fig 66, M3:B11. 5 scraps of copper alloy. 1 iron object. Numerous Roman roof tiles, 1 misfired

Feature 246 (pit complex A)

Coarse pottery forms	*Cam* 93 (I-III, rs-VI), 99(IV-VI), 104(2)(VI), *113, 114, 215*(I-III/IV), 218(5), *229*(I-III/IV, rs-VI), 241(II-VI), 249(I, rs-?VI), *264* (I-III/IV), 266(5), 270, 271(2), 272(II-VI), lids, body sherds of storage jars
Gallo-Belgic wares	Stamp GB 13, Fig 35, M1:E4, 2:A5-7
Samian	Decorated samian report 10*, *c* AD 25-40, Fig 41. Plain samian, Tiberian/Claudian (1 vessel), Claudian (2 vessels), Claudian/Neronian (2 vessels), Neronian (1 vessel). Samian stamp 2, Acutus, *c* AD 30-45; samian stamp 5, Atepomarus, *c* AD 30-55; samian stamp 36, Secundus i, *c* AD 30-50; M2:E1, 5
Other finds	2 small fragments of copper alloy. 2 small fragments of iron. A little slag. Imbrex waster

Feature 247 (pit complex A)

Coarse pottery forms	*Cam* 218, 266, body sherds of flagons

Feature 250 recut of feature 252

Small fragment of copper alloy

Feature 251 (pit complex A)

Coarse pottery forms	*Cam* 241(II-VI), 266(2), 270
Gallo-Belgic wares	Claudian/Neronian
Samian	Plain samian (1 vessel), M2:A7

Pit complex C, features 270, 262, 257 (site iib)

Feature 270

This is a large gravel pit, recut for a rubbish pit. With features 262 and 257 which are later recuts of feature 270, these form pit complex C which cuts through the south edge of feature 247, which is itself part of the Neronianpit complex A (P16).

Coarse pottery forms	*Cam 113,* body sherds from storage jars

Feature 262 recut of gravel pit 270

Coarse pottery forms	Cam 108(II-VI), 113(2), 120(IV-VI), 140, 154(III-VI), 163, 168(III-VI), 218, 266, *259*(2), 272(II-VI). 1 beaker in Central Gaulish fine ware, see fine ware report, M1:D7
Gallo-Belgic wares	Claudian/Neronian. Stamp GB 31, Fig 35, M1:E9, 2:A7
Amphoras	Dressel 2/4 according to Sealey, Beltrán I according to Williams, amphoras report 31*, Fig 54, M3:A10
Samian	Plain samian, Claudian (5 vessels), Claudian/Neronian (3 vessels), M2:D8
Other finds	2 small iron fragments. Roman roofing tile fragments

Feature 257 recut of gravel pit 270

Coarse pottery form	*Cam* 266
Gallo-Belgic wares	Claudian/Neronian, M2:A7
Samian	Decorated samian report 56*, c AD 50-65, Fig 45, M2:C6. Plain samian, Claudian/Neronian (2 vessels), M2:D8

Site v

Feature 503 gravel pit filled with domestic refuse (not fully excavated)

Coarse pottery forms	*Cam* 28*, 92, 108 (II-VI), 140, 215(I-III/IV), 218, 232, 241(II-VI), 253(I-IV, rs-VI), *259,* 266*(4), 267(III/IV-VI), 272(II-VI), coarse pottery report 173-5, Fig 29, M1:C9. NB A high proportion of the pottery from this pit is in C fabric; *262,* M1:D9
Gallo-Belgic wares	Pre/post-conquest, Claudian, M3:A10
Amphoras	Dressel 2/4, amphoras report 26, 44*; *Cam* 184, F58*; Dressel 20, 97; Figs 54, 55, M3:A10
Mortaria	Mortaria report 80*, *c* AD 30/40-65, Fig 51, M2:F3; 1 29, pre-Flavian, M2:G5
Samian	Plain samian, Arretine? (1 vessel), Tiberian/ Claudian (1 vessel), Claudian (3 vessels), Claudian/Neronian (4 vessels), Neronian (1 vessel). Samian stamp 7, Atepomarus, *c* AD 30-55, M2:D8, E1
Glass	Green rim fragment, ?Isings form 22, glass report 42*-3; fragment of blue two-handled flask, Isings form 15, glass report 58; Fig 81, M3:F7-8
Coins	Caligula, Roman coin catalogue 15; Tiberius, Roman coin catalogue 16; M3:B2
Other finds	Brooch, Camulodunum type XVIIIB*, brooch report 34, Fig 75, M3:C7. At least 10 small fragments of copper alloy, copper alloy report 59*, Fig 66, M3:B11. Iron clamp

Site vi

Feature 601 large gravel pit filled with refuse

Coarse pottery forms	Cam *102**, 108(5)(II-VI), *113**(5), *114*(3), 140, 148*(IV-VI), *204*(I-IV, rs-VI), 218*(4), *219**(I-III/IV, rs-VI), *229*(I-III/IV-VI), *231**(2), 241*(II-VI), 242(5)(II-VI), *259, 262**, 266*(5 and 1 waster), 270, 271, 272(II-VI), body sherds of flagon, coarse pottery report 177-90, Figs 29-30. Cup in Lyon ware, fine ware report, M1:D7. For notes on imported forms 102 and 262, see M1:D9
Gallo-Belgic wares	Claudian/Neronian with some earlier residual material. Stamps GB 20, 40, 62, 73, 77, 88, Fig 35, M1:E6-F9. Gallo-Belgic report 322*, 327*, 329*, 334*, Fig 40, M2:A8-10
Amphoras	Dressel 2/4, amphoras report 7*, Fig 53, M3:A9
Mortaria	Mortaria report 117*, pre-Flavian, Fig 50, M2:G3
Samian	Decorated samian report 70*, *c* AD 25-40, Fig 46, M2:C8. Plain samian, Claudian (2 vessels), Claudian/Neronian (3 vessels). Samian stamp 15, Crestio, *c* AD 45-65, M2:E3, D8
Other finds	Small scraps of copper alloy and iron. Smithing slag, hearth lining, and bottom, technological report, M3:D11. Belgic coin mould fragment, technological report, M3:E5. Lumps of burnt daub, possibly kiln or furnace material. Fragments of Roman roof tiles

Periods III-IV: AD 44-61

Site i

Feature 105 small scoop with black humic fill

Coarse pottery forms	*Cam 213* (II-IV, rs-VI), *225* (very rare, may be just period I, rs-IV-VI)
Other finds	3 studs*, copper alloy report 8, Fig 62, M3:D6

Feature 109 shallow pit with domestic refuse

Coarse pottery forms	*Cam 113,* 242(II-VI), 266
Gallo-Belgic wares	Claudian, M2:A10

Feature 114 base of pit, otherwise destroyed by later gravel quarry

Coarse pottery forms	*Cam 113*(2), 266, body sherds of flagon and storage jar
Gallo-Belgic wares	Claudian, M2:A10
Glass	Marvered fragment, from the same vessel as one in feature 102, glass report 16*, Fig 80, M3:F3
Other finds	Iron key, iron report 22*, Fig 79, M3:D9

Feature 122 edge of a pit, otherwise destroyed by later gravel quarry

Coarse pottery forms	*Cam* 266. Cup in Lyon ware, fine ware report, M1:D8

Feature 124 shallow scoop

Coarse pottery forms	*Cam* 218, *253*(I-IV, rs-VI), 260a (rare, III-VI), 266, 270

Feature 129/137 large rubbish pit, trenched in earlier excavations

Coarse pottery forms	*Cam* 108(II-VI), *113, 115/16*(2), 120(IV-VI), 140(5), 141(III/VI-VI), 144, 145(III-IV), 170, *204*(2)(I-IV, rs-VI), 218(5), 221(2), 229(I-III/IV), *232*(2), 241(2)(II-VI), 242(II-VI), 246(III/IV-VI), *250*(I/II-IV, perhaps true range only I), *259,* 260a (rare, III-VI), 266(5), 267(III-VI, mainly VI), 271, 272(3)(II-VI)
Gallo-Belgic wares	Claudian and Claudian/Neronian. Stamp GB 58*, Fig 35, M1:F3, 2:A10-11
Amphoras	Dressel 2/4, amphoras report 38*, F43*, F45*; Haltern 70, 73; Dressel 20, 86*, 95*, 97; Figs 54, 58, M3:A10-11
Mortaria	Mortaria report 10*, 16, 27*, 41, all *c* AD 20-55; 52*, *c* AD 40-65; 53*, *c* AD 20-60/5; 58, *c* AD 40-60/5; 59*, c AD 30/40-60/5; 104, *c* AD 55-85; 118*, pre-Flavian; 135, uncertain date; Figs 49, 50, 52, M2:F5-10, G1-3
Samian	Decorated samian report 103*, *c* AD 50-65, Fig 47, M2:C12. Plain samian, Claudian (4 vessels), Claudian/Neronian (2 vessels), Neronian (1 vessel). Samian stamp 3, Ardanus, *c* AD 45-60, M2:D4, E1
Glass	Mould blown beaker fragment, glass report 90*, Fig 83, M3:F10; fragment of square bottle in natural green glass, glass report 93, M3:F10
Coins	Caligula, Roman coin catalogue 17, M3:B4
Other finds	Fragments of a plate brooch*, brooch report 44, Fig 76, M3:C9. Very large numbers of tiny fragments of copper alloy, including a few larger, identifiable fragments, copper alloy

report 16-19*, Fig 62, M3:B7. Fragments of crucibles, technological report, M3:E2-4. Fragments of Roman roofing tiles. Small quern fragment

Feature 130 small pit filled with brown loam (cuts feature 129/137)

Coarse pottery forms: A few body sherds in fabric A

Feature 140 shallow pit, cut by earlier excavations

Coarse pottery forms: *Cam* 104(VI), 139(II-IV/VI), 154(III-VI), 161, 216, 218, *232,* 246(III/IV-VI), *259,* 266

Other finds: Small fragment of septaria

Site ii

Feature 201 small gravel pit with domestic refuse (site iia)

Coarse pottery forms: *Cam 204*(2) (I-IV, rs-VI), 218, 266, flagon body sherds

Amphoras: Dressel 1, amphoras report F2*, Fig 53, M3:A9; *Cam* 184, 52, M3:A11

Glass: Fragment of millefiori bowl from the same vessel as a fragment from feature 166, glass report 1*, Fig 80, M3:F2

Feature 202 very shallow scoop (site iia)

Coarse pottery form: *Cam* 218, body sherds in fabric C

Samian: Decorated samian report 90*, *c* AD 50-65, Fig 47, M2:C11

Other finds: 1 fragment of Roman tile. Lumps of burnt daub

Feature 203 large gravel pit (site iia)

Samian: 1 fragment in Ateius B fabric, M2:D8

Feature 204 large shallow pit, cuts feature 214 (site iia)

Samian: 1 fragment Claudian

Feature 205 small gravel pit with domestic refuse in fill (site iia)

Coarse pottery forms: *Cam 259,* 266, 271, body sherds in fabric C

Gallo-Belgic wares: Claudian/Neronian

Amphoras: Beltrán I, amphoras report 108*, Fig 59, M3:A13

Mortaria: Mortaria report 81*, *c* AD 30/40-65, Fig 51, M2:F13

Other finds: Iron fragment

Feature 206 small gravel pit with brown loam filling, cuts feature 205 (site iia)

Coarse pottery forms: *Cam 114,* body sherds of flagon and of cooking pots in fabric C. Base in Lyon ware, fine ware report, M1:D8

Feature 209 gravel pit, cuts feature 207 (site iia)

Coarse pottery forms: *Cam 113, 115/16*

Gallo-Belgic wares: Claudian/Neronian, M2:A11

Samian: Claudian/Neronian (2 vessels), Claudian (1 vessel), South Gaulish (1 vessel); M2:D9

Coins: Belgic coin catalogue 13, M3:B2

Other finds: A little slag. Lumps of burnt daub

Feature 210 gravel pit with loamy fill, cuts feature 207 (site iia)

Coarse pottery forms: *Cam 113*(2), *204*(I-IV, rs-VI), 218, *230*(I-III, rs-VI), *231, 259,* 266(2), 270, 271*, coarse pottery report 208-10, Fig 30, M1:C12-13

Amphoras: Dressel 2/4, amphoras report 14*, 18; Beltrán I, 107*; Figs 53, 59, M3:A9, 13

Feature 212 small rubbish pit cut into feature 203 (site iia)

Coarse pottery forms: *Cam 113*(2), 140, *204*(I-IV, rs-VI), *259,* 266. The pottery from this feature was relatively unweathered

Mortaria: Mortaria report 13, *c* AD 20-55, M2:F2

Other finds: Weight*, copper alloy report 20, Fig 63, M3:B7.5 iron nails. Small lump burnt daub

Feature 215 small pit, cuts feature 216, brown loam filling (site iia)

Gallo-Belgic wares: Stamp GB 80, Fig 35, M1:F8, 2:A11

Amphoras: Haltern 70, amphoras report 77, M3:A12

Feature 216 shallow scoop filled with light loam and cutting feature 221 (site iia)

Coarse pottery forms: *Cam 204*(2)(I-IV, rs-VI), 266

Gallo-Belgic wares: Stamp GB 102, Fig 35, M1:F11, 2:A12

Amphoras: Dressel 2/4, amphoras report 14*, Fig 53, M3:A9

Mortaria: Mortaria report 31*, *c* AD 20-55, Fig 50, M2:F7

Feature 217 gravel pit with dark humic fill, part of pit complex D (site iia)

See under feature 267 below.

Feature 218 shallow rubbish pit cut into feature (site iia)

Coarse pottery forms: *Cam 113,* 140, *230*(2)(I-III, rs-IV), *231, 232(2), 259,* body sherds in fabric A, and flagon

Other finds: Tip of misfired Roman brick

Feature 223 large gravel pit, cuts features 258, 225(1), 205 (site iia)

Coarse pottery forms: *Cam* 266, 271, body sherds in fabric A and B

Other finds: Iron nail. Roman roof tile. Human ulna fragments

Feature 224 shallow pit cut into feature 266 and filled with brown loam (site iia)

Coarse pottery forms: *Cam* 218, 266, body sherd of storage jar

Feature 225 gravel pit, filled with brown loam, cut by features 223, 226, 258 (site iia)

Mortaria: Mortaria report 76*, *c* AD 50-100, Fig 51, M2:F12

Feature 226 recut of feature 223, filled with dark humic silt (site iia)

Coarse pottery forms	*Cam 119* (I-IV, rs-VI), 175, body sherds of flagon and storage jar in fabric A
Other finds	Brooch report 35*, Fig 75, M3:C8

Feature 237 rubbish pit (site iib)

Coarse pottery forms	*Cam 113*(5), 266(5), 271. Cup in local imitation Lyon ware, fine ware report, M1:D8
Amphoras	*Cam* 184, amphoras report 53, M3:A11
Mortaria	Mortaria report 32, *c* AD 20-55, M2:F7
Glass	Fragments of millefiori bowl, glass report 9; small rim fragment, glass report 39, M3:F2, 7
Samian	Plain samian, Claudian (5 vessels), Claudian/ Neronian (3 vessels), M2:D9
0ther finds	Brooch, Camulodunum type III*, *c* AD 1-75, brooch report 10, Fig 73, M3:C4; Camulodunum type XIVB*, brooch report 18, Fig 74, M3:C5. Fragments of copper alloy and iron. Waster of a *tegula*

Feature 238/44 rubbish pit

The pottery and finds come from layer 2 (section 8).

Coarse pottery forms	Cam *113*(5), 140(3), *204*(I-IV, rs-VI), 218(5), *222, 229*(I-III/IV), 256(I-III, rs-IV), *262* (see note, M1:D9), 266(4), 271(4), lids, pottery report 211-15, Fig 31, M1:C13
Gallo-Belgic wares	Claudian/Neronian. Stamps GB 10, 42, Fig 35, M1:E2, 12, 2:A12
Amphoras	Beltrán I, amphoras report 102*, Fig 58, M3:A13
Mortaria	Mortaria report 15, 18, *c* AD 20-55, M2:F5-6
Samian	Decorated samian report 29*, *c* AD 30-45, Fig 44, M2:C2. Plain samian, Tiberian/Claudian (1 vessel), Claudian (1 vessel), Claudian or Claudian/Neronian (2 vessels), probably Neronian (1 vessel); M2:D9
Other finds	Iron nails. A little slag. Roman tiles. Lumps of burnt daub

Feature 239 midden over rubbish pit

The pottery and finds come from layer 3 (Section 8).

Coarse pottery forms	*Cam* 85, 108(II-VI), *113*(5), *115/16,* 218(5), *232*(4), 241(II-VI), 246(III/IV-VI), 266, lid
Gallo-Belgic wares	Claudian/Neronian. Stamp GB 68, Fig 35, M1:F6, 2:A13
Amphoras	Dressel 20, amphoras report 85*, 87, 90; Beltrán I, F103*, 113*; Beltrán IIa, 115*; Figs 57, 58, 59, M3:A12-13
Samian	Plain samian, Claudian/Neronian (10 vessels), M2:D9
Other finds	Small copper alloy fragment. Iron nails. Smithing slag. Roman roofing tile fragments

Feature 273 tip in eastern part of feature 239

Coarse pottery forms	Storage jar body sherds in fabric A
Amphoras	*Cam* 184, amphoras report 70*, Fig 56, M3:A11

Feature 240 tip in fill of feature 253

See under feature 253.

Feature 241 small gravel pit with loam fill (site iib)

Sterile

Pit complex B, features 242, 245, 274, and 277 (site iib)

Feature 242 is a steep-sided gravel pit filled with humus and refuse. Feature 245 is a substantial tip in the gravel pit fill; features 274 and 277 are recuts into 245. The contents of the entire complex are listed here.

Feature 242

Coarse pottery forms	*Cam 113,* 218, 266, 270. The pottery from this pit was all very weathered
Gallo-Belgic wares	Claudian (Neronian). Stamp GB 71, Fig 35, M1:F6, 2:A14
Amphoras	*Cam* 184, amphoras report 56*, Fig 55, M3:A11
Samian	Plain samian, Tiberian/Claudian (1 vessel), Ateius B fabric (1 vessel), Claudian (3 vessels), M2:D9
Other finds	Copper alloy stud, and 2 small scraps of copper alloy. Iron nails. Slag. Roman roofing tiles

Feature 245 tip of refuse in feature 242 (site iib)

Coarse pottery forms	*Cam* 104(VI), *113*(4), *225/16,* 140, 242(II-VI), 259, 266, lids, small weathered fragments of flagon and cooking pot
Gallo-Belgic wares	Claudian/Neronian; Pompeian red ware, M2:A14, B5
Amphoras	*Cam* 184, amphoras report 56*, 69*; Haltern 70, 74*; Beltrán I, 106*; Figs 53, 56, 57, 59, M3:A11-13
Samian	1 Claudian plate, M2:D9
Other finds	Small piece of septaria

Feature 274 recut in pit complex B

Coarse pottery forms	*Cam* 218(2)
Samian	Plain samian, Claudian (2 vessels), Claudian/ Neronian (1 vessel), M2:D10
Other finds	Copper alloy spike. Slag

Feature 277 recut in pit complex B

Coarse pottery forms	*Cam* 113, body sherds of storage jar in fabric A
Samian	Plain samian, 1 Arre tine vessel, M2:D10
Other finds	Iron nail. Smithing slag, fuel ash slag, technological report, M3:D12

Feature 243 steep-sided gravel pit with sterile loam fill (site iib)

Recut and filled with dark humic loam. The pottery and finds come from the recut. Cuts feature 248.

Coarse pottery forms	*Cam* 104(VI), *113,* 218, 271, coarse body sherds
Other finds	Iron nail. Smithing slag, fuel ash slag, hearth lining, and base. Metallic iron, technological report, M3:D11-13, E9

Feature 248 shallow gravel pit with light brown loam fill, cut by pit complex C and feature 243 (site iib)

Coarse pottery forms	*Cam* 246 (III/IV-VI), 272(II-VI)
Other finds	Copper alloy pin. Copper alloy stud. Copper alloy strips

Feature 249 steep-sided gravel pit with brown loam fill, cut by feature 238 (site iib)

Coarse pottery forms	*Cam 115/16, 218,* 232, 246(III/IV-VI), 266, flagon body sherds

Samian	Decorated samian report 61*, *c* AD 50-65, Fig 45, M2:C7. Plain samian, Claudian (2 vessels), Claudian/Neronian (1 vessel), 1 inkwell; M2:D9
Other finds	Brooch, Camulodunum type XVIIIB*, *c* AD 1-75, brooch report 36, Fig 75, M3:C8. Iron nails. Roman bricks (10). Fragments of roof tiles

Feature 253/240 tip of humus over feature 243

Coarse pottery forms	*Cam* 218, 266, body sherds of flagons
Amphoras	Dressel 2/4, amphoras report 32*, Fig 54, M3:A10
Other finds	Iron nails

Feature 254 shallow gravel scoop with shelving walls, filled with light brown loam and cut by later gravel quarry (site iib)

Coarse pottery forms	*Cam 113,* 218, 266, 272(II-VI), body sherds of flagon and storage jars. Body sherds in Lyon ware
Gallo-Belgic ware	Stamp GB 91, Fig 35, M1:F10
Other finds	Iron nail. Slag

Feature 255 shallow pit, which does not penetrate through the gravel, filled with light brown loam (site iib)

Coarse pottery forms	*Cam 113,* 272(II-VI), body sherds of amphoras, flagons, and storage jars
Gallo-Belgic wares	1 piece of Tiberian/Claudian, M2:B1
Other finds	Roman tile fragments

Feature 256 edge of a pit otherwise obliterated by feature 214 (site iia)

Samian	Burnt plate, ?Neronian, M2:D9
Amphoras	*Cam* 184, amphoras report 56*, Fig 55, M3:A11

Feature 258 edge of a pit otherwise obliterated by feature 205, (site iia)

Sterile

Feature 259 small gravel pit filled with light brown loam (site iib)

Coarse pottery forms	*Cam 113,* 266, base of flagon, body sherds in fabric A
Other finds	Large quantities of broken Roman tile. A little slag

Feature 263 shallow, steep-sided pit filled with light brown loam, disturbed by grave 11 (site iib)

Coarse pottery forms	*Cam* 104(VI). Fragment of cup in Lyon ware, fine ware report, M1:D9
Gallo-Belgic wares	1 piece of Tiberian/Claudian, M2:B1
Amphoras	*Cam* 184, amphoras report 56*, 60, Fig 55, M3:A11
Samian	Plain samian, Claudian/Neronian (1 vessel), M2:D9

Feature 266 gravel pit with brown loam fill, cut by feature 224 (site iia)

Sterile

Pit complex D, features 217, 267, and 271 (sites iia-iib)

Features 217 and 267 are indistinguishable and together form an irregular-shaped rubbish pit with shelving sides. Feature 271 is a steep-sided recut of this composite pit.

Feature 217, part of pit complex D

Coarse pottery forms	*Cam 115/16,* 131*, 266, coarse pottery report 210, Fig 30, M1:C13

Feature 267 part of pit complex D (site iib)

Coarse pottery forms	*Cam 113,* 266, 271, body sherds of cooking pots, one of which joins with a sherd from feature 261. Beaker fragment in Lyon ware

Feature 271 part of pit complex D (site iib)

Coarse pottery forms	*Cam 232,* 266, 270
Gallo-Belgic wares	Stamp GB 11, Fig 35, M1:E2, 2:A1
Mortaria	Mortaria report 17*, 33, both *c* AD 20-55, M2:F6-7
Amphoras	Haltern 70, amphoras report 78; Dressel 20, 92
Samian	Plain samian, Claudian (5 vessels), Claudian/Neronian (1 vessel). Samian stamp 35, Scottius, *c* AD 20-55, M2:D9, E5
Coin	Cunobelin, Belgic coin catalogue 14, M3:B3
Other finds	Iron nail. Roman tile fragments. Slag

Feature 268 small shallow pit, possibly caused by roots (site iia)

Sterile

Feature 269 shallow pit cutting features 251 (pit complex C) and 272 (site iib)

Sterile

Feature 272 wide shallow pit with sterile primary fill of gravel and loam, and an upper humic fill (site iib)

Pottery and finds came from this humic layer. Feature 272 obliterated earlier small pit, feature 244.

Coarse pottery forms	*Cam* 104(VI), *113*(4), *115/16, 204*(2)(I-IV, rs-VI), 218, *231, 259,* 260a(III-VI, rare), 262 (see note, M1:D9), 266(5), 272(II-VI)
Gallo-Belgic wares	Claudian/Neronian. Stamp GB 51, Fig 35, M1:F1, 2:B2-3
Amphoras	Haltern 70, amphoras report 78*, fig 57, M3:A12
Samian	Plain samian, Claudian (4 vessels), Claudian/Neronian (4 vessels), M2:D10

Feature 273

See under feature 239

Feature 274

See under feature 242

Feature 275 shallow gravel scoop cut by later gravel quarry (site iib)

Amphoras	Dressel2/4, amphoras report 49, M3:A10

Feature 276 large shallow pit filled with pale clayey soil (site iib)

Coarse pottery forms	*Cam* 218
Samian	1 piece plain samian, Claudian/Neronian, M2:D10
Other finds	Early Bronze Age beaker sherds (see note, M3:A14)

Feature 277

See under feature 242

Feature 279 shallow scoop with gravel/loam fill (site iib)

Sterile

Feature 281 small shallow pit, filled with gravelly silt (site iib)

Sterile

Feature 283 small gravel pit with loamy fill, cut by later gravel quarry (site iib)

Finds	Bronze and brass scraps, technological report, M3:D14, E11-12

Site v

Feature 1 Roman ditch (Section 15)

Finds from the gravelly fill, layer 2, above the primary silt

Coarse pottery forms	*Cam* 266 in fabric C
Other finds	1 fragment Roman tile. Fragment of copper alloy tube

Feature 501 gravel pit with dark humic fill

Coarse pottery forms	*Cam* 108(11-VI), 115/16, 140, 154(III-VI), 163(I-IV, rs-VI), 218*, *221, 259*(2), 266, 272 (II-VI), coarse pottery report 220-1, Fig 31, M1:C14. Body sherds in Lyon ware, fine ware report, M1:D8
Gallo-Belgic wares	Claudian/Neronian; Pompeian red ware; M2:B3, 5
Amphoras	Dressel 2/4, amphoras report F24*, F47*; *Cam* 184, 56*; Haltern 70, 71, 78*; Dressel 20, 88-9, 95; Beltrán I, 102; Figs 54-8, M3:A10-13
Mortaria	Mortaria report 54*, 99*, c 40-65, Figs 50, 52, M2:F9-14
Samian	Plain samian, Claudian (1 vessel), Claudian/ Neronian (1 vessel), 1st century (2 vessels); also 1 intrusive Antonine vessel
Glass	Fragment of olive green pillar moulded bowl, glass report 46, M3:F7
Other finds	Brooch, Camulodunum XII variant*, brooch report 15, Fig 74, M3:C5.2 copper alloy studs. Iron fragment

Feature 502 timber-lined latrine or well

Not fully excavated; finds from stony filling of shaft

Coarse pottery forms	*Cam* 154(2)(III-VI), 163(I-IV, rs-VI), 270, body sherds of storage jar, coarse pottery report 222, Fig 32, M1:C14. Beaker fragment in imitation Lyon ware, fine ware report, M1:D8
Gallo-Belgic wares	Pompeian red ware
Other finds	2 small fragments of copper alloy

Feature 504 small pit filled with brown loam and occupation debris

Finds from the occupation debris

Coarse pottery forms	Cam 140(2), 218, 246(III/IV-VI), 259, 266(3), 270, body sherds of storage jar

Site vi

Feature 603 small gravel pit

Coarse pottery forms	*Cam 123, 204*(I-IV, rs-VI)
Samian	Splinter of 1st century vessel
Other finds	Roman tile fragments

Feature 604 small gravel pit

Coarse pottery	Body sherds of cooking pots in fabric C
Amphoras	Dressel 2/4, amphoras report F48*, Fig 55, M3:A10
Mortaria	Mortaria report 96*, *c* AD 40-65, Fig 52, M2:F14
Samian	Decorated samian report 52*, *c* AD 40-55?, Fig 45, M2:C5
Other finds	Brooch, Camulodunum type III*, *c* AD 1-75, brooch report 5, Fig 73, M3:C4

Feature 605 small gravel pit

Coarse pottery forms	Cam *113,* 218, *221, 259,* 266(2)
Gallo-Belgic wares	1 piece Claudian, M2:B3

Site vii

Body sherd of *Cam* 260b
Iron nail fragments

Period V: Boudiccan destruction, AD 61

Site i

Feature Z5 timber-lined cellar

The finds come from the burnt daub filling the feature, except the brass stamp which was found on the burnt floor (Section 5)

Coarse pottery forms	*Cam 113*,* 154*(III-VI), 266*, coarse pottery report 237-40, Fig 32, M1:D2
Amphoras	Dressel 2/4, amphoras report 38*; Haltern 70, 78*; Dressel 20, 87; Figs 54, 57, M3:A10-12
Samian	Decorated samian report 20*, AD 50-65, Fig 42, M2:B14. Plain samian, Claudian (1), Claudian/Neronian (1), Neronian (1), M2:D10
Other finds	Mount*, copper alloy report 60, Fig 66, M3:B11. Stamp*, found lying on the cellar floor, copper alloy report 61, Pl 14, Fig 66, M3:B11-12

Site iii

Layer 1a-2 burnt daub from burnt building B

Coarse pottery forms	*Cam* 108(2)(II-VI), 146(IV-VI), 154(III-VI), 163(I-IV, rs-VI), 218*(5), *221, 229*(III/IV, rs-VI), *231,* 241(II-VI), 242(2)(II-VI), 245*,

	246(4)(III/IV-VI), *252** (I, rs-IV/VI), *254,* 255*(I-IV/VI), *259**(2), 260a*, *264*(2), *265*,* 266(12), 268(V-VI), 270(2), 271, 272(4)(II-VI), body sherds of flagon, cooking pot, and storage jars, coarse pottery report 223-31, Figs 31-32, M1:C14-D1. Lyon ware and imitation Lyon ware, fine ware report, M1:D8
Gallo-Belgic wares	Stamp GB 57, Fig 35, M1:F3
Amphoras	Dressel 2/4, amphoras report 8, 35*; *Cam* 184, F67*; Haltern 70, 75*; Dressel 20, 85*(2), 86*-87, 91, 97(2), 99*; Beltrán I, 101*, 103-5*, 108*, 110-12*; *Cam* 189, 121; Dressel 28, F131*, F133*; Iberian amphora bung; Figs 54, 56-60, M3:A9-14
Mortaria	Mortaria report 1*, 9*, *c* AD 20-55; 89*, 95*, 97*, *c* AD 30/40-60; 110*, *c* AD 50-86; 117*, 128, pre-Flavian; Figs 49, 51-2, M2:F3-G5
Samian	Decorated samian report 24*, 55*, 83*, all *c* AD 50-65; 53*, *c* AD 55-70; 54*, *c* AD 45-60; Figs 42, 45-6, M2:B14, C6, 10. Plain samian, Tiberian/Claudian (1 vessel), Claudian (15 vessels), Claudian/Neronian (8 vessels), Neronian (8 vessels), *c* AD 50-65 (1 vessel), pre-Flavian (3 vessels). Samian stamp 22, Marsus, *c* AD 40-60, M2:D10-11, E3
Glass	Tubular rim fragment, glass report 38*; fragment of bowl, Isings form 12, 84*; beaker rim fragment, 87*; indented beaker fragment, Isings form 32, 88*; fragment of square bottle in natural green glass, 95; Figs 81-3, M3:F7-10
Coins	Belgic coin catalogue 15-18 (Cunobelin), M3:B3; coins of Mark Antony, Tiberius, and 3 Claudian copies, Roman coin catalogue 19-23, M3:B5
Other finds	Brooches, Camulodunum type III and Camulodunum type XII, brooch report 4* and 14*, Figs 73-4, M3:C4-5. 2 gold-plated rings*, copper alloy report 62, Pl 15, Fig 66, M3:B12. Fragments of domestic and military equipment, copper alloy report 62*-74*, Figs 66-7, M3:B12-13. Dice and dice shaker*, copper alloy report 67-8, Pl 16, Fig 68, M3:B12. Iron arrow head*, iron report 23. Iron latchlifter*, shears*, bucket handle*, iron report 24-6, Fig 79, M3:D9. Numerous iron fragments. Cameo, Pl 20 (p 136). Pellets of Egyptian blue and haematite, technological report, M3:E13, and glass report 100, M3:F11. Smithing slag, hearth lining and base, tuyère, fuel ash slag, technological report, M3:D11-12

Feature 331 burnt daub masking clay wall in hollow over earlier pit (Section 13, layers 1 and 2)

Coarse pottery forms	*Cam* 28(I-III/IV, rs-VI), *113*(4), *115/16*(2), 140*, 141(III/IV-VI), 203b(I, rs-VI), *210d, 222**, 218, *231,* 252, *254*(2) 266(2), 270, 272(2) (II-VI), lid, body sherds of storage jar, coarse pottery report 232-6, Fig 33, M1:D1-2
Gallo-Belgic wares	Pre/post-conquest, M2:B4
Samian	Plain samian, Neronian (2 vessels, 1 burnt), Claudian (2 vessels), M2:D10
Other finds	Copper alloy and iron fragments. Lamp fragment

Feature 320

Amphoras	Dressel 20, amphoras report 97, M3:A12
Mortaria	Mortaria report 49*, *c* AD 20-55, Fig 50, M2:F9
Samian	Decorated samian report 34*, *c* AD 45-60, Fig 44, M2:C3

Period VI: AD 61-*c* 65

Site iii

Feature 301

Coarse pottery forms	*Cam* 108(II-VI), *113, 115,* 266, 270a
Gallo-Belgic wares	Gallo-Belgic report 442*. Stamp GB 78, Figs 35, 40, M1:F8, 2:B4-5
Amphoras	Haltern 70, amphoras report 78*; Beltran I, 110*-11*; *Cam* 189, 126; Figs 57-8, M3:A12-13
Mortaria	Mortaria report 57*, *c* AD 20-55, Fig 50, M2:F10
Samian	Decorated samian report 86*, c AD 50-65, Fig 46, M2:C10. Plain samian, Claudian (1 vessel), Neronian (1 vessel), inkwell. Stamp 16, Crestio, *c* AD 45-65, M2:D11, E3

Feature 302

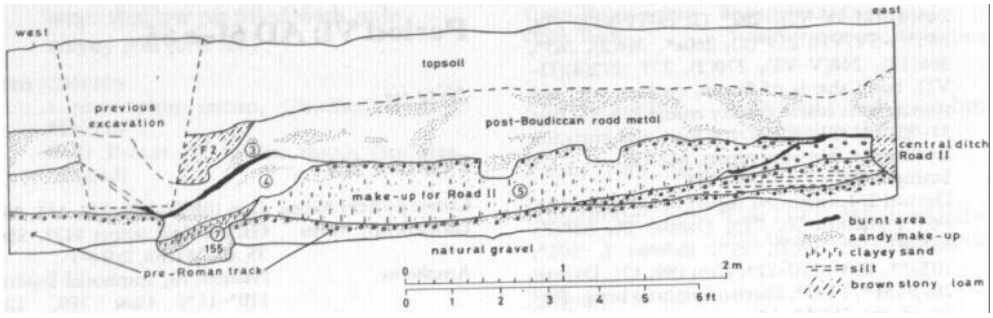
Coarse pottery forms	*Cam* 108(II-VI), *115,* 154(III-VI), 218, 242(II-VI), coarse pottery report 241, Fig 32, M1:D2
Amphoras	Dressel 20, amphoras report 98; Dressel 28, 133*; Beltrán I, 110*; Figs 59, 60, M3:A12-13
Mortaria	Mortaria report 77, AD 50-100, M2:F13
Samian	Decorated samian report 50*, *c* AD 50-65, Fig 44, M2:C5. Plain samian, ?pre-Claudian (1 vessel), Claudian (2 vessels), Claudian/ Neronian (1 vessel), Neronian or Flavian (1 vessel), M2:D11
Coins	1 Caligula and 1 Claudian copy, Roman coin catalogue 24-5, M3:B5
Other finds	Plate brooch*, brooch report 42, Fig 76, M3:C9. Small fragments of copper alloy. Piece of blue frit, technological report, M3:F11

Feature 311

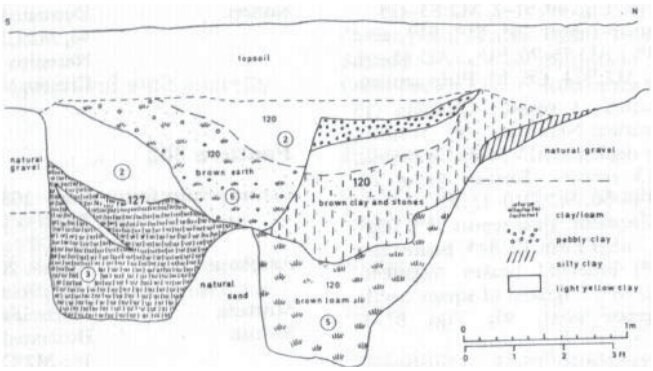
Coarse pottery forms	*Cam* 140, 242(II-VI), 266, 272(II-VI), coarse pottery report 242, Fig 32, M1:D3
Amphoras	Haltern 70, amphoras report 78*, Fig 57, M3:A12

Feature 319

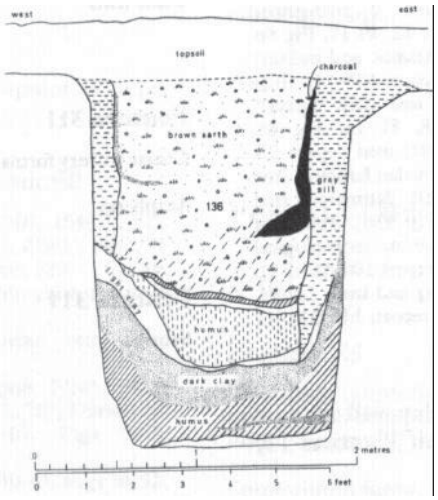
Samian	1 piece plain samian, Claudian, M2:D11



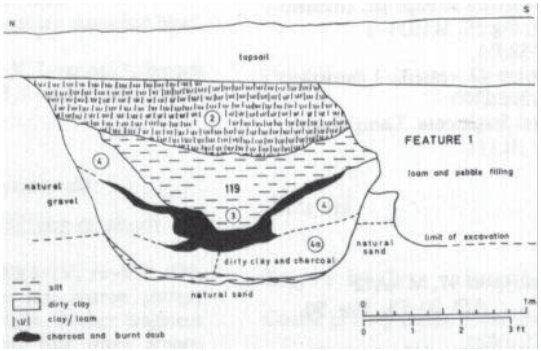
Section 1 Road on site i (Figs 4 and 6)



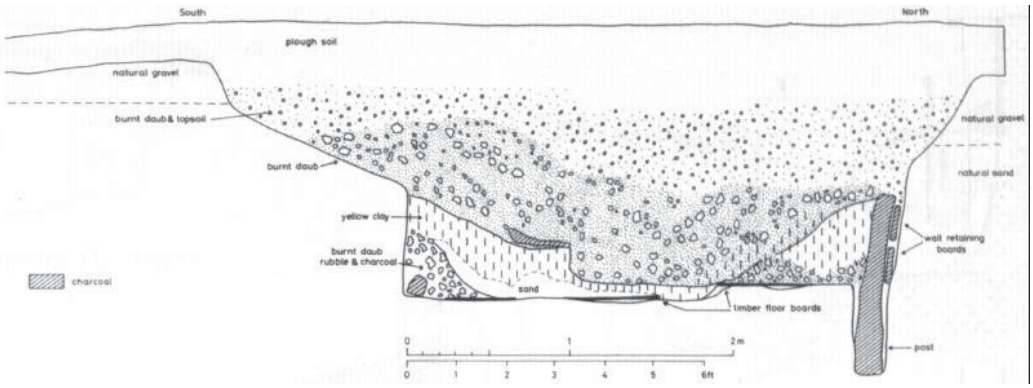
Section 2 Feature 120 5, period III; features 120 and 127, period IV (Figs 4 and 6)



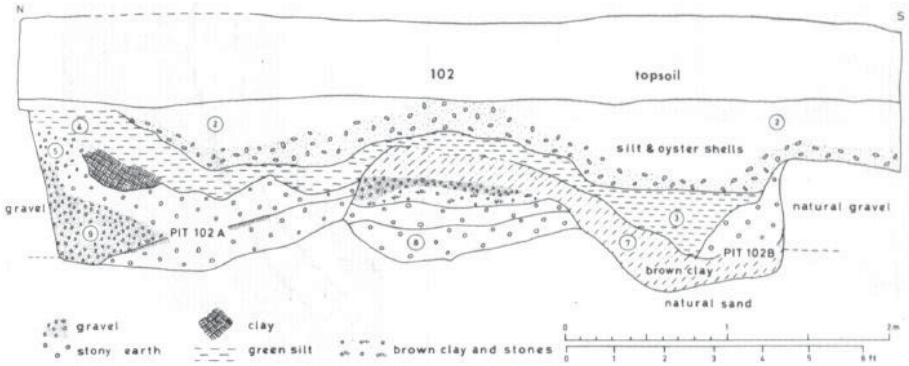
Section 3 Feature 136 (Fig 6)



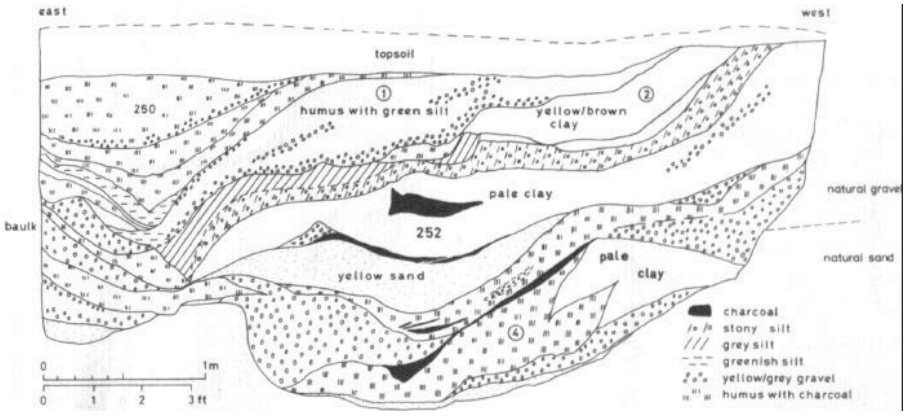
Section 4 Feature 119 (Fig 6)



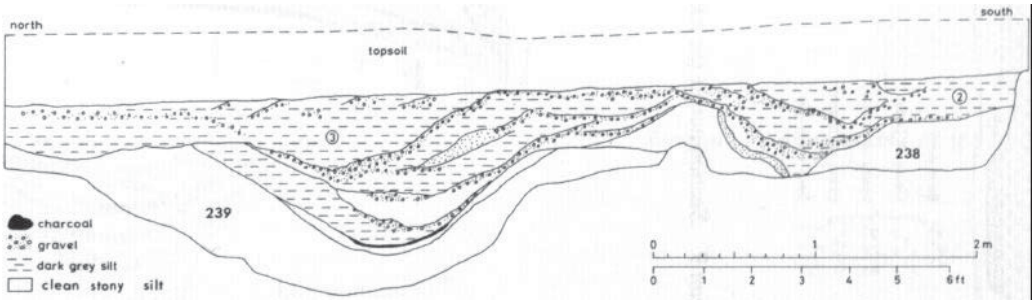
Section 5 Timber cellar, north-south section (Fig 7)



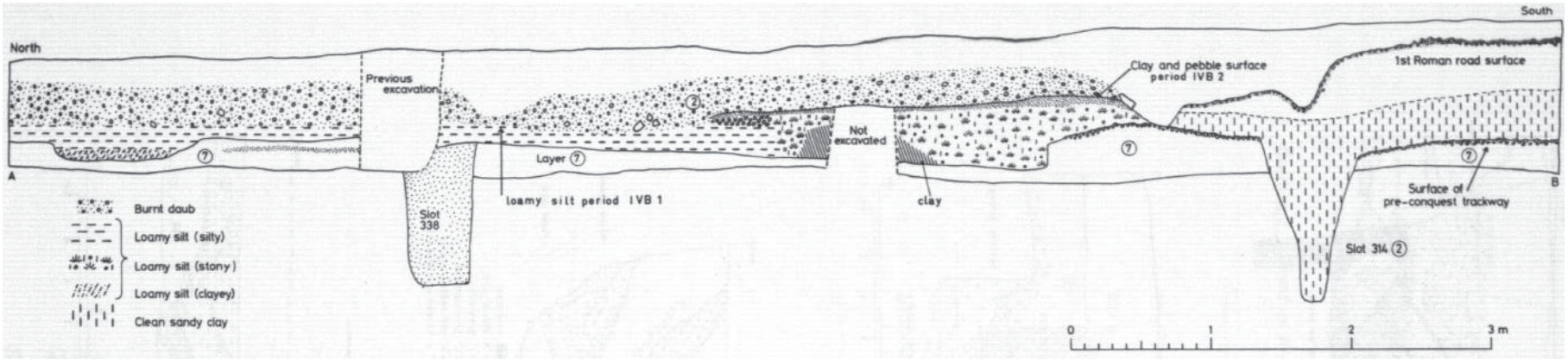
Section 6 Feature 102 (Fig 6)



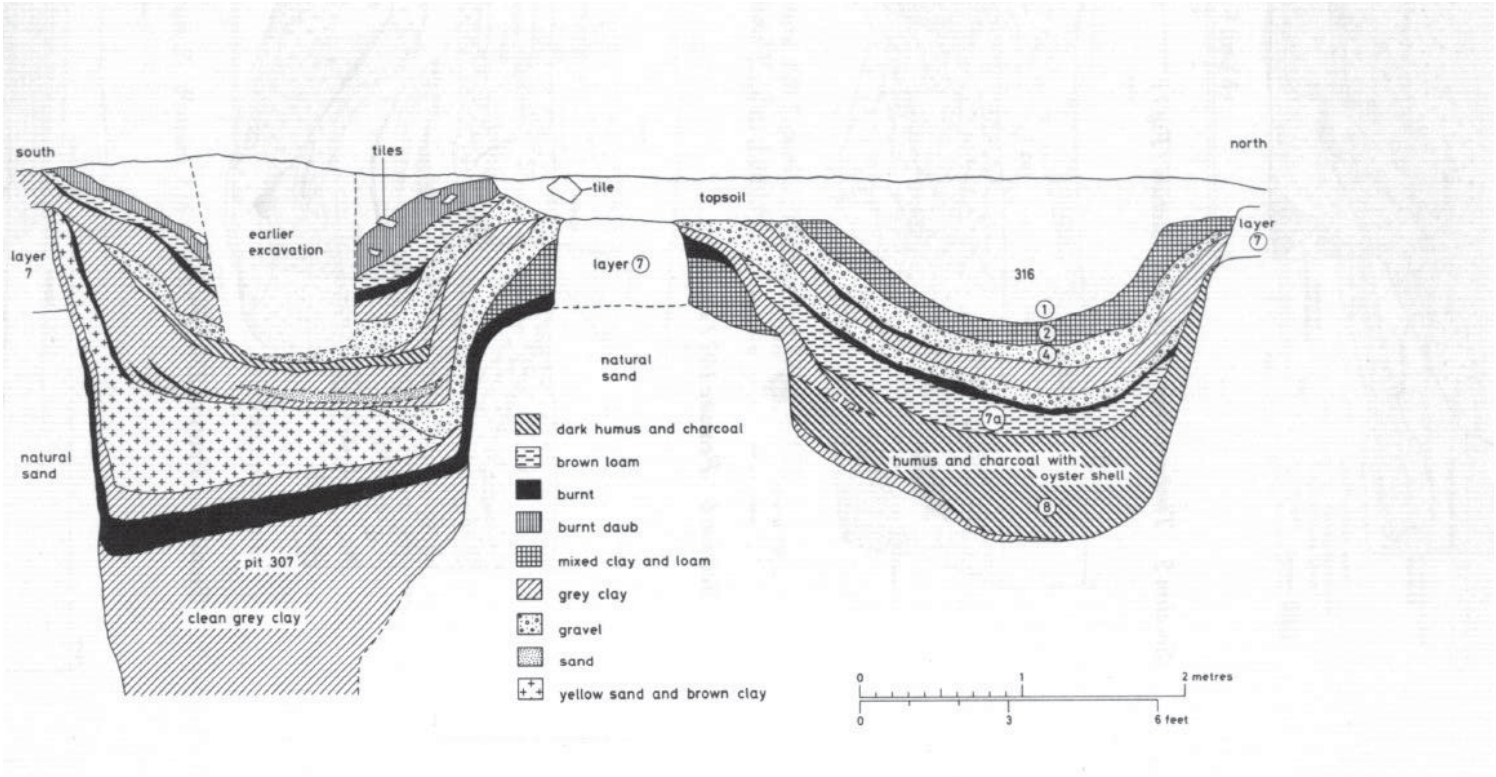
Section 7 Feature 252 (Fig 9)



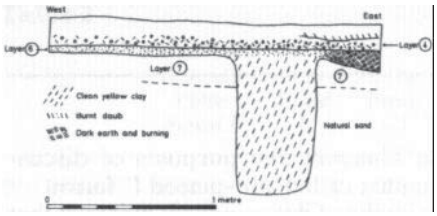
Section 8 Feature 238-9 (Fig 9)



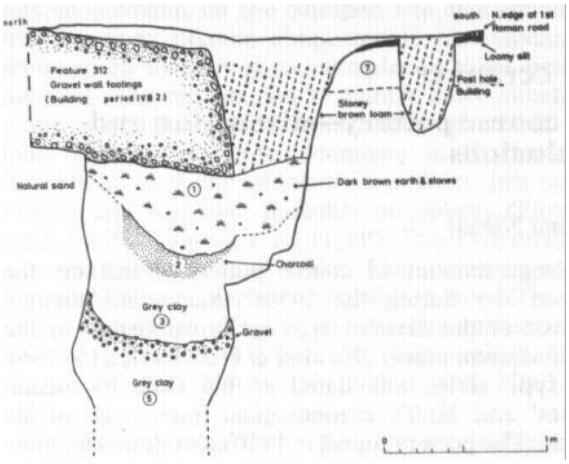
Section 9 Section across the east end of site iii (Figs 10 and 11)



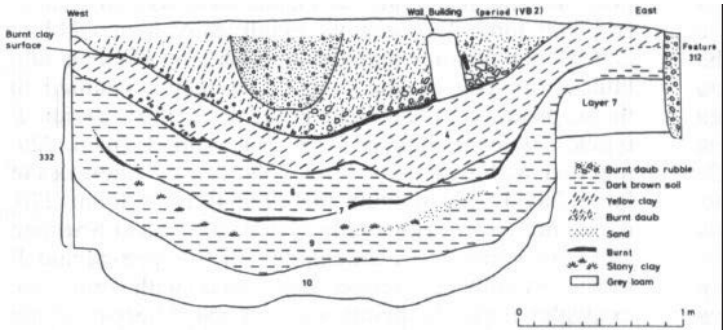
Section 10 Feature 307 and feature 316 (Fig 10)



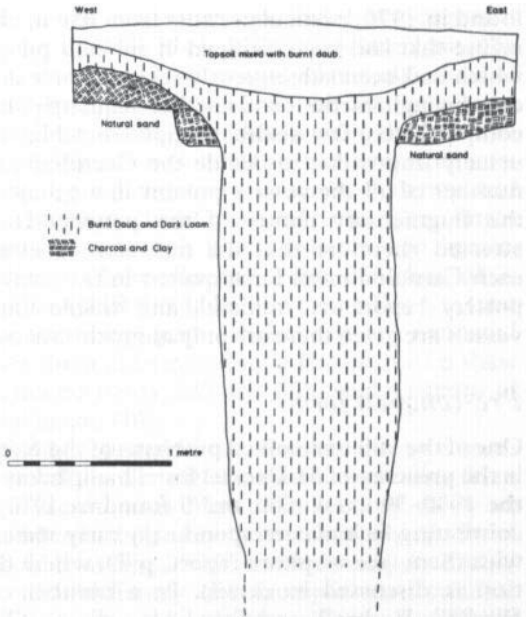
Section 11 Feature 342 (Fig 10)



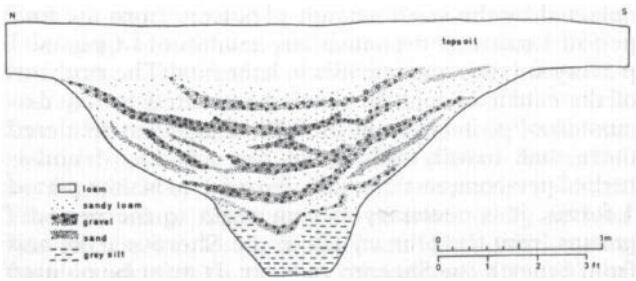
Section 12 Feature 336 (Fig 10)



Section 13 Feature 332 and the east wall of building B (Fig 11)



Section 14 Feature 341 (Fig 11)



Section 15 Section across the east-west ditch on site v (Fig 12)

The finds

The ceramics

The coarse pottery discussion and conclusions

Rosalind Niblett

The large amount of coarse pottery found on the Sheepen site during the 1930s excavations formed the basis of the detailed type series published in the Camulodunum report (Hawkes & Hull 1947, 215-586). This type series was dated at the time to within Hawkes and Hull s chronological framework of six periods. The pottery found in 1970 came from the same area and fell within the same narrow chronological limits *(c* AD 5-65) with the exception that only a few Period I deposits were found. It was consequently considered financially unjustifiable to do more than list the Camulodunum types found in each deposit in 1970 (see feature catalogue, pp 28-43) and to publish more fully only groups of particular interest, such as the Period I groups and the closely stratified sequences on site iii. In addition, the small number of unusual pieces found have been published, together with five pit groups as a sample of the whole (features 102, 119, 127, 153, and 601). See coarse pottery report, M1:B7-8, and Figs 22-32, pp 61-71. Figs 33-4 (other ceramic finds see M1:D9-12) are on pp 72-3.

It is important to remember that much of the pottery found in 1970, particularly that from site ii, came from refuse that had been dumped in rubbish pits, many of which had been subsequently recut or were themselves cut through earlier features. Consequently there were comparatively few sealed groups. In addition, it was usually impossible to decide the Camulodunum form number of all the vessels present in a group owing to the fragmentary nature of the pottery. It must be stressed therefore that the numbers of examples of each Camulodunum form quoted in the catalogue and pottery report are minimal, and where numbers of vessels are given these are only approximations.

Pre-conquest forms

One of the still unresolved problems of the Sheepen site is the presence of 51 Dressel form 1 amphoras (46 from the 1930-39 excavation and 5 found in 1970) and the continuing lack of correspondingly early material to go with them (see amphora report, p 99, where this question is discussed in detail). In a number of papers Birchall, Rodwell, and Stead have discussed types of coarse pottery, examples of which have been found at Camulodunum, which they suggest may date from the 1st century BC (Birchall 1965; Stead 1976; Rodwell 1976; see also Hawkes 1980, 57). The types concerned are *Cam* forms 201-4 (Fig 29.185), 211 (Fig 22.18), 229a (Fig 24.51), 263/4 (Fig 22.12), and 270 (Fig 25.70). If they are indeed as early as the 1st century BC they would provide a background for the Dressel 1 amphoras found at Sheepen. For purposes of discussion here these forms are called pre-period I forms.

Some of the best stratified pre-conquest material that has been found at Sheepen comes from five groups found in the 1930s excavations, notes on which are preserved in the Colchester and Essex Museum. One of these groups came from a small area sealed beneath the Sheepen rampart (Hawkes & Hull 1947, 60-2, fig 5, in region 1, area F, section 3); the remaining four groups came from the primary silt in the Sheepen Dyke (Hawkes & Hull 1947, 60-2, fig 5, site F14: region 1, area F, section 2-6, region 2, section 22, and region 3, sections 28-3 1).

Assuming that the primary silt in the Sheepen dyke accumulated within a few years of its being dug, and that this took place in period I, the pottery in the primary silt must be material that was lying about at the time. Among this pottery, however, was only one pedestal base *(Cam* form 204), one jar *(Cam* form 264), and four form 270, with no examples of forms 211 or 229. Other features dated to period I by Hawkes and Hull, primarily on the basis of pottery contained in them, produced a few more examples of pre-period I types: 10 form 204, 3 form 211, and 4 form 229, together with numerous form 270s, but no examples of form 264/3. Thus, with the exception of form 270, which occurs in large numbers at all periods at Sheepen and even turns up in the colonia, all the pre-period I forms are rare in period I contexts with only two examples from the primary silt of the Sheepen dyke, and 17 from less well-stratified period I deposits. All the pre-period I forms survived in use well into the 1st century AD, so it cannot be argued that their scarcity is due to the fact that they rightfully belong to the 1st century BC and so were old types simply surviving as rubbish. Thus, although some pre-period I forms were on the site when the Sheepen dyke was dug, they did not occur in numbers sufficient to suggest a very dense occupation. There is still nothing in the coarse pottery from the site that necessarily dates from as early as the second half of the 1st century BC, and so there is still no satisfactory explanation that can be offered for the presence of the large numbers of Dressel 1 amphoras.

Whatever may have been the situation on the site in the 1st century BC, there was certainly some occupation on region 4 of Sheepen (the area excavated in 1970), at any rate in the later part of period I. This is reflected by the small amount of pottery from the four period I pits and the much larger amount of period I pottery surviving as rubbish in later pits. The problem of the extent of rubbish survival is central to any discussion of pottery found in 1970, a problem rendered more than usually difficult by the scarcity of undisturbed pre-conquest deposits. In order to isolate period I forms, it is necessary to turn again to the period I groups from the primary silt in the Sheepen dyke and from beneath the Sheepen rampart. It must be pointed out that the notes in the Colchester Museum in which

Table 2

	Dyke silt 1930s Period I	1970 Period I	1970 Period III	1970 Period IVb	1970 Period V
Butt beakers	180	8	26	37	5
	56.9%	32.5%	21.6%	9.5%	7.3%
218	51		13	36	5
	16.1%		10.8%	9.2%	7.3%
254	4	2	1		2
	1.2%	8%	0.8%		3%
256	22	2	2	3	
	6.9%	8%	1.6%	0.7%	
259	8	1	4	8	2
	2.5%	4%	3.3%	2.1%	3%
258	2	1	1	1	
	0.6%	4%	0.8%	0.2%	
211-17		2	6	9	1
		8%	5%	2.3%	1.4%
219			1	3	
			0.8%	0.7%	
204	1		2	3	1
	0.3%		1.6%	0.7%	1.4%
221	3	1	3		1
	0.9%	4%	2.5%		1.4%
229		1	1	1	1
		4%	0.8%	1.8%	1.4%
231	2			1	1
	0.6%			0.2%	1.4%
232	1		1	5	
	0.3%		0.8%	1.3%	
233	4		1		
	1.2%		0.8%		
234		2	1		
		8%	0.8%		
260b	4		1	1	
	1.2%		0.8%	0.2%	
264	1	1		2	1
	1.2%	4%		0.5%	1.4%
266	9		19	70	14
	2.8%		15.8%	17.9%	20.5%
flagons	17		3	58	7*
	5.3%		2.6%	14.9%	10.3%
270/1	4	2	8	31	4
	1.2%	8%	6.1%	8%	5.9%
250	1			2	
253		2		3	
101	1				
Total vessels	315	25	120	390	68

*flagons from feature 146 omitted

these groups were recorded have been used to provide a different breakdown of the material to that presented in the Camulodunum report, which consequently cannot be directly compared with the figures discussed here.

The commonest forms of pottery contained in these groups are listed in Table 2, where it can be seen that butt beakers formed by far the most popular class, making up 57% of the total pottery assemblage. Of the butt beakers, the fine, white/biscuit-coloured *Cam* 113 (as Fig 29.180) made up nearly 50%, while Hull s early form 118 (as Fig 25.74) was represented by only one example, and the rusticated, mica-dusted form 114 (as Fig 26.106) by only fourteen examples (4.4%). The remaining 36% was more or less equally divided between the fine, Gallo-Belgic form 112 and the coarser local forms 115/16 (as Fig 22.10) and 119. Of the remaining pottery the commonest form was the carinated bowl, 218 (as Fig 26.82), and the simple cooking pots, 256 (as Fig 22.15) and 259 (as Fig 27.113). The necked cooking pot, form 266 (as Fig 24.42), which was so common on the Sheepen site as a whole and which was to become ubiquitous in the *colonia,* was represented by only nine examples in these period I deposits. Flagons formed a slightly more substantial group with seventeen vessels, four of which were form 161 (as Fig 26.91), common in Gaul and the Rhineland, and one of which was form 165 (as Fig 25.67), and was also probably an import (Partridge 1981, fig 28,2; fig 40, 1; fig 47, 60). These six categories of pottery (butt beakers, bowls 218, cooking pots 256, 259, and 266, and flagons) formed just over 90% of the coarse wares from the primary silt. The remainder was made up of forms 101, 204, 221 (3 examples), 231(2), 232, 233(4), 250, 254(4), 258, 260b(4), 265, 270(3), and 271.

Table 2, column 2 shows the pottery found in period I deposits in 1970, but this is only shown for general interest; the number of vessels involved is so small (only 25 in all) that they are of no use statistically (see M1:B4-6 and Fig 22 for the 1970 period I pottery).

It is clear that butt beakers, forms 218, 256 and (to a lesser extent) 233 (as Fig 23.24), 254 (as Fig 22.6), 259, 260b (as Fig 32.228), and 266, together with some imported flagons, were well established at Sheepen while the primary silt was accumulating in the Sheepen dyke. There were doubtless other forms, however, which were current on the site, but which nevertheless did not find their way into the primary silt or occurred there only rarely. In the 1930s' excavations forms 201-4, 209-17, 219, 220-3, 225, 229-33, 250, 252-3 and 263-5 occurred sporadically in contexts which suggested to the excavators an initial pre-conquest date (Hawkes & Hull 1947, 277-81). A late Iron Age cemetery is known to have existed 1 km south-west of the Sheepen site at Lexden, where pre-conquest grave groups have been found periodically since the last century when a Victorian suburb spread over the area. The pottery from Lexden is essentially funerary and consists predominantly of pedestal urns *Cam* forms 201-3, that is urns with a dice-shaped or quoit-shaped pedestal base (Birchall 1965, 253, figs 20-2, 25-6; see also CMR 1913; 1937, 114, pl IV, V). Less frequently occurring forms at Lexden are carinated bowls, *Cam* form 211 (including a fragment of a shale example), lidded bowls (252 and 253), and a variant of the pedestal tazza (210).

The published pottery from Lexden does not compare particularly well with the period I pottery from Sheepen. Pedestal urns form 201-3 occur rarely at Sheepen, where their place is taken by pedestal urns form 204 (as Fig 29.185) with trumpet-shaped pedestals, of which only one example was found at Lexden. The carinated bowls form 211 (as Fig 22.19) from Lexden have small omphalos bases (Birchall 1965, 175, 177, fig 20), a feature that is not found at Sheepen. The fact that the Lexden site was a cemetery and Sheepen an industrial, trading, or occupation site could account for differences in the pottery assemblages, but it may well be that there was also a chronological difference and that the Lexden pottery is slightly earlier in date.

Changes after AD 43

Table 2, column 3 shows pottery from Period III deposits excavated in 1970. These deposits were dated by stratigraphy and associated Gallo-Belgic ware, samian, coins, and military equipment. Column 3 shows a marked decrease in the three most popular groups of pottery found in the primary silt of the dyke, that is in butt beakers and forms 218 and 256, while a small decline is also evident among the flagons. *Cam* form 266 (cooking pots) on the other hand shows a marked increase from 3% in the primary silt to over 15%, while new forms, the stab-decorated beaker (form 108 (as Fig 23.39-41)), the carinated bowls (forms 241-2 (as Fig 23.29-31) and 246 (as Fig 27.138)), and the notched-shoulder storage jars (272 (as Fig 28.158)) all occur for the first time.

The trends apparent in column 3 continue in later contexts. Column 4 lists forms found in deposits with Neronian samian and Gallo-Belgic ware, and column 5 those found with deposits associated with the Boudiccan destruction. Butt beakers and forms 233, 254, 256, and 218 all become rarer, while the newly introduced forms 108, 241-2, 246, and 272 all show an increase, together with form 266 and flagons generally.

It would be wrong, however, to dismiss all the forms whose numbers decrease after period I simply in terms of rubbish survivals. Although forming a smaller proportion of the total pottery assemblage, butt beakers continue to occur in sufficient numbers in Periods II I, IVb, and V to suggest their continued use. Bowls form 218 also continued to be made after the conquest, as is demonstrated by their appearance in a purely Roman fabric, both at Sheepen and in the *colonia,* where they last into Flavian and Trajanic times. It is worth bearing in mind at this point that a change in the use of the Sheepen site after the conquest could have resulted in changes in the pottery assemblage. The very large proportion of butt beakers in period I, for instance, must raise the question whether they were manufactured and perhaps stockpiled at Sheepen before the conquest, for use elsewhere in the *oppidum* and surrounding area. A similar argument could be applied to flagons and amphoras in period I. These could have been imported from the continent and shipped direct to Sheepen up the Colne (p 23).

While it is clear that some forms butt beakers and 218s continued in use after the conquest, the dwindling proportions in the pottery assemblage of other forms found in the primary silt suggest that they gradually went out of use, and that by period IVb many of the early forms survived only as rubbish (Table 2, cols 3-5). The figure of 12.5% (Table 2, col 5) for pre-conquest forms appearing in Neronian assemblages can be compared with the proportion of pre-conquest material among other types of pottery from the site in period IV: amphoras, Gallo-Belgic ware, and samian. Fine table ware and amphoras doubtless survived longer than coarse wares, but the coarse wares may have occurred in greater quantities in the first place, so that after this relatively short period of time the proportions of rubbish survival among them might well be similar to that among the longer lasting wares. It must be emphasized, however, that the early forms only occurred in relatively small numbers in any period, even in period I, owing presumably to the sparse nature of the pre-Roman occupation here.

Post-conquest forms

Of the new forms of pottery that appeared on the site at the time of the conquest the most noticeable are the mortaria and flagons which became common in period IV and showed clear links with the Rhineland. A variety of forms of flagon has been found at Sheepen in periods III-IV, many of them occurring very rarely but some of them found in the *colonia* as well *(Cam* forms 136, 139, 141, 143, 146, 148-9, 168, and 155). The most popular flagon forms at Sheepen in periods II-IV, however, were *Cam* form 140 (as Fig 30.195) (Hofheim 50), *Cam* forms 161 (as Fig 26.91), 163 (as Fig 28.153), and 165 (as Fig 25.67), all of which were present on the site in period I, and *Cam* form 154 (as Fig 30.192). By period IV both forms 140 and 154 were being manufactured on the site in kilns 23, 26, 34, and 35 (for kiln 23, Hawkes & Hull 1947, 28 1-4; for kiln 26, Hull 1963, 157-61; for kilns 33 and 34, J *Roman Stud,* **50,** 184-5, fig 30; see also Archaeol J, **131,** 144 for continental potters working under military supervision). All four kilns are thought to have been destroyed in the Boudiccan revolt. The situation is paralleled by the imported Lyon ware which occurs on the site from period II-V, alongside locally made copies from period III (see M1:D4). New forms of coarse pottery, the bowls *(Cam* 241-2), the stab-marked beakers (108), and storage jars (272) were also made on the site. They are found initially in period III contexts, made in local fabric. Other, rarer innovations such as the cooking pot forms *Cam* 267 and 268 were also made in local fabric. Both forms occur very rarely at Sheepen, but form 268 particularly, with its distinctive grey gritty fabric, undercut rim, and grooved shoulder, became very popular in the *colonia* by the end of the 1st century. Form 268 was seldom found in the Boudiccan destruction layer in the *colonia* and it is clear that it was only just beginning to be made in 61, hence its rarity at Sheepen. Carinated bowls, Cam form 246, are also found on the site from period III onward, but a distinction must be made between this post-conquest *Cam* form 246 which is normally, although not invariably, made in coarse gritty grey ware, and the much finer and smaller form 245 (Fig 24.55) which is also a carinated bowl with everted rim, but is often in a mica gilt fabric and which occurred in period I contexts, probably initially imported from the continent. It was extensively copied in pre-Roman times on the site but never became as common as form 246 did after the conquest (Thompson 1982,482).

General comments

Not the least important result of the 1970 excavations has been the confirmation, by and large, of Hull s dating of the coarse pottery and it is a tribute to his work that after 40 years his Camulodunum type series is still relevant. Minor adjustments to his dating of individual types of coarse pottery have to be made: no evidence has been found to date the stab-marked beaker, 108, to the

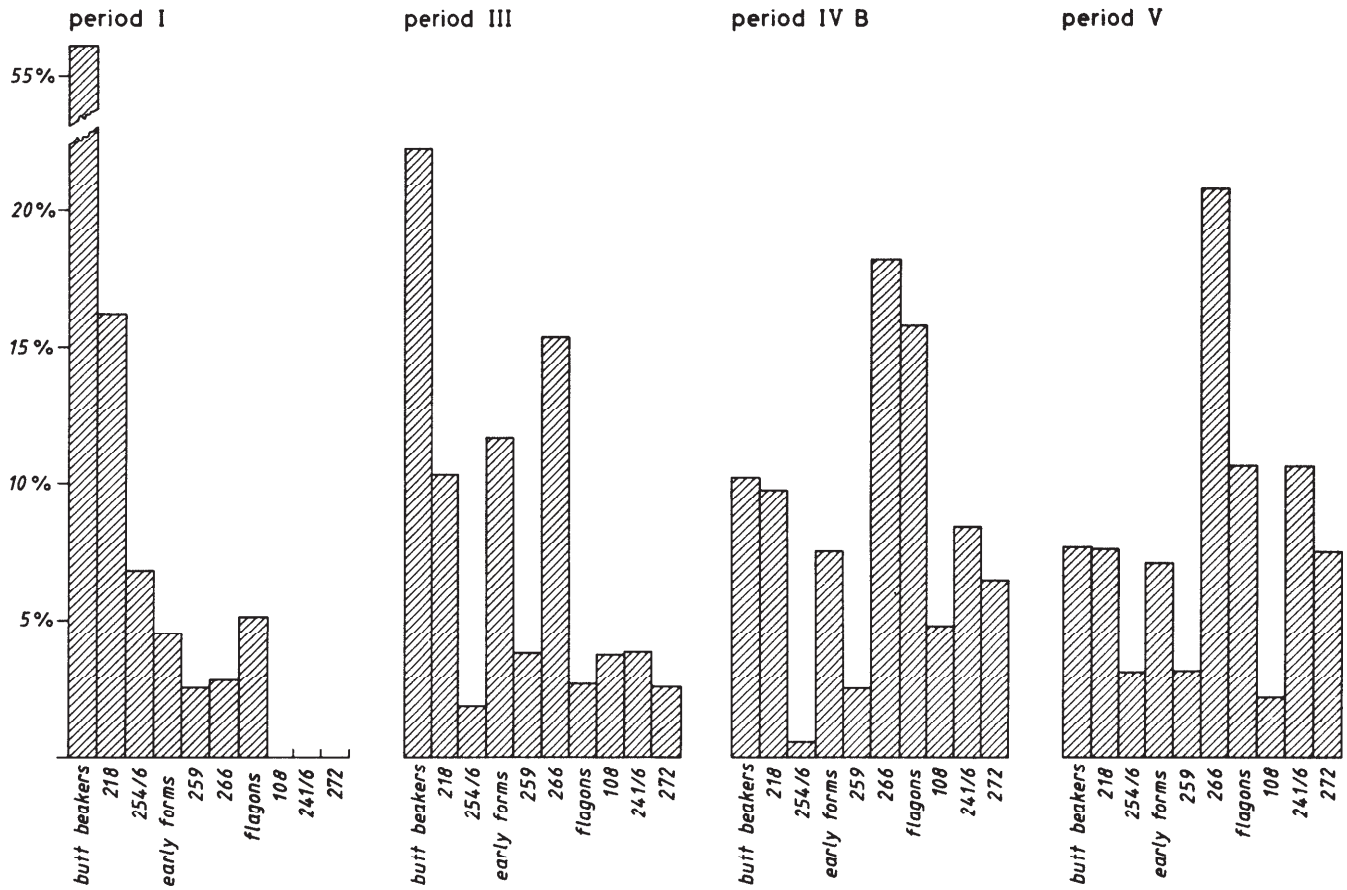


Fig 13 Histogram showing relative frequency of different pottery forms at Sheepen: periods I-V

pre-conquest period, and it has been classed in this report as a post-conquest innovation; the fine black beakers 104 which Hull dated to the Neronian period have since been found in Claudian contexts (features 146, 140, 245, 246, 263, 272) and, although scarce, are not so rare as he thought; and his flagon form 165 and mica-dusted bowl form 262 are now known to be continental imports starting before the conquest (see M1:B12 and M1:D9). These, however, are only minor alterations to Hull s type series and in no way detract from its continued importance. In the coarse pottery report (M1:B4-D3) Hull s dating for each pottery type is added in the form of his period numbers I-VI. This has been included for comparative purposes only, and not as a means of dating the 1970 deposits.

The innovations in the pottery at Sheepen certainly suggest the presence on the site of immigrant potters, as do the new forms of kilns and the generally higher standard of firing of much of the pottery, but the number of new potters need not have been very great. The standard of native potting was already high, and local potters could quickly have assimilated the new styles and techniques needed to meet the new market provided by the legionary fortress and subsequent *colonia.* Continental potters may have arrived in small numbers at the time of the conquest to produce the mortaria, flagons, and cooking pots that Roman eating habits demanded, but native potters doubtless quickly copied and rivalled them. Perhaps this fusion is best exemplified by kilns 34 and 35, where flagons (forms 140 and 154) were manufactured alongside imitation Gallo-Belgic platters of a type popular on the site in period I.

Since the main period of occupation on the part of the Sheepen site which was excavated in 1970 lasted less than twenty years, all that can be discerned are trends and fashions in pottery used, and an attempt has been made to summarize these in the form of histograms (Fig. 13). It is only by studying more sizeable groups, or the pottery from particular periods in *toto,* that these trends emerge. Particular fabrics, individual vessels, and even small groups could often be equally at home at any time during the occupation of this part of Sheepen. Perhaps the most striking result is the differing proportions of rubbish survival that may be encountered in different parts of Sheepen. It is noticeable, for instance, that the pottery from site ii contained more early forms than the pottery from the other sites excavated in 1970, and it is likely that the very numerous and repeatedly recut pits on this site had totally obliterated the period I deposits which no doubt once existed here.

The fabric

Changes in fabric must have been at least as significant as those in forms and in the popularity of individual types. In 1947 Hull distinguished three main categories of pottery fabric: native , Romanizing , and Roman

(Hawkes & Hull 1947, 206-7). In the present pottery report these categories have been expanded into eight, and it is interesting to note that in periods I-I II fabric A (native) and fabric B 1-5 (Romanizing) account for almost all the pottery. The Roman fabric C becomes increasingly common in later contexts.

Fabric A

Native. This was a very granular fabric, sparsely grog-tempered, and with numerous other inclusions ranging in size from small sand grains on the finer vessels to medium-sized grits on the coarser cooking pots and storage jars. The fabric was relatively soft and thick, with a tendency to laminate so that the original surface had sometimes flaked completely away. The colour varied considerably; although usually red/brown near the surfaces, the core was frequently grey, while the surfaces themselves were generally dark and in the case of the fine wares often carefully smoothed or even burnished. A soapy texture to the vessel was not uncommon.

Fabric B

Romanizing. This was split into five sub-groups.

B1 Pale s&d fabric. This was one of the two commonest fabrics found in 1970. It was used for both coarse wares and finer vessels and was often rather soft, with a marked tendency to laminate. It was usually oxidized, although frequently grey at core. The surfaces themselves were often darkened and carefully smoothed or burnished. At fracture the fabric was close-textured but granular, with sparse to moderate grog temper and a distinctive pale-coloured sand temper. Frequently there were also sparse, medium-sized, rounded white and buff grit inclusions and, more rarely, black organic temper. The fabric was fairly micaceous.

B2 Blue/grey fabric. This was a uniformly deep blue/grey ware, very dense and close-textured at fracture, but with sparse white or black sand temper, scarcely visible to the naked eye. There were also occasional large white, grey, or black inclusions, and the ware was relatively micaceous.

B3 Black sandy fabric. This fabric was distinguished by its very dark grey to black colour, and by its high level of sand temper. The sand grains were minute and evenly matched. Other inclusions were very rare and consisted of occasional small pink or yellow grit. Fabric B3 was relatively soft and micaceous. The fabric was normally used for thick walled vessels, although there were exceptions.

B4 Grog-tempered fabric. This was the second of the two most commonly occurring fabrics on the site. It was a relatively hard, micaceous, grog-tempered ware, usually grey but often with blotchy red/grey surfaces. In addition to the liberal grog temper, there was normally also black and white sand and white grit temper and, more rarely, black organic inclusions as well.

B5 Gritty grey fabric. This was not a common fabric in 1970. It was pale grey, sometimes almost buff in colour, and was granular at fracture with sparse grit and grey sand temper. It was less sandy than fabric B1, B3, and B4.

Fabric C

Roman grey ware. This was a hard, well-made, grey ware, invariably wheel thrown. At fracture it was dense with a rather sandy texture, but there were no visible inclusions. It was uniformly grey in colour, although the exterior of the vessel was sometimes fumed. It was not common on the site, except on site v.

Fabric D

Brick red sandy fabric. This relatively uncommon fabric was distinguished by its bright red/orange colour and by its very gritty texture. It was close-textured, sandy, and micaceous, but had no other visible inclusions.

Fabric E

This fabric was confined to butt beakers, *Cam* form 113, which occurred extremely commonly on the site. The fabric was distinctive and remarkably homogeneous. It was well made, hard, and dense, with no visible inclusions and uniformly pale biscuit in colour. At fracture it was dense and smooth to the touch. The interior was smoothed, and the rim and exterior burnished and decorated, with a distinctive leathery texture.

The fabric categories just described are based on visual examination with a hand lens and clearly not all the vessels in the pottery report fall into a particular category. Where this is the case the fabric has been described separately in the report. In all other cases, however, the fabric is simply referred to by category.

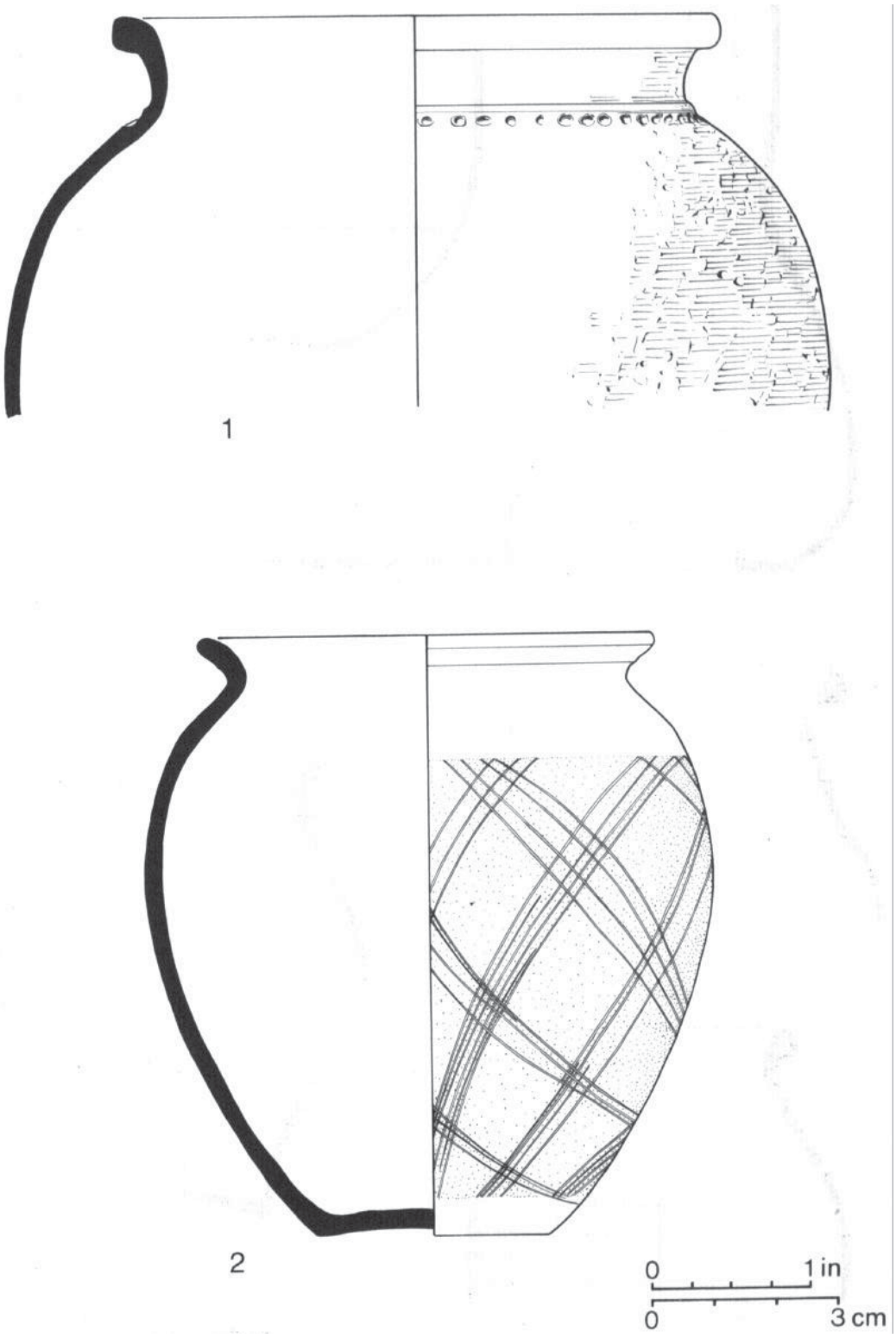


Fig 14 Cremation group 1, no 1, and cremation group 2, no 2 (see pp 22, 256)

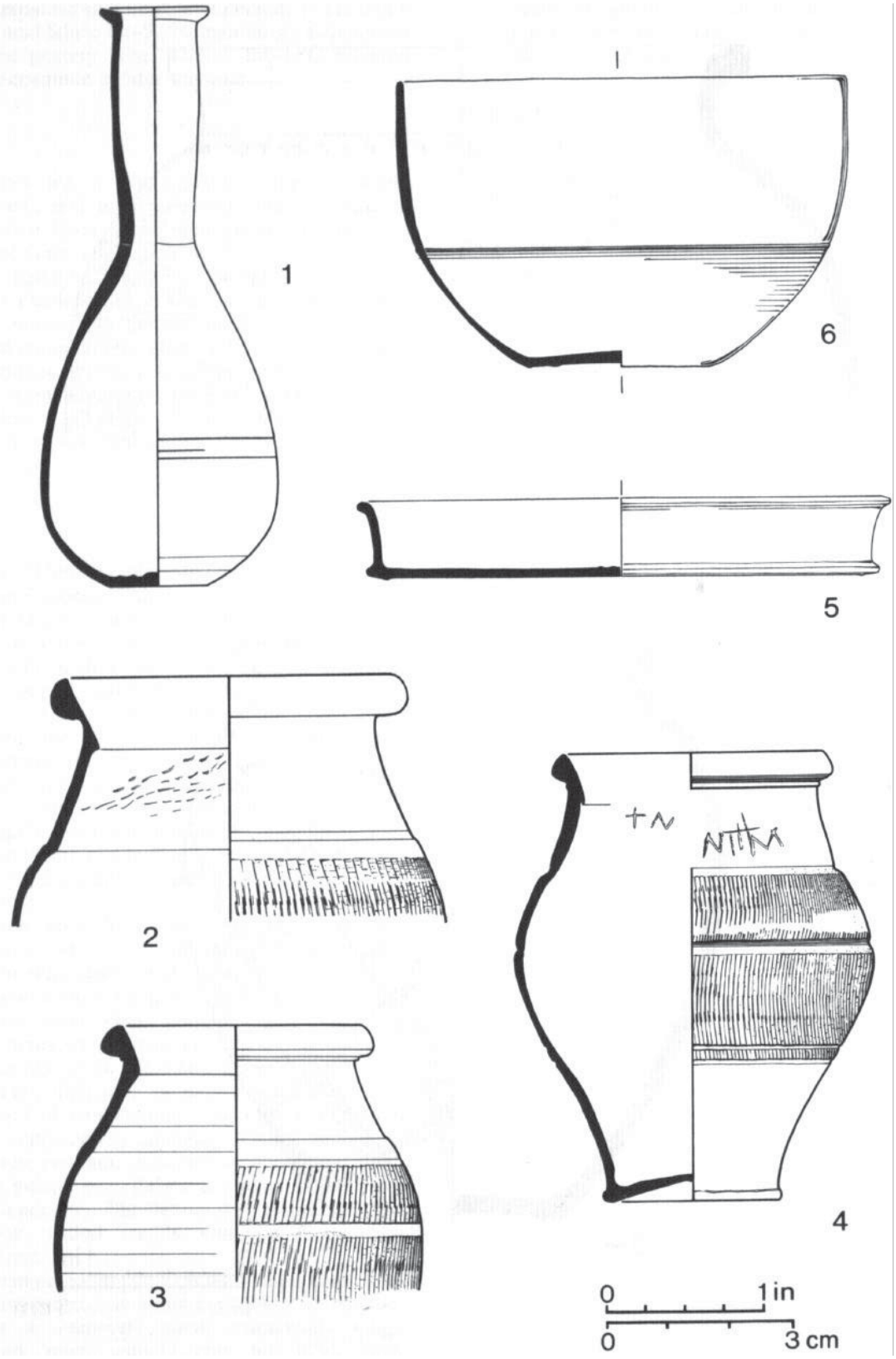


Fig 15 Cremation group 3: nos 1-4 pottery vessels; nos 5-6 glass (see pp 22, 256)

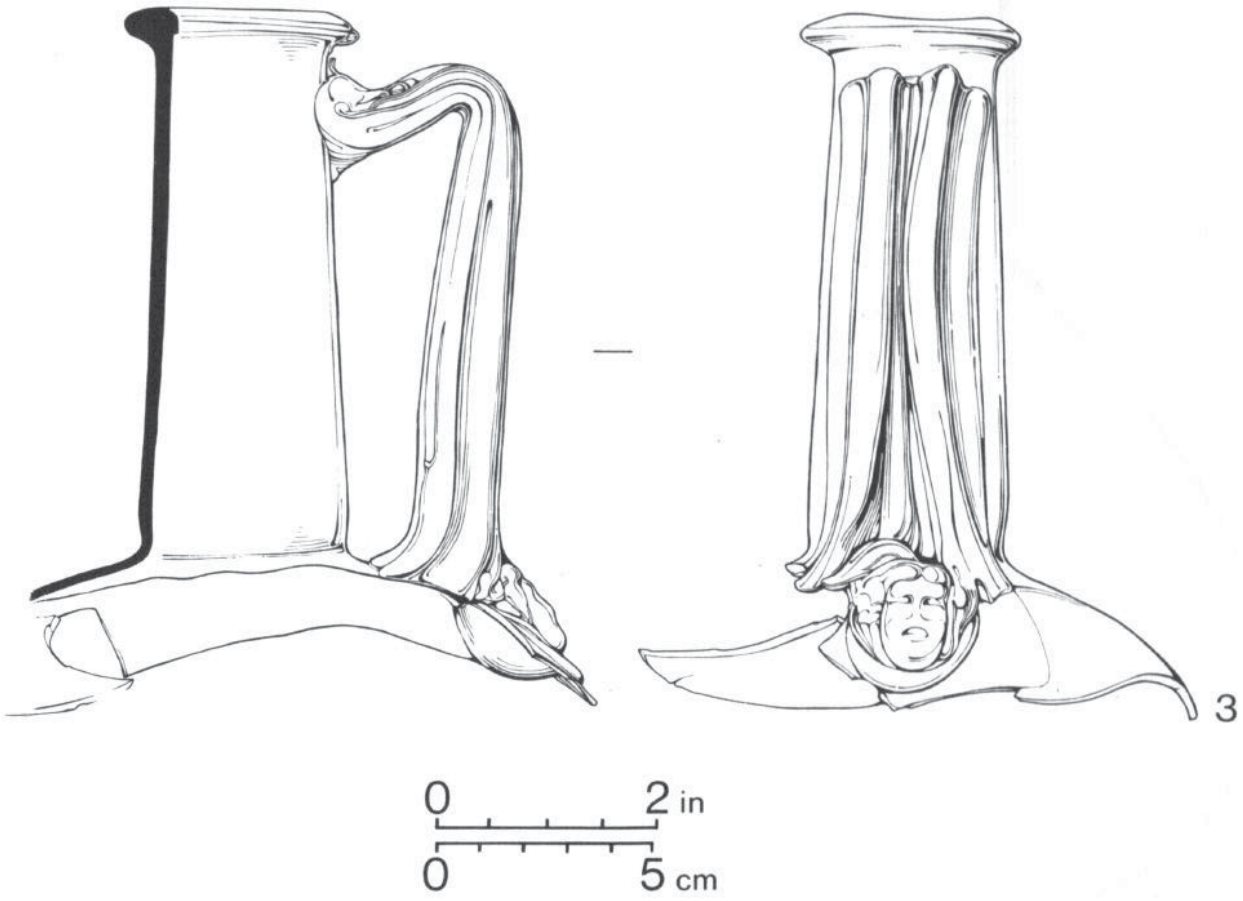


Fig 16 Glass flagon neck from cremation group 4 (see pp 22, 256)

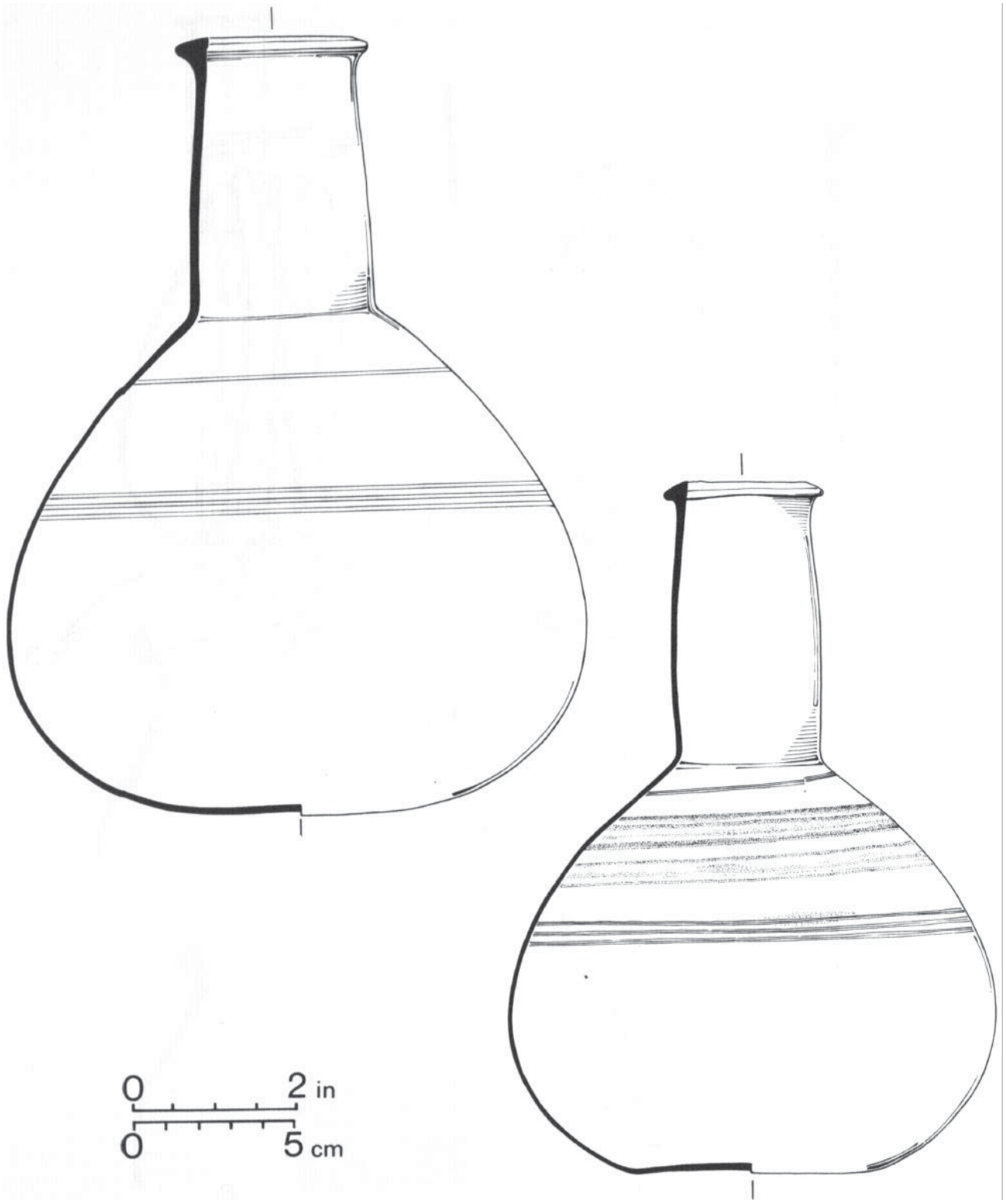


Fig 17 Glass flasks from cremation group 4 (see pp 22, 256)

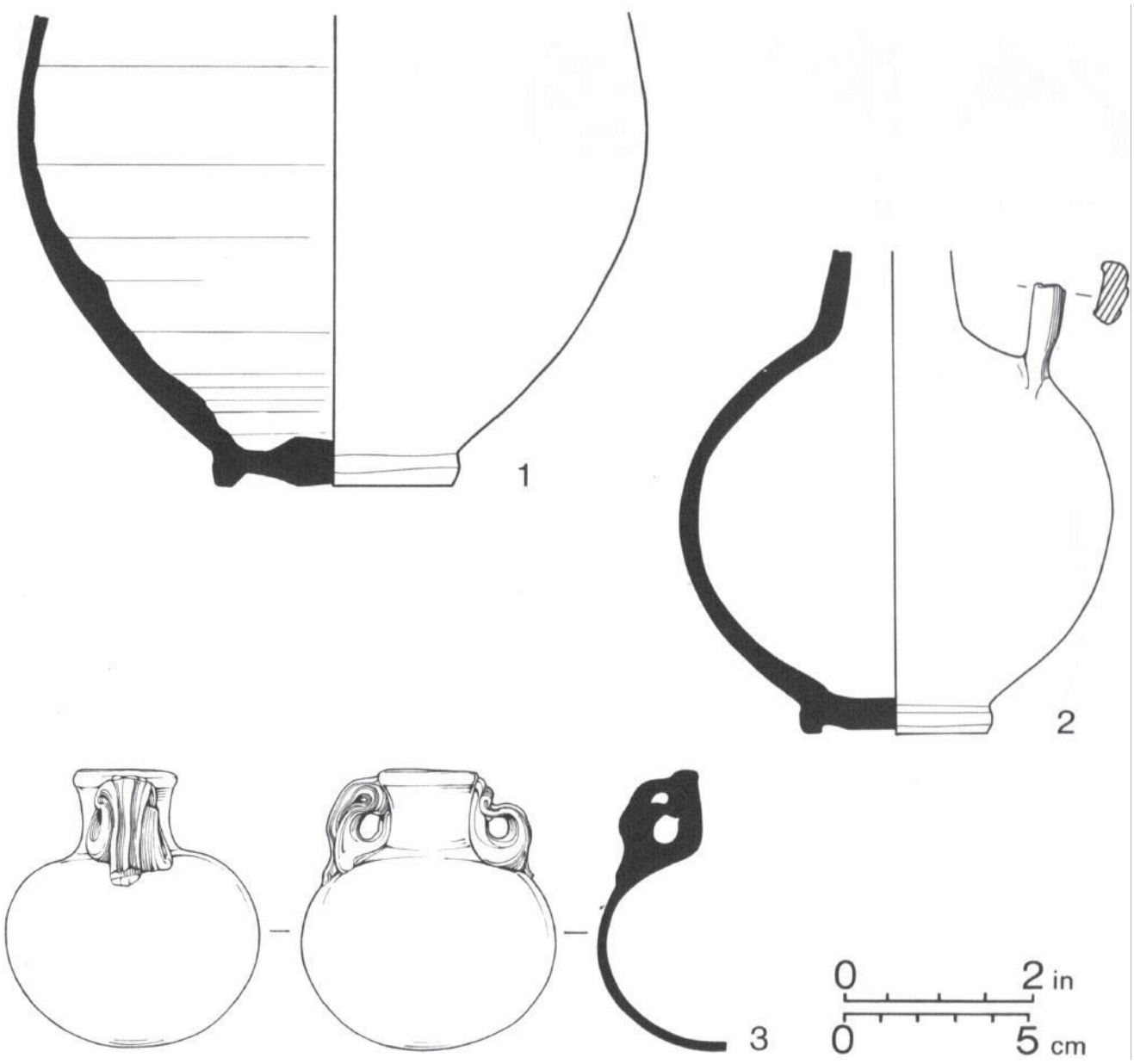


Fig 18 Cremation group 5 : nos 1-2 pottery vessels; no 3 glass (see pp 22, 256)

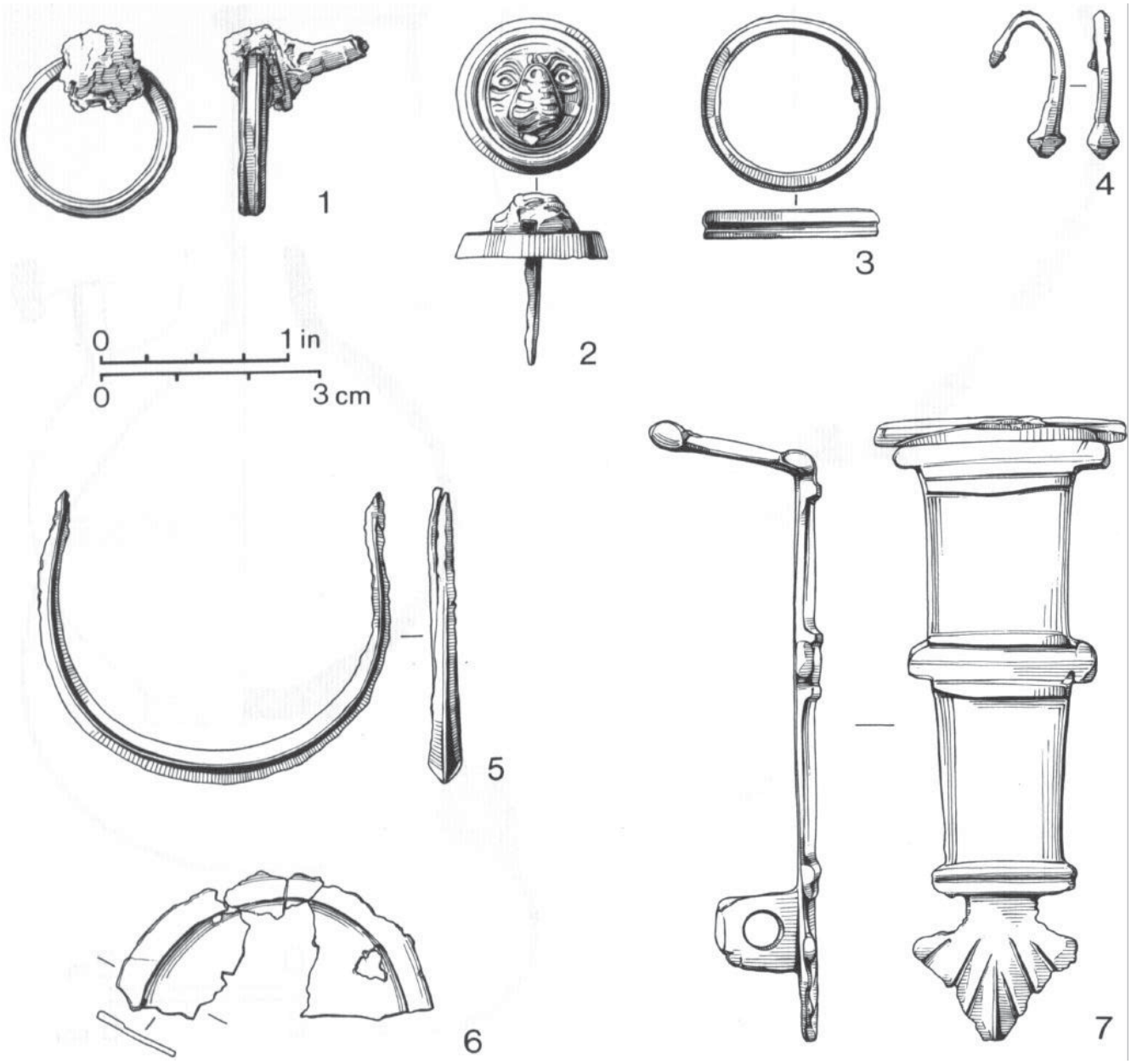


Fig 19 Copper alloy fittings from the casket in cremation group 5 (see pp 22, 254; M1:A9-14)

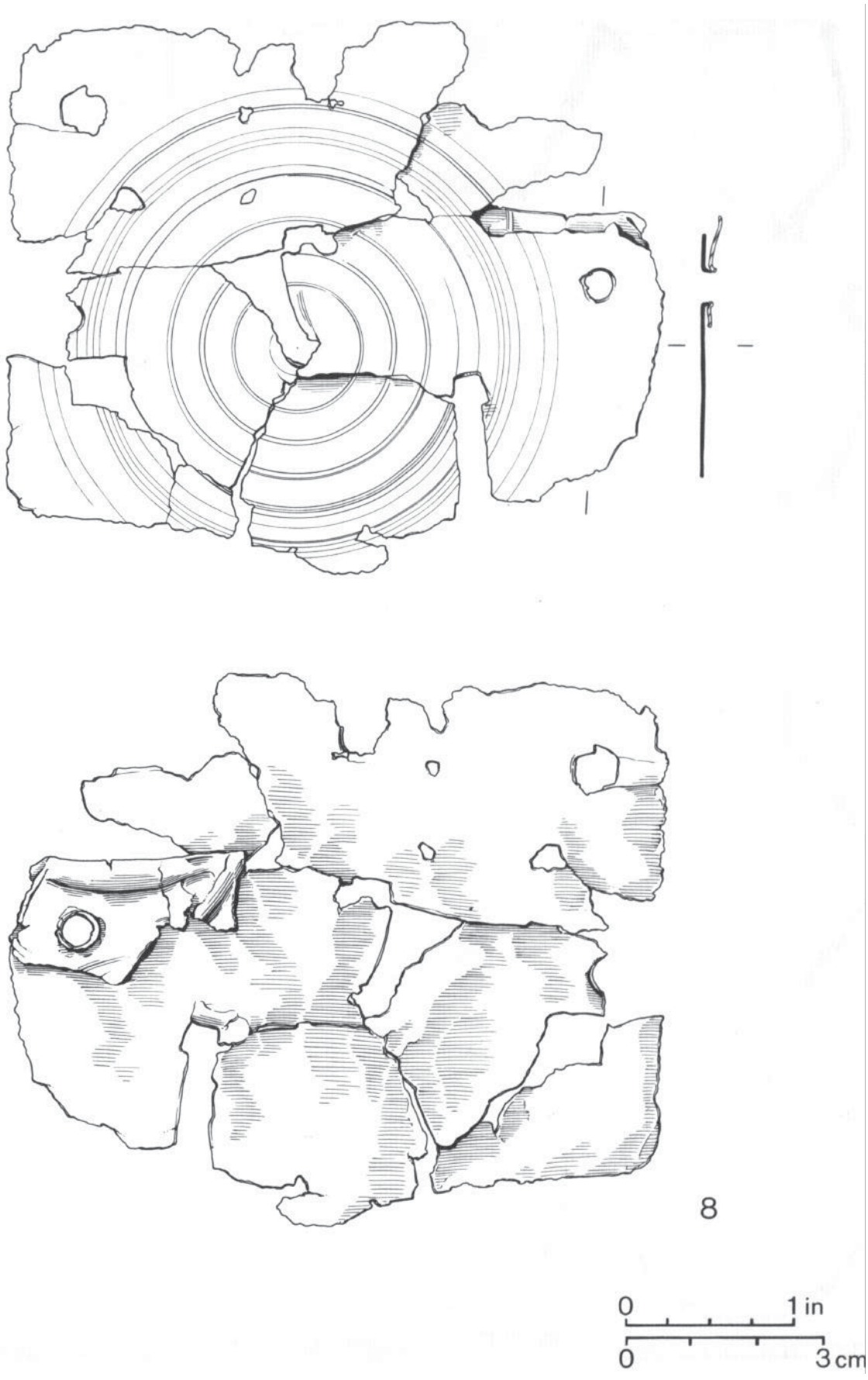


Fig 20 Copper alloy lock plate from cremation group 5: above, front view; below, rear view with remains of leather covering (see pp 22, 256; M1:A9-14)

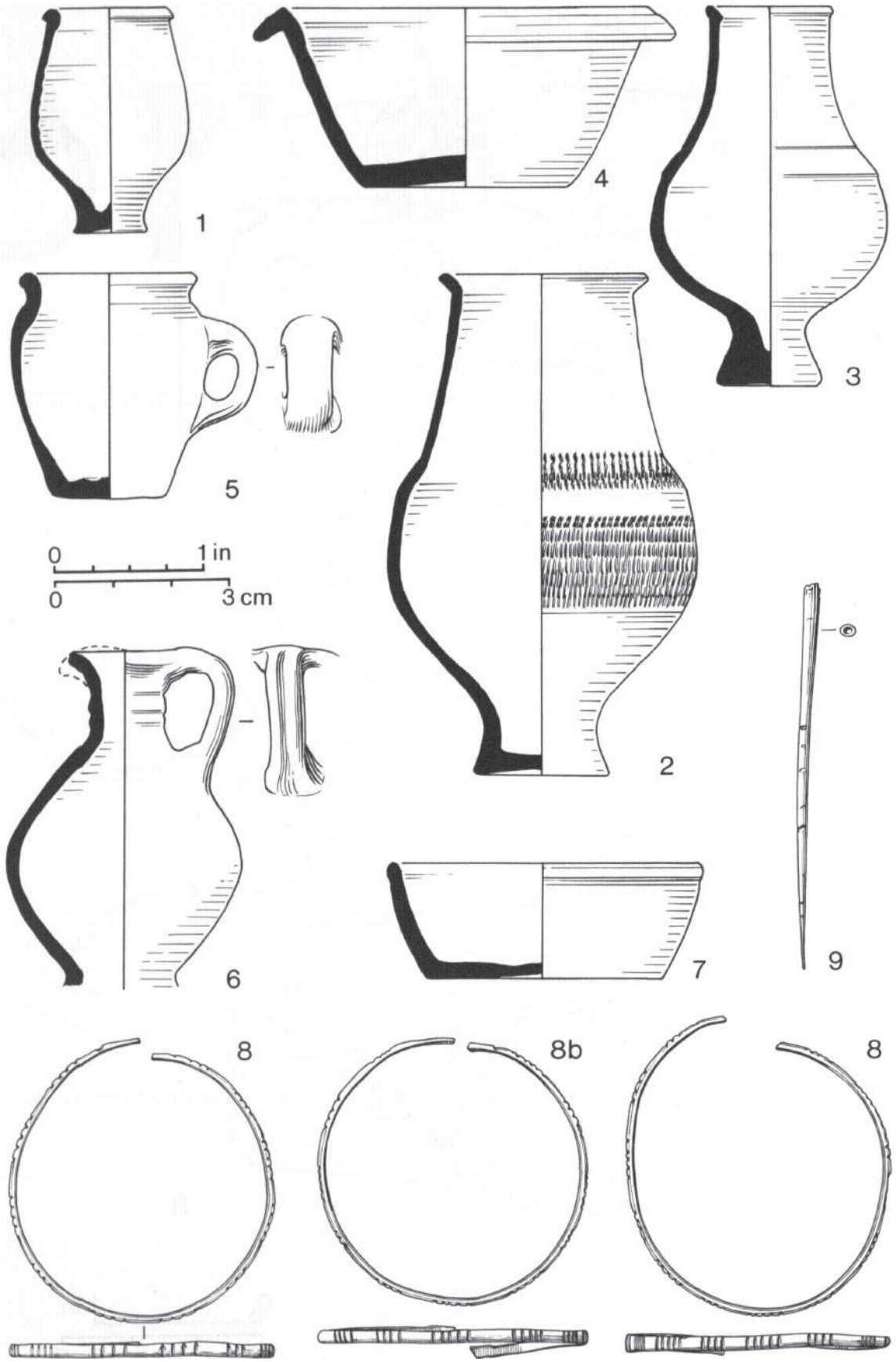


Fig 21 Grave goods f tom late Roman graves : no 1, grave 3; nos 2-4, grave 4; no 5, grave 6; nos 6-9, grave 11 (see p 22). Scale refers to nos 6-9; nos 1-5 scale 1 : 2

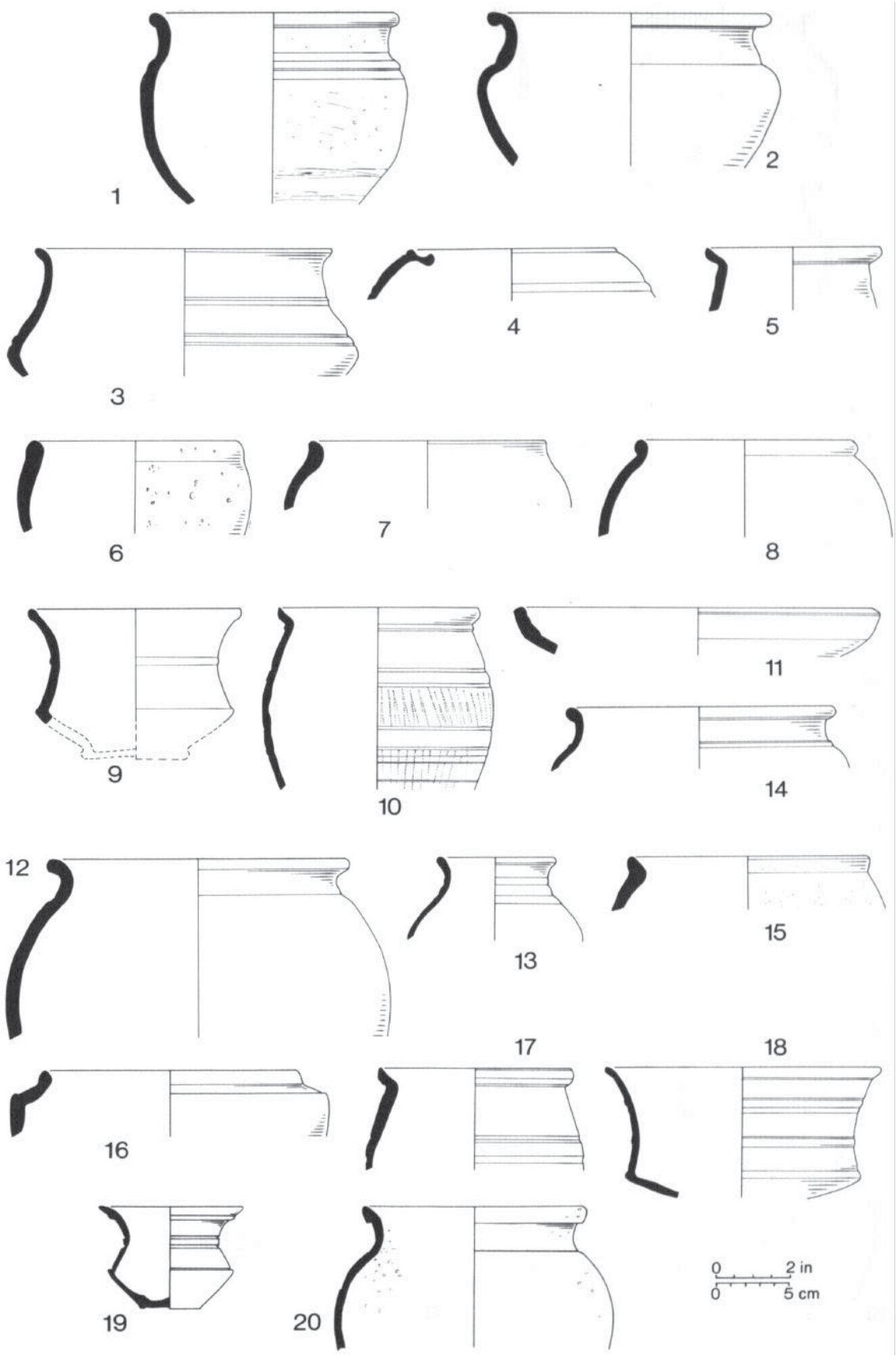


Fig 22 Coarse pottery, period I: nos 1-5 from feature 291; nos 6-11 from feature 282; nos 12-17 from feature 143. Period III: nos 18-20 from feature 156

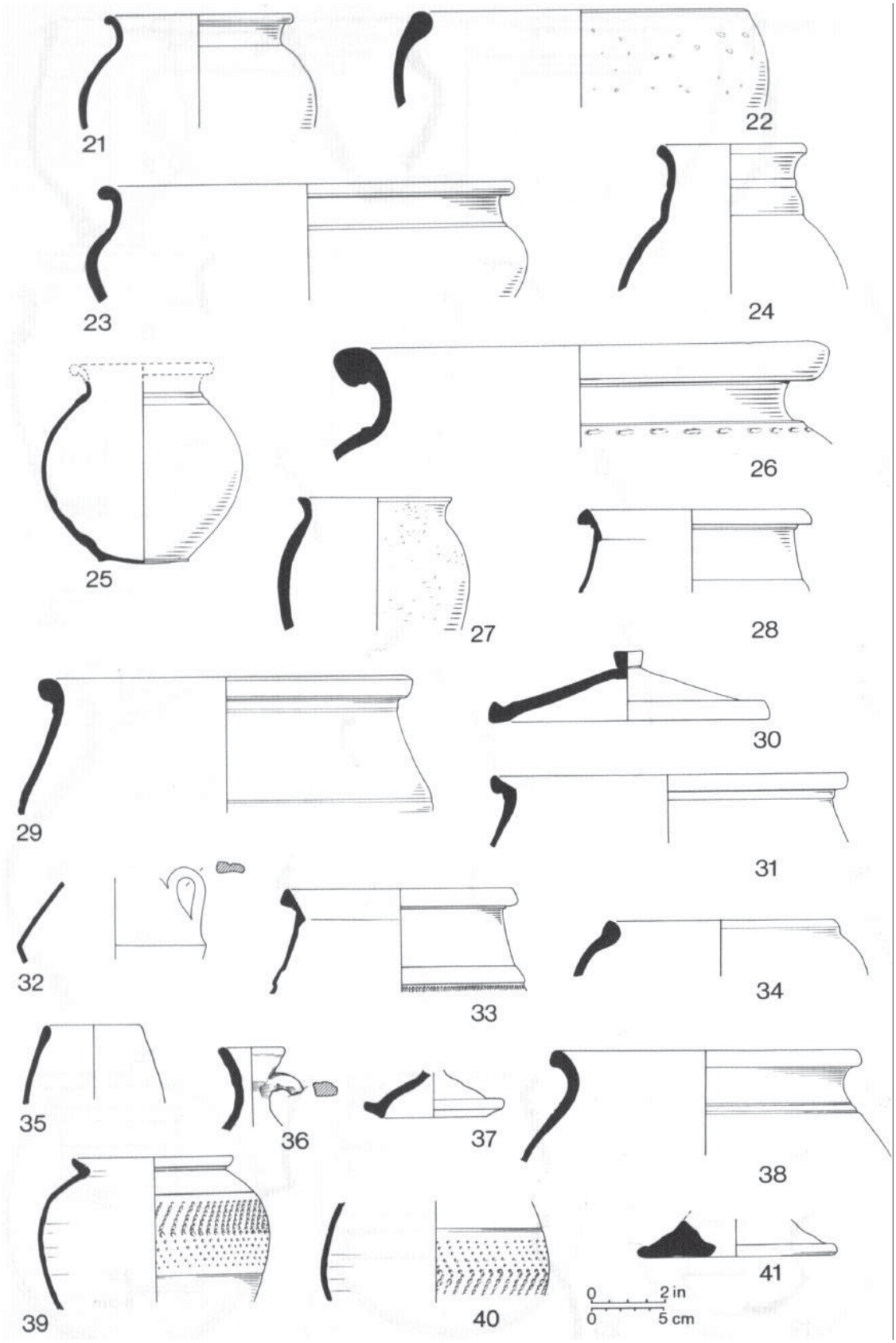


Fig 23 Coarse pottery, period III: nos 21-6 from feature 127; nos 27-8 from feature 116; nos 29-30 from feature 107; nos 31-3 from feature 307; no 34 from feature 342. Period IV: no 35 from site iv, feature 1; nos 36-7 from site iv feature 2; nos 38-41 from feature 157b

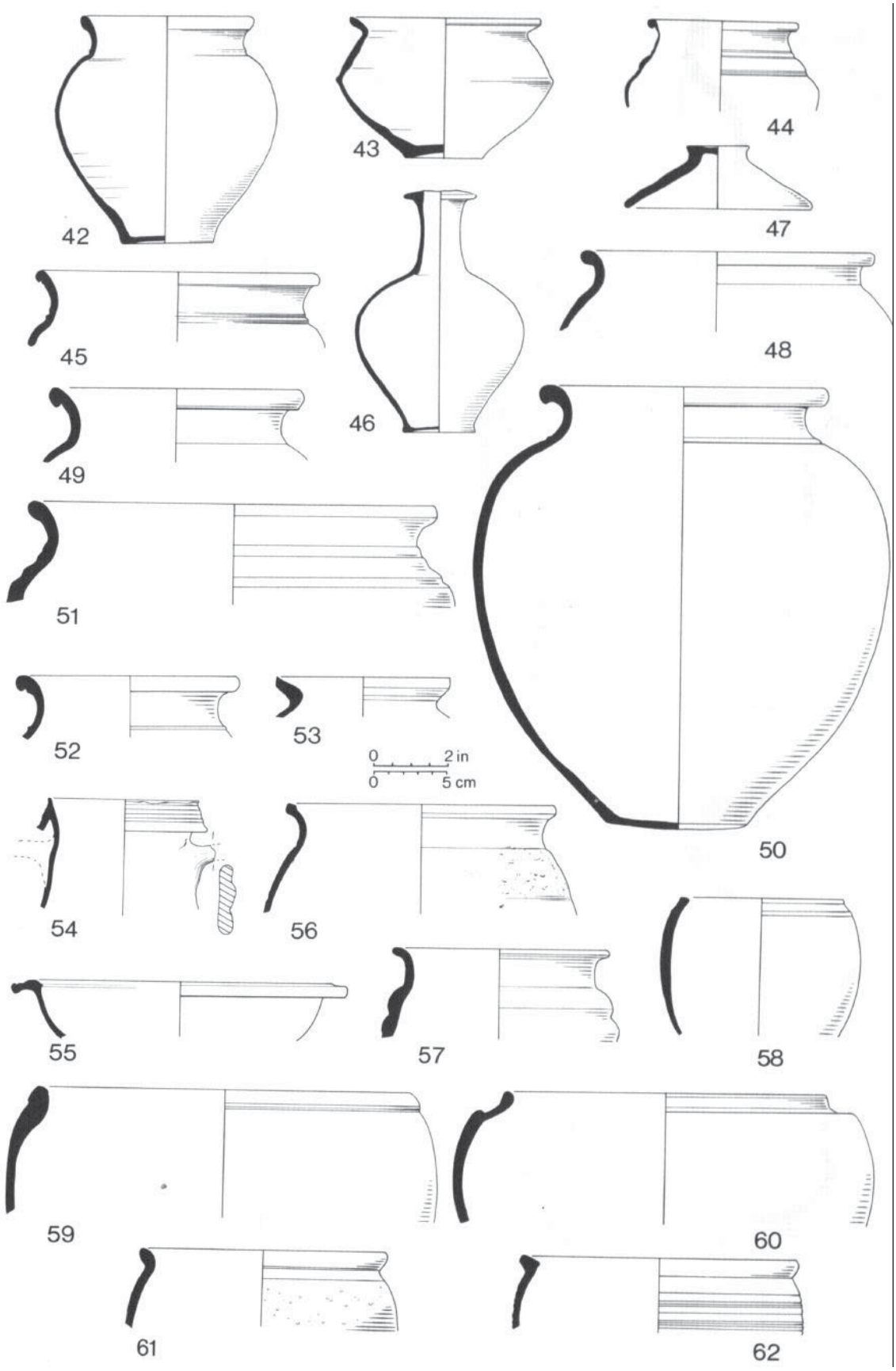


Fig 24 Course pottery, period IV: nos 42-7 from feature 166; nos 48-55 from feature 120.6; nos 56-62 from feature 119

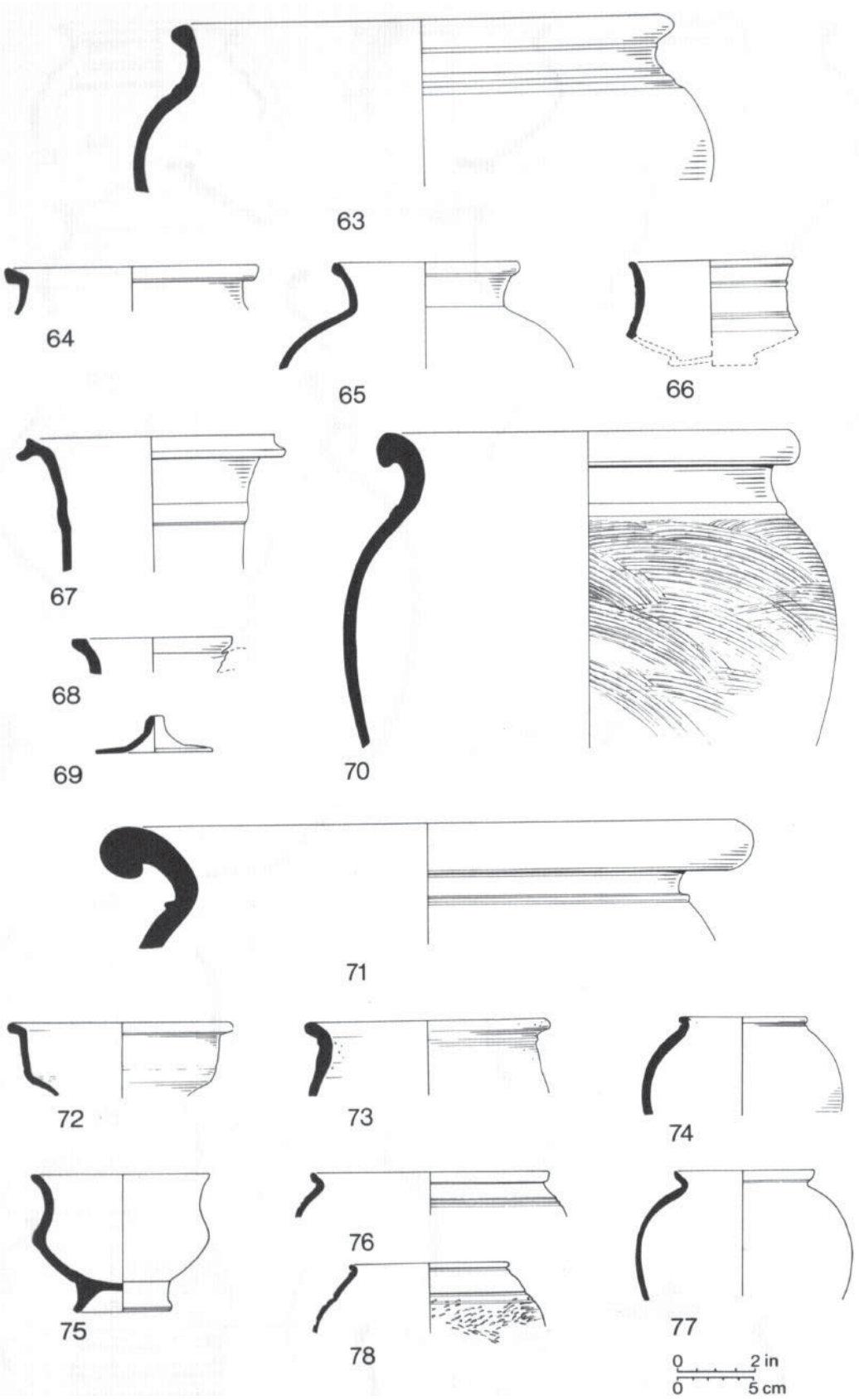


Fig 25 Coarse pottey, period IV : nos 63-71 from feature 119; nos 72-4 from road II; nos 75-7 from feature 138; no 78 from feature 214

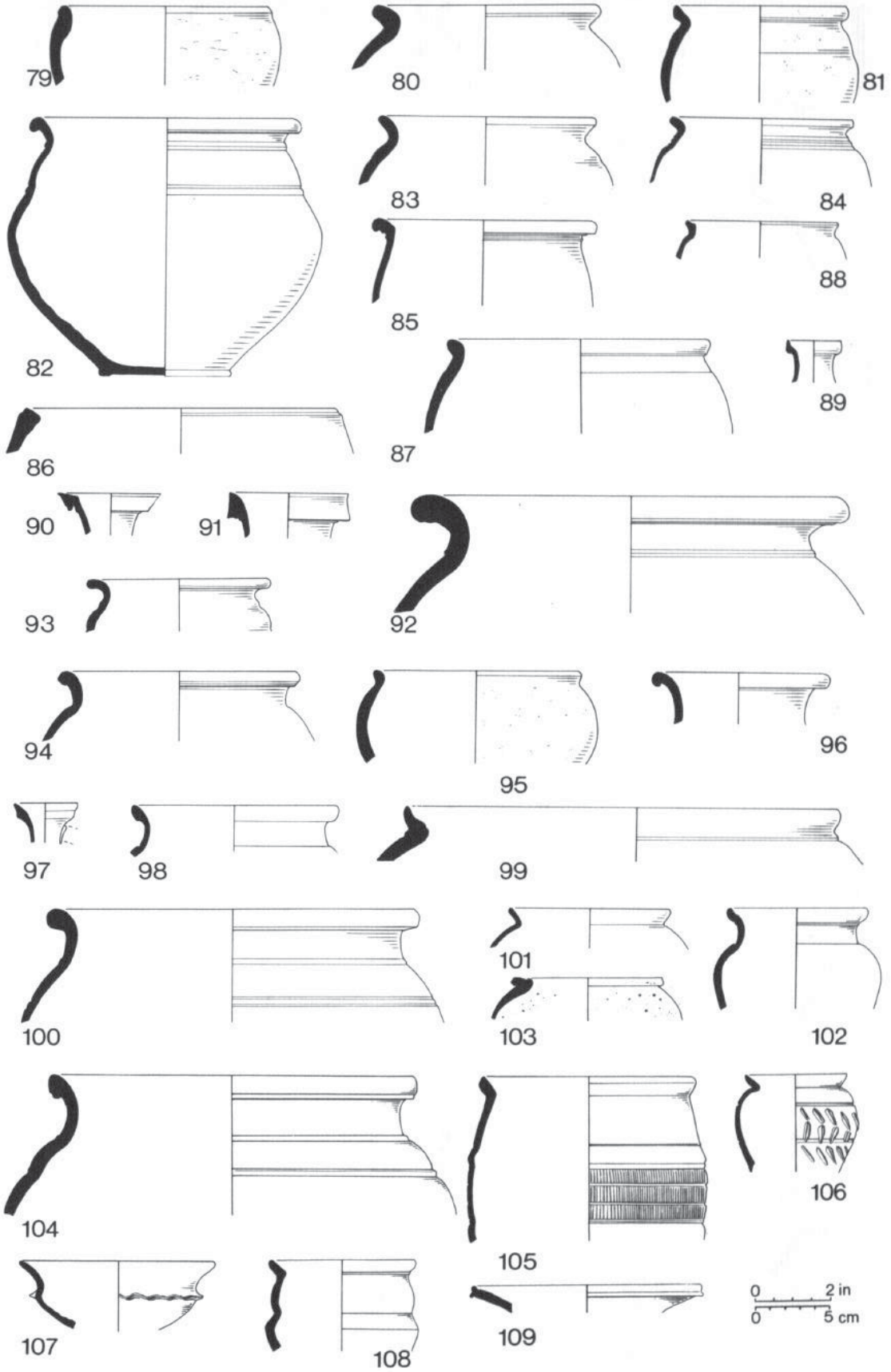


Fig 26 Coarse pottery, period IVB (early Neronian) : nos 79-81 from feature 316.8; no 82 from feature 334; nos 83-92 from site iii, layer 8; nos 93-7 from feature 325; nos 98-101 from feature 336; nos 102-9 from feature 332

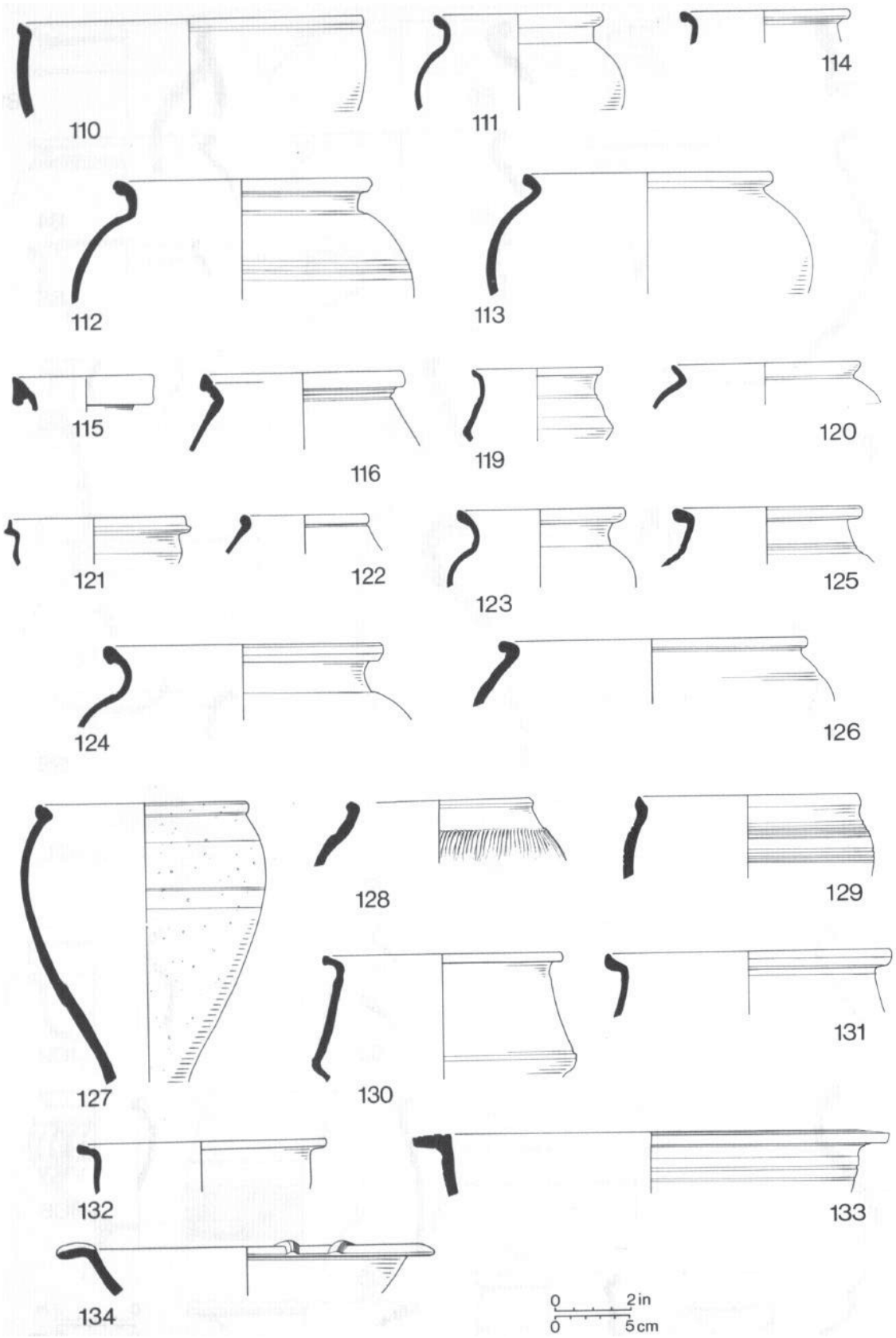


Fig 27 Coarse pottery, period IVB (Neronian) : nos 110-16 from site iii, layer 4; nos 119-21 from feature 341; no 122 from feature 335; nos 123-34 from feature 102

Fig 28 Coarse pottery, period IVB (Neronian) : nos 135-64 from feature 102; nos 165-8 from feature 153

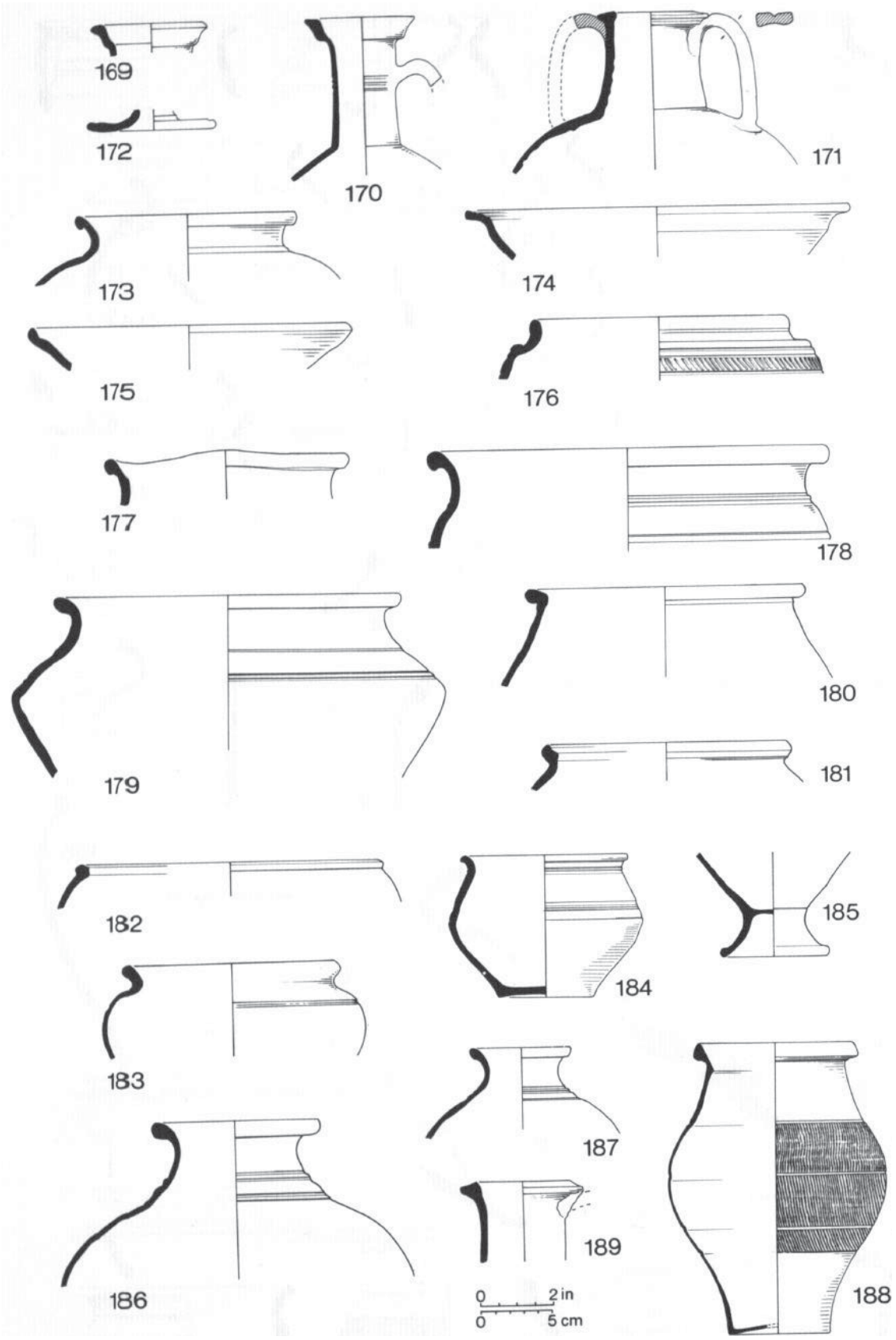


Fig 29 Coarse pottery, period IVB (Neronian) : nos 169-72 from feature 153; nos 173-5 from feature 503; no 176 from feature 112; nos 177-89 from feature 601

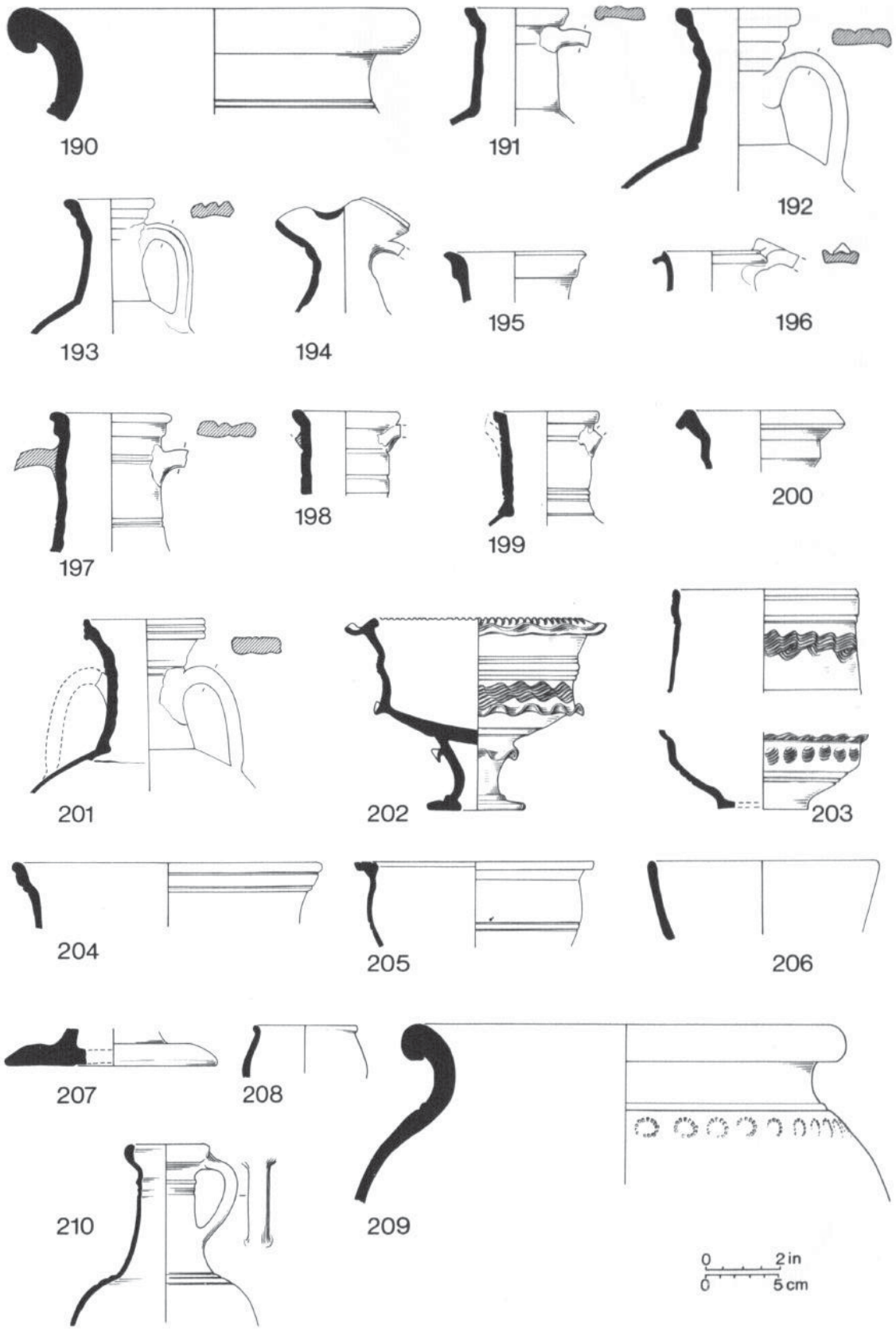


Fig 30 Coarse pottery, period IVB (Neronian) : no 190 from feature 601; nos 191-207 from feature 146; nos 208-10 from feature 210 (Period III/IV)

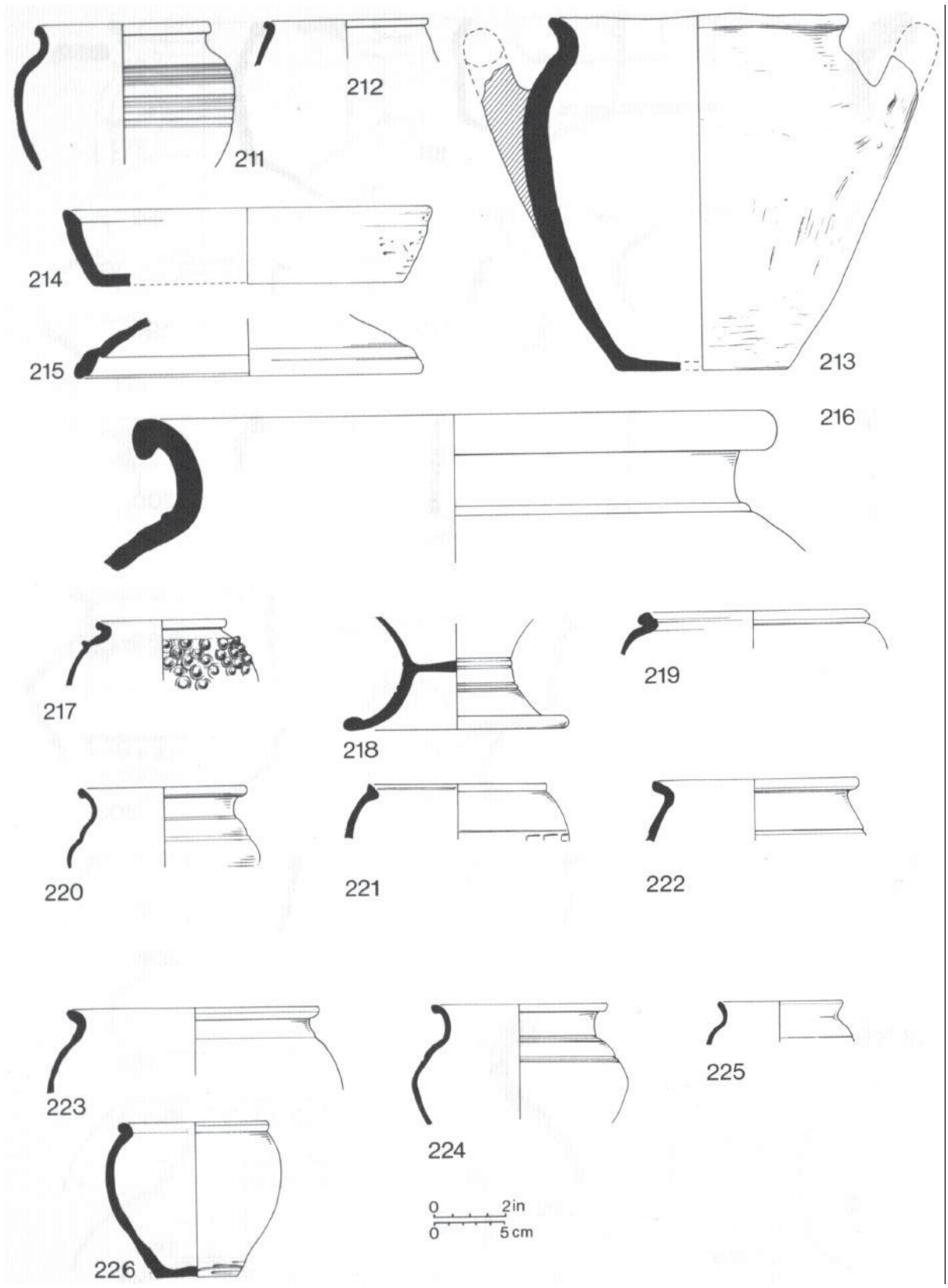


Fig 31 Course pottery, periods III/IV and V: nos 211-15 from feature 238; nos 216-19 from feature 252; nos 220-2 from feature 501; no 222 from feature 502; nos 223-6 from period V (Boudiccan destruction layer on site iii)

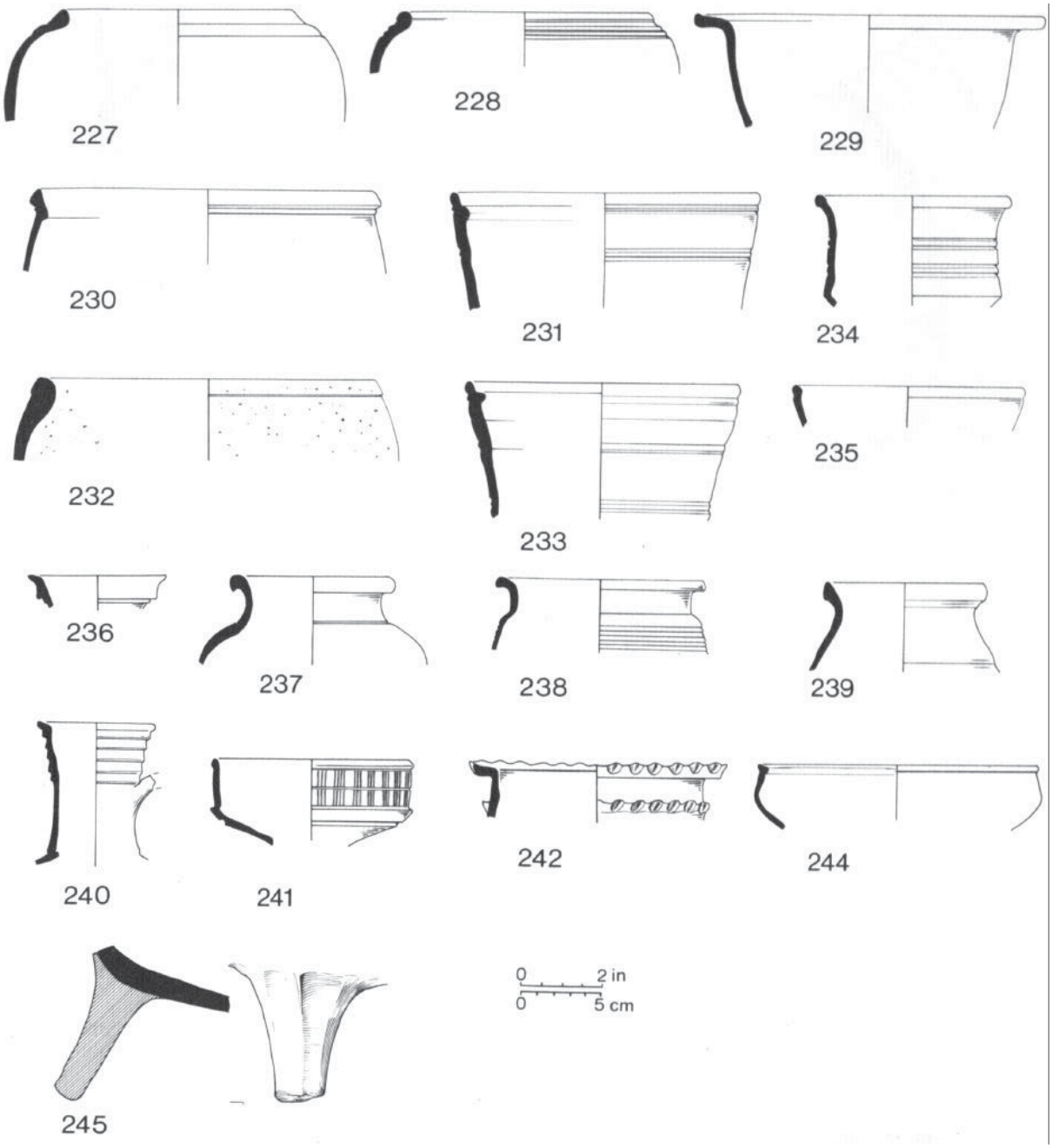


Fig 32 Coarse pottery, period V (Boudiccan destruction) : nos 227-31 from layer 2, site iii; nos 232-6 from feature 331; nos 237-40 from burnt fill of cellar. Period VI: no 241 from feature 302; no 242 from feature 311; no 244 from ploughsoil; no 245 from site v, feature 2

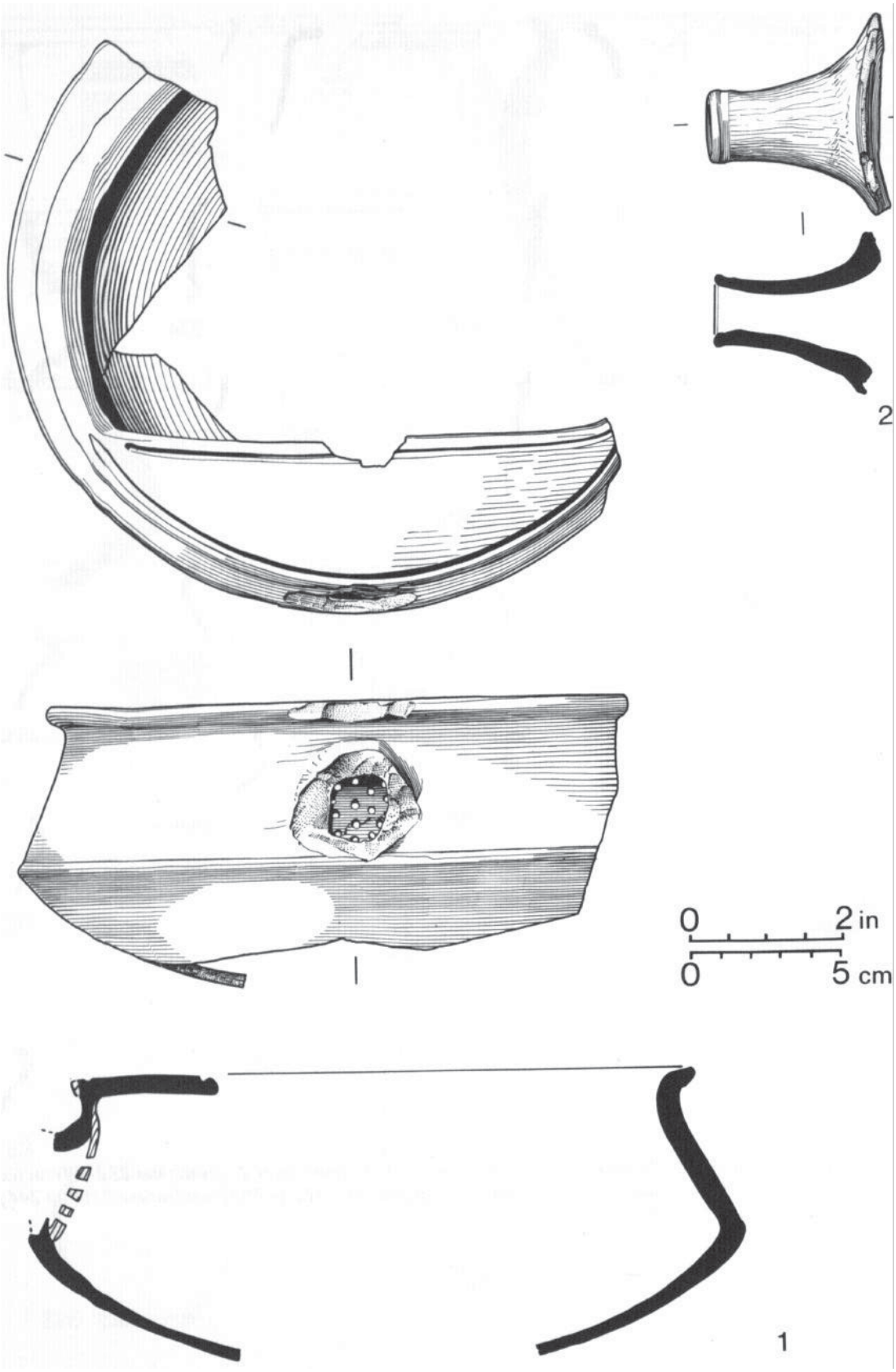


Fig 33 Fragments of strainer bowls from feature 332 (no 1) and site v, feature 2 (no 2)

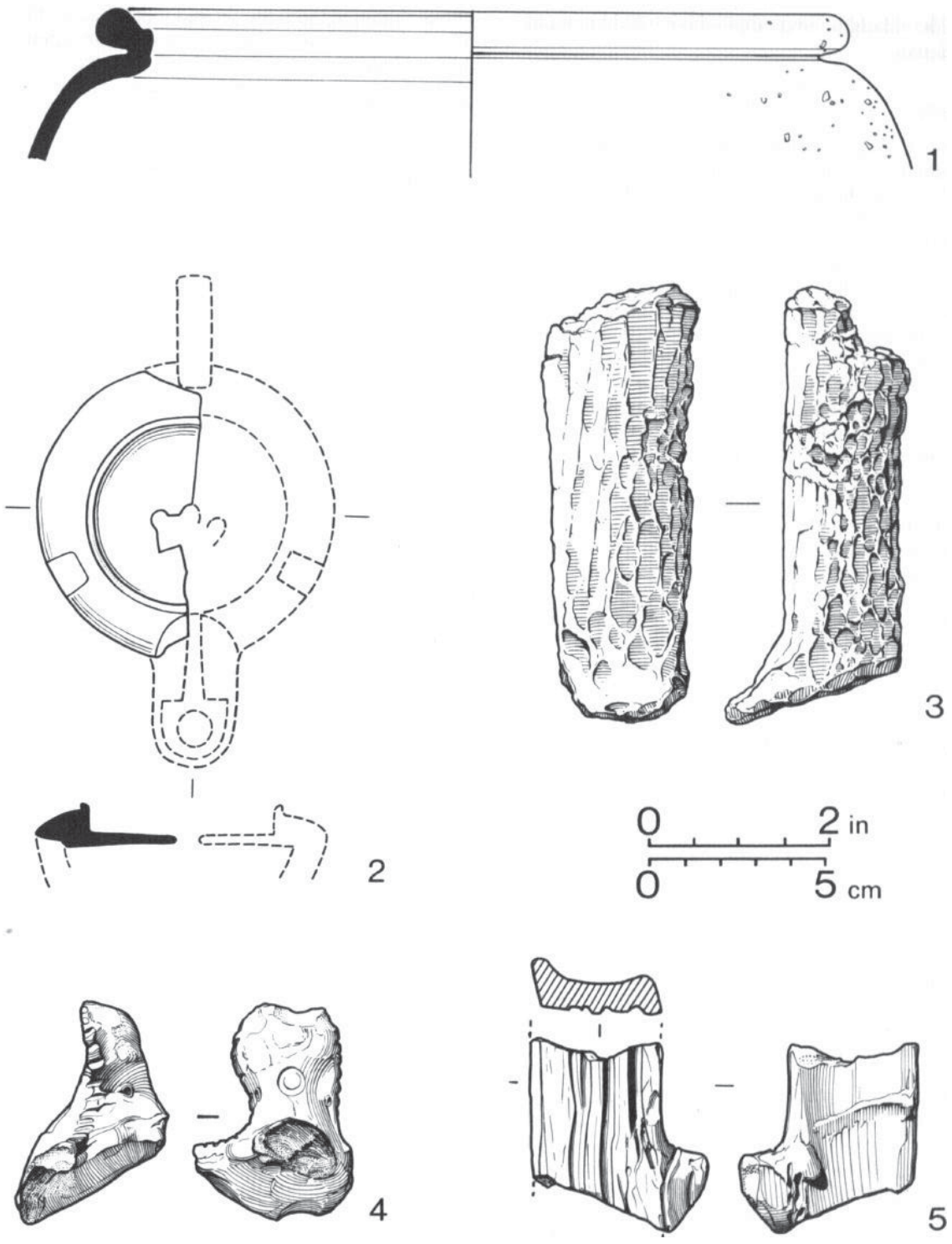


Fig 34 Imported mica-dusted jar, Cam form 262 from ploughsoil (no I); lamp from feature 153 (no 2); pedestal from ploughsoil (no 3); miscellaneous objects of fired clay from ploughsoil and feature 2, site iv (nos 4-5)

The Gallo-Belgic wares-discussion and conclusions

Valerie Rigby

The following pages comprise a detailed discussion of the Gallo-Belgic wares. It was completed in the summer of 1977 with the exception of the paragraph on micaceous wares (p 78) which was written in 1981. A descriptive catalogue of the potter's stamps and of the groups of Gallo-Belgic vessels can be found in the microfiche archive (M1:D12-2:B10). Figs 35-40 are to be found in this section, p 74 and pp 79-82.

The 1970 excavation at Sheepen produced the largest collection of Gallo-Belgic (GB) pottery to have been found in Britain recently, exceeded only by the existing collection from Camulodunum, a summary of which was published in Hawkes & Hull 1947. Not only is the amount large but the quality is good with an unusually high proportion of complete profiles and vessels amongst the stamped and unstamped forms. Relatively little was badly worn or weathered so that the maximum information is available about the products of individual potters who stamped their wares. The most significant findings, derived from the larger groups, were of the repeated association of specific dies with particular fabrics and form variants.

To distinguish between the finds in this report and those excavated previously and published in Hawkes & Hull 1947, the former are designated Sheepen and the latter Camulodunum finds. Note also that throughout this report *terra rubra* and *terra nigra* are referred to as TR and TN respectively.

The potters's stamps and stamped forms (Fig 35)

The total number of stamps on TN and TR is 104, 8 of which are too fragmentary for any identification, while 13 can only be classified as Name stamps because the impressions are worn, broken, or imperfect; since these dies are unique it is not possible to identify the potter's name.

The 98 classifiable stamps are of two basic categories, Name stamps (Names) and Marks, where the die-maker has made no attempt to spell a recognizable name and has used letters merely as decorative motifs. In addition, there are a few stamps which do not fit easily into either category. These seem to be the work of unskilled or illiterate die-cutters attempting to copy names with varying degrees of success; they are designated Copies. The majority are Names, including abbreviations (77%); Copies account for only about 3% and Marks 20%.

Twenty-three Names and 12 Marks (37%) are from the same dies as stamps on the Camulodunum list; the

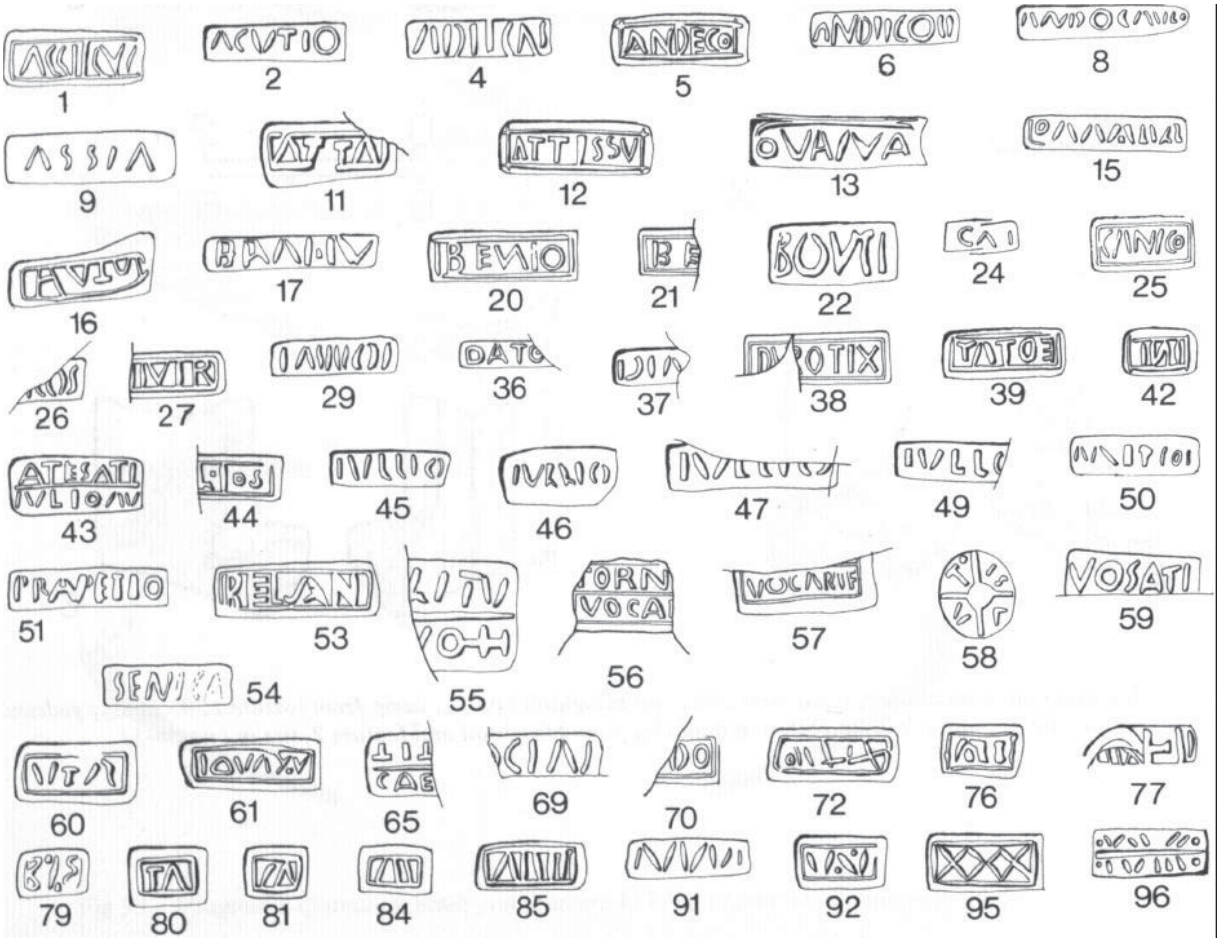


Fig 35 Gallo-Belgic stamps (for individual contexts see stamp catalogue M1:D13-F11)

Table 3 The incidence of potters' stamps on cups and platters in TR and TN from settlement material

	Stamps	*Potters*	*Dies*	*TN*	*TR*	*Cups*	*Platters*	*Cups* *TN*	*Cups* *TR*	*Platters* *TN*	*Platters* *TR*
Names	74	39 + 2	53	57 (77.0%)	17 (23.0%)	14 (18.9%)	60 (81.1%)	12 (85.7%)	2 (14.3%)	45 (75.0%)	15 (25.0%)
Marks	19	?10	10	10 (52.6%)	9 (47.4%)	16 (84.2%)	3 (15.8%)	9 (56.2%)	7 (43.8%)	1 (33.3%)	2 (66.7%)
Copies	3	?3	3	2	1	2	1	1	1	1	0
Total	96		66	69 (71.9%)	27 (28.1%)	32 (33.3%)	64 (66.7%)	22 (68.7%)	10 (31.3%)	47 (73.4%)	17 (26.2%)
Frags	8			8	0	1	7	1	0	7	0
Total	104			77 (74.0%)	27 (26.0%)	33 (31.7%)	71 (68.3%)	23 (69.7%)	10 (30.3%)	54 (76.1%)	17 (23.9%)

remaining 63% are from dies new to the area, all but 6% being entirely new to Britain. Such a high proportion of new stamps is predictable since a comparison with continental collections shows that finds from Britain to date comprise only a limited selection of the output of the Gallo-Belgic industry. Despite the fact that over half the potters on the list (Names, Copies, and Marks) are entirely new, their products account for only 36%) or just over one-third of the total classifiable stamped vessels. The remainder is the work of well-known potters, presumably large-scale operators, whose products are already common on British sites-Acutus, Andecos, Attissu, Benios, Canicos, Cassicos, Durotix, Edatos(?), Jul(l)ios, Tornos-Vocari, and Ux(?). The Sheepen stamp list suggests that about two-thirds of the GB wares were supplied to Britain by a fairly small group of potters (M1:D13).

The incidence of Names, Marks, and Copies shows certain interesting features with regard to the relative quantities of TR and cups (Table 3). Together Names, Copies, and Marks average 26% on TR and 74% on TN; however, within each category there are marked differences. While Marks are almost evenly divided between TN and TR vessels, the percentage of Names on TR is much lower at 23%. Similarly while just less than one-third of the total number of stamps occurs on cups (31.7%), the equivalent for Marks alone is 84.2%, well over three-quarters, but is less than one-fifth for Name stamps (18.9%). It appears that TR fabrics and cups could have been more important in the output of potters using Marks than named potters. The importance of TR in the output of potters using Marks is unexpected since it is characteristic of the early period before AD 30 and traditionally Marks are considered to be characteristic of the later stages of the industry, after *c* AD 30. By this time, the use of TN in Britain had expanded greatly to exceed TR while the latter declined so as to be unobtainable by the early Flavian period.

Only two potters, Canicos and the Mark potter, nos 25-6 (M1:E8), are represented by stamps on both TR and TN; however, another eleven Name potters on the list are known to have used both fabrics at some time during their working life. Likewise, only three potters have stamps on both cups and platters: Canicos, Jul(l)ios, and the Mark potter, nos GB 44-9 (M1:E13), although five other Name potters are known to have made both. The Sheepen stamps show that the GB potters tended to specialize in a limited range of forms in a particular fabric, and that with such specialization eventually the output of TR suffered, possibly since it was in more direct competition with the rapidly increasing South Gaulish samian industry.

A comparison of the Sheepen and Camulodunum stamp lists highlights differences which cannot be entirely due to the fact that the latter is three times longer. The Camulodunum list is a representative cross-section of the GB industry from the Augustan to the Neronian period and beyond, with practically all the known major producers represented. There are more stamps on TN than TR, and more on platters than on cups—the general picture for Britain. In contrast, the Sheepen list is not such a complete cross-section since there is a marked absence of early stamps, ie vessels made before *c* AD 25. Indeed, unlike the Camulodunum list, there are no stamps at all from dies dated by finds at Haltern, or other comparable German sites, despite such finds being fairly common in Britain. Only one stamp, belonging to Durotrix, no 38, is almost certainly Augustan on stylistic grounds and is the earliest stamp in the list (M1:E11). There is no equivalent truncation of later stamps in the Sheepen list so they become absolutely and relatively more important than in the Camulodunum list; eg, together the potters Edatos and Ux and the Marks potters nos 80 and 83 comprise respectively 15% and 3.5% of the stamp lists.

Paralleling the shortage of early stamps and the preponderance of later ones at Sheepen, there is a marked shortage of early forms in the groups of sherds. In consequence, the later forms, *Cam* forms 14, 16, and 58, standardized between AD 30 and AD 40, dominate the groups and the collection as a whole. It appears therefore that the GB wares from Sheepen are essentially Claudian/Neronian in date, with a small proportion of pre-Claudian wares and little Augustan material.

The conclusion that the Sheepen GB wares are essentially post-conquest in date is reinforced by comparison with those found at Skeleton Green,

Table 4 The incidence of forms from Sheepen 1970 and Skeleton Green 1972

Sheepen Type no	*Cam Form no*	*Sheepen TN*	*Sheepen TR*	*Total*	*Skeleton Green Type no*	*Skeleton Green TN*	*Skeleton Green TR*	*Total*	*Reference*
1	2	32	—	32	1A	44	—	44	
	2	0	—	0	1B	1	—	1	
2	15	2	—	2	2	2	—	2	
3	15/16	1	—	1		0	—	0	
4	16	31	—	31	3	1	—	1	
5*		2	—	2		0	—	0	
6*		1	—	1		0	—	0	
7	11/12	0	2	2	4	8	1	9	
8	12/13	8	—	8	5	4	—	4	
9	13	25	—	25	6	8	—	8	
10)	14	108	—	108	7	—	2		
11)						0	—	0	
12	3	6	7	13	19	3	14	17	
13*		0	1	1		0	0	0	Holwerda 76b
14	5	41	22	63	20	17	15	32	
15*	5v	2	0	2		0	0	0	
16*	5v	2	0	2		0	0	0	
17*	5v	2	0	2		0	0	0	
18*		0	1	1		0	0	0	
19*		0	1	1		0	0	0	
20*		0	1	1		0	0	0	
21	6v	0	1	1		0	0	0	Fig 46.8
22	6v	0	1	1		0	0	0	Fig 46.7
	cf 6v	0	0	0	16	0	4	4	Fig 46.8
23	7B	0	2	2		0	0	0	Fig 46.11
24	7A	0	2	2	17	0	2	2	Fig 46.12
25*	7v	1	0	1	14	1	0	1	
26	7B	1	36	37	13A	0	4)	5	Fig 46.13
					13B	0	1)		
27	7C	2	1	3	11	1	2	3	Fig 46.14
	7v	0	0	0	9	1	3	4	Fig 46.15
		0	0	0	10	0	2	2	
		0	0	0	12A	0	3	3	
		0	0	0	12B	1	0	1	
28	8	44	4	48	15	2	0	2	
29*		0	1	1		0	0	0	
30	10v	1	0	1		0	0	0	
		0	0	0	18	0	1	1	Holwerda 76a, pl XIII.65
		0	0	0	21	0	1	1	Fig 46.6
31	58	10	7	17	33	2	1	3	
32*		1	0	1		0	0	0	
33*		1	0	1		0	0	0	
		0	0	0	25	0	4	4	
34	54	0	1	1	26	0	7	7	
	53	0	0	0	27	1	0	1	
35	56B	2	1	3	28	0	2	2	
36	56A	37	31	68	29	5	9	14	
	56Av	0	0	0	30	0	1	1	
	56v	0	0	0	31	2	1	3	
37	56C	37	3	40	32	21	9	30	
Pedestal beakers									
41/1	74B	0	6	6	42	0	1	1	
41/2	79	0	5	5		0	0	0	
41/3	75A	0	3	3		0	0	0	
42	75	0	1	1		0	0	0	
43	77	0	1	1		0	0	0	
44	76/7	0	6	6	43	0	6	6	
45	76A	0	18	18		+ 4 body sherds, unclassified			
46*		0	1	1					
47*		0	11	1					
48*		0	1	1					
Girth beakers									
50	84	0	23	23	37	0	18	18	Holwerda 9b
51	82	0	3	3	38	0	9	9	
Butt beakers									
52/1	112	0	2	2	39A	0	59	59	
52/2	112C	0	46	46	39B	0	2	2	

Table 4 continued

Sheepen Type no	*Cam Form no*	*Sheepen TN*	*Sheepen TR*	*Total*	*Skeleton Green Type no*	*Skeleton Green TN*	*Skeleton Green TR*	*Total*	*Reference*
Central Gaulish unstamped vessel forms Platters and cups		*Micaceous TN*	*Micaceous TR*			*Micaceous TN*	*Micaceous TR*		
39	1	7	0	7	22	22	2	24	
40/1		2	0	2	23	1	0	1	
40/2		1	0	1		0	0	0	
		0	0	0	24	1	0	1	
		0	0	0	34	1	0	1	
	51A	0	0	0	35	5	0	5	
	51C	0	0	0	36	3	0	3	

**forms not identified among the GB wares from Camulodunum*

Puckeridge, Herts, during the 1972 excavations (Rigby 1981a). The two stamp lists are mutually exclusive: no die is represented both at Sheepen and Skeleton Green, while only two Names are represented in both lists—the 'problem' composite potters, Acutus and Jul(l)ios; there is no overlap at all with the Marks and Copies. When the Skeleton Green list is compared to the Camulodonum list the result is very different. Five dies, seven probable, and two possible potters are shared by both lists, including four important early potters, with stamps at Haltern—Acutus, Attissu, Jul(l)ios, and Dannomaros.

Early forms current on continental sites in the late Augustan period are present at Skeleton Green in significant quantities but at Sheepen they are either absent, or rare and residual (Table 4: Sheepen types 23-25, 27, 34; Skeleton Green types 9-12, 14, 17). Conversely, late forms are either absent or only just represented at Skeleton Green although they dominate the Sheepen collection (Table 4: Sheepen types 4, 10, 11, 31). Among the long-lived forms produced from the Augustan to the Neronian period, typologically early variants in TR are dominant at Skeleton Green while later variants in TN are even more dominant at Sheepen (Table 4: Sheepen types 12, 14-17, 35-37). In consequence, while TN platters comprise the bulk of the collection from Sheepen, the finds from Skeleton Green are almost equally divided between TN and TR, and cups are slightly more common, although platters still comprise three-quarters of the total (Table 5).

One of the consequences of the marked differences in the incidence of TN and TR, and cups and platters, is that Sheepen has approximately one stamp for every six vessels found, while the ratio for Skeleton Green is one in twelve. Large platters and vessels in TR1(A) are important in the early collection from Skeleton Green; small platters and TN are much more significant at Sheepen (Table 4, nos 1, 12, 14 and 4, 9-11, 28). Small platters and cups were normally stamped as a matter of course, but many large platters, particularly those in micaceous TN and TR1 (A) were seldom or never stamped. When large platters were stamped, it was normally radially, with from three to five impressions. However, multiple stamping apparently did not make up the entire leeway, so the stamp list from Skeleton Green is relatively shorter than that from Sheepen.

Unstamped forms

Pedestal beakers *(Cam* forms 72-79)

There are some new variants and forms additional to those already published in Hawkes & Hull 1947, but the most common beaker is still *Cam* form 76, which has only limited continental parallels from burials in the area of Rheims (Marne), and so may have been made in Britain. All are in varieties of TR1 which are identical to those used for the stamped cup and platter forms and so could be from the same sources. However most of the pedestal beakers, particularly *Cam* forms 75 and 76, were found in Claudian/Neronian groups associated with late GB stamps and stamped forms and so seem to be most common at a time when the production of TR1 cups and platters, begun between 20 BC and 15 BC, had apparently ceased.

Pedestal beakers were virtually absent from Skeleton Green. Only four identifiable sherds were found in the upper layers where the few late TN pieces occurred. This negative evidence appears to support the Sheepen dating for Cam forms 76 and 76A in particular to c AD 30-60.

Table 5 The incidence of cups and platters in TR and TN from Sheepen 1970 and Skeleton Green 1972

	Cups Sheepen	Skeleton Green	*Platters* Sheepen	Skeleton Green	*Total* Sheepen	Skeleton Green
TR	44 (33.6%)	33 (52.3%)	105 (22.8%)	56 (34.7%)	149 (25.2%)	90 (39.8%)
TN	87 (66.4%)	30 (47.7%)	355 (77.2%)	93 (65.3%)	442 (74.8%)	136 (60.2%)
Total	131 (22.1%)	63 (28.8%)	460 (77.9%)	149 (71.2%)	591	226

Girth beakers *(Cam* forms 82 and 84 (Holwerda 96))

All are in red TR3 and the most common form is *Cam* form 84. They vary widely in size and proportion. Most are decorated with a band of vertically combed stripes but there are different incised designs around the constriction. Most were found in post-conquest groups, though a few are probably pre-conquest in date. This is the most common type of girth beaker at Skeleton Green. Few are securely stratified, the majority being from the upper layers where the latest GB wares were found, but two vessels do occur in definitely pre-conquest groups.

Butt beakers *(Cam* form 112)

Butt beakers are generally more common than girth beakers although they are clearly from the same sources. The most common single variant is the small and rather curvaceous form 112 Cb which is decorated with a single broad band of rather coarse rouletting and is in red TR3. Its repeated occurrence in post-conquest groups suggests that it is the latest variant of the form, particularly since there are only two examples from Skeleton Green compared to 59 larger and tubbier variants which are closer to *Cam* form 112A in shape, although not in decoration. A second major difference is that over half of the butt beakers from Skeleton Green are in very pale TR3(c), while examples of pale TR3 are much scarcer at Sheepen.

All the evidence from the stamps, the stamped forms, and the unstamped forms from Sheepen is compatible. The collection of GB wares contains some residual material, but very little need have been manufactured before *c* AD 25. Only a small amount is definitely pre-Claudian in date; the vast majority dates to the Claudian/Neronian period or later.

Cups and platters in micaceous wares *(Cam* forms 1 and 4)

Archaeological and recently obtained petrological evidence indicates that micaceous or mica-dusted TN and the equivalent in TR were made in Central Gaul in the late Augustan period, and so are not directly associated with GB wares, other than sharing prototypes. The range of forms in micaceous TN occurring at Mont Beuvray (Saône-et-Loire) suggests that there was a source local to this oppidum, and that its products were the regional equivalent of GB wares in northern Gaul and Britain. Import into Britain appears to have been limited to a fairly short period in the late Augustan and Tiberian periods.

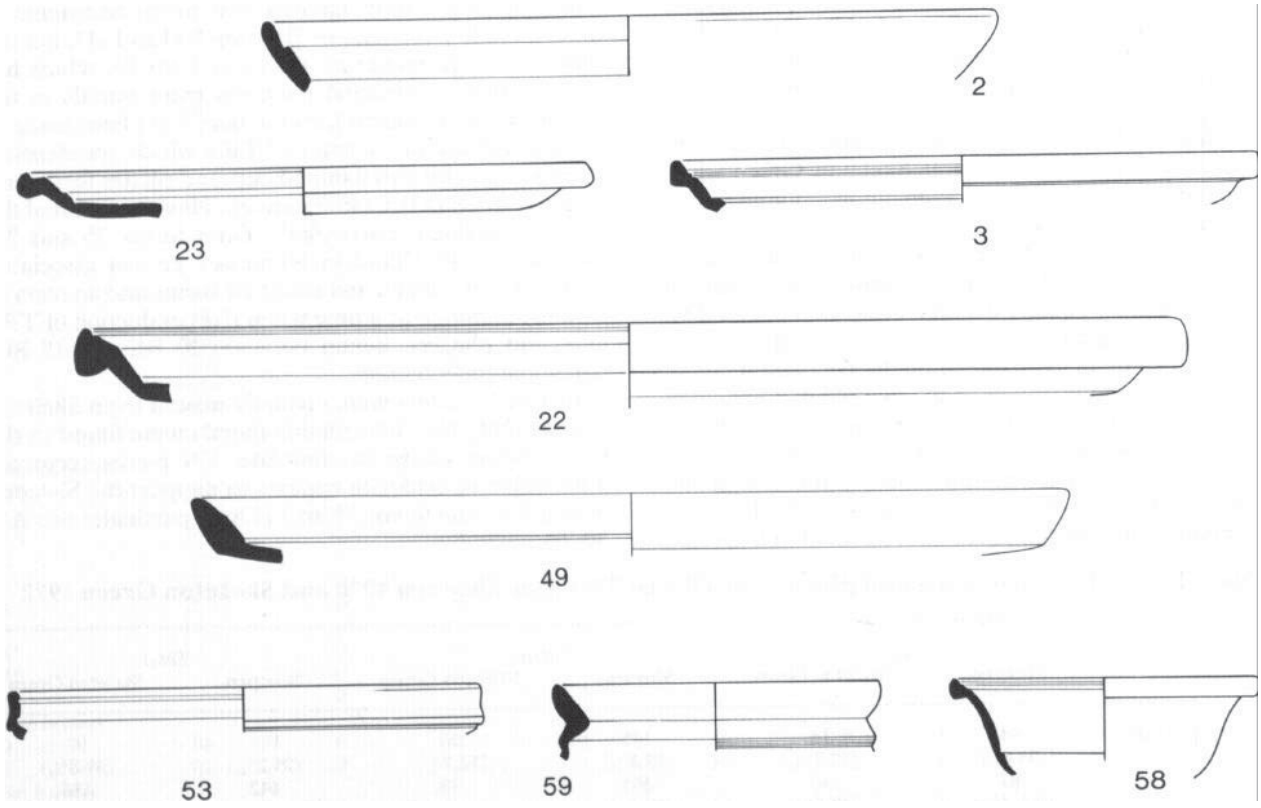


Fig 36 Gallo-Belgic ware, periods I-III: nos 2-3 from feature 143; nos 22-3 from feature 120.5; nos 49, 53 from feature 307; nos 58-9 from feature 119 (Scale 1:2)

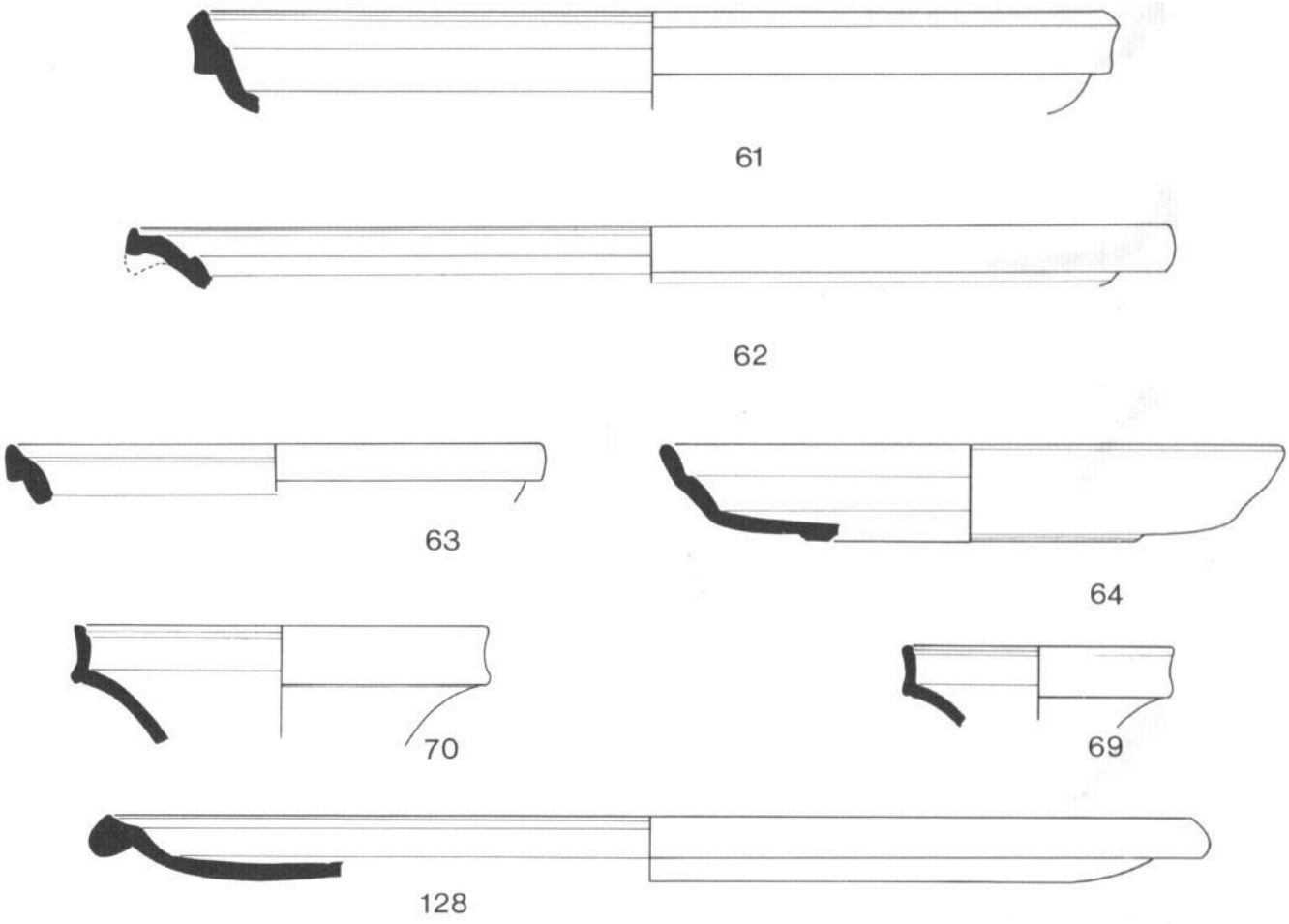


Fig 37 Gallo-Belgic ware, from Claudian/Neronian features: nos 61-4, 69, 70 from feature 120.6, no 128 from feature 334 (Neronian) (Scale 1:2)

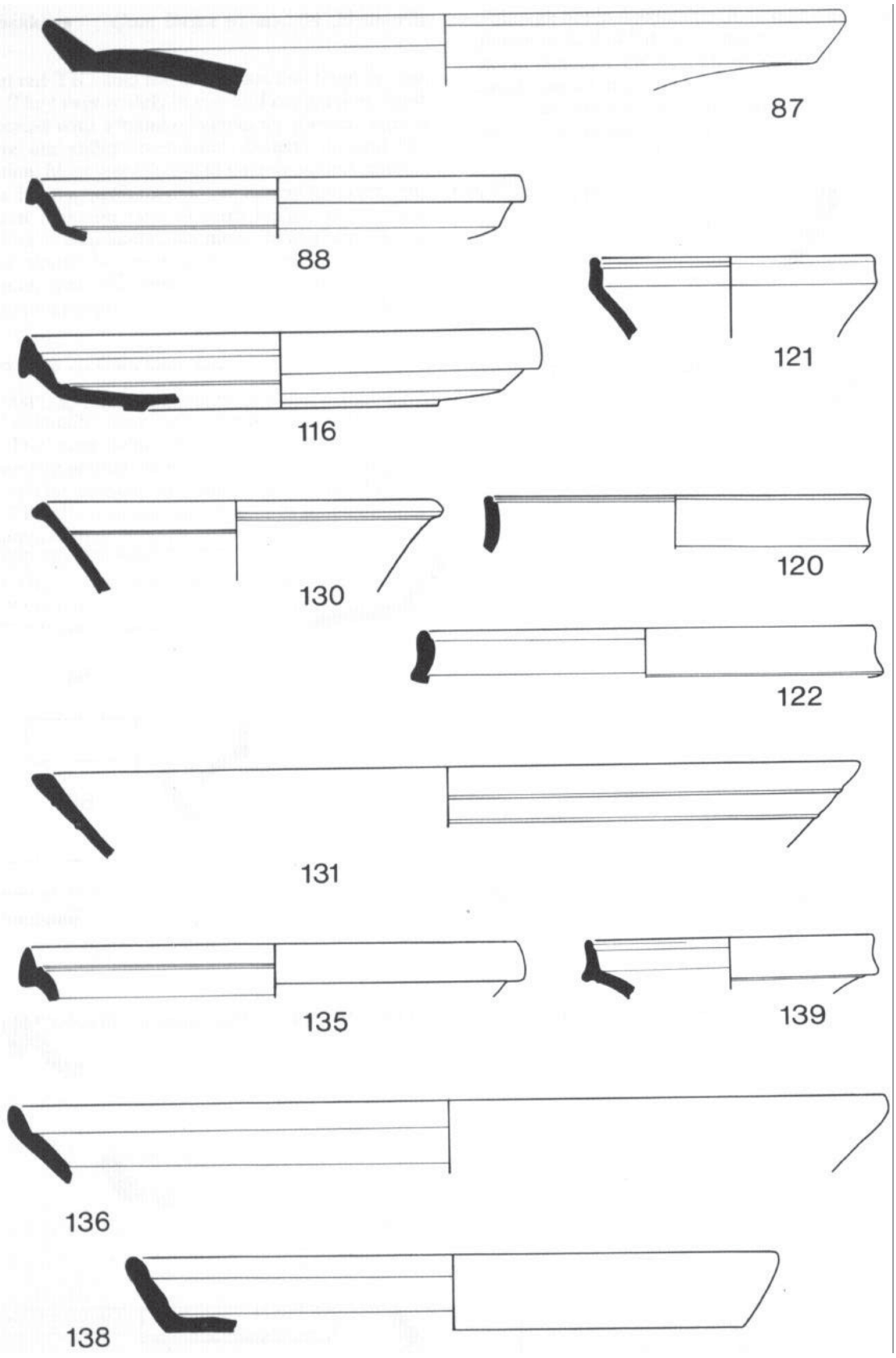


Fig 38 Gallo-Belgic ware, Claudian/Neronian and Neronian features: nos 87-8 from feature 138; nos 116, 120-2 from feature 316.8; nos 130-1, from feature 334; nos 135-6, 138-9 from feature 325 (Scale 1:2)

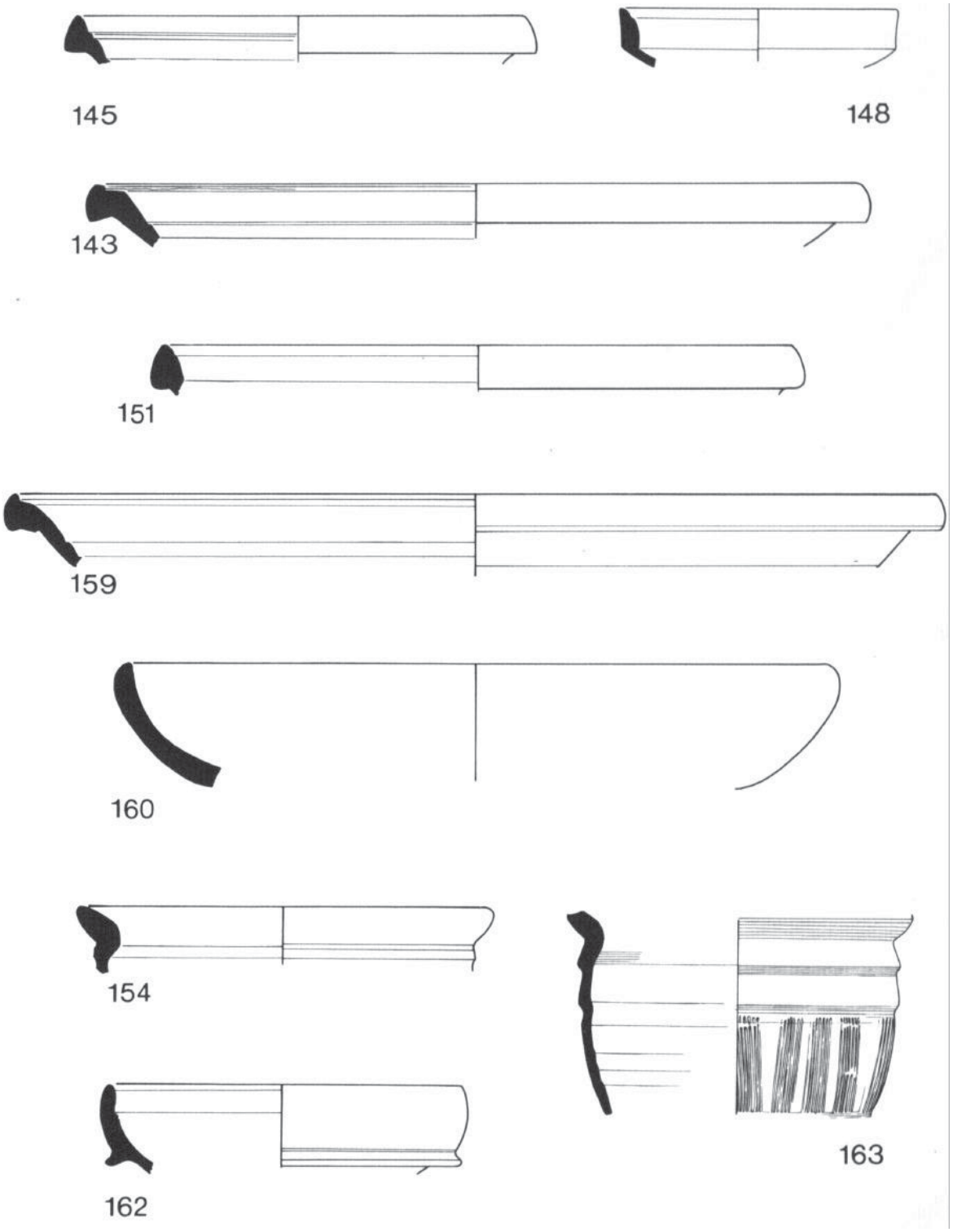


Fig 39 Gallo-Belgic ware, Neronian features: nos 151-4 from feature 332; nos 159-60, 162-3 from feature 102 (Scale 1:2)

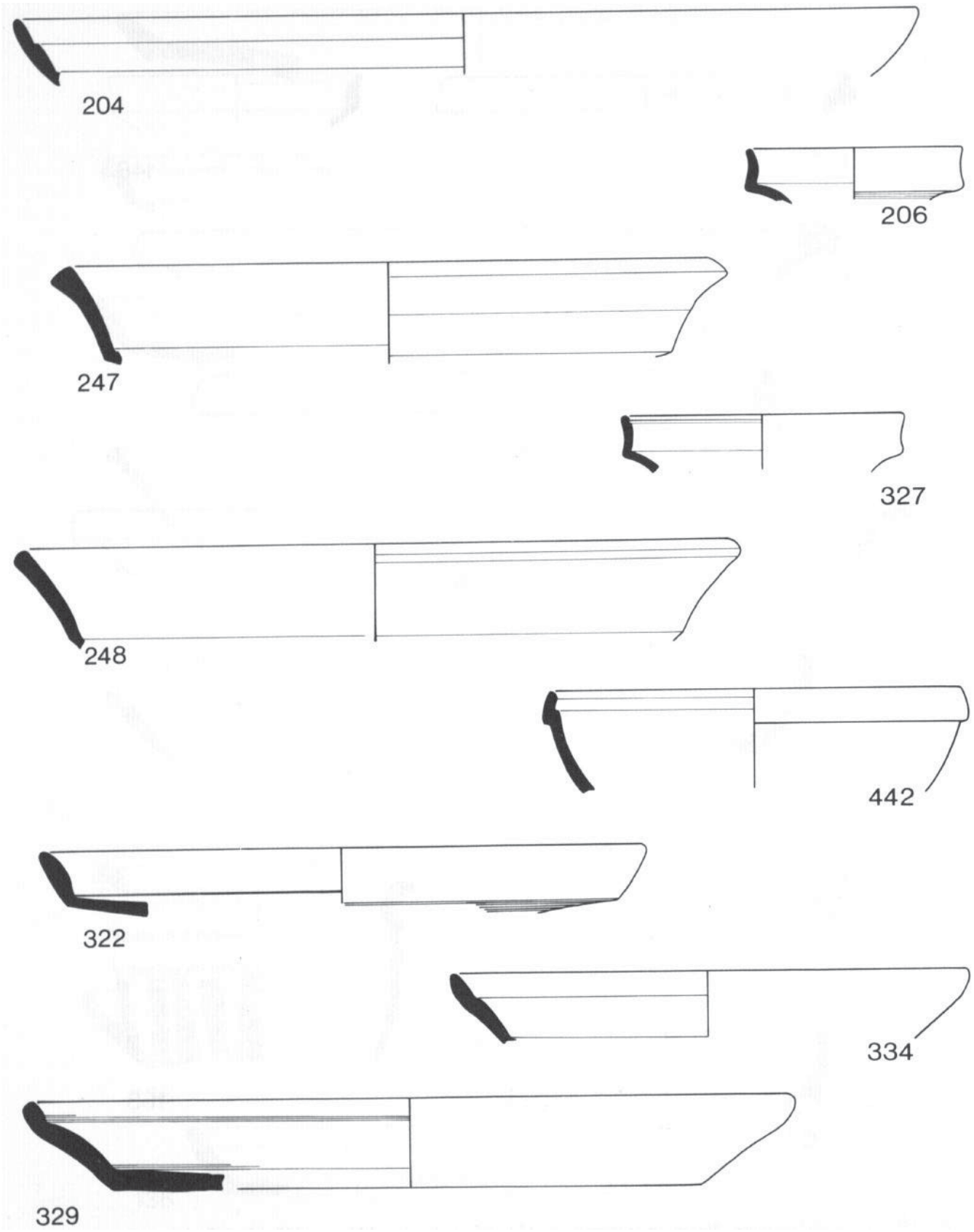


Fig 40 Gallo-Belgic ware, Neronian features: nos 204, 206 from feature 146; nos 247-8 from feature 252; nos 322, 327, 329, 334 from feature 601; no 442 from feature 301 (Boudiccan) (Scale 1:2)

The samian ware-discussion and conclusions

Geoffrey Dannell

This collection of samian strongly reinforces the views expressed by Hawkes and Hull in their previous examination of the evidence. It is clear that Camulodunum was supplied with quantities of samian ware before the conquest both from Italy and from Gaul. Why so much survives to turn up in Roman military deposits remains a question to which there is no easy answer. Two possibilities recommended themselves: first, simple rubbish survival, evidenced by the large number of identifiable decorated vessels coming from differing contexts, while the joining edges show completely varied appearance, suggesting that they have been the subject of redeposition; second, there remains the likelihood that some at least of the early material was still current when the army invaded, and it fell into their hands.

The most striking feature of the group is the amount of decorated ware belonging to the Tiberian period from La Graufesenque: eg nos 1-11, 13, 25-30, 32, 68, and 70. While Hawkes and Hull published a number of vessels (particularly pls XX-XXV), the current group has proportionally more. These vessels were being exported widely to the Roman military installations on the Rhine and to Austria and Switzerland, which seem to have been the markets for which the South Gaulish industry was created. The Camulodunum bowls, mostly f29, should have arrived in the decade(s?) preceding the conquest. If so, and if they were objects of civilian trade, there is the problem of their route. Certainly no other contemporary site has the quantity, but then no other British site has as much samian generally. Odd decorated sherds of the period are known for Chichester and Silchester, but not such a large group. This encourages the view that the geographical position of Camulodunum may have played some part in getting supplies from the Rhineland, even though Strabo tells us that the direct sea route between Germany and Britain was not used. There seem to be some important chronological and probably social and economic points to be worked out here. It is noticeable that although Arretine imports were made (see stamps), only one of the decorated bowls is Italian, and the rarity of these products is in strict contrast to the situation some twenty years later, when both plain and decorated ware came in from Gaul in some quantity. Craters were certainly not the most common products of the Italian workshops, but neither were they particularly scarce. Their comparative absence from the British collections, compared with the Gaulish bowls, must be significant.

From the statistical record, it is sobering to consider that from over 100 decorated vessels, only a single stamp was retrieved, and this is not an unusual proportion. Taken together with growing evidence from La Graufesenque (Cluzel and Malaval), that large numbers of 'potters' may have had access to the output of particular workshops, the problems of ascription have become still more speculative.

See M2:B11-E6 for a full catalogue of the samian showing individual contexts. The drawings, Figs 41-8, are reproduced on pp 84-91.

Note

Reference is made to the Malaval samian group by the kind permission of Dr Colette Bémont who is responsible for the publication of this remarkable deposit, which contains over 3,000 vessels among which are some hundreds of decorated bowls.

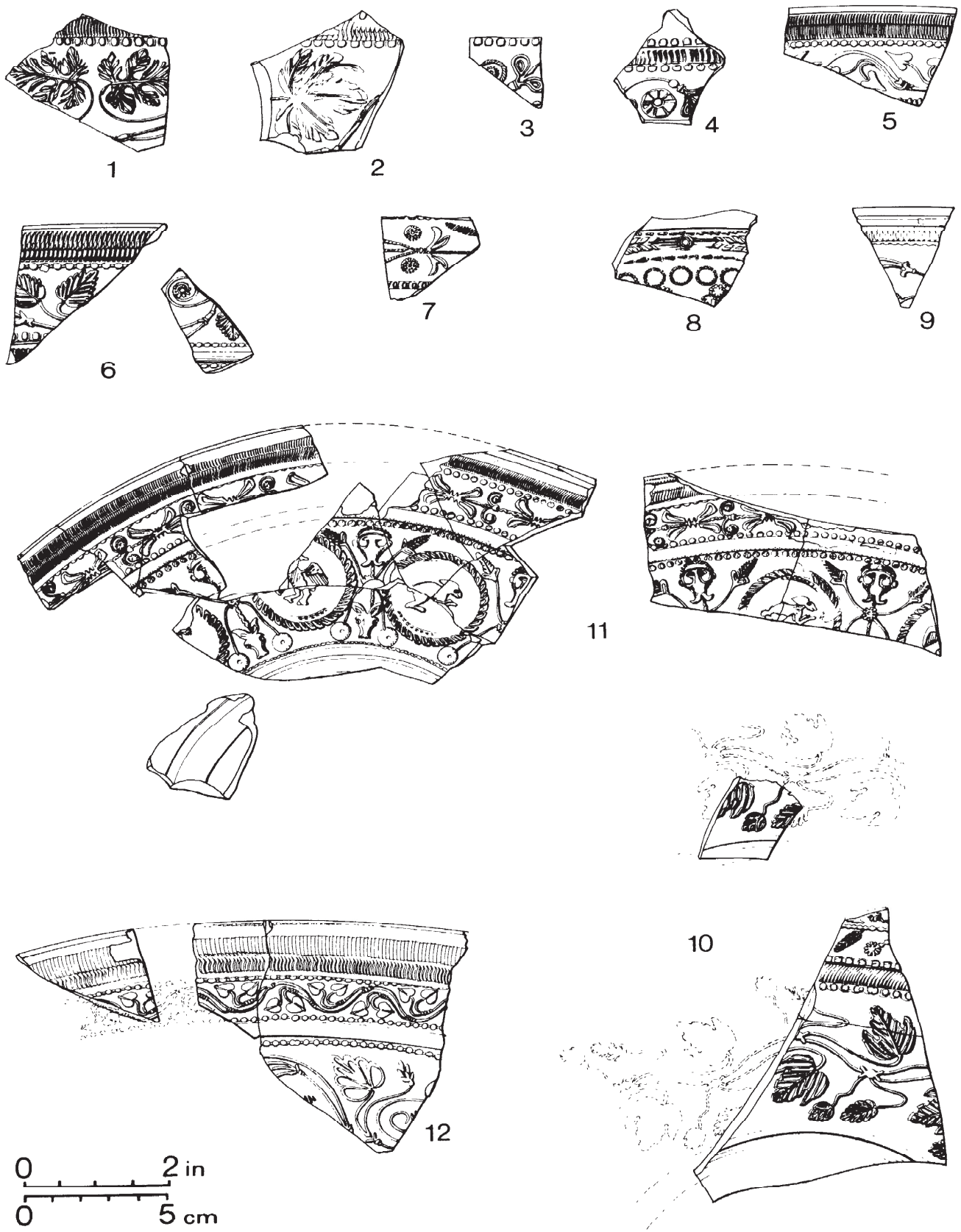


Fig 41 Decorated samian: nos 1–11 Tiberian/Claudian from features 120.5, 112, 132, 204, 246, 252, 272, 306, and site iii, layer 7; no 12 Claudian from feature 153

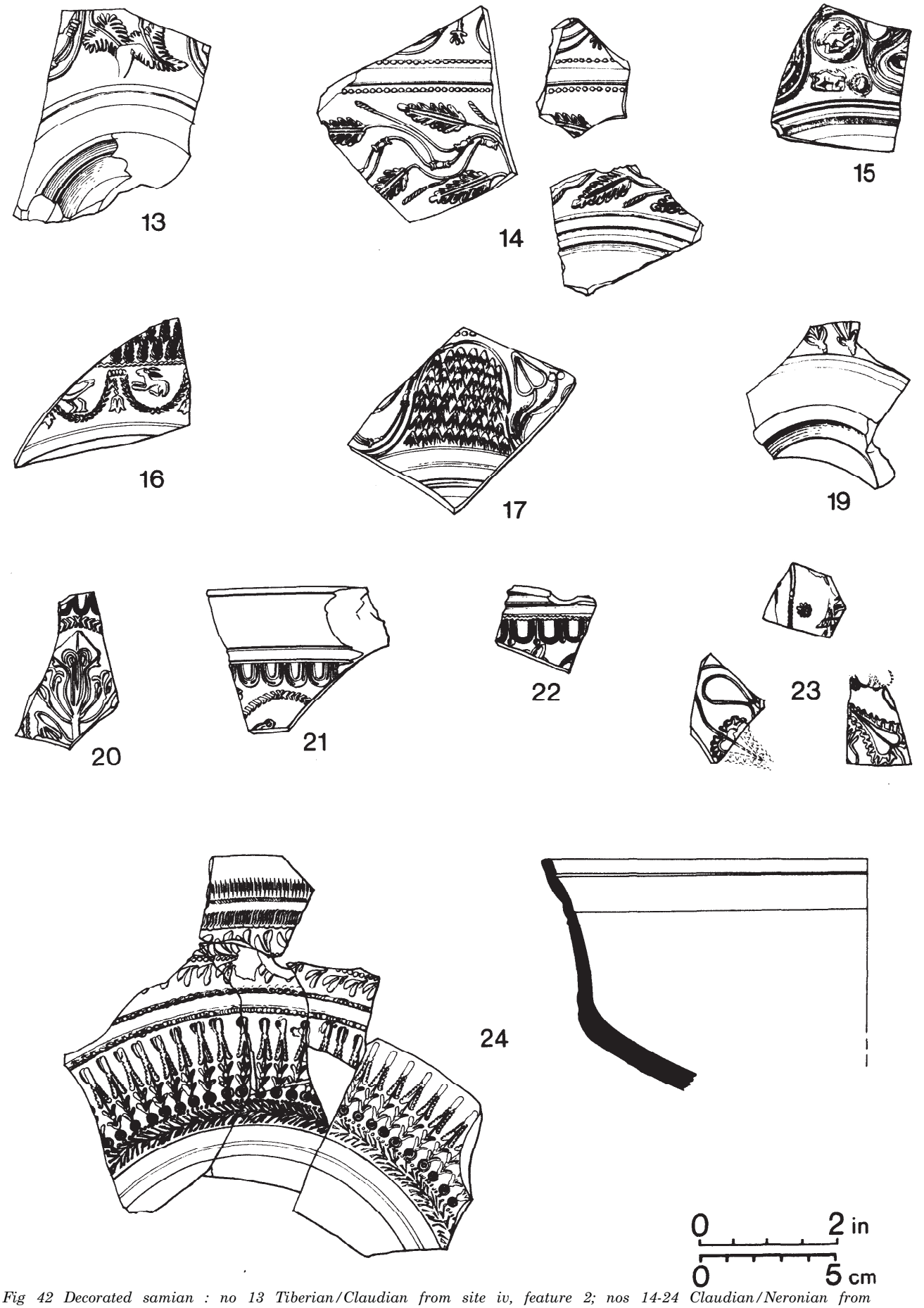


Fig 42 Decorated samian : no 13 Tiberian/Claudian from site iv, feature 2; nos 14-24 Claudian/Neronian from features 236, 138, timber cellar, site iii, layer 2, and ploughsoil

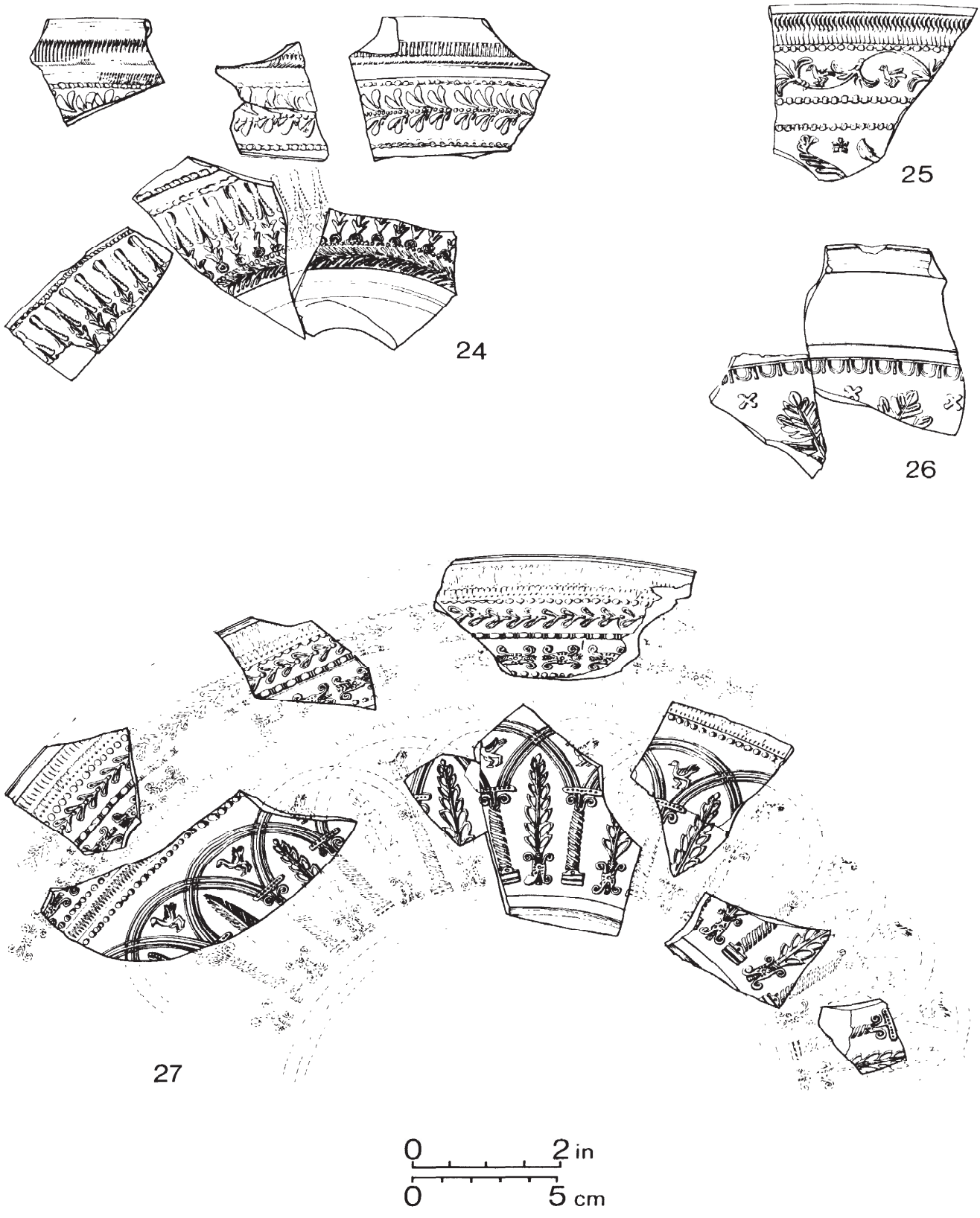


Fig 43 Decorated samian: no 24 Claudian/Neronian from *feature 138 and site iii, layer 2; nos 25–7 Tiberian/Claudian from feature 252 and ploughsoil*

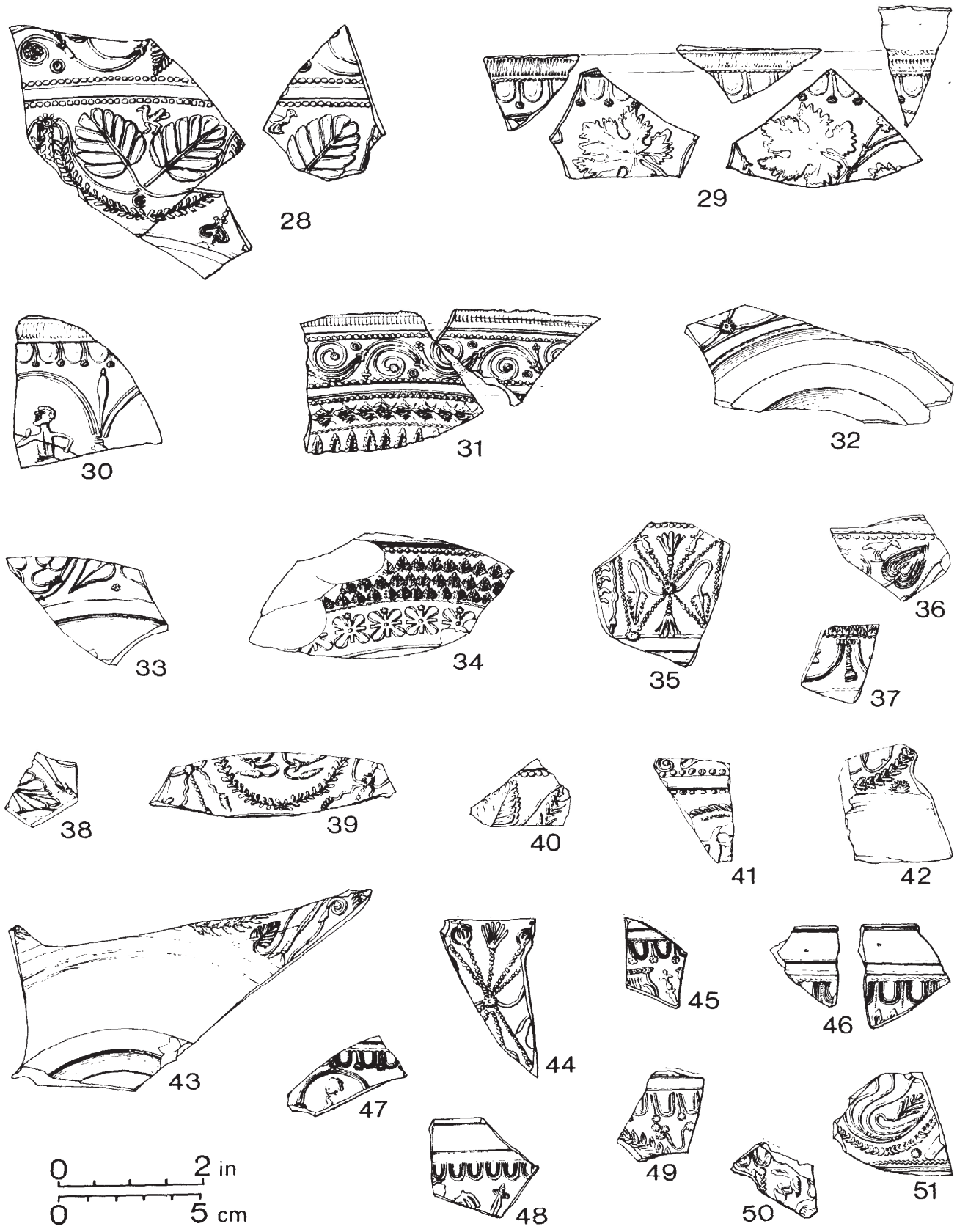


Fig 44 Decorated samian: nos 28–30 Tiberian/Claudian from features 204, 213, 238, 238, 252, 274, and 275; no 32 Tiberian from feature 120.5; nos 31, 33–4, 38, 40–1 Claudian from features 138, 153, 236, 252, and 320; others Claudian/Neronian from features 102, 204, 214, 236, 302, and ploughsoil

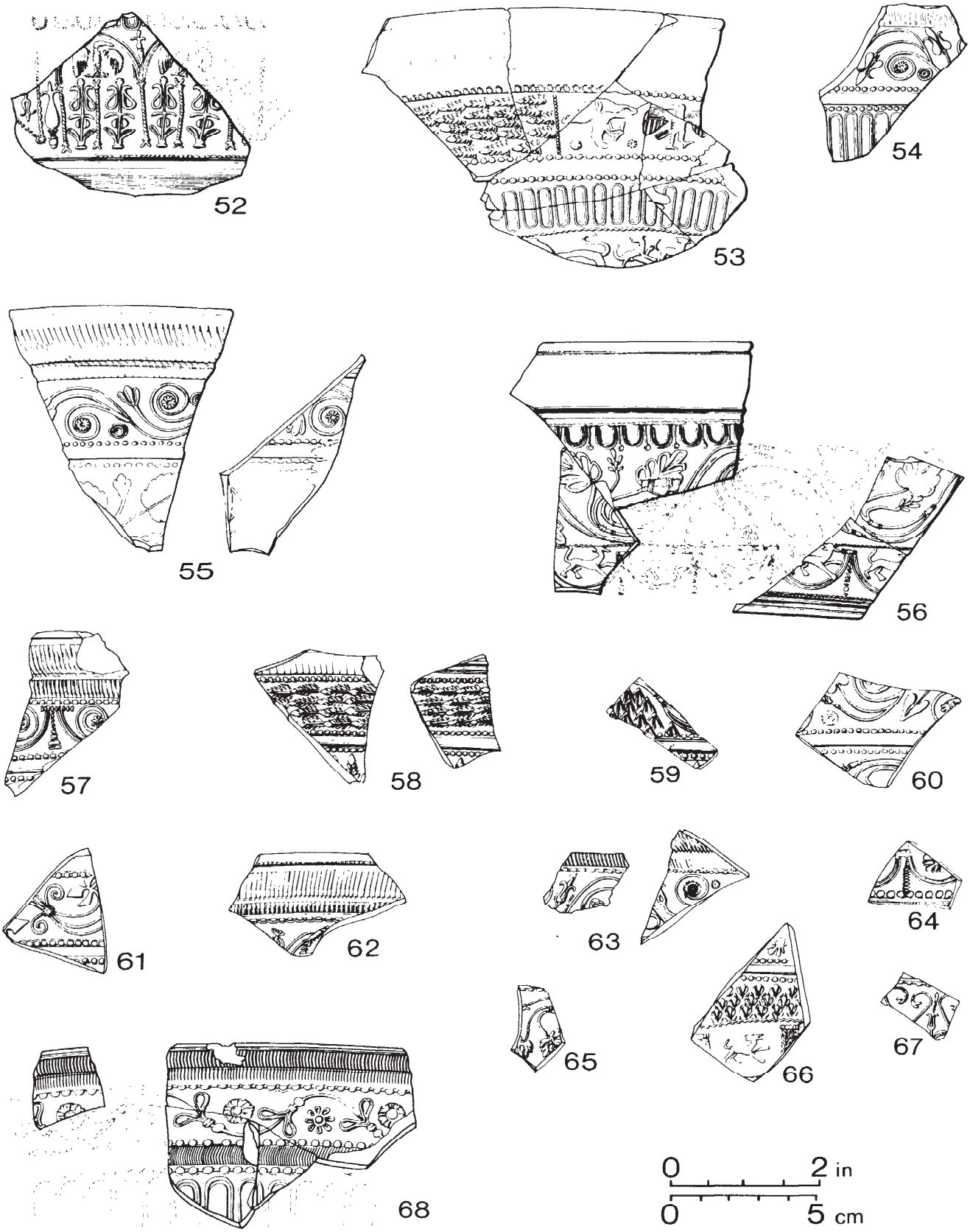


Fig 45 Decorated samian: nos 59, 65–6 Claudian from features 158, 271, 290; no 68 Tiberian/Claudian from feature 138; no 53 Neronian from site iii, layer 2; others Claudian/Neronian from features 102, 249, 252, 335, site iii, layer 2, site iv, feature 2, 503, and ploughsoil

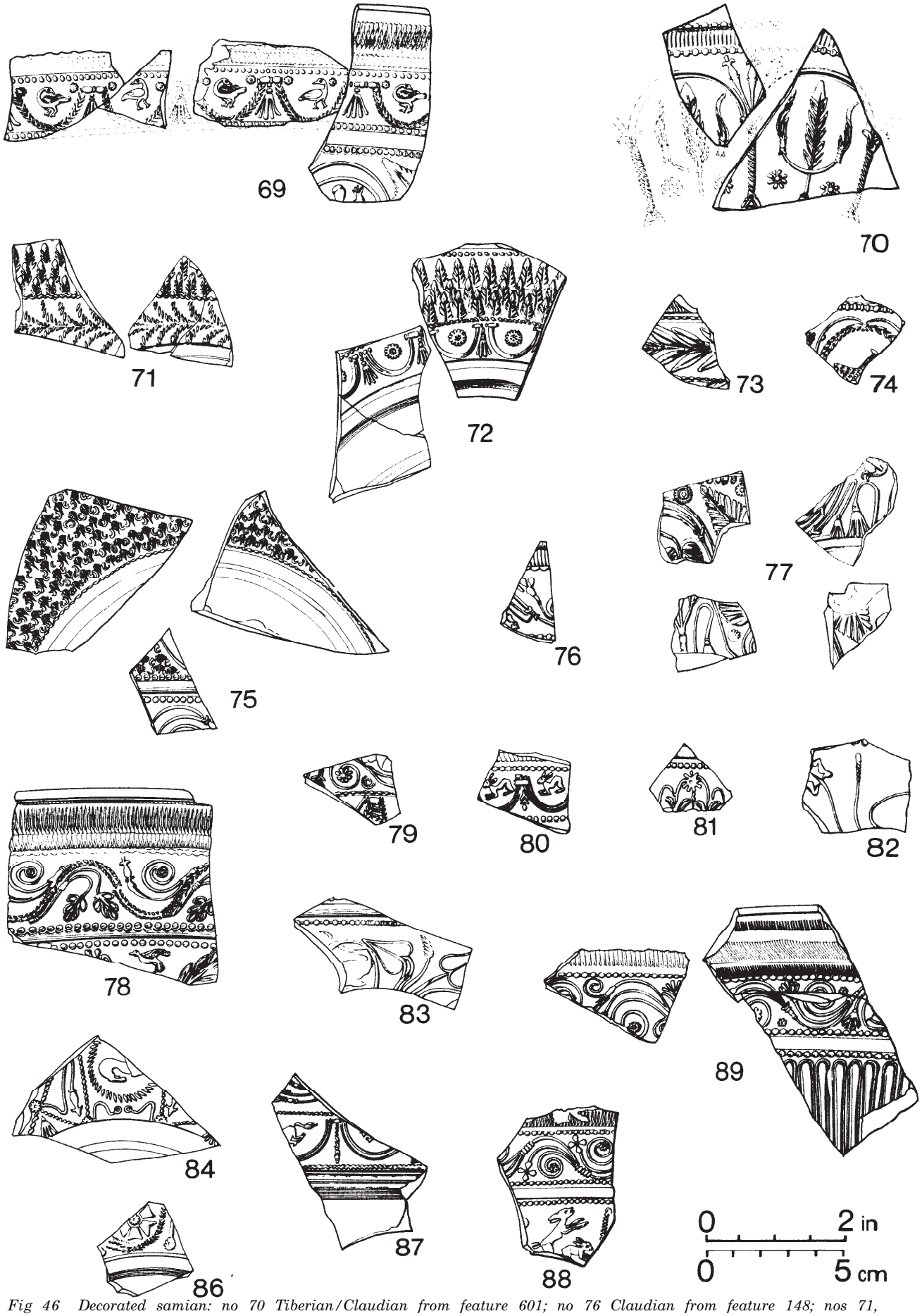


Fig 46 Decorated samian: no 70 Tiberian/Claudian from feature 601; no 76 Claudian from feature 148; nos 71, 81-9 AD 50-65 from features 102, 112, 146, 138, 252, 271, 301, 314, site iv, feature 2, and ploughsoil; nos 78, 80 Neronian from ploughsoil; others Claudian/Neronian from features 115, 153, 271, and ploughsoil

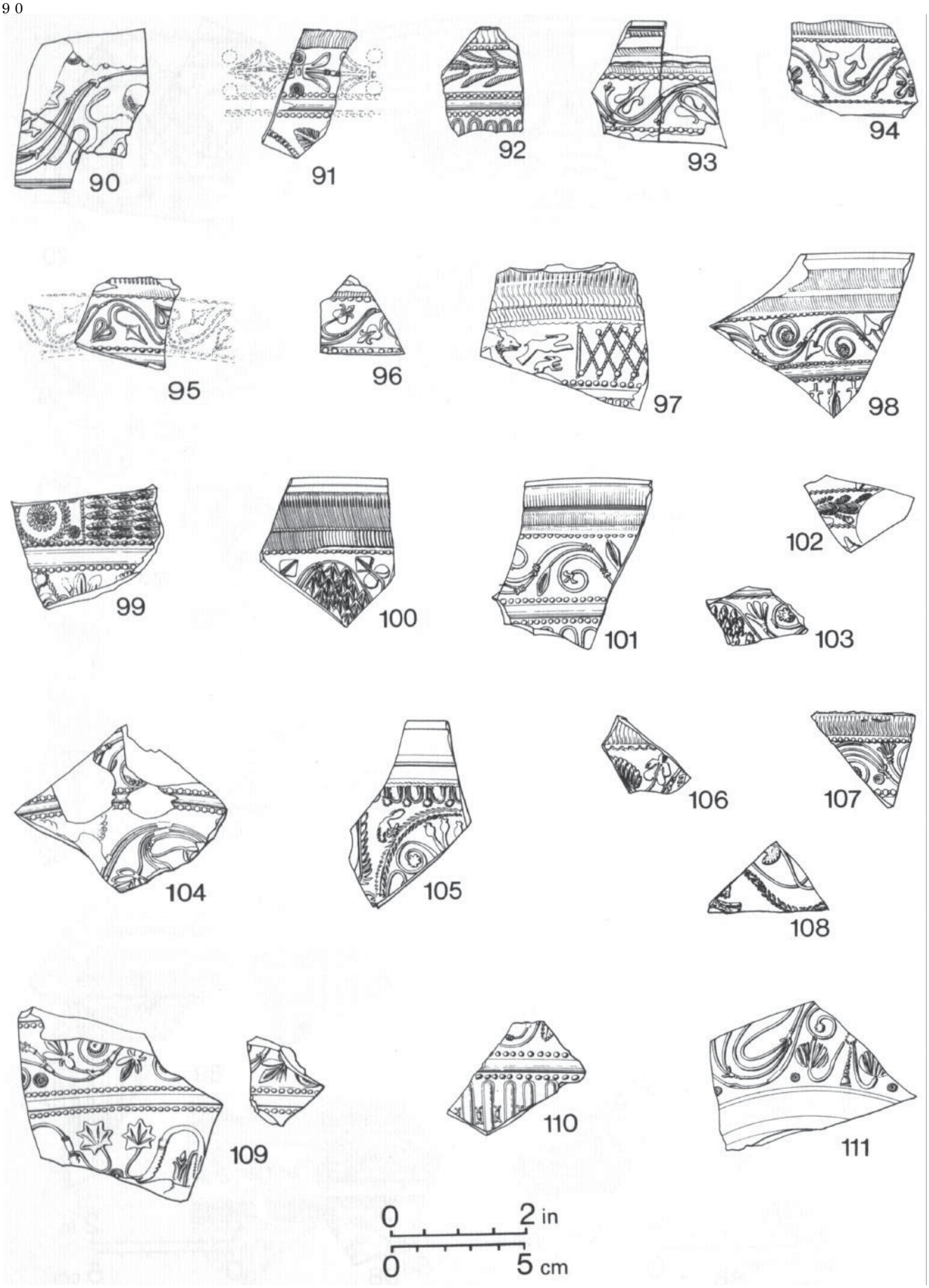


Fig 47 Decorated samian: nos 91, 93-5, 101, 109-10 Claudian from features 138, 236, 503, and ploughsoil; nos 98, 100, 106 Claudian/Neronian from feature 138 and ploughsoil; others AD 50-65 from features 102, 129, 153, 213, 236, 252, site iv, feature 2, and ploughsoil

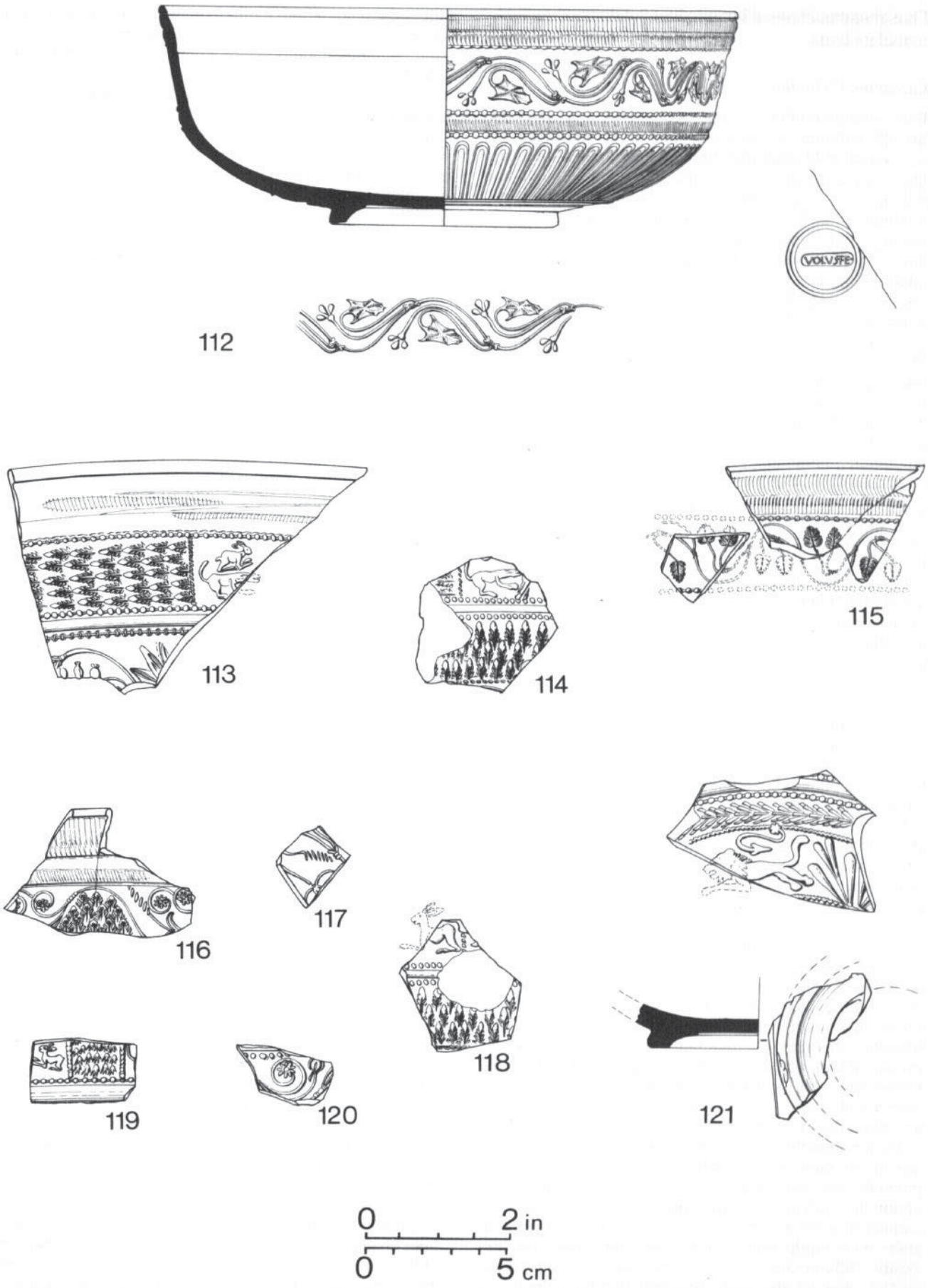


Fig 48 Decorated samian: nos 112, 115 Tiberian/claudian from features 148 and 252; nos 116-19 Claudian from feature 153 and ploughsoil; no 120 Claudian/Neronian from feature 153; others AD 50-65 from ploughsoil

The mortaria-discussion and conclusions

Katharine F Hartley

The 132 mortaria that were found in 1970 were divided into 55 different types all of which are listed in the type series (M2:E12) and illustrated in Figs 49-52 (pp 94-7). In addition each mortarium found in 1970 has been given a serial number and is listed in the mortaria catalogue, together with notes on its type, the context in which it was found, dimension, fabric, probable origin, date, etc (M2:F3). Finally, the 28 different fabrics are listed with detailed descriptions (M2:E7); only the results of Dr Williams s petrological analysis are reported here (p 93).

In a total of at least 132 mortaria (2 ?bowls omitted), 58 are of the early wall-sided variety *(Cam* type 191) and 74 are flanged mortaria. Some 42 of the latter are almost certainly pre-Flavian, 15 are dated AD 55-85, and 9 others described as 1st century or uncertain are, given the nature of the sample and the variety of form and fabric prevalent in the early period, more likely to be pre-Flavian than later. Only five of the mortaria are certainly 2nd century, though three others may be. There is a notable scarcity of late Flavian and early 2nd century mortaria and none is likely to be later than AD 170-180.

It is now certain from finds at Skeleton Green (Partridge 1981) that mortaria were known in south-eastern England before AD 43, and although it would be difficult to attribute any of the Sheepen mortaria unequivocally to a pre-conquest date, nos 3 and 4 (type 3; Fig 49) could very well be that early and it remains a possibility for many others.

The importance of the mortaria from Sheepen lies, however, in the large numbers of Claudian and early Neronian products. Together with earlier finds from Camulodunum and Richborough they should provide a large enough body of material to make some reassessments possible. Claudian and early Neronian mortaria are rarely found in quantity in Britain and the few kilns which are known here for this period are relatively unimportant. The vessels involved were never stamped and many were undoubtedly imported and must be compared with continental finds.

It is highly probable that mortaria would have been made in quantity in the vicinity of Colchester very soon after AD 43. The local clays are suitable, potting skills were well established in south-eastern Britain before the conquest, the area was regarded as stable, and the legionary fortress, besides being a stimulus to civilian production in the area, may be expected to have had influence on the distribution of certain essential goods over a wide area. There is also the probability of legionary manufacture of pottery.

Unfortunately the mortarium fabrics which are known to have been produced at Colchester in later periods vary considerably, though all are within the cream to brownish-cream range. Different firing techniques may have been involved, but it is probable that there were slight differences in the clays used and certainly differences in the proportions of tempering added. Among the early Sheepen mortaria there are several fabrics which could have been produced locally (Fabrics 7, 8, 17, 21-23, 27, and others) but proof is needed. For detailed descriptions of the fabrics see M2:E7-11.

The early wall-sided mortaria in particular were normally made in this range of fabrics. Only two kilns are known to have produced these mortaria in Britain, at Corfe Mullen, Dorset (Calkin 1935) and Eccles in Kent (Detsicas 1977), the first producing aberrant forms and the latter clearly late in date and perhaps with only a local distribution. It has been suggested that they were made at Thuisy (Marne) but only one mortarium sherd is drawn or mentioned and this could simply have been in use on the site (Fromols 1938). In fact these wall-sided mortaria appear to be at least as uncommon in Gaul as in Britain and probably more so. The nearest area to Britain where they are undoubtedly common, especially on military sites, is the Rhineland. They must have been produced in quantity there, in part at least by the army, and kilns are known at Neuss and Cologne (Filtzinger 1972, 66-7, Taf 73-4; La Baume 1958; 1962/3).

Many supplies for the army in Britain might be expected to have come from the heavily occupied German frontier zone rather than Gaul and mortaria would certainly have formed part of such supplies in and immediately after AD 43. There is adequate evidence that mortaria in fabric 5 were imported from the Eifel area in the Claudian/Neronian period (see p 93 for a report on the petrological analysis by Dr D F Williams). Fabric 4 is similar in many ways to fabric 5 and, the mortaria are in the same highly unusual tradition of form. These mortaria must be attributable to the same general area. Many mortaria in fabrics 4 and 5 were also found in previous excavations at Camulodunum (type 194) and Richborough (mostly unpublished); see also Verulamium (Frere 1972, fig 102, no 93 (AD 49-60)).

The quantities of early mortaria from Richborough and Camulodunum are comparable and many of the overseas suppliers were clearly the same. It may therefore be worthwhile to point out that Sheepen types 35-6 (Fig 51; *Cam* type 192) are notably common at Camulodunum but have not been recorded at all from Richborough in a recent exhaustive study of the pottery. They must therefore have come from a source supplying Camulodunum in bulk but not Richborough. There seem to be no very close parallells for them elsewhere and it is at least possible that they could be from workshops near Camulodunum.

Most of the Claudian wall-sided mortaria in Britain can be roughly divided into three categories which appear to have some chronological significance. These categories are indicated in the date column of the mortaria catalogue by Roman numerals after the suggested date. Category I (type 3) has no defined bead at the top of the collar; in Category II the bead is more or less defined on the outside though not usually on the inside; in Category III (types 16, 18, ?19, and 21; Fig 50) the bead is considerably swollen. Type 21 could represent a very late development when the wall-sided mortarium had virtually become a flanged mortarium. There are, of course, other factors to consider and some mortaria (types 1, 17; Figs 49, 50) will not readily fit

into any of these categories. There would also have been overlaps in production. Nevertheless, it does seem probable that those which fit perfectly into Category I were of pre-conquest manufacture-they are certainly rare in Britain while those in Category III are very late, perhaps *c* AD 45/60-65. There is no trituration grit surviving on any of the wall-sided mortaria from Sheepen and it is likely that none had it.

However, although the initial date of manufacture given is often very early the majority of the Sheepen mortaria are likely to have been made after AD 40. The appearance of wear on some of the wall-sided mortaria may be deceptive since the internal ridged surface may deteriorate through weathering when the fabric is soft. Only one of the two joining pieces from the same mortarium (no 19), shows the fresh ridged and virtually unused internal surface; it is impossible to believe in the partial use of this vessel.

Two other general points can be noted. Large groups of early mortaria in Britain often exhibit an unusually wide range of fabrics and the Sheepen mortaria are no exception. The earlier potters may have been less concerned with producing a consistent fabric than later ones but it is reasonably certain that a large number of smaller workshops were active in the pre-Flavian period.

Petrological analysis of the mortaria

David William

Sherds from four mortaria were submitted for petrological analysis. This work is part of a long-term project on the petrological analysis of Roman mortaria.

1 Mortarium no 73 of the mortaria catalogue, M2:F12, Fig 51.28; type 28 of the type series; fabric 5; from feature 102 (period IVB).

Very hard, slightly rough fabric, reddish-buff (between Munsell 2.5YR 6/4 and 7.5 8/6) surfaces, light grey core. The trituration grits are composed of inclusions of sandstone, quartz, and many rounded brown or black fragments, some of which can be seen to possess a cindery scoriaceous appearance suggestive of volcanic glass.

Thin-section analysis: fine clay matrix containing inclusions of quartz grains, felspar, sandstone, siltstone, trachitic lava, volcanic glass, and some clinopyroxenc. This range of inclusions fairly closely parallels that recognized in Mayen ware (Fulford & Bird 1975, fabric l), and texturally is similar to sectioned Mayen ware from Mucking seen by the writer. This strongly suggests that an origin in the Eifel/Rhine region of Germany is likely for this mortarium.

2 Mortarium no 66 of the mortaria catalogue, M2:F11, Fig 50.26; type 26 of the type series; fabric 4; from feature 332 (period IVB2).

3 Mortarium no 71 of the mortaria catalogue, M2:F12, Fig 51.30; type 30 of the type series; fabric 4; from site i, topsoil.

4 Mortarium no 70 of the mortaria catalogue, M2:F12, Fig 51.29; type 29 of the type series; fabric 4; from site i, topsoil.

All three sherds appear to be in a fairly similar, slightly sandy, fabric, which tends to be softish and has a mild soapy feel to it; reddish-brown inclusions of (?) grog and a little quartz are scattered throughout. The trituration grits are composed for the most part of quartz and sandstone. The surface colour of nos 2 and 3 is pinkish-white (5YR 8/2) with a light reddish core, while no 4 is reddish-brown (2.5YR 5/4) throughout.

Thin-section analysis: this fabric (fabric 4) is very distinctive in thin-section, and there are similarities of texture with no 1. The clay matrix is very fine and comparatively clean, with a scatter of quartz, sandstone, mudstone, and (?)grog. A similar fabric has been noted in this section from Richborough (AML 78301014, D8 92U, 44 AML 7830820, D8 99U, and D9 97U).

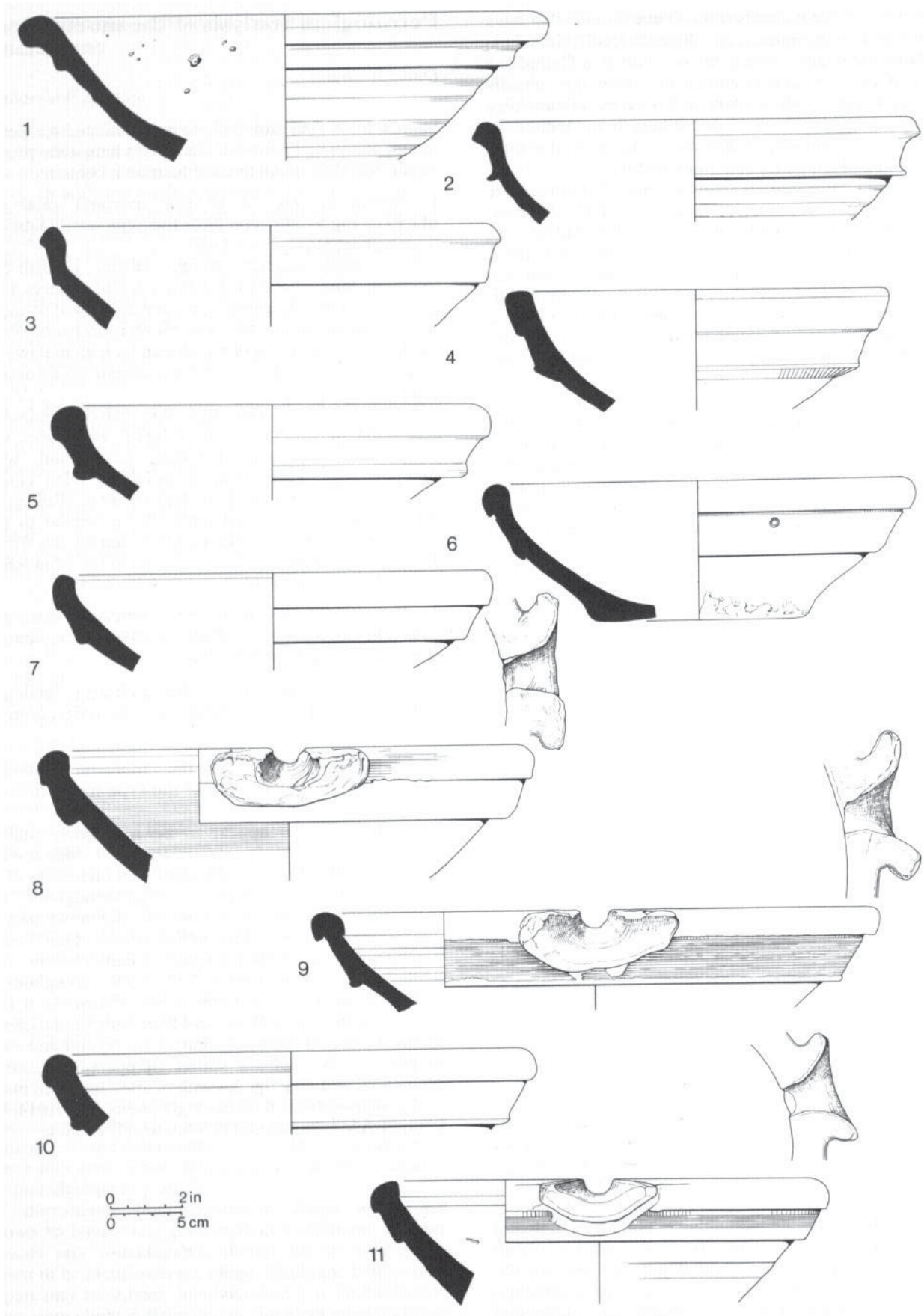


Fig 49 Mortaria types 1-11; see M2:E12-13 for contexts of individual vessels

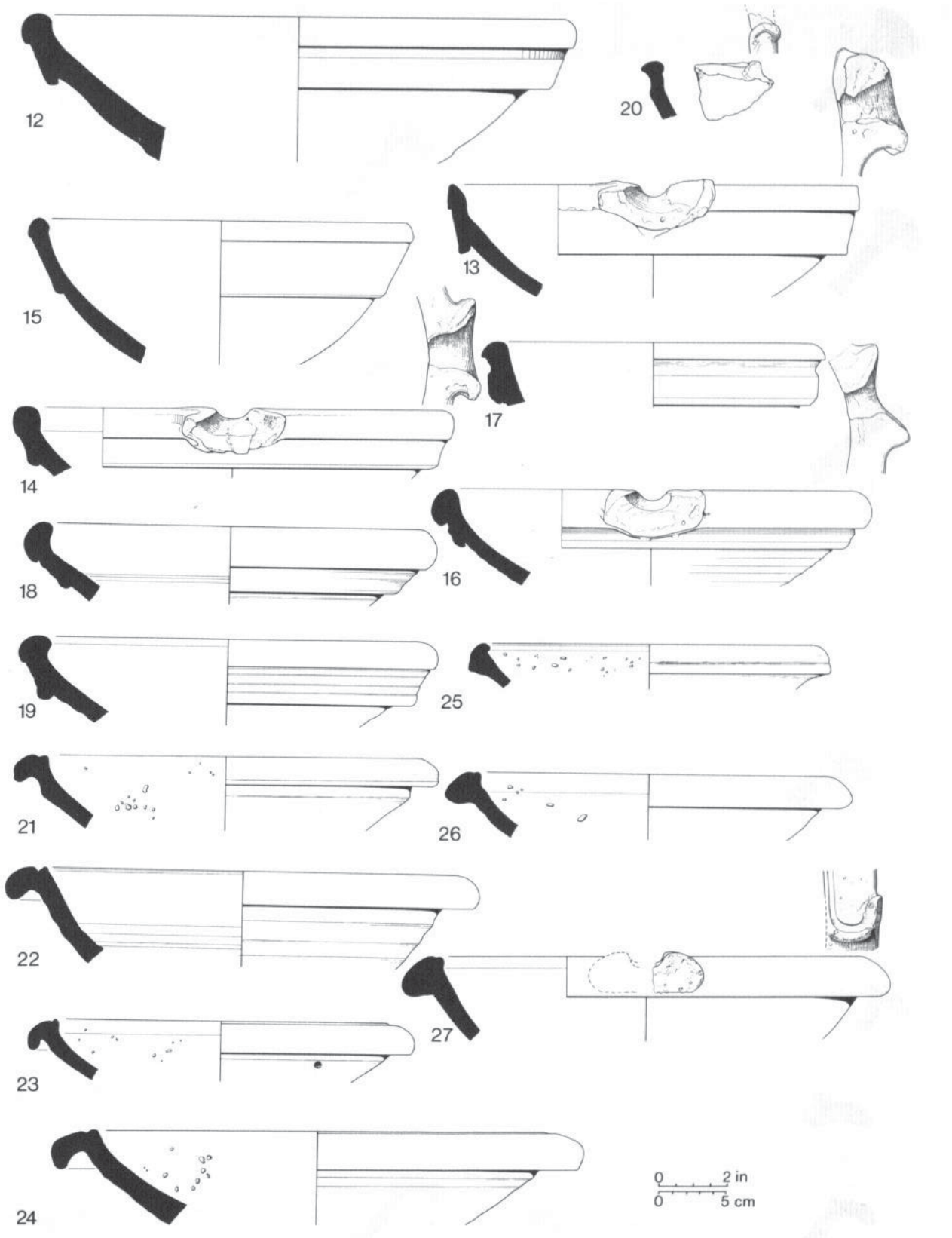


Fig 50 Mortaria types 12-27; see M2:E13-14 for contexts of individual vessels

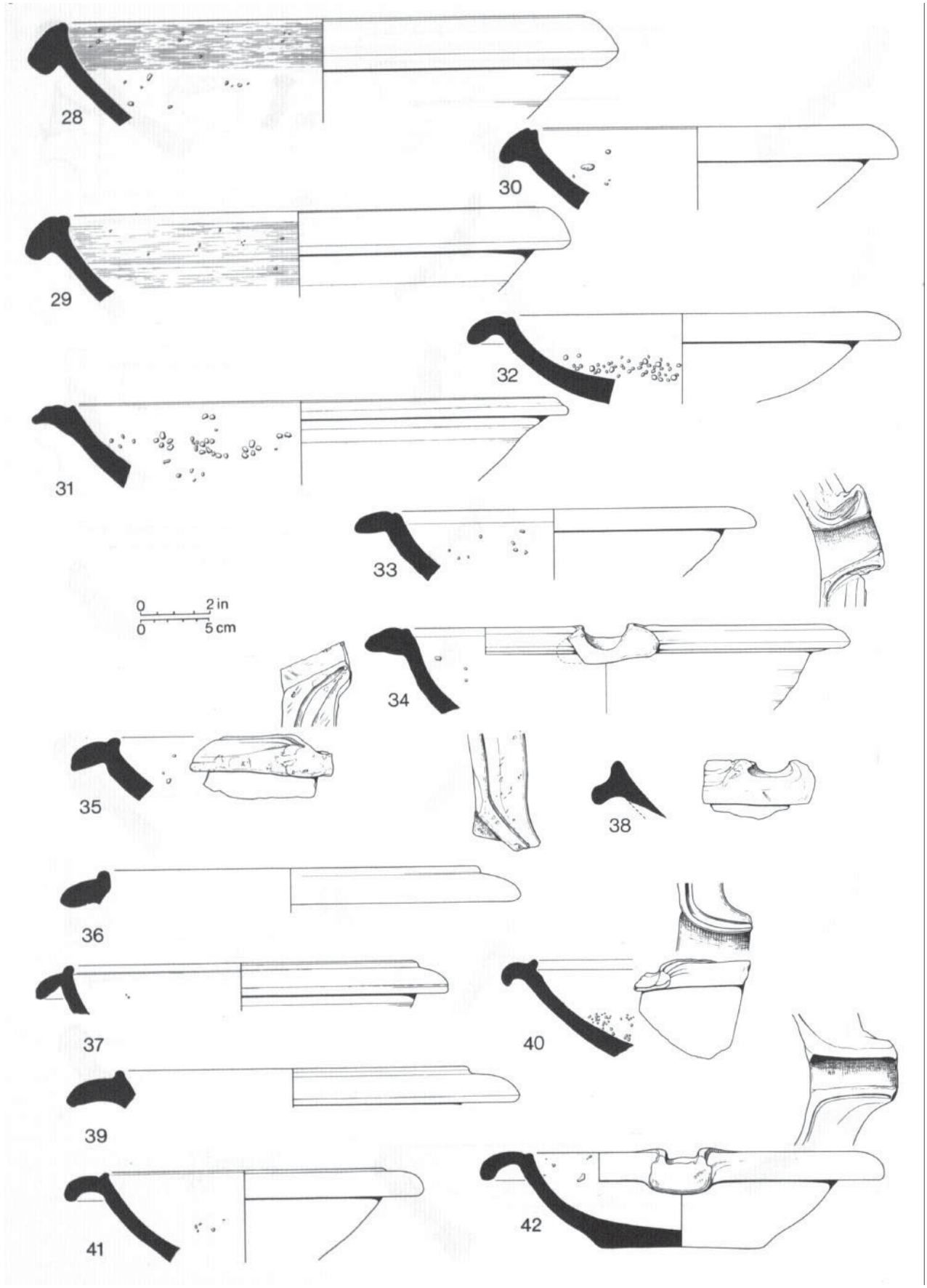


Fig 51 Mortaria types 28-42; see M2:F1-2 for contexts of individual vessels

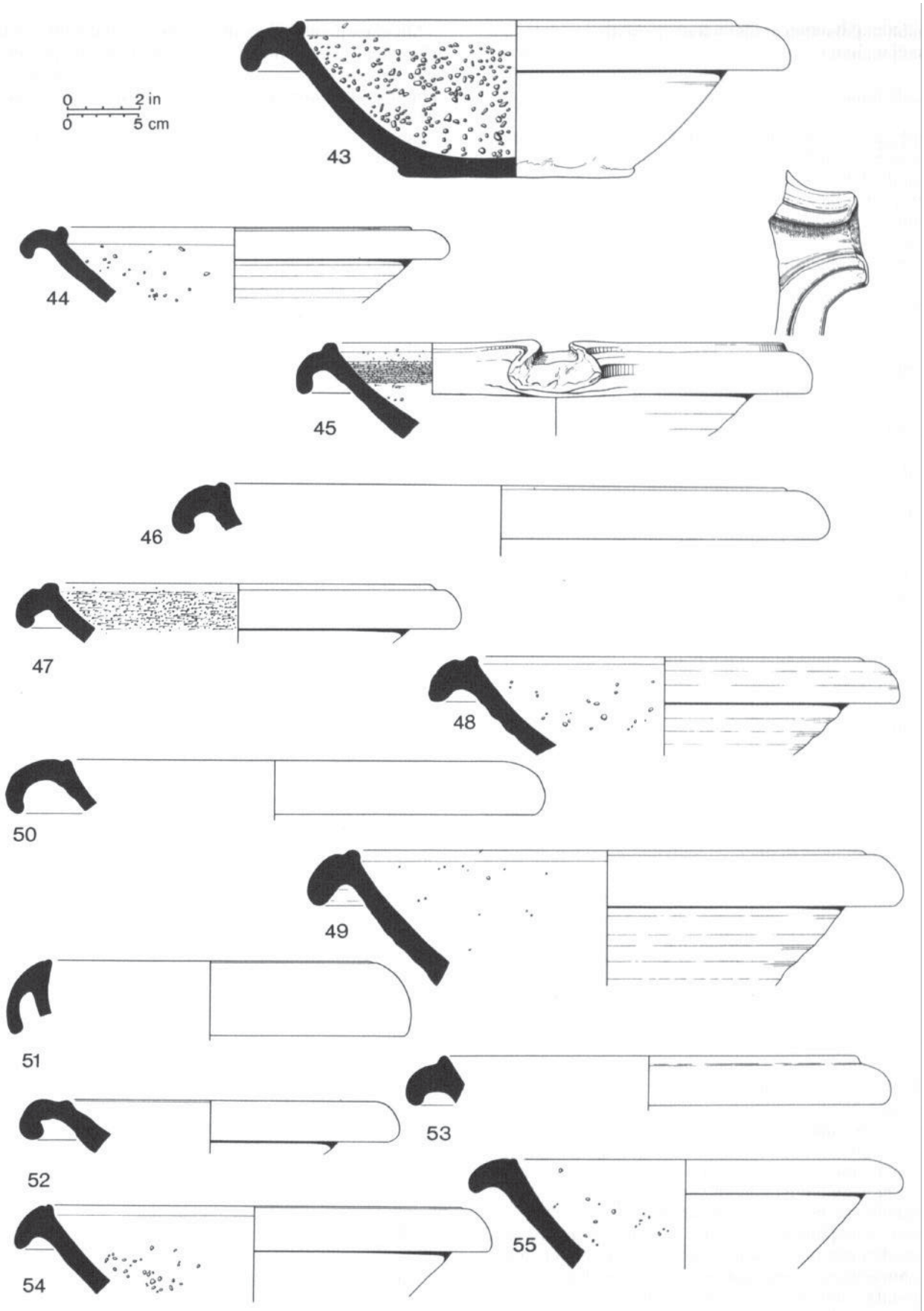


Fig 52 Mortaria types 43-55; see M2:F2-3 for contexts of individual vessels

The amphoras summary and conclusions

Paul R Sealey

Amphoras are large, two-handled pottery jars that were used for the bulk storage and transport of wine, olive oil, and other foodstuffs in the Roman period. Wine and oil in particular were staple foods, so the study of these containers can provide crucial source material for the economic history of antiquity. The 1970 excavations at Sheepen produced a large assemblage of these vessels. Nearly ail of them reached Britain in the brief period between the Roman invasion of AD 43 and the AD 60/61 sack of Colchester by Boudicca. The conquest period patterns of importation are not obscured beyond recognition by the incidence of sherds as residual elements in later horizons; this allows us to focus on trade in the early years of the province with some clarity and the magnitude of the assemblage makes it a useful datum point for assessing subsequent developments. But the importance of the Sheepen amphoras ought not to be envisaged solely in insular terms. The wine amphoras offer a telling commentary on the scale of Julio-Claudian investment in viticulture and the assemblage in its entirety graphically illustrates the significance of the trade in amphora-borne commodities from the Iberian provinces under Claudius and Nero.

There is no single system of amphora classification sufficiently comprehensive to encompass all the forms found in Italy and the western provinces. Nor can there even be said to be agreement on the principles that should govern classification. With two exceptions, Camulodunum form numbers are not used here and the nomenclature employed is that current among contemporary students of amphoras. But to make comparison with the Camulodunum report easier, Table 6 gives Camulodunum form numbers alongside the terminology used in the text. *Salazon* amphoras require immediate explanation: *salazones* is a Spanish word for high salt-content foods such as the marine sauces and salted fish bottled in amphoras made along the coasts of Portugal and Spain. Spanish archaeologists call these amphoras *salazones* and that is the generic term used for them in this report. The word can also of course be used for their contents.

Sixty-three of the amphoras, just under half of the minimum number recovered, were thin-sectioned and studied under the petrological microscope by Dr D F Williams, DOE Ceramic Petrology Project. This enabled the fabrics to be characterized in detail, allowing in some cases suggestions of source areas to be made and also assignment to form. Full descriptions of the petrology and the fabric groups identified by Williams are to be found in M3:A3-9.

Exhaustive lists of the commodities stored or transported in amphoras have been compiled but they tend to obscure the role of wine and olive oil as the principal amphora-borne commodities of antiquity. Tables 8 and 9 specify (where ascertainable) the contents of the Sheepen amphoras and give the overall volumes of the commodities involved. Wine (1619.12 litres) and olive oil (1392.51 litres) lead the field by a wide margin.

Sheepen provided no direct evidence of contents but a Dressel 2/4 has a painted inscription which apparently tells us that its wine was two years old (amphora 23). The high salt-content marine sauces and salted fish of the *salazon* amphoras were also important, although not imported on the same scale as wine or oil. A more vexed question concerns the contents of Haltern 70. Painted inscriptions naming the contents as *defrutum* do not make the form a wine amphora. The report endorses research that shows that the boiling of must (grape juice) to make *defrutum* would cause any alcohol present to evaporate, leaving behind a viscous and sweet substance not unlike honey and here called *defrutum* syrup.

Table 6 gives the minimum number of amphoras. Despite what is sometimes said, the calculation of this statistic need not be a subjective exercise and should be regarded as a precise statement of the lowest number of complete amphoras the excavated sherds can represent. Each amphora from Sheepen has been given a number, from 1-135. The numbers 136 and 137 are reserved for the two stoppers. Amphoras were traded for their contents; to grasp the economic truth behind the welter of sherds an excavation produces, we need to know the capacities of the types present. Information on this was collected from published sources and supplemented by measurements of complete amphoras in the Colchester and Essex Museum. The capacities of individual amphoras and the mean figures used for each class in this report are given in Table 7. Note the range in capacities: from 3.15 to 66.31 litres. All calculations there and elsewhere in the report are correct to two decimal places. Multiplying the minimum numbers of amphoras by the mean figures for capacities gives the volume of contents each form represents (see Table 8). This is taken a stage further in Table 9 which gives the total volumes of wine and *salazones* (as well as *defrutum* syrup and olive oil) that reached Sheepen in amphoras. Although estimates of the volume of wine carried on shipwrecks with cargoes of amphoras are sometimes made, the same technique has not hitherto been applied to the multiplicity of forms present on settlements. The

Table 6 Amphoras from the 1970 excavations at Sheepen

Amphora type	*Minimum vessel number*
Dressel 1 (Cum 181)	5
Dressel 2/4 (includes *Cam* 182/183)	44
Cam 184	21
Haltern 70 *(Cam* 185a)	8
Dressel 20 *(Cam* 187)	21
Beltràn I (Dressel 7/11 includes *Cam* 186a/186b)	16
Beltràn IIa (Dressel 38/39 includes *Cam* 186c)	1
Beltràn I/IIa	4
Cam 189	7
Richborough 527	1
Dresse1 28 *(Cam* 172/173)	5
Unidentified	2
Total	135

Table 7 Amphora capacities in litres

Amphora type	*Individual capacities*	*Average*
Dressel 1	22; 26	24.0
Dressel 2/4	28.5; 28.95; 15; 31.5; 32.5; 28; 33.8; 18; 30.5; 29	27.58
Cam 184	13.6	13.6
Haltern 70	25.5; 30; 30; 34.75	30.06
Dressel 20		66.31
Beltràn I	16.5; 18	17.25
Beltràn IIa	12.5; 15; 15	14.17
Beltràn I/IIa		15.71
Cam 189	3.15	3.15
Pélichet 47	30.8	30.8

advantages of this style of quantification will become apparent later in the discussions of the wine trade and the economy of the Iberian provinces.

Any assessment of the chronology of the amphora assemblage must first address itself to the tiresome question of Dressel 1 at Sheepen. New wine was not bottled in that form after c 10 BC and its presence on a settlement not founded until the first years AD merits explanation. The terminal date of all classes of amphora is obscured by secondary use once the original contents were consumed or decanted. This may have extended the life of an amphora for decades. Dressel 1 is the most sturdy and robust of the amphoras that reached Britain in the Iron Age. This enhanced their longevity and made them especially favoured for secondary use. In distant regions where amphoras were infinitely rarer than in the Mediterranean lands, it is unlikely that opportunities to make use of empty vessels would have been neglected. There is indeed archaeological evidence for the secondary use of Dressel 1 in Britain. The detailed account of Iron Age features in the Camulodunum report gives no hint of a sequence of horizons that could now be adjusted to take us back to when Dressel 1 was still current. If Dressel 1 was imported by a 1st century BC settlement at Sheepen (as has been claimed), then so too should have been other Roman wares of the same date. It would be a patent absurdity to postulate a settlement that imported wine in quantity and yet declined to receive contemporary Roman fine wares (terra sigillata and Gallo-Belgic ware), particularly as such pottery, earlier than that found at Sheepen, is present on other Iron Age sites in Britain. The coin list shows that the duration of the Iron Age phase at Sheepen was coincident with Cunobelinus and no earlier. His reign cannot be extended back to a period when Dressel 1 was still current. There are clearly difficulties therefore about postulating a 1st century BC settlement at Sheepen to account for the Dressel 1 amphoras. Stratigraphy and the coin list show that such a scttlcmcnt did not exist. All the Dressel 1 amphoras reached Sheepen as old vessels put to secondary use after the original contents had been consumed. Some may even have reached Sheepen filled with old wine.

Table 8 Amphora contents by form in litres

Amphora type	*Minimum vessel number*	*Volumes*
Dressel 1 (wine)	5	120.0
Dressel 2/4 (wine)	44	1213.52
Cam 184 (wine)	21	285.6
Haltern 70 *(defrutum* syrup)	8	240.48
Dressel 20 (olive oil)	21	1392.51
Beltràn I *(salazones)*	16	276.0
Beltràn IIa *(salazones)*	1	14.17
Beltràn I/IIa	4	62.84

Table 9 Volumes of amphora-borne commodities in litres

Commodity	*Amphorus*	*Volumes*
Wine	Dressel 1 + 2/4 + Cam 184	1619.12
Defrutum syrup	Haltern 70	240.48
Olive oil	Dressel 20	1392.51
Salazones	Beltràn I + IIa + I/IIa	353.01

The five Dressel 1 amphoras were not the only vessels from the 1970 excavations that reached Britain in the Iron Age. Two Augustan Dressel 20 amphoras were also present. At the other end of the chronological spectrum is a Dressel 20 rim of Flavian or early 2nd century AD date. All the other amphoras may be deemed to have reached Britain in the period AD 43-60/61. This is apparent from Table 10 which gives the chronological incidence of the amphora sherds by period. The only sherds stratified in Iron Age horizons arc both Dressel 1. Because the majority of the stratified sherds fall in the AD 43-60/61 bracket, the few sherds in subsequent levels may be regarded as detritus from vessels that arrived before AD 60/61. All the amphoras held to have reached Britain between AD 43 and 60/61 are listed in Table 11.

When the start of the late Iron Age occupation at Sheepen was dated c AD 10, it was in the belief that the

Table 10 Chronological incidence of amphora sherds

Context	*Number of sherds*
Pre-AD 43	2
AD 43-60/61	505
AD 60/61 (Boudiccan destruction horizon)	126
Post-AD 60/61	43
Total of stratified sherds	676
Unstratified	612
Total of stratified and unstratified sherds	1288

Table 11 The amphora trade with Sheepen AD 43-60/61

Amphora type	*Minimum vessel number*
Dressel 2/4	44
Cam 184	21
Haltern 70	8
Dressel 20	18
Beltràn I/IIa *salazones*	21
Cam 189	7
Richborough 527	1
Dressel 28	5
Unidentified	2
Total	127

latest pottery from the Roman military sites at Haltern dated to AD 14-16. Now that we know Haltern was lost forever in AD 9, we must adjust the start of Sheepen to fall within the lifespan of the fortress. AD 5 is proposed here as a provisional revised date for the beginning of the Sheepen settlement.

Seventy of the Sheepen amphoras are wine vessels (51.85% by vessel count) and they represent wine imports of 1619.12 litres (44.91% of the contents listed in Table 9). Wine was the most important single commodity reaching Sheepen in amphoras and the trade deserves extended scrutiny. Wine imports are accounted for by three forms: Dressel 1, Dressel 2/4, and *Cam* 184. The fabrics of each form have been defined on the basis of their petrology. Nineteen fabric groups are present. Because some encompassed extensive geological tracts, these nineteen groups must be regarded as a statement of the minimum number of wine-producing regions supplying Sheepen. The chronological incidence of the sherds shows that the majority of the amphoras may be deemed to have reached Sheepen in the period AD 43-60/61. But we must exclude all the Dressel 1 amphoras because they relate to trade with Iron Age and not Roman Britain. Table 12 accordingly omits that form from our wine amphora assemblage and gives details of those vessels that supplied Sheepen with wine in the period AD 43-60/61. By stating the percentage of wine supplied from each source, it allows one to estimate the significance of the different regions. Provided the composition of the assemblage does not reflect local predilections for certain crus, it should reflect (at least in part) the differing outputs of the various source regions.

Cam 184 in the two fabric groups from Rhodes supplied 14.52% of the wine drunk at Sheepen under Claudius and Nero. There is nothing before Claudius to lead us to anticipate so momentous a contribution. It has been demonstrated elsewhere that Rhodian wines were consumed in quantity on some early military sites in Roman Britain but that civilian settlements did not participate in the trade to the same extent. This is accounted for as wine levied by the Roman state from the Rhodians as a penalty for unrest there early in the reign of Claudius. Sheepen was not military but civilian (at least technically); nevertheless it had sufficient affiliations with the Roman army for the incidence of Rhodian amphoras there to be cited in support of this thesis. The lack of a fabric at Sheepen shared between

Table 12 The wine trade with Sheepen AD 43-60/61

Amphora type and fabric group		*Minimum vessel number*	*Litres of wine*	*%*	
	Dressel 2/4				
Italian	Peacock fabric 1	13	358.41	23.92	38.64
	Peacock fabric 2	8	220.64	14.72	
Spanish	Catalan	4	110.32	7.36	20.24
	Williams fabric 1 (Baetican?)	4	110.32	7.36	
	Williams fabric 2 (Baetican?)	3	82.74	5.52	
Unprovenanced	Williams fabric 3	2	55.16	3.68	22.08
	Williams fabric 4	1	27.58	1.84	
	Williams fabric 5	1	27.58	1.84	
	Williams fabric 6	1	27.58	1.84	
	Williams fabric 7	1	27.58	1.84	
	Williams fabric 8	2	55.16	3.68	
	Williams fabric 9	1	27.58	1.84	
	Williams fabric 10	1	27.58	1.84	
	Williams fabric 11	1	27.58	1.84	
	Williams fabric 12	1	27.58	1.84	
	Cam 184				
Rhodian	Peacock fabric 1	11	149.6	9.98	14.52
	Peacock fabric 2	5	68.0	4.54	
Aegean?	Peacock fabric 3	3	40.8	2.72	4.53
	Williams fabric 7	2	27.2	1.81	
Totals	19 fabrics	65 amphoras	1499.12 litres of wine		

Table 13 The civilian wine trade with Sheepen AD 43-60/61

Amphora type and fabric group		*Minimum vessel number*	*Litres of wine*	*%*	
	Dressel 2/4				
Italian	Peacock fabric 1	13	358.41	27.97	45.19
	Peacock fabric 2	8	220.64	17.22	
Spanish	Catalan	4	110.32	8.61	23.68
	Williams fabric 1 (Baetican?)	4	110.32	8.61	
	Williams fabric 2 (Baetican?)	3	82.74	6.46	
Unprovenanced	Williams fabric 3	2	55.16	4.3	25.83
	Williams fabric 4	1	27.58	2.15	
	Williams fabric 5	1	27.58	2.15	
	Williams fabric 6	1	27.58	2.15	
	Williams fabric 7	1	27.58	2.15	
	Williams fabric 8	2	55.16	4.3	
	Williams fabric 9	1	27.58	2.15	
	Williams fabric 10	1	27.58	2.15	
	Williams fabric 11	1	27.58	2.15	
	Williams fabric 12	1	27.58	2.15	
	Cam 184				
Aegean?	Peacock fabric 3	3	40.8	3.18	5.3
	Williams fabric 7	2	27.2	2.12	
Totals	17 fabrics	49 amphoras	1281.52 litres of wine		

Cam 184 and Dressel 2/4 suggests that Cam 184 does not (as has often been suggested) include imitations of the Rhodian prototype made in Italy and the western provinces. The two Cam 184 fabrics at Sheepen that did not come from Rhodes must presumably therefore have come from elsewhere in the Aegean or the Greek world. Amphoras in these fabrics need not therefore have any connection with the commissariat. Nor of course should we deny the possibility that wine from Rhodes could have reached early Roman Britain in the course of civilian trade. The Roman army was ever one of the major consumers of wine, so it would be mistaken to represent the importance of the Rhodian connection as a distorting factor in the composition of the Sheepen assemblage. But it does mean that our wine amphoras are typical neither of exclusively military nor purely civilian milieux. To gain some insight into what may approximate to civilian contexts, we should delete Cam 184 in the two Rhodian fabrics from the assemblage. Table 13 is accordingly presented as an essay in what may be thought of as the civilian wine trade with Sheepen.

But to return to Table 12. It may come as a revelation to see that Sheepen was supplied with wine from at least nineteen different sources. When Dressel 1 was current, Britain had been supplied for at least a century with wine exclusively from Italy. It is only in the last decades BC that the picture begins to assume the diversity we encounter in so developed a form at Sheepen. A root cause of this diversity was the growing recognition that wine was the most remunerative capital investment in agriculture. An assessment of the profitability of wine, based on the epigraphic and documentary evidence, has shown that for Italy, wine could give a return of 7-10% on capital, compared with ordinary dividends of 5-6% This led to the planting of new vineyards, not only in Italy, but in the provinces as well.

These new vineyards encroached on land that had hitherto been devoted to grain. Now in AD 92 there was a glut of wine and a dearth of grain. Domitian announced drastic measures to counter the crisis: he stipulated that no new vineyards were to be planted in Italy and that up to half in the provinces were to be destroyed. There is no evidence that Domitian was seeking to protect the Italian wine industry from provincial competition; what lay behind the edict was his perception that investment in viticulture had created a perilous imbalance in the economy. The assemblage of wine amphoras from Sheepen shows Roman viticulture thriving as never before; the multiplicity of fabrics is tangible expression of a massive and widespread investment in the wine trade and we can see the crisis of AD 92 in the making. Table 12 shows that Italy was the most important single source of the wine consumed at Sheepen in the period AD 4360/61, supplying 38.64%. Its contribution may eventually prove to be higher because some of the unprovenanced Dressel 2/4 fabrics must surely be Italian. A century earlier, Italy supplied all the wine that reached Britain. Our statistics apparently suggest a crisis of production in the peninsula. But the investment in viticulture noted above led to a substantial increase in the volume of wine produced under the Julio-Claudians. Italy produced more wine under Claudius and Nero than a century before. Much of this new demand may be attributed to the increasing adoption of the Roman way of life in the young provinces of Gaul and Iberia. Italy was no longer the sole provider, but the senior partner in a burgeoning wine trade; although her contribution to the whole was proportionally less than it had been, an increase in output must betoken enhanced prosperity. The debut of provincial crus does not signify an attenuation of, or an assault on, Italian prosperity, but rather a widening participation in one of the buoyant sectors of the Julio-Claudian economy.

Table 14 Spanish amphoras at Sheepen

Amphora type	*Minimum vessel number*
Catalan Dressel 2/4	4
Dressel 2/4 in Williams fabric 1 (Baetican?)	4
Dressel 2/4 in Williams fabric 2 (Baetican?)	3
Haltern 70	8
Dressel 20	21
Beltràn I	16
Beltràn IIa	1
Beltràn I/IIa	4
Total	61

Attention should be drawn to the important contribution of the Iberian provinces. They apparently supplied one-fifth (20.24%) of the wine drunk at Sheepen under Claudius and Nero. Bearing in mind that Haltern 70 was not a wine amphora (because syrup was bottled in it), we should seriously consider anew the possibility that Dressel 2/4 was produced in the province for local wines. Kiln products representing Baetican production of Dressel 2/4 have indeed been published but doubt has been expressed about the validity of the claim. Now Sheepen produced seven Dressel 2/4 amphoras in two distinct fabrics (Williams fabrics 1 and 2) that merit serious consideration as Baetican. Without stamps or painted inscriptions, decisive evidence of an origin there cannot be demonstrated. But their petrology is consistent with a Baetican provenance and Williams fabric 1 is more or less identical in the hand specimen with one of the *salazon* amphoras from Sheepen.

The 61 amphoras at Sheepen that came from the Iberian provinces are listed in Table 14. They constitute 45.19% of the total assemblage by vessel count. The wine that came from Baetica and Tarraconensis in Dressel 2/4 accounted for 20.24% of that consumed at Sheepen in the period AD 43-60/61. But only when allowance is made for the volumes of commodities involved can the significance of the Iberian connection be truly appreciated: 63.5% of the contents listed in Table 9 came from Iberia. Although the volume of contents for every class of amphora at Sheepen could not be established, it is clear that Spain was the most important single source of the amphora-borne commodities reaching Sheepen and the only source of olive oil, *salazones,* and *defrutum* syrup (assuming no *defrutum* arrived in Dressel 1 and 2/4 amphoras). At Sheepen the scale of olive oil imports eclipses that of Baetican wine, *defrutum* syrup, and *salazones*. This suggests that by the reign of Claudius olive oil may have become the mainstay of the Baetican export trade in amphora-borne foodstuffs. Corroboration is provided by the contemporary shipwreck of Port-Vendres B, for there Dressel 20 oil amphoras were the major element of the cargo. Two early olive oil amphoras from Sheepen are Augustan in form and supplement evidence from Verulamium and Skeleton Green that shows that the export of Baetican oil to Britain began that early. It is clear from the deposit of amphoras at La Longarina (Ostia) and from those at Rijdgen in Germany that the Spanish provinces were major exporters of amphora-borne commodities under Augustus. The rise of Spain was dramatic and there is little sign in the archaeological record of the export of Spanish agricultural and fisheries products earlier, in the late Republic. Sheepen shows how under Claudius and Nero, Spain maintained the ascendancy she had established in the reign of Augustus.

Throughout this report amphoras are thought of as pottery jars that were bunged and used for the storage and transport of their contents. The word now serves as a technical term in current archaeological discourse. But the Latin use of the word was not always exactly the same as ours and for these reasons the anglicized plural is used here.

The importance of the Sheepen amphoras is such that they will be published independently in monograph form; in that publication will be found further details of the assemblage as well as the report on petrology by Dr D F Williams, of which a short version is published here in the microfiche section M3:A2-8).

The incidence of amphoras in stratified deposits is summarized in Table 15. The amphora drawings (Figs 53-60) are on pp 104-11. A catalogue of all the amphoras is at M3:A9-14. This gives the context, serial number, type, fabric, and figure number for each amphora. See also the general feature catalogue, pp 26-43.

Table 15 Incidence of amphoras in stratified deposits

compiled by R Niblett

Period	*Dressel 1*	*Dressel 2/4*	*Cam 184*	*Haltern 70*	*Dressel 20*	*Beltràn I*	*Beltràn IIa*	*Beltràn I/ IIa*	*Dressel 28*	*cam 189*
I	F291(2)									
III		F148 F307	F131 F128	F133 F116	F4	F133(2)				F148
IV	F120 F214	F119 F120 F136 F230 F2(2) (site iv)	F136 F214 F2 (site iv)	F119 F136 F138 F1 (site iv)	F101 F119 F136 F138(2)	F138(3) F2 (site iv)		F119	F138	F214
IVb		F316(8) F323 F325 F332 F303 F321 F102(4) F119 F112 F132 F134 F146(2) F153(2) F213 F252(2) F245 F236 F262 F503 F601	layer 4 (site iii) F112 F153 F213(3) F252(5) F236(2) F503	layer 4 (site iii) layer 8 (site iii) F340 F321 F102(2)	F316 F332(2) F312 F102 (6) F132 F146(3) F153 F503	F323 F332(4) F303(3) F252 F503		F102 F252		F332(3) F102(6) F213 F252
III/IV	F201	F129/ F137(3) F216 F210(2) F253 F501(2) F604 F275 F237 F239	F129/ F137(2) F201 F237 F273 F242 F245 F256 F263(2) F501	F129/ F137 F215 F245 F271 F272 F501(2)	F129/ F137 F239(2) F271 F501(3)	F205 F210 F238 F239(2) F245 F501	F239			
V		timber cellar site iii (layer 2) site iii (layer 4)	layer 2 (site iii)	timber cellar layer 2 (site iii)	timber cellar layer 2 (site iii) F320	layer 2 (site iii)			layer 2 (site iii)	layer 2 (site iii)
VI				F301 F311		F301(2) F302			F302	F301

Notes: F = feature

Numbers in brackets indicate number of vessels represented in feature. In some cases fragments of the same vessel occur in more than one feature.

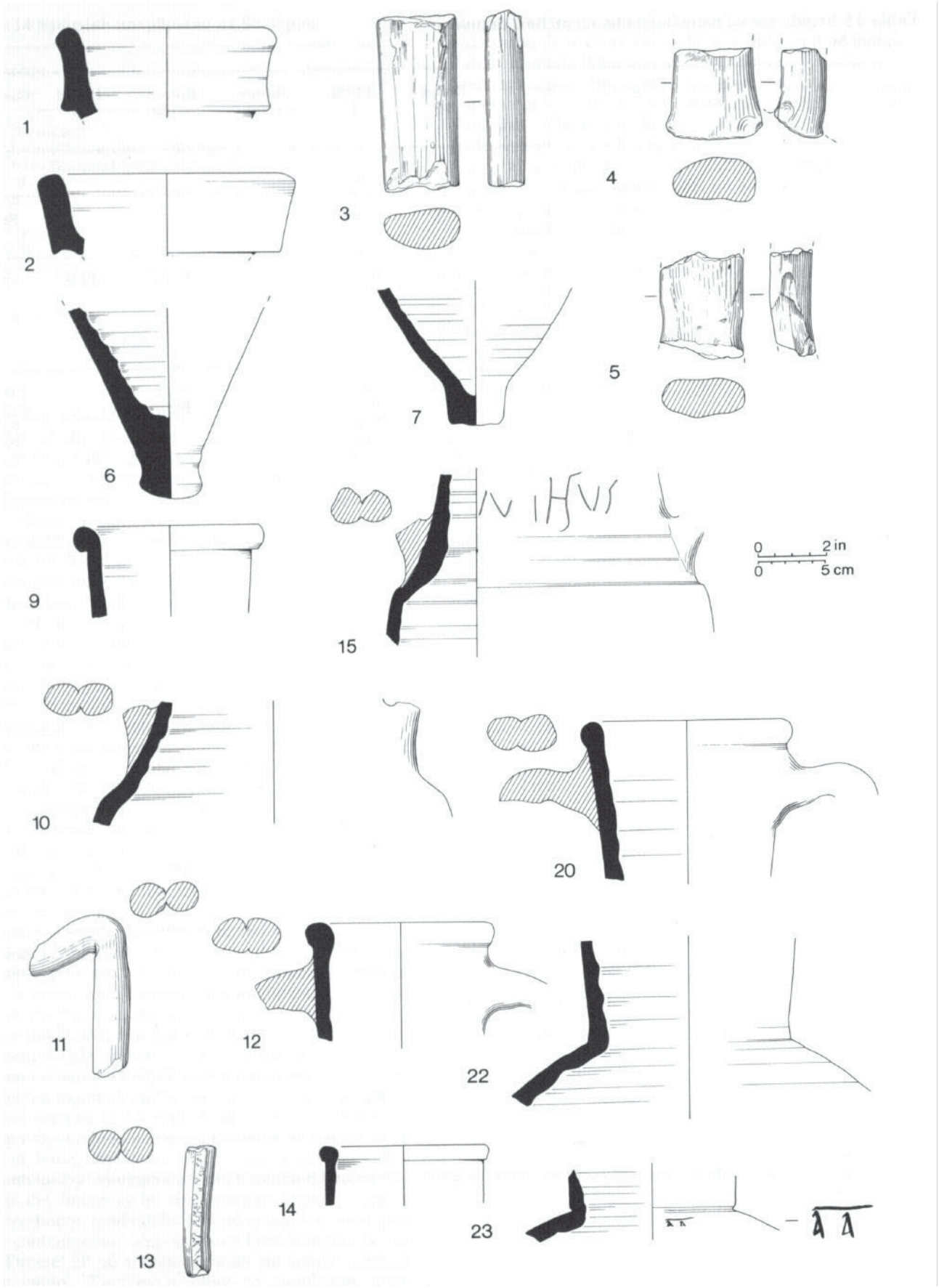


Fig 53 Amphoras: 1-2 Dressel 1B; 3-5 Dressel 1; 6-7, 9-15 Italian Dressel 2/4 in Peacock fabric 1; 20, 22-3 Italian Dressel 2/4 in Peacock fabric 2. See M3:A9-10 for contexts of individual vessels

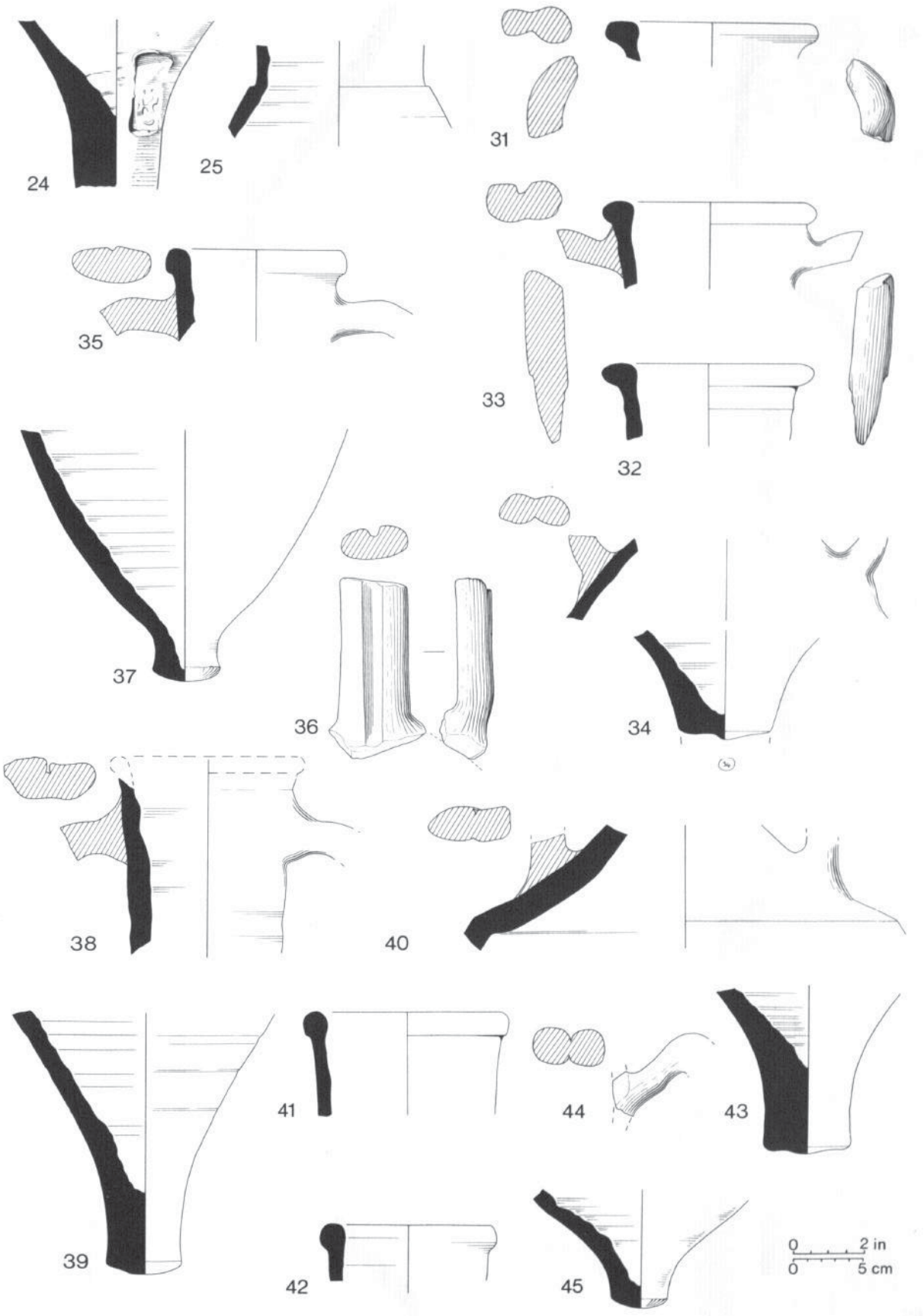


Fig 54 Amphoras: 24-5 Italian Dressel 2/4 in Peacock fabric 2; 31-4 Baetican Dressel 2/4 in Williams fabric 1; 35-7 Baetican Dressel 2/4 in Williams fabric 2; 38-9 unprovenanced Dressel 2/4 in Williams fabric 1; 40 the same in Williams fabric 2; 41 the same in Williams fabric 5; 42 the same in Williams fabric 6; 43 the same in Williams fabric 7; 44-5 the same in Williams fabric 8. See M3:A10 for contexts of individual vessels

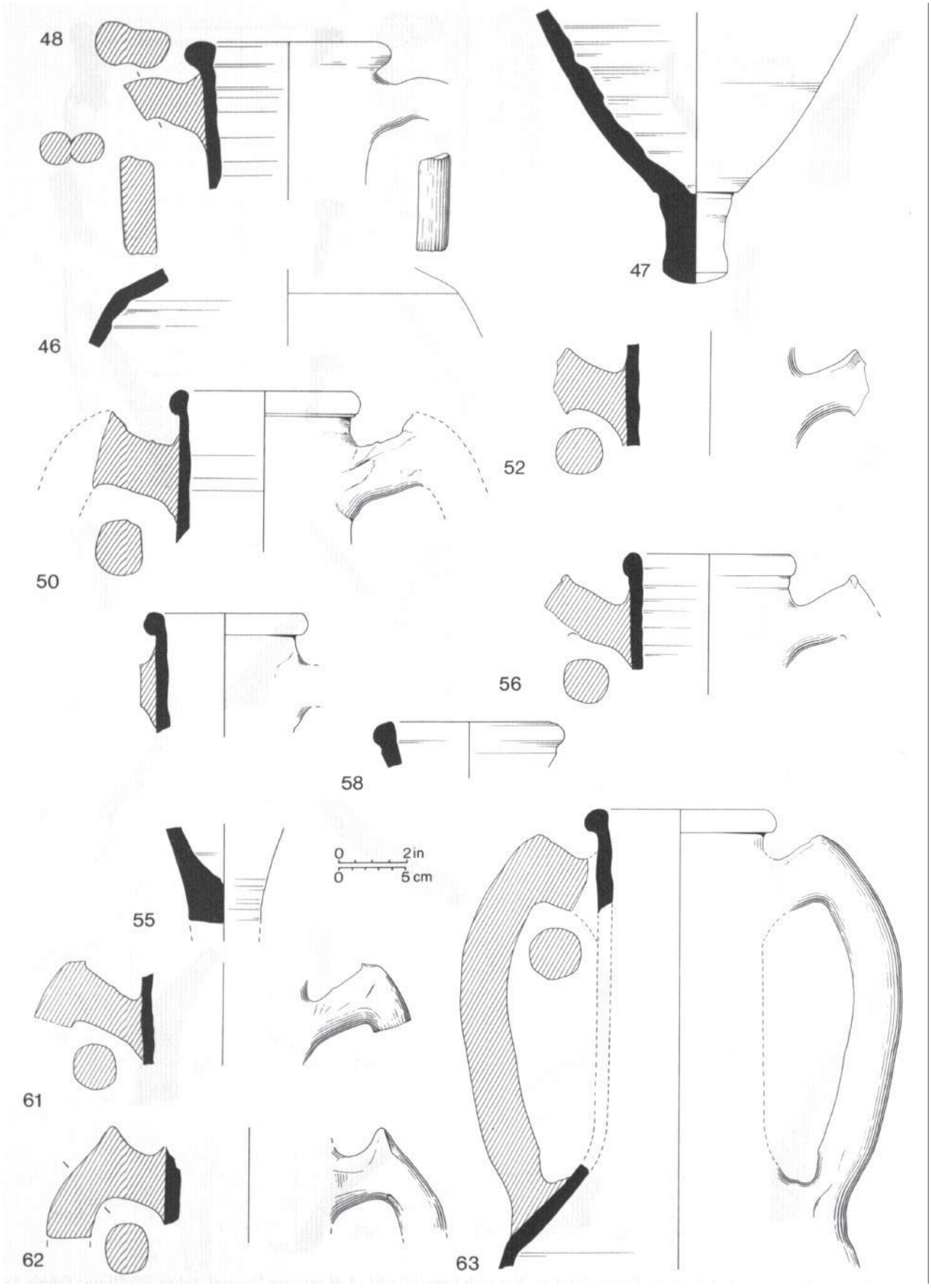


Fig 55 Amphoras: 46 unprovenanced Dressel 2/4 in Williams fabric 9; 47 the same in Williams fabric 10; 48 the same in Williams fabric 11; 50, 52, 55-6, 58 Cam 184 in Peacock fabric 1; 61-3 Cam 184 in Peacock fabric 2. See M3:A10-11 for contexts of individual vessels

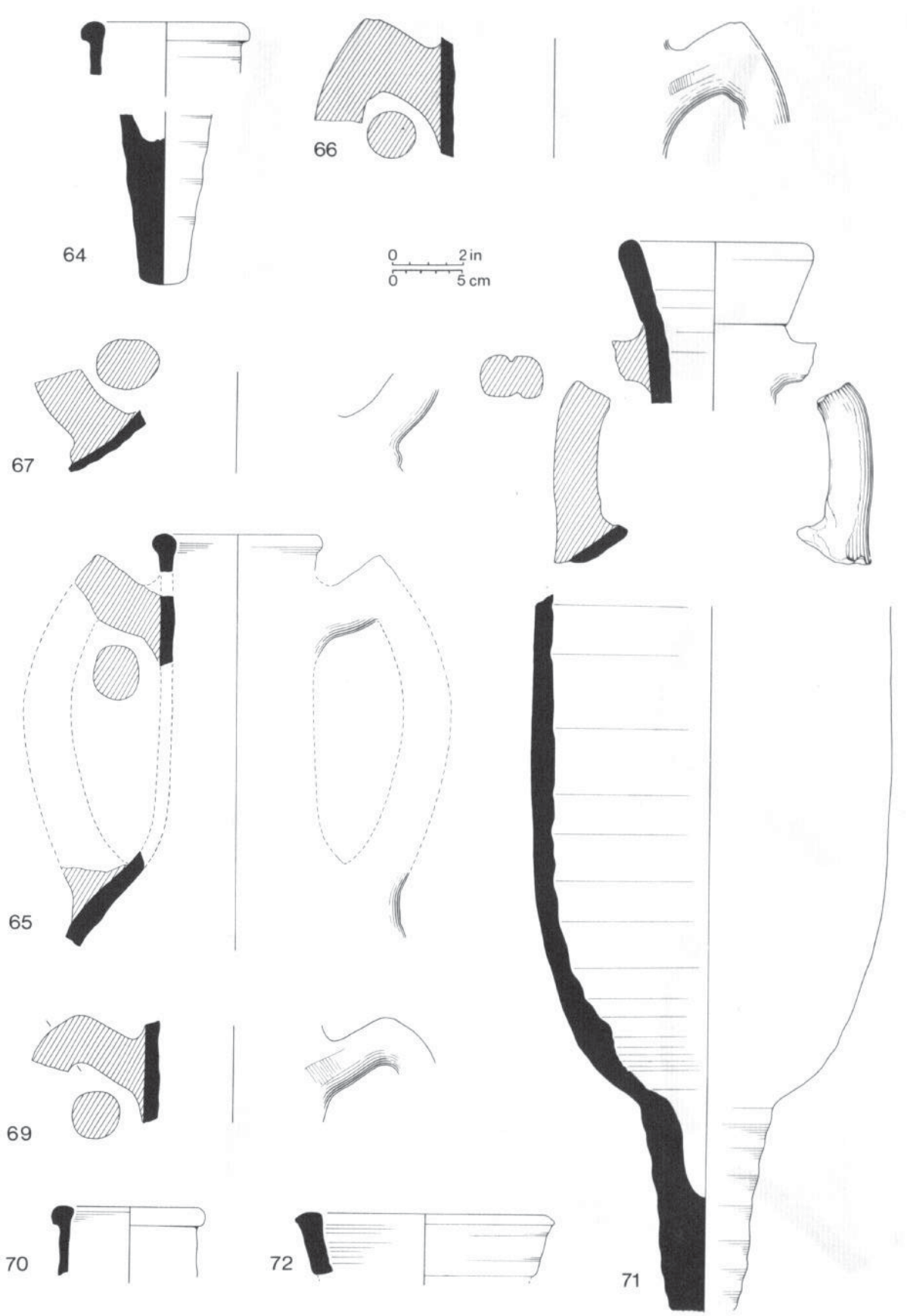


Fig 56 Amphoras: 64-5 Cam 184 in Peacock fabric 2; 66-7 Cam 184 in Peacock fabric 3; 69-70 Cam 184 in Williams fabric 9; 71-2 Haltern 70. See M3:A11 for contexts of individual vessels

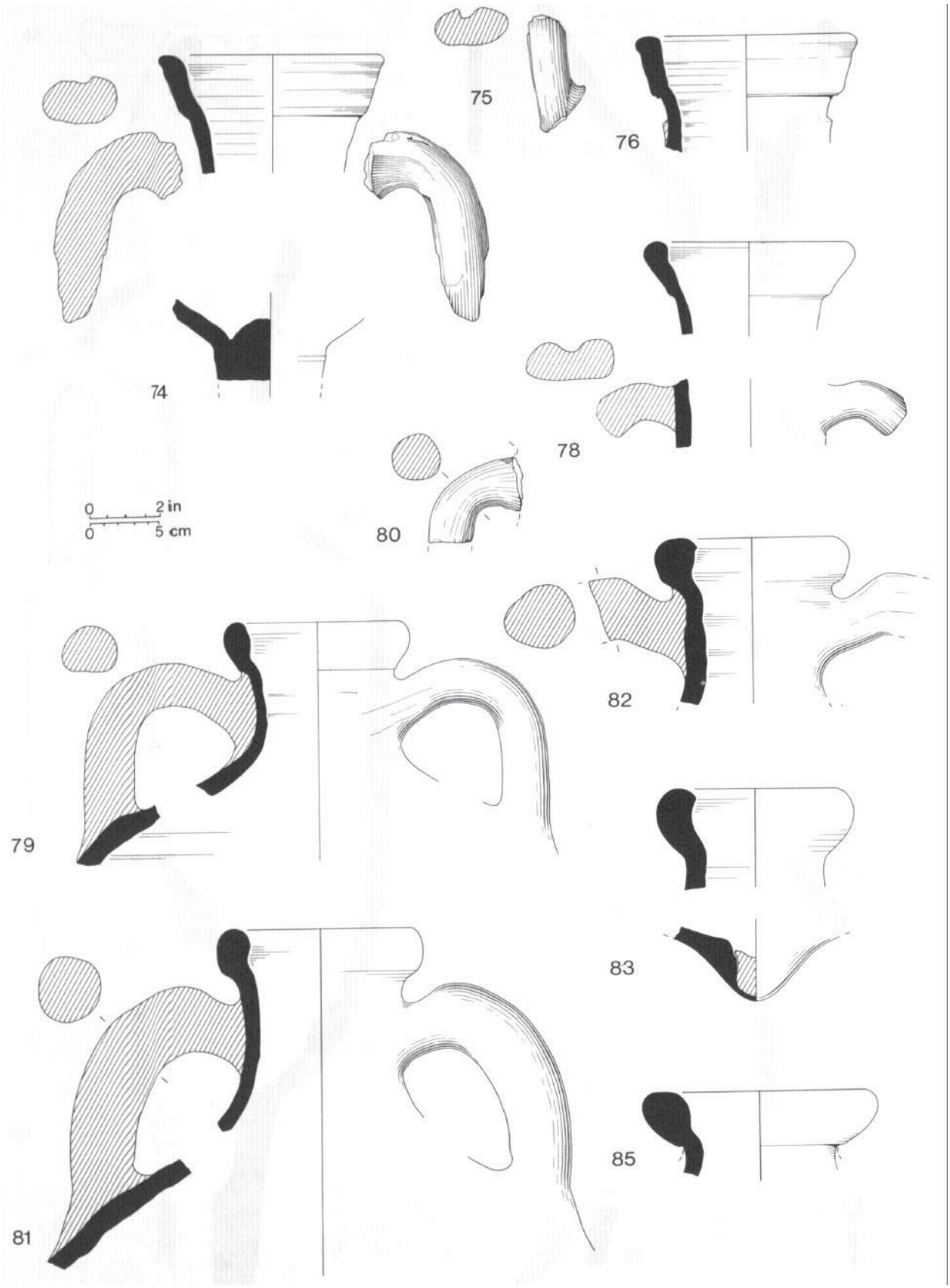


Fig 57 Amphoras: 74-6, 78 Haltern 70; 79-80 pre-Claudian Dressel 20; 81-3, 85 Dressel 20. See M3:A12 for contexts of individual vessels

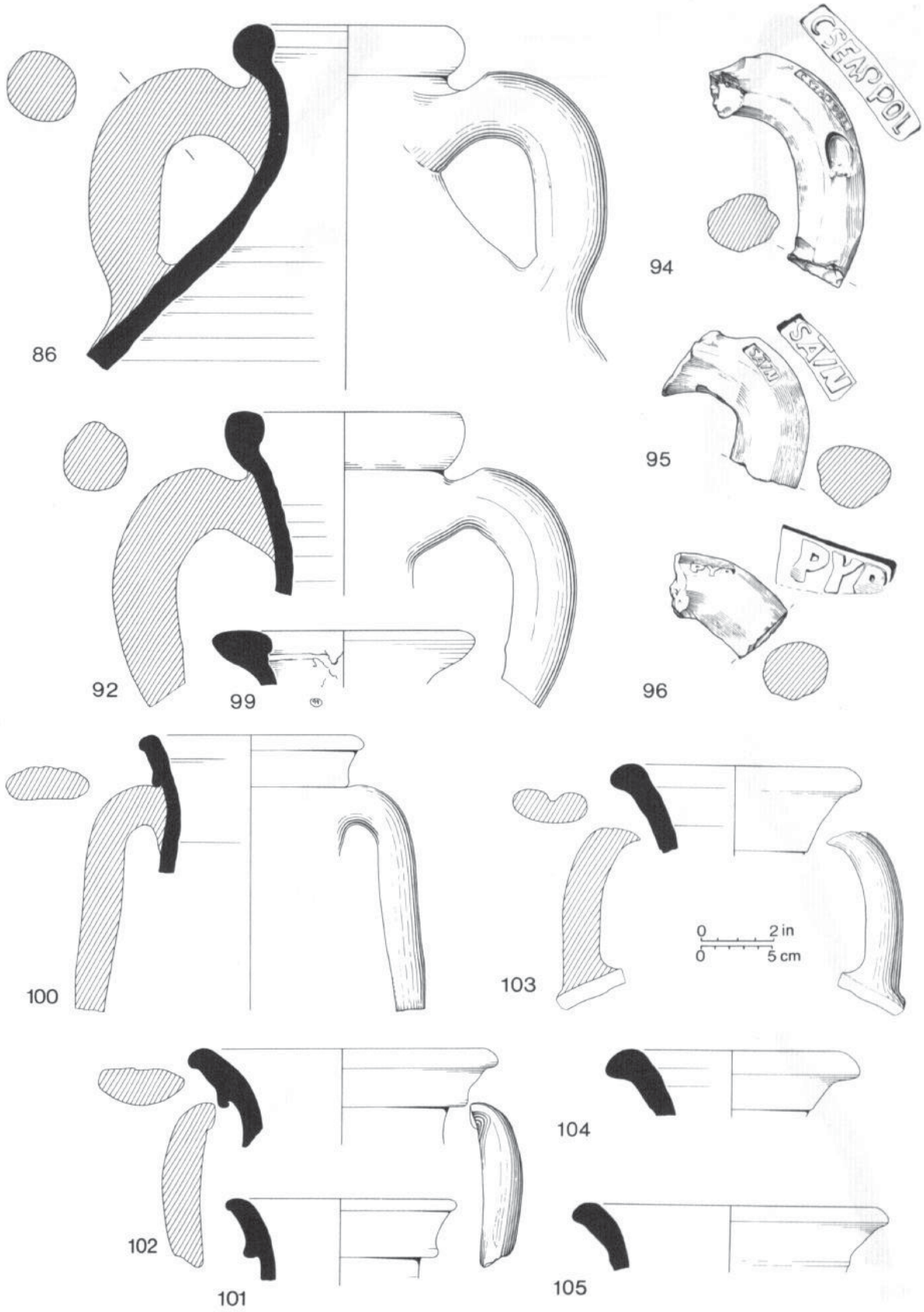


Fig 58 Amphoras: 86, 92 Dressel 20; 94 Dressel 20 stamped by C Sempronius Polyclitus; 95 Dressel 20 stamped by Saturninus; 96 Dressel 20 stamped PYP (or B); 99 Flavian or early 2nd century AD Dressel 20; 100-5 Beltràn I. See M3:A12-13 for contexts of individual vessels

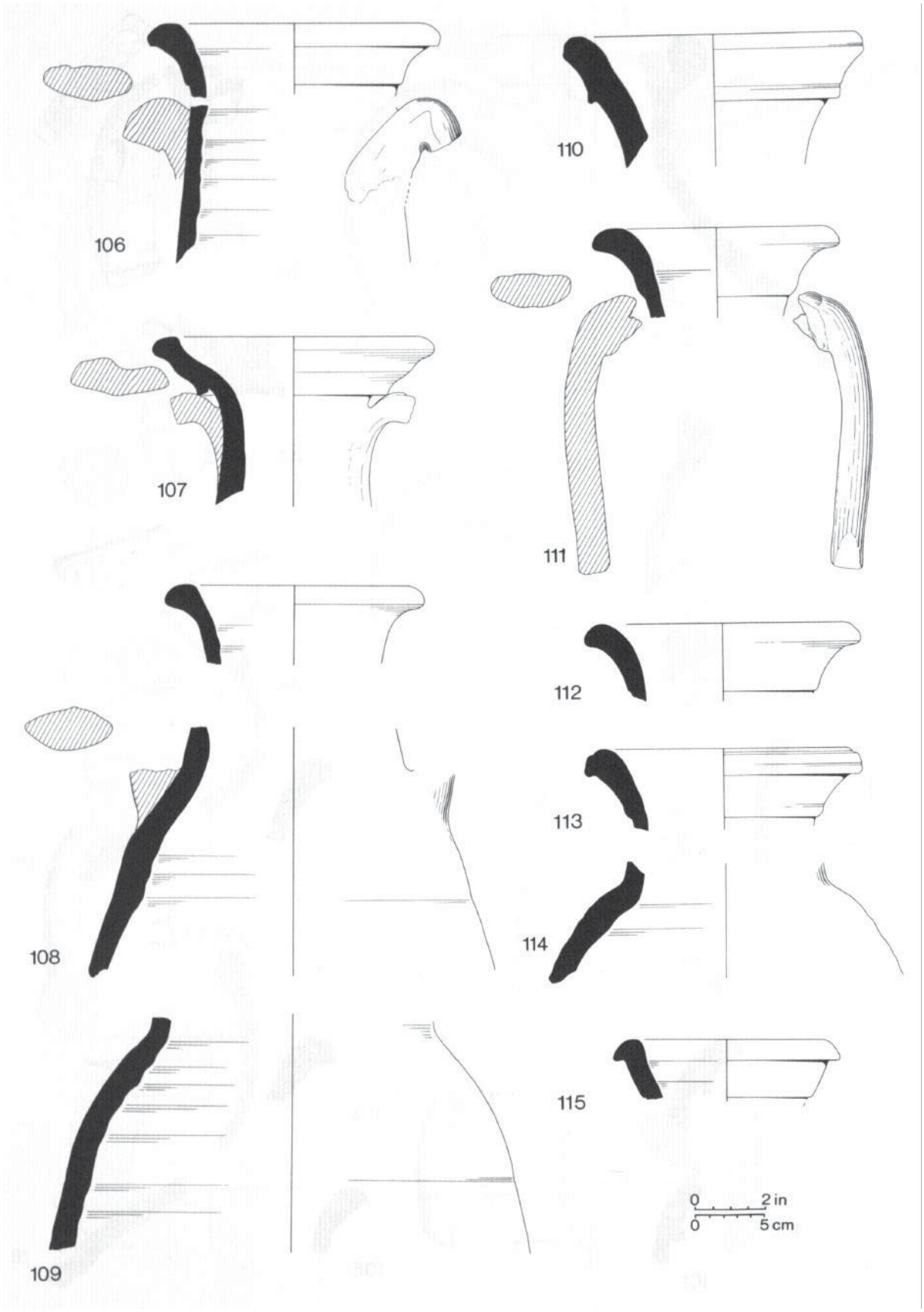


Fig 59 Amphoras: 106-15 Beltràn I. See M3:A13 for contexts of individual vessels

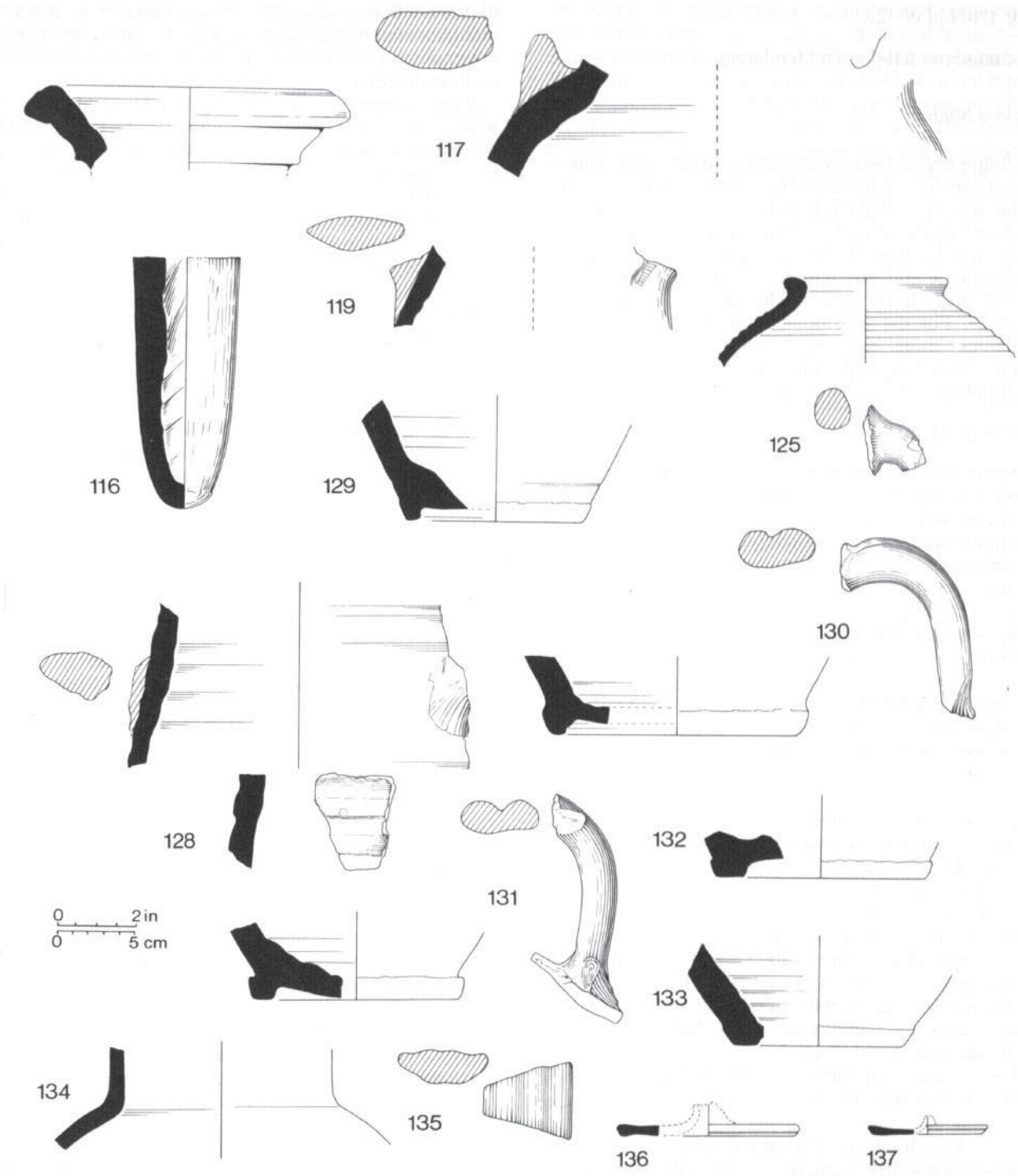


Fig 60 Amphoras: 116 Beltràn IIa; 117, 119 Beltràn I/IIa; 125 Cam 189; 128 Richborough 527; 129-33 Dressel 28; 134-5 unidentified amphoras; 136-7 amphora stoppers. See M3:A13-14 for contexts of individual vessels

The metalwork

Discussion and conclusions

Rosalind Niblett

The following section comprises a general discussion of the metalwork and metalworking processes carried out on the site in periods III and IV. This discussion is based on work carried out in particular by Justine Bayley and Graham Webster whose detailed descriptive catalogue and discussions can be found below, pp 114-15, and in the microfiche archive, M3:B6-C3, D11-E13. For the iron objects see M3:D7-9. All the metalwork finds drawings-those of copper alloy objects, brooches, and iron objects-will be found at the end of the metalwork section, pp 117-35.

The context

Extensive deposits securely dated to the pre-conquest period (period I) were not found in 1970, and it has been argued above (p 22) that this part of Camulodunum was only sparsely occupied in period I. The main occupation of the site fell between AD 43 and 61, and it is to these years that the bulk of the metalwork and metalworking debris must belong.

The material was all found in one or other of four contexts:

i) in scoops, hollows, or working places on site i
ii) in rubbish pits or disused shafts
iii) strewn over sealed surfaces
iv) loose in topsoil

i) The small scoops and hollows were all found on site i where they were associated with the Claudian compound 1. Evidence for copper alloy working came from the filling of features and consisted of dribbles and pools of molten metal, hundreds of minute flecks and filings, part of an ingot (see M3:D13), and a few pieces of fuel ash slag with copper alloy. Metallurgical examination of the dribbles and pools has shown that they are for the most part bronzes, although there is one brass rod or awl (technological report, M3:D14). Actual objects associated with these features are scarce (Fig 62, nos 1-6, copper alloy report, M3:B6), but it is clear that bronzes were being cast here soon after the conquest.

ii) The bulk of the stratified metalwork and metalworking debris came from the filling of gravel and rubbish pits or, in a few cases, from the filling of disused latrines. The pits had been filled with rubbish, some of which may have come from domestic contexts but much of which was clearly derived from workshops. The widespread occurrence of metalworking debris, including crucibles, moulds, and slags indicates both iron and copper alloy working, but the presence of pottery and tile wasters, together with a leatherworker s stamp and numerous animal bones is a reminder that other industries flourished on the site. While some metal objects, particularly the more fragmentary pieces, are probably scrap swept up with rubbish from workshop floors, others may simply be personal belongings that were lost accidentally. The pottery from the pits includes material dating from some twenty years before the conquest and some of the metal objects may also be earlier survivals.

There seems to have been a very large quantity of organic rubbish accumulating on the site between AD 43 and 61 which not only filled the pits but was piled over them to cover an area approximately 100 x 50 m with what was essentially a large rubbish dump into which even quite large and presumably valuable pieces of metal occasionally found their way. The brass sheet (P1 18, copper alloy report no 112, M3:C2) weighing over 9 kg is the prime example of this.

Only one pit (feature 153, site i) contained what could be described as a scrap metal hoard. This large gravel pit, filled in the Neronian period, contained a dump of numerous pieces of fragmentary metal objects and hundreds of small copper alloy fragments, together with crucibles and fuel ash slag (see feature catalogue, p 36). Pit 153, however, was unusual and the majority of the metal objects were found in rubbish tips in gravel pits.

iii) Sealed surfaces survived only rarely, owing to the high degree of erosion the site had suffered, and were only preserved in places where they had been sealed by later layers, that is on site iii, over a small area on the west edge of the period IV road on site i, and in the cellar on site i. With the exception of the cellar floor these surfaces were all associated with metalworking and the metal objects found on them (copper alloy report, nos 22, 60, 62-74, M3:B12; iron report, nos 4-6, 20-1, M3:D7) are likely to be a mixture of scrap and objects lost accidentally. The scrap in particular may include a proportion of earlier material.

iv) The denudation and ploughing of the site resulted in a large amount of material being recovered from the ploughsoil. The pottery and coins from the site included virtually no material of Flavian or later date, although in the later Roman period a small cemetery impinged on the eastern edge of the excavated area. The metal objects found in the ploughsoil can therefore be confidently assigned to the pre-Flavian period and considered alongside the other metalwork, ie as a mixture of scrap, including some pre-conquest survivals, and objects lost by the site s inhabitants.

General conclusions

There is ample evidence for the smithing of both iron and copper alloys at Sheepen, but there is no evidence of copper smelting and the only evidence of iron smelting is provided by a metallic iron cake discussed in the technological report, M3:E8.

The working of copper alloys certainly started in the Claudian period. At this stage the legionary fortress on the neighbouring hill was still occupied and it seems likely that the metalworkers at Sheepen were supplying the fortress. The handful of objects from the period III features 133, 150, and 156, however, are all best interpreted as scrap rather than manufactured articles (copper alloy report, Fig 61, nos 1-7, M3:B6). In AD 49, with the departure of the legionary garrison and the

establishment of the *colonia,* the Sheepen compounds were swept away. Nevertheless Claudian/Neronian and Neronian features on site i produced crucibles and mould fragments suggesting that copper alloys continued to be cast in period IV (see technological report, M3:E5-6). It is true that this material could all be survivals from period III, but the very large quantity of scrap found in the period IV feature 153 argues against this (feature catalogue, p 36). Hawkes and Hull concluded that metalworking, both of copper alloys and of iron, flourished in period IV and it must be borne in mind that only a relatively small sample area of Sheepen was excavated in 1970. Although no period IV metalworking areas were found on site i, such features could well have been destroyed by erosion or gravel working, or they could well have lain nearby, in an unexcavated area.

Roughly 50% of the copper alloy objects found in 1970 (excluding brooches) was specifically military, and the remainder would not have been out of place in a legionary setting, particularly in the officers quarters (P1 12). This material was found in all of the four contexts detailed above but was particularly numerous in four pits, features 129/137, 138 (both Claudian/ Neronian), 102, and 153 (Neronian) (copper alloy report, Figs 62-6, nos 11-19, 24-34, and 40-55, M3:B7-11).

All four pits produced crucible fragments, and feature 138 a mould fragment as well (technological report, M3:E6). This concentration of military metalwork in pits which produced evidence of metalworking is unlikely to be entirely fortuitous, and suggests that these items were deliberately collected as scrap to supplement metal from other sources, notably from ingots and sheets (technological report, M3:E10). It has already been remarked that the metal objects and fragments from feature 153 probably constituted a scrap metal hoard and certainly as far as the military equipment is concerned (copper alloy report, Figs 65-6, nos 47-55, M3:B11), the newly settled veterans in the nearby *colonia* would be the obvious source of supply, with the proviso that some of the military equipment could be rubbish surviving from period III when the legionary fortress was occupied. That the military equipment was scrap or the results of casual loss rather than newly manufactured objects produced on the site is suggested by the fact that most of the items are broken and some are extremely fragmentary (see, for example, the cuirass hinges, copper alloy report, Figs 65, 71, nos 48-50 and 93-4, M3:B11,C1).

The question what was being produced by the copper smiths is a difficult one as the moulds are too fragmentary to be of assistance and no obviously unfinished objects were found. The presence of military scrap metalwork does not in any way presuppose either that military equipment was being produced or that legionary metalworkers were on the site. The metalworkers here in period IV were probably civilians who may have been supplying military contracts but are just as likely to have been simply exploiting the new market provided by the *colonia* (but see below, p 114, and above, P 12).

One class of object that may well have been produced on the site is brooches. The 1970 excavations produced 45 complete or fragmentary examples which are discussed in detail below (p 116, Figs 73-6, and M3:C3D6). X-ray fluorescence analysis has shown that most of the Sheepen brooches were made of brass, as were some of the items of military equipment (see below, p 115 and M3:D1-6 (for brooches), and M3:E11). Brasses were certainly being cast on the site in period IV. Not only is there the brass sheet from the Neronian feature 236 (copper alloy report, no 112, M3:C2), but X-ray fluorescence analysis has shown traces of brass on the inside surface of one of the crucibles and in one of the moulds (see technological report, M3:E2-6). Three crucibles also showed traces of glass which may have been used as enamel or for the manufacture of small objects. Some of the brooches may well have been the products of the workshops, but it is not possible to say which, in individual cases, were simply lost by an inhabitant or were newly finished products accidentally swept up with workshop debris; others may be residual from an earlier period.

A few of the copper alloy objects, notably the weights (copper alloy report, nos 13, 20) and the balances (copper alloy report, nos 12, 84), may have been used by the smiths in the workshops, but most of the other objects, coming as they do from rubbish or destruction deposits, or simply from ploughsoil, are severely limited in the information they can provide.

Evidence for ironworking was concentrated on sites ii and iii and no evidence was found in 1970 to date it earlier than the early Neronian period (see iron report, M3:D7-9). Here again the evidence comes in the form of rubbish dumped in pits and objects strewn on sealed surfaces or loose in ploughsoil. The ironwork is therefore subject to the same uncertainties as apply to the copper alloy objects.

Most of the ironwork survived only as unrecognizable lumps, and far fewer objects have been identified (Figs 77-9, pp 133-5). These objects are for the most part either tools for woodworking (iron report, nos 8, 13, 15, 20, M3:D8), cutting implements (nos 6, 9, 26, 28, M3:D8-9), or in a few cases possibly tools used by the smiths themselves (nos 7, 27, M3:D7-9). Specifically military items are rare and consist only of fragments of *lorica hamata* and *lorica segmentata* from feature 153 (iron report, nos 17-18, M3:D8, P1 19) and the small arrowhead (no 23, M3:D9). Some again, notably iron reports nos 1 and 2, probably date from period I.

If, as seems likely, the blacksmiths were serving the needs of the local community in period IVb, this is precisely the sort of assemblage of ironwork one would expect to find on the site. Tools or constructional items such as bolts and latch lifters form the bulk of the material, with some survivals from the pre-conquest period I, and the military period III. There is however no direct evidence as to what objects were being made.

The objects of copper alloy-discussion

Graham Webster

For a detailed, descriptive catalogue of the objects of copper alloy, see M3:B6-C3. Figs 61-72 are on pp 117-28.

The copper alloys are a very mixed assemblage and include undoubted items of military equipment, together with many objects which belong to a civil context. Examples of the latter, however, are common on military sites and it is often impossible to distinguish between such items as brooches, bronze jugs, and box mounts, since they could have been used equally well in any officer s quarters in a fort or in a dwelling in a civil settlement. Many of the military objects have definite legionary characteristics which is hardly surprising since it is now certain that Legio XX was established at Camulodunum from AD 43-8, prior to the founding of the *colonia.* The main question at issue is whether it is possible to distinguish any differences between the site in these two phases, ie military and *colonia.* This is complicated by the fact that the colonists were army veterans expected, in any emergency, to take to arms *(Annales,* xii, 32) and there was also a small military detachment quartered in the town *(Annales,* xiv, 32). If, therefore, arms and equipment were made and repaired on the site during the legionary period, there seems no logical reason why this should not have continued, on a reduced scale, after the *colonia* had been founded. There is another point made by the earlier excavators (Hawkes & Hull 1947, 335-6), that a great deal of the military material they found was owing to a desperate effort at rearmament by the colonists at the outbreak of the revolt of AD 60. Taking these factors into account, it would seem possible for items of military equipment to be found at any time from AD 43 to 60 and probably later, since Camulodunum would have been a base for the operations against the Iceni, who were pursued with such vigour through the winter *(Annales,* xiv, 38).

The excavation produced a large number of pits and working hollows, many of which had been cut into earlier ones which would have redistributed some of the artefacts. No timber buildings were found either at this time or in the 1930-39 excavations which have any military characteristics, although one in Hawkes & Hull s Region 3 bears a slight resemblance (1947, 90 and fig 19, where it is described as a variant of a military form).

It is agreed by all concerned that the Sheepen area could never have been under direct army control and the only conclusion one can draw is that it was occupied by civilians doing work for the army under contract. The establishment of works depots like that at Holt on the Dee in North Wales (Grimes 1930) appears to belong to the late 1st century, and may be due to the extensive reorganization of the army under the Flavians. Before this time the army relied on civil workers for pottery and items of equipment. An example of the former has been investigated by Dr John Peter Wild at Longthorpe near Peterborough on the site of one of the so-called vexillation forts associated with *Legio IX.* He found a series of crude kilns constructed on the edge of the defences of the fort for the production of the kitchen wares used by the troops (Wild 1977, 75-80). A similar working area may have existed beyond the north-east corner of the fortress at York (John Magilton, pers comm). Where investigations have been made beyond the defences of legionary fortresses, the presence of compounds and working areas have been noted, as at the Hunerberg, Nijmegen *(Noviomagus : auf der Spuren der Römer in Nijmegen,* GM Kam Museum, 51-6) and this is clearly a much neglected aspect of military establishments.

Nevertheless, this hardly explains the discovery of a sackful of helmets in the earlier excavations. The abandonment of equipment on this scale is very unusual; one often finds a certain amount turned out of stores buried in pits, when a unit dismantled its buildings and cleared the site of the fort, but this cannot apply to the Sheepen area. A possible suggestion could be that this material was the result of a tidying-up operation after the sacking of the *colonia.* Any Britons working for the army would have been treated as enemies and killed on the spot and their timber buildings destroyed. When the army reoccupied the area, all the human remains would have been properly cremated and the ashes deposited in a cemetery, and this would have been accompanied by collecting all the debris and burying it in pits, presumably as it had been defiled by the enemy. An excellent example of this is from the fort at Newstead in Scotland, where such pits produced a rich hoard of military equipment including weapons and helmets (Curle 1911, 147-80; *Britannia, 3,* 1972, 243-6 for Professor Manning s well reasoned argument with another feasible explanation).

It is possible, as the earlier excavators suggested, that the civil metalworkers were repairing armour and helmets for the colonists when they were overrun by an advance party of rebels (Hawkes & Hull 1947, 39-40). Normally, this kind of work would have been carried out in the *fabrica* of the fortress. Civil workers might have contracted to do extra work which the legionary metalsmiths were unable to do and this could well have arisen if they were engaged on campaign or ground duties away from their base. But this reckons without the luxury trade in extra decorative items with which soldiers were allowed to adorn their equipment. Dagger scabbards could be richly decorated with enamel inlay, and other items could be enriched with gold and silver mounts, a practice recorded by Tacitus in describing the events of the Civil Wars of 69. The legionaries of Vitellius stripped their equipment of silver to support him in his bid for the purple *(Historiae, 57, insignia armorum argento decora).*

The analysis of copper alloy objects

Justine Bayley

The majority of the large quantity of copper alloy fragments found was in minute pieces, too small to allow identification. The 180 more complete pieces were sent to the Ancient Monuments Laboratory of the Department of the Environment where they were cleaned and photographed; 119 of these objects are catalogued. Sixty-three pieces were subjected to surface analysis by x-ray fluorescence; the individual results are incorporated into the descriptive catalogue of the copper alloy objects, M3:B6-C3.

The alloys are defined as follows:

Brass = copper + zinc
Bronze = copper + tin
Gunmetal = copper+ tin + zinc (both zinc and tin in significant amounts)

Bronzes and gunmetals may also contain lead, sometimes in considerable amounts. Most bronzes contain a little zinc and some brasses contain a little tin, but they are not described as gunmetals unless they contain significant amounts of both metals.

The analyses showed that a variety of copper alloys was used to make the objects found, so one then needs to try and answer the questions that immediately come to mind: Why use different alloys? On what basis, if any, were alloys selected? The first question is easily answered. Different alloys have different appearances and properties. Some are easily and conveniently worked in one way, some in other ways. The second question-and answer-follows from the first. It could be that the alloys were chosen solely for their physical properties but other possible factors should also be considered. Was some of the raw metal coming from military and some from civilian sources? Is there a chronological variation in the availability, and hence use, of one or more alloys? Did changes in fashion dictate the use of one alloy rather than another because of its colour?

Although the finds come from different periods there are relatively few from each one and a variety of alloys is always present. The overall timespan is not great so any major chronological variation is not to be expected.

The civil/military divide is another possible split. However, most of the definitely military fittings are made of sheet metal (cuirass hinges, shield bindings, etc) so the alloy choice may be governed by this factor rather than by reason of their military nature.

Examples of alloy properties suiting manufacturing method are numerous; none of the analysed objects was made from a totally unsuitable alloy.

The three pieces of sheet (nos 3, 11, and 65) are all unalloyed copper which is very malleable and therefore easily hammered into thin sheet. It is not very hard or strong but these are not necessary properties of, eg, box claddings.

The strap buckles and hinges, cuirass hinges, and shield bindings are all made from sheet metal and thin rods and rivets. All those analysed were of brass which is malleable and therefore easily worked into the basic sheet or rod but stronger and tougher than pure copper. It also has a pleasing golden appearance.

Adding lead to copper alloys has several effects on the properties of the metal. It lowers the melting point and gives higher fluidity to the molten metal and so is easier to cast, especially where complex shapes are involved. The lead does not dissolve in the copper alloy but is dispersed throughout the metal as tiny droplets. This makes the metal difficult to forge as it tends to split, the lead making weak points in its structure. For the same reason heavily leaded alloys are not suitable for objects where mechanical strength is important as they are liable to fracture in use. Lead was a relatively cheap metal so heavily leaded alloys may have been used where practicable as an economy measure. Examples of leaded alloys among the Sheepen finds include the dice-box and dice (nos 67 and 68) and the weight (no 13) which are all of leaded bronze. The two possible cart fittings (nos 42 and 69) and the ?leather punch (no 61) are of leaded gunmetal. The two highly decorated, S-shaped pieces (nos 22 and 44) are both of leaded alloys which suggests that their function was decorative rather than structural.

The number of objects of different alloys is shown in Table 16. It should be stressed, however, that the objects analysed were not a random selection and so the overall balance is probably somewhat different. One thing though is perfectly clear-a significant proportion of the objects are not bronzes but brasses.

To sum up: alloy choice can be explained on purely practical metallurgical grounds but other factors cannot be completely discounted. The numbers and types of objects analysed from the different periods did not permit definite conclusions one way or another.

Table 16 Distribution of alloy types by period

Period	*Copper*	*Leaded copper*	*Bronze*	*Leaded bronze*	*Brass*	*Leaded brass*	*Gunmetal*	*Leaded gunmetal*	*Total analysed*
III	1			1	3	1	1		7
III-IV	1		1	1			4		7
IV			2	3	16		1	3	25
V	2	1	1	3	2			3	12
later					1				1
u / s				3	6		1	1	11
Totals	4	1	4	11	28	1	7	7	63

The brooches-discussion and conclusions

Justine Bayley and Sarnia Butcher

A detailed descriptive catalogue of the brooches from the site and a description of the results of the analytical examination of the brooches can be found in the microfiche archive M3:C3-9. The drawings, Figs 736, are on pp 129-32.

This group consists almost entirely of representatives of types already catalogued in Hawkes & Hull 1947. In general, M R Hull s discussion there of a much larger group of brooches is still valid, but more recent evidence on points of detail is given in the catalogue (microfiche archive). It is doubtful whether the new evidence is sufficient yet to date the types more closely. Recent finds confirm that many of them were present in southern Britain before AD 43 (we are particularly indebted to Dr I M Stead for showing us the brooches from the King Harry Lane cemetery at St Albans, which appears to have been in use from *c* 10 BC to AD 43) but they are remarkably persistent, and similar brooches occur on sites only occupied after the conquest.

Most of the Sheepen brooches came from post-conquest contexts on the site. It may be that they were residual but several factors argue against this. The brooches did not form part of the deposits of scrap metal but were scattered about the site and can be regarded as casual losses by the occupants. They were not all necessarily brought by the army since most types are equally associated with civilian sites and, in the case of the form of Colchester type present here, were probably British products (discussion of incidence of types on military and civil sites by M R Hull in Cunliffe 1968,232). Similar types appear at Richborough, which had no pre-conquest occupation. At present it seems safer to allow a fairly broad dating bracket for these 1st century brooch types.

Metallurgical analysis is beginning to provide a supplement to typological grouping of brooches (see Justine Bayley s report, M3:C10-D6). In general alloy composition tends to be consistent within each type. The preliminary results of a general study (Bayley & Butcher 1981) show that types which were certainly current in the first half of the 1st century are usually made of brass, while British types of the second half are normally of leaded bronze. The change may have coincided with the exploitation of British lead mines after the conquest.

Analyses show that in those types where a long life in the first half of the century and beyond had been indicated by site groups there is also a tendency for a few brooches in mid century groups to be made of a low-lead bronze while the majority are brasses (eg Richborough). This seems to confirm a long chronology for the manufacture of types such as the Colchester, Hod Hill, Aucissa, and Nauheim derivatives. So far it has not proved possible to associate variations of decoration or construction within a type with a particular alloy.

At present it is difficult to be precise as to which of the Sheepen brooches were made in Britain, perhaps locally, and which were imports. The form of Colchester brooch common here and on other British sites is rarely found on the continent and is most probably a British product; the majority are made of brass though elsewhere a few bronze examples occur. It seems therefore that the change to bronze is a chronological rather than a geographical indicator.

Of the other early types present at Sheepen most could well be continental products, but given that brass Colchester brooches were made in Britain it is possible that the Langton Down, Rosette, Aucissa, or Hod Hill types may have been made here also, although all of these originated on the continent.

The few slightly later (and certainly British) types present were of bronze. These were 38, a two-piece Colchester brooch, and nos 39 and 40, two other derivatives of the original Colchester type. Unfortunately all three were unstratified, but the presence of similar brooches in periods IV to VI at Camulodunum (Hawkes & Hull 1947, types IV and V, 310 ff) shows that this new phase of development had begun before AD 61, and possibly earlier.

Catalogue of brooches

(illustrated on pages 129-32)

Nauheim-derivative
1 ploughsoil

Colchester type
2 feature 102
3 feature 238
4 site iii, layer 2
5 feature 604
6 feature 111
7 feature 112
8 site iii, layer 3
9 ploughsoil
10 feature 237
11 feature 252
12 feature 213

Langton Down
13 feature 316(8)
14 site iii, layer 2
15 feature 501
16 ploughsoil

Cylindrical-headed
17 feature 231
18 feature 237

Thistle/Rosette type
19 feature 120
20 ploughsoil
21 ploughsoil
22 feature 107
23 ploughsoil
24 feature 213

Aucissa
25 ploughsoil
26 feature 119
27 ploughsoil
28 feature 138

Bagendon
29 feature 252
30 feature 133

Camtype XVIIIB
31 feature 146
32 feature 236
33 feature 316.8
34 feature 503

Hod Hill type
35 feature 226
36 feature 249
37 feature 133

Camtype IV
38 ploughsoil
39 ploughsoil
40 ploughsoil

Plate brooches
41 feature 4
42 feature 302
43 ploughsoil
44 feature 129

Penannular
45 ploughsoil

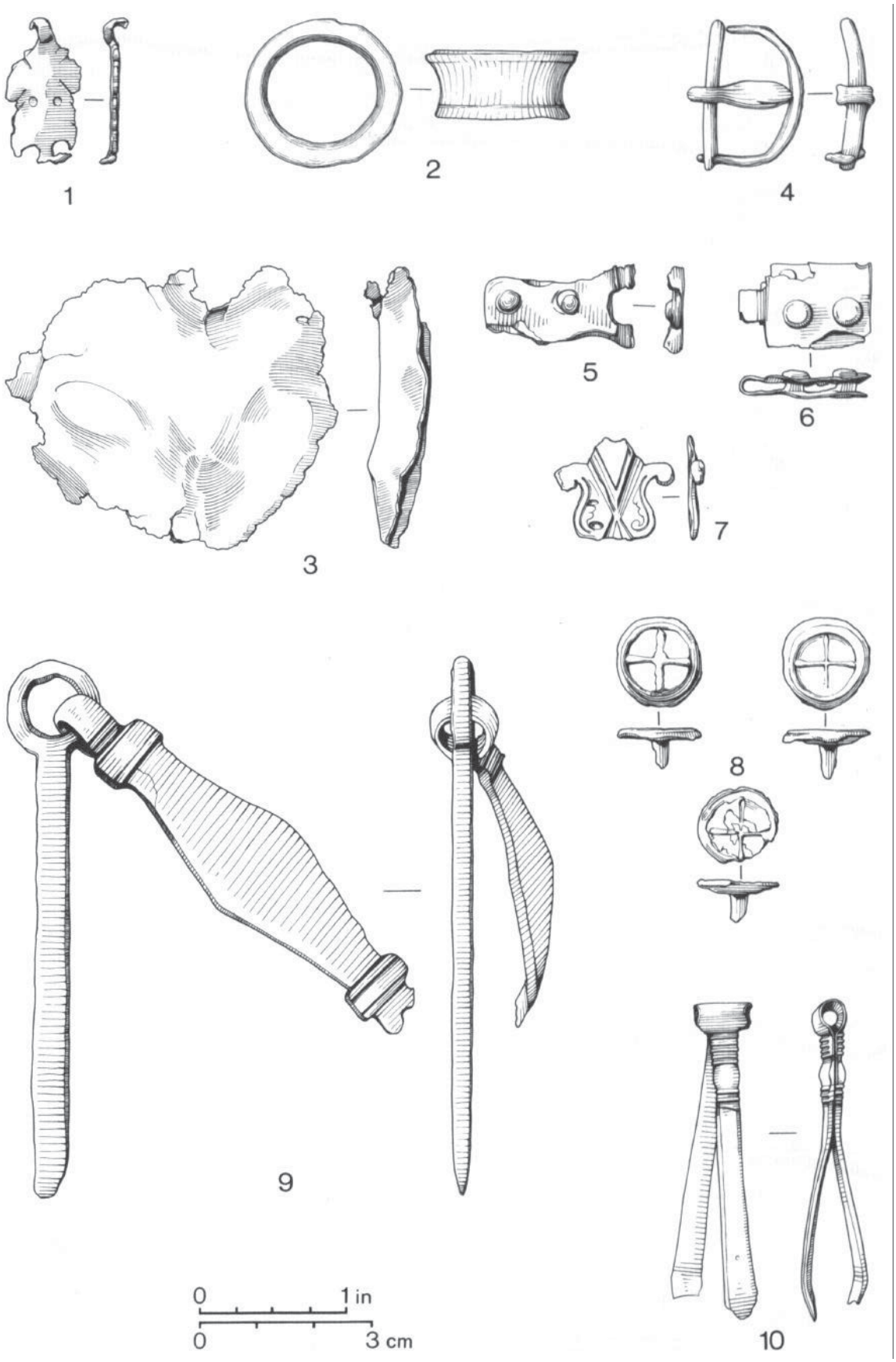


Fig 61 Objects of copper alloy, period III: no 1 from feature 133; no 2 from feature 150; nos 3-6 from feature 156; no 7 from feature 307. Period III/IV: no 8 from feature 105; no 9 from feature 119; no 10 from feature 138. See pp 112-15 and M3:B6

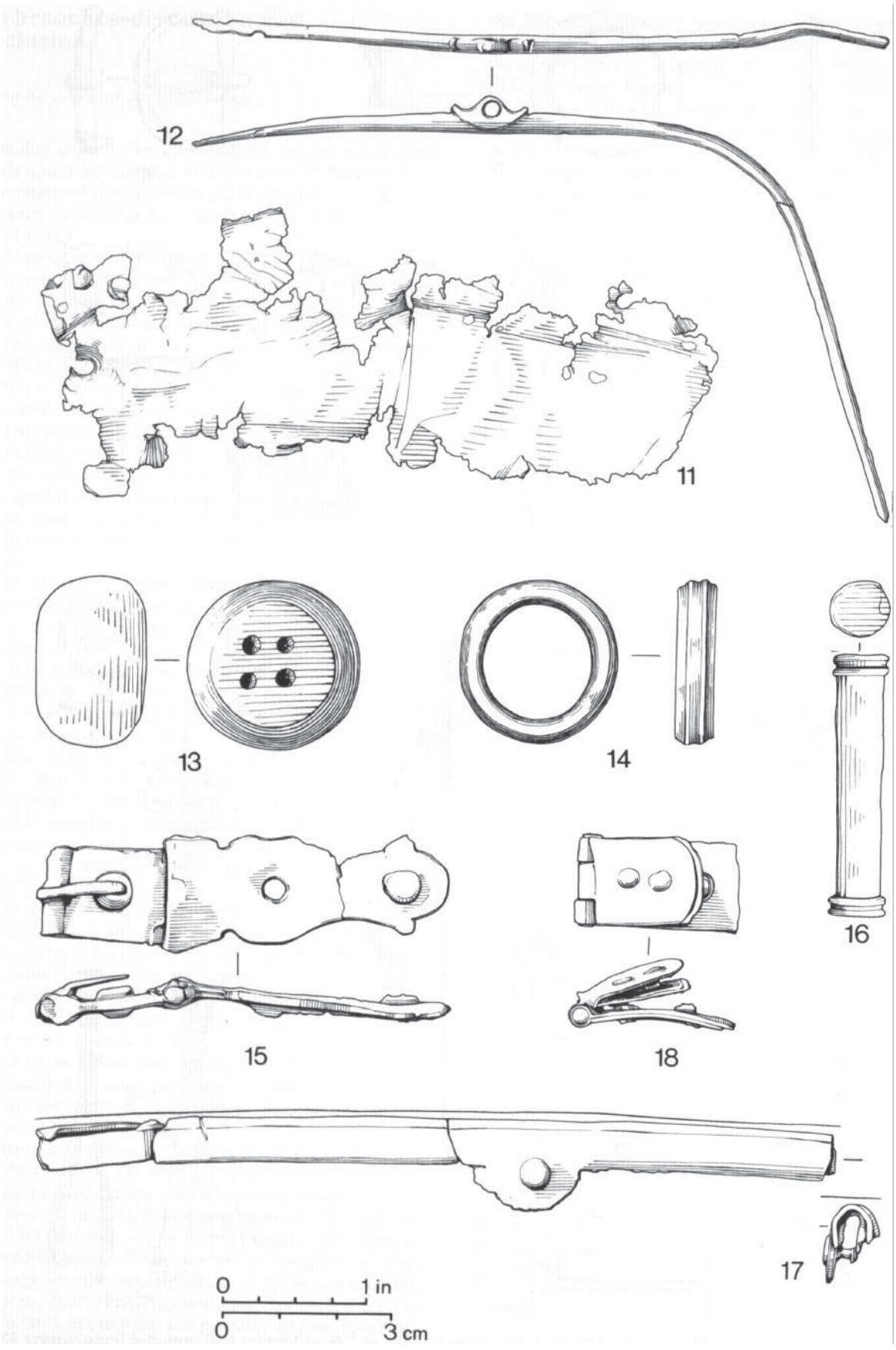


Fig 62 Objects of copper alloy, period III/IV: nos 11-15 from feature 138; nos 16-19 from feature 129-137. See pp 112-15 and M3:B7

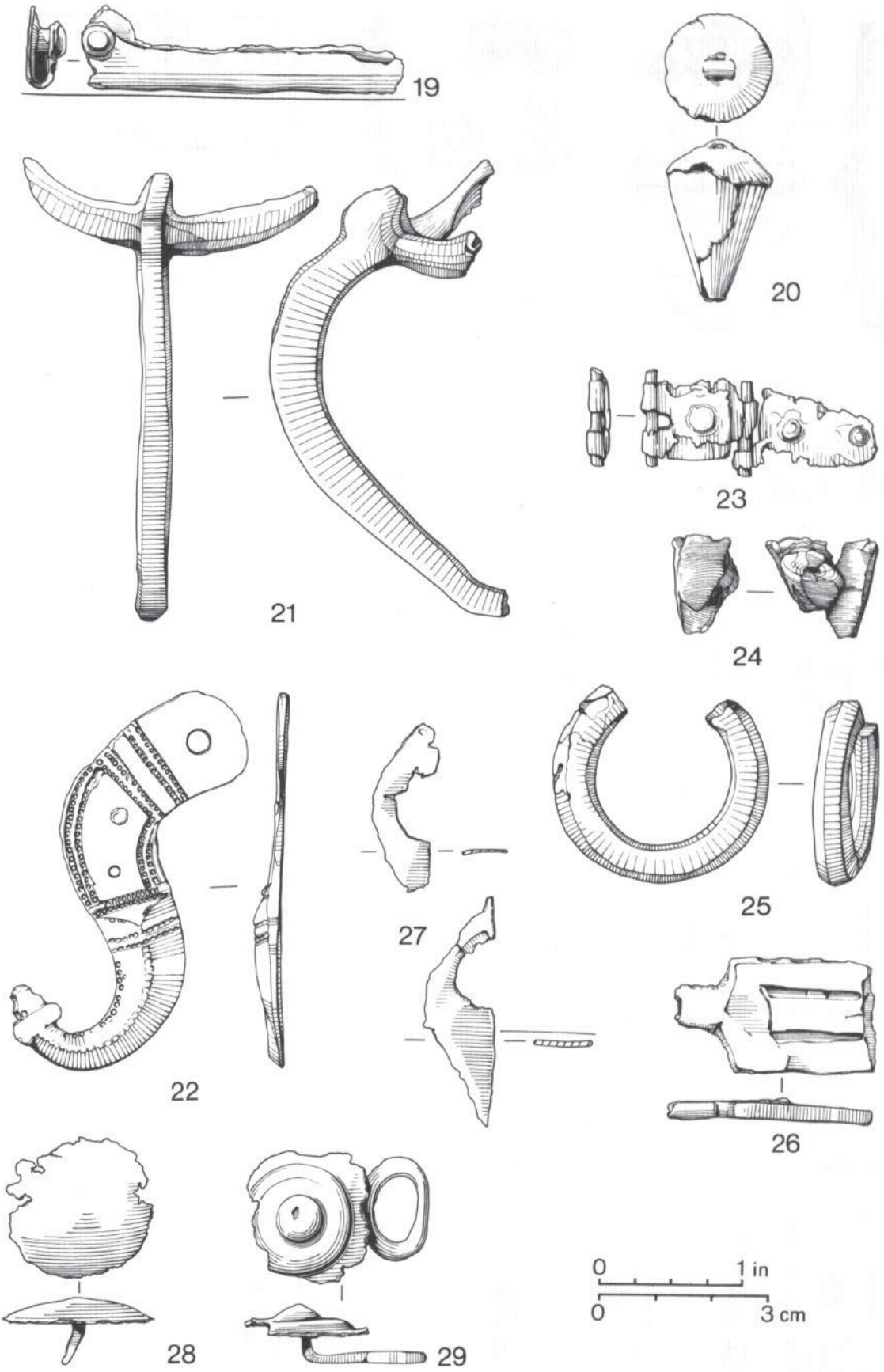


Fig 63 Objects of copper alloy, period III/IV: nos 20-1 from feature 212 and site iv, layer 2. Period IVb: nos 22-3 from site iii, layer 4; nos 24-9 from feature 102. See pp 112-15 and M3:B7-8

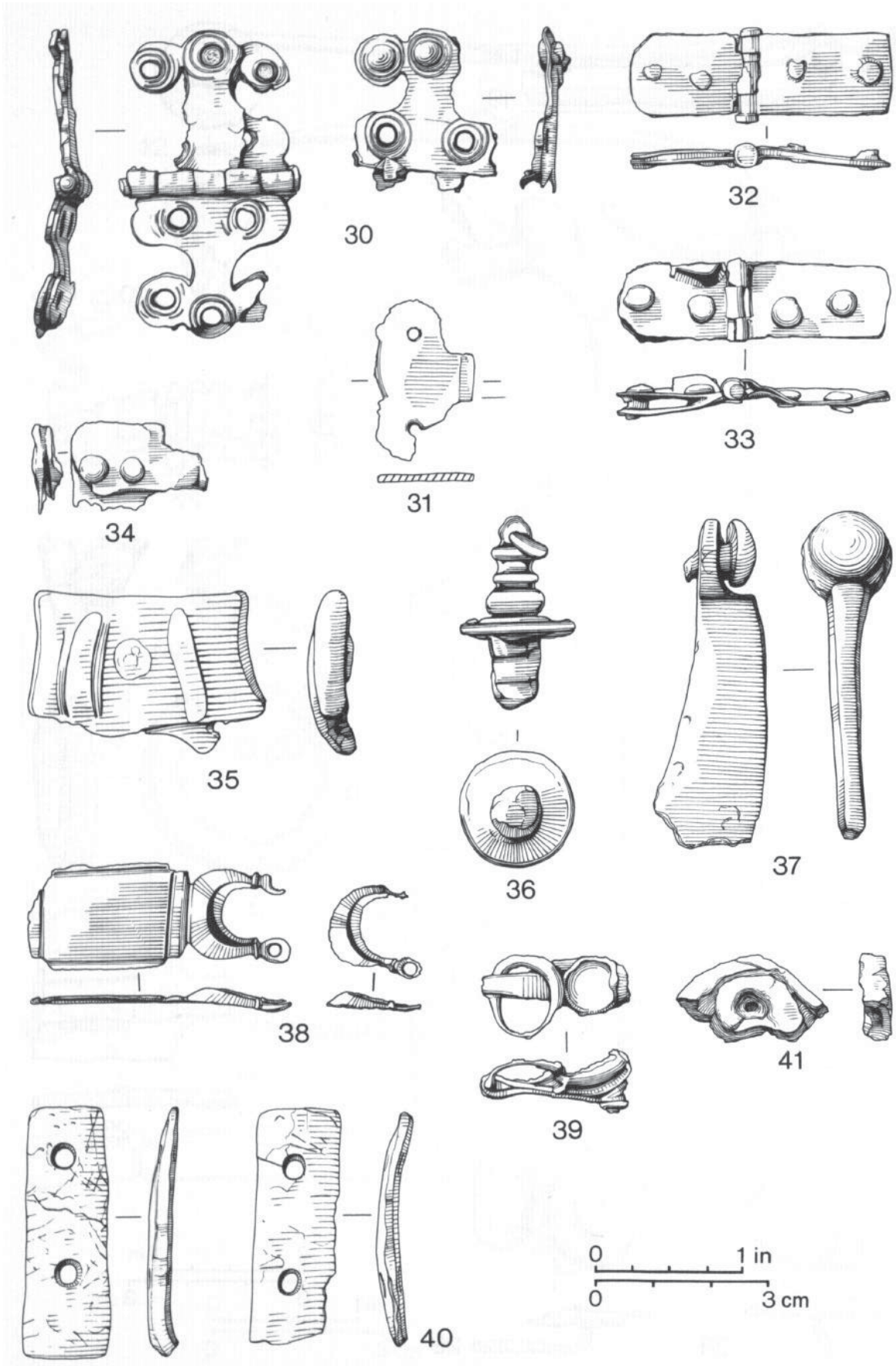


Fig 64 Objects of copper alloy, period IVb: nos 30-4 from feature 102; no 35 from feature 112; nos 36-9 from feature 132; nos 40-1 from feature 153. See pp 112-15 and M3:B8-9

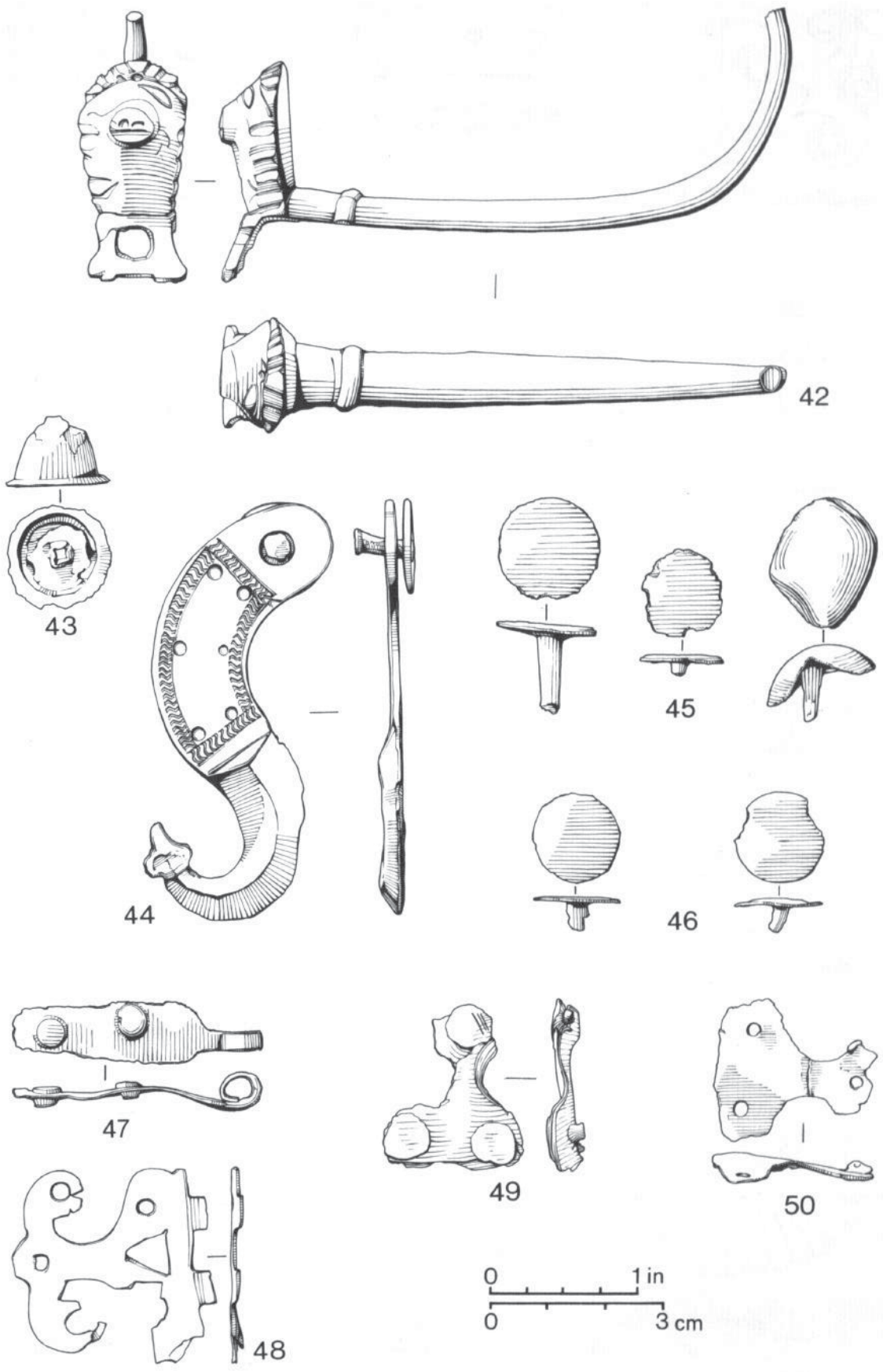


Fig 65 Objects of copper alloy, period IVb: nos 42-50 from feature 153. See pp 112-15 and M3:B9-10

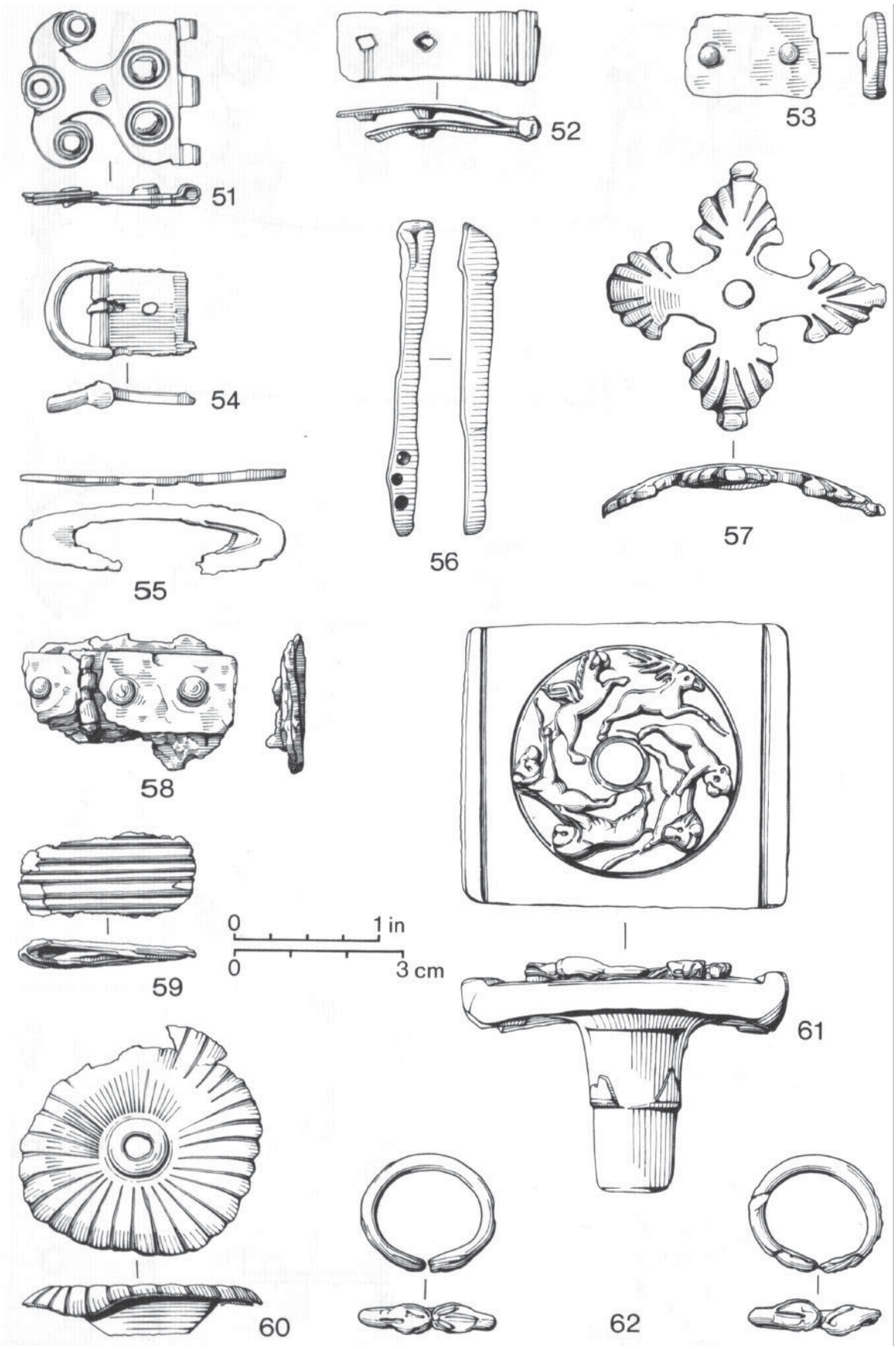


Fig 66 Objects of copper alloy, period IVb: nos 51-5 from feature 153; no 56 from feature 236; nos 57-8 from feature 252; no 59 from feature 505. *Period V: nos 60-1 from timber cellar; no 62 from the Boudiccan destruction layer, site iii, layer 2. See pp 112-15 and M3:B11-12*

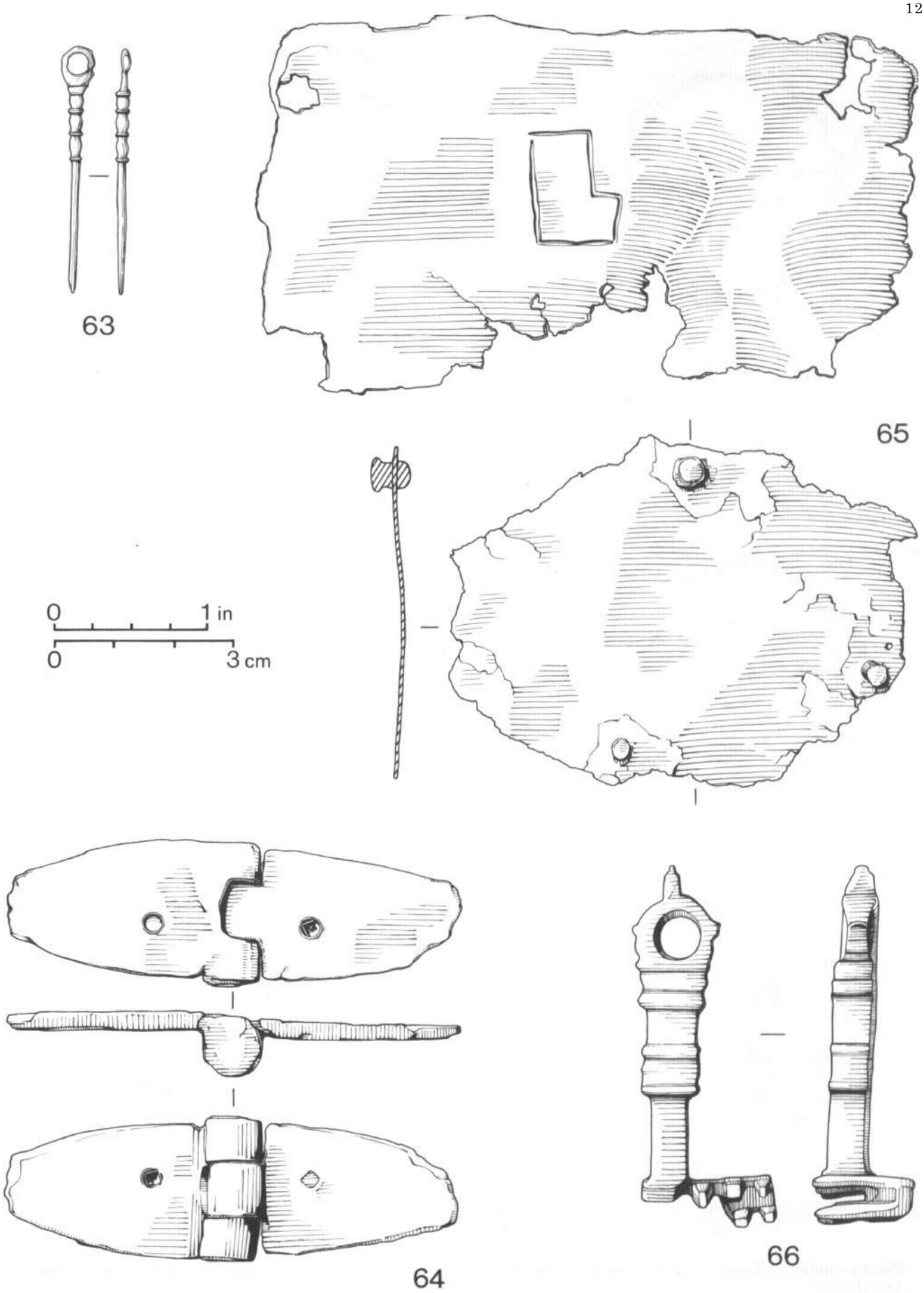


Fig 67 Objects of copper alloy from the Boudiccan destruction layer, site iii, layer 2. See pp 112-15 and M3:B12

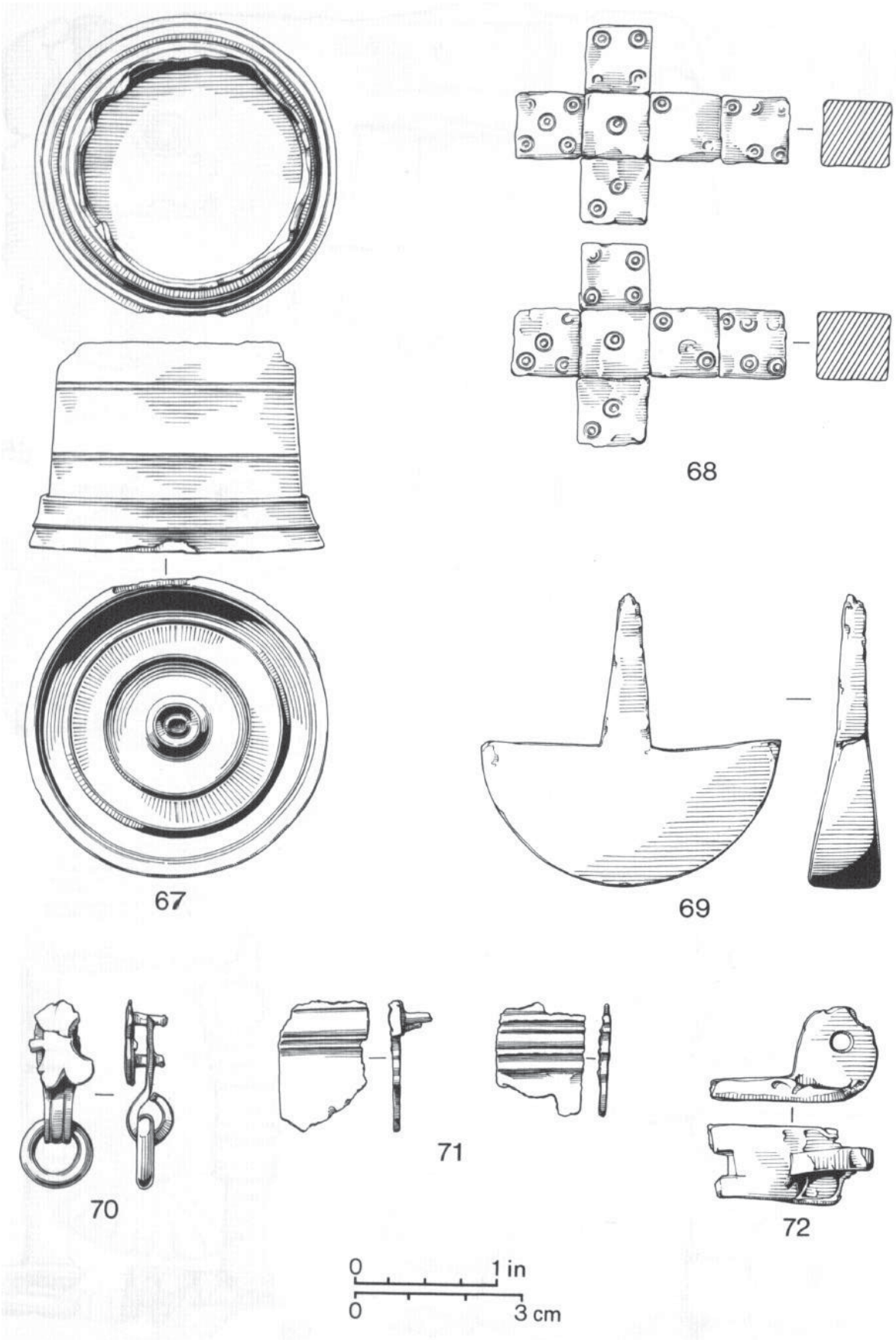


Fig 68 Objects of copper alloy from the Boudiccan destruction layer, site iii, layer 2. See pp 112-15 and M3:B12-13

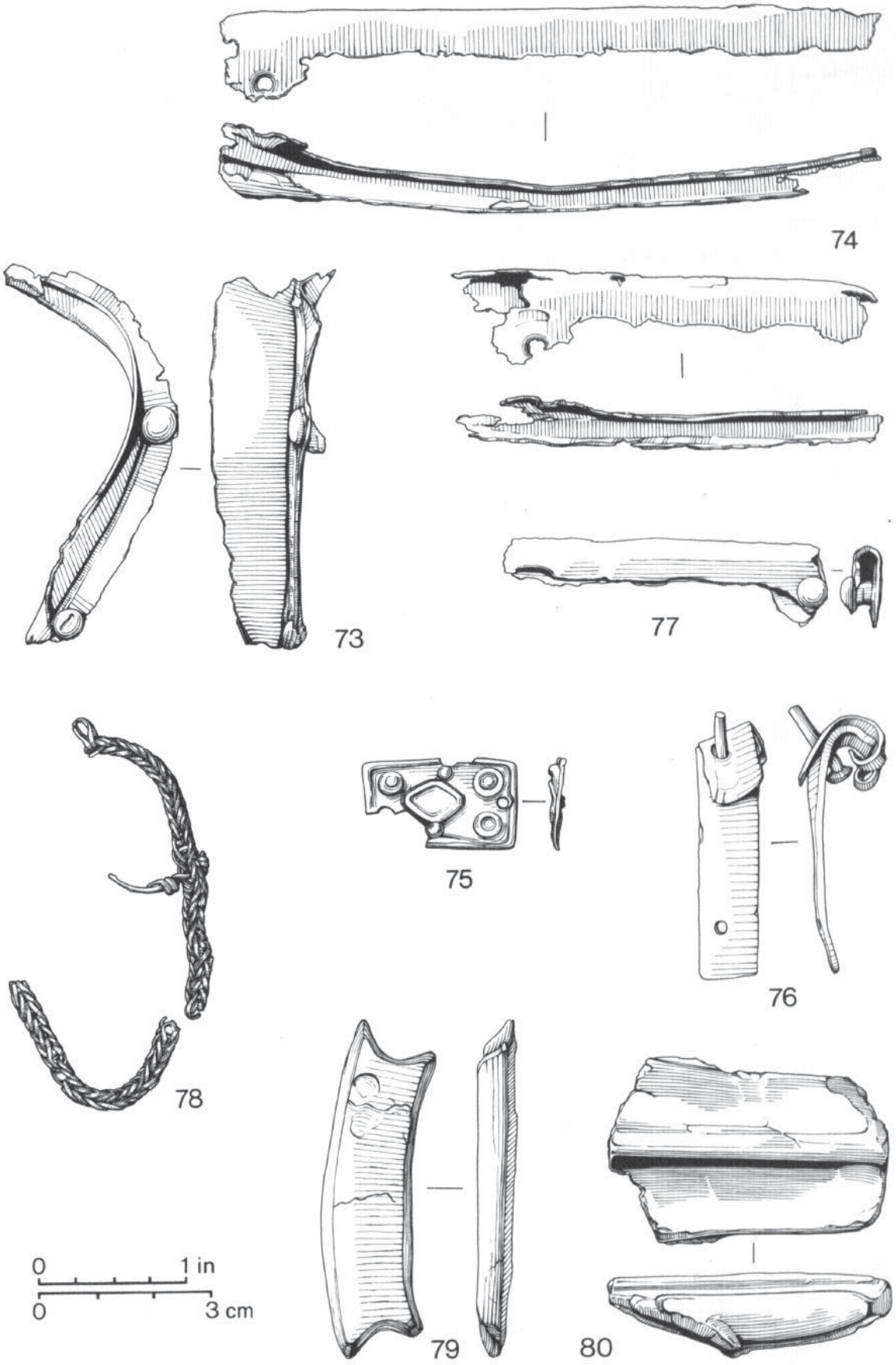


Fig 69 Objects of copper alloy: nos 73-5 from the Boudiccan destruction layer, site iii, layer 2; nos 76-8 from later features; nos 79-80 from ploughsoil. See pp 112-15, and M3:B13

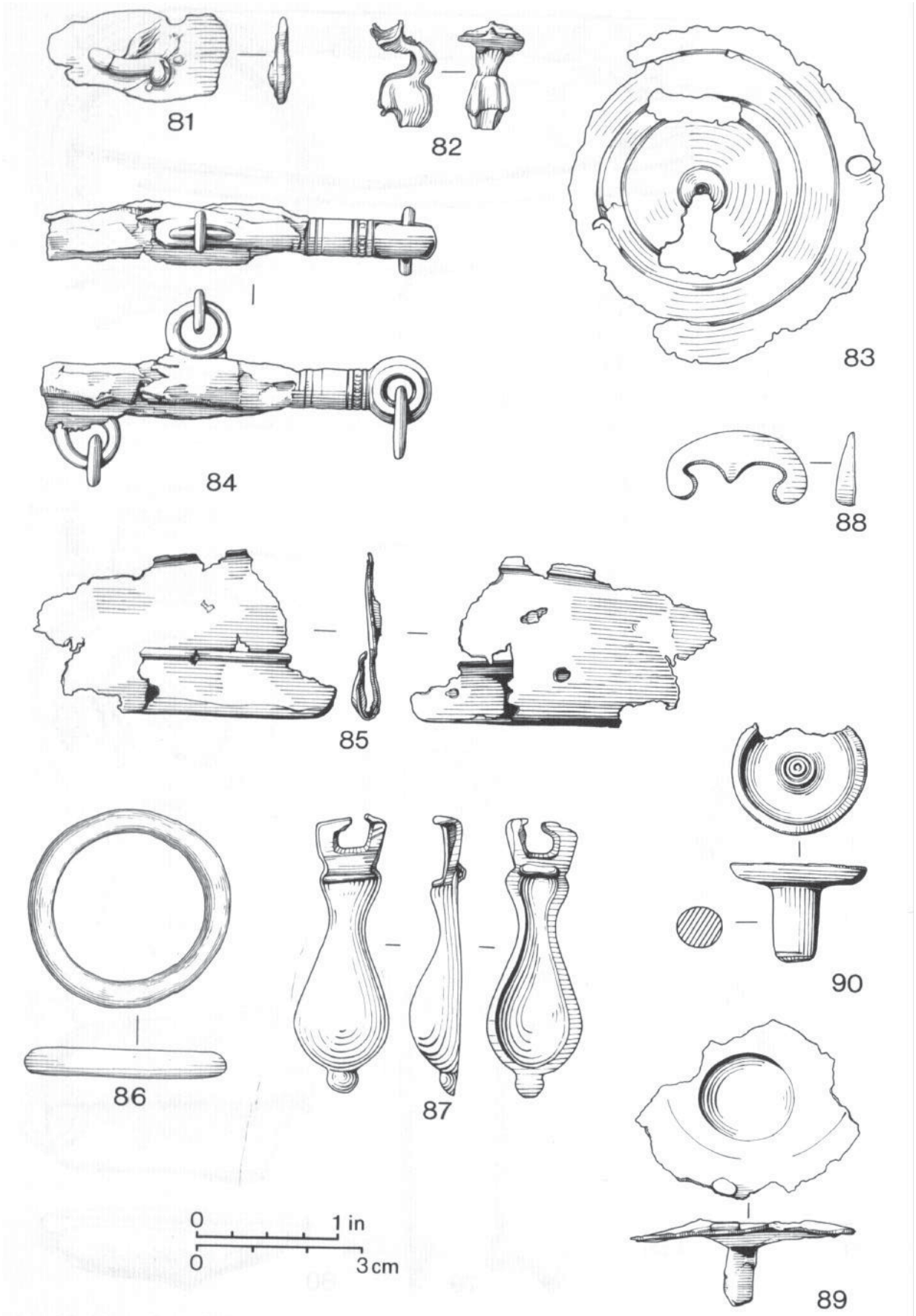


Fig 70 Objects of copper alloy from ploughsoil

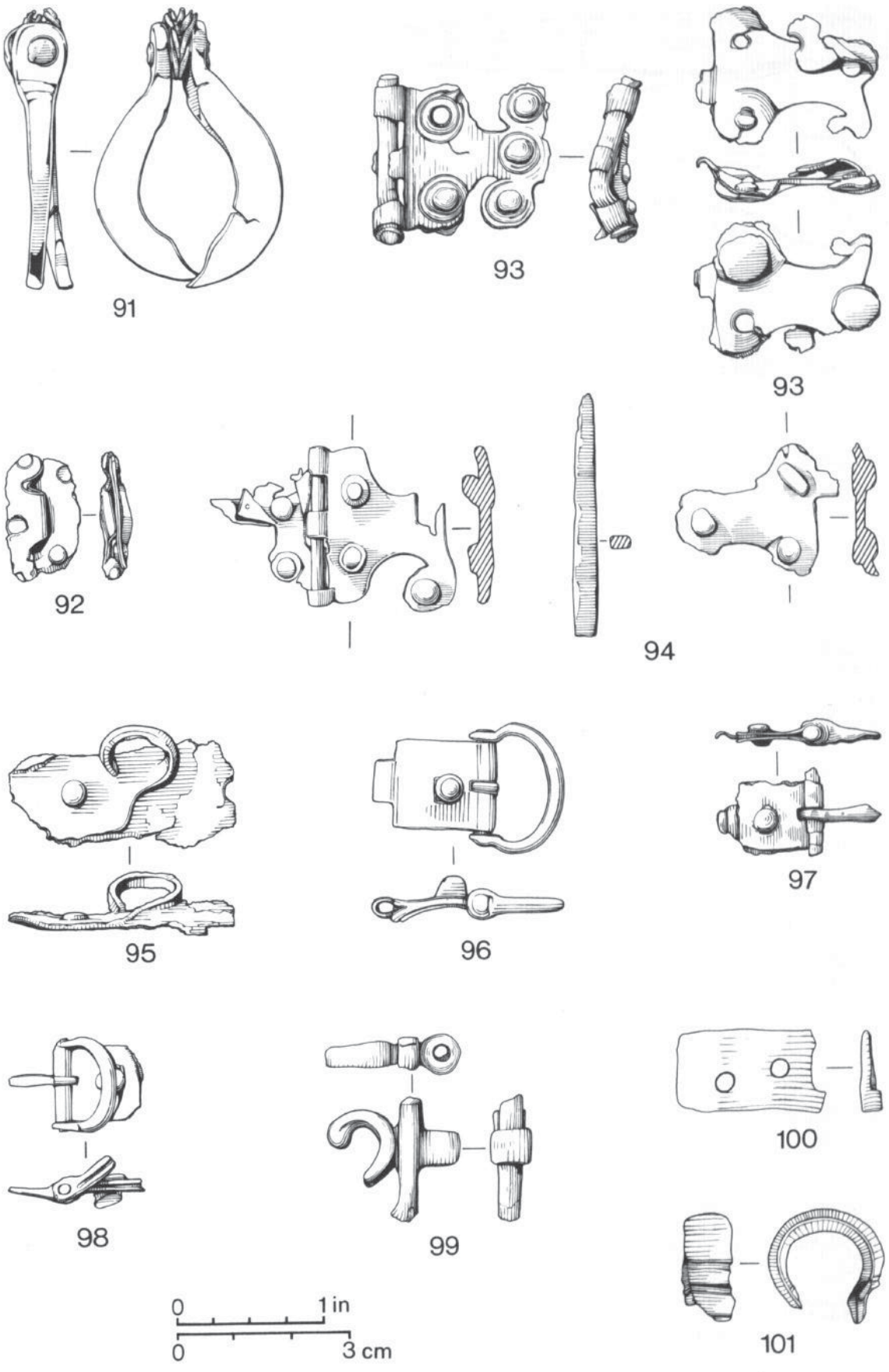


Fig 71 Objects of copper alloy from ploughsoil

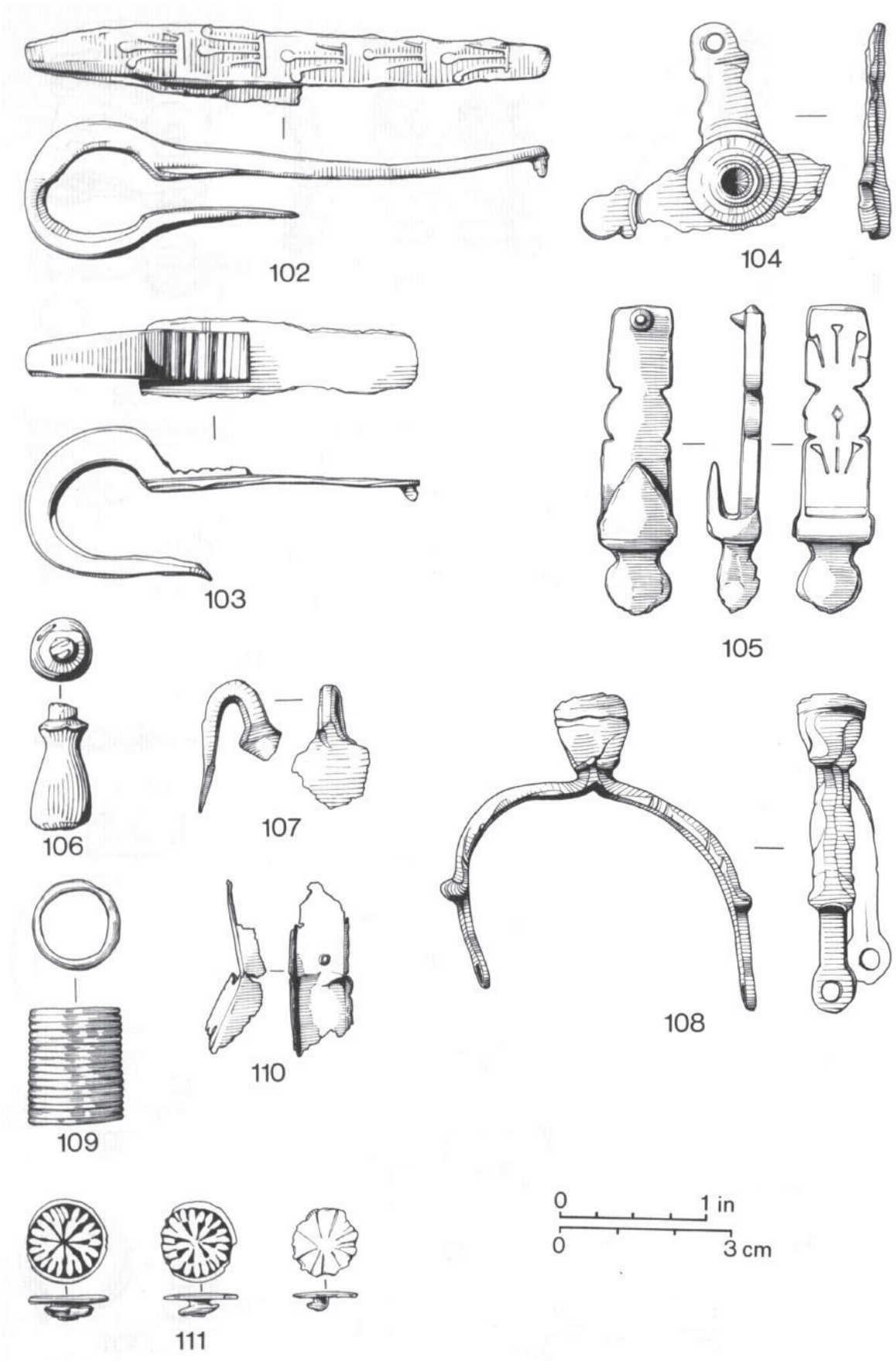


Fig 72 Objects of copper a alloy from ploughsoil

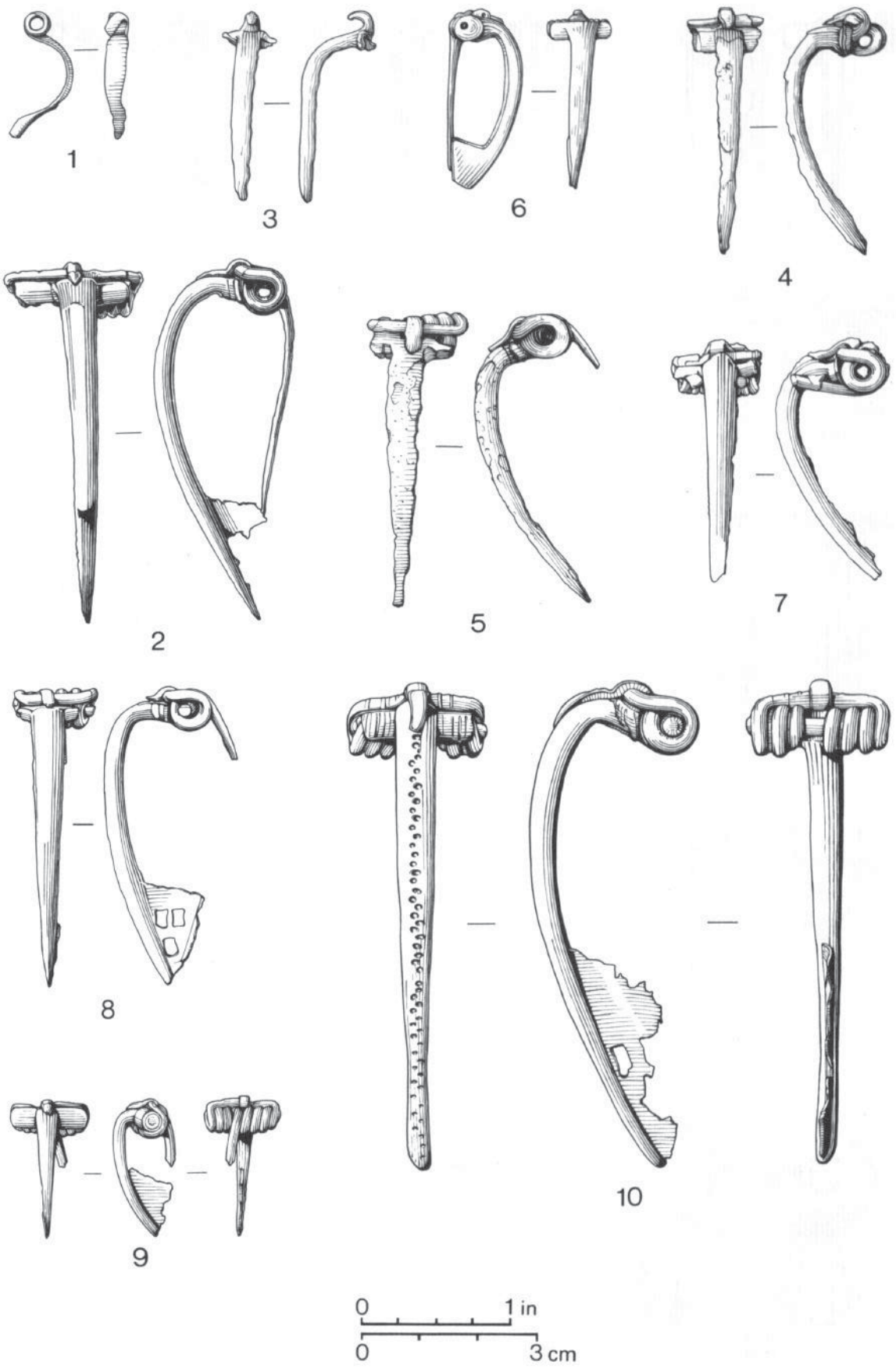


Fig 73 Brooches: no 1 Nauheim-derivative; nos 2-10 Colchester type. For individual contexts see p 116

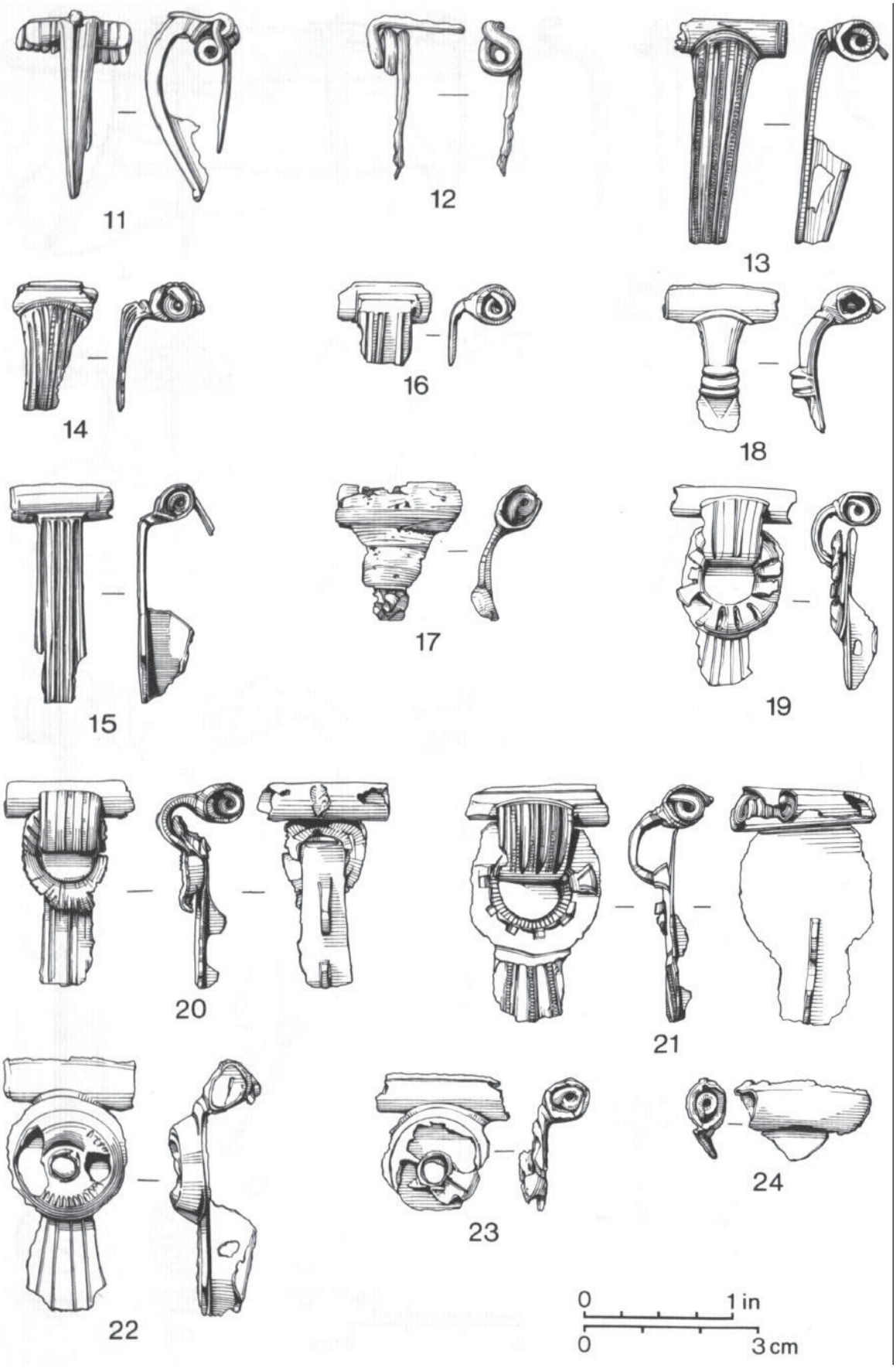


Fig 74 Brooches: nos 11-12 Colchester type; nos 13-24 cylindrical-headed types. For individual contexts see p 116

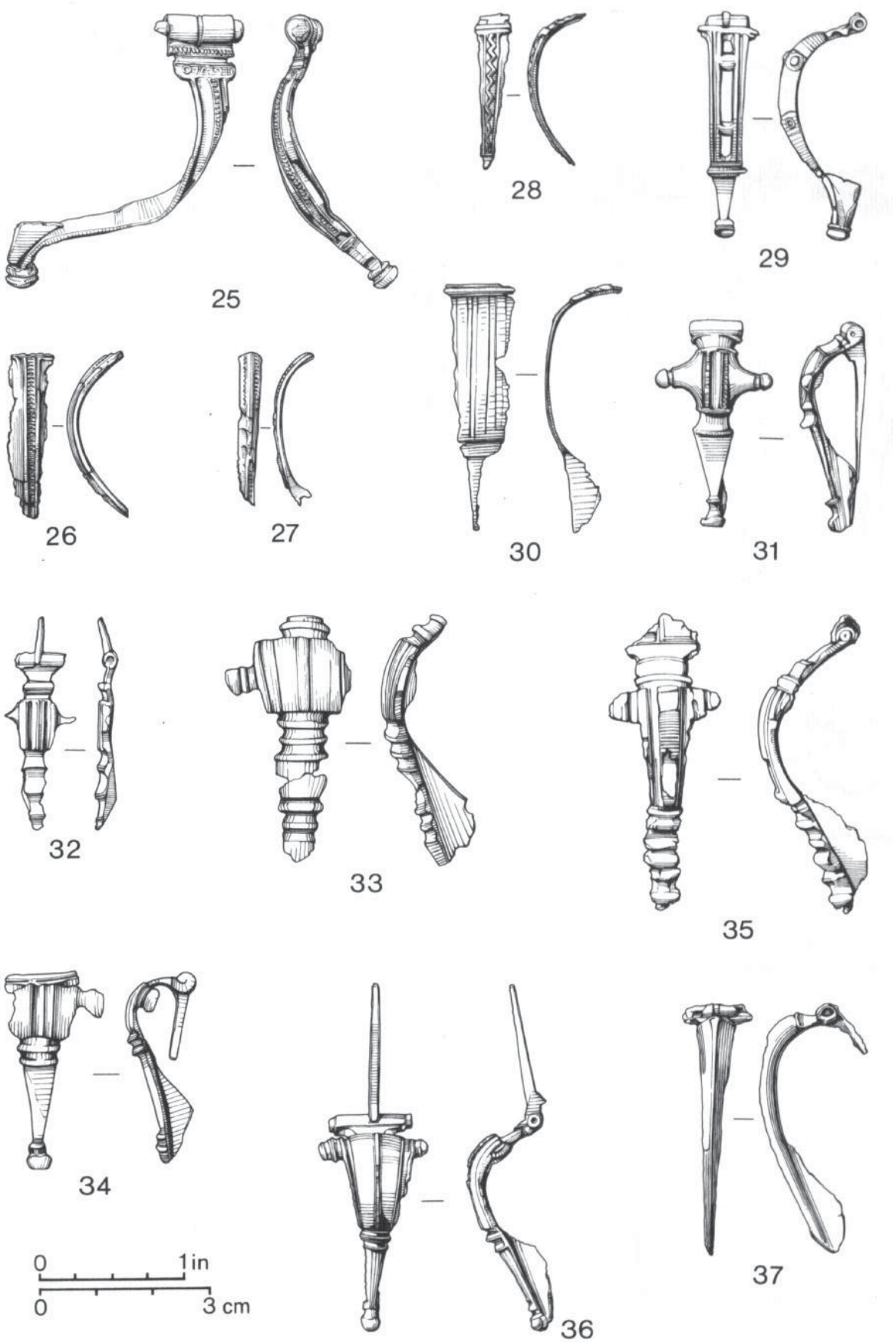


Fig 7.5 Brooches: nos 25-28 Aucissa type; nos 29-30 Bagendon type; nos 31-7 Hod Hill types. For individual contexts see p 116

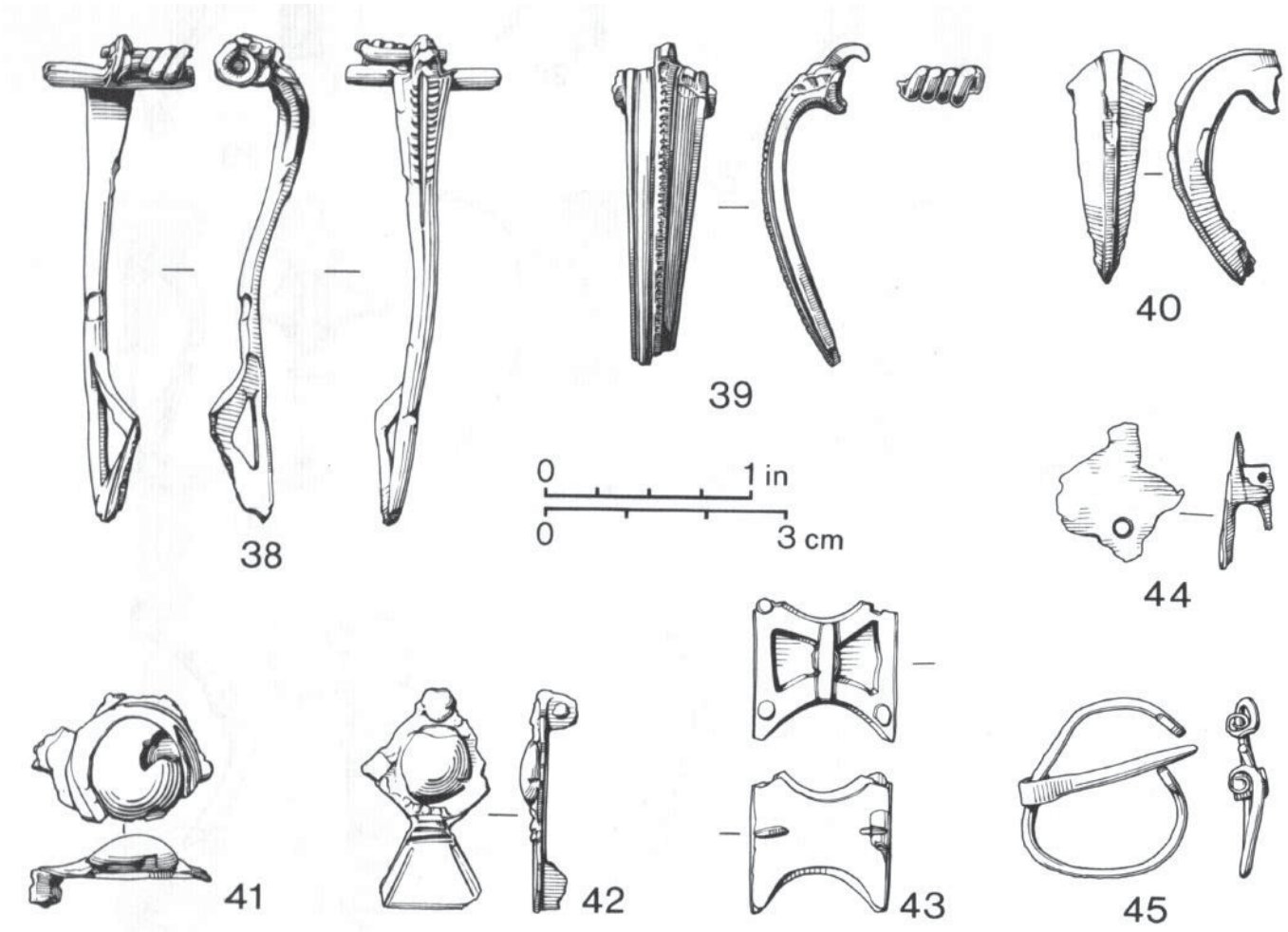


Fig 76 Brooches: nos 38-40 two-piece Colchester type; nos 41-4 plate brooches; no 45 penannular brooch. For individual contexts see p 116

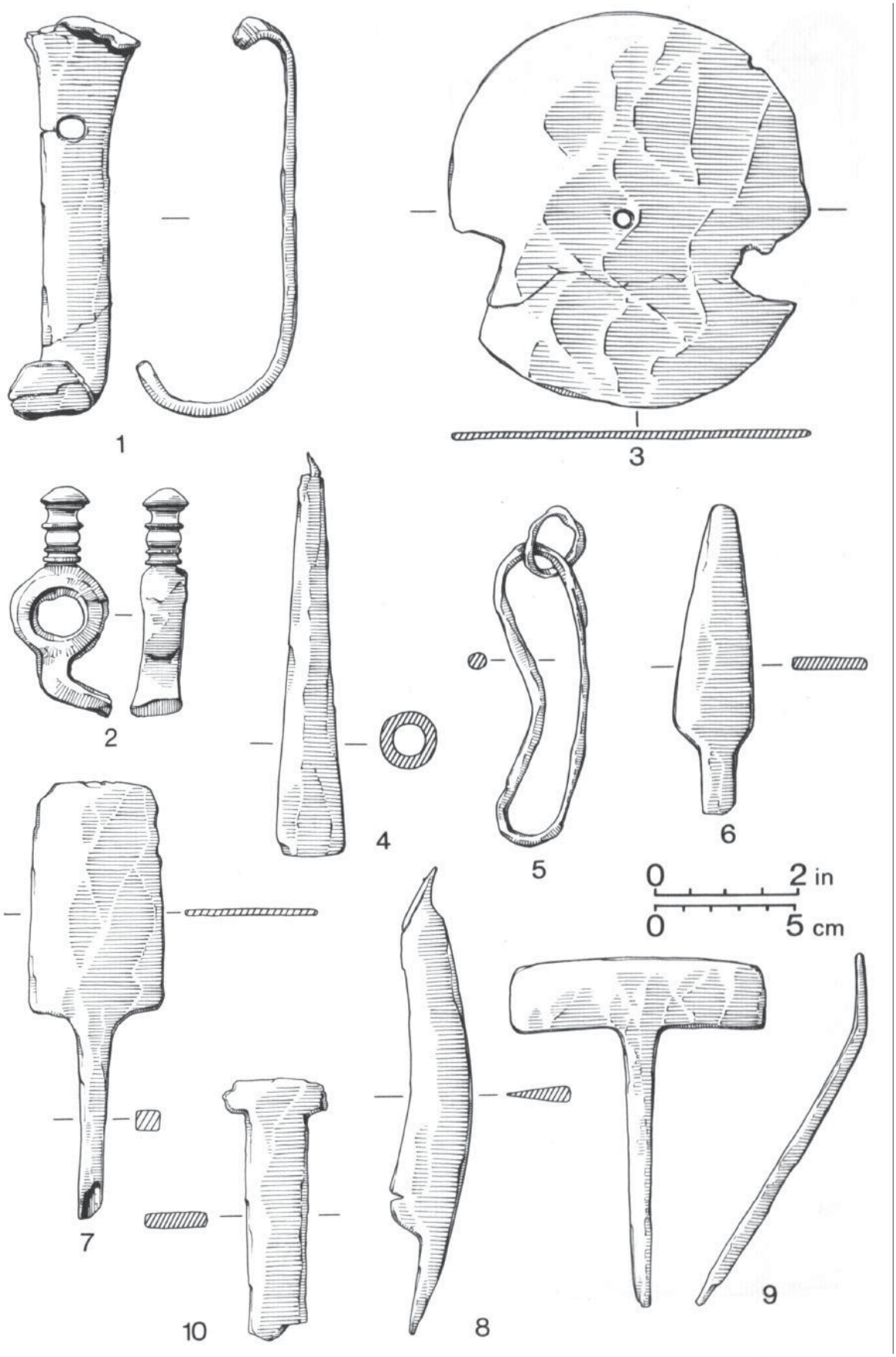


Fig 77 Iron objects: nos 1-2, period I, from features 143,183; no 3, period III, from feature 4; nos 4-10, period IV, from features 155, 102, 112, 214. See p 113 and M3:D7

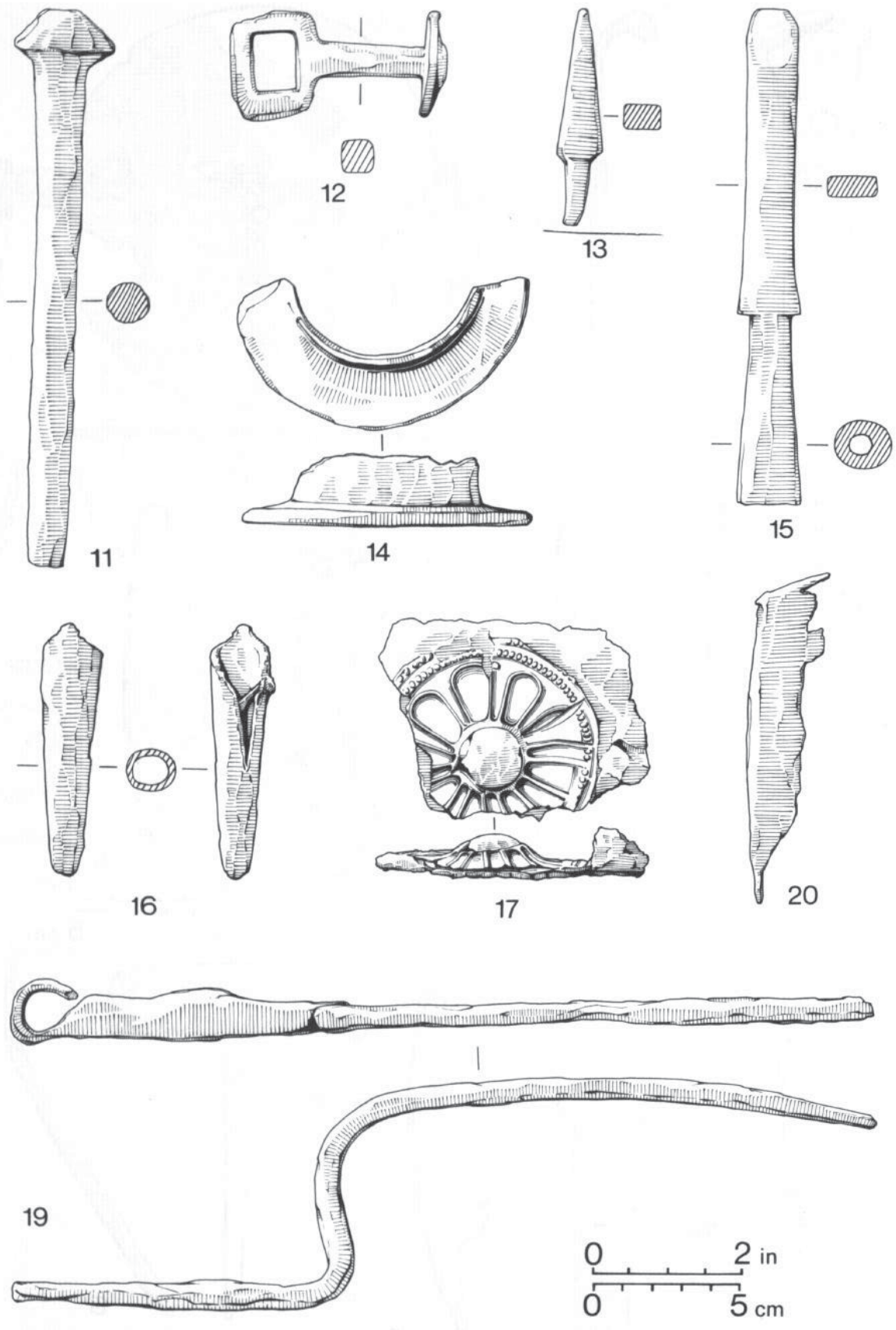


Fig 78 Iron objects, period IVb; no 17 is part of an iron lorica segmentata with a copper alloy boss, nos 11-13 from feature 132; nos 14-18 from feature 153; no 19 from feature 246; no 20 from site iii, layer 8. Seep 113 and M3:D8

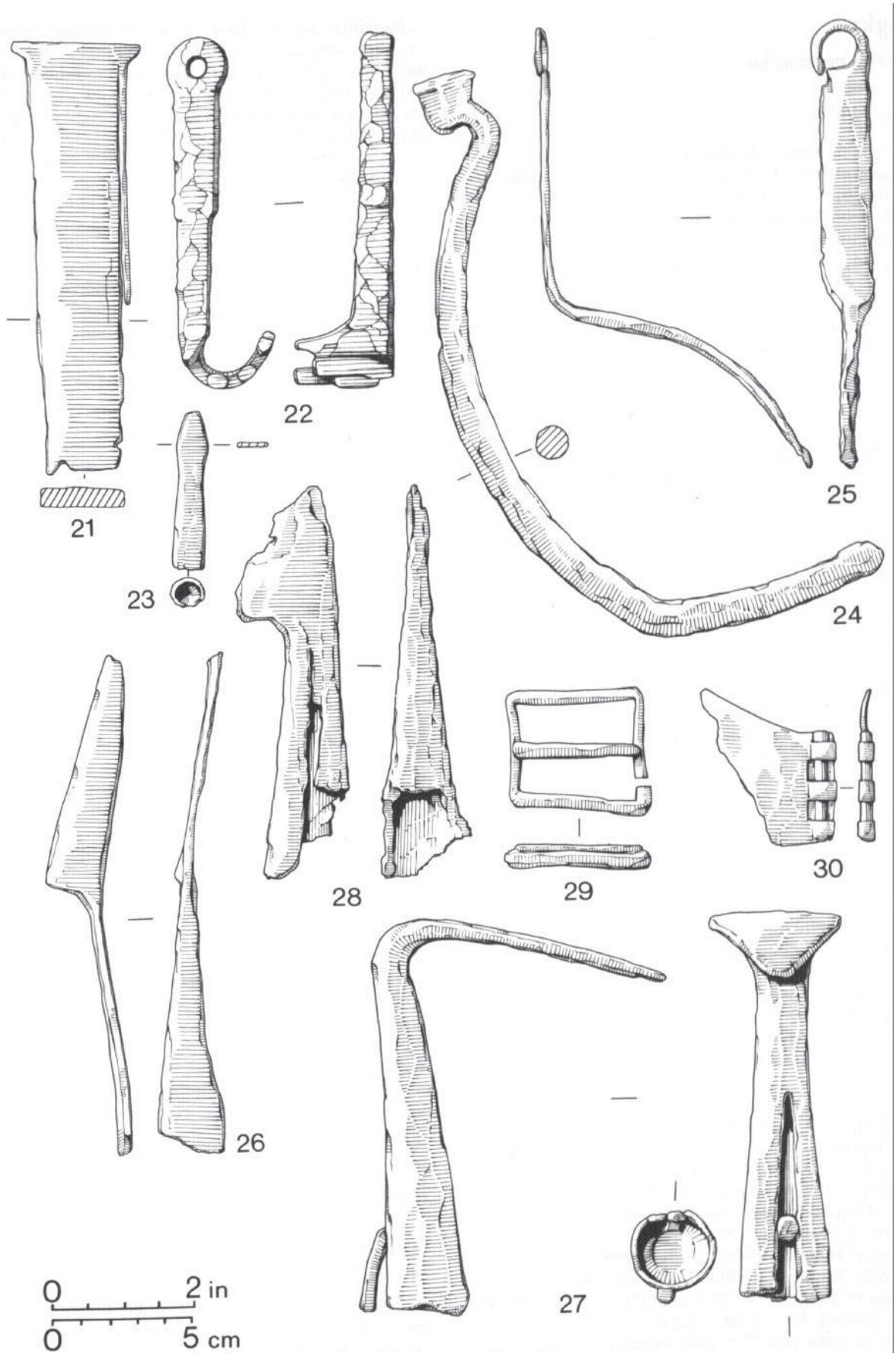


Fig 79 Iron objects, periods IVb and V: no 21 from site iii, layer 8; no 22 from feature 114; nos 23-6 from site iii, layer 2; nos 27-30 from ploughsoil. See p 113 and M3:D9

The glass

General remarks

Rosalind Niblett

Fragments of some 200 glass vessels were found, some in pits and stratified levels, the rest strewn over the site in ploughsoil. The glass was reported on by the late Dorothy Charlesworth whose detailed discussion and catalogue showing contexts is included on microfiche (M3:F1-11). The drawings, Figs 80-3, are to be found on pp 138-41.

No glass was found in period I features, a fact that is not surprising in view of the scarcity of glass in period I deposits in the more extensive 1930s excavations when only three period I pieces were recorded (Hawkes & Hull 1947, 288-9). Whatever other items were being imported at Sheepen before the conquest, glass does not seem to have beenamong them.

A modest amount of glass was recovered from period III deposits in 1970. In compound 1 (site i), a postpit, feature 111, produced fragments of two pillar moulded bowls, one in blue glass and the other in purple and white millefiori (glass report, no 15, Fig 80, M3:F7). The same feature produced a drip of blue glass (glass report, no 97, M3:F11), but it would be going too far to use this to postulate glassworking here in period III. A third pillar moulded bowl fragment, this one in natural green glass, came from the filling of a period III postpit on site iii, feature 307 (glass report, no 71, M3:F9). A fragment from a square bottle, Isings form 50, in natural green glass was found in feature 162 in compound 1 (site i). As the main floruit of this form was AD 70-130 and since it is uncertain how early it began to be made, it is interesting to note this example in a Claudian context (glass report, no 95, M3:F10). The only other glass found in a period III context was a fragment of a bowl or beaker in emerald green glass from a shallow scoop, feature 152 in compound 1, site i (glass report, no 49, Fig 81).

Fragments of seven vessels came from deposits that could date equally well from period III or IV. Parts of two millefiori bowls were found in features 201 and 237 (glass report, nos 1, 9, Fig 80, M3:F2). Feature 237 also produced a hollow tubular rim in blue glass (glass report, no 39, M3:F7). A large fragment of a fine beaker or chalice, apparently unworn, in amber glass with white marvered trails was found in a small rubbish pit on site i, feature 114 (glass report, no 16, Fig 80, M3:F3). Feature 129, also on site i, contained parts of two vessels, both in natural green glass, one of them another square bottle Isings form 50, and the other a mould blown beaker decorated with bosses (glass report, nos 93 and 90 respectively, Fig 83, M3:F10).

Most of the stratified glass found in 1970 came from period IV deposits, as was also the case in the 1930s excavations (Hawkes & Hull 1947, 289-90). In 1970, 33 vessels were found in period IV contexts as opposed to 5 in those of period III. It is noticeable that, particularly in period IV, glass tended to be found concentrated in a few pits. The prime example of such a pit is feature 102, where an earlier gravel pit was recut in period IVb and used as a rubbish pit for domestic and industrial material. This pit produced fragments from fourteen vessels: a millefiori bowl (glass report, no 16, M3:F2); two marvered vessels, one in amber glass and one in opaque white glass (nos 17, 23); one possibly marvered vessel, a further fragment of which was found in the filling of the nearby latrine, feature 138 (no 26); three unmarvered vessels (nos 27-9); a moulded base in emerald green glass (no 36); large fragments of four two-handled flasks, Isings form 15, three in blue glass and one in natural green glass (nos 54-6, 86); a small blue, bulbous jar with a ledged rim (no 34); and a small bowl, Isings form 12, in natural green glass (no 82). This group of vessels illustrates something of the varieties of glass and range of forms current on the site in the Neronian period, a variety which is reflected in two smaller groups of Neronian vessels. Feature 153, a large period IVb pit containing a scrap metal hoard, also produced fragments of seven glass vessels: part of a two-handled flask in deep blue glass (glass report, no 57); a small ribbed bowl, Isings form 17, in white glass with brown streaks and a white marvered trail, further parts of which were found in feature 252 in site ii (nos 20, 22); two pillar moulded bowls (80-1); and a two-handled bowl or *scyphos,* Isings form 39, in green glass (no 86). A third and smaller group from feature 256 comprised part of a millefiori bowl (no 7) and two pillar moulded bowls in natural green glass (nos 68, 73). Other isolated glass vessels from period IV features extend the range: a moulded rim, Isings form 22, from feature 503 where it was associated with a blue two-handled flask (no 42); another square bottle, Isings form 50, from feature 336 (no 94); and a small green and amber flask with white trails marvered in two directions from feature 213 (no 18). See Figs 80-83.

Five vessels from the Boudiccan destruction layer on site iii reflect a similar range and a large number of glass fragments were found in the ploughsoil. Since these are all pre-Flavian they can be regarded as contemporary with the main period of occupation on the site, and not later strays.

The glass from the 1970 excavations, together with that found in the pre-Flavian cremations (M1:A4-8), indicates the quality of the glass being used on the site. It is unfortunate that, apart from the glass from the cremations, no complete vessels were found; indeed, much of the glass was extremely fragmentary and not infrequently parts of the same vessels were found scattered in more than one pit. Nevertheless, the collection of glass as a whole, all of mid 1st century date, provides a useful addition to that found in the 1930s, especially as it includes several forms not found previously at Camulodunum.

The glass cameo

Martin Henig

The Boudiccan destruction layer on site iii produced a fine glass cameo (P1 20). It appears to consist of a two-layered glass, the upper zone, on which the device has been moulded, being white and opaque, and the lower green and translucent. It is oval, 10 mm in length

and 8 mm in height. The relief portrays a nereid, holding a veil which billows out to form a canopy over her head, seated upon a dolphin, shown swimming towards the right (Henig 1974, 96, pl XLVII, no 738).

A cornelian intaglio of 1st century date, also from Colchester, depicts virtually the same subject. A nereid again sits upon a dolphin s back although the creature here is guided by a little cupid (Henig 1974, 42, pi IX, no 288; also Rose 1958). Possibly both gems refer to the story of Amphitrite and the dolphin. Amphitrite fled from her husband Poseidon (Neptune) and was brought back by a dolphin. Nereids are frequently shown on cameos of the Roman period and two pastes in the British Museum each depict one riding upon a bull-headed sea-monster (Walters 1926, nos 3842-3). It is just conceivable that the subject of our paste is a sea-bull, for its head is larger and its snout broader than is normal. Other gems portray nereids mounted upon hippocamps (Henig 1974, no 3428; Babelon 1897, no 117; Eichler & Kris 1927, no 55).

Despite the indifferent workmanship of the cameo, the composition is harmonious and indeed reminiscent of such masterpieces as the gem attributed to Dioshurides, with a device that surely refers to Actium Octavian riding upon a Capricorn (Vollenweider 1966, 60, and pl LXI, nos 1-2). In any case our gem is important as the earliest known cameo from Britain with the exception of the three glass phalerae (one from Colchester) showing Germanicus and his family (Toynbee 1955; Toynbee & Richmond 1953). See Harden 1972 for glass *phalerae*. For other cameos from Britain, see King 1878 and Henig 1970a. It may also cast some light on the attitudes of its wearer, possibly a resident in the early *colonia;* whereas some 1st century soldiers wore signets (often made of glass) that showed heroic warriors of legend such as Theseus and Hercules, our cameo, even if its subject is mythological, either alludes to the journey of the soul after death to the Isles of the Blessed, or expresses a desire for a calm voyage across Ocean from Gaul to Britain (Henig 1970b, 256-7 on heroic types; Toynbee 1964, 298-9 on the popularity of funerary subjects in the Roman army; Henig 1977, 347-66; *cf Anth* Pal, **9,** 544 on the nereid Galene, depicted on a ringstone-according to this poem she brought calm seas). Dio tells us of the reluctance of the troops to embark for Britain in AD 43, and a gem such as this might have been worn as an amulet in order to protect its owner during the perilous crossing (Dio, 60, 19; *cf* Henig 1974, *Corpus,* Part 11, 76, and pl XLI, no 533 for a gem from Verulamium showing an Eagle, Standard, and Trophy on a warship this intaglio may well have been cut for a member of the expeditionary force).

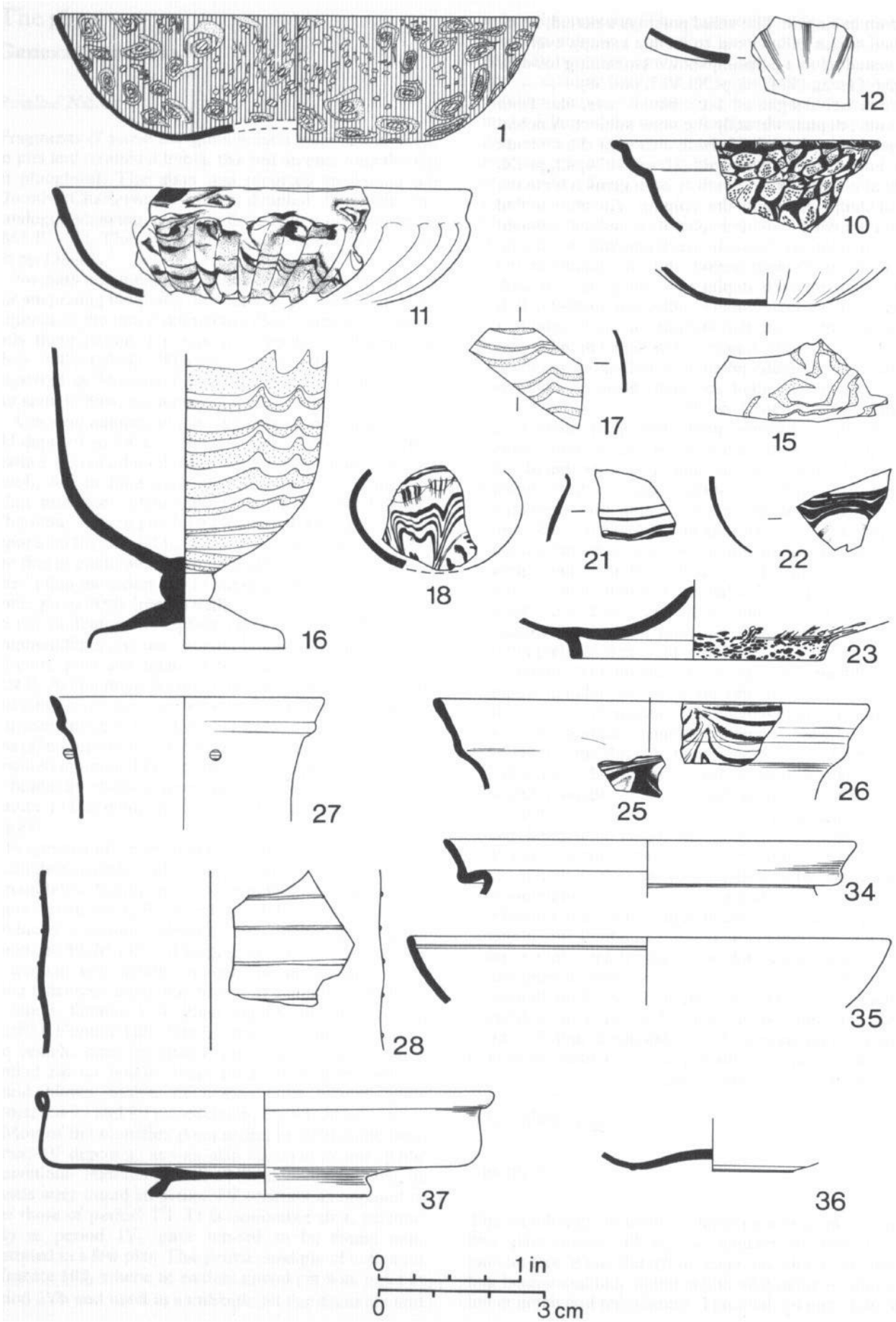


Fig 80 Glass : nos 1-32 polychrome; nos 34-7 monochrome coloured. See p 136 for individual contexts

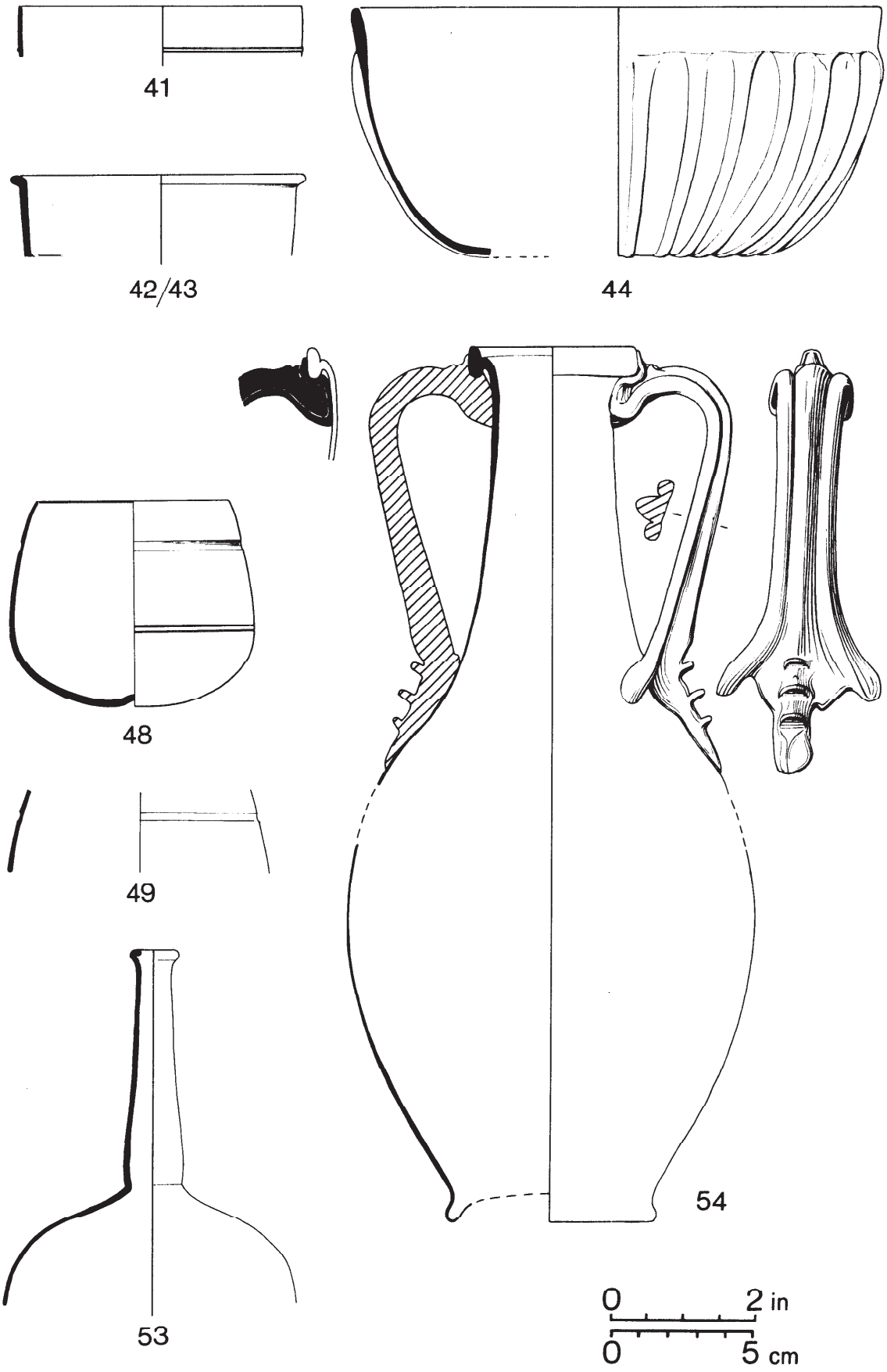


Fig 81 Coloured glass. See p 136 for individual contexts

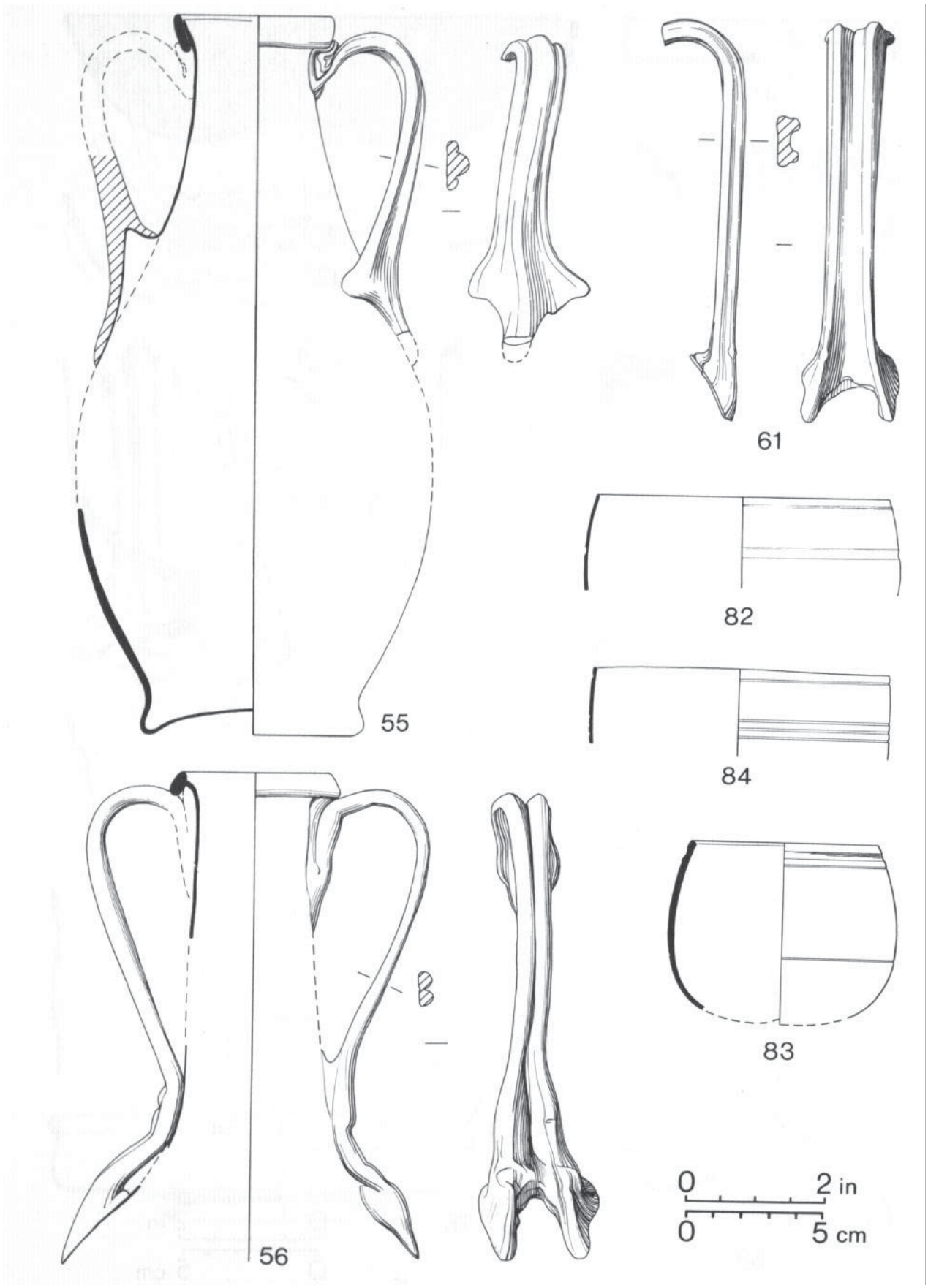


Fig 82 Glass: nos 55, 56, 61 coloured monochrome; nos 82-4 natural green glass. See p 136 for individual contexts

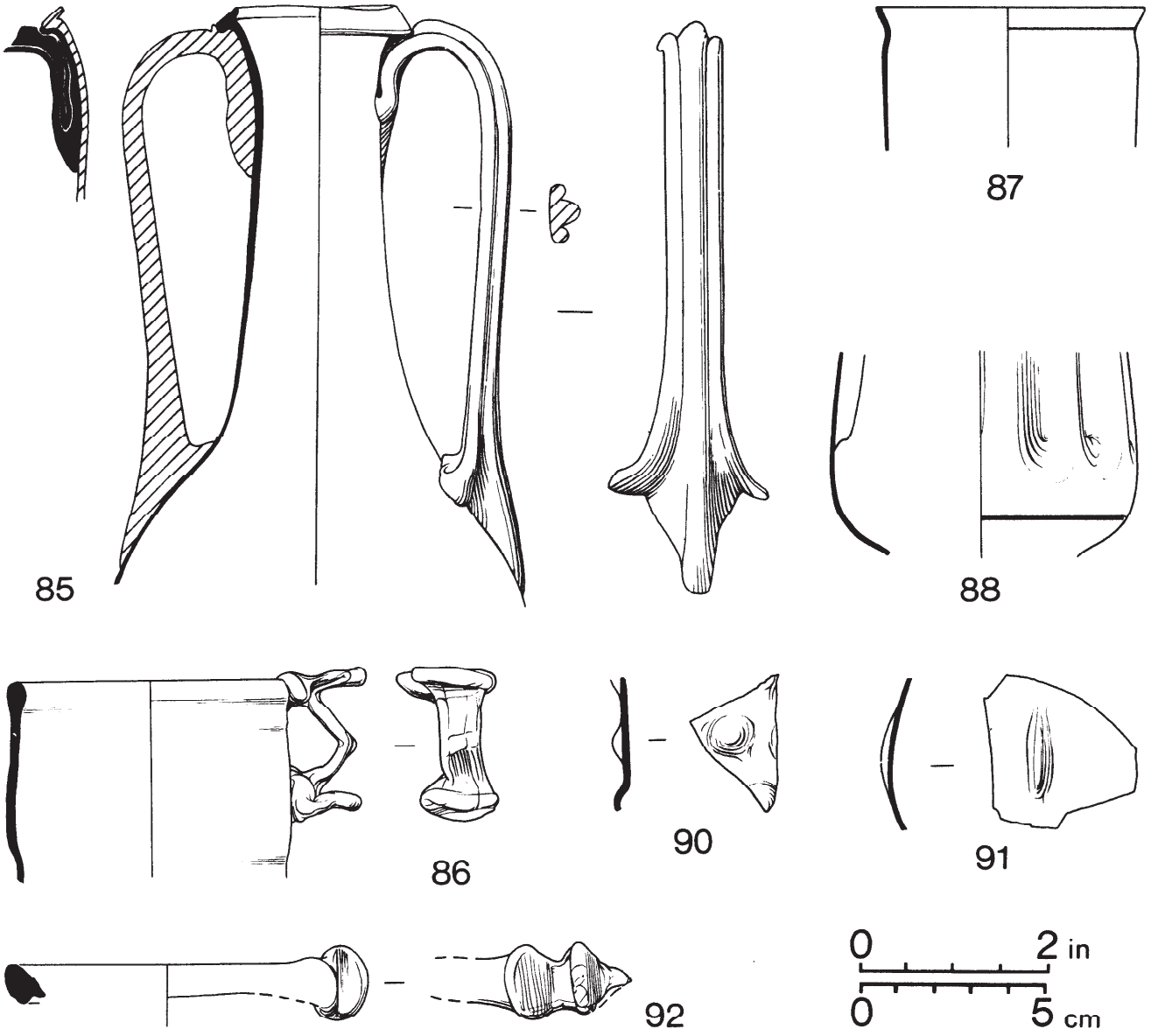


Fig 83 Natural green glass. See p 136 for individual contexts

The stone and flint

Rosalind Niblett

Stone was very rarely found on the site, in contrast to the very large quantities of tile. Two small fragments of local iron stone —septaria—were found in features 140 and 312, a small chip of lava, presumably from a quern, in feature 342, and one of pudding stone in feature 138. Fragments of smoothed sandstone, doubtless from whetstones, from feature 102 and the objects of worked flint described below (M3:F12) complete the list of stone from the site.

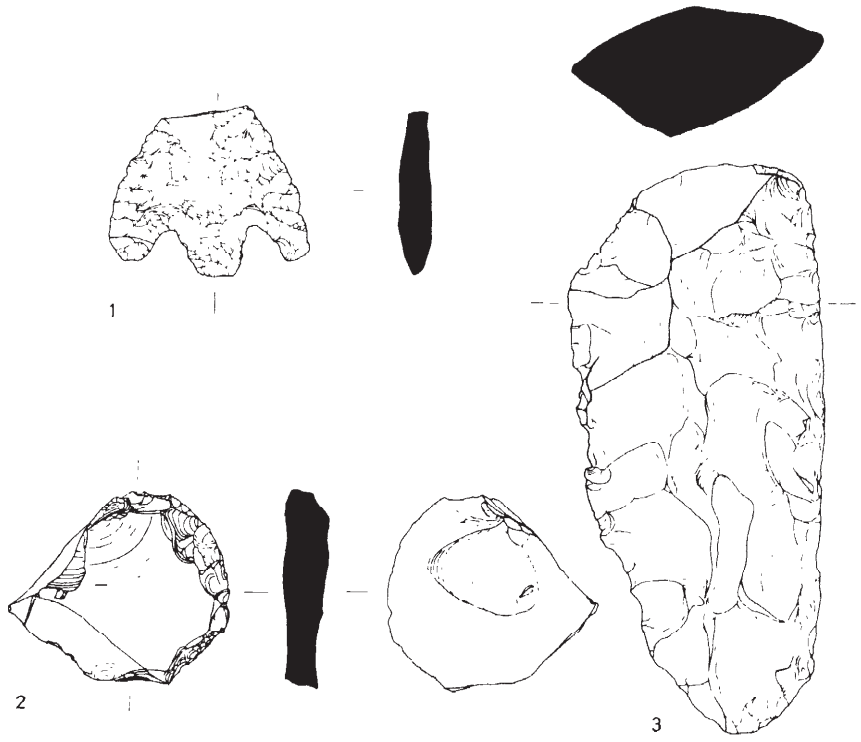


Fig 84 Objects of worked flint

The fauna

Rosemary Luff

Animal bone fragments of weight 1574 kilograms were analysed and the following species emerged: horse, cattle, sheep, goat, pig, bear, red deer, roe deer, hare, dog, frog, and bird. The animal remains came from a series of rubbish pits dated as follows:

Group 1 pre-Roman
Group 2 AD 44-49
Group 3 AD 49-61
Group 4 AD 44-54
Group 5 AD 47-61
Group 6 AD 54-57
Group 7 AD 54-61
Group 8 AD 57-61
Group 9 AD 44-61

This faunal sample makes an important contribution to Romano-British studies since the site was in use for a limited period of time and the bone was extremely well preserved, thus allowing a reasonably thorough investigation. As with the other specialist reports on the Sheepen material, a general discussion of the animal bone can be found in the following pages, while the detailed tables and graphs on which the conclusions discussed here are based can be found in the microfiche archive (M4:A2-E7).

Bone fragment count of the main domestic species

Out of a total of 8143 fragments, 6752 were identified. The standard of bone recovery was determined by measuring the lengths of the unidentifiable bone fragments not recently broken (Watson s Fragmentation Method; Watson 1972). Fig 85 (M4:C1) shows an acceptable level of recovery. Tables 17 and 18 (M4:A3,4-7) illustrate the number of bone fragments for each period (excluding birds). Although the exact dating of the site may be modified in future, the phasing should still be broadly the same. A striking difference is apparent between material from contexts dated AD 44-49 and AD 49-61. Results were weighted to account for factors affecting bone fragment recovery (Luff in press).

In the pre-Roman animal bone sample, which was small, cattle predominate with pig and sheep/goat an equal second. The pits dated AD 44-61 (post-conquest) reveal an increase in cattle with a definite decrease of sheep/goat and a decrease of pig. However, the time span includes the occupation of the fortress, the later withdrawal of the garrison, and the setting up of the *colonia* in 49. If pit groups 2 and 3 are studied, then a sizeable reduction in cattle coincides with the establishment of the *colonia* together with a large increase in sheep/goat, while the pig levels remain constant. The group 6 pits indicate the same trends as those of group 3 with a smaller increase of sheep/goat, while the group 7 pits show a decrease of pig but a larger increase of sheep/goat. Domesticates from groups 4 and 5 have percentage ratios which span part of the fortress and *colonia* periods; they were more similar to the group 3 deposits than group 2. It seems likely therefore that the differences between groups 2 and 3, ie the decrease of cattle, slight decrease of pig, and definite increase of sheep/goat, reflect some of the changes occurring when the legionary fortress was replaced by the new *colonia.*

Before accepting these results it is vital to scan the contents of the pits (M4:A8-13, Table 19) in order to assess whether the bone refuse was the result of random food refuse disposal or the waste arising from butchery. For example, the group 2 pits might contain a huge number of cattle phalanges and metapodials, ie waste bones (non-meat-bearing) from slaughter, thus distorting the results.

Whole animals, cow, sheep/goat, and pig, were butchered on the site and their remains distributed between the pits; meat and non-meat bones were mixed together. No differences in butchery were found between the pits of each period; thus it was deemed permissible to group them as a whole, according to the phasing.

Butchery

The butchery of a sample of bone must be examined in detail so that valid comparisons with other samples might be made. For example, if cow femurs are smashed into small fragments on one site and left whole on another, the calculation based on the number of bone fragments per species could be radically distorted when the two sites are compared. Severing across joints was uncommon and most long bones exhibited chops below and above proximal and distal epiphyses.

Cattle butchery

It was found that 2.8% of the cattle bones had been gnawed by dogs and two complete mandibles had been gnawed by a small rodent about the size of a water vole or rat (P1 21). It is impossible to say whether rat was directly responsible but evidence for the black rat, *Rattus rattus,* has been found in a Roman stratified context at York (Rackham 1979).

Definite evidence of pole-axing was found in feature 238, dated AD 44-61 (PI 22) where the blow was directed at the frontal bone.

A few skull fragments had chop marks on the superior surfaces of the occipital condyles. However heads were normally severed from the body by oblique chop marks directed across the dorsal surface of the axis and atlas. Chops were frequently made through the temporal and frontal process of the zygomatic bone and through the anterior portion of the zygomatic bone itself, thus releasing part of the orbit.

Some of the frontal bones had cuts across them. The mandibles were chopped up in order to release the good proportion of cheek meat.

Before the head was removed the animal was probably skinned, the hide being a valuable commodity. Several metacarpals and metatarsals had knife cuts on their medial and lateral proximal edges.

The metapodials were generally severed from the legs a couple of centimetres below the proximal surface.

Some metapodials were further divided by chopping off the distal end; the shafts were absent from the pits concerned. These bones are particularly useful for boneworking.

None of the vertebrae showed signs of medial cleavage; the cervical vertebrae remained almost whole having slight lateral trimming. The thoracic and lumbar vertebrae were characterized by the removal of the lateral processes and in some cases this was performed so close to the vertebra central axis that the spines had also come away. A few caudal vertebrae had chop marks at right-angles across the axis of the body, thus severing the tail.

It should be pointed out that a few distal and proximal long bones were quartered and this type of butchery should be looked for in other samples as evidence of a distortion factor in the bone fragment count. However, the epiphyses were mainly left intact, unlike in the contemporary Balkerne Lane deposits at Colchester where much quartered bone was found.

The most important point to notice in the cattle butchery is that no particular joints are completely absent from the site. Recovery of the smaller bones, eg carpals and tarsals, was difficult due to their small size. Pit groups 4 and 6 rendered no proximal humeri, though all the other groups did; however group 4 shows a large preponderance of humerus shafts. The cow proximal humerus consists of light cancellous tissue which is prone to disintegrating easily (Brain 1967).

Pit groups 2 and 3 show comparable figures for the ratio of the bone fragment percentages of humerus and radius (meat -bearing bones) to the metacarpal (non-meat-bearing bone) and also the ratio of the bone fragment percentages of femur and proximal tibia (meat-bearing bones) to the metatarsal (non-meat--bearing bone), as follows:

	Period	*Forelimb*	*Hindlimb*
Group 2	AD 44-49	2.6: 1	0.9 : 1
Group 3	AD 49-61	2.4: 1	0.7 : 1

When groups 4 and 6 are considered a clear difference is obtained:

Group 4	AD 44-54	10: 1	0.6 : 1
Group 6	AD 54-57	14: 1	1.03: 1

Both these groups show a sharp increase in the percentage of pelvic remains over the other two groups with the *c* AD 54 to 57 sample also showing a sharp increase in the skull and vertebrae remains.

Apart from group 3 the hindlimb fragments, ie the tibia and the femur, did not equal or exceed in number those of the forelimb, ie the radius and the humerus. This is not accounted for by the butchery of the individual bones. However it could possibly represent additional supplies of meat being brought into the settlement; conversely, some of the hindlimb joints may have been sent outside. Joints from the hindpart of cattle are normally much more tender than those from the forepart. Since whole animals were being slaughtered on the site the author tends to support the latter view.

Sheep/goat butchery

It was found that 10.6% of the bone fragments were chewed by dogs. Three skulls of sheep, ie the right side, had been sagittally split, a method commonly found on pre-Roman Iron Age sites: Little Woodbury (Jackson 1948); Glastonbury (Boyd-Dawkins & Jackson 1911-17); Maiden Castle (Jackson 1943); Ashville (Wilson *et al* 1978); Bishopstone and Newhaven (Gebbels 1977, 279). Two of the skulls were recovered from feature 102 (AD 54-61) and the other from feature 112 (AD 54-61).

The head was removed from the body by chopping through the axis, normally at right-angles, but one axis was split sagittally and two cervical vertebrae also displayed this.

The ratio of the percentage number of bone fragments of humerus and radius (meat-bearing bones) to the metacarpal (non-meat-bearing bone) and the ratio of the percentage number of bone fragments of femur and proximal tibia (meat-bearing bones) to the metatarsal (non-meat-bearing bone) is as follows:

	Period	*Forelimb*	*Hindlimb*
Group 3	AD 49-61	11.2 : 1	1 : 1
Group 7	AD 54-61	1.1 : 1	0.6: 1
Group 9	AD 44-61	1 : 1	0.5 : 1

Group 3 shows a much higher ratio of meat-bearing to non-meat-bearing bones than groups 7 and 9. This could perhaps imply extra meat being brought on to the site but evidence of boneworking could possibly account for this discrepancy; eg, various articles of worked bone utilized the sheep/goat metapodials. The group 3 pits revealed large numbers of broken horn cores while group 9 contained many skull and mandible fragments. One sheep horn core and goat horn core were chopped off cleanly at the base.

Pig butchery

Dogs were found to have chewed 2.8% of the bone fragments. As with sheep/goat the skull was chopped in Iron Age fashion in order to extract the brains; thus three skulls were split sagittally and in one case the cleaver was directed into the parietal bone at the back of the skull. Several right halves of pigs heads were recovered from the early 1st century military layers at Lincoln (Harman 1973). The three Sheepen skulls were retrieved from features 119, 127, and 138, dated respectively to AD 49-61, 44-49, and 49-61.

One skull was chopped across the superior surface of the occipital condyles and twelve atlases were chopped sagittally, probably as a result of the shape of the bone, in order to sever the head. The group 4 pits show a larger percentage of humerus shafts than those of group 6. There were no distal femurs found in pits dated AD 44-54. The group 6 sample was characterized by many skull fragments and a distinct discrepancy between the numbers of ulnae and radii. In group 2 there was a higher percentage of the back leg than front leg when compared with group 3. The reverse was true in group 3 pits.

Minimum number of animals

There is a certain number of bone fragments below which a calculation of MIN is not accurate. According to the method of Grayson (1978) MIN/E (minimum number of animals divided by the number of bone fragments) was plotted against E (number of bone fragments). Comparisons between MIN and E were found not to be valid below 60 fragments (M4:C2–3, Fig 86). In order to calculate MIN, all the pit contents belonging to each period were amalgamated, the assumption being that it would be unlikely that all the bones of one slaughtered animal would have been deposited in one particular pit; in any case, some of the pits contained small amounts of bone, less than 60 fragments, and would have greatly inflated calculation of MIN.

With the MIN method the importance of pig is very much emphasized (Table 20, M4:A14); it appears first in order of preference over cattle and sheep/goat in every group except group 7 where it is joint first with sheep/goat. In pits dated AD 49–61, 54–61, and 54–57 cattle appears second. With the number of bone fragments method it was hinted that the importance of sheep/goat increased from *c* AD 49–61.

Unfortunately the group 2 and group 4 deposits are not reliable enough to make an assessment of the importance of sheep/goat via MIN. However, groups 7, 9, and 4 signify its predominance over cattle where it appears in second place to pig.

It would be unwise to rely absolutely on the actual percentage figures; it is the relative order of the species which is important.

The MIN figures for pig were largely based on the well represented mandibles; they are robust bones and survive much better than the rest of the post-cranial skeleton. Also they are much more substantial than those of cattle and sheep/goat.

However, in the relative assessment of meat potential it can be seen that cattle far surpasses the other two species as Cunliffe (1978) has pointed out for pre-Roman Iron Age sites. The following ratio is based on the average carcass weights used by Carter *et al* (1965) for Hawkes Hill Iron Age farmstead:

cow	:	sheep	:	pig
408 kg		56.7 kg		90.7 kg
7.2		1		1.6

The number of fragments of bone per period per species was multiplied by the relevant unit and the whole process was repeated using MIN. Table 21, (M4:B1) shows pig in second place after cattle with sheep/goat third.

It is essential to remember that the relative frequency of the species represents the eating habits of the inhabitants and not necessarily the slaughter pattern of the farmer.

Cattle (Figs 87–96, M4:C4–D5)

Beef was the most important food item of the Sheepen inhabitants, but meat production was not the main purpose for which cattle were kept since the animals were slaughtered at an advanced age.

In order to determine the sex of the animals consumed, the methods of Higham (1966; 1969) were used, ie measurements of metacarpal distal epiphysial width were plotted against distal width and those of metacarpal distal thickness were plotted against distal width (Figs 87, 88, M4:C4–7).

Fig 87 shows a continuous array of points with a clustering in the centre; no visual separation was apparent. The indices of Howard (1963) were calculated (Table 22, M4:B2) so that the sex of twelve complete metacarpal bones could be tentatively determined. A sex ratio of 10 female : 1 castrate/female : 1 male was found with the DB/L index, and 8 female/castrate with the MB/L index. One MB/L index fell outside the lower range for females. If a bone's MB/L index was castrate/female and its DB/L index female then it was assumed female. The one dubious castrate/female DB/L index bone lies within the range of variation of females and steers. Fig 87 shows a similar pattern to that of Fig 88.

Besides the metacarpal, the radius and phalanx 1 (fore) are good indicators of sex. Unfortunately not enough radii were available but the measurements for phalanx 7 (fore) were. Fig 89 shows the maximum proximal width plotted against the maximum proximal articulatory surface. Again a continuous array of points can be observed with no separation.

Although the metatarsal is not as strong an indicator of sex as the metacarpal, nevertheless it is still a valid bone to use. Indeed Fig 90 (M4:C10–11) does suggest that some sort of separation is occurring when the metatarsal epiphysial width is plotted against the maximum distal width. Howard's DB/L index (Table 23, M4:B3) on ten complete bones gave a sex ratio of 9 female : 1 female/castrate/male and the MB/L index 9 female : 1 female/castrate. A few of the animals are very small and do not occur within the limits she gives. The largest bone on the graph, D, revealed values for the DB/L index that could be male, female, or castrate and the MB/L index female or castrate. Since there is a fairly large gap between Bd 52.9 and 56.6 it was thought valid to perform a principal component analysis.

The equation for the line of least-squares best fit was found to be $Y=0.67X+12.5$

An equiprobability ellipse was calculated for the large grouping, ie Bd 42 to 54 (as explained in Armitage 1977). The ellipse did not encompass all the points and indeed left some female metatarsals outside the cluster.

Measurements of the scapula (Fig 91) and thickness of the metatarsal (Fig 92) demonstrated a similar scatter to Fig 90. Thus, the Higham method has given no clear indication of sex separation although the indices of Howard have suggested that a large proportion of the animals may be female (M4:B2–3).

Because Zalkin (1960) showed that cow, bull, and steer metacarpals could be separated by distal width-to-length ratios, an attempt was made using the Sheepen data (Fig 93). A separation is apparent and Howard's indices have been marked. There are no significant differences in length between cow and bull metacarpals but bulls tend to have broader distal widths than cows. Steer metacarpals have on average greater length with the same breadth as bulls. It seems likely that the point in the top left-hand corner of Fig 93

could be a male, possibly a bull, with the remaining points female. If this is true, the cows exhibit a great range of variation in length.

In 1946 Dottrens pointed out that the broader BP/GL fore-phalanx 1 (proximal width divided by total length) of males enabled their separation. Fig 94 does suggest a similar grouping to the metatarsal graphs.

It is necessary to mention here the conclusions of Mennerich s research (1968). He investigated the metacarpals of 80 animals of the Illyrian or Busarindes cattle (40 castrates, 19 males, 20 females) which he collected in Bosnia. This short-horned breed is small, primitive, and late maturing. The cattle have lived for centuries in miserable, barren, mountainous country; hence their small size. First and foremost these animals are regarded as working animals, ie oxen; in second place they are exploited as suppliers of meat; and lastly they are used for milk production which is very much less important.

Mennerich established the following points:

1 There was no increase in the height of oxen and the length of oxen, bull, and cow metacarpals scarcely differed from one another. Higham produced similar evidence with Aberdeen Angus cattle (1969).

2 The overlapping in length/breadth indices between cow and bull is small, but metacarpals of oxen and bulls cannot be differentiated from one another in their growth form and he maintained that the bulls can even be excelled by the oxen in the length/breadth indices.

He thus concluded that ox and bull metacarpals cannot be separated satisfactorily.

The oxen are better fed than the bulls which are only kept for breeding and are slaughtered as sub-adults or young adults. Mennerich maintained that the relatively good feeding and heavy work had a great influence on growth through the breadth of the bones. Moreover, growth in height was thought to have been suppressed by heavy work, the metacarpals growing scarcely longer than those of bulls and cows. However, since the animals were castrated as late as 1 to 2 years old then their growth and development would be similar to that of bulls. Castration in medieval cattle was performed 10 to 20 days after birth (Dr P Armitage, pers comm).

Mennerich measured metacarpals from recent cattle populations, prehistoric, and early historical cattle, with the aim of plotting the smallest diaphysis breadth/length (Index I) against the greatest distal breadth/length (Index III).

The advantage of such a diagram is that the points are doubly determined by relative breadth measurements. Fig 95 illustrates this and again Howard s indices have been marked on the graph. The one possibly male bone K does separate easily from the females. Small horned cattle were identified together with the larger short-horned variety after the method of Armitage and Clutton-Brock (1976); see Table 24, M4:B4, and P1 23. Very small types of cattle are notoriously difficult to sex (Uerpmann 1973) and this might well explain some of the difficulties encountered with the Sheepen material.

For further evidence to elucidate the picture, the morphology of the pelvic girdle was investigated. In female cattle the ilio-pectineal process is flattened and tends to be pointed forward. It is connected with a concave depression under the acetabulum which exhibits a shallow medial rim. The pubic bone in cross-section is lozenge- or diamond-shaped. In male cattle the pubis and medial acetabulum rim are much thicker with no concave depression under the acetabulum, and the pubis tends to be more oval.

This gave the supporting evidence needed-19 females : 2 males! Thus it can be reasonably concluded that the sample of cattle bones, ie the food that the inhabitants of Sheepen ate, contains a high proportion of females. Indeed the coefficient of variation (V) of the distal metacarpal widths is 5.3, fairly low, indicating that there was not much admixture of sex/breed.

Since cattle were not slaughtered at the prime age for meat consumption and whole animals were butchered on the site, it could be argued that the results of sexing reflect the animal husbandry that was being practised locally.

A high incidence of females is suggestive of dairy economy but the corroborative facts are strongly lacking, eg evidence of the slaughter of calves under six months old. Thirty-five cattle mandibles had an erupted third molar which in the majority of cases was well worn (Fig 96). The mature mandibles are supported by the percentages of unfused epiphyses which are low in all periods, 5.3%-9%. Possibly the immature animals were sent elsewhere, though this seems unlikely. The females could be barren cows, but there appears to be an unusually large number of them. A difference in the sequence of tooth eruption might signify a difference of breeds (the term breed cannot be used in the strict sense) since nutritional and environmental factors are not important.

The bias is so strongly towards females that the author feels this may represent a deliberate policy in animal husbandry.

During the early Roman occupation, hides and cattle were exported from Britain (Strabo, iv, 5.2). The importance of Britain in hide export cannot be underestimated since better skin quality is generally obtained from animals reared in cool moist climates (Reed 1972, 37).

The Roman army was the greatest user of leather in the Roman world as is shown by its demand for clothing, leather boat sails (Caesar, *BG,* iii, 13), boat coverings (instead of tarpaulin), purses, saddles, harness and straps for draught animals, shield and scabbard coverings, battle screens, and other military protective devices. Indeed as Richmond (1967, 132) points out the need for hides must have been enormous. There is documentary evidence showing that the Roman requirement for leather could not always be supplied from the immediate neighbourhood, for example Tacitus s report *(Annales,* iv, 72) of the Frisians revolt against severe Roman taxation in the form of ox hides.

Further, the presence of the *colonia* must have imposed a severe drain on the surrounding native resources of cattle and other animals. The cost of providing not only food but also raw products in the form of leather must have been considerable. Thus large breeding herds would have been very necessary.

In the classical literature cattle are regarded very much as work animals, ie as oxen, but cows can just

as easily be used for traction, eg the primitive, triple-purpose Rossa Pontremolese cattle, the cows of which can be used for draught work in late stages of pregnancy without any bad effect on the mother or calf (Ferrari *et al* 1978).

Sheep/goat (Figs 97-103, M4:D6-E6)

In the majority of cases it is extremely difficult to distinguish between bones of the species sheep and goat. The most reliable indicators are the horn core and pelvic girdle. Goat was known to be present in the sample because a horn core was found in feature 153 *(c* AD 54-61). Payne's method (1969; Fig 97) also isolated at least four bones that could possibly be goat.

Noddle (1978) showed that Boessneck *et al's* index (1964), ie the height of the scapula neck divided by the minimum length of the neck (SLC/ASC), was not a good separator of sheep and goat. Using modern species as evidence, she pointed out that the Soay sheep overlapped with the domestic and wild goat samples. This reinforced Higham's findings (1966) with Nepalese sheep where he found the degree of overlap between the two species to be 14.5%. The Sheepen indices (Fig 98) do not overlap with Noddle's Soay sheep or domestic goats. Since only eight bones provided the necessary measurements it cannot be assumed that they represent the total sample of sheep/goat originally present. However, they do indicate the possible presence of long-tailed sheep early in the Romano-British period. Noddle (1978) pointed out that scapulae of short-tailed breeds, eg the Soay, have comparatively longer necks than those of long-tailed breeds, while cross breeds fall in between.

The Sheepen indices ranged from 0.74 to 0.93 and coincided with measurements for the Clun Forest breed. Ryder (1964) claimed that in the late Iron Age the main sheep was probably like a short-tailed Soay and the Romans possibly introduced a mainly hornless white-faced breed. The long-tailed Sheepen sheep could well represent this introduction.

Higham (1966) found that the ratio of the metacarpal antero-postero diaphysial width against minimum transverse width is significantly different for sheep and goats. Fig 99 shows that while the majority of the points come from one population there is at least one point SD15 (th. 10) that could be goat. This isolated point was also noted on the other graphs, eg Fig 98 (scapula), Fig 100 (metacarpal), and Fig 101 (tibia).

Separation of the sexes is not easy because there is so much overlapping, Zalkin (1960) investigated 134 domestic sheep of eleven breeds and found sex differentiation not marked. The male mctapodials on average were longer and larger although castrates could not be identified. The index for the metacarpal, mid-shaft-width divided by length x 100, has been claimed to vary with sex (Pfund 1961; Haak 1965; see Fig 102). On the basis of the previous information the point with GL 132 has been assumed to be goat. In summary, the majority of bones would appear to come from sheep with the occasional goat among them. Sexing via the long bones was unsatisfactory and the only three horn cores of sheep gave a ratio of two male to one female. Eleven pelvic girdle fragments of sheep gave a sex ratio of eight females to two males (after the method of Armitage 1977).

It was deduced by Payne's method (1973; Fig 103) that a considerable number of sheep were slaughtered in the first year-15.5% between 0 and 6 months, and 27.4% between 6 and 13 months-in order to supply the Sheepen inhabitants with lamb (M4:E5-6).

Horse

Horse was represented at Sheepen by eleven fragments and one molar. No evidence suggested that the horse was an item of food and its stature was typical (11.7 hands) of the small pre-Roman Iron Age pony.

Pig

Using the data gathered by Flannery (1960), length measurements of upper and lower molar 3 proved that the Sheepen pig size fell within that of modern domestic European *Sus scrofa.* Except for one specimen, long bone measurement was avoided owing to the immaturity of the animals.

Assuming the metapodial epiphyses to fuse at 2-2¼; years, the percentage of unfused metapodials is 46.9%; ie half the sample is older than 2-2¼ years. If Silver's modern eruption data are used (Silver 1969), ie molar 3 erupts at 17-22 months, then 90% of the Sheepen mandible sample is 17-22 months old or less. These two ageing methods therefore do not agree. However, if Silver's 18th century data are used, with molar 3 eruption at three years, then some agreement is reached.

Sexing of the mandibular canines gave a ratio of 46 males to 18 females. Petch (1980) relates that traditionally in England young male pigs were castrated by eight weeks of age because the carcass would be tainted if left entire. Columella suggested that boars should be castrated at not less than six months and Varro preferably at one year (White 1970, 320). White also gathered evidence which indicated that the Romans could produce differing flavours by altering the diet.

That the animals at Sheepen were castrated seems a reasonable probability; it is well known that boar pork reared the wrong way can produce a strong taint making the meat almost inedible. Petch has likened this to 'the pungent aroma of rotting football socks' (Petch 1980). Unfortunately the mandibular canines were too broken to give any metrical data concerning this.

Dogs

The 1st century pits contained 170 fragments of dog, several of which belonged to burials; feature 146 held two burials (79 fragments), one being an old arthritic dog, and feature 120 revealed the remains of two animals, one an adult dog and the other a puppy of less than one year. This particular pit also had an unusual assortment of bird bone (see below).

The size of the dogs (Table 25, M4:B5) fell within the ranges given by Harcourt (1974) for pre-Roman Iron Age and Romano-British dogs.

Birds (Fig 104, M4:E7)

Fowl greatly outnumbers the other species whether the number of bone fragments or MIN method is used (Tables 26 and 27, M4:B6,7). With the number of fragments method, raven appears second, but with MIN, the mallard appears second. The mallard is more likely to be the second food item since ravens occur as more or less whole skeletons.

Feature 120 (AD 49-61) at first sight produced a curious assortment of bones, including two nearly complete raven skeletons, the remains of two white-tailed eagles, and also the bones of one complete dog and puppy. Although the raven was endowed with prophetic wisdom in both the classical Roman and Celtic worlds, in a rural environment it could be rather a pest. It is a well-known scavenger and recent reports have shown it guilty of attacking and even killing young lambs. The white-tailed eagle prefers coastal areas or large inland waterways and should not be regarded as an unusual occurrence although it is less common today.

The common crane *Grus grus,* now extinct in Britain, was common in bogs and wooded swamps; outside the breeding season it could be found in marshes and on sand banks. Marshes and meadows are the habitat of the black-tailed godwit; it winters along seashores with mudflats. The wigeon, *Anas penelope,* is also common to marshes, meadows, and swamps where it breeds. The knot, *Calidris carnutus,* breeds in the high Arctic and in winter can be found along sea shores with mudflats. *Crex crex,* the corn crake, is locally common in meadows and fields with dense vegetation. Bones of all these birds were found at Sheepen, and thus the evidence of the birds indicates a marshy environment with densely vegetated meadowland; this fits in well with the abundance of pigs.

There is now a strong body of evidence pointing to the existence of *Gallus* in the pre-Roman Iron Age (Camulodunum, Jackson 1947; Kingsdown Camp, Jackson 1930; Slonk Hill, Sheppard 1977; Gussage All Saints, Harcourt 1979; Skeleton Green, Partridge, pers comm; Winklebury, Jones 1977; Bishopstone, Gebbels 1977,279).

Caesar *(BG,* xii, 16) informs us that the Britons did not eat fowls, hares, or geese; they were kept as pets.

Table 28 (M4:B8) indicates the size of the fowl and the tarsometatarsus gives a ratio of seven females to two males (ie presence of the spur being indicative of a male). The size of the Sheepen 1st century specimens, based on the female tarsometatarsus, compares very well with those of the Iron Age *oppidum* of Manching in Bavaria (Schweizer 1961; see also Fig 104), as follows:

female tarsometatarsus	n	X	
greatest length	6	66.7	Manching
greatest length	7	66.3	Sheepen 1st century

Castration of fowls was practised by the Romans. Varro *(De re rustica,* iii, 9) stated that the operation involved the burning of the leg spurs with red hot irons, the wounds being healed with clay; this was later reiterated by Columella. This might well have resulted in deformation to the underlying bony part but the author has found no evidence of this, possibly because the spur is joined to the leg bone by a very thin septum which can be broken very easily.

Wild animals

Hunting contributed very little to the Sheepen economy. Altogether twelve fragments of hare were found, two fragments of red deer and seven antler fragments, and one fragment of roe deer. However the most interesting wild mammal bone fragment came from the mandible of a brown bear. Martial writes of bears being imported from Scotland after Agricola's conquest in the 1st century in order to kill criminals in Rome *(De spectaculis,* vii, 3). This perhaps implies that bears did not occur frequently in England, particularly in the south-east, in the 1st century AD. Toynbee (1973) informs us that out of all the wild and dangerous animals sought after for display in public and private spectacles, the bear was the most ubiquitous. It seems likely that this possibly represents some trophy from hunting in the north or the presence of an animal used in bear baiting.

Cattle size

In the 1st century AD at Sheepen the mean size of cattle did not differ very much from that of the pre-Roman Iron Age where the mean metacarpal length ranged from 167.7 mm at Little Woodbury to 180 mm at Ivinghoe Beacon (Table 29, M4:B9).

Sheepen fits well within these limits. Catcote, an Iron Age settlement in Northumberland, and Sheepen in Essex have identical means even though the sites are several hundred miles apart. In a comparison of bones from different sites, it is not always known whether one is comparing bones of cows with cows or bulls, etc, since few workers have been able to sex their cattle bones. However, Wilson *et al* (1978) published data for the withers height of cows from several Iron Age sites in the Thames Valley. Table 30 (M4:B10) shows that the Sheepen range of withers heights falls within those from the Thames sites and indeed the mean of the Sheepen cattle is identical with the mean from Farmoor.

Sheep size

Table 31 (M4:B11) shows that the Sheepen tibia *c* AD 44-61 have an identical mean distal width to those from the Roman villa of Frocester, 1st century. Although the Iron Age Grimthorpe sheep appear larger than those from Sheepen, the Students t-test shows no significant difference at the 0.01 level. Similar metatarsal length measurements of sheep from Wandlebury Iron Age hill fort appear larger but the sample is too small to indicate whether this is significant or not.

Pig size

Sheepen only produced one measurable bone, a tibia of length 174 mm, that gave a withers height of 68.2 cm (Teichert 1966). The domestic pigs at Sheepen were of a long-legged variety.

Horse size

During the Iron Age ponies of 10, 11, and 12 hands existed together with larger beasts; eg at Barley there is evidence of animals of 14.4 and 14.6 hands. Whether this was the result of gelding, better breeding, or even imports cannot be determined at present. A radius giving a withers height of 11.7 hands suggests that Sheepen stockbreeding continued along Iron Age lines.

Bibliography

Abbreviations

The abbreviations used follow the recommendations made in the CBA's standard list of abbreviated titles, with the addition of the following

Annales	Tacitus, *Annales*
BAR	British Archaeological Reports
Cam	Hawkes & Hull 1947
CBA	Council for British Archaeology
CMR	Colchester Museum Report
Dio	Cassius Dio, *History of Rome*
Historiae	Tacitus, *Historiae*
Hofheim	E Ritterling, *Das Fruhromische Lager bei Hofheim im Taunus*, 1912
O	F Oswald, *Index of figure-types on terra sigillata*, 1936–7
Pro Nervia	*Revue Historique et Archeologique du Pays des Nervii*
RIC	H Mattingly & E A Sydenham, *Roman imperial coinage*, 1932

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Plate 1 The central ditch of road II (period IV) on site iii (Fig 12)

Plate 2 Postpit (feature 135) from the period III compound 2 on site i (Fig 4)

Plate 3 Postpit (feature 116) from the period III compound 2 on site i (Fig 4)

Plate 4 Postpit (feature 111) from the period III compound 2 on site i (Fig 4)

Plate 5 Burnt timber upright from the north wall of the timber cellar, site i (Fig 7)

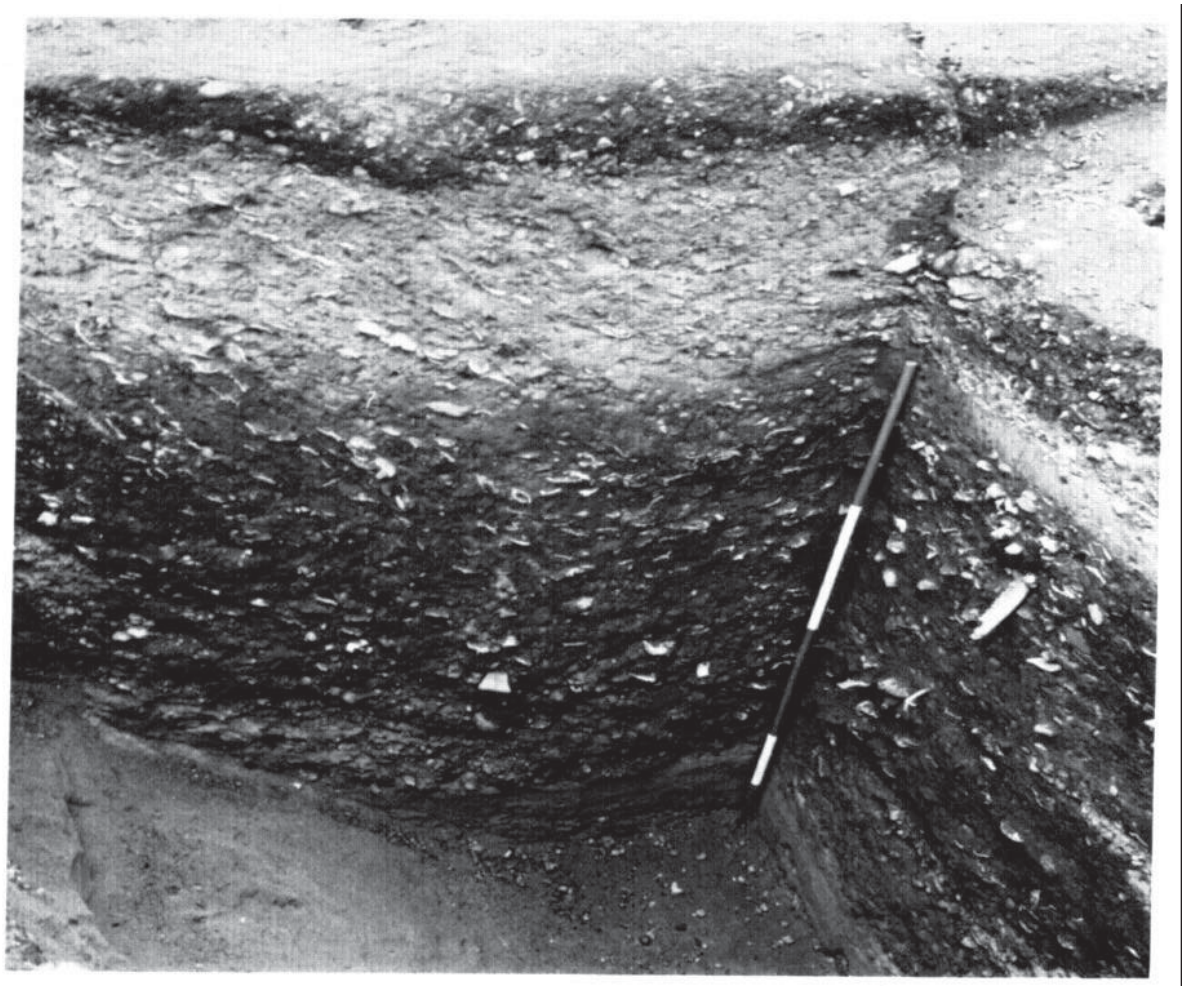

Plate 6 Filling of rubbish pit (feature 270) site iib (Fig 9)

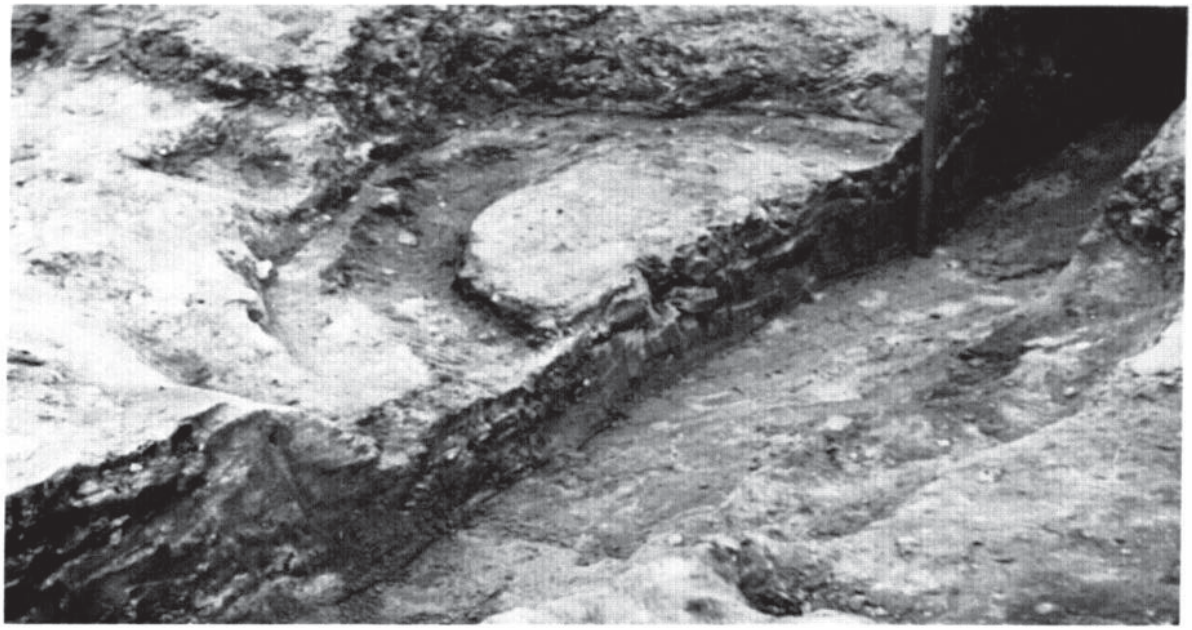

Plate 7 Section cut across feature 325, site iii, period IVb1 (Fig 10)

Plate 8 Shaft (feature 336) sealed by gravel footing of the pre-Boudiccan building A, site iii, periods iv B1-2 (Figs 10,11)

Plate 9 The pebble floor of building A, site iii, overlain by burnt daub of AD 61; the gravel footings of the east wall of building A are on the left of the plate (Fig 11)

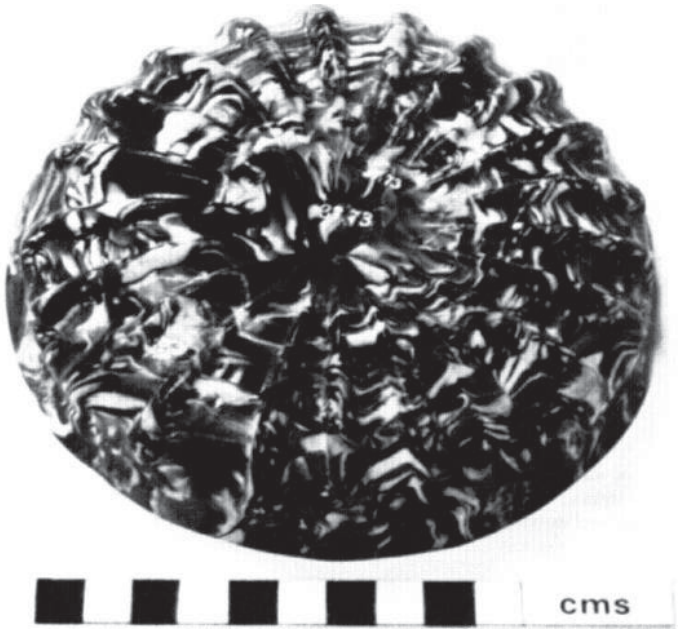

Plate 10 Pillar-moulded bowl in brown and white marbled miltefiori glass from cremation group 3 (Photograph Denise Allen; copyright Colchester and Essex Museum)

Plate 11 *Fittings from the wood and leather casket, cremation group 5 (Scale 1.1; photograph James Brown)*

Plate 12 Small copper alloy items: S-shaped mounts (copper alloy catalogue nos 22 and 44); cuirass hinges (copper alloy catolgue nos 30, 48, 51, and 93-4); small D-shaped buckles (copper alloy catalogue nos 96, 98); baldrik clips /copper alloy catalogue nos 102-3); apron mount /copper alloy catalogue no 105) /Scale 1.1; photograph James Brown)

Plate 13 Cooper alloy ? chariot fitting from feature 153 (copper alloy catalogue no 42) (Scale 1.1; photograph James Brown)

Plate 14 Bronze stamp from the timber cellar, front and rear views (copper alloy catalogue no 61) /Scale 2.1; photograph James Brown)

Plate 15 Gilded finger rings with snakes heads terminals, from the Boudiccan destruction level on site iii (copper alloy catalogue no 62) (Scale 3.1; photograph James Brown)

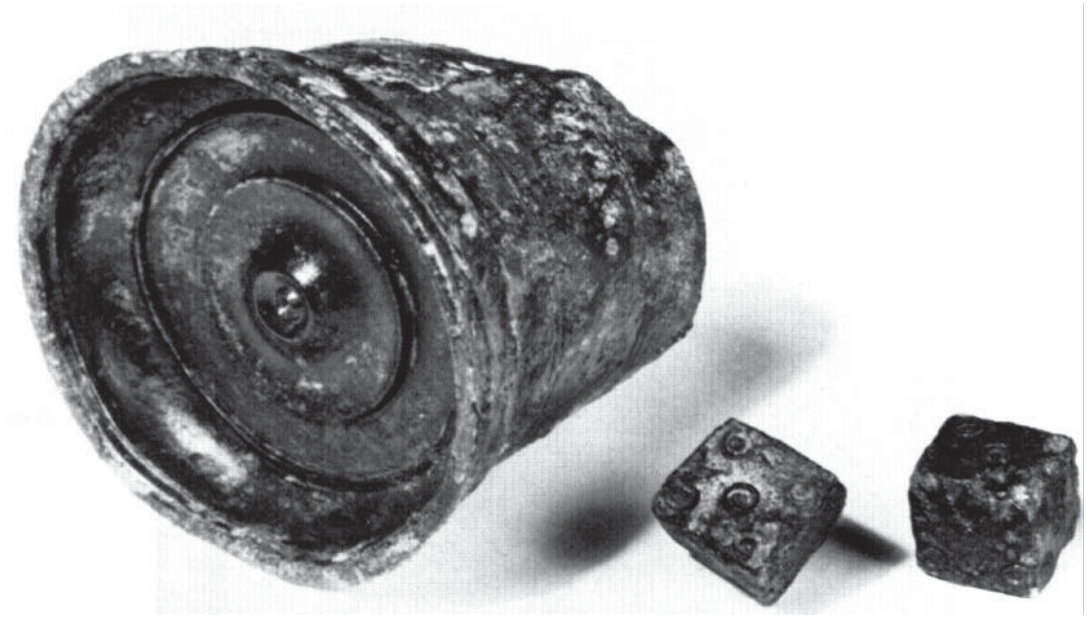

Plate 16 Bronze dice and dice shaker from the Boudiccan destruction level (layer 2) on sire iii *(copper allow catalogue nos 67-8) (Scale 1. 1; photograph James Brown)*

Plate 17 Small bronze spur with filed down prick, from ploughsoil (copper alloy catalogue no 108) (Scale 2.1; *photograph James Brown)*

Plate 18a: Brass sheet from feature 236; the stamp is visible at the right hand end (copper alloy catalogue no 112) (Ancient Monuments Laboratory; Crown copyright)

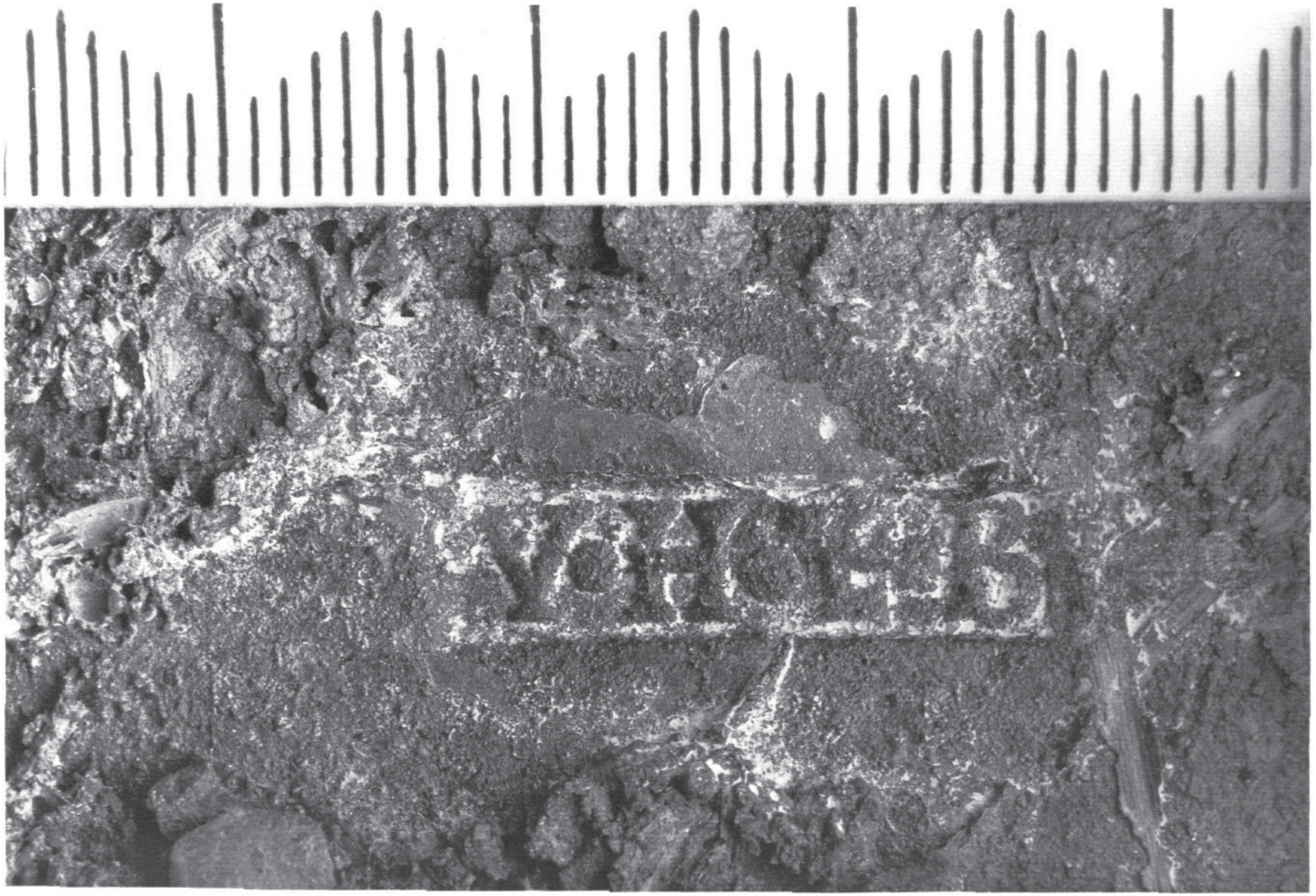

Plate 186: close-up of the stamp on the brass sheet with impressions of organic material on the surrounding corrosion (Ancient Monuments Laboratory; Crown copyright—reproduced with permission of the Controller of Her Majesty's Stationery office)

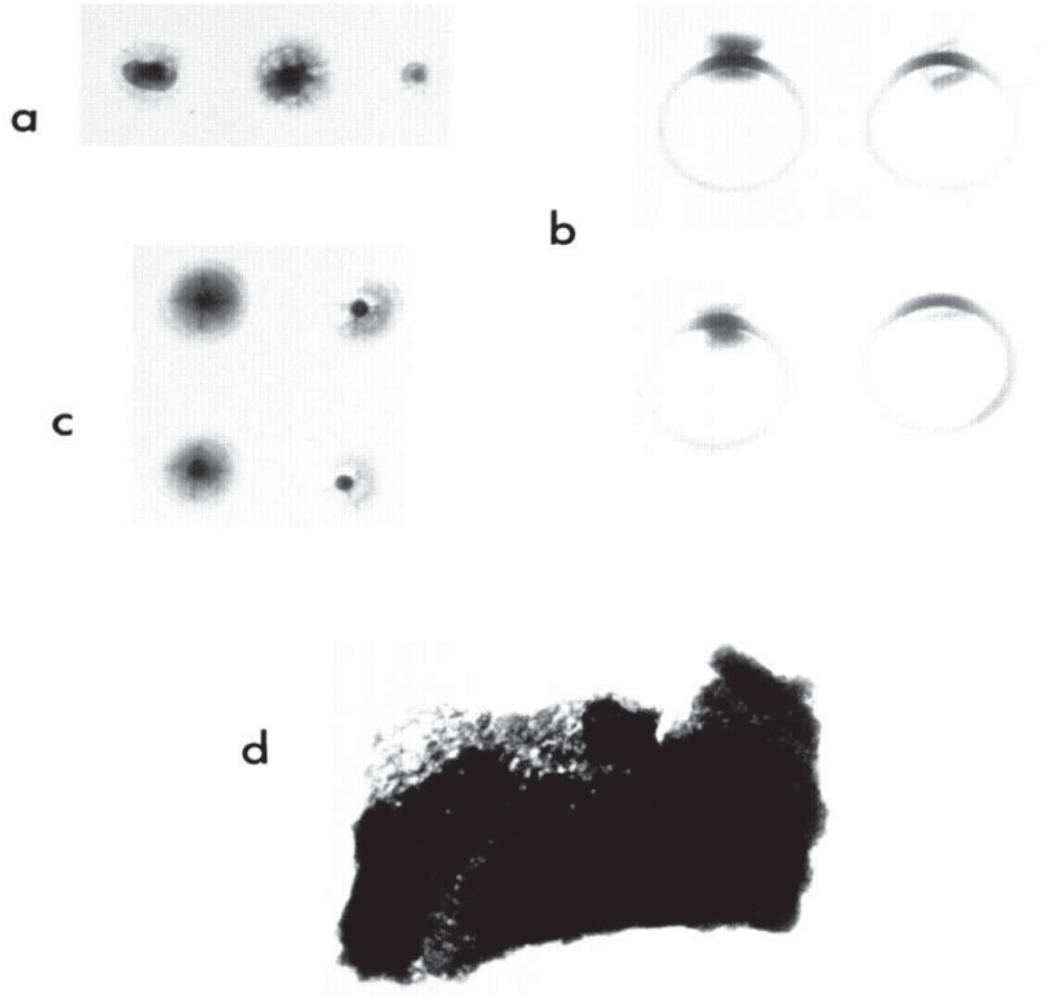

Plate 19 X-ray phorographs. a: copper alloy inlaid studs (copper alloy catalogue no 111), top row at 30 seconds exposure at 80 KV, second row at 45 seconds exposure at 80 KV; b: four rings with vitreous paste beads from the casket (cremation group 5), taken at 45 seconds exposure at 80 KV; c: *inlaid copper alloy studs (copper alloy catalogue no 8), top row taken at 30 seconds exposure, second row at 45 seconds, both at 80 KV; d: fragment of iron chain mail from feature 153 (iron catalogue no 18), taken at 15 seconds exposure at 80 KV (Scale of all objects 1.1; photographs Birgül Biktimir)*

Plate 20 Glass cameo from the Boudiccan destruction level on site iii (Scale 15.1; photograph and copyright Colchester and Essex Museum)

Plate 21 Cow mandible, possibly, gnawed by a rodent (Photograph G Owen, Department of Archaeology, University of Cambridge; copyright Rosemary Luff)

Plate 22 Pole-axed cow skull (Photograph G Owen, Department of Archaeology, University of Cambridge; copyright Rosemary Luff)

Plate 23 Cattle horn cores (Photograph G Owen, Department of Archaeology, University of Cambridge; copyright Rosemary Luff)

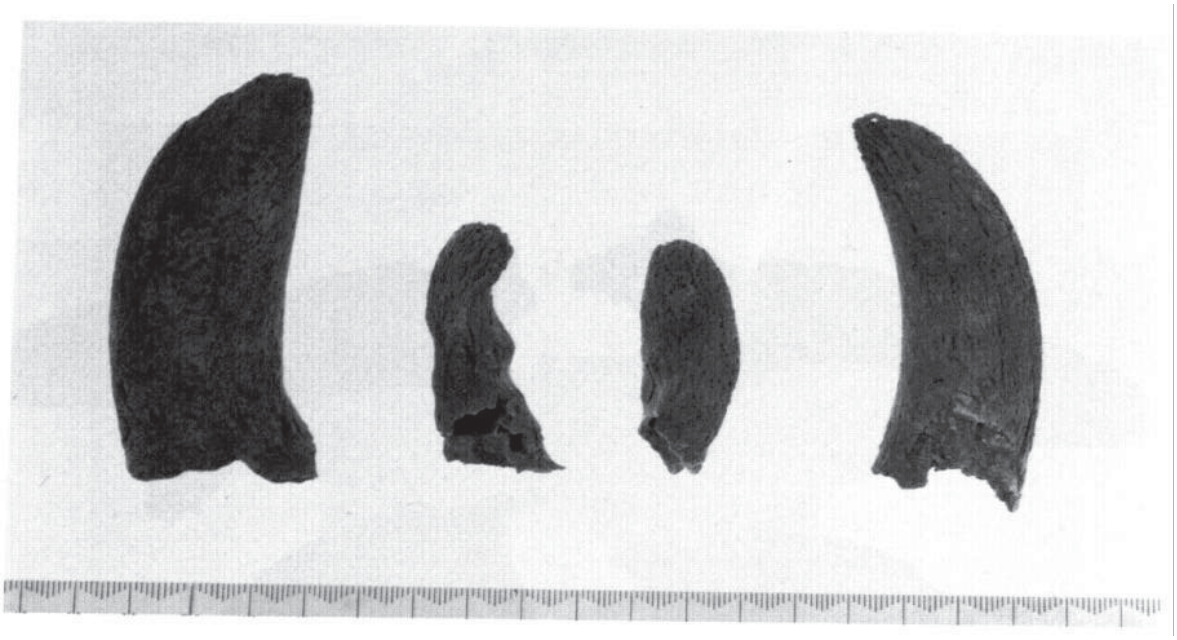

Plate 24 Two deformed sheep horn cores (centre) with two normally developed horn cores (Photograph G Owen, Department of Archaeology, University of Cambridge; copyright Rosemary Luff)

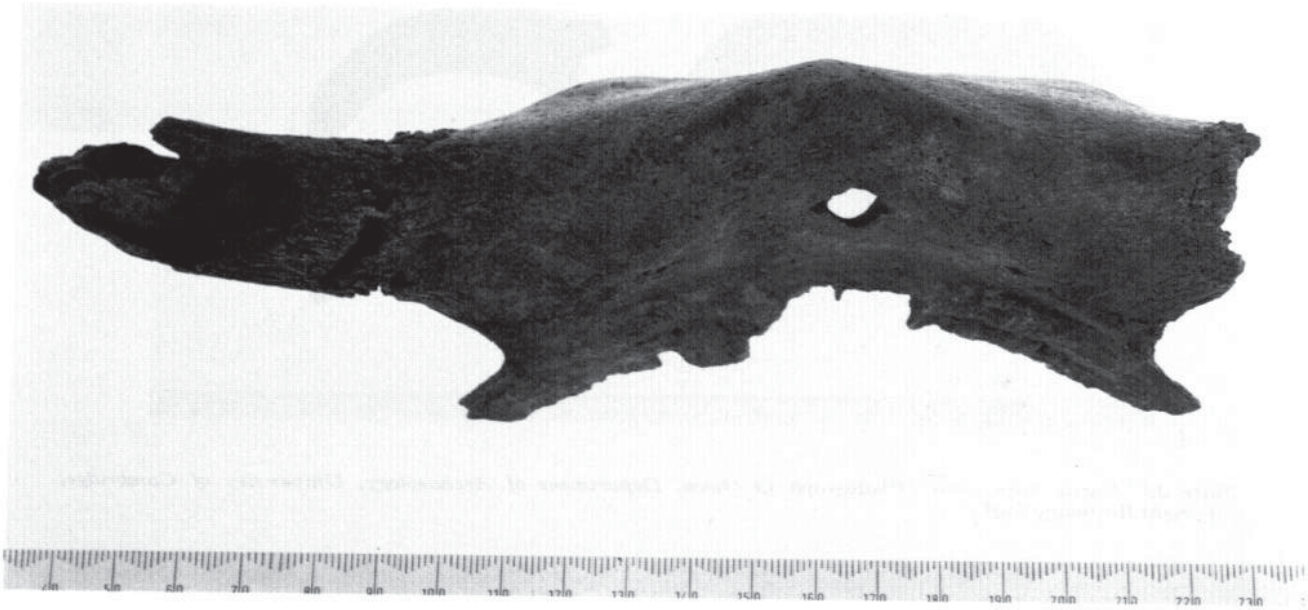

Plate 25 Lesion in parietal bone of Sheepen cow skull (Photograph G Owen, Department of Archaeology, University of Cambridge; copyright Rosemary Luff)