EXCAVATIONS AT MAGIOVINIUM, BUCKINGHAMSHIRE, 1978–80

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A fort and vicus were the forerunners of Magiovinium, a small defended town straddling Watling Street. Outside the town, occupation consists of buildings fronting Watling Street and field systems aligned with the fort; the structures are industrial—smithies servicing road traffic. Barns and many horse bones in the enclosure ditches indicate the proximity of stabling and knacker's yards. The clearance of these structures possibly represents a period of urban reorganization perhaps associated with the construction of the town's defences. In the fourth century part of the area was taken up by a cemetery.

Acknowledgements

If it had not been for the remarkable fortitude shown by numerous volunteers, frequently working in the most adverse conditions, the excavation would not have been possible and therefore the writer, on behalf of the Department of the Environment, would like to record a debt of gratitude to them. He would also like to acknowledge his gratitude to the team of supervisors who bore the same conditions: these included N. Appleton, D. Bartlett, B. Bell, the late Miss D. Edwards, F. McAvoy, Miss M. A. Nation and A. Walters.

The processing of the finds was ably organized by Mrs J. Keen: the processing of the pottery was begun on site by Mrs B. Easterbrook, Mrs B. Hurman and Mrs Y. Parminter. Mrs Parminter undertook the reporting of the pottery for publication—an arduous task involving the processing of 874 kg of sherds! A special debt of thanks must also go to Mr and Mrs P. Woodfield not only for maintaining a watching brief during road works but for liaising with the numerous metal-detector enthusiasts and obtaining their coins and finds for identification. Mr Woodfield's list of coin identifications appears in the text.

Reports and identifications of the finds have been made by a number of specialists. These include the late Dr F. W. Anderson (stone), Miss J. Bayley (slag and copper alloys), Miss S. A. Butcher (brooches), Miss E. Crowfoot (textiles), P. Curnow (coins), G. Dannell (samian), Miss B. Dickinson (samian stamps), Miss J. Henderson (human bones), Dr M. Henig (intaglios), Mrs A. Locker (animal bones), Miss F. Macalister (slag), Dr R. F. Tylecote (hammer adze) and Dr A. Wardle (small finds). The writer is also grateful for the considerable help of the Ancient Monuments Laboratory. N. Balaam co-ordinated specialist contributors and Miss G. Edwards supervised a team of conservation staff including Miss A. Bennett, Miss J. Douglas, Miss K. Mercer, I. Panter, Miss M. Robson, Miss K. Starling and Miss K. Walker. The geophysical survey was carried out by A. Bartlett and A. David, and the writer has also benefited from a bibliography on Magiovinium prepared by Andrew Pike of Buckinghamshire County Museum (see Appendix).

The illustrations of the small finds have been made by J. C. Thorne and D. Honour of the Ancient Monuments Illustrator Section; the plans and pottery drawings are by the writer. The landowners, Mrs Unwin of Dropshort Farm and the Bedford Estate, are thanked for allowing the excavations to proceed before land transfer.

Finally, the writer would like to acknowledge the considerable help by Miss M. A. Nation and Dr A. Wardle towards the completion of this report and its archive.

The finds from Site 17 are preserved in Buckinghamshire County Museum, Aylesbury and the finds for Site 18 in the British Museum. Copies of the site archive are available for inspection at Aylesbury Museum, the National Monuments Record, Fortress House, London and the Central Excavation Unit, Fort Cumberland, Portsmouth, Hants.

General Introduction

From London, Watling Street, the modern A5, passes through *Sulloniacae*, the Roman industrial settlement at Brockley Hill, and then proceeds towards Verulamium (Fig. 1, insert). It passes through *Durocobrivae*, modern Dunstable, runs over the chalk scarp and across rolling countryside towards Little Brickhill, a small village on the north-facing edge of the Lower Greensand hill commanding a view of much of the South Midlands. Close by, at an elevation of 170 m, is the Iron Age hillfort of Danesborough, a sub-rectangular enclosure aligned south-west–north-east. From Little Brickhill the road drops towards Magiovinium, a small defended settlement situated at the end of a narrow spur projecting into the flood plain of the River Ouzel. Leaving Magiovinium, Watling Street crosses the river and heads towards *Lactodorum*, modern Towcester, 24 km north-east.

The settlement of Magiovinium (SP 890 335), now only identified by a shallow earthwork encompassing about 8 hectares (19.76 acres), is partly under cultivation and apart from the A5 and Dropshort Farm is unencumbered by development. West of the river and the Grand Union Canal, however, lie Fenny Stratford and Bletchley, both incorporated into the newly designated city of Milton Keynes.

Dropshort Farm lies on the edge of the clay close to the alluvium covering the flood plain —which even with modern drainage is still very damp and liable to flood. The precise limits of Magiovinium are uncertain. Part of its bank can be seen south-east of Dropshort Farm curving round towards and at right angles to the A5 (Fig. 1). From this point it can be traced north-west towards the farm where it appears to underlie a barn. In this area, however, the bank merges with pronounced ridge and furrow and certainty of its alignment is not possible. On the opposite side of the A5 the oval plan of the defences shows as a shallow rise and, when ploughed, a ditch is represented by darker soil. The north-west limits of the settlement are dictated by the course of the river, but this may have changed since Roman times and conceivably the banks have been eroded. However, there is no evidence for the bank emerging in an orchard to the north-west and adjacent to the farm, and it is probable therefore that it turned and that the actual farmhouse lies just outside or upon the defences. Indirect support for this view was given by the discovery in 1975 of a deep ditch opposite the farm and also of a Roman road leading towards it. It is likely to have met Watling Street just outside the entrance into the settlement rather than to have communicated with the settlement through a separate gate.

The settlement lies on a thin spread of sand and stones, being fragments of the lower Greensand hills further south; some of the fragments are boulders as large as $\frac{1}{2}$ m. Beneath this lies Oxford clay. There is a springline between the Lower Greensand and the clay, making the site very wet.

Previous Excavations and Discoveries

Dropshort farmhouse, formerly the White Hart Inn, and the area adjacent to it has long been recognized as the site of Roman Magiovinium or Magiovintum recorded in the Antonine Itinerary (itineraries 471, 476, 479; Rivet 1970, 42 ff.). As early as 1732 Roman coins were reported from Fenny Stratford while in 1806 Lysons records 'coins and foundations of buildings have been dug up in abundance' (1806, 485). In 1848 Roach Smith reported the discovery of a figure of an eagle on a piece of land adjoining the inn (1849, 246) and Sheahan records that in 1857 'a great number of human bones and skulls' were found (1862, 532). Finds continued to be reported and in 1912 Haver-

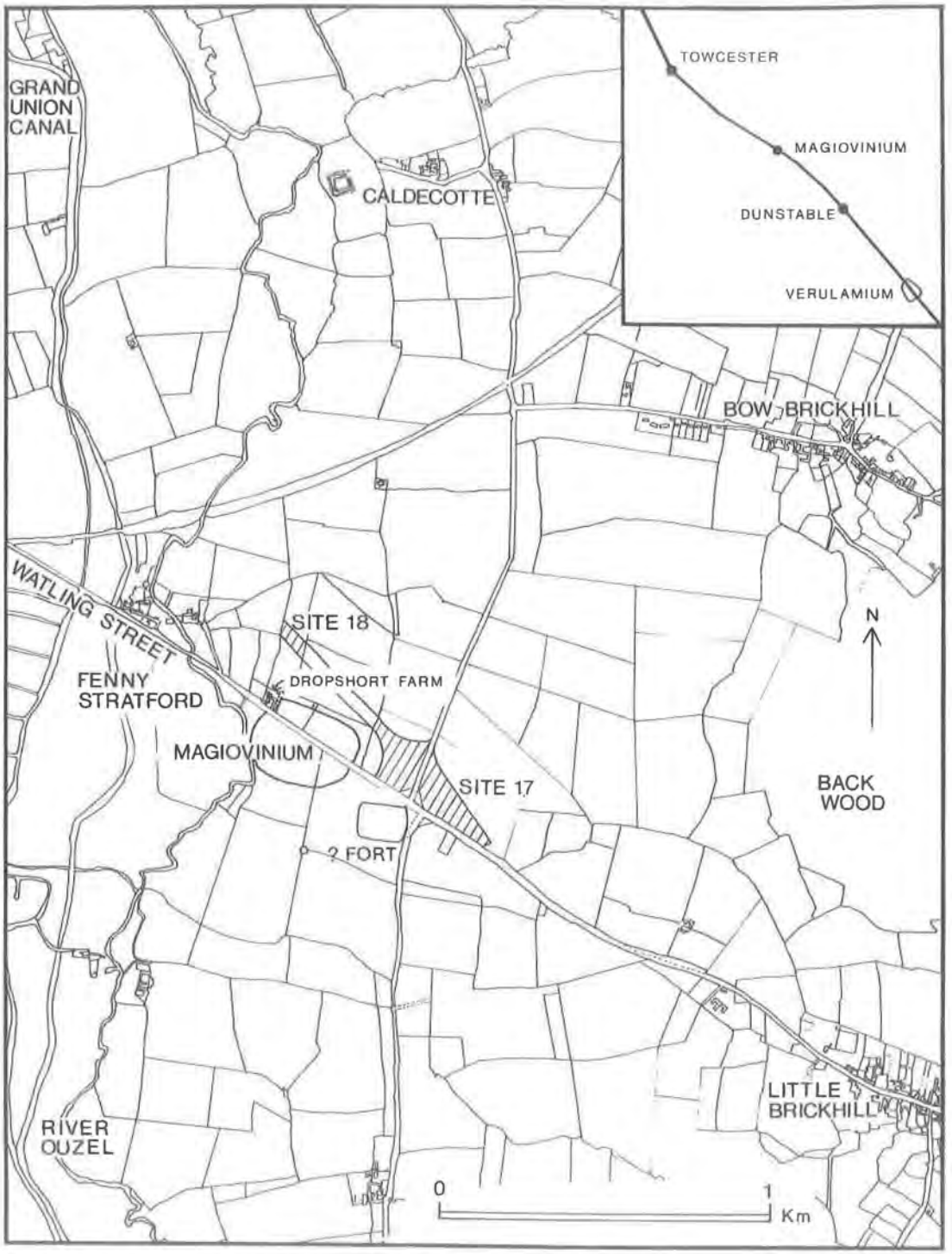

Fig. 1. Plan showing location of site and relationship of Magiovinium to other small Roman towns along Watling Street.

field contributed a note on a fragment of samian (1912, 35–6). More recently, numerous finds have been made as a result of road works and the installation of services. At the Bathing Station site, from 1955, graves have been found cut into the floors of Roman buildings of masonry and timber; the finds included 40 third to fourth-century coins (Tapper 1955). The laying of a North Sea gas pipe-line in 1967, running north–south, east of Galley Lane crossroads, resulted in the discovery of a hoard of 296 denarii. More coins from this hoard were found in 1987. Nearby was a hoard of ironwork comprising two lugged axes, a chisel and a large spoon bit (Wilson 1968, 192).

Further structures were revealed in 1970 by Hedley Pengelly at the north angle of the Galley Lane crossroads. He found five phases of occupation including post-holes, clay floors, ditches and pits. The remains of a third to fourth-century masonry building were also found. In 1975 Mrs Unwin of Dropshort Farm invited Miss D. M. Hudson to investigate an area of land to the north of her farm on the line of the proposed A5 diversion. Features discovered were interpreted by Miss Hudson and N. Farrant as sleeper beams, which led them to speculate that 'the building of early timber-framed structures at a considerable distance from Watling Street could well indicate that they form part of a larger plan. A very real possibility is that they are connected with a fort for all or part of the XIV Legion'; and 'Another possibility is that a garrison was maintained after the advance and that the destruction may be dated to the Boudiccan revolt' (Hudson and Farrant 1977, 10).

The presence of a fort at Magiovinium was suspected as early as 1971 when aerial photographs revealed a double ditched enclosure of 2.25 hectares lying in a field south of the defended settlement. The results of the cutting of a water-pipe trench across the suspected ditch in 1976 and a watching brief by Mrs C. Woodfield were more cautiously appraised. She concluded: 'The profile and construction of the ditches indicates, though not conclusively, that it is military work, and finds suggest a construction in the Neronian period, probably related to military consolidation after the Boudiccan rebellion' (Woodfield 1977, 385).

Development Proposals

The proposal to build the A5 diversion bypassing Fenny Stratford and Bletchley to form part of the transport infrastructure for Milton Keynes was put forward in 1967 and formulated in 1970. The straight north-west to south-east route of Roman Watling Street was to be superseded by a dual carriageway leading from a new roundabout at the Galley Lane crossroads (Fig. 2) which would cross part of Dropshort Farm. In addition to the roundabout, a large portion of land to the north of the Pullman Café was threatened by the construction of access roads.

The occurrence of finds over such a large area affected by the proposals caused concern in many quarters that important archaeological features would be destroyed. It was argued that the town extended well beyond the scheduled area (the defended settlement) and that the road should be re-routed to minimize destruction. Understandably, it was also argued that the environs of an undisturbed settlement should be protected. Contrary to local opinion, however, the proposed route was, on the evidence available, considered by both the Ancient Monuments Inspectorate and the Road Construction Unit to be less damaging both archaeologically and environmentally. However, in order to understand the nature of the archaeological remains large-scale excavations were arranged. These were carried out by the Inspectorate's Central Excavation Unit under the direction of the present writer and involved trial trenching virtually the whole length of the proposed new road, from where it was to merge with the A5 close to the Pullman Café, across to the north-west boundary of Dropshort Farm—a distance of 1000 m. North of the A5, at the Galley Lane crossroads, adjacent to Mr Pengelly's excavation of 1970, overall clearance was undertaken.

For convenience of recording, the overall area was divided into two sites, Sites 17 and 18. Site 17 was situated on either side of the crossroads on land previously owned by Bedford

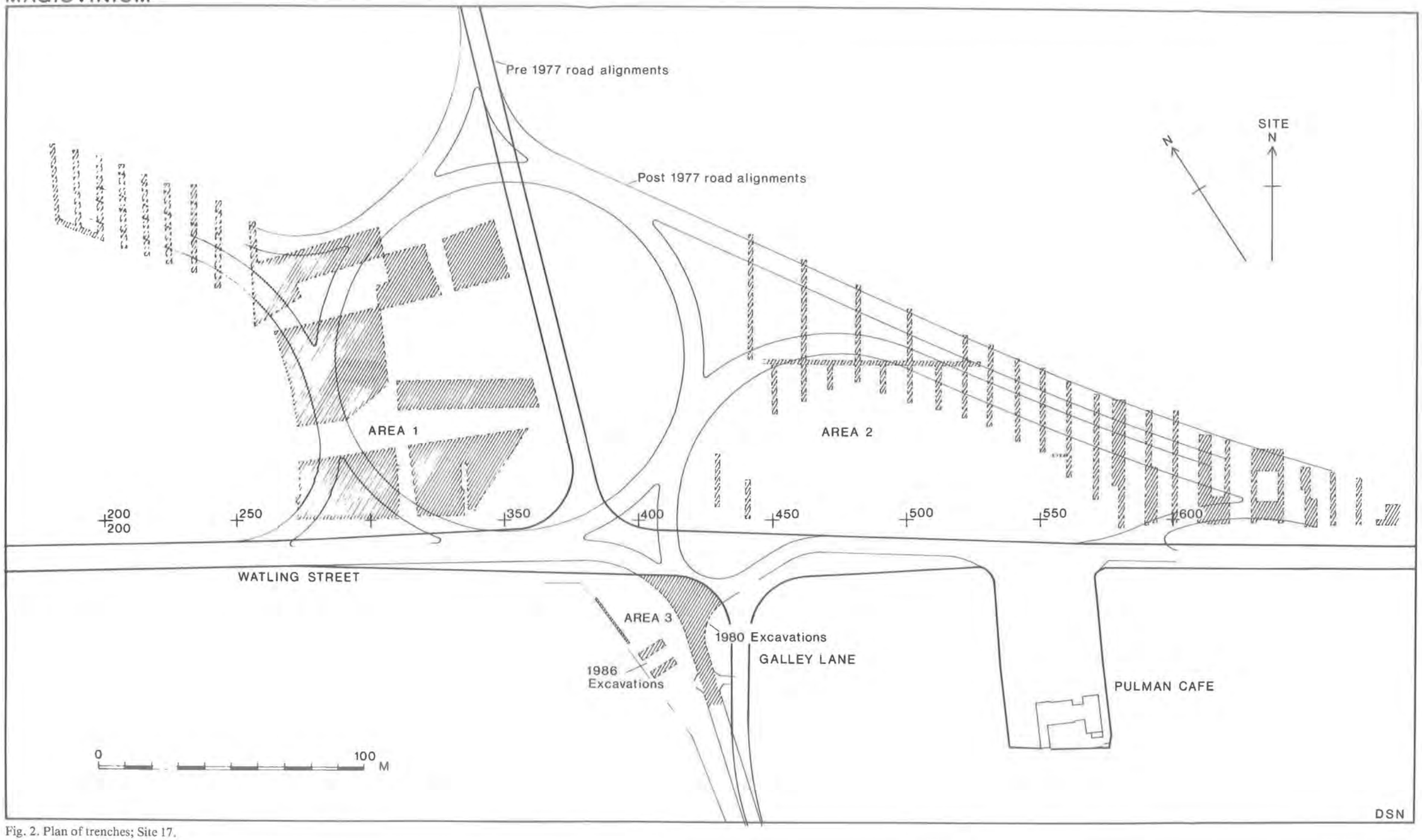

Fig. 2. Plan of trenches; Site 17.

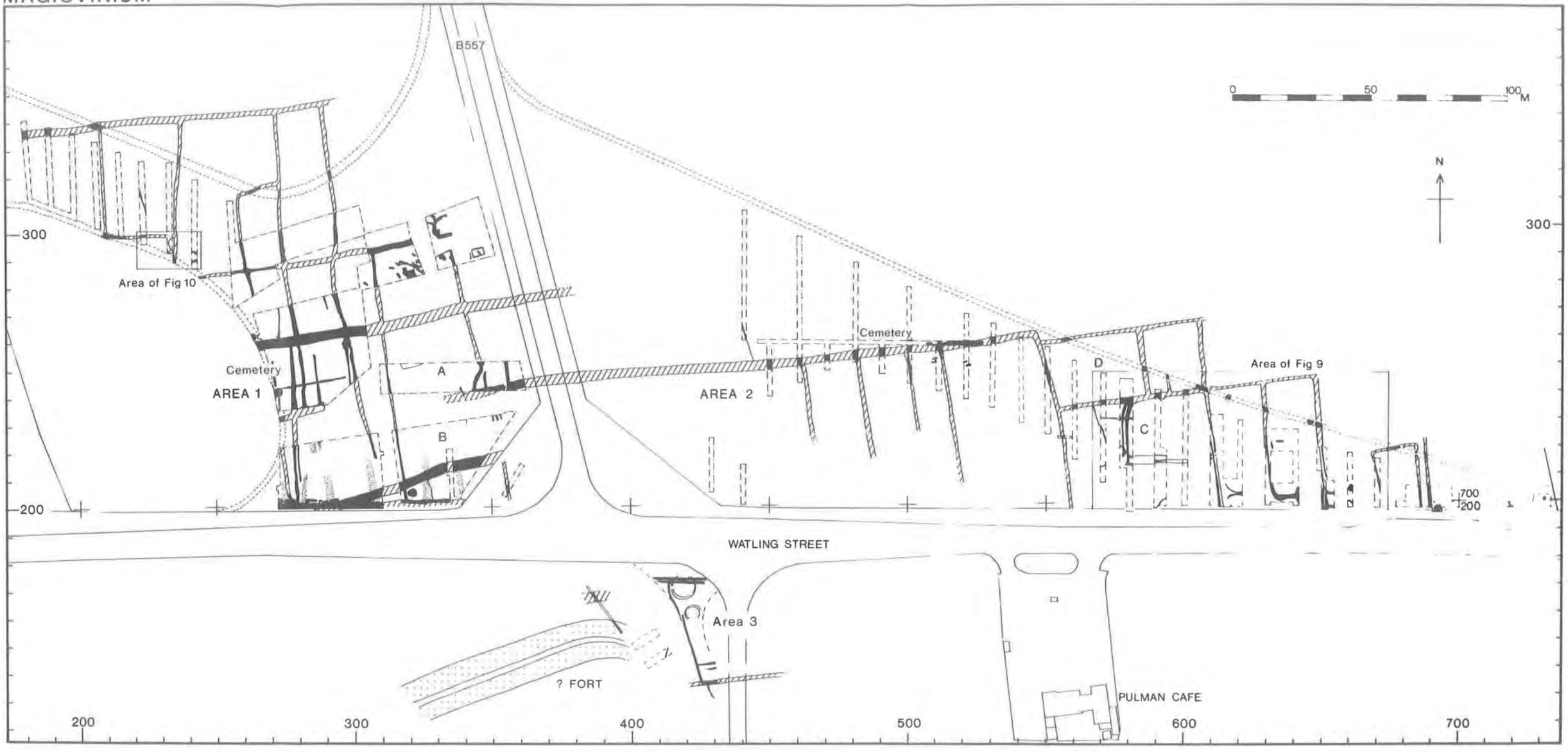

Fig. 3. General plan showing field system in relation to Watling Street; Site 17 Areas 1–3.

Estates and farmed by Mr Gurney of Cross Roads Farm; it was subdivided into three areas (Areas 1–3, Fig. 2), separated by Galley Lane and the A5. Site 18 was on Dropshort Farm. (Site numbers follow the sequence of excavations carried out by the Central Excavation Unit.) For convenience of reporting the two sites will be described separately, and conclusions drawn from them will be combined in the discussion (p. 29).

Work began in October 1977 and continued until May 1978. The period coincided with the wettest winter for many years and for much of the time the site was totally waterlogged—for six weeks the work had to be abandoned. Once road construction began it was possible to carry out a watching brief inspecting drainage ditches cut along the route of the easement. They provided useful evidence for the extent of the site (Fig. 3). Other opportunities for excavation were presented in May 1980, when improvements were made to the junction of Galley Lane where it meets the south side of the new roundabout, and in March 1985, in advance of the proposed A4146 Fenny Stratford southern bypass. The recording of the finds was well in hand when these works were undertaken and although the pottery is recorded it has not been included in the detailed analysis (pp. 58–102).

THE EXCAVATIONS

Site 17 (Pl. I)

Summary of Phases

1. Pre-conquest field systems oriented east–west possibly dictating orientation of later fort.
2. Construction of fort (situated on south side of Watling Street and represented by crop marks).
3. Realignment of Watling Street skirting north side of fort. Associated roadside ditches.
4. Extensive field systems on a slightly different alignment to features of Phases 1 and 2 and possibly aligned onto road leading to fort.
5. Roadside ditches infilled. Settlement with industrial furnaces constructed on top.
6. Clearance and levelling of above. Later appearance of new buildings and industrial activity.
7. Abandonment of some plots or allotments to create a cemetery.

Phase 1

Phase 1 is represented by a narrow ditch (No. 1, Fig. 4; Pl. II), running approximately east–west situated at 290–300 m east, 205 m north. It was subsequently recut on three successive occasions demonstrated in Section 396 (Fig. 5) by, in sequence, 1630, 1607, 2164 and 2177 (the primary fillings).

The pottery from the earliest layer (L1751, equating with L2164, Section 396, Fig. 5) is exclusively native and includes specific vessels Nos. 220, 221 and 268 and types equivalent to Nos. 232, 236, 244 and 250. They occur at Saffron Gardens (Waugh *et al.* 1974, 373) and Caldecotte (forthcoming) situated nearby on the north and south banks respectively of the River Ouzel. The absence of Roman wares in this phase, although not demonstrating conclusively a pre-conquest date, suggests the possibility. Slightly further east, later recuts have realigned the ditch with the Phase 4 field systems. A scatter of native fabrics elsewhere about the site further supports native occupation; it is to be regretted however that conditions for excavation were so poor that early features could have been missed. It is possible that this occupation and probable field system dictated the orientation of the conquest fort believed to lie southwards in the field opposite. Three Republican issues (Nos. 1–3) from a ditch opposite the Pulman Café are further support for early occupation.

Phases 2 and 3

Evidence for a fort to the south of Watling Street has been published by Charmian Woodfield (1977, 384 ff.). Aerial photographs show two possible forts, the first, probably of Claudian date and the second a reconstruction interpreted as possibly being associated with the

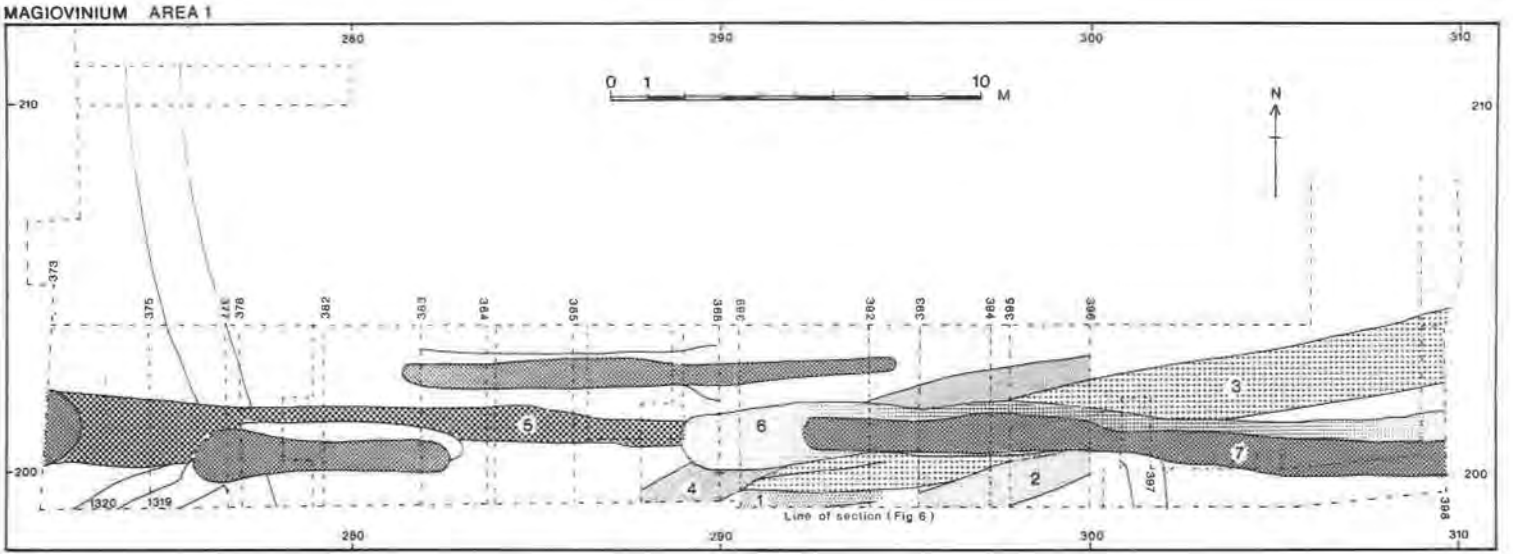

Fig. 4. Plan of road-ditches; Site 17 Area 1. Numerals 1–7 denote sequence of cuttings.

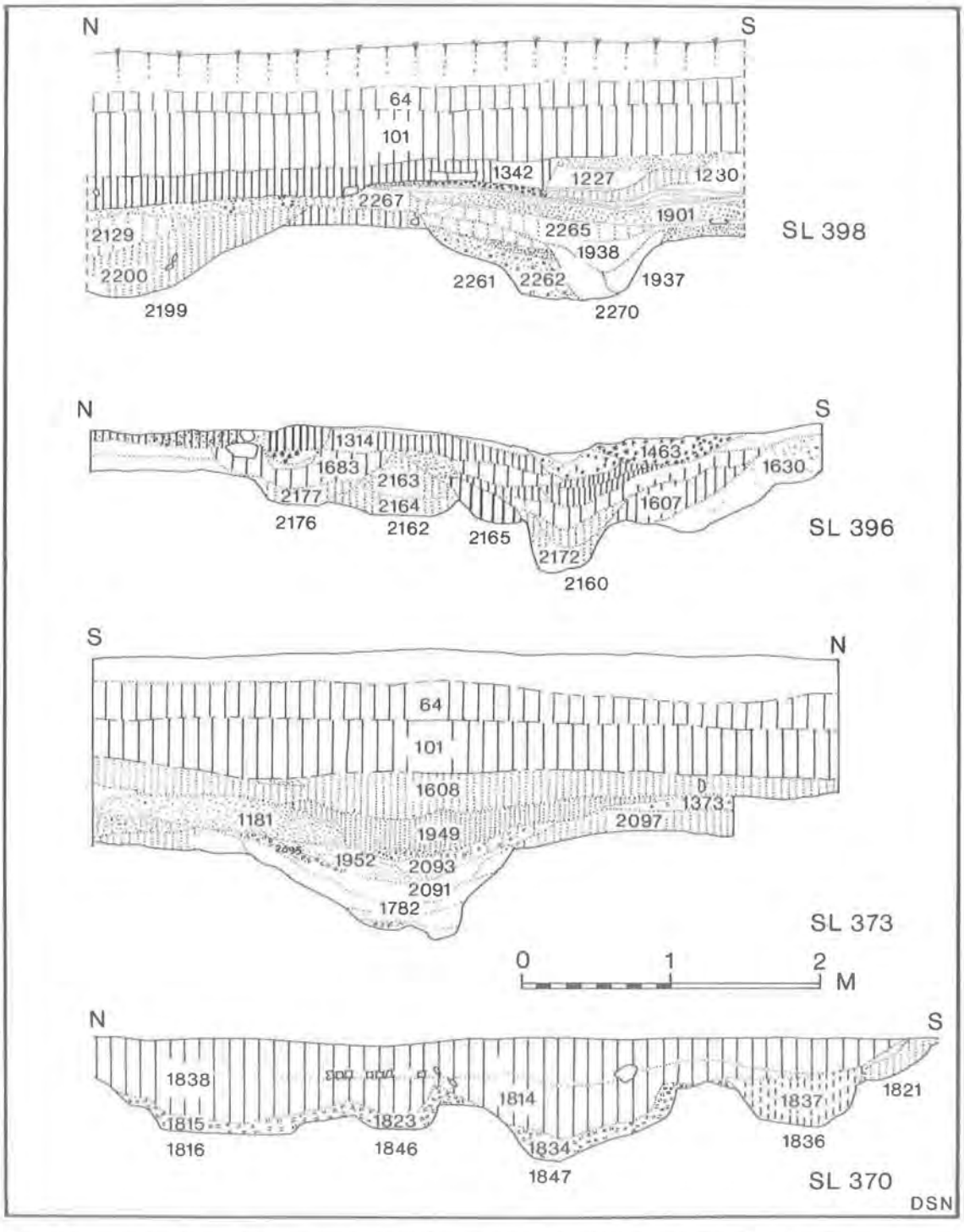

Fig. 5. Sections north–south across roadside ditches on north side of Watling Street; Site 17 Area 1.

Boudiccan revolt of A.D. 61–2. Excavations by Mrs Woodfield in 1976 in a water-pipe trench shown on Fig. 3 at 390–400 m east, 170 m north, located two ditches, possibly the north angle of the fort. Unfortunately the high water-table prevented excavation beyond a depth of 1.50 m but they were between 4 and 5 m wide.

In March 1986 two trenches were cut by the writer on the western verge of Galley Lane, south of the A5 (Fig. 3) and south of the 1976 discoveries, in the hope that the east ditch of the fort might be located. However, no evidence for it was found (only post-medieval cart-ruts associated with the original alignment of this section of road) and it is assumed that the ditch lies slightly further to the west.

A significant feature of the possible fort (Fig. 1) is that although its orientation is the same as the Phase 1 ditches neither appears to have influenced the route of Watling Street or allotments of land along its north side. A possible explanation is that the road leading to the fort approached at an oblique angle. Allotments may have been set out alongside this road but were not realigned following the construction of Watling Street. The evidence is tenuous especially as surfaces of Roman Watling Street have never been recorded. However, at about 275 m east two gullies were found (Nos. 1319 and 1320, Fig. 4), one a recut of the first (Section 388, Fig. 6) aligned approximately east–west and another (No. 1198) aligned north–south, linking with other gullies which were associated with the field systems. They were cut by a roadside ditch (5), probably contemporary with Watling Street (Phase 3).

Pottery from the earliest gully includes vessels similar in form to Nos. 131, 147 and 252, none later than Flavian. A fragment of Drag. 18 South Gaulish samian of pre-Flavian date was also discovered. Because these allotments expanded following the realignment of Watling Street, they will be described under Phase 4 below.

After the abandonment of the fort Watling Street was realigned to the north (2), probably serving a *vicus* (3) situated to the north-west, represented by the later defended area of Magiovinium. This route follows a straight line as far as Towcester (Fig. 1, insert) which suggests a major programme of civil engineering including possibly building of new bridges.

As already stated, details of the construction of Watling Street near Magiovinium are not known nor likely to be since the level of the road was lowered in the 1820s by Thomas Telford as part of a major scheme of improvements to the London–Holyhead turnpike. There is no stratigraphic link therefore between the road and its ditches; however, it is assumed that Ditch 5 (Fig. 4) is the original northern road ditch. A length of 20 m was excavated between 270 and 290 m east. At the eastern limit it was about 1 m wide and had been erased by later recuts (Pl. II); at the lower western end it was 2 m wide. Whether the ditch proceeded westwards to run through the nucleus of the *vicus* is uncertain, but the volume of water that the gullies drained would suggest the need for a major north–south culvert to divert water from the town. Pottery from the earliest levels in this ditch included Pot Nos. 206 and 252, a storage jar similar to form 331 and a carinated bowl all in native fabrics dated to the later first century. No samian was found.

In Area 3 on the south side of the road two parallel road ditches were located between 410 and 425 m east; the northern, 2389 (Fig. 7) was probably the earlier and was V-shaped in profile, measuring 1.50 m wide by 70 cm deep. At a later date they were sealed by a circular house, a similar sequence to the ditch on the north side of Watling Street which also had structures built over its filling.

Phase 4 (Fig. 3)

A major feature of the excavations was the discovery of a series of small ditched enclosures stretching for over 500 m along the north side of the road. As we have already seen the alignment appears to have been based on an earlier alignment of Watling Street. Nearer the town the plots were five deep but eastwards they gradually thinned out. They were delineated by a series of fairly narrow north–south gullies draining into broader east–west ditches. Casual

observation suggests a piecemeal development but more critical assessment indicates a certain uniformity. Most of the plots are about 19 m wide (a similar width was noted at Towcester), but at about 300 m east there were two adjacent plots (A and B) double width (about 38 m) and others (C and D) at approximately 550–600 m east. Their depths north–south appear less regular but may have originally been more uniform depending on their relationship to Watling Street which seems to truncate the layout. At about 250 m east one field was 56 m deep and had a small 'enclosure' on its south-east side. Smaller plots were also found behind plots at about 600 m east.

There is evidence for allotments on Site 3 on the south side of Watling Street also diverging from the road. At the southern limit of the excavation, 420–430 m east, were traces of three parallel gullies, 2353, 2346 and 2341 (Fig. 8). Although the area excavated was limited and their overall layout uncertain it is possible that they were part of the same system. What is significant, perhaps, is that the distance (110 m) between the larger gully (2346) and a major east–west gully across Areas 1 and 2 (270–550 m east and *c.*240 m north; Fig. 3), is the same as the distance between the latter and the northernmost east–west gully on the site (at about 200 m east by 335 m north).

Although the ditches acted as field boundaries their use as drainage gullies was vital. Many had silted up and had been recut three or four times (observation of a modern roadside gully associated with the road development demonstrated all too clearly the need for drainage gullies and the speed at which they silted up—about 10 cm of silt followed a storm within about one hour). There was evidence that attempts were made to prevent silting: gully 760, found at about 650 m east (Fig. 9), was timber-lined with steep sides and nails along its length. Its filling contained an assemblage of pottery of which 32 vessels are published here (Nos. 335–65, Figs, 45–6) dated no later than the mid second century. After silting up, and being used as a rubbish dump, it was recut further east. It also postdates at least two earlier gullies located in the same trench.

Ribbon development took place along the whole length of the road where allotments occur. However, only in a few places can the occupation be associated with the actual plots: some buildings postdate the road ditches and others the allotments. Traces of four circular buildings associated with the plots were located at the east end of Area 2, between 560 and 630 m east (Fig. 9) and included Nos. 172, 781, 784 and 794. They were 8–10 m wide and were constructed in wattle and daub with penannular gullies with entrances on the west sides—facing Magiovinium.

Building 794 had traces of burnt daub indicating destruction by fire. The surface of the daub had a thin coating of white plaster suggesting attempts to decorate the hut in Roman fashion. Pottery in the filling of the penannular gully of house 781 indicates a late second-century date and includes forms such as Nos. 4 (Fig. 32), 30 (Fig. 33), 101, 113 (Fig. 36), 129 (Fig. 37) and 303B (Fig. 43). Further west, towards the town, the buildings may have improved in quality, for at about 440 m east traces of a rectilinear timber building were observed in two trenches alongside Watling Street. Unfortunately waterlogging prevented their examination. Other circular features such as 2221 (Fig. 10) may have been gullies around haystacks as their diameters were very small.

The road ditches were allowed, in places, to silt up and be backfilled. The reason for this is uncertain, but was probably due to the fact that when the ditches cut existing plots, access to them from Watling Street by occupants, or allotment holders, was effectively barred. Consequently we now see the ditch being recut, but with causeways to provide access, for example Ditches 6 and 7 (Fig. 4) are recuts of the road ditch, but they are not continuous; they both have causeways at about 273 and 285 m east. The latest pottery from the filling of L1938 of Ditch 7 for example, showing in S.L. 398 (Fig. 5) is exclusively early second-century and is further sealed by horizon L1901 of Antonine deposition.

Causeways have not been observed in Area 3 on the south side of the road although the

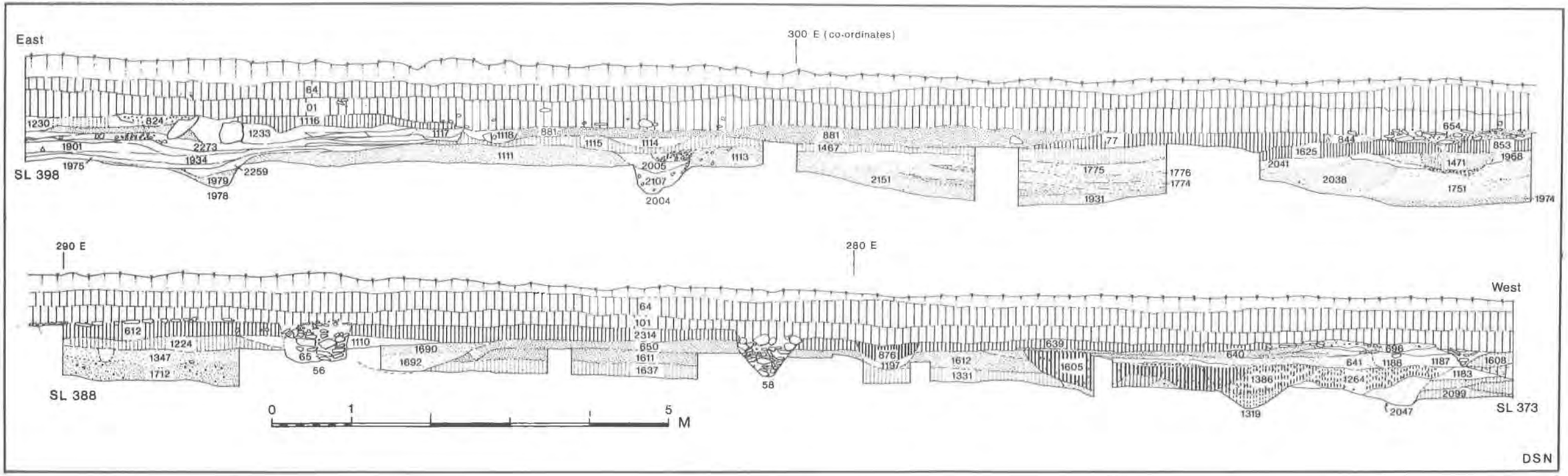

Fig. 6. Sections east–west showing sequence of levels cut by and sealing roadside ditches; Site 17, Area 1.

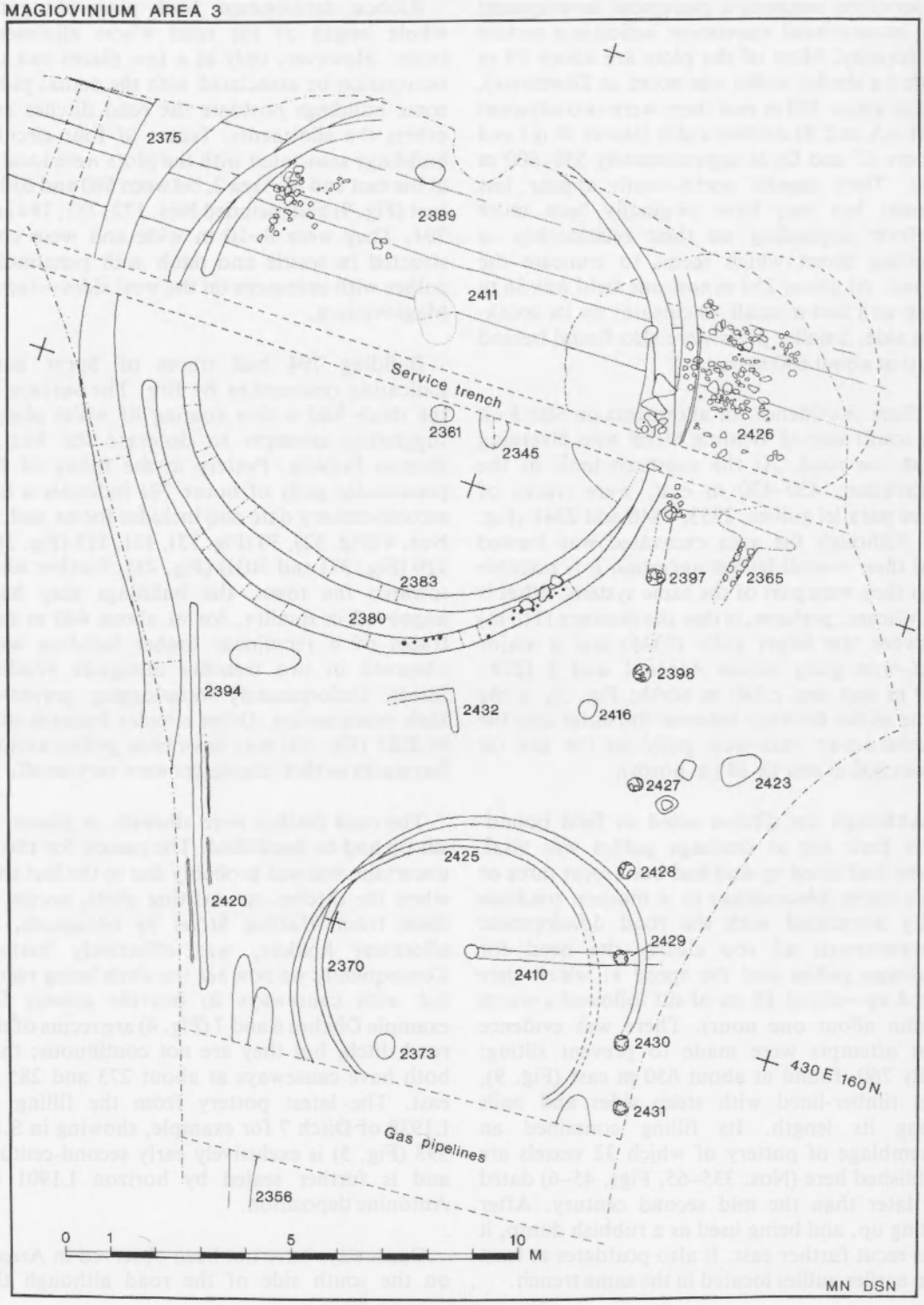

Fig. 7. Plan showing circular houses on south side of Watling Street; Site 17, Area 3.

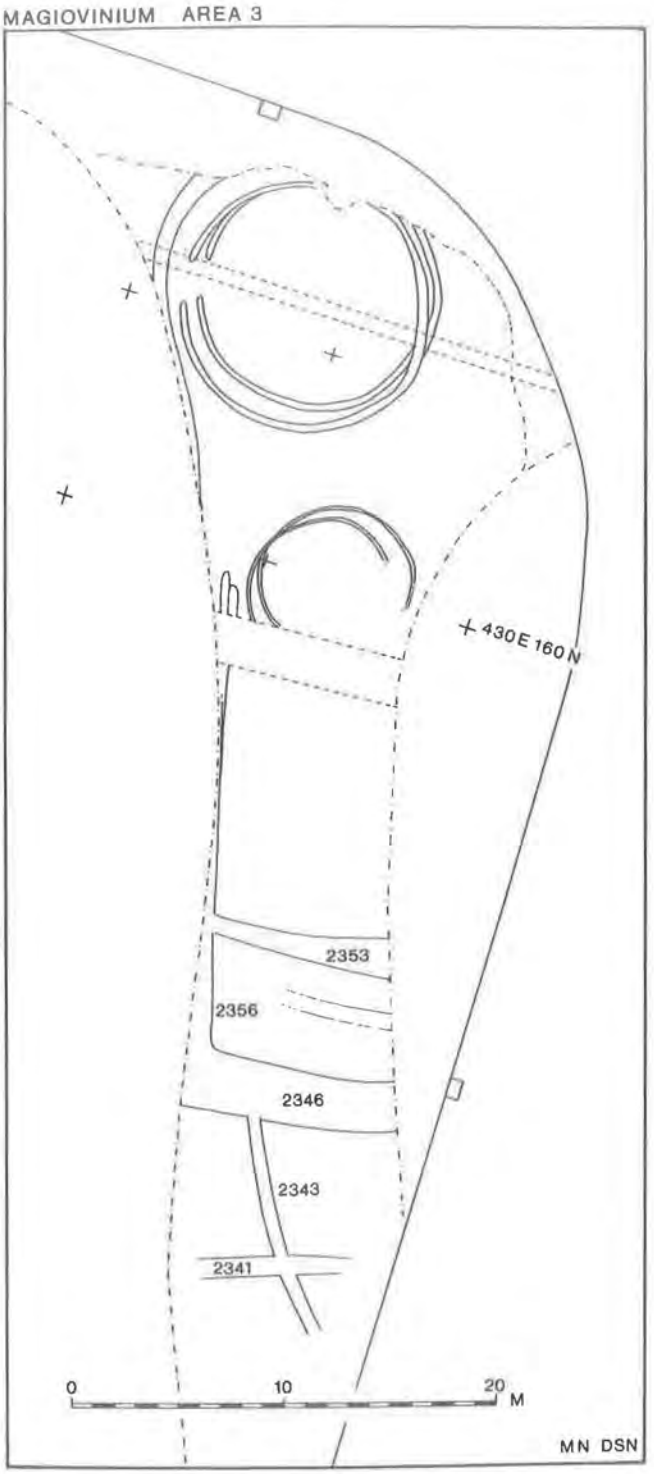

Fig. 8. Plan showing location of field ditches in relation to circular houses on south side of Watling Street; Site 17, Area 3.

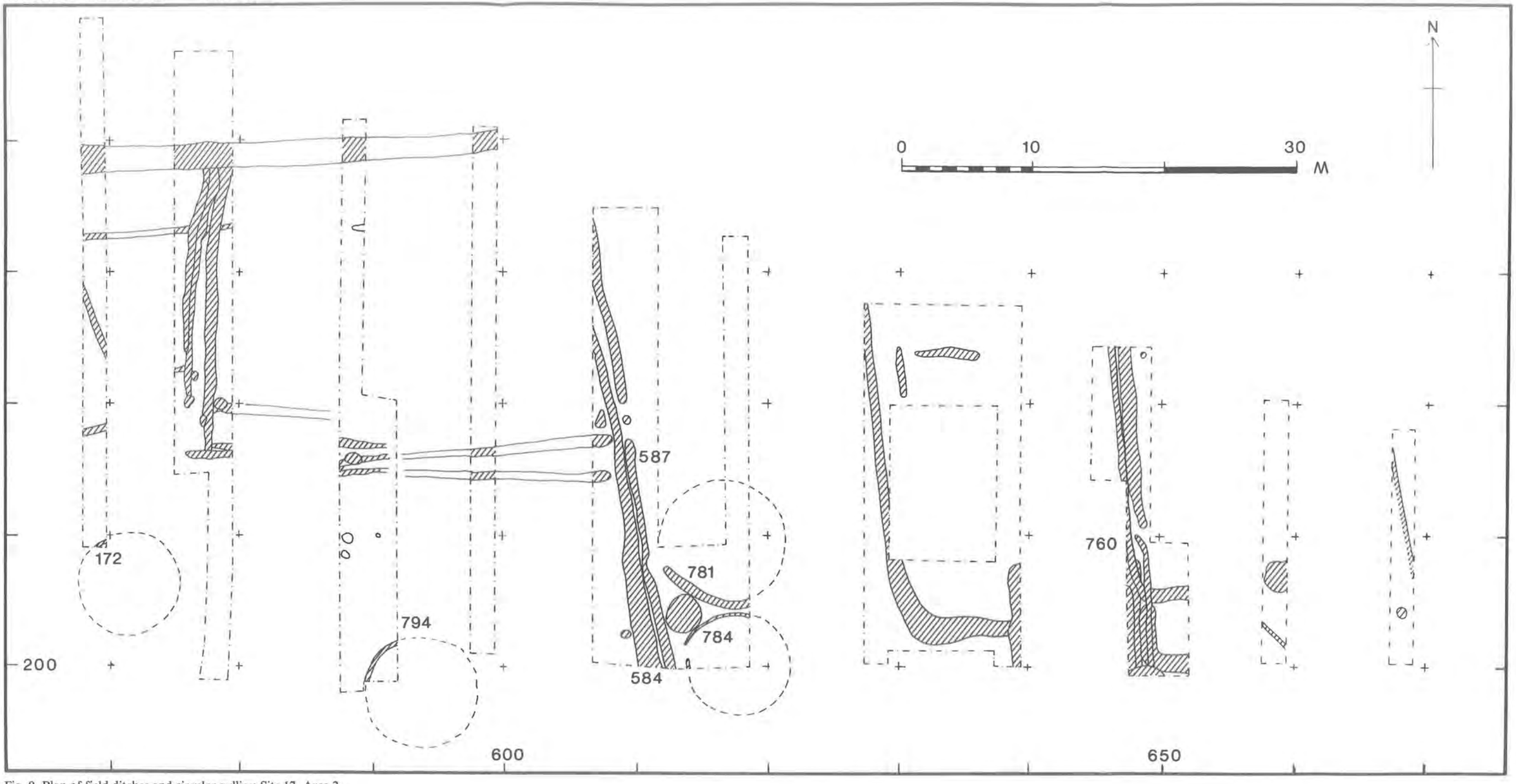

Fig. 9. Plan of field ditches and circular gullies; Site 17, Area 2.

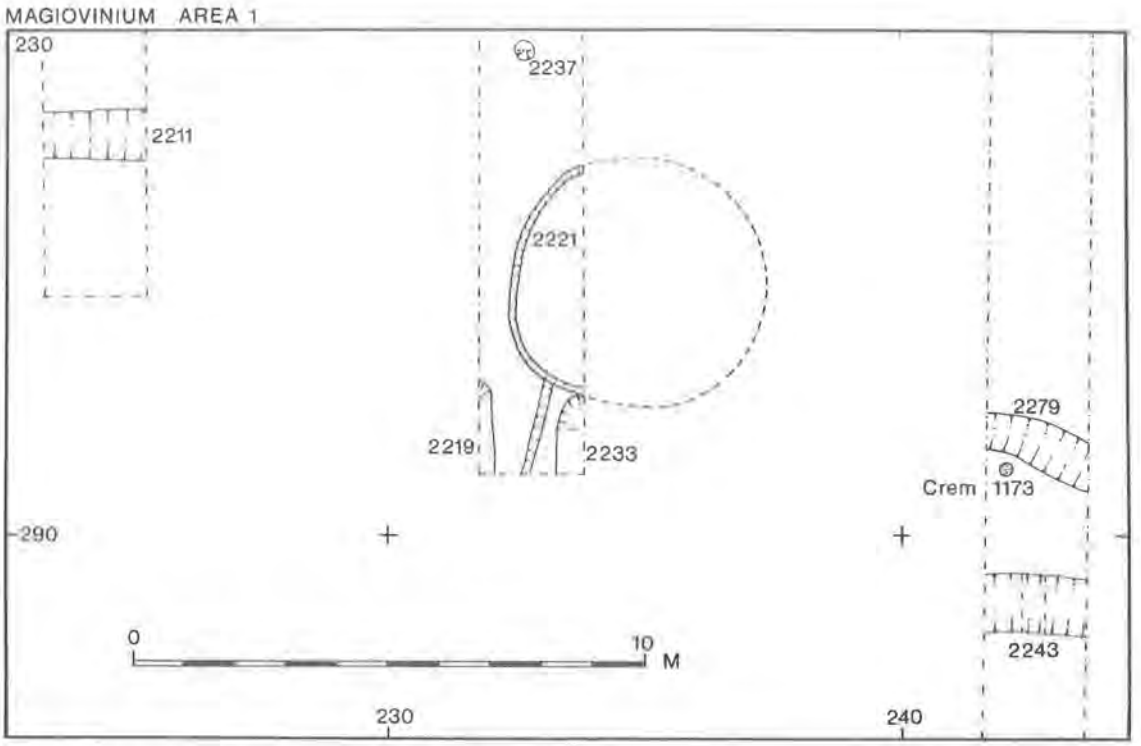

Fig. 10. Plan of 'circular' gully; Site 17, Area 1.

ditches here also went out of use and were later sealed by buildings of Antonine date. The latest pottery in the ditches, sealed by the buildings, is of the early second century and includes forms 3.18 and 9.7.

An intermediate stage in Area 3 sees a large rubbish pit (2426) or possibly a well (not excavated) sealed by buildings, further evidence for a gradual decline in the importance of the road ditches. The implication is that either conditions on the actual carriageway were allowed to deteriorate, or more likely that an area drainage scheme was implemented which reduced their need; in the Antonine period they were abandoned altogether and never replaced.

Phase 5 (Fig. 11)

In Phase 5, dated to the Antonine Period, there is greater activity about the site. Following the filling of the road ditches, huts with rough metalled floors and associated with industrial hearths were constructed along the north side of Watling Street. The allotments continued in use and may have expanded in places; existing field ditches were recut.

Traces of four buildings of the most ephemeral kind were found; working eastwards: buildings 1192 and 1693, the latter a replacement of the first, were represented by narrow slots probably for the emplacement of wattles. Associated with the earlier was a circular furnace, 891. To the east was a row of five post-holes which became smaller towards the north. It is possible that that feature was the principal side of a lean-to shed. Building 2487 comprised an area of metalling, 1259, 4 × 7 m, defined by a narrow slot 1359, fairly straight on the west side but curving eastwards on the north. No evidence was found for a similar slot on the east and it is assumed that the structure was also open on one side and was associated with industrial furnaces shown in detail in Figs. 12 and 13 and similar in plan and construction to other furnaces found as far as 730 m east,

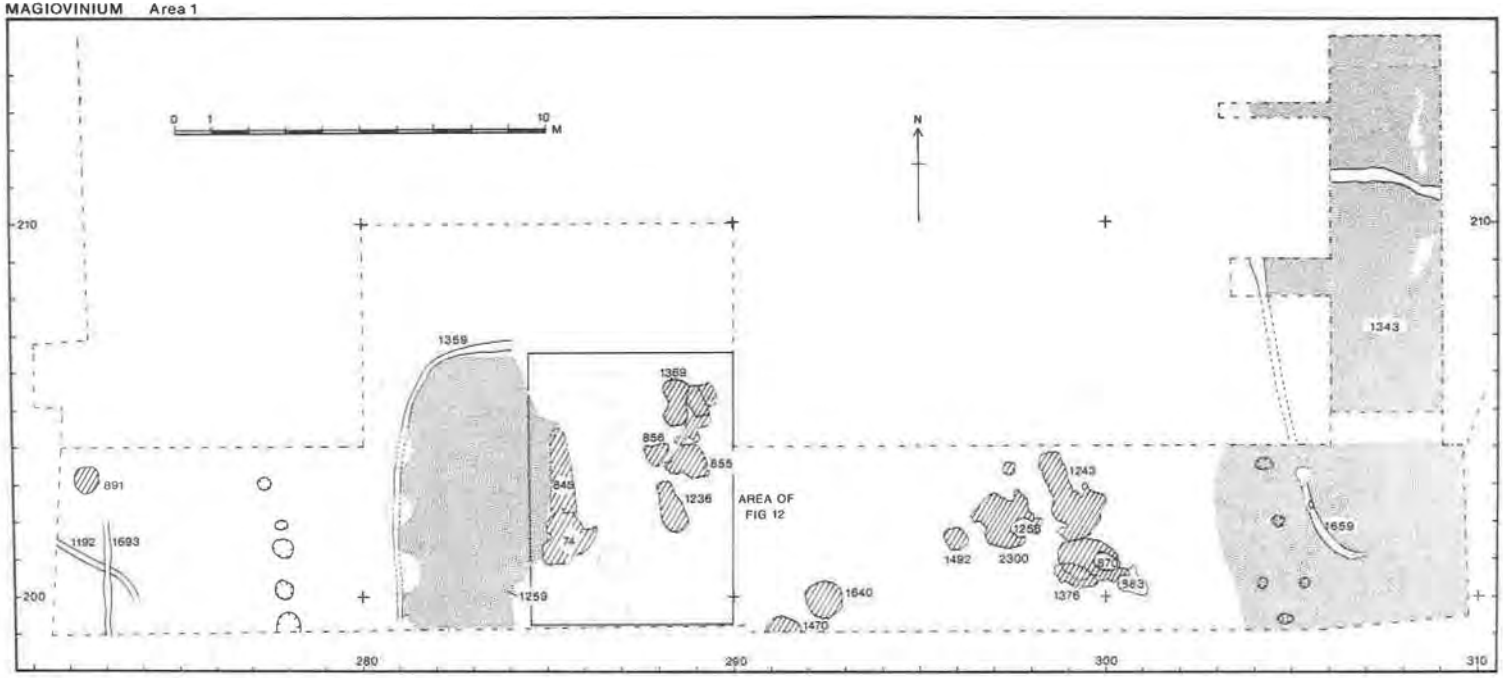

Fig. 11. Plan showing metalled floors of huts and furnaces along north side of Watling Street; Site 17, Area 1.

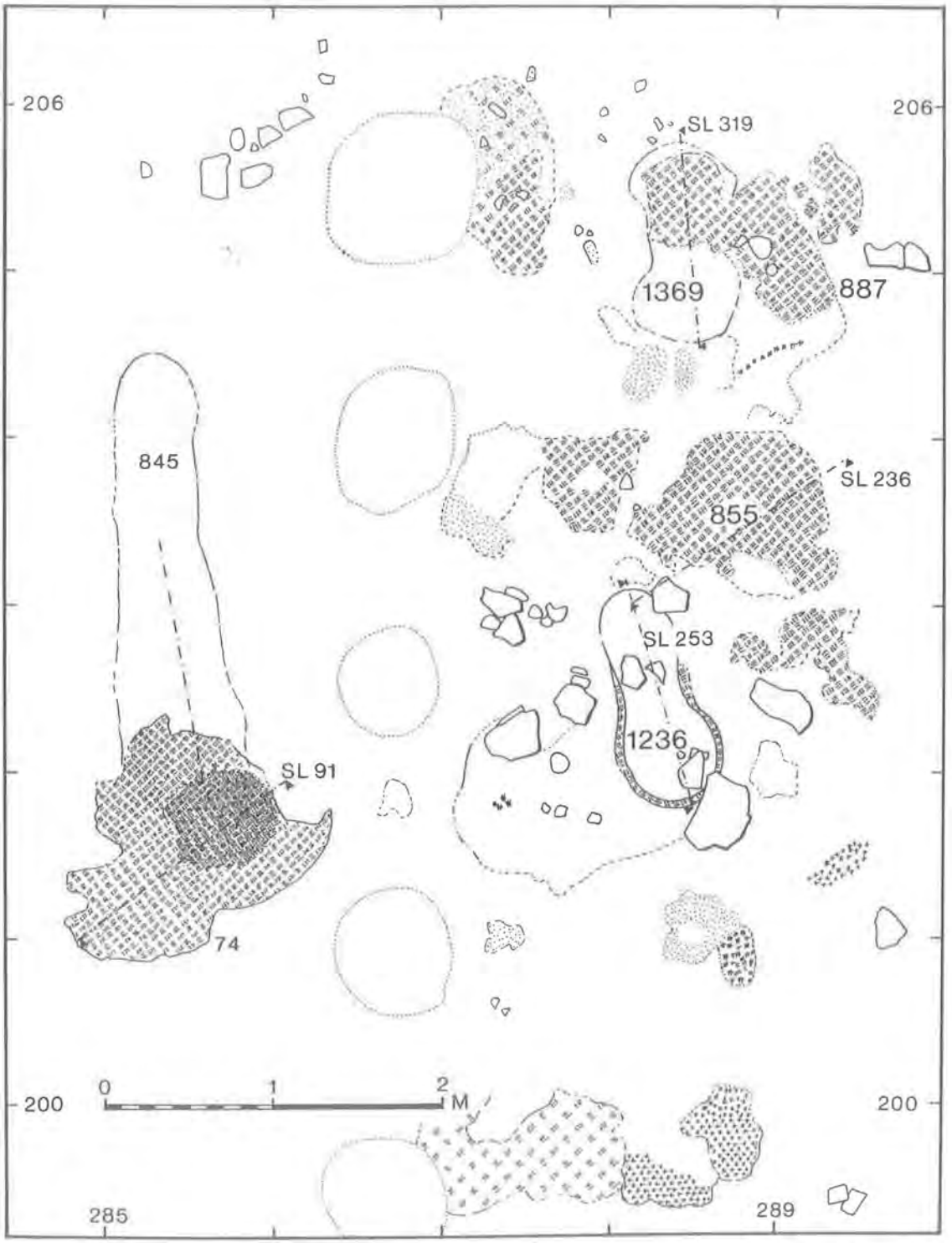

Fig. 12. Plan of furnaces (context 74) and associated hearths; Site 17, Area 1.

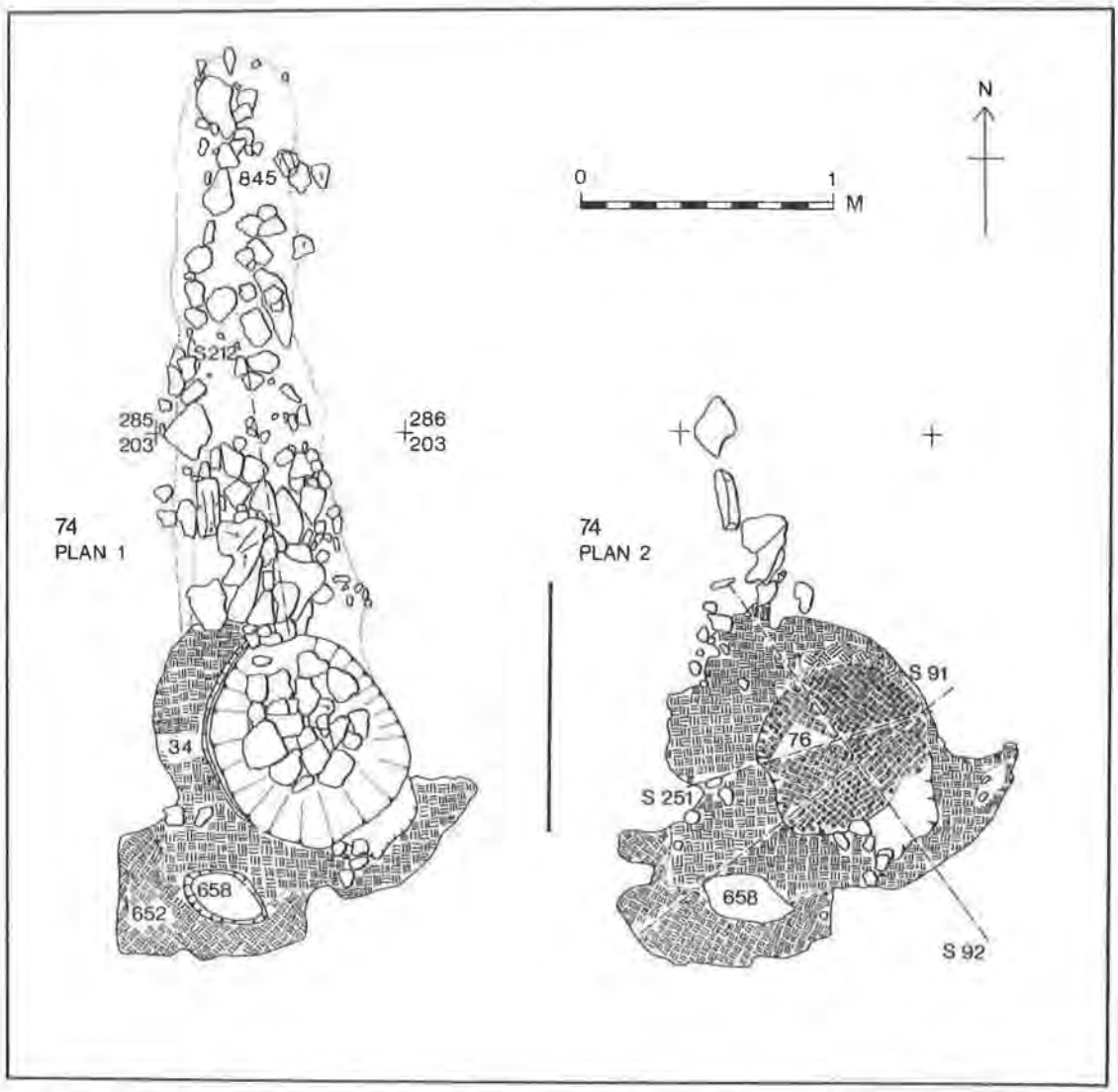

Fig. 13. Detailed plans of furnace (context 74) showing underlying soakaway and gully; Site 17, Area 1. Plan 1 shows the surface levels and Plan 2 the soakaway.

where a particularly fine example was found. Furnace 74 (Fig. 12 and Pl. III) was constructed over a circular bowl-shaped pit filled with large stones, and had on its north side a gully (845) 2.30 m long and U-shaped in section. Above the stones a layer of clay had been rammed, in the centre of which was a shallow hollow, heavily scorched. The stones beneath the clay were presumably intended as a soakaway. It is also possible that originally the clay formed part of a shaft furnace since large quantities of iron slag indicating metal-working were found nearby. Slightly further east patches of clay, also burnt, indicate the presence of other furnaces, one of which, 1236, was probably domestic as it was similar in plan to conventional horseshoe-shaped bread-ovens found on numerous other sites. Around this oven, but associated with a later example were a number of flat stones intended as pads for

uprights supporting a crude canopy. More furnaces were encountered 291–293 m east (features 1470 and 1640, Fig. 11) and others 296–300 m east where traces of four furnaces were recorded (1243, 1376, 1492 and 2300) constructed over similar stone-filled hollows capped with clay. Associated with this complex was a very large mass of slag, probably tap-slag, which had possibly dribbled and fused into a furnace mouth (1256). Fiona Macalister, formerly of the Ancient Monuments Laboratory (AML), reports on the slag as follows:

The Slag by Fiona Macalister

The total weight of the slag was 59.1 kg and was of two types, smithing and fuel ash slag, but there is a complete range between the two. The smithing slag is in the form of irregular masses, 'puddles', 'buns' and hearth bottoms. The latter are generally of the order of 12 cm across, indicating small-scale working, but one (AML 7711040) measures 36 cm, and is thus a product of smithing on a large scale. Further evidence for large-scale working is found in a group of slags (1256) which formed as one and weighs 21.4 kg. This slag has the texture of smithing slag but has flowed. It may be tap-slag which was poured over pieces of wood, producing bubbles and thus giving a vesicular texture to the slag, or it may be the result of a smelting process which has failed. In the absence of any ordinary tap-slag it is not possible to say definitely that smelting was carried out here, but it is reasonable to assume that ores would have been smelted nearby. Some of the smithing slag is magnetic due to the presence of hammer scale. The lighter fuel ash slag is often found as dribbles of cooled molten slag and one piece formed close to the tuyere (957).

Evidence for the fuel used was seen in both types of slag, in the form of wood and charcoal, and also as casts, particularly clear in 1256. These show that quite large pieces of wood were sometimes used, up to 3 cm in diameter. Two pieces of wood tar were found (1229), which would have been used as fuel.

There are a few pieces of *hearth lining*, with the thickness of the lining varying from 1.5 cm to about 2 cm, burnt clay and a few corroded iron 'lumps' and two corroded iron objects. There was one piece of copper alloy (516), which was analysed using X-ray fluorescence and was found to contain Cu, Zn, Pb, (Fe), and Sn, and is therefore a gun metal (AML Report No. 3154).

Glossary

Smithing slag: Produced by secondary working of raw iron in a smithing hearth. It is chemically similar to tap-slag but is spongey and inhomogeneous.

Fuel Ash Slag: A vitreous material which is produced when ash in the fire reacts with sand, clay or other siliceous material. It is usually but not always associated with metalworking.

Hearth lining: The sand or clay lining of the hearth becomes vitrified on one side, producing a glassy skin which grades into ordinary high-fired clay.

Tap-slag: A dense, homogeneous iron silicate slag, dark in colour, which is tapped out of an iron smelting furnace and cooled rapidly from the molten state. It has a smooth surface and only a few large gas bubbles.

Hearth bottom: Plano-convex in form, this is the smithing slag which collected in a pool in the bottom of the hearth and solidified on cooling.

It is interesting to note the use of slag as metalling in trackways from Watling Street towards the allotments in this and later periods (D.S.N.).

At 303–310 m east was another large area of metalling (1343) which probably originally defined the inside floor of a hut later to be cut by a right-angled slot (1659) of another hut, the south end of which curved slightly to the east (Pl. IV). This shed too was probably open-sided and like the others may have been associated with the adjacent furnaces.

The evidence of metalworking suggests the presence of smiths either engaged in shoeing horses (although no evidence was found for the manufacture of horseshoes or hipposandals), or wheelwrights catering for the needs of transport using Watling Street. It is unlikely, perhaps, that these 'undesirable' or potentially dangerous industries were allowed to trade in the nucleus of the settlement for fear of fire.

Area 3

In Area 3 on the opposite side of Watling Street, at about 415 m east, were two huts, Nos. 2383/2380 2370/2425 (Fig. 7), both of which had been rebuilt. Unfortunately the relationship of the two groups of huts is uncertain and it is quite possible that they were in use at the same time, especially as their different sizes may indicate different functions. However, a row of post-holes (Nos. 2397–8 and 2427–31) appears to respect the northern hut but crosses the southern and, if so, the southern group might be the earlier.

Buildings 2370/2425

The southern hut, 2370, measured 6.75 m wide, its replacement, 2425, being of similar proportions. They both had U-shaped slots which were 'broken' on their east sides, indicating the possible positions of entrances.

Buildings 2383/2380 (Pl. V)

These were situated to the north of the buildings just described and were constructed over earlier road ditches and also over a pit or well (2426). They were both about 11.25 m wide and had entrances on their west sides. The slots of both were U-shaped in section and packed with clay forming part of a wall reinforced by wattles, evidence for which was found on the southern area of the later hut, where 15 stake-holes occurred. Both huts had central hearths and also evidence for a domestic oven (2345). Where the later hut crossed the earlier pit, 2426, its wall was given a foundation of large stones, presumably to counteract subsidence. Conceivably the presence of the pit may have necessitated the reconstruction of the hut. Both huts were probably living quarters. Curving around the west side of the hut was a U-shaped gully 2375 intended to drain water southwards and also, possibly, on account of its close proximity to the hut, to act as an eavesdrip to prevent rainwater flooding the entrance; the entrance was on the opposite side of the hut to building 2370 further south.

A large group of pottery from the gully contained mid to late second-century shell-tempered forms 3.38 with rilled body sherds, sandy grey-ware bowls, forms 5.6, and a small indented beaker with white slip. A fine red-ware omphalos base, possibly from the Oxfordshire kilns, suggests a later second/early third-century date for the group and the period of occupation for the larger huts.

On the south side, the gully ran under the side of the modern road cutting but appears to have straightened out to run north–south and roughly parallel to a sleeper beam (2394) for either a palisade or a rectilinear hut.

Further south, traces of another gully (2356) continued the general alignment. The alignment, further represented by a row of stone-packed post-holes (2397–8 and 2427–31), forming a fence or larger stockade, is not at right angles to Watling Street but on the same orientation as the allotments on the north side of the road—further evidence perhaps that a feature of the topography, earlier than Watling Street, influenced alignments. On the east side of the stockade, lined with stone, was a T-shaped furnace (2365). There was no industrial waste associated with it and the lack of scorching suggested that it was a conventional corn-drying or malting oven. Pottery dumped in the structure following its disuse included forms 3.9 and 9.2 in shell-tempered fabrics from the Harrold Kilns; the sherds are of the later second century.

Associated with this general phase on both Areas 1 and 2 were a number of cremations. In Area 1 there were nine and in Area 2, more superficially sampled, 14. Both groups were about 60 m from Watling Street, the same distance from a north–south road as the cremation groups on Site 18 (p. 27), and represent two separate cemeteries to the east of the town. That in Area 1 was located at about 270 m east by 250 m north and on Area 2 at about 500 m east by 250 m north. Of the cremations only three were deposited in and associated with pottery grave-goods—others were contained in small wooden boxes, evidence for which came from groups of accompanying nails. In Area 2 there were eight inhumations oriented east–west which probably represent the transition from cremation to inhumation burial practice and since they were

Plate I. Site 17. General view south-west. The hedge marks the line of Watling Street. Fenny Stratford can be seen in the distance.
(Photo CEU)

Plate II. Site 17. Successive recuts of road-side ditch along Watling Street. View north-west. A sequence of earlier gullies can be seen diverging beneath sections on left. (Photo CEU)

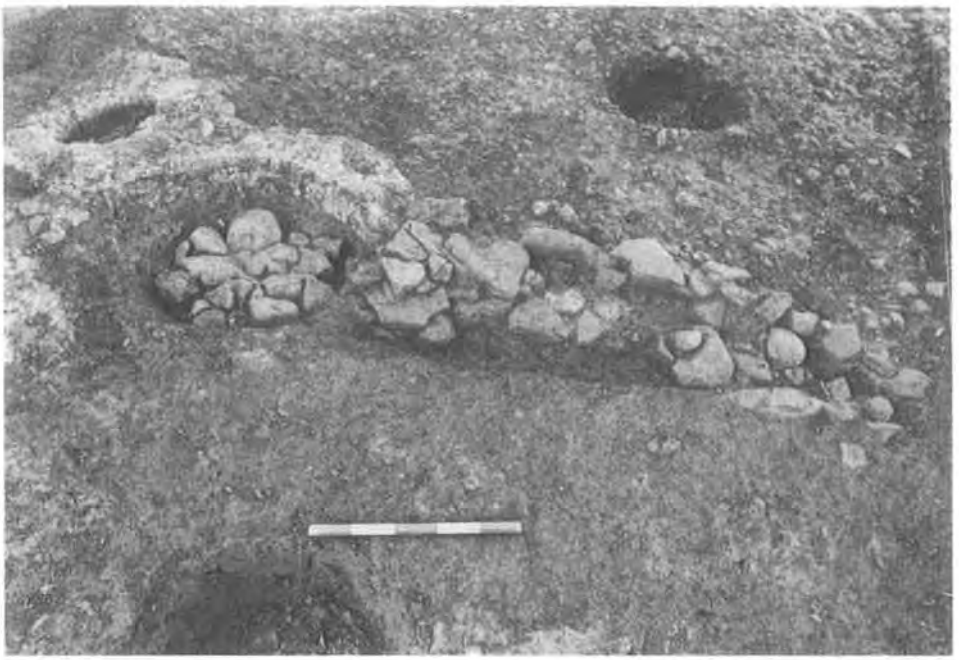

Plate III. Site 17. Furnace 74 with hearth removed showing stone-filled soakaway. View west. (Photo CEU)

Plate IV. Site 17. Metalled area (1343) cut by curved slot (1659) of hut. View south. (Photo CEU)

Plate V. Site 17. Area 3. Buildings 2383/2380. A cutting top left gives the location of the underlying road-side ditch. Modern Watling Street top right. View north. (Photo C. Woodfield)

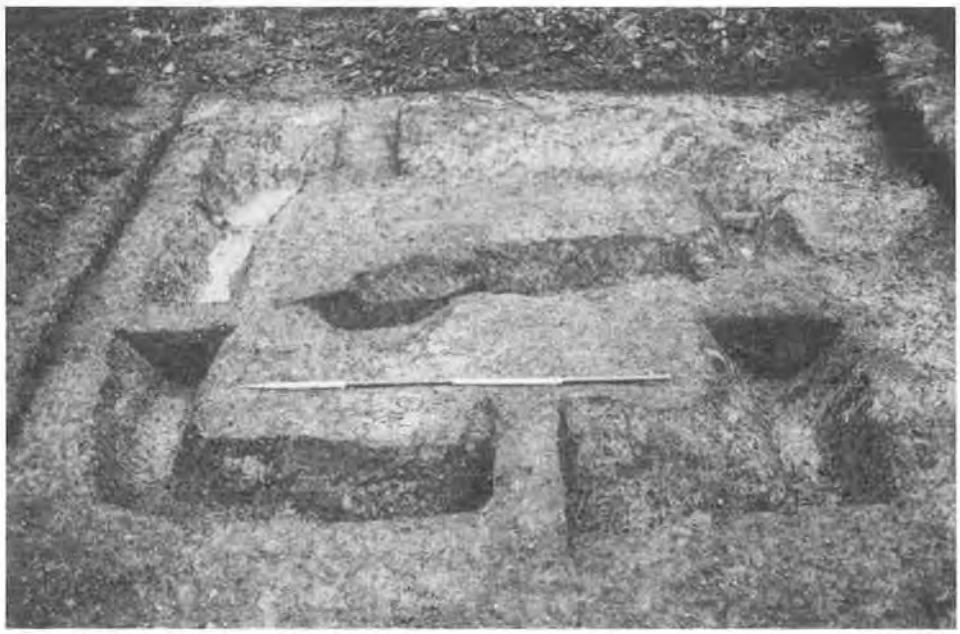

Plate VI. Site 17. Rectangular enclosure 2329 with central burial. View east. (Photo CEU)

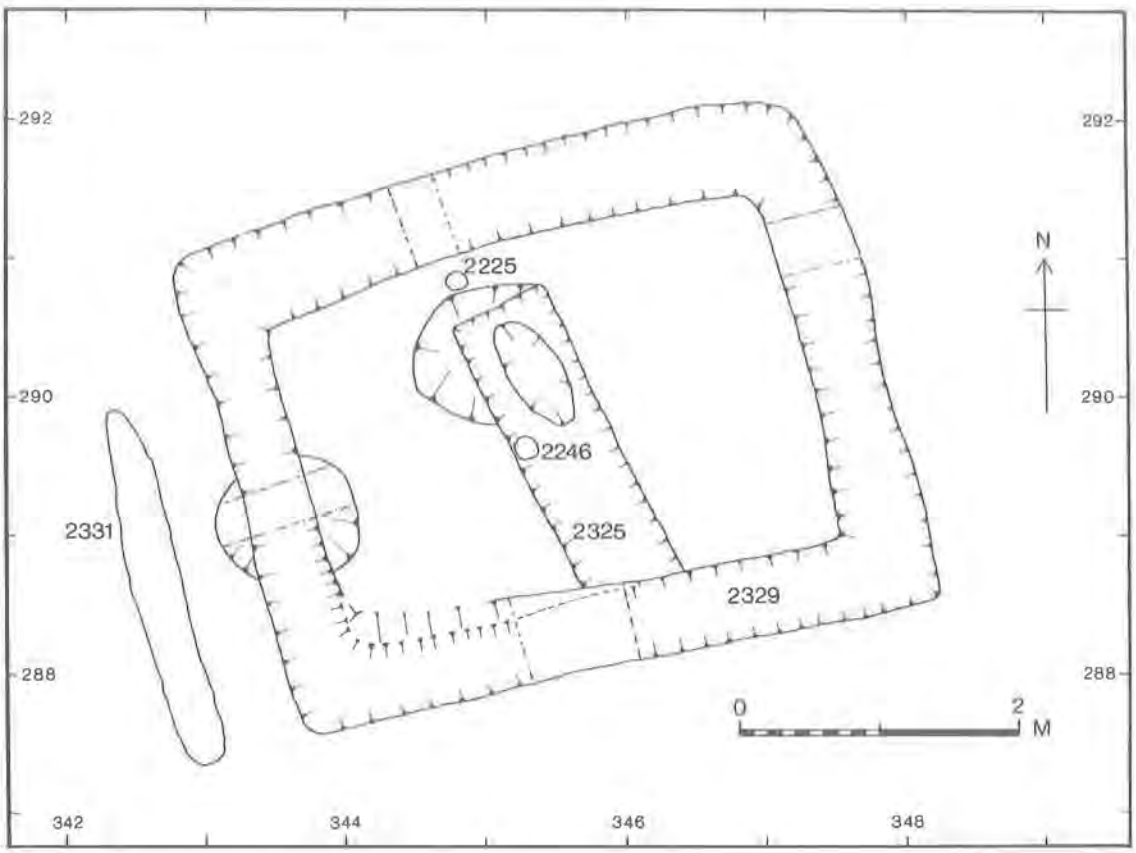

Fig. 14. Burial enclosure 2329; Site 17, Area 1.

found in the same areas as the cremations indicate that the cemeteries continued in use. The inhumations had no grave goods but iron nails show evidence for wooden coffins. On Area 1 at 350 m east by 295 m north there was a more elaborate burial (Fig. 14). It began as a cremation set in a shallow pit, without funerary objects, surrounded by a rectangular ditched enclosure (2329), measuring 2.70 by 3.70 m (Pl. VI). It was reminiscent of late Iron Age square barrows, for example those excavated by Dr I. M. Stead at Burton Fleming, N. Humberside (Stead 1976, Fig. 1). Cutting the cremation pit was a secondary inhumation (2325), without a skeleton, containing a fine penannular bronze bracelet (No. 25, Fig. 24) with snakehead terminals dated by parallels to the fourth century. These were the 'official' graves. In addition to the above, Area 1 yielded eight infant burials, perhaps deposited without ceremony, overlying the infilled roadside ditch hollows at about 280 m east by 200 m north and a single isolated example at 285 m east by 245 m north. In contrast Area 2 produced no infant burials and the explanation therefore would appear to be that infants from the town were being hastily buried outside the town gate. An examination of the skeletal remains by Janet D. Henderson (p. 103) showed that all eight individuals could be classed as infants—one was foetal, two were from term to three months, four were from early post-natal to three months and one was three to four months. Infant mortality therefore seems to have been common during the first three months. Inhumations on Area 1 (Fig. 18) associated with the later cemetery will be described under Phase 7 below.

Phase 6

This was probably a significant period in the history of Magiovinium. Covering the industrial hearths and structures on Area 1 was a broad swathe of coarse sandy soil, in places 30 cm deep, in other places absent, its extent giving the impression that it was spread with the intention of levelling and tidying-up the area and therefore possibly part of a municipal programme of works. This levelling sealed considerable quantities of pottery, none dated later than *c.*AD 180. A single coin of Tetricus was apparently found in a level sealed by the sand but the pottery is consistently of late second-century date or earlier and the coin is therefore believed to be an intrusion. What inspired this programme of 'civic pride' is not known but the date is similar to the date of construction of the town defences at Towcester and Great Casterton. If Magiovinium was being defended in this period (it has the remains of a bank and shallow ditch) it is possible that ribbon development beyond the nucleus was removed and residents left outside the new limits of the town were moved inside.

Following perhaps a period of inactivity represented by a broad swathe of loam (Layers 639 and 2314) containing Nene Valley wares, we now see metalled trackways from Watling Street leading into the allotments and some allotment ditches being recut (Fig. 3). Traces of six such trackways were found between 275 and 340 m east. Although the original allotments appear to have been based on a width of about 19 m, the spaces between the trackways was now less uniform, ranging from 15 to 20 m. They appear to have divided properties fronting Watling Street, but evidence for these was slight with the single exception of Building 60.

Building 60 (Fig. 15, Pl. VIII)

This was situated between 281 and 286–7 m east adjacent to trackway 654. It was about 5.50 m wide, its length north–south being unknown (at least 6.50 m) as it ran beneath the modern hedgerow along Watling Street and was not fully excavated. The structure was of timber and had originally at least four bays separated by posts supported on large circular pads of stones (Pl. VIII), set into pits varying between 50–80 cm deep and 70–100 cm wide (Sections, Fig. 16). Two rows of five posts were excavated, the northern pair having another post between them (42), giving the gable additional support. Also associated with the building were three post-holes (Nos. 624, 628 and 632) shallower than the main supports and perhaps indicating the position of a central division. There was no evidence for intermediate walls between the main posts although on the west side a sleeper beam, assumed to relate to an earlier structure, may conceivably be a sill. The lack of evidence for post-pipes in the holes confirmed their function as pads and therefore raises questions as to the method of construction and means of stability (Fig. 17). The posts on one side match those on the other so it is probable that each pair was joined by a tie-beam. Although the north–south divisions (1.60 cm centre to centre) were fairly regular, the opposite post of a pair was sometimes askew from the right angle. However, the north–south centre-line between both rows of posts was very regular and it seems likely that the five pairs of posts and connecting tie-beams were stabilized by a wall-plate on which the common rafters rested. The lack of evidence for intermediate walling may be merely a consequence of ploughing but more likely, perhaps, is that the structure was clad in timber planks or wattles fixed with wooden pegs (nails were not found in quantity). Lack of tiles or slates suggests a thatched roof.

The function of the building must remain a matter for speculation but it was probably a barn. A single hearth found on the east side need not necessarily indicate a domestic use. If it was for habitation more traces of ovens and rubbish would have been found. It could have been another one or two bays longer. It is impossible to tell how late the building ran owing to plough damage, but it is likely to have continued into the early fourth century and may have remained when the cemetery to the north extended its area.

Post-holes of Phase 6 structures along the roadside were found elsewhere in Area 1 but they did not form any logical plan. The re-introduction of industrial activity is represented

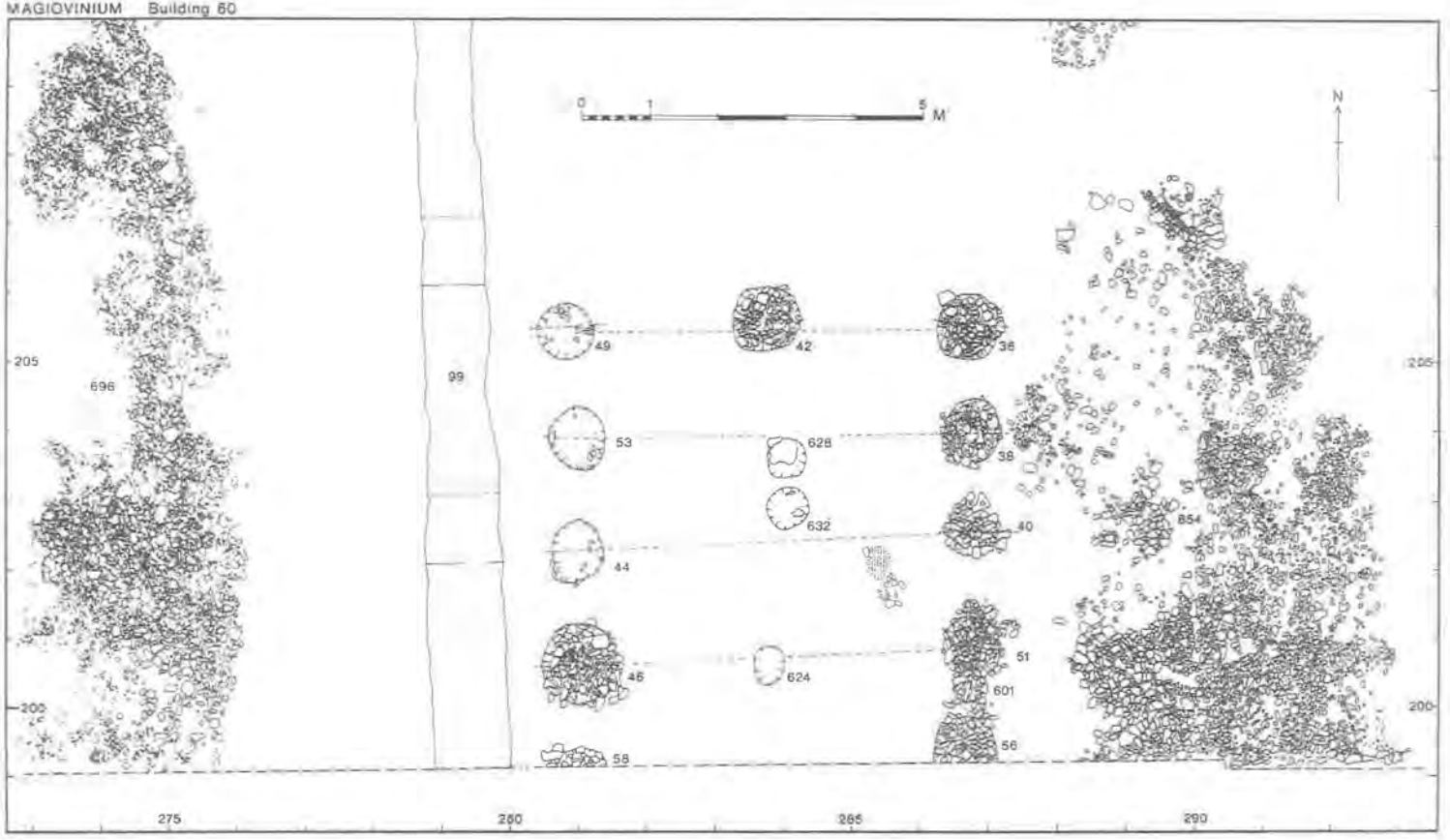

Fig. 15. Plan of Building 60 with associated trackways to east and west; Site 17, Area 1.

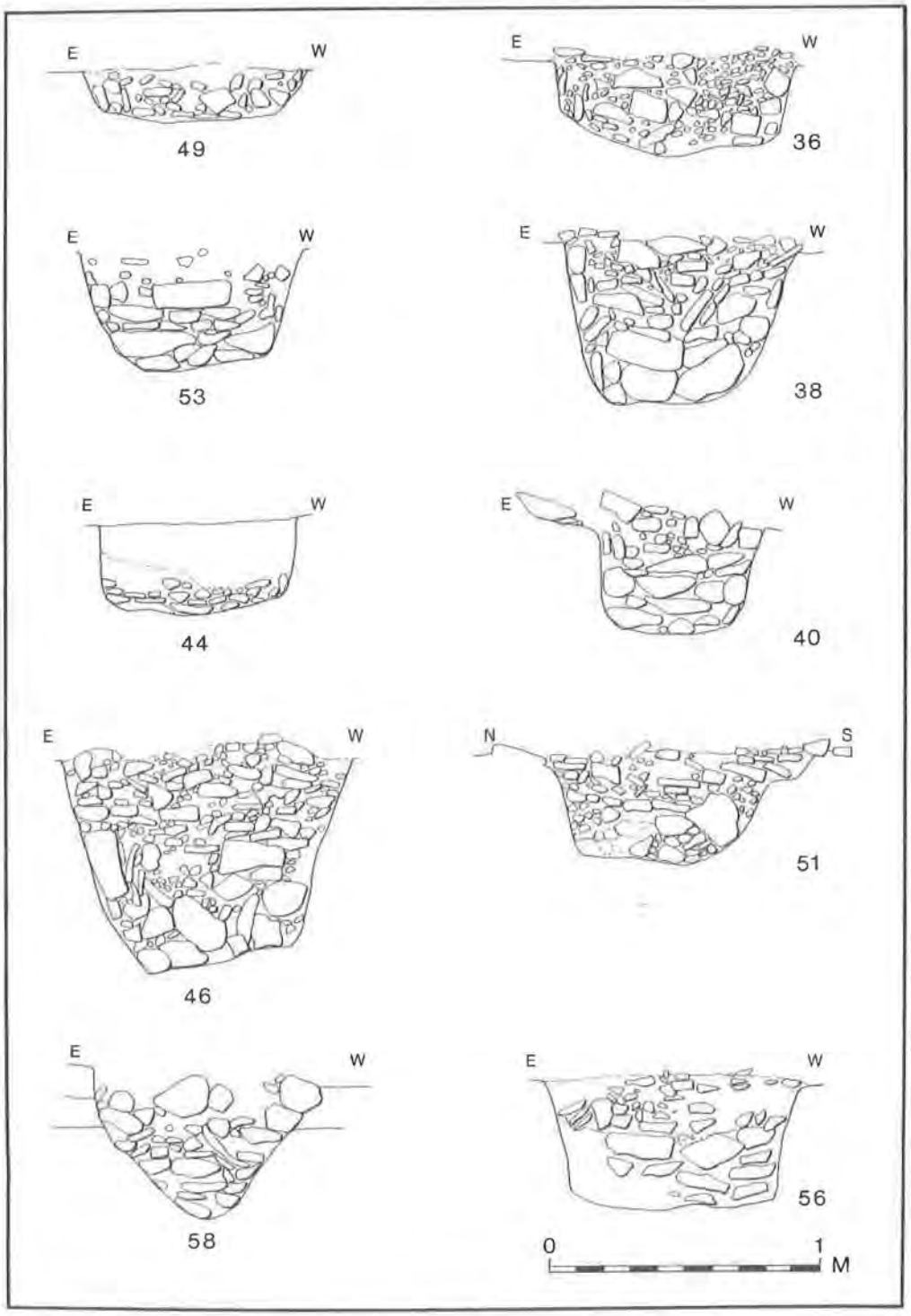

Fig. 16. Sections through post-holes, Building 60; Site 17, Area 1.

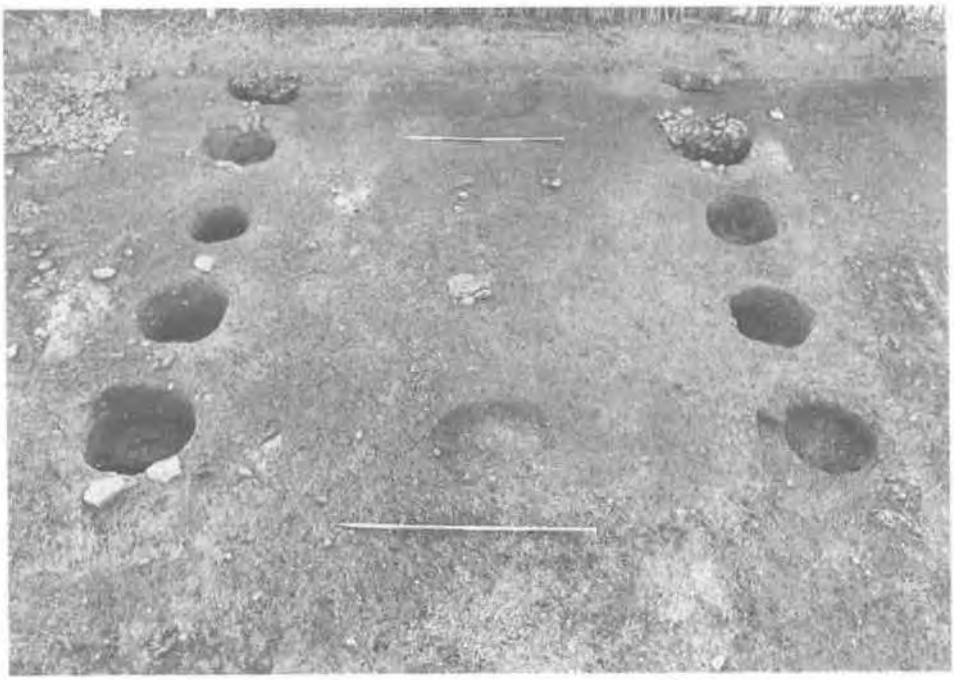

Plate VII. Site 17. Building 60. Overall view south. (Photo CEU)

Plate VIII. Site 17. Building 60. Post-pad 38. View south. (Photo CEU)

Plate IX. Site 17. Skeleton of a horse. (Photo CEU)

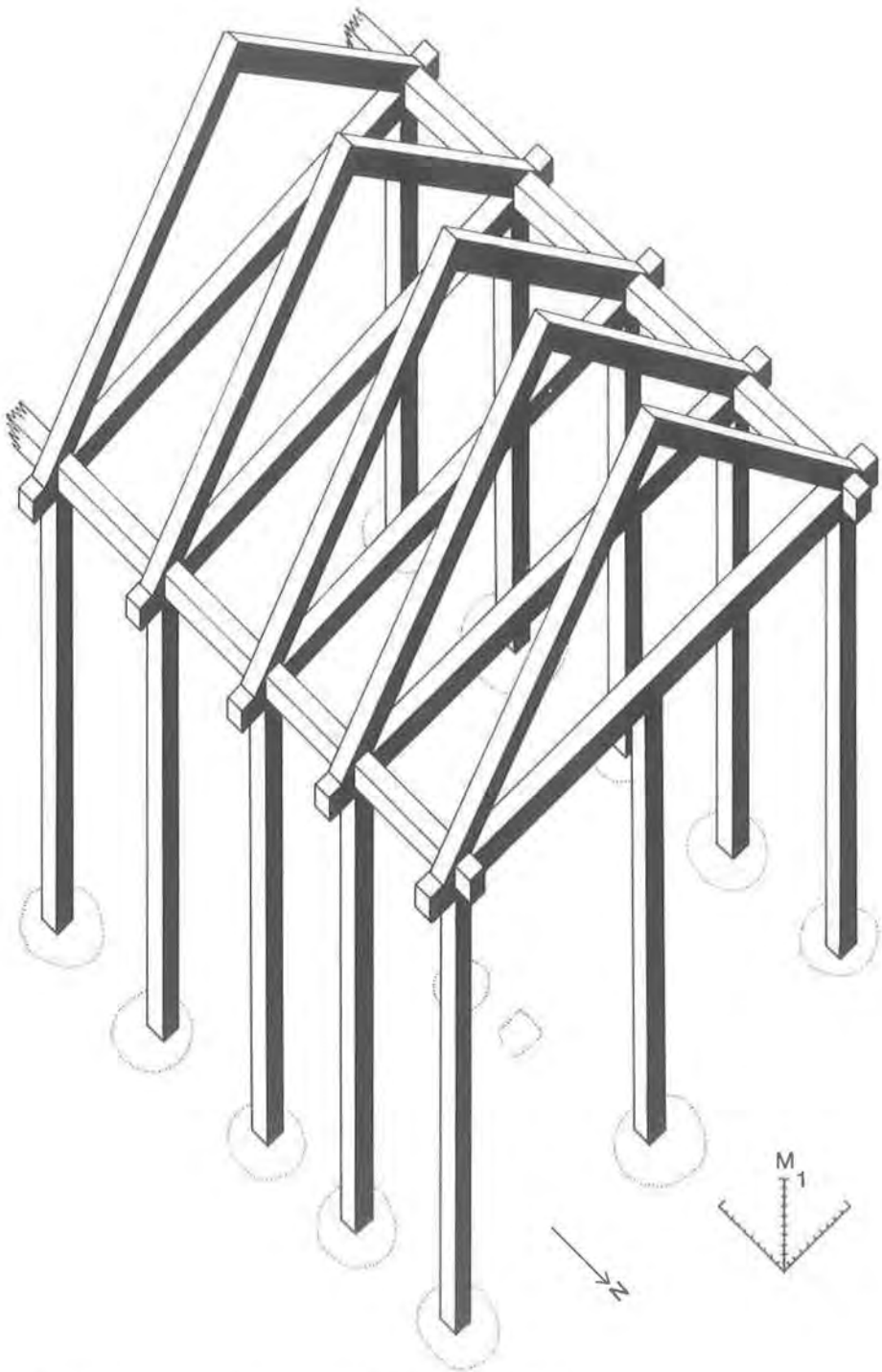

Fig. 17. Reconstruction drawing of Building 60; Site 17, Area 1.

by spreads of scorched clay found at *c.*300 m east (not shown on plan) perhaps evidence that the town could not be contained within its new limits and traders were allowed to expand. How far eastwards later occupation is to be found is uncertain—Hedley Pengelly's excavation in 1970 of a trench situated at *c.*355 m east located a line of stones interpreted as a wall but which is more likely to be another trackway. No trackways have been found on Area 2 further east, nor evidence for later buildings.

Phase 7

Many of the allotments and trackways in Area 1 were abandoned when the cemetery was enlarged (Fig. 18). Initially the cemetery appears to have had defined limits, its northern extent being an east–west ditch (1894), situated at about 260 m north, which was recut in the fourth century. The southern boundary was close to the road. On the east side no graves were found beyond north–south gully 1507 at about 300 m east; the western limit is not known.

The graves were of two types; three, Nos. 1518, 1817 and 996, without grave-goods, were oriented east–west, the first with head to the east and the others head to the west. One of this group (1518) lies to the north and 'outside' the assumed northern boundary. The other graves, of which 22 have been located, were oriented north–south, heads to south, without coffins and without grave-goods, excepting Grave 1519 which had a bone comb (No. 98, Fig. 27). It is difficult from such a small sample to read significance in their distribution, but a north–south 'row' including 1564, 1895, 1865, 1886, 1890 and 1871 appear to be separated from the other graves by a 5 m wide gap. It is possible that this gap indicates evidence for a path leading into the fields further north (both gullies here were now silted-up), especially since its alignment is a continuation of trackway 696 (Fig. 15). Furthermore, terminals 1816 and 1846 of east–west ditch complex 1894, defining the assumed north boundary to the cemetery, stopped at the same alignment, further supporting this hypothesis. Also of interest was the presence of two skulls buried, perhaps without ceremony, in gully 1878 just beyond the north boundary, and the skeletons of a mother and child in grave 1871. As none of the graves had ritual deposits it was impossible to date them. A further complication regarding date was the remote chance that the burials were medieval and victims of the hangman nearby at Galley Lane (Fig. 2). Accordingly, samples from both east–west (212) and north–south (1564) oriented graves were submitted for C14 analysis which suggested that the north–south graves were of late third/early fourth century and the east–west burials were late fourth century. The results, expressed as DELC 13, AGE bp and bp–1950, are given in accordance with the method outlined in Harwell Notes Sheet NS/1/75:

HARWELL REF	SENDERS REF	TYPE	DELC 13 (‰/10)	AGE bp (Yrs)	bp–1950
2935	17/1564	Bone	–21.6	1660±80	ad 290
3174	17/212	Bone	–21.8	1550±90	ad 400

The skeletons were studied by Miss Janet Henderson of the Ancient Monuments Laboratory (AML Report No. 3548) and her detailed observations are available in archive form. The small sample size makes deductions about the population unreliable, but there were more females than males and a noticeable absence of juveniles or sub-adults compared to the number of infants. Women dying in childbirth might account for the higher ratio of women to men. Of the graves, few were notable except 1871 which contained the skeletons of an adult and a juvenile aged 2–4 years. The position of the east–west graves north of those oriented north–south might suggest that the cemetery had expanded beyond its original northern limit represented by ditch 1894, and also suggests that a separate cult and burial custom now prevailed.

In many of the ditches, especially the upper filling of No. 1894 (Fig. 18), were very large numbers of animal bones, kindly identified by Mrs A. Locker. Of significance are the bones from horses, many of which were found in semi-articulated positions suggesting that portions of carcases were being dumped, the ditches providing a useful, if unhygenic, void to be filled. The general picture which emerges is one of worn-out horses meeting their end in knacker's yards alongside Watling Street, their

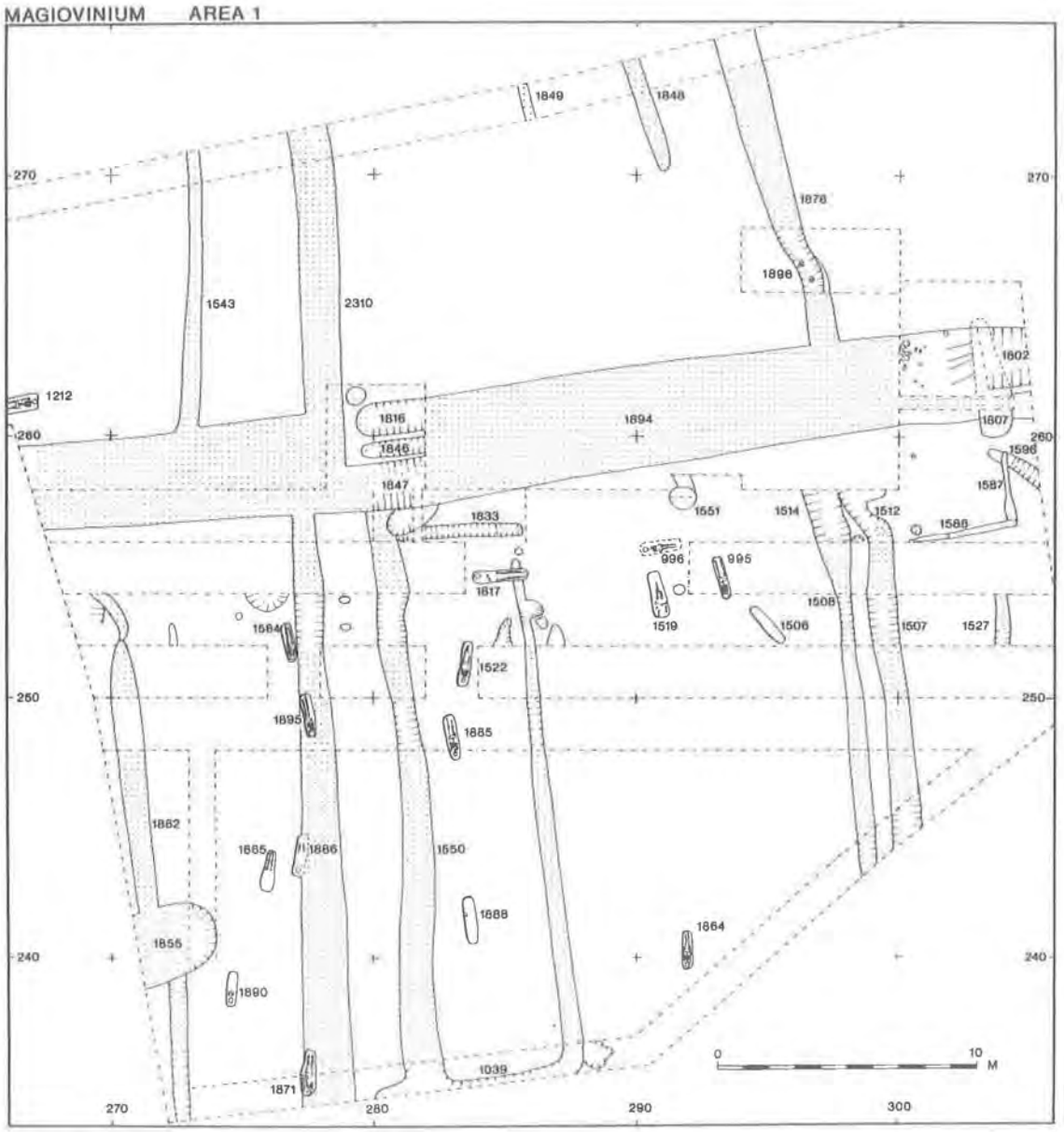

Fig. 18. Plan of cemetery; Site 17, Area 1.

meat possibly stripped for consumption and their skins used by various traders. Magiovinium, sitting astride Watling Street, would have been a major centre for the supply and change of horses, which could have pastured on the meadows. Apart from a general trade obtained from travellers using Watling Street, Magiovinium may have been a centre associated with the sand industry.

Very large deposits of sand are to be found two miles south of Magiovinium and hauliers would be required to transport the material to villas and towns, especially Verulamium; the

yellow sand found there is possibly from this general source. Sand from the Woodwich and Reading beds is available locally to Verulamium but it is rarely in 'clean' deposits, and is usually mixed with gravel, and pale yellow/grey in colour. Leighton Buzzard and its area provides a source of 'pure' yellow-orange sand easily extracted. A consequence of this trade would be a need for iron-traders and smiths, as demonstrated by the furnaces, and possibly cartwrights.

This trade was not confined solely to the north-west, south-east route along Watling Street however. The Ouzel, flowing north to link with the Great Ouze, must also have borne traffic as did a road discovered on Site 18 leading from Magiovinium to the north-east probably to link up with Harrold in Bedfordshire, and further afield Irchester on the River Nene; trading from the Harrold area is attested by the pottery, much of which was from the Harrold Kilns.

Site 18

Site 18 (Fig. 1) is situated *c.*500 m north-west of Site 17, on land previously owned by Dropshort Farm. Excavations were first made there by others in 1975 and features found interpreted as sleeper beams, possibly belonging to a fort of the XIV Legion (see p. 4). This was a rash assessment considering that all the samian found, apart from a single sherd of Flavian date, was second century.

In 1977 a length of the easement was trial trenched for a distance of about 300 m but, as on Site 17, flooding was a serious problem and it was not possible to bottom features. When an attempt was made to bottom a pit by rapid machining the sides of the pit melted away as quicksand. The main feature is a Roman road with allotments on either side similar to those on Site 17. The archaeological story is also much the same but simpler—there is no evidence for occupation earlier than the Flavian period.

Summary of Phases

1. Construction of the road and layout of allotment system.
2. Construction of huts over road ditches.

Phase 1

The Roman road runs on a north–south alignment (Fig. 19) and led directly south towards Dropshort Farm and presumably the main gate into Magiovinium. Its northern route is uncertain, possibly it linked with Harrold, Beds and eventually, perhaps, Irchester on the River Nene. It appeared as a distinct camber *c.*8 m wide defined on either side by shallow U-shaped ditches. It was built-up with deposits of fine gravel and had, on later levels, a metalling of cobbles (Pl. X). The make-up was possibly taken from nearby because to the east and west were three large pits, that on the west (Section 119, Fig. 20) being *c.*8 m wide by at least 2 m deep, possibly quarries for the extraction of suitable hoggin. Trace of a fourth pit was found at *c.*530 m east by 50 m north (not shown on plan) with gullies associated with the allotments cutting across its fill. The pits therefore appear to be an early feature of the site but remained open as ponds or convenient places to dump rubbish for some considerable time.

Alongside the road, as at Watling Street, were traces of allotments defined by narrow gullies, some very regular and possibly timber-lined. The plots were *c.*20 m wide by possibly 60 m deep, the gullies draining into a deep ditch running parallel to the road. However, traces of intermediate gullies may indicate the depths of the plots to be 30 m—again a similar size and distribution to those on Site 17. A geophysical survey by the Ancient Monuments Laboratory (AML Report No. 3012) shows allotments south of the excavated area. Of significance, possibly, is that the present field system shares the same orientation as the Roman; perhaps the presence of these has influenced the later topography.

Phase 2

The road ditches were recut in the late first or early second century, but as on Site 17 were soon allowed to silt up, for they were never recut; they had horizons of occupation material sealing them, and contained an admixture of pottery up to the mid fourth century. These horizons were associated with hearths and

Plate X. Site 18. Surface of Roman road. View east. (Photo CEU)

Plate XI. Site 18. Burial pit 44. Publication Pot Nos. 370–2. (Photo CEU)

cms

Plate XII. Site 17: (a) intaglio with parrot, small find No. 158 and (b) iron signet ring with cornelian intaglio portraying Ceres, small find No. 159. (Photos: (a) A. M. Laboratory, (b) Institute of Archaeology, Oxford)

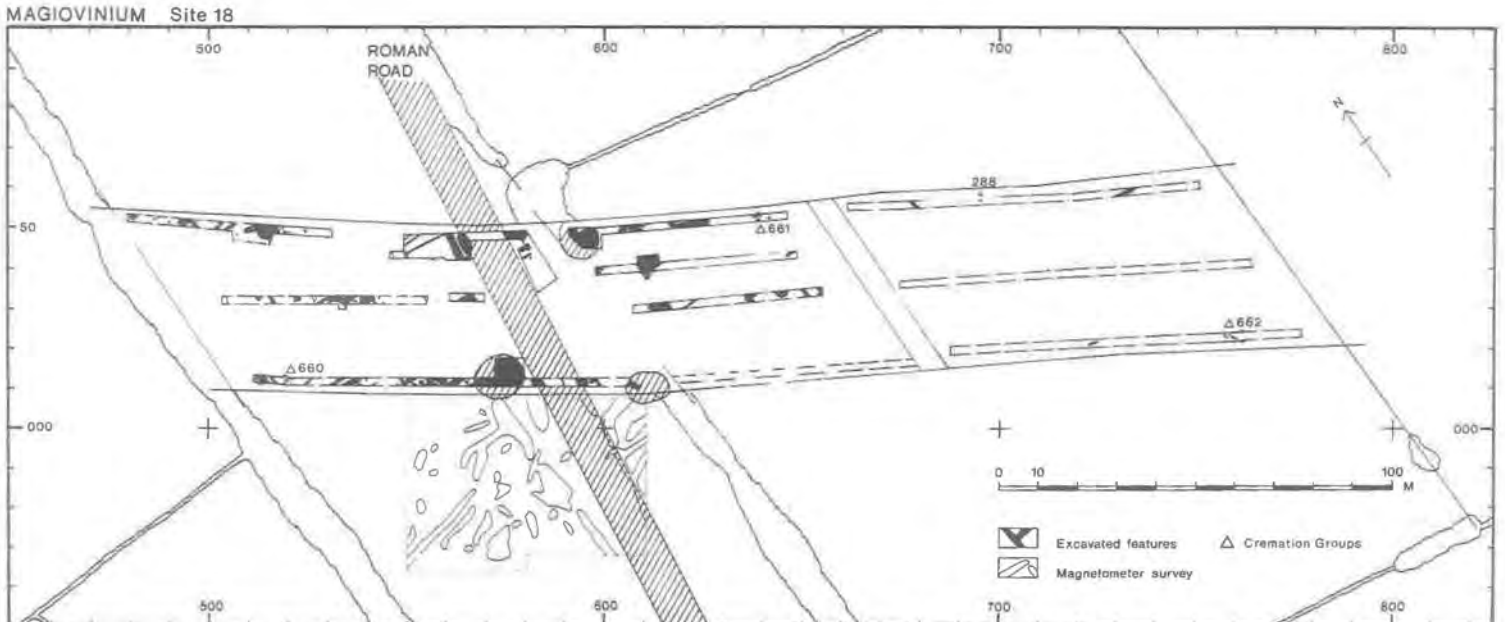

Fig. 19. Overall plan of features; Site 18. The route of the Roman road is shown hatched.

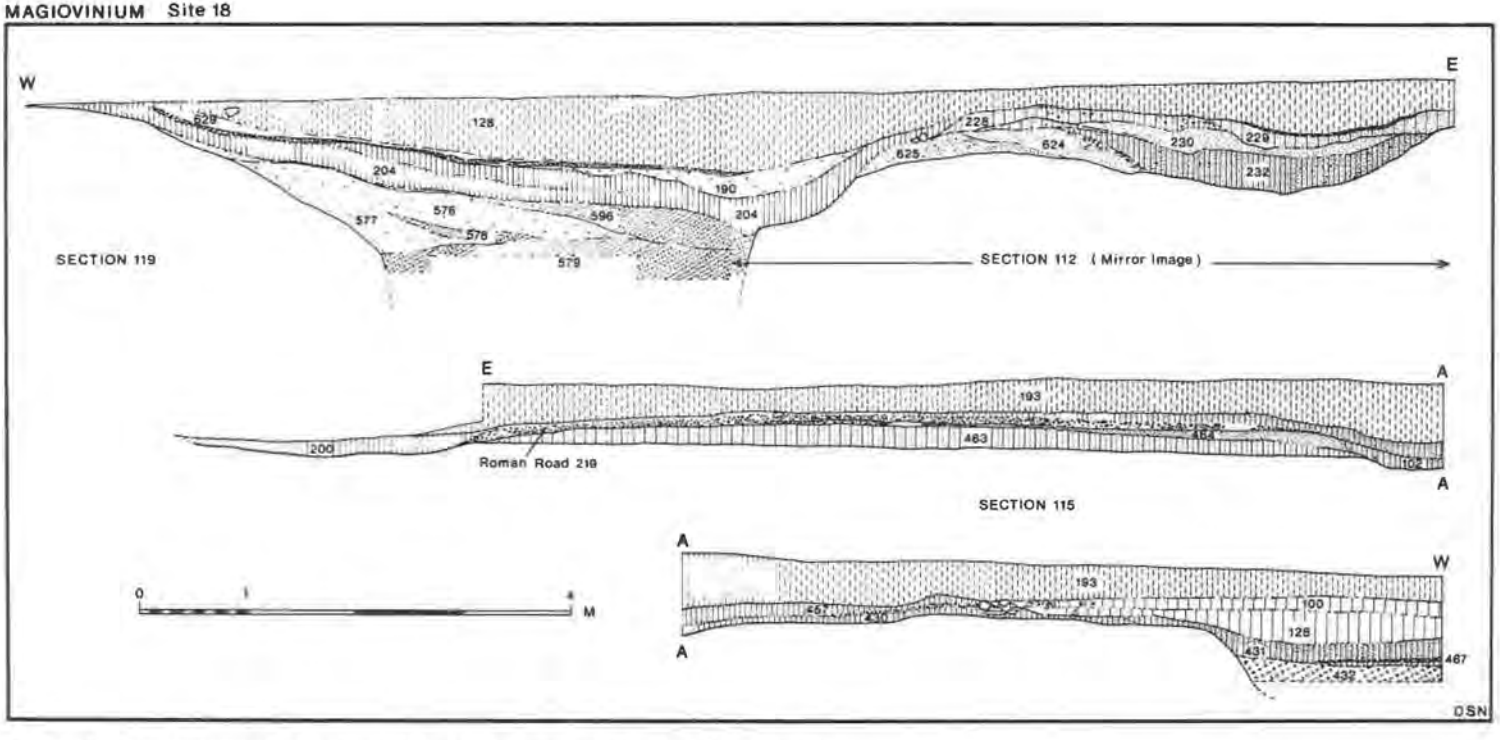

Fig. 20. Sections across pits (Section 119) and Roman road (Section 115); Site 18.

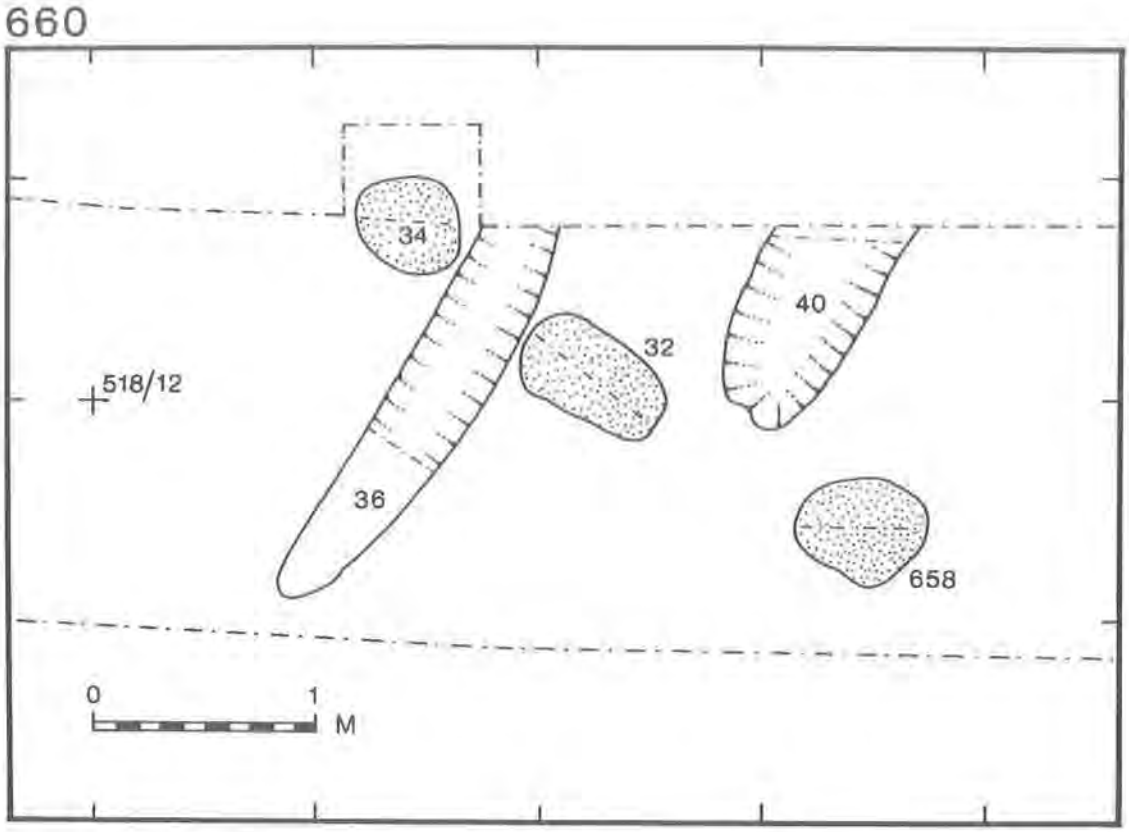

Fig. 21A. Cremation burials, Group 660; Site 18.

limited quantities of slag (but far less in quantity than Site 17) indicating industrial activity close by. Gully 395 situated at 558 m east by 47 m north cut the road ditch and contained a coin of Claudius II (AD 268–70).

Among the 2.8 kg of samples recovered from Site 18 were two basic types—smithing and fuel ash slags, often dribbles. There was a hearth bottom (No. 496) 10.5 cm in diameter. Among the small finds related to this activity was an iron object (Fig. 28, No. 104) identified as an unfinished hammer-adze. It was found in the upper levels of a filled-in quarry, located at *c.*575 m east by 12 m north.

To the rear of these properties, close to the 60 m field limit on both sides of the road, were four cremation groups perhaps representing separate family plots. The first (660, Fig. 21A), situated at *c.*520 m east by 12 m north, had three pits, Nos. 32, 34 and 44, all with a cooking pot holding ashes. No. 32 had the base only of a cooking pot surviving (366, Fig. 47) but No. 34, apart from an urn (367), also had an ovoid beaker (368) and a samian cup from a Drag. 35 of Flavian date (pot 369). An analysis of the bones by Janet Henderson of the Ancient Monuments Laboratory has shown the burial to contain two cremations, that of an adult and a juvenile. In general however the sample sizes of the unburned bone were too small for detailed analysis. In addition to an urn (370), Pit 44 (Pl. XI) had a white-ware flagon (371) and a south Gaulish Drag. 18 dish (372) signed by the potter Masculus dated to the early second century. The next group, 661 (Fig. 21B), was situated on the opposite side of the Roman road at *c.*640 m east by 53 m north and appears to have had six burials, two of which

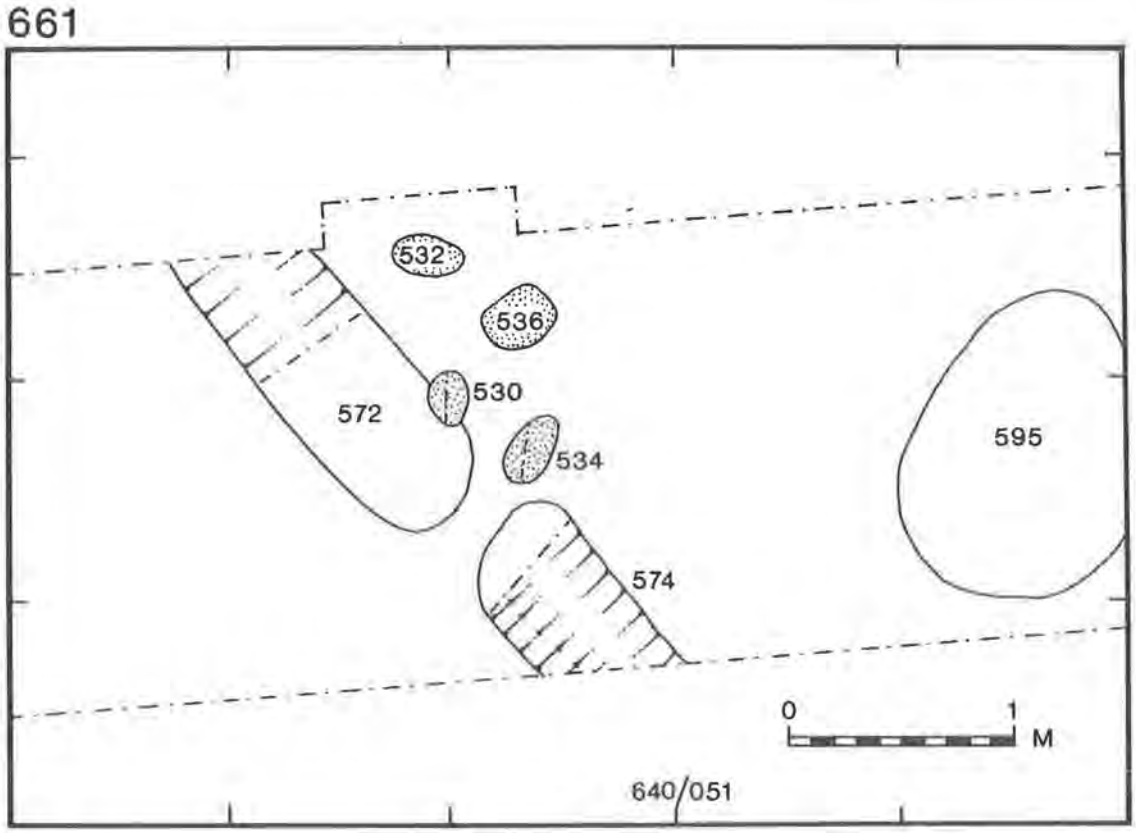

Fig. 21B. Cremation burials, Group 661; Site 18.

were accidentally machined-out and their exact positions unfortunately unrecorded. Again, the ashes were contained in urns and accompanied by beakers and dishes (Fig. 47). Burial 530 was associated with an urn (373), a beaker (374), and a samian Drag. 36 dish (375) from central Gaul and dated to the Antonine period. The grave cut the filling of the allotment boundary ditch. Burial 532 had an urn (376) with a Trajanic south Gaulish Drag. 31 dish stamped Paterclus. Grave 534 had a large urn only (378) and Grave 536 a large urn (379), a beaker (380) and a samian dish Drag. 18/31 (381) stamped Nicephor, dated *c.*AD 100–20, containing a mid first-century brooch (No. 14, Fig. 23).

Another group, 662, of 11 cremations (Fig. 21C) was found at 728 m east by 23 m north; and another single example located at 695 m east by 57 m north. The ashes were not in urns nor accompanied by grave goods.

The coarse pottery and samian in each group appears to be consistent in date, yet the dates of the various graves range from Trajanic to Antonine; it is possible therefore that each group is a small family burial plot in use for some seventy years. Future excavations might reveal similar groups at the back of each allotment.

By contrast to Site 17, Site 18 produced a relatively higher proportion of fourth-century pottery, in particular from L492 and L505, the upper levels of Pit 491 situated at 611 m east by 41 m north. While there is a possibility that this represents rubbish being brought from the town for dumping into the hollows, the likelihood of

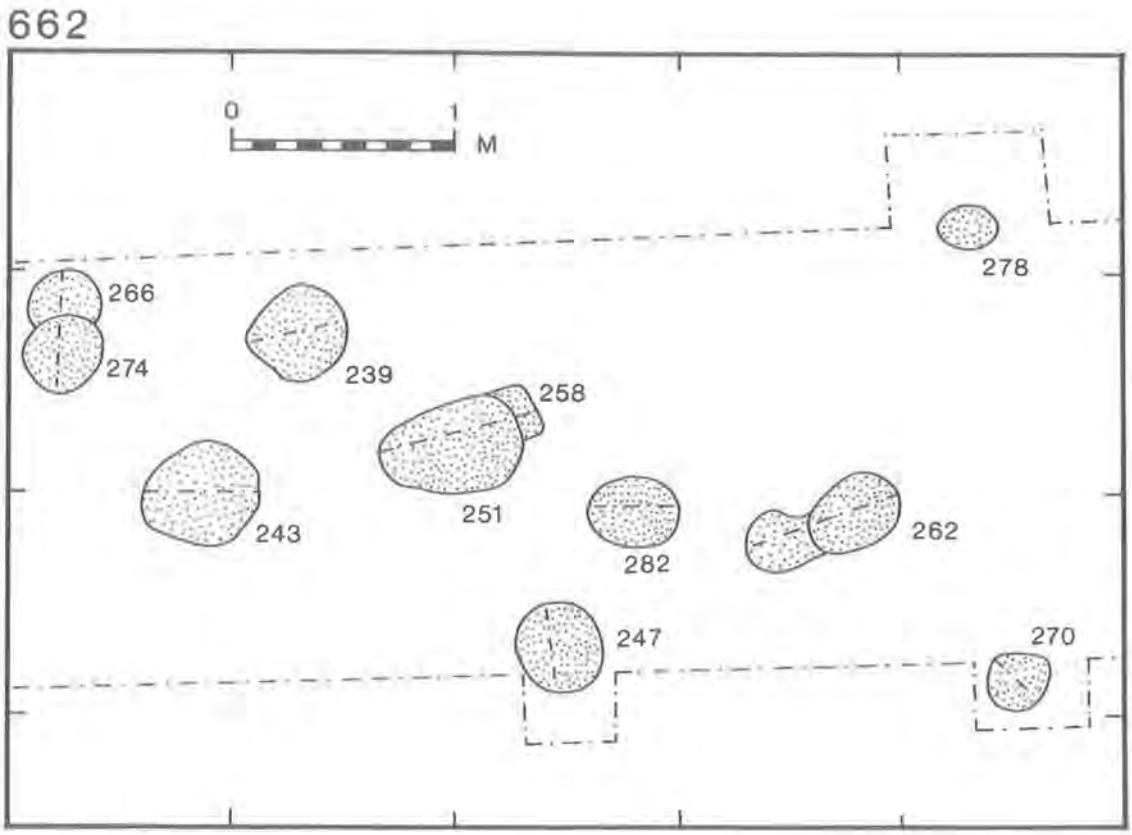

Fig. 21C. Cremation burials, Group 662; Site 18.

fourth-century occupation should not be dismissed, especially as horizons (for example L96/100) with third and fourth-century pottery were found along both sides of the road (but not, unfortunately, associated with obvious structures, apart from the occasional large stones which could have been pads for sleeper beams). If this is so, the structures were of the most ephemeral kind. However, the coins from Pit 491 are later than elsewhere and range up to AD 387–8, further evidence perhaps that the pit was being used as a dump for material from the actual town and therefore that the site itself was now abandoned.

General Discussion

The presence of native wares indicates pre-conquest occupation at Magiovinium, perhaps associated with a settlement or settlements alongside the River Ouzel. It may signify a movement into the valley from the hill-fort at Danesborough situated to the north-east. Late Iron Age pottery production centres at Caldecotte and Saffron Gardens, 2 km apart, on the opposite bank of the river, suggest that Iron Age settlement was extensive.

The Roman fort probably formed a bridgehead on the secured river bank as part of the north-west advance by XIV Legion. It is likely to have been quickly abandoned or reduced in strength, although the aerial photographs indicate a secondary phase, possibly a reconstruction related to the Boudiccan rebellion of AD 61–2.

It is significant that Watling Street is neither oriented on the fort nor with the agricultural plots east of the town. The explanation is that the road originally ran towards the fort in a

more southerly direction and that the agricultural plots were set out at right angles to it. However, Iron Age features might indicate that the orientation of the fort was partly dictated by the existing landscape. A realignment of Watling Street, bypassing the fort, took place *c.*AD 70; the new routes took the road across the existing agricultural plots.

As with many forts a *vicus* grew up close by, but it is questionable whether its focus was the fort itself. More probably, perhaps, the native British took advantage of the military and civilian trade which a river crossing would have generated. The result was a settlement situated closer to the river crossing than the fort; a settlement which gradually expanded along Watling Street with ribbon development stretching over 0.8 km south-east of the river. Indeed, Roman occupation found in the garden of Tylers by the writer on the western outskirts of Little Brickhill 1.2 km from the river points to considerable roadside trade.

River trade is possibly indicated by the movement of pottery from the kiln-sites at Harrold, Felmersham and Clapham, Beds. Although the River Ouzel follows a circuitous route from Magiovinium, and roads are far more direct, river traffic might explain the frequency of querns from Snettisham, Norfolk, which could have been transported via the River Ouse (for further comment related to pottery production and river transport see p. 95).

The field plots appear to have been laid out with a degree of regularity which raises the question as to whether their size is based on a standard unit of measurement. Two sizes of plot are present, the larger measuring *c.*38 by 56 m and the smaller half the size, *c.*19 by 56 m. When these areas are converted to square feet, 22,895 and 11,447 respectively, and further converted to Roman square feet, 23,810 and 11,905, we find that they approximate to a Roman *dextans* (24,000 Roman square feet) and a *quincunx* (12,000 Roman square feet), both described by Columella (Book VI, 9–13). The *dextans* amd *quincunx* represent respectively ten twelfths and five twelfths of the *iugerum* (28,800 Roman square feet). Attempts to make comparisons between the classical model and units of land in Roman Britain are fraught with difficulties, but it is interesting to note that field divisions based on 19 m have been noted at Towcester (C. Woodfield, pers. comm.). Whatever the measure, uniformity of plot size is evident. This pattern of development is typical of many towns which originated as forts. Typical too is that the construction of defences around Magiovinium truncated much of the peripheral settlement. Such fortifications are to be found around many small towns including nearby Towcester and are generally believed to have been the work of Albinus, who proclaimed himself Augustus in AD 196. However, the evidence from Towcester suggests the construction of defences *c.*AD 170–80 (C. Woodfield, pers. comm.). Although no excavations have been made on the defences of Magiovinium to suggest a similar date, the clearance of roadside settlements at the end of the second or beginning of the third century may suggest that the two events were linked. For lack of excavation within the town our knowledge of the defended area is pitiful—most chance finds coming from beyond the defences. The northern half of the town is under pasture, the southern arable, but here there is a marked lack of heavy building rubble (compared to many other sites of Roman buildings), merely the occasional fragment of worked ironstone. It is probable that this indicates that the buildings within the town were modest—nor were significant quantities of building stone found in the extra-mural areas. The picture which emerges is one of a very busy town, probably with a *mansio* or posting station, where the messengers of the Imperial post changed horses. The rest of the settlement is likely to have been seedy and relatively poor.

At Towcester, in contrast, a number of well-constructed masonry buildings are known, one being situated beneath St Lawrence's church (C. Woodfield, pers. comm.). Architectural and sculptural fragments are also known (e.g. Woodfield 1978, 76, Fig. 2), including a stone head of an underworld goddess possibly from a funerary monument (Toynbee 1962, Pl. 52),

which suggest considerable wealth and the presence of monumental buildings. The situation of Towcester on two roads, Watling Street and a main route leading south to Alchester and Dorchester-on-Thames, may have brought increased trade and prosperity but other economic factors may be relevant. As already stated Towcester lies on the limestone belt, rich agricultural land which was exploited by a network of villas and country estates. It was a market for villa produce and a purveyor of supplies.

The closest known villas to Magiovinium are those at Newton Longville (SP 8431) and Bancroft, Milton Keynes (SP 827405), respectively 4.8 and 8.8 km from the town. However, these sites are both on the west side of the Ouzel and, even though poorer class settlements have been found, there are no known villas between Magiovinium and the villas along the Icknield Way following the north-facing slope of the Chilterns. Such sites, for example, include Totternhoe (Mathews 1963) and Ivinghoe, 16 and 21 km respectively. What is the reason for this dearth of villas? It may merely reflect lack of fieldwork but possibly the soils were less fertile and agriculture uneconomic. Large areas east of Magiovinium are heathlands which stretch from Heath and Reach in the south, northwards over much of the Woburn estate including Aspley Heath and Wavenden. Eastwards, along Watling Street the heath stretched for about 9 km. Although such areas were farmed in medieval times this type of soil was not favoured in the Roman period. A study of the distribution of villas elsewhere in Britain shows their marked absence on the heathlands of Berkshire and Surrey and, even where villas do exist, e.g. Rapsley, Surrey (Hanworth 1968), they are of a poorer class and related to the production of tile.

Magiovinium, therefore, is unlikely to have been a market for villas and must have concentrated primarily on its *mansio* and transport-related trades.

Roman Watling Street, though presumably better metalled, was probably not unlike Daniel Defoe's description of the same stretch of road. He writes: 'On this road after you are passed Dunstable . . . you enter the deep clays, which are so surprisingly soft that it is perfectly frightful to travellers . . . indeed the great number of horses every year killed by the excess of labour in those heavy ways has been such a charge to the country, that new building of causeways, as the Romans did of old, seems to me to be a much easier expense' (Defoe 1738). Horses would have rested and grazed in roadside plots while others ended their lives here worn out by toil.

THE FINDS

The Coins

The official excavation produced 138 coins identified and reported here by P. E. Curnow. During the two years following the completion of the excavation, as the roadworks continued, the area was systematically worked by members of the Bletchley Metal Detector Club who recovered 601 coins. The bulk of these were kindly identified by P. Woodfield, and others by M. Petchey of the Bradwell Abbey Field Centre. Every care was taken to avoid the same coins being identified twice. The report therefore is divided into two parts, excavated coins, by P. E. Curnow and metal detector finds, by P. Woodfield. The two groups are shown independently on the coin histograms (Fig. 22A, B). A further subdivision of the excavated coins (but not the histograms) was made to establish whether the coins on Sites 17 and 18 were of similar loss. Discussions on the groups by the separate authors follow each coin list. Combined lists appear in the site archive, the coin identification number corresponding to the numbers in brackets following each entry. Two coin hoards from Magiovinium worthy of mention include 251 fourth-century pieces found in 1962 (Griffiths 1967, 27–8) and 296 denarii found in 1967 at the junction of Watling

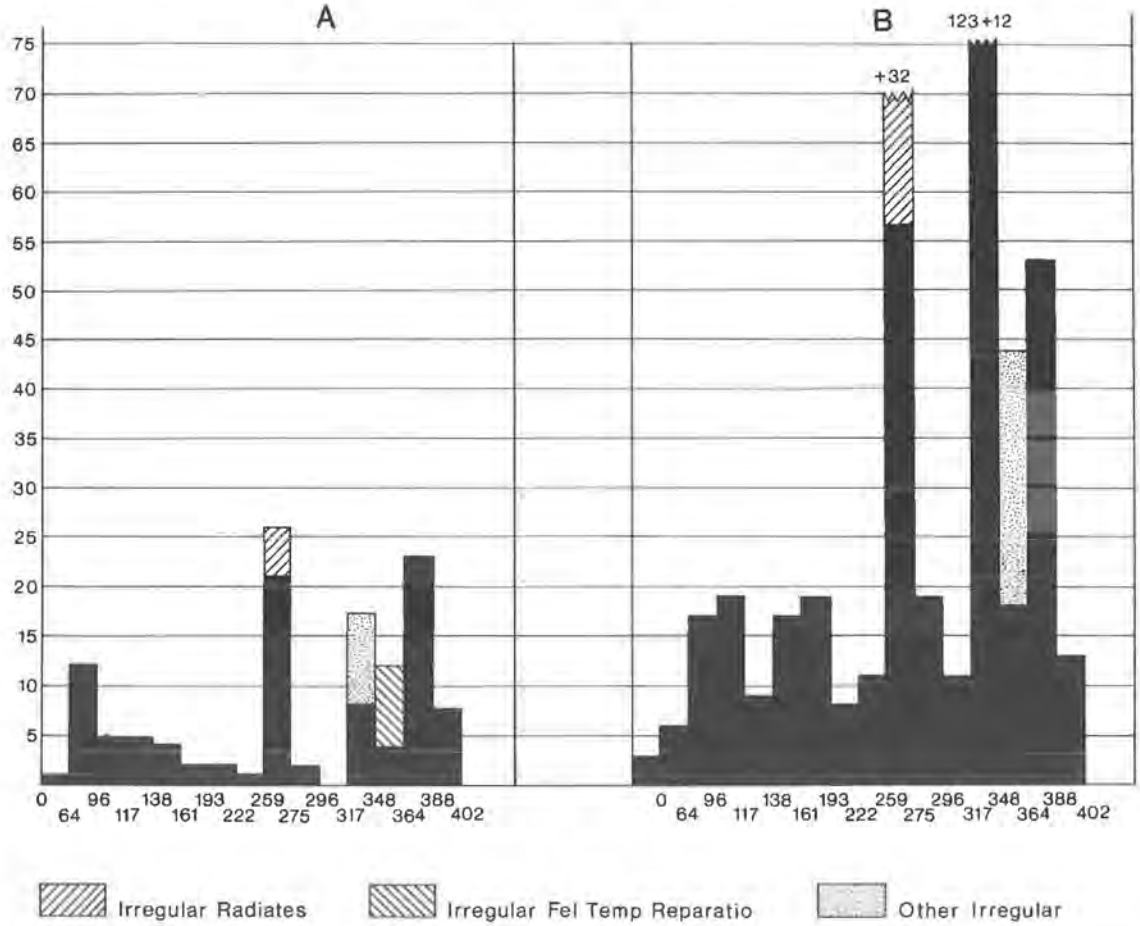

Fig. 22A. Histogram showing coins recovered from official excavations on Sites 17 and 18 and (B) coins recovered by metal detectors from Site 17 (for Fig. 22C see p. 36).

Street and Galley Lane. The latest coin of these was dated AD 183 (Crawford 1969, 113–22). In 1987 more coins from this hoard were recovered by metal-detector users. (D.S.N.)

The Excavated Coins
by P. E. Curnow

The evidence of coin loss suggests more or less continuous activity from the mid first century to the late third century (Fig. 22A). The number of coins of Flavian and Trajanic/Hadrianic date may be misleading as most of them are heavily worn and some could have been lost in the second or even in the third century as is the case with the Antonine pieces. Nevertheless the presence of the three Julio-Claudian pieces and the two denarii tends to confirm that there was activity in the first century.

The later third century is represented, but neither regular nor irregular radiates are present in exceptional numbers. Their considerable degree of wear suggests proper monetary use.

The early fourth century shows a remarkable paucity: only two pieces, both of 320–3, are earlier than the bulk Constantinian issues of the 330s and even then there are few regular pieces

present; for example not a single 2-victories type of Constantius II and Constans, although there is quite a high proportion of copies of the types most prone to imitation. This is in contrast to the distribution shown in the metal detector list where early to mid fourth-century coins are much better represented.

In the excavated coin list the second half of the fourth century clearly represents a relative peak of activity with substantial numbers of the Houses of both Valentinian I and Theodosius I being present.

Site 17

No.	*Issuer*	*Date*	*Type and refs*
1 (1)	Claudius	41–54	As. Grade II copy, *RIC* 66
2 (3)	Nero	54–69	As. 329
3–5 (4–6)	Vespasian	69–79	Dup, Asses [2] 478 (Obv. 2), 497/528, 764
6–8 (7–9)	Flavian	69–81	Den, Dup or As. +, As
9–11 (10, 11, 13)	Domitian	81–96	Sest, Dup, As. 412, 392/3 + As
12–16 (14–18)	Trajan	98–117	Den (? plated – R/seated fig) Sest 489, Dup [2] of 411 [+ 1] + Dup or As.
17, 18 (19, 23)	Hadrian	117–138	Sest uncertain, Dup or As.
19, 20 (25, 26)	Faustina I (Ant. Pius)	138–161	Sest, 1118 (Posth. issue?) + Dup or As.
21 (28)	M. Aurelius	161–180	Sest 1097/9
22 (29)	Lucilla (M. Aurelius)	161–180	Sest 1736
23 (30)	Septimius Severus	193–211	Den. 510a
24 (31)	Geta	198–212	Den. uncertain
25, 26 (32, 33)	Severus Alexander	222–235	Den [2] cf 53/61/73 + 1
27 (38)	Irreg. posth. Claudius II	*c.*270	Ant. cf 261
28 (39)	Postumus	259–268	–
29 (40)	Victorinus	268–270	–
30–36 (41–47)	Tetricus I	270–273	Ant [7] 79, 100, 100/1, 126 + [3]
37 (48)	Tetricus II	270–273	Ant. cf 248
38–41 (51–52, 54–55)	Uncertain Radiates	*c.*270	– [4]
42, 43 (56, 57)	Irregular Radiates	*c.*270	– [2] (Tet I type, Laetitia rev. type)
44 (60)	Carausius	287–293	Ant. 930, overstruck – O/. on female head

No.	*Reverse*	*Date*	*Mint*	*Obverse*	*Refs*
45 (62)	CAESARVM NOSTRORVM	320–321	Siscia	Cr	*RIC* VII 165
46 (63)	BEATA TRANQVILLITAS	320–323	–	c.I	–
47 (64)	GLORIA EXERCITVS (2 Stds)	330–335	Lyons	Cs II	*LRBC* I 194
48 (65)	Irregular " " "	330–335	–	–	– (clipped to AE.4)
49–51 (66–68)	Irregular Victory on Prow	330–335	–	C'opolis	– [3](1 cf 66) 1 Hybrid – O/C'opolis R/Gloria Exercitus 2 Stds + 1
52, 53 (69–70)	Irregular Wolf and Twins	330–335	–	Urbs Roma	– [2] (AE3, AE4)
54 (71)	GLORIA EXERCITVS (1 Std)	335–341	–	H. of CI	–
55–58 (73–76)	Irregular GLORIA EXERCITVS (1 Std)	335–341	–	–	– [4] AE 3 cf 134, + IAE4 + 2 minims

No.	*Reverse*	*Date*	*Mint*	*Obverse*	*Refs*
59 (77)	PAX PVBLICA	337–341	Trier	Helena	*LRBC* I 112
60 (78)	SECVRITAS REIP	*c.*337	Rome	Cn	*LRBC* I 584/588
61 (79)	VIRTVS AVGG NN	338–339	Trier	Cs.II	*LRBC* I cf 109
62 (82)	FELICTAS REIPVBLICE	350–351	Lyons	Mg.	*LRBC* II 209/11
63–70 (84–91)	Irregular Fel Temp Reparatio	*c.*353 +	–	cf Cs II	– [8] (Small AE 3 [4], AE 4 [2], Minims [2])
71–75 (92–94, 96, 98)	GLORIA ROMANORVM	364–378	Arles	V.I Vn [2]	*LRBC* II 489, 500, 526
			Aquileia	Vn	*LRBC* II 984
			–	V.I	–
76–83 (101–103, 105–109)	SECVRITAS REIPVBLICAE	364–378	?Lyons	G	*LRBC* II cf 299
			Arles	V.I, Vn	*LRBC* II cf 502, 514 (O/Abraded)
			Siscia	Vn	*LRBC* II 1395 (MM. var E)
			–	V.I H. of V.I [3]	– [4]
84–86 (112–114)	GLORIA NOVI SAECVLI	367–375	Arles	G [3]	*LRBC* II 503, 511, 524
87–92 (116–121)	VICTORIA AVGGG	388 +	Trier	T.I	*LRBC* II 163
			Lyons	H. of T.I	*LRBC* II 389–98
			Arles	Ar	*LRBC* II 566/9
			–	Ar	– [3]
93–94 (122–123)	SALVS REIPVBLICAE	388 +	Rome	H. of T.I	*LRBC* II cf 799 + 1
95–98 (124, 126–128)	Uncertain 4th century	–	–	–	– [4] (Small AE 3, AE 4 [3])
99–103 (132–135, 137–138)	Uncertain	–	–	–	– [5]

Site 18

No.	*Issuer*	*Date*	*Type and refs*
1 (2)	Nero	54–68	Dup cf 284
2 (12)	Domitian	81–96	Dup
3–5 (20–22)	Hadrian	117–138	Sest uncertain, Dup uncertain [2]
6 (24)	Antoninus Pius	138–161	Dup 993
7 (27)	Faustina II (Ant. Pius)	138–161	Dup or As. cf 193–4
8 (34)	Gallienus	259–268	Ant 166
9–11 (35–37)	Claudius II	268–270	Ant [3] 18/19, 85/6, 103
12–13 (49–50)	Tetricus II	270–273	Ant [2] cf 248, 270/2
14 (53)	Uncertain Radiate	*c.*270	–
15–16 (58–59)	Irregular Radiates	*c.*270	[2] minims
17 (61)	Allectus	293–296	Ant. VII, 33 (Regular but PVX)

No.	*Reverse*	*Date*	*Mint*	*Obverse*	*Refs*
18 (72)	GLORIA EXERCITVS (1 Std)	335–341	–	H. of C.I	–
19–20 (80–81)	FELTEMP REPARATIO (Phoenix)	348–350	Trier	Cn 2	*LRBC* II 36, 39

No.	*Reverse*	*Date*	*Mint*	*Obverse*	*Refs*
21 (83)	Irreg. Victoriae Dd Nn Aug et Cae	351–353	–	cf Mg./Dec.	– (AE 4)
22–25 (95, 97, 99, 100)	GLORIA ROMANORVM	364–378	Rome	Vn	*LRBC* II 727
			Siscia	G	*LRBC* II 1392
			–	H. of V.I [2]	– [2]
26–28 (104, 110, 111)	SECVRITAS REIPVBLICAE	364–375	Aquileia	V.I	*LRBC* II cf 967
			–	H. of V.I [2]	– [2]
29 (115)	SPES ROMANORVM	387–388	–	Fl. victor	*LRBC* II cf 158
30, 31 (125, 129)	Uncertain 4th century	–	–	–	– [2] (AE4)
32–33 (130–131)	Irregular 4th century	–	–	[ ]	AE4 [2]
34–35 (136–137)	Uncertain	–	–	–	– [2]

Coins Discovered by Metal Detectors 1979–81
by P. Woodfield

Following the completion of the excavations and before the new road was finished there was opportunity for members of the Bletchley Metal Detectors Club to scan the area of Site 17. The assistance of Mr G. Foster and members of the club is gratefully acknowledged. They were made aware of the archaeologists need to see the total assemblage of finds and accordingly 601 coins were submitted for examination. It might have been expected that the method of recovery would favour coins of large module but there is no evidence for this; the coin histogram (Fig. 22C, p. 36) shows no distortions.

Coins of special interest include three Republican issues (Nos. 1–3) found close together on undisturbed ground opposite the Pullman Café. One was found with an archaeologist present, possibly from the bottom of a field ditch containing first-century pottery. Whereas Republican silver is not unusual on British sites, and remained in circulation well into the post-invasion period, the appearance of a bronze of *c.*90 BC is unusual, the nearest parallel being a bronze from the extensive site of Ashfurlong, near Olney, Bucks (D. Mynard, pers. comm.). Punch marks on the obverse of the Magiovinium piece might indicate a secondary function which served to keep it in use.

The dupondius of Antonia (No. 9) is an uncommon find. The ratio between identifiable and extremely worn first and second-century bronzes is normal, the high proportion of the latter resulting from their continued use in circulation well into the third century. The plated denarius of Caracalla (No. 121) is also interesting—there appears to be a deliberate attempt to erase certain letters of the VOTA SVSCEPTA X legend to form another, but uncertain, reading.

Some coins of the mid and late third century clearly show their silver content or have been silver washed. Of the later coins there are no pieces worthy of special comment, the pattern of reigns, reverse types and mints being quite normal. Representation in the post-Roman period is again normal. There are no Saxon coins, while the medieval period is represented by a thin scatter of commoner coin types.

Histogram

The 581 Roman coins have been plotted (Fig. 22C) on an annual coin-loss-per-1000 histogram as described by Casey (1974). To the histogram have been added the unidentified coins spread over their appropriate periods and the irregular coins (shaded), again spread over the accepted periods of their use. In addition, the 473 closely identified coins have been plotted on a separate histogram (Fig. 22B, p. 32), based on the Curnow–Reece time divisions, for comparison with the excavated coins.

This exercise shows a fairly normal rate of coin loss. The early periods are, in comparison with histograms for other local sites, strongly represented, particularly the two Trajanic decades; this might just be due to the better chance of detection offered by the larger flans. Again, the second half of the third century peaks are quite normal and the only point of significance is the relatively low peak reached in

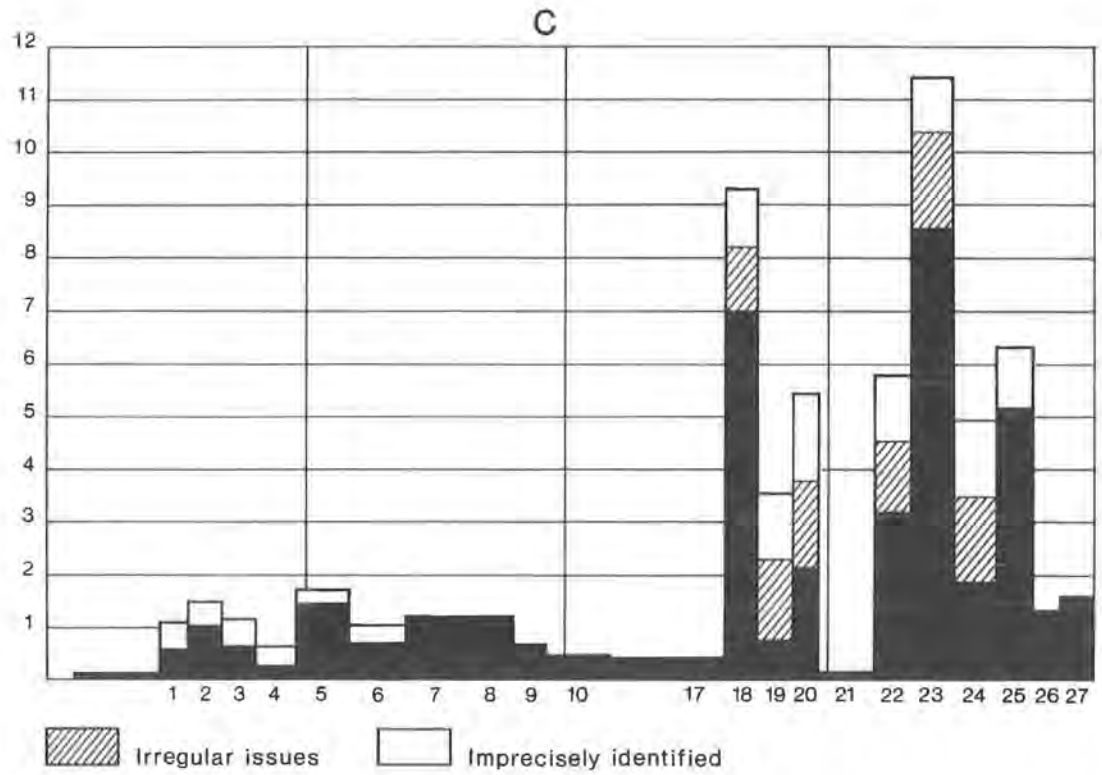

Fig. 22C. Histogram showing coins recovered by metal detectors from Site 17 showing annual loss per 1,000 (for Fig. 22A & B see p. 32).

period 23 where on local sites the coin loss annually per 1000 may be expected to reach between 25 and 30. The relatively substantial number as late as period 27 (388–402) indicates that this suburban area probably continued to be occupied to the very end of the Roman period. In this respect the area differs from the outer suburbs of Towcester, where occupation is of similar character (plot divisions containing insubstantial buildings where a variety of manufacturing trades, particularly metal-working, were pursued) but where occupation apparently ceases in period 25 (364–78). In neither Magiovinium nor Towcester suburbs is the peak in the Gallic period reached as it was in the walled area of Towcester and other urban sites.

Unstratified Coins 1979–81

No.	*Issuer*	*Date*	*Type and Refs*
1	Gallius/Bala	*c.*92 BC	Den, Crawford 336/1
2	D Silanus L F	*c.*90 BC	As, Crawford 337/5 or 339/1
3	Julius Caesar	*c.*40 BC	Den, Crawford 526/2
4	Tiberius	14–37	Den, Seaby 16a
5	Gaius	37–41	Sest, *RIC* 26
6–8	Claudius	41–54	Den, Asses [2], *RIC* –, 66 [2]
9	Antonia	51–54	Dup, *RIC* 8

10–18	Nero	54–68	Dup [2], Asses [7], *RIC* 329 [3], + Dup 2, Asses 4
19–20	Galba	68–69	Den, As, Seaby 330 + As
21–23	Vespasian	69–79	Den, Dup [2], Den AD 70 Seaby 359a, Dup AD 76 *RIC* 753a + Dup
24–26	Domitian	81–96	Sest, Asses [2], Sest + As AD 86 *RIC* 371 + As
27	Nerva	96–98	As
28–45	Trajan	98–117	Den [3], Sest [3], Dup [4], Asses [8], Seaby 114–121, 372, 372a; *RIC* 417, 454, 479, 498(?) + Sest 2, Dup 2, Asses 7
46–54	Hadrian	117–138	Den, Sest [4], Dup [2], Asses [2], Den. Seaby 625a; Sest *RIC* 749 + 3; Dup 2; As *RIC* 934, [3]
55–68	Antoninus Pius	138–161	Den, Sest [7], Dup [3], Asses [3], Seaby 439b; Sest *RIC* 648 + 6; Dup 898 + 3; As *RIC* 577a + 1
69–71	Faustina I (Ant. Pius)	138–161	Den, Sest, As, *RIC* 1103a, 1172
72–78	M. Aurelius	161–180	Sest [5], Asses [2], *RIC* 934, 1337 var + Sest 3, As *RIC* 884 + 1
79–85	Faustina II	161–180	Sest [5], Asses [2], *RIC* 1642, 1686, 1688 [2] + Sest + As *RIC* 1639 + 1
86–90	Commodus	180–193	Den, Sest, Dup [3], Seaby 647; Sest *RIC* 1588; Dup *RIC* 420, 1554 + 1
91–117	1st or 2nd century		Sest [7], Dup, Dup or As [3], Asses [16], – 27
118–119	Septimius Severus	193–211	Den [2], Seaby 203 plated, 475
120	Julia Domna	193–211	Den, Seaby 150
121–124	Caracalla	196–211	Den [4], Seaby 183 plated, 562, 672, 688
125	Elagabalus	220–222	Den, Seaby 1b
126–128	Severus Alexander	222–235	Den [3], Seaby 239, 254, 530/2
129	Gordian III	238–244	As, *RIC* ? 305
130–131	Philip I	244–249	Dup, As, *RIC* 162b + Dup
132	Philip II	247–249	Ant, –
133–135	Valerian	253–260	Ant [3], Seaby 53/5, 143/4 + 1
136	Mariniana	*c.*253	Ant, *RIC* 6
137–152	Gallienus	259–268	Ant [16], Seaby 5a, 138, 167 [2], 265/72 [2], 562/3, 667–9, 685–710, 715–42, 727a + 5
153–154	Salonina (Gallienus)	253–268	Ant [2], Seaby 39, 129a/130 (silvered)
155	Valerian II (Gallienus)	260–262	Ant, Seaby 12
156–164	Claudius II	268–270	Ant [9], *RIC* 54 (?), 63 (?), 104 (?), 109 + 5
165–169	Postumus	259–268	Ant [5], Seaby 213, 365/6, 239/266 + 2
170	Marius	268	Ant, *RIC* 6
171–181	Victorinus	268–270	Ant [11], *RIC* 71, 78 (?), 114, 118, 130 + 6
182–188	Tetricus I	270–273	Ant [7], *RIC* 87, 126, 148 [2] + 3
189–191	Tetricus II	270–273	Ant [3], *RIC* 259, 270, 272
192	Aurelian	270–275	Ant, –
193	Aurelian or Probus	270–275	Ant, –
194	Probus	276–282	Ant, –
195–196	Carus	282–283	Ant [2], *RIC* 124c, 125 var
197	Carinus	282–283	Ant, *RIC* 155

No.	*Issuer*	*Date*	*Type and refs*
198–203	Carausius	287–293	Ant [6], M&S 41–43, 98–117, 129, 264/5, 325–332 (?) + 1
204–210	Allectus	293–296	Ant [3], Quin [4], M&S 5, 23, 33, 55, 128–30 + 2
211–212	Maximianus	286–305	Ant [2], *RIC* 432, 595
213–241	Uncertain 3rd century		Ant, – 29
242–273	Irregular Radiates	*c.*270	Ant [32], – 32, types of Claudius [6], Postumus [2], Tetricus [3] + 21

No.	*Reverse Type*	*Date*	*Mint*	*Obverse*	*Refs*
274	Uncertain	305–311	–	Galerius	–
275–277		309–324	–	C.I [3]	– [3]
278	GENIO AVGVSTI	311–313	Alexandr.	Max.II	*RIC* VI 149b
279	GENIO POP ROM	309–313	Trier	Lic.I	*RIC* 845 var
280	VIRTVTI EXERCITVS	311–313	Antioch	Lic.I	*RIC*
281	VIRTVS EXERCIT	311–313	Trier	C.I	–
282–283	SOLI INVICTO COMITI	312–313	London	C.I [2]	Cohen 523
284				C.I	–
285	Irregular			C.I	–
286–287	VICTORIAE LAETAE PRINC PERP	318–320	Trier	C.I [2]	– [2]
288–290				C.I [3]	– [3]
291	CAESARVM NOSTRORVM	320–321	Siscia	C.II	
292			Constant.	Cr	*RIC* 68
293			Trier	Cr	*RIC* 68
294–296	BEATA TRANQVILLITAS	320–323	Trier	C.I [3]	– [3]
297			Arles	C.I	–
298			Lyon	Cr	–
299–301				C.I [3]	– [3]
302	PROVIDENTIAE AVGG	324–330	Trier	C.I	–
303			–	C.II	–
304	PROVIDENTIAE CAESS	324–326	London	Cr	*LRBC* I 4
305–306		324–330	Trier	C.II [2]	*LRBC* I 33 + 1
307–308			–	C.II, Cs	– [2]
309–310	CONSTANTIVS CAESAR	324–330	Trier	C.II/Cs	*LRBC* I 20/23–4
				Cs	*LRBC* I 23
311–316	GLORIA EXERCITVS 2 Standard Types	330–335	Trier	C.I [3]	*LRBC* I 54, 60, 62
				C.II [3]	*LRBC* I 56, 73 + 1
317–318			Lyon	C.II [2]	*LRBC* I 181–2 + 1
319–321			–	C.I, C.II, Cs	– [3]
322–327			Trier	Not attrib.	*LRBC* I 48–86, 72–75 + 4
328			Arles	Not attrib.	–
329			Lyon	Not attrib.	*LRBC* I 186–9
330–340			–	Not attrib.	– [11]
341	Irregular 2 Std				–
342–347	Victory on Prow	330–337	Trier	C'opolis [6]	*LRBC* I 52, 59 [2], 66 [2], 77
348			Arles	C'opolis [1]	*LRBC* I 410
349–350			Lyon	C'opolis [2]	*LRBC* I 185 + 1

351–361			–	C'opolis [11]	– [11]
362–363	Irregular				– [2]
364–366	Wolf and Twins	330–337	Trier	U. Roma [3]	*LRBC* I 76 [2], 58
367			Lyon	U. Roma	*LRBC* I 184
368–369			–	U. Roma [2]	– [2]
370	Irregular				–
371–375	GLORIA EXERCITVS (1 Std)	335–341	Trier	C.II/Cs, Cn [2], Cs [2]	*LRBC* I 131 + 1 *LRBC* I 89, 108a
376			Lyon	C.II	*LRBC* I 229
377–382			–	C.I, C.II [3], Cs	– [6]
383–389	Irregular 1 Std			C.II/Cn [7]	– [7]
390	Quadriga	337–341	–	C.I	
391–393	PAX PVBLICA	337–341	Trier	H. [3]	*LRBC* I 128, 119 + 1
394–395			–	H. [2]	– [2]
396	SECVRITAS REIPVBLICE	337–341	–	H.	
397–399	PIETAS ROMANA	337–341	Trier	Th. [3]	*LRBC* I 120 [2], 129
400			–	Th.	
401	VIRTVS AVGG NN	337–341	Trier	Cn	*LRBC* I 117
402–406	VICTORIAE DD AVGG Q NN	341–346	Trier	Cn [5]	*LRBC* I 149-50 [2], 151, 159 + 1
407			Trier	Cs	*LRBC* I 139
408			Trier	Cn/Cs	*LRBC* I 137–8
409			Arles	Cn	*LRBC* I 456
410–411			Lyon	H. of C.I, Cs	– [2]
412			–	Cn/Cs	
413–414	VICTORIA AVGVSTORVM (?)	341–346	?Lyon	Cs/Cn, Cs	*LRBC* I 254/5
415	VOT XV MVLT XX	341–346	Antioch	C.II/Cn	*LRBC* I 1399?
416–419	H. of Constantine			Cn [2], Cs, Cr	– [4]
420–421	GLORIA ROMANORVM	350–351	Trier	Mg [2]	*LRBC* II 54, 53–5
422	SALVS DD NN AVG ET CAES	350–353	Lyon	Mg	*LRBC* II 247
423–425	VICTORIAE DD NN AVG ET CAE	350–353	Amiens	Mg, Mg + Dc. [2]	*LRBC* II 8–11
426	VICTORIAE DD NN AVG ET CAES	–	–	Dc.	
427	Irregular				–
428–429	VOT V MVLT X	351–354	Amiens	Mg + Dc.	(1 a forgery?)
430	FEL TEMP REPARATIO	351–354	Siscia	Cs	*LRBC* II 1218
431			Thessal.	Cs	–
432–437			–	Cs [4], H. of C., Mg	– [6]
438–440	Irregular FH				– [3]
441	SPES REIPVBLICE	351–361	–	Julian	
442–463	H. of C.I; Irregular	330–350		H. of C. [22]	– [22]
464–465	GLORIA ROMANORVM	364–378	Trier	G [2]	*LRBC* II 127 + 1
466–467			Arles	V.I/Vn [2]	– [2]
468–473			Lyon	V.I/Vn [2], V.I, V.I–G, G, H	– [6]

No.	*Reverse*	*Date*	*Mint*	*Obverse*	*Refs*
474–476			Aquileia	V.I [2], V.I/Vn/G	*LRBC* II 1017 + 1
477			Siscia	Vn	*LRBC* II 1395
478–490			–	V.I [2], V.I/Vn [5], Vn [3], V.I–G [2], V.II	– [13]
491–494	SECVRITAS REIPVBLICAE	364–378	Arles	V.I/Vn [4]	*LRBC* II 490-2 + 3
495–496				Vn [2]	*LRBC* II 483, 522
497				V.I/Vn/G	*LRBC* II 501–2
498			Lyon	V.I/Vn	
499–500			Siscia	V.I [2]	*LRBC* II 1405, 1394
501			Aquileia	V.I	*LRBC* II 1001
502–504			–	V.I/Vn [2], Vn	– [3]
505	SALVS REIPVBLICAE	367–375	–	V.I	*RIC* 20a
506	FELICITAS ROMANORVM	367–375	Aquileia	Vn/V.I/G	*LRBC* II 1007–10
507	GLORIA NOVI SAECVLI	367–375	Arles	G	*LRBC* II 503
508			–	G	–
509	VOT XV MVLT XX	378–383	–	G	*LRBC* II 378
510–511	H. of Valentinian I	364–383	–	Vn, H. of V [5]	– [5]
517	GLORIA ROMANORVM	388–392	Aquileia	V.II	–
518			–	V.II	–
519–527	VICTORIA AVGGG	388 +	–	V.II [4], A [4], V.II/T/A	*LRBC* II 392/5 + 3
528	SPES ROMANORVM	388–394	Aquileia	Hon.	*LRBC* II 1108 type
529		393–395	?Nicom.	Hon.	–
530–543	Irregular later 4th century				– [14]
544–581	Uncertain 4th century				– [38]
582–585	Medieval				– [4]
586–601	Post-1500, jettons and coin weight				– [16]

Other Finds

One hundred and sixty finds are published, 117 from Site 17, 22 items found in the contractor's spoil heaps with the aid of metal detectors, and 21 from Site 18.

Most objects came from the numerous ditches and pits, many from unstratified contexts, but four—a brooch (No. 5), a bracelet with snake-head terminals (No. 25), a ring (No. 58) and a riveted bone comb (No. 98)—were from burials. Personal items included a selection of brooches, bracelets, finger-rings (two with intaglios), hair pins, ligulae and toilet tweezers; there were no complete sets. Of particular interest are two grooved and one crescentic pendant (Nos. 40–2): they are discussed in detail below. There are very few objects with obvious military associations, with the exception of a scabbard chape (No. 157, Fig. 31) and the pelta-shaped mount (No. 43).

Two iron objects indicate metalworking, namely an unfinished hammer adze (No. 104) and a knife (No. 109), both of which seem to have been discarded for use as scrap. Metalworking is confirmed elsewhere by furnaces, described in the main report (p. 14, Fig. 11).

Other evidence includes a hoard of iron tools comprising two lugged axes, a chisel and a large spoon bit discovered in 1967 close to a hoard of denarii dating from the second century (Manning 1972, 235; Wilson 1968, 192).

The number and range of identifiable iron objects is limited but there are several agricultural implements, for example a spud (No. 106), a spade shoe (No. 108) and a pruning hook (No. 110). Other tools include a fine woodworking gouge (No. 111), a drill bit (No. 115) and various knives. With the exception of a fragment of barb-spring padlock there is a marked absence of keys, and there are only a few items of harness equipment and hippo-sandals. The usual range of structural fittings were found but the fact that they do not occur in great numbers may suggest construction in a native rather than a Romanized style. In addition to the metalwork, building materials included limited quantities of roofing, hypocaust and box-flue tiles, the latter presumably discarded from the town. Fragments of window glass of second and fourth-century types were also recovered.

Without exception the fragments of glass from both sites are very small and in many cases abraded, with only six rim sherds in the entire collection. They are predominantly fragments of bottles lacking any material of quality apart from an amber vessel represented by a handle (AML 7711368) from Site 17. An enclosed bowl (AML 779014) with a thick rolled rim with traces of a handle, and the rim of a bowl in clear white metal (AML 779874) are also of interest (not illustrated).

Six glass beads were found, five in green and the sixth in dark blue metal. A counter in purple glass was the only other glass object. Details of these items are recorded in the site archive.

Apart from the grooved pendants, which are comparatively rare objects, the finds are typical of most Romano-British sites, the brooches indicating activity from the first to the fourth century, which is consistent with the coin evidence. With the obvious exception of items found with specific burials, the finds in general need not be associated with the roadside development but may have been discarded from the town, the ditches being used as rubbish dumps. There are no concentrations of particular classes of object that might suggest trading, although, as already implied, smithing would have supplied a range of basic products. Products traded with the settlement include querns from Snettisham, Norfolk (Fig. 30).

The following abbreviations are used in the catalogue of finds: AML, Ancient Monuments Laboratory (No.); L, Layer (prefixed by Site No. 17 or 18); SL, Section Line; P, Plan; AS, Archive Sheet.

All objects are Roman and all dates are AD, except when otherwise stated. Measurements: except where otherwise indicated, the maximum length of each object is given.

The Roman Brooches

by S. A. Butcher

A full descriptive catalogue will be found in the archive, together with Justine Bayley's notes on her technological study (AML Report No. 4298). Both are summarized here.

Fig. 23

Strip-bow Brooches

1. Brass. Hinged pin. The foot ends in a peg, to which is attached a separate knob (cf. Wroxeter: Bushe-Fox 1916, 22, No. 2). First half of the first century, by analogy with others from southern Britain.
   4.1 cm. AML 7711042. 17-L885, Pit 1442. AS102/SL321.
2. Brass/Gunmetal. The upper half of a Langton Down brooch, with cylinder to hold a spring (now missing). Probably similar to one from Wakerley (Butcher in Jackson and Ambrose 1978, 216, No. 1) belonging to a type common in the first half of the first century and widely distributed in the Roman provinces, although confined to the southern half of Britain.
   3.8 cm. AML 7711196. 17-L999. Unstratified.

(See also No. 102, a strip-bow brooch of iron.)

Nauheim-derivative Brooches

3. Bronze. 4.2 cm. AML 779208. 17-L1.
4. Bronze, badly distorted. 4.7 cm. 17-L2381, Hut 2380 (Fig. 7). AS65/P56.

The type is common in southern Britain in the mid first century (e.g. Camulodunum, Hawkes and Hull 1947, 312, esp. Nos. 56 and 57 for comparison with 3 above).

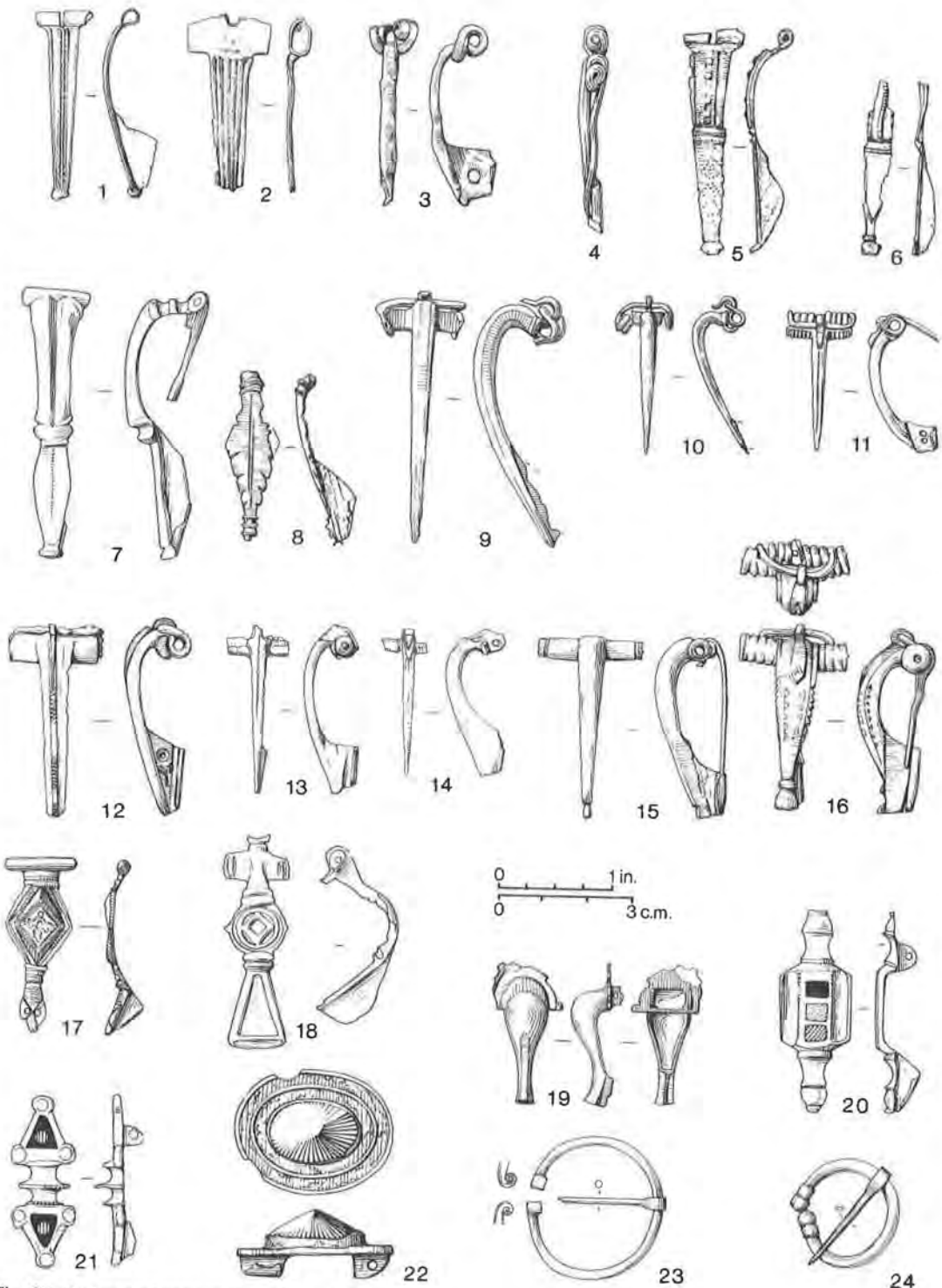

Fig. 23. Objects of copper alloy; Nos. 1–24, brooches. Scale 2:3.

Hod Hill Brooches

5. Brass/Gunmetal, with tinning on front. 5.1 cm. AML 7711176. 17-L1291, Ditch 889, AS107/SL387, 388.
6. 3.9 cm. AML 779890. 18-L510, Pit 656, AS55/SL118.
7. 6.1 cm. Metal detector find.
8. Brass/Gunmetal (cf. Richborough, Bushe-Fox 1949, 112, No. 23). 3.8 cm. AML 7711088, 17-L435, Gully 1120, AS87/190.

The Hod Hill series includes many different patterns but they share the rolled-over narrow tube for the bar holding the hinge. All the variations can be dated to the mid first century and are widespread on the continent as well as in southern Britain.

Colchester Brooches

9. Brass. 5.6 cm. AML 779004. 17-L1.
10. Brass. 3.6 cm. AML 779377. 17-L221, Stone surface 219, AS92/SL265.
11. Brass. 3.1 cm. AML 7711152. 17-L1265.

These brooches share the usual features of the Colchester brooch (cf. Hawkes and Hull 1947, 309): the spring is made from the same strip of metal as the bow and held by a hook turned back at the head, with a short plain crossbar. The type is common in south-eastern Britain in the first half of the first century.

Two-piece Colchester Brooches

12. Leaded gunmetal. 4.2 cm. AML 7711248. 17-L1468, Ditch 2128, AS109/SL395.
13. Leaded bronze. 3.8 cm. AML 7711177. 17-L1315, AS109/SL396.
14. 3.3 cm. AML 7711915. 18-L548, Burial 536 (Fig. 21), AS52/SL108. A similar brooch, unnumbered fragment, drawing only seen.

In this very common type the spring is made separately and threaded through a lug at the back of the head. From many examples, including those from Camulodunum (Hawkes and Hull 1947, 311, Type IV) it can be dated to the mid first century. The sub-type represented by No. 12, with decorated central rib and plain flanges, seems to be particularly common in the counties immediately north of London.

T-shaped Brooches

15. (Leaded) bronze. Hinged. One of the many derivatives of the Colchester type which are to be dated to the second half of the first century on typological grounds. 4.0 cm. AML 779678. 17-L1009, Gully 1008, Area 1. AS47/P38.
16. Leaded bronze. The spring is secured in the 'Polden Hill' manner and there is enamel decoration in small triangular cells on the bow. The distribution of this type is distinctive: it is found in the south and west midlands, South Wales, Dorset and Somerset. There are outliers at Farley Heath (Surrey) and Holt (Clwyd). There is no secure context dating but typologically it could well go back to the later first century.
    4.2 cm. AML 779677. 17-L1013, Ditch 1012, Area 1.

Plate-on-bow Brooches

17. (Leaded) gunmetal. Hinged pin. There is decayed enamel in the toothed cells in the lozenge-shaped plate. This type is well-known on the continent and probably dates from the late first or early second centuries.
    4.0 cm. Metal detector find.
18. Brass. Hinged pin. There would have been enamel decoration in both the central disc and the triangular field on the foot. Similar brooches are found in central and northern Britain. One from the forum at Leicester must have been deposited after 130 (Butcher in Hebditch and Mellor 1973, 45–7) and the indications are of a date in the second half of the second century.
    4.7 cm. Metal detector find.

Knee Brooch

19. Gunmetal. This form of the knee brooch is very common in military contexts on the Rhine–Danube frontier in the later second century (cf. Böhme 1972, Taf. 6 and 7, Riha 1979, Taf. 12) but Miss Bayley points out that this example has enamel and silver on the semicircular head-plate and possibly silver foils attached to the bow. These decorative elements are often found on knee brooches of British origin. The type occurs at Newstead (Curle 1911, 325, No. 30), where it must belong to the Antonine occupation, and on other mainly military sites in Britain.
    3.3 cm. AML 7711243. 17-L1351, over cobbled surface 1343. AS109/SL398.

Plate Brooches

20. Leaded gunmetal. An equal-ended brooch with hinged pin. There is a central rectangular panel with three cells for enamel: red in the outer ones.
    The main features of this brooch are easy to parallel at Nornour (Isles of Scilly, Hull 1968, Nos. 159–72) but the Magiovinium brooch is larger and there are few exact parallels. Brooches from Augst (Riha 1979, No. 1643) and Besançon (Lerat 1956, No. 278) have a similar arrangement of rectangular cells, but both have additional lugs projecting from the side of the plate. However it appears that all these brooches are closely related so that the dated context of the Augst brooch (late first to early second centuries) is probably a reliable indication of the date of this one. The distribution of the general type is wide, including the Rhineland and Pannonia as well as France and Switzerland. It is evidently a product of a continental workshop.
    4.5 cm. Metal detector find.

21. Brass. A complex equal-ended brooch with hinged pin. There are fields of blue enamel in both triangular end-plates, each inset with one white glass spot. This technique does not seem to have been employed by British workshops and there are parallels for this brooch at Augst (Riha 1979, 195, No. 1673, Taf. 64) and in Pannonia (Sellye 1939, Pl. XII, 11) although both have flat centres. There is a close parallel from the temple site at Farley Heath, Surrey, in the British Museum (53. 4–19. 53). The Augst brooch was in a deposit dated late first to late second-century and it is not possible to suggest a closer dating for the Magiovinium brooch than the second century.
    3.8 cm. Metal detector find.

22. (Drawing only seen.) From the drawing this appears to belong to a well-known class of disc brooch which bears a raised conical glass setting in the centre (here noted as being 'purplish'). Some are oval and others round, but there is no significant difference between the two groups.
Although a few are known from the continent (Zugmantel: Böhme 1972, 43; Augst: Riha 1979, 88) they are much more numerous in Britain, where their distribution is mainly in the south and east, although there is a cluster on the Tyne–Solway frontier and outliers from Nornour (Hull 1968, No. 237) and New Grange (O'Kelly 1977, 52, E56.976). Most have been found in fourth-century contexts, but one from Fishbourne was in a late third to early fourth-century deposit (Cunliffe 1971, 106, No. 43) while Zugmantel was abandoned *c.*260.
3.4 cm. AML 779887. 18-L492, Pit 491 (Fig. 19). AS56/SL120.

Penannular Brooches

23. (Leaded) gunmetal; pin brass. Penannular brooches with terminals flattened and rolled back over a plain wire ring have been found on sites dated to the first half of the first century (e.g. Hod Hill, Brailsford 1962, E8), but a number are known from fourth-century or later contexts (e.g. Nettleton, Wedlake 1982, 133, No. 78).
3.2 cm. AML 7711300.
24. (Leaded) bronze/gunmetal; pin bronze/gunmetal. This belongs to a class of brooch with variably knobbed or ribbed terminals; they appear in first-century contexts (e.g. Hod Hill, Brailsford 1962, E2) but as with the last type, seem to have a long life.
2.4 cm. AML 7711346.

Discussion

This group of brooches is perhaps too small to sustain generalization, but it is worth pointing out the noticeable absence of 'local types'. On settlement sites in Britain it is usual to find at least a few brooches which are linked by certain characteristics and which can be shown to originate in the region concerned. The group from Magiovinium is very mixed, as might be expected from its position on a major trunk road, and there seems to be a higher proportion of brooches with a continental origin than usual.

The date range of the group is normal for British sites: a preponderance of first-century types, a few from the second century and one or two which are probably later. This reflects the decline in the use of brooches rather than any local chronology.

Miscellaneous Objects of Copper Alloy
by Angela Wardle

Fig. 24

25. Heavy bracelet with snake-head terminals of fourth-century type. The closest parallel comes from Gadebridge, found in a fourth-century context (Neal 1974, No. 158, Fig. 60); see also Verulamium Theatre (Kenyon 1934, Fig. 12, No. 5), and Colchester (Crummy 1983, 44, Fig. 45, 1710–12).
Diam. 6.4 cm. AML 771404. 17-L2326, from Grave 2325 (Fig. 14). AS75/P113.
26. Fragment of bracelet with incised line decoration and a punched dot and circle motif, characteristic of fourth-century types.
3.8 cm. AML 7711104. 17-L101. Ploughsoil. AS80/SL38.
27. Fragment of bracelet with incised chevron decoration.
5.2 cm. AML 779003. 17-L1. Topsoil.
28. Bracelet terminal with incised horizontal lines and lattice decoration.
7.9 cm. AML 7711180. 17-L1. Topsoil.
29. Bracelet fragment with notched decoration at the edges and incised lines along the spine. At one end is part of a terminal which was pierced by a small hole. Fourth-century, as Lankhills Type E (Clarke 1979, 307, Fig. 37).
4.2 cm. AML 779885. 18-L492, fill of Pit 491 (Fig. 19). AS56/SL120.
30. Enamelled stud with a design of triangles in alternating orange and blue (J. Bayley, AML Report No. 4298).
Diam. 2.2 cm. Unstratified. Metal detector find.
31. Decorative fitting. Knob made of leaded bronze which originally had an iron shank.
Diam. 2 cm. Metal detector find.
32. Terminal from a drop handle decorated in the form of a swan's head and neck.
5.3 cm. AML 779819. 18-L52. Topsoil from machining. AS54/SL114, 115.
33. Finger ring with a setting which contains a white substance, possibly decayed glass or enamel, or perhaps the remains of an adhesive that held a stone in place (J. Bayley, AML Report No. 4298).
2 cm. Metal detector find.
34. Hinged base of a circular seal box pierced by four holes, with traces of replaced threads inside (E. Crowfoot, AML Report No. 3023).
2.1 cm. AML 7711286. 17-L1403, Ditch 889.
35. Steelyard weight in the form of a female head with a full fleshy face, the hair parted and coiled back into a bun. It is not possible to ascribe the hairstyle to any particular period, nor to identify the figure as a goddess.
2.4 cm. Metal detector find (Mr Plasom).
36. Leather mount.
4.6 cm. Metal detector find (Mr Foster).
37. Lion-headed stud with lead infill and iron pin. The object is cast with secondary working of the features. Such studs are frequently used on lock-plates of burial caskets as at Skeleton Green (Partridge 1981, 314 ff.), where this finely-worked type is found in late first-

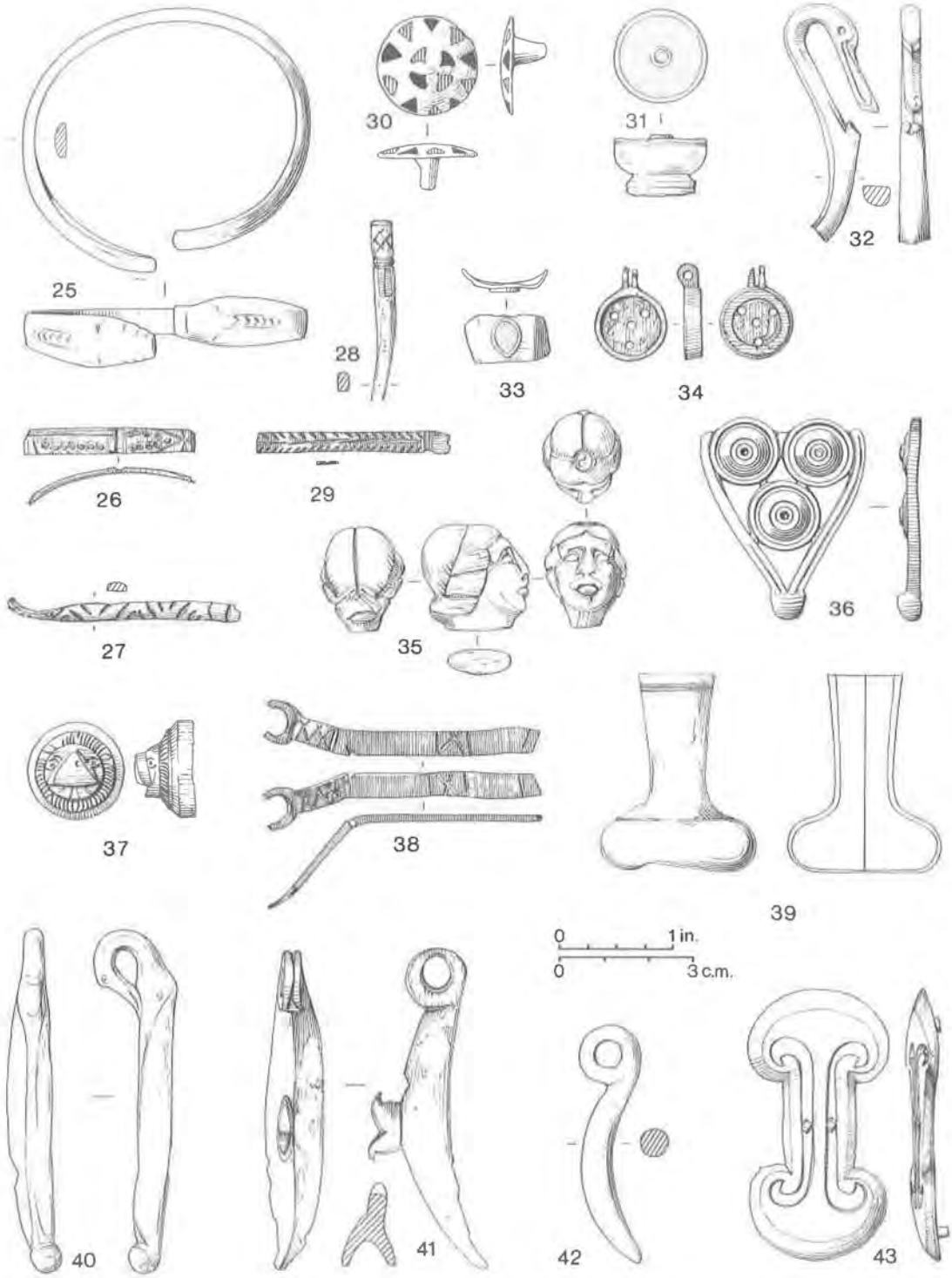

Fig. 24. Objects of copper alloy; Nos. 25–43, miscellaneous finds. Scale 2:3.

century contexts.
Diam. 2.2 cm. AML 7711306. 17-L1351, eastern area of site over cobbles 1343. AS101/SL306.

38. Balance from a steelyard. Bronze strip, terminating in a loop with incised ? numbers X and XXX on both sides; cf. example from Jewry Wall, Leicester (Kenyon 1948, 259, Fig. 87, No. 4).
6.1 cm. AML 7711080. 17-L965. Sealed below orange sand levelling (Phase 6); not later than *c.*180.

39. Phial with flat round base and slender neck decorated with horizontal lines.
4.2 cm. AML 7711369. 17-L1826, Gully 1827. AS102/SL343.

The following three items belong to a group of objects usually described as pendants or amulets, which have been found on many Romano-British sites, apparently confined to southern Britain. They were first discussed by R. A. Smith (1918, 54 ff.), who suggested that their shape was derived from an item of horse harness, the cavesson or barnacles, hence the term 'barnacle pendant' which is sometimes used, as for example for the objects from a late second/early third-century burial from Chichester (Down and Rule 1971, Fig. 5. 18, No. 228 v and w). There is however no further evidence to support this explanation, which now seems untenable.

The pendants are usually crescent-shaped with a grooved or hollow back, V or U-shaped in section. The suspension loop is either at one end or at the central (exterior) point of the curve. Some of the latter type have enamelled decoration, often with simple knobbed or more elaborate bull-headed terminals (Smith 1918, Fig. 13, 14 from South Ferriby and Colchester; Cunliffe 1968, Richborough, Pl. XXXIX, No. 143; Icklingham, Suffolk, BM Reg. No. 1957 10-3, 6). Pendants of the first type frequently also have knobbed, possibly phallic terminals, as on examples from Colchester and Wylye Camp, Wiltshire (Smith 1918, Fig. 8, 9), and some have a suspension loop that is apparently decorated with a stylized bird's head, as an example from Lydney Park (Wheeler and Wheeler 1932, Fig. 18, 65; cf. No. 40 below).

The other, possibly related form is a simple solid crescent (as No. 42 below), a shape which has a long tradition of amuletic significance.

The two types of pendant, the solid and the grooved, have occasionally been found together, apparently as 'sets', and their purpose has been a matter of some discussion. In a recent article concerning a group of grooved pendants from East Anglia, Robert Trett mentions the theory, originally put forward by Ian Stead and Valery Rigby, that they may have been 'cosmetic' grinders, the solid and grooved components being used as pestle and mortar respectively for grinding cosmetics or perhaps medicaments (Trett 1983, 220). Grooved 'pendants' are at present being studied as a group by Ralph Jackson of the British Museum, who interprets them as grinders, and it is hoped that his researches will clarify matters (Jackson 1985, 165–92).

Whatever their practical function, if any, the decoration found on many of the pendants must have some symbolic significance, the frequency of bull's heads perhaps indicating a connection with virility and fertility, as suggested by Mr Trett. One of the two grooved pendants from Magiovinium has a bird's head terminal, the other a stylized bird as decoration at the mid-point of the crescent. Aquatic birds, particularly ducks and swans, appear frequently in Celtic art and may have had some religious or cult significance as in Gaul, where they were connected with the sun and with healing (Green 1976, 12, 133). The fact that the pendants are found only in southern Britain may indicate some localized cult significance.

A general observation is that there appears to be no element of mass production for these objects; all examples, although sharing a basic form and many decorative features, are individual pieces. Few pendants are securely dated; exceptions include the two examples from Chichester already mentioned and one from the Gosbecks site at Colchester (Dunnett 1971, 45), all from second-century contexts, as is No. 41 below.

I am grateful to Mr Jackson for drawing my attention to Mr Trett's article and for discussion about the function of these objects.

40. Swan-headed grooved pendant, or amulet, the suspension loop formed by the bird's head and neck, with a possibly phallic terminal at the lower end. The object is V-shaped in section with a hollow back, which is slightly asymmetrical but shows no obvious wear marks. The closest parallels for the swan's head are on the pendants from Lydney Park (Wheeler and Wheeler 1932, Fig. 18, 65) and Gosbecks, Colchester (Dunnett 1971, 45, Fig. 6, 1) dated to the mid second century, but on both it appears in a very stylized form. An example from a second-century pit at Richborough (Cunliffe 1968, Pl. XXXIX, No. 142), which may also represent a stylized bird's head, has a possibly phallic terminal. The large grooved pendant from Hockwold, which is of the type with a central loop, has one bull's head and one more naturalistic bird's head terminal, probably a duck (Trett 1983, Pl. 1, 219; BM Reg. No. P 1977, 43, 1).
7.6 cm. Metal detector find.

41. Crescent-shaped grooved pendant, with a hollow back, a suspension ring at one end and a ? stylized bird, probably a duck, on the front. This is a typical crescent form of the class of object discussed above, although the presence of a bird as decoration in this position is at present unparalleled.
7.1 cm. AML 7711270. 17-L1493, fill of Ditch 2128 (Fig. 4), Phase 4 early second-century context. AS109/SL395.

42. Crescent-shaped pendant or amulet, circular in section with a suspension ring at one end. The type appears to be related to the 'grooved pendants' (see above).
5.3 cm. Metal detector find.

43. Leather mount in the form of two opposed and linked peltae. Two openwork strips along the spine curve into the lobes of peltas reflecting the general shape of the piece. Probably military. A fragment of a pelta-shaped mount from Colchester is dated to the second/third century (Crummy 1983, 136, No. 4237).
6.0 cm. AML 779985. 18-L647, fill of Pit 646. AS6, 18.

Fig. 25

44. Ferrule made from cast copper alloy, pierced by opposing rivet holes presumably to secure a wooden rod.
13.3 cm. AML 779005. 17-L1. Topsoil.
45. Circular handle with a central hole, possibly from a mirror or more probably a skillet as from Broxtowe, Nottingham (Oswald 1939, 69, No. 5, Pl. lxxxvii) and Gloucester (Webster 1958, 79, No. 91, Pl. IXB). Skillets are often found in military contexts dating from the first and second centuries.
4.4 cm. AML 7711063. 17-L247, orange sand levelling. Phase 6, late second century. AS93/SL265.
46. Fragment of a toilet knife, possibly of the folding type, with trace of an iron blade.
1.9 cm. AML 779332. 17-L227. AS93/SL265.
47. Lower part of a handle from a jug or flagon decorated with a cloaked female bust, placed between a pair of leaves, at the base. The facial features are unformed but the hair is parted and coiled back with locks falling on either side. This was a common form of decoration on bronze flagons; cf. one from a late first-century pit at Newstead (Curle 1911, Pl. LVI) possibly depicting Medusa, and Gaulish Antonine examples from Richborough (Cunliffe 1968, Pl. LIX, Nos. 189, 190).
8 cm. Metal detector find.
48. Triangular strip, perhaps used as inlay, with punched circles along the edges, broken at the narrow end.
1.65 cm. Metal detector find.
49. Crescent-shaped sheet, 'dished' in form with a 'rectangular' area with a rivet hole at one end. Purpose uncertain—it is too small for a cheek piece.
6.3 cm. AML 779447. 17-L240. AS93/SL265.
50. Possible cart or carriage fitting (with the same function as a terret). Cast splayed plate with a hooked end terminating in a knob. The other end is circular and has a rivet hole.
9.8 cm. AML 7711023. 17-L530, fill of Pit 529. AS92/SL243.
51. Fragmentary spoon or possibly a cosmetic implement with notched decoration on the handle.
7.4 cm. AML 7711324. 17-L1806, clearance layer over Ditch 1802. AS104/SL369.
52. Dome-headed stud or nail.
2.9 cm. AML 779103. 17-L155, Hearth 1898. AS64/P55; 80/SL 46.
Further examples, not illustrated:
2.3 cm. AML 779378. 17-L227.
2.4 cm. AML 779552. 17-L501.
1.2 cm. AML 7711029. 17-L1034.
53. Stud with flat round head.
2.9 cm. AML 7711170. 17-L988. AS93/SL265.
54. Leather fitting, probably from a belt. Possibly military. The metal has been identified by Miss J. Bayley as brass, with slight traces of silver on the front.
3.4 cm. Metal detector find.
55. Seal-box lid with incised decoration around the edge (see also No. 34).
1.5 cm. AML 7711240. 17-L1455.
56. Pin coiled at the upper end into a flat head.
1.8 cm. AML 7711163. 17-L1274, fill of Gully 1261, Area 1. AS106/SL383.
57. Finger ring made from two twisted strands of wire.
2.3 cm. AML 779130. 17-L16. Plough furrow.
58. Octagonal ring with incised linear decoration.
Diam. 2 cm. AML 771128. 17-L400, Burial 335 (inhumation). AS57/P48.
59. Ring.
Diam. 2 cm. Metal detector find (Mr M. Simmons).
60. Heavy ring, probably from harness equipment.
Diam. 2 cm. AML 779551. 17-L501. AS93/SL243.
61. Binding, sheet bronze bent horizontally.
10.7 cm. AML 7711039. 17-L247, orange sand levelling, Phase 6. AS93/SL265.

Fig. 26

62. Pin with flattened round head.
10.6 cm. AML 779450. 17-L690.
Further examples, not illustrated:
2.6 cm. AML 779009. 17-L1.
1.7 cm. AML 779541. 17-L501.
63. Pin with flattened round head and groove and cordon decoration.
6.8 cm. Site 17. Unstratified.
64. Round-headed pin with a cordon below. There are traces of replaced textile on the shaft (E. Crowfoot, AML Report No. 3023).
9.4 cm. AML 779790. 18-L204, Pit 163 (Fig. 19), Phase 7. AS53/SL112, 113.
Similar examples, not illustrated:
6.2 cm. AML 779000. 17-L1.
3.7 cm. AML 779532. 17-L697.
65. Round-headed pin with groove and cordon decoration. There are traces of replaced textile along the shaft. Miss E. Crowfoot reports 'Z spun, probably tabby weave, fine' (AML Report No. 3023).
AML 779943. 18-L461. AS55/SL117, 118.
Similar examples, not illustrated:
8.3 cm. AML 779539. 17-L501.
3.0 cm. AML 7711044. 17-L945.
66. Round-headed pin with cordon decoration.
8.7 cm. AML 779649. 17-L848–L1353. AS101/SL306.
67. Pin with triangular head.
3.2 cm. AML 779716. 18-L49, fill of Gully 48. AS48/SL5.
68. Pin with a biconical head, decorated in the form of a stylized lion mask. Pins of this shape are common, cf. Skeleton Green (Partridge 1981, No. 18, Fig. 55), Chichester (Down 1978, No. 103, Fig. 10. 38) and Verulamium (Frere 1984, 43, No. 135b) where it is dated no later than 135, but these examples are decorated with incised triangles. The Magiovinium example more obviously represents a lion-head.
8.8 cm. AML 779249. 17-L101. Ploughsoil.
69. Small pin with conical head and grooved decoration.
3.2 cm. AML 779758. 18-L100. Topsoil (Fig. 20, Section 115). AS54/SL115.
70. Ligula with cupped scoop and grooved decoration on the shaft.
9.0 cm. AML 779635. 17-L540, fill of Gully 2294, Phase 6. AS93/SL265.
71. Ligula with flat angled scoop and broken shaft.
4.8 cm. AML 779082. 17-L1. Topsoil.

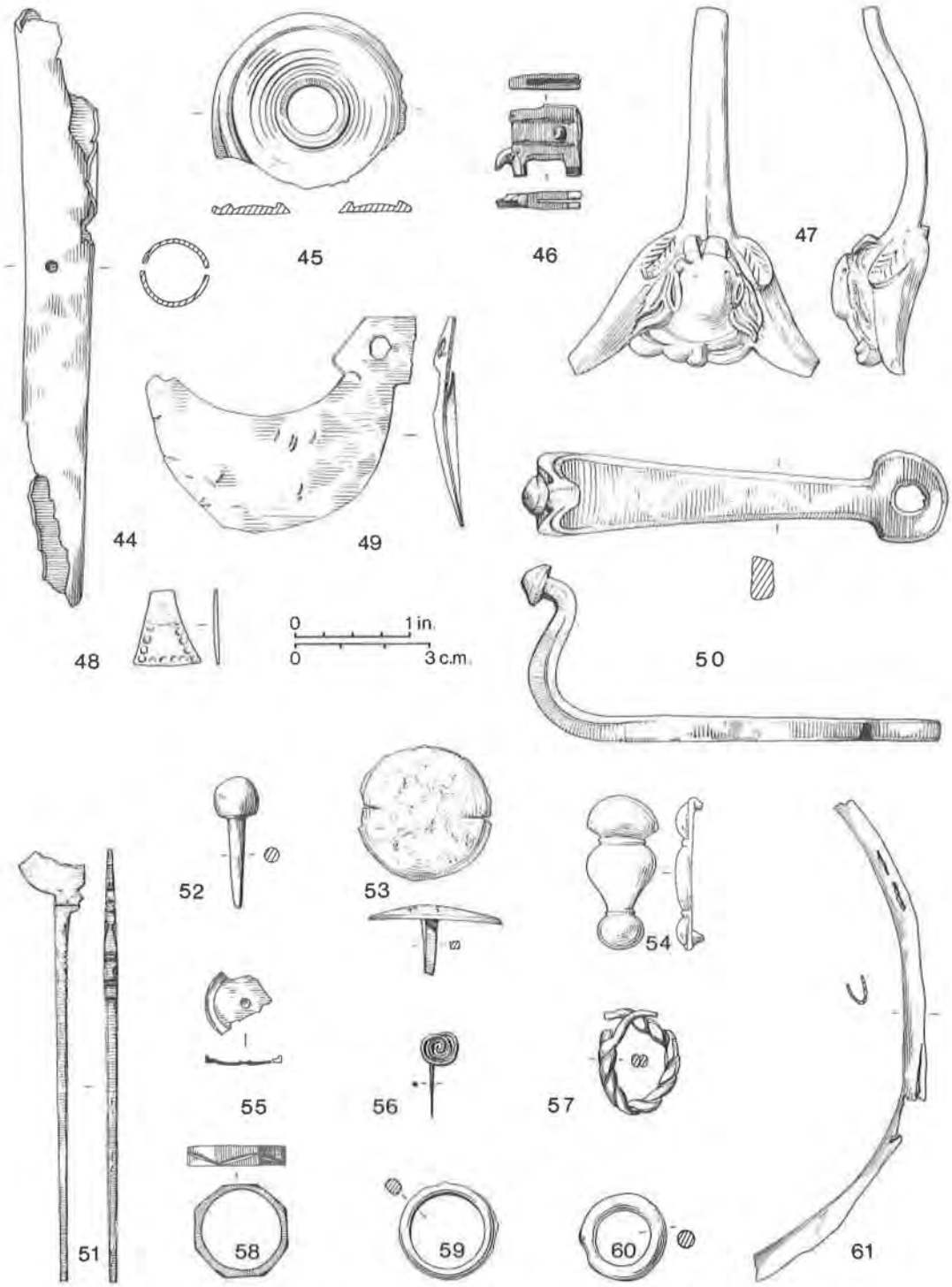

Fig. 25. Objects of copper alloy; Nos. 44–61, miscellaneous finds. Scale 2:3.

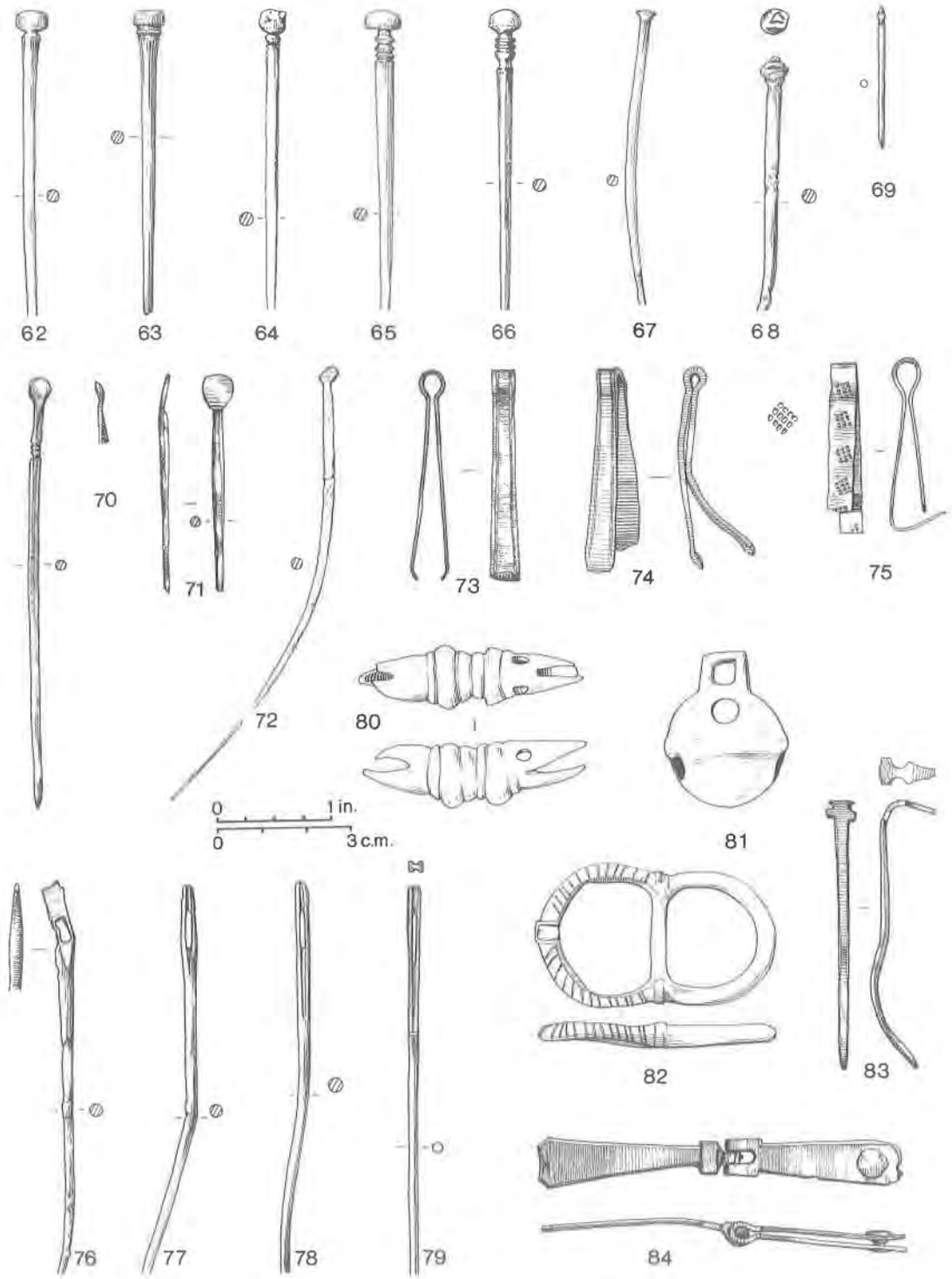

Fig. 26. Objects of copper alloy; Nos. 62–84, miscellaneous finds. Scale 2:3.

Another example, not illustrated:
3.9 cm. AML 7711298. 17-L1542.

72. Ligula with trace of a flat scoop.
10.4 cm. AML 7711184. 17-L997. Unstratified.
Other examples, not illustrated, all with fragmentary scoops:
8.2 cm. AML 779357. 17-L221.
10.0 cm. AML 7711062. 17-L965.
10.4 cm. AML 779734. 18-L113.

73. Tweezers with incised linear decoration along the edges.
4.7 cm. AML 779442. 17-L889, stone surface (path) 696 (Fig. 6). AS94/SL258.

74. Tweezers with incised linear decoration.
4.6 cm. 17-L2368, fill of 2367, part of Pit 2426 (Fig. 7). AS66.

75. Tweezers decorated with stamped squares set lozenge-wise, each formed from twelve dots arranged in rows of four by three.
3.8 cm. AML 779006. 17-L1.
Similar but undecorated:
4.8 cm. AML 77955. 17-L501.

76. Needle with flattened head and large rectangular eye.
11.9 cm. AML 779448. 17-L697 (= L650), orange sand levelling, Phase 6 (Fig. 6). AS95/SL258.
Another example, not illustrated:
6.9 cm. AML 779546. 17-L501.

77. Needle.
11.1 cm. AML 779057. 17-L1. Topsoil.

78. Needle.
10.6 cm. AML 779229. 17-L1. Topsoil.

79. Needle with elongated head and a groove above the eye.
10.8 cm. AML 779511. 17-L585, Ditch 765. AS88/SL176.
Similar examples, not illustrated:
5.9 cm. AML 779347. 17-L360 (Pit 280).
7.1 cm. AML 779506. 17-L339.
6.6 cm. AML 779533. 17-L641 (Fig. 6).

80. Unusual cast fitting with five central mouldings and fish or dragon-head terminals. It is likely that a cord or thong passed through it, perhaps being secured by the 'mouths' which may have acted as grips. Date uncertain. According to J. Cherry of the British Museum, if medieval it is thirteenth or fourteenth-century, but no parallels are known and a Roman date cannot be excluded.
5 cm. Metal detector find (Mr Plasom).

81. Harness bell with iron pea. Medieval.
3.5 cm. Metal detector find.

82. Buckle with scored decoration on one loop, probably medieval.
5.2 cm. AML 779827. 18-L339, machined topsoil.

83. Pin or bracelet terminal with widened decorated end. Medieval or post-medieval.
6.0 cm. AML 779098. 17-L1. Topsoil.

84. Hinged fitting, possibly from harness. Probably medieval or post-medieval.
8.1 cm. AML 779012–13. 17-L1. Topsoil.

Objects of Bone

Fig. 27

85. Pin with faceted conical head with groove and cordon decoration, Crummy Type 2 (Crummy 1983, 21).
9.6 cm. AML 7711043. 17-L881, orange sand levelling, Phase 6 (Fig. 6). AS99/SL258.

86. Pin with conical head and oblique incised decoration.
4.5 cm. AML 779563. 17-L583, Gully 766, Area 2. AS88/SL176.

87. Rough pin or peg with flat rectangular head.
4.9 cm. AML 779046. 17-L1. Topsoil.

88. Pin with conical head decorated with grooves and cordon. Crummy Type 2.
5.8 cm. AML 779566. 17-L639. AS94/SL295.

89. Needle.
9.5 cm. AML 779060. 17-L1. Topsoil.
Another example, broken at both ends:
6.8 cm. AML 779506. 17-L240.

90. Needle with flattened head for coarse sewing, perhaps rush work.
6.8 cm. AML 779674. 17-L530, Pit 529. AS92/SL243.

91. Awl.
8.7 cm. 17-L1655, from 1654 furnace. AS102/SL334.

92. Handle made from bone cut at both ends.
7.4 cm. AML 779565. 17-L591, Gully 766, Area 2. AS86/SL162.
A similar handle and an antler example, not illustrated:
6 cm. AML 779567. 17-L227.
12.1 cm. AML 779564. 17-L501.

93. Dice.
1.4 cm. AML 7711211. 17-L1356, Loam over furnace 2300, Area 1 (Fig. 11).

94. Lozenge-shaped inlay decorated with an incised dot and circle motif.
3.7 cm. 17. Unstratified.

95. Lozenge-shaped inlay.
4.1 cm. AML 779186. 17-L1. Topsoil.

96. Counter with a small hole in the centre of one side.
Diam. 1.5 cm. AML 779427. 17-L27, spread over stone surface 100.

97. Counter.
2.2 cm. AML 779056. 17-L1. Topsoil.

98. Riveted comb, double-sided with finely cut teeth on one side and wider spaced teeth on the other. The illustration shows a reconstruction of the four fragments, which do not join. The comb is a type found in the late fourth to fifth century (e.g. Colchester, Crummy 1983, 55 ff.).
AML 7711281. 17-L1511, Burial 1519 (Fig. 18).

99. Tusk with rivet hole worked at the pointed end. Possibly a crescent amulet (see No. 42).
10.6 cm. 17-L501. AS93/SL265.

100. Knife with bone handle, decorated with incised lines, and an iron blade.
4.1 cm. AML 779986. 18-L508, Ditch 504. AS6, 18.

101. Folding knife, with bone handle, part of the bronze binding and an iron rivet remaining. The handle has a ring for suspension and is decorated with turned cordons.
6.3 cm. AML 779184. 17-L1. Topsoil.

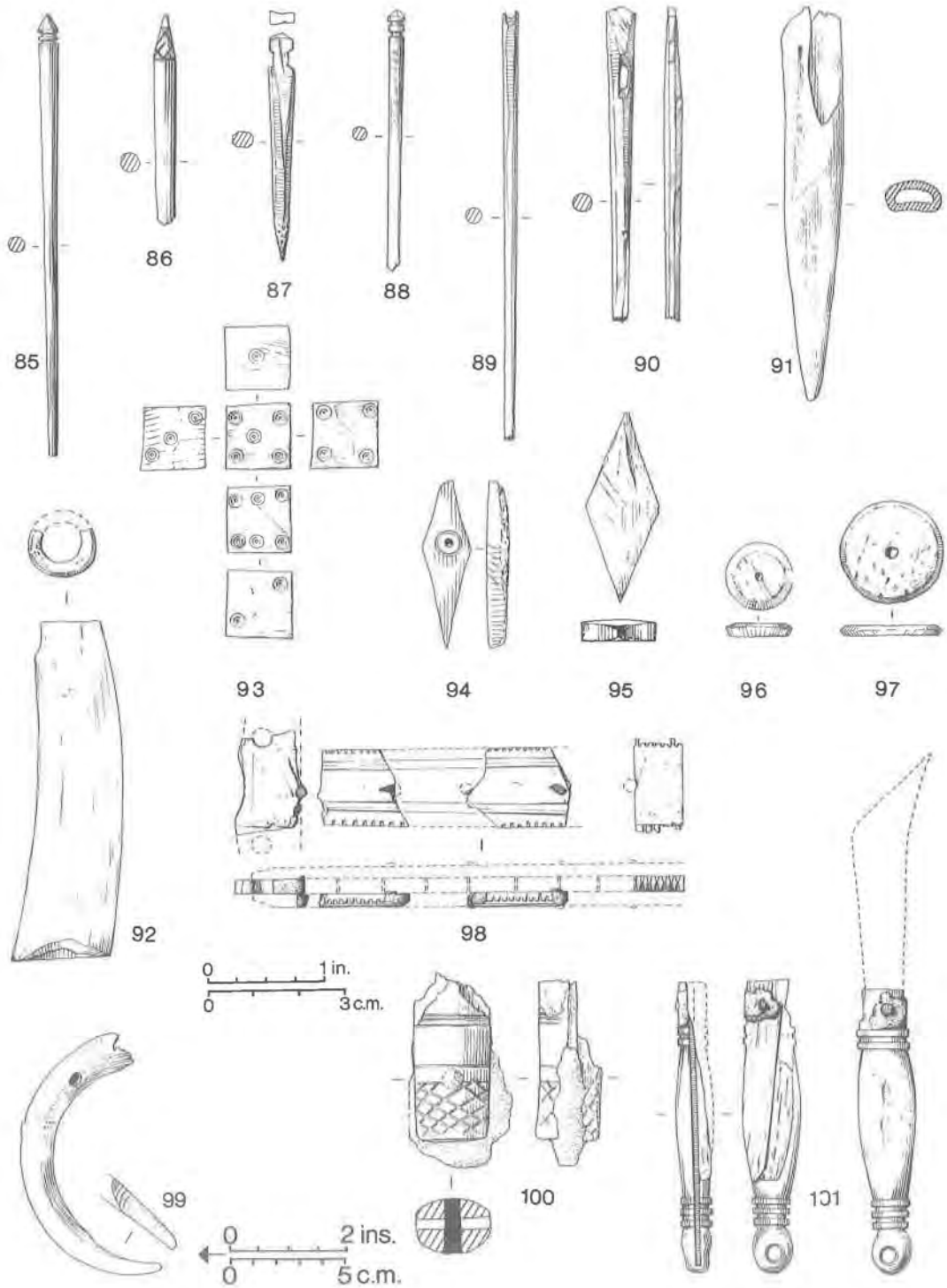

Fig. 27. Objects of bone; Nos. 85–101, miscellaneous finds. Scale 2:3.

Objects of Iron

Fig. 28

102. Upper half of a strip-bow brooch with a hinged pin. A southern British type, dating to the first century. 5.2 cm. AML 7711162. 17-L1254. AS107/SL388.
103. One half of a bridle bit connected to a fragment of harness ring.
12.2 cm. AML 779580. 17-L501. AS93/SL265.
(For other items of horse equipment see Nos. 121, 134, 135).
104. Unfinished ?hammer-adze. Professor R. F. Tylecote reports: 'This seems to be a square-sectioned bar, flattened for half its length as though it were being shaped into an adze head. A piece was cut from the corner of the thinner section where it joins the thicker and found to be predominantly coarse-grained ferrite with a little lamellar pearlite at one end with a good deal of slag. The ferritic regions are very free from slag and have a hardness of 135 HV indicating a low phosphorus content' (AML Report No. 2762).
19 cm. AML 779787. 18-L224, Quarry 203 (Fig. 19). AS53/SL112.
105. Narrow flat blade with a socketed handle. Two fragments.
11 cm, 9 cm. AML 779596. 17-L718, part of 778. AS88/SL176.
106. Spud with a wide blade and a socket through which is a rivet hole for attachment to a wooden handle. Such tools may have been used for weeding (Rees 1979, 330), cf. example from Lakenheath (ibid., 392, Fig. 131, BM 82 2-6 6).
20.5 cm. AML 7711494. 17-L1501, Ditch 1501, Area 1.
107. Ladle, the handle and part of the bowl remaining.
14.5 cm. AML 779739. 18-L86, Ditch terminal 85. AS49/SL50.
108. Spade shoe, probably with square mouth as Manning Type 2a (Manning 1970). One grooved arm survives, with the side of the blade below. It is not possible to state whether the mouth was also grooved or solid. See Rees (1979, 376, Fig. 117) for examples from Owmby, Lincs and Caistor (Norwich).
17 cm. AML 771041. 17-L530, Pit 529. AS92/SL243. Another fragment of U-shaped binding from a shovel blade, not illustrated:
10.6 cm. AML 779342. 17-L227.
109. Fragment of large knife or cleaver with socketed handle. The back of the blade is greatly thickened, but much corroded. The end has been bent over and broken and the socket hammered flat: it appears to have been used as scrap.
18.4 cm. AML 779562. 17-L736, Gully 781, circular house (Fig. 9). AS88/SL174.
110. Pruning hook, with socketed handle.
12 cm. AML 7711295. 17-L1661, Area 1.
111. Gouge. Small woodworking gouge, the end showing signs of hammering.
11.7 cm. AML 7711054. 17-L946, Pit 2297 (postdates Phase 6). AS83/SL217.
112. Ferrule. Conical ferrule with a split socket for attachment to a wooden staff, cf. Carrawburgh (Manning 1976, No. 24, Fig. 13).
10.3 cm. AML 779951. 18-L556, Pit 555. AS57/SL123. Another example, only the point surviving:
6.4 cm. AML 7711053. 17-L951.
113. A straight square-sectioned shaft with an expanded flattened terminal similar to one from Rudston, there described as a spit (Stead 1980, No. 94).
29 cm. AML 779667. 17-L922, Pit 921. AS36/P27; 90/SL222.

Fig. 29

114. Fitting. Tang with a widened head with a square rivet hole.
10.7 cm. AML 7711179. 17-L988, Area 1. AS93/SL265.
115. Drill bit. For a comparable example from Niederbieber see Gaitzsch (1980, No. 231, Taf. 47).
12.5 cm. 17-L2379, Ditch 2346 (Fig. 8). AS65/P56.
116. Stylus with moulded decoration above the point and grooves below the eraser.
10.6 cm. AML 779849. 18-L350, Pit 374. AS56/SL122.
117. Knife blade with cutler's mark. Probably medieval.
8.4 cm. AML 779070. 17-L1. Topsoil.
118. Fitting. Pierced spike.
6 cm. AML 779329. 17-L227. AS93/SL265.
119. Ring hook.
10.5 cm. AML 979114. 17-L197, on edge of ditch, area 2. AS 86/SL150.
120. Ring hook.
9.6 cm. AML 779589. 17-L101. Ploughsoil.
121. Possibly a link from a two-link snaffle bit.
6.3 cm. AML 7711401. 17-L689, stone surface 660. AS90/SL233.
122. Fragment of spring from a barb-spring barrel padlock. For a complete example see Shakenoak II (Brodribb *et al.*, 197, 121, Fig. 51, No. 93).
11.6 cm. AML 779767. 18-L190, Pit 163 (Fig. 19). AS56/SL119.
123. Bucket mount. Iron handle strap with fragment of copper alloy hoop.
7 cm. AML 779386. 17-L227, Area 1. AS93/SL265.
124. Strap with hooked terminal, probably a bucket side-mount.
5.5 cm. AML 7711057. 17-L946, Pit 2297, Area 1. AS83/SL217.
125. Bucket side-mount.
9.6 cm. AML 779538. 17-L803 (Fig. 5) L612, Area 1. AS107/SL388.
126. Strap with pierced terminal.
7.5 cm. AML 779435. 17-L199, Ditch 2180, Area 2. AS87/SL186.
127. Fitting. Square-sectioned loop with flat, expanded, pierced terminals.
4 cm. AML 7711269. 17-L1403, Ditch 889. AS107/SL388.
128. Strap with rivet.
6.7 cm. AML 779638. 17-L501. AS93/SL265.
129. Linked fastening.
6.2 cm. AML 779439. 17-L27, Area 1, spread.
130. Ferrule.
Diam. 3.8 cm. AML 779227. 17-L35, general

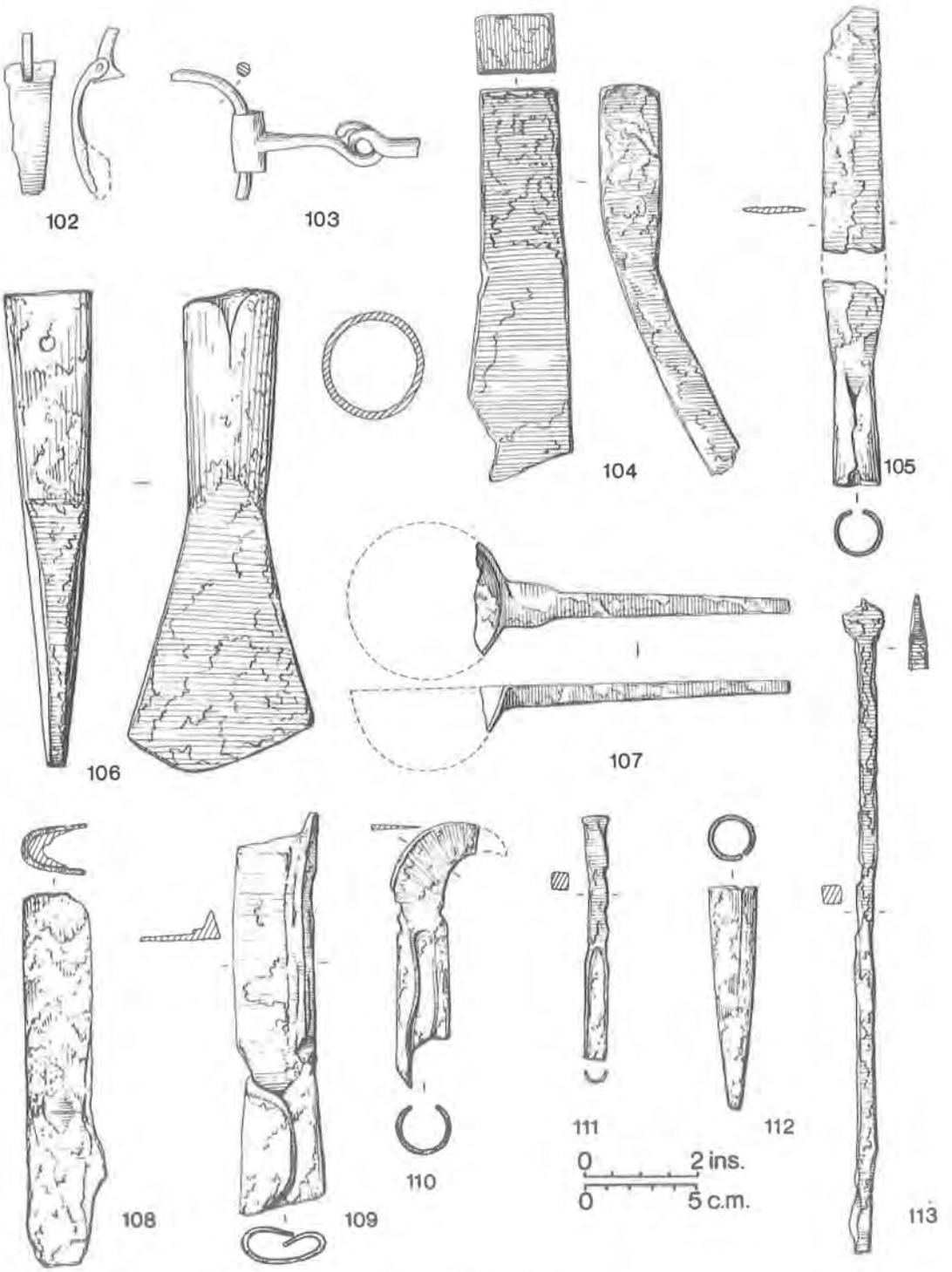

Fig. 28. Objects of iron; Nos. 102–113, miscellaneous finds. Scale 1:3.

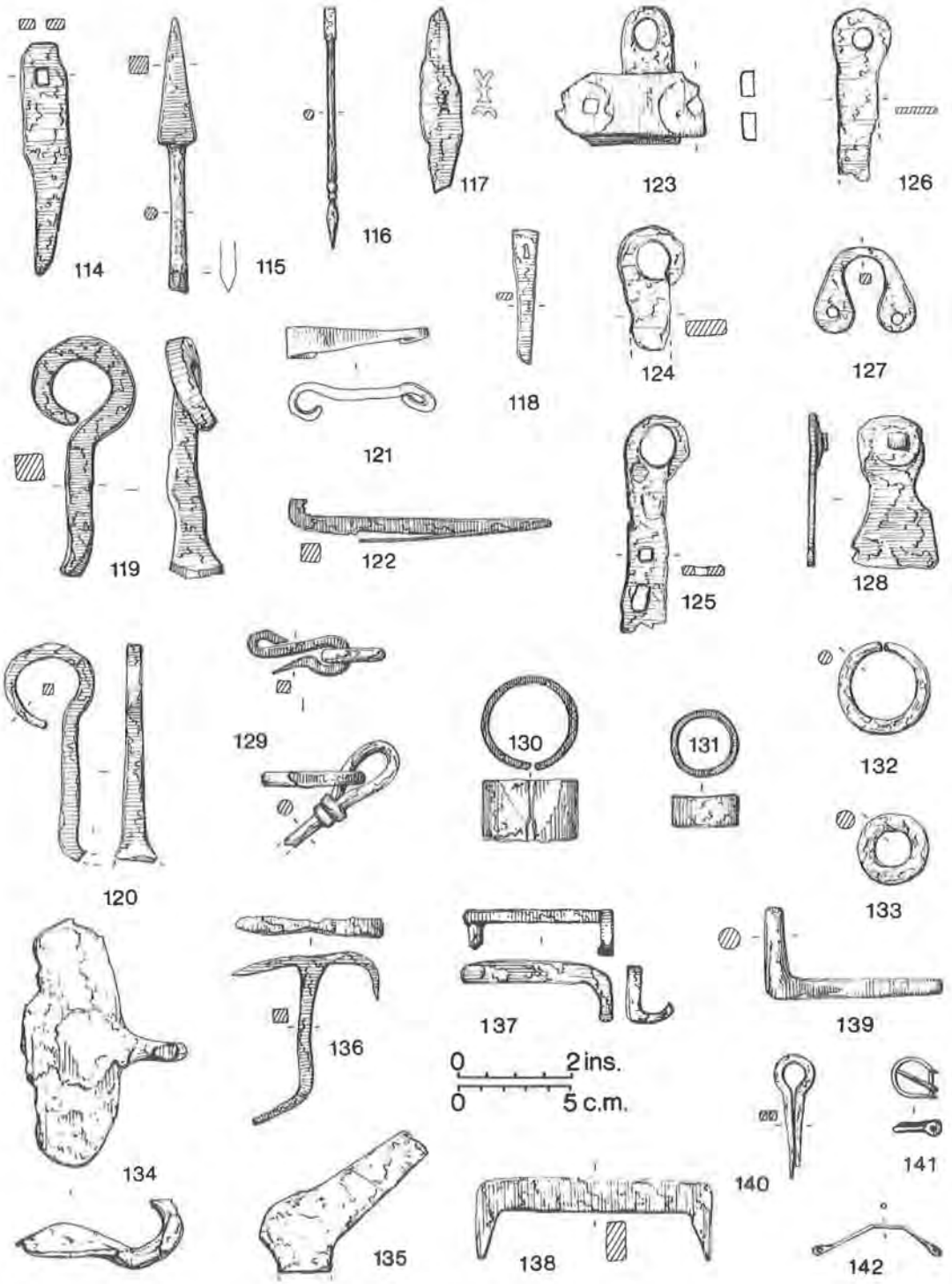

Fig. 29. Objects of iron; Nos. 114–142, miscellaneous finds. Scale 1:3.

clearance around furnace 818. AS83/SL99.

131. Ferrule.
Diam. 3.2 cm. AML 779597. 17-L718. AS88/SL176.

132. Split ring.
Diam. 4 cm. AML 779945. 18-L556, Pit 55 (Fig. 19). AS57/SL123, 124.

133. Ring.
Diam. 3.1 cm. AML 779283. 17-L196, depression on edge of Ditch 799. AS86/SL150.
Similar examples, not illustrated:
Diam. 5.2 cm. AML 7711038. 17-L247.
Diam. 3.3 cm. AML 7711118. 17-L530.

134. Hipposandal heel, part of the sole and rear hook.
11.3 cm. AML 779530. 17-L227. AS93/SL265.

135. Hipposandal wing.
8.5 cm. AML 779406. 17-L199, Ditch 2180, Area 2. AS87/SL186.
A similar fragment:
8.7 cm. AML 779634. 17-L827.

136. T-staple. Such clamps were used to hold tiles in place.
8 cm. AML 779658. 17-L912, Pit complex 911, Area 1. AS90/SL221.

137. Joiner's dog.
7.8 cm. AML 779768. 18-L128 (Fig. 20). AS53/SL112, 113.

138. Joiner's dog.
10.5 cm. AML 779293. 17-L302, Ditch 756, Area 2. AS84/SL113.
Another example:
6 cm. AML 7711301. 17-L1344.

139. L-shaped hinge staple.
8.5 cm. AML 779899. 18-L505, Pit 491 (Fig. 19). AS 56/SL120.

140. Split spiked loop.
5.5 cm. AML 779104. 17-L1. Topsoil.

141. Buckle. Medieval.
Max. diam. 2.3 cm. AML 779547. 17-L501. AS93/SL265.

142. Rod with splayed riveted terminals.
5.8 cm. AML 7711358. 17-L1940, Area 1. AS100/SL291.

Objects of Stone
(Identification by F. W. Anderson: AML Report No. 2739)

Fig. 30

143. Quern. Coarse grit without pebbles. Possibly Millstone Grit but more probably quern stone from Snettisham, Norfolk, perhaps transported down the River Ouse.
Diam. 35.6 cm. AML 7711381. 17-L1343, stone surface (Fig. 5). AS99/SL258.

144. Quern. Hertfordshire Puddingstone. An Eocene conglomerate of flint pebbles in a siliceous matrix found near the base of the Woolwich and Reading Beds.
Diam. 30.4 cm. AML 779340. 17-L534, Pit 533, Area 1. AS83/SL204.

145. Rotary quern.
Diam. 28.8 cm. AML 7711409. 17-L1343, stone surface (Fig. 5). AS99/SL258.

146. Quern. Coarse pebbly grit, probably Snettisham.
Diam. 34.5 cm. AML 7711194. 17-L1276, fill of furnace 1243 (Fig. 11). AS100/SL281.

147. Quern. Coarse pebbly grit, probably Snettisham.
Diam. 38.5 cm. AML 779323. 17-L546, Pit 545, Area 1. AS83/SL205.

148. Quern. Probably Snettisham.
Diam. 33 cm. AML 779420. 17-L101. Ploughsoil.

149. Quern. Probably Snettisham.
Diam. 35 cm. AML 779032. 17-L1. Topsoil.

150. Quern. Probably Snettisham.
Diam. 38.5 cm. AML 7711361. 17-L2021, Ditch 2280, Area 1. AS27/P18.

151. Mortar. Brown sandstone, probably Millstone Grit.
20.8 cm. AML 779369. 17-L291, Gully 290, Area 2. AS80/SL48.

Miscellaneous Finds

152. Shale spindle whorl.
Diam. 3.9 cm. AML 779848. 18-L379. Topsoil in area of Pit 491 (Fig. 19).

153. Shale bracelet; one of two fragments, triangular in section.
3.8, 2.3 cm. AML 7711495. 17-L1501, Ditch, Area 1.

154. Tile, apparently trimmed to make a lid.
18 cm. AML 779976. 18-L497, Gully 506. AS55/SL118.

155. Ball of fired clay, possibly a sling shot.
Diam. 2.1 cm. AML 7711036. 17-L530. AS92/SL243.

The following bronze objects were discovered after the processing of the other small finds:

Fig. 31

156. Brooch. Head-stud brooch, with red enamel in the circular stud and in design of lozenges and triangles on the bow. A hook on the head indicates that it had a spring and not a hinge. The type is not securely dated but an early second-century date is probable.
5 cm. Metal detector find.

157. Scabbard chape, incomplete, but similar to examples from Richborough (Cunliffe 1968, 93, Pl. XXXIV, No. 92) and Wroxeter (Atkinson 1942, 209, Pl. 481, No. 1), the latter dated to the mid second century. Swords with fittings which included a chape were found at Canterbury (Goodburn 1978, 471, Fig. 20).
5.2 cm.

The Intaglios
by Dr M. Henig

158. Glass paste with light blue upper surface on dark ground. Oval with flat upper surface 11 × 10 × 1.5 cm. 'Gem' slightly decayed, chip on left side.
AML 7711296. 17-L1356, Loam over area of furnace 2300, Area 1 (Fig. 11).

The *device* is an Indian parrot: *Psittacus torquatus*, identified by a prominent ring around its neck, an upturned tail and slightly hooked beak. It stands upon a branch. The bird was a common pet and also associated with Dionysos-Bacchus who was believed to have made

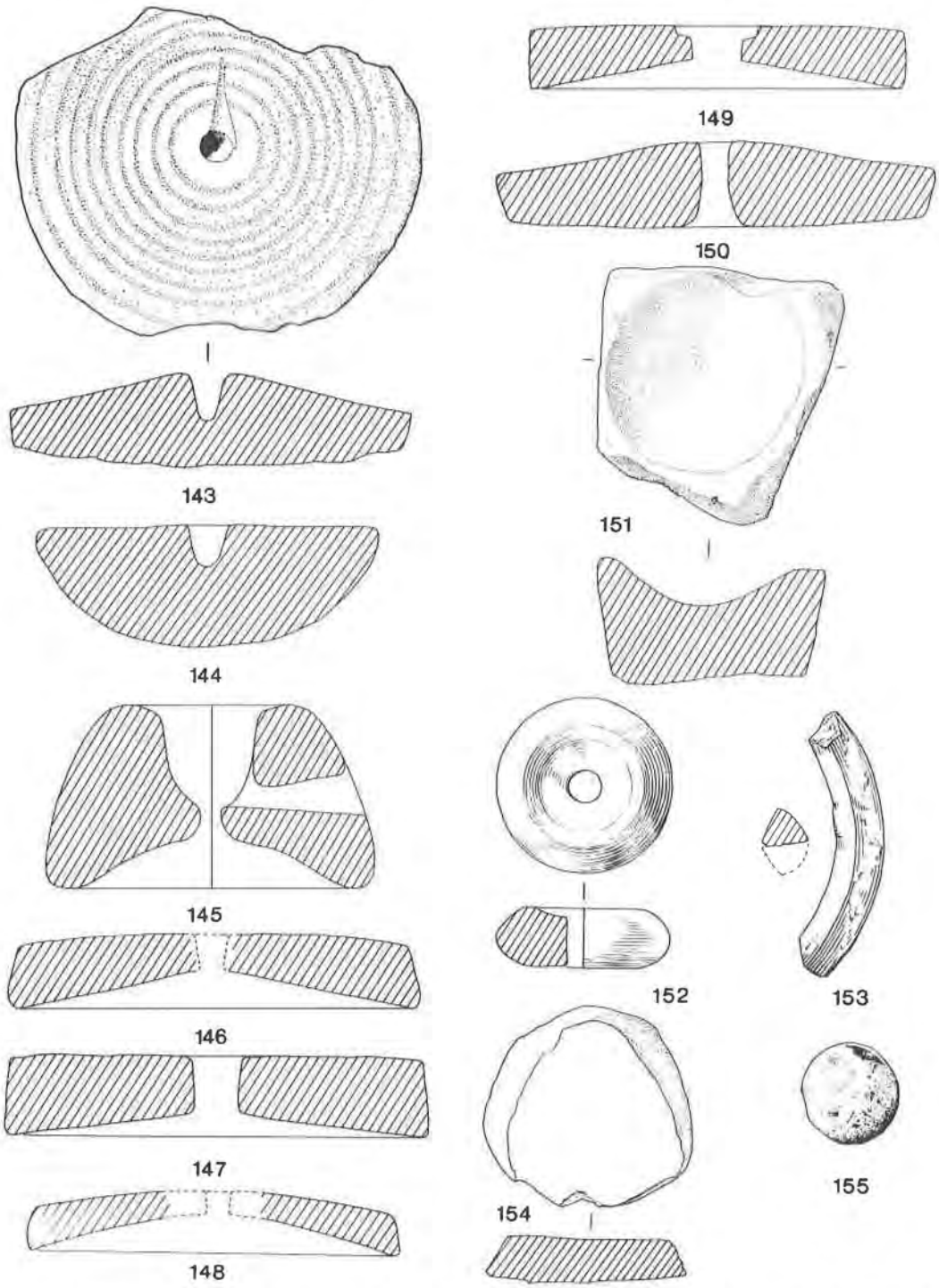

Fig. 30. Objects of stone, Nos. 143–153 and fired clay, Nos. 154–155. Scales: Nos. 143–151, 154, 1:6. Nos. 152, 153, 155, 2:3.

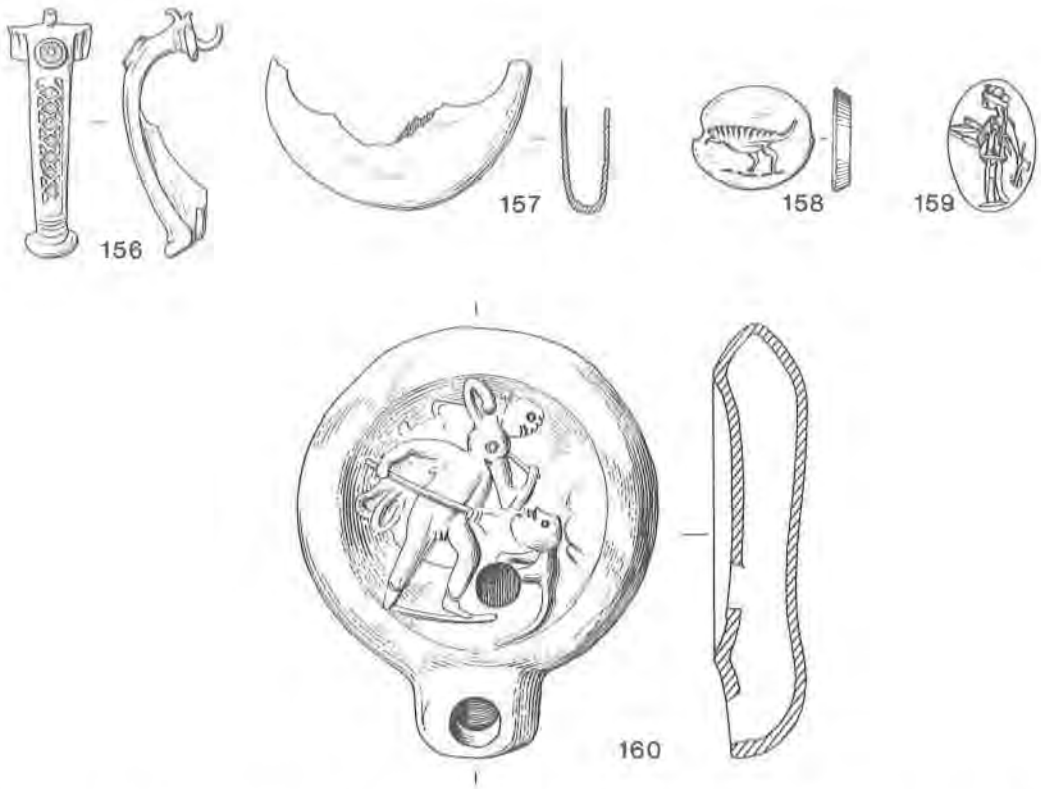

Fig. 31. Objects of copper alloy (metal detector finds), Nos. 156–157; glass intaglios, Nos. 158–159; fired clay lamp, No. 160. Scales: Nos. 156–157, 160, 2:3; Nos. 158–159, 3:2.

a triumphal progress through India (Toynbee 1973, 247–9, 281).

There are a number of representations of parrots on intaglios from Britain, the closest parallel being a paste from the Walbrook, London set in a bronze ring dating, in all probability, no later than the early Flavian age (Henig 1978, 269, No. 686, Pls. XXI and XLIX).

The device, which is neatly executed in the classicizing style (cf. Maaskant-Kleibrink 1978, 205, No. 462, probably also a parrot, with similar bold modelling of form and fine detailings), was impressed by means of a stamp onto viscous glass, within a mould (Czurda-Ruth 1979, 171–7, esp. fig. on p. 175). Such moulded glass gems were very common in the later Republic and Early Empire especially in the period 50 BC–AD 50 when the practice of wearing signet rings became ever more widespread throughout the Roman world, even among the poorer classes of society.

159. Iron signet ring, hoop incomplete, expanding towards bezel. It contains a cornelian intaglio, oval in shape with a slightly convex upper surface (13 × 10 mm). Metal detector find (Mr Plasom). Topsoil from roadworks at Galley Lane roundabout, June 1980.

The device portrays *Ceres* dressed in a long chiton, holding two ears of corn in one hand and a dish of fruit in the other. *Ceres* is commonly found on gems and is also shown on coins from the late first century and through the second century where she is identified as *Fides Publica* (Zwierlein-Diehl 1979, 219–20, Nos. 1582–5). The type has a male equivalent identified as *Bonus Eventus* and the two occur together on a gem in the British Museum. Following Cornelius Vermeule, I have suggested that the two figures were adapted from a statue group by Praxiteles, known to have been in Rome during the Imperial period (Henig 1974, 71–3). Amongst the fairly numerous British finds of gems showing Ceres there is only one other example from Buckinghamshire, a cornelian in a silver ring from Dunsmore (Henig 1978, No. 261; see also ibid., 217–19, Nos. 259–74; 291, No. 49; 304 f., Nos. 134–7).

The intaglio is only the fourth known from the site of Magiovinium. The ring type (Henig Type III) is typical of the first half of the second century; the dating of the coins and of other intaglios showing *Ceres*, where known, also serves to confirm this impression, and the gem is a splendid indication of mid Imperial peace and prosperity. Stylistically the stone can be compared with an example now in the Hague which shows the same simplified modelling and stylized physiognomy, ascribed to the chin–mouth–nose style of the second century (Maaskant-Kleibrink 1978, 298, No. 861).

Lamp

160. Lamp.
8.3 cm. Unstratified.

The lamp, which was apparently found on the site of Magiovinium after the completion of the excavations, has been identified by Donald Bailey of the British Museum as being of eastern manufacture, probably from the Tarsus area of northern Syria. It is likely that it depicts Meleager slaying the Calydonian boar, although there are no exact parallels for the design, and it probably dates from the second or third century. Complete lamps of eastern provenance are extremely rare finds on Romano-British sites and it is most unlikely that this example was an ancient import.

The Coarse Pottery
by Yvonne Parminter

The excavations on Sites 17 and 18 produced a total pottery weight of 874 kg and some 8,000 vessels as represented by their individual rims. The pottery from Site 17 has been analysed in greater detail than that from Site 18 since the latter was available for a much shorter time and was not easily accessible for checking. The data also result from a series of selected samples —for example Area 1 was subjected to almost total excavation whereas Area 2 was trial trenched; furthermore flooding prevented deep excavation. All these factors must affect the results.

Method

The 40,000 pottery sherds were examined under a binocular microscope (× 20) and grouped into a fabric series, while the vessel rims were separated into major form types and then into variants within those types. The inclusions within the fabrics were graded using the classifications produced by the DOE Study Group for Romano-British Pottery (Young 1980) and the Munsell Soil Colour Chart was used to grade colour. Sherds and every vessel's rim were recorded numerically on coding sheets indicating fabric, weight, rim diameter and decoration, and then entered into the computer programmed to answer general numerical data and specific inquiries. In addition the rim from each separate vessel, context by context, was sketched onto a card index.

In the report the numbers for both the form and fabric series do not follow consecutively because they have been amended or amalgamated during processing. The basic decision for a form type was made on the rim/body-form but there were numerous cases where the form type was not certain and where an informed guess had to be adequate.

There are two additional form series; the first based upon local 'native' fabrics and the second upon shell-tempered wares. They were represented in considerable quantities throughout both sites and were sufficiently diverse in type and date to justify separate publication.

To reinforce the dating of the vessels in the pottery form/fabric series, several different approaches were adopted: (a) all pottery from a context was dated, where possible from coins or other stratified material, fabrics difficult to identify being taken to specialists and (b) parallels were mostly taken from reports with kiln material, or specialist articles on pottery types. Full sources can be found in the site archive: references to specific kilns appear in the bibliography.

The pottery from Site 17 and all archival material, together with the form and fabric series, is deposited in the County Museum, Aylesbury. The pottery from Site 18 is held by the British Museum, London. In addition to specialists acknowledged in the text the writer would like to thank the following for their help and advice. A. E. Brown, K. Crouch, Mrs B. Easterbrook, D. Knight, M. Lynes, P. Marney, R. Perrin, H. Toller, P. Tyer and Mrs C. Woodfield.

Fabric Descriptions

Fabric Nos. 3–93:

3. Brockley Hill. Hard sandy fabric, generally blue/grey in colour both in fracture and on surfaces. Even sandy mix with sparse scatter of rounded shell, an occasional dull grey laminated inclusion up to 5 mm in length and a number of voids up to 1 mm. Vessels are wheel made and well finished with white slip. Decoration: Lattice, vertical combing and squared 'painted' lattice.
M7.5YR. N6/0. Pot No. (Form Series) 12, 57, 109, 137, 141.
4. Possibly Highgate 'C' (Brown and Sheldon 1974, 224). Hard smooth finely finished fabric, pale grey/white in section with darker surfaces, slipped and highly

burnished. Fabric very similar to the Nene Valley grey colour-coated Fabric 30. Decoration: Slip; burnishing and possibly lattice.
M7.5YR. N7/0. Pot Nos. 117, 192, 195.

5. Central Gaul. Fine dense fabric very similar to samian ware but with matt orange/brown slip. No identifiable vessel from site, three sherds from dispersed contexts and one pottery counter. Fabric confirmed as Central Gaul colour-coat.
M5YR. 7/6.

6. Kiln uncertain. Coarse loose fabric with contents very similar to native Fabric 26 but containing considerable amounts of shell of varying size scattered throughout. Dark grey in section, surfaces vary from dark to reddish brown. Generally harsh to the touch but can be highly burnished and smoothly finished. Fewer than six vessels were found.
Pot Nos. 270, 272, 295, 298.

7. Local fabric. Black burnished ware, often black throughout with high burnish but can fire with red surface margins and considerable loss of surface from flaking and splitting. In section the matrix contains moderate amounts of rounded quartz often pinkish in colour with some red iron and shell inclusions. Decoration: burnishing, lattice arcading and scored lines.
M7.5YR. N2/0. Pot Nos. 173, 370.

8. Kiln uncertain. Hard very fine sandy fabric with visible shell scatter, up to 0.5 mm in size. Black in section with paler grey surface margins; exterior slipped and decorated with barbotine dots. One vessel only, not illustrated.

9. Verulamium region. Pale browny/cream granular fabric containing abundant similar-sized quartz inclusions evenly distributed throughout the core. Some sparse scatter of red iron. Decoration: none.
M10YR. 8/3–6/4. Pot Nos. 33, 42, 69, 73, 86, 126, 368.

10. Nene Valley. Hard cream fabric both on surface and in section containing fine even quartz inclusions with some larger shell pieces—up to 1 mm in size. Scatter of pale or dark red iron. Decoration: rouletting, barbotine.
M10YR. 8/3. Pot Nos. 68, 70, 82, 93, 168, 169, 175.

11. Bedfordshire. Shell-gritted fabric. See thin section report by Dr D. F. Williams (p. 97). Fewer than 12 vessels on site, some rather crude in finish. Decoration: burnishing, rim slashing, rilling. Some forms paralleled at Bromham, Beds (Tilson 1973, 23).
Pot Nos. 148, 299, 301, 302, 319A, 325, 325A, 326, 328.

12. Oxfordshire. Hard smooth very micaceous beaker fabric with pale brown surfaces and light grey core. Very fine sandy mix with sparse pellets of red iron which can be up to 2 mm in size. Decoration: rouletting.
M10YR. 7/4. Pot No. 348.

13. Kiln uncertain. Thick soft fabric with smooth powdery surfaces usually pale orange-buff with mid grey core. In section there are considerable amounts of grog and shell inclusions up to 3 mm in size. Decoration: grooves, scored wavy lines.
M5YR. 6/6. Pot Nos. 61, 116, 121, 150–1.

14. Local product. Native fabric possibly a development of Fabric 26. Generally reduced with visible grog inclusions in a sandy core with random scatter of larger quartz pieces. Probably from Caldecotte kiln 2 (Caldecotte forthcoming). Decoration: scored lines, burnishing, combed lines.
M2.5YR. N5/0. Pot Nos. 62, 111, 119, 134, 145, 229, 253–5, 342, 365.

15. Kiln uncertain. Medium sandy fabric quite gritty on surfaces whose colour ranges from pale orange-brown to mid brown, all with a mid grey core. Very even sandy core with a few larger pieces of quartz and considerable amounts of mica in section and on surfaces. Decoration: often mica-coated.
M7.5YR. 7/6–6/6. Pot Nos. 45, 55, 185–6, 232.

16. Oxfordshire. Fine hard micaceous fabric with smooth 'leathery' finish, usually light brown surfaces with mid grey core. No definable constituents in the clay but there are a number of voids, measuring up to 0.05 mm. Sparse scatter of red iron. Vessels generally indented beakers. Decoration: rouletting.
M5YR. 6/6. Pot No. 97.

17. Oxford. Smooth micaceous fine sandy fabric, often dull reddish-brown with grey core. Decoration: stamped rosettes, paint, barbotine and rouletting.
M2.5YR. 6/6. Pot Nos. 10, 19, 32, 41, 47, 53, 59, 96.

18. Harrold area. Shell-tempered fabric. See thin section report by Dr D. F. Williams (p. 97). Decoration: rilling, burnishing, 'wavy' lines, impressed marks.
M10YR. 7/3 average vessel colour (many variations). For pottery see shell-tempered pottery Nos. 270–334 and Nos. 11, 18, 49, 50, 118, 123, 128, 147, 152–3, 156, 378, 379.

20. Nene Valley grey ware. Clay very similar to Fabric 10 but in section the core is noticeably white and the surfaces are mid/dark grey. No red iron inclusions but some grey/black. Decoration: burnishing.
M2.5Y. N8. Pot No. 181.

21. Kiln uncertain. Represented by one pot only and a few sherds. Form 2.8 shallow bowl. Creamy yellow fabric, slightly darker in section, with scatters of black and red inclusions, some sparse sub-angular quartz and a few much larger red iron pieces about 1 mm in length. Some shell traces and a moderate number of voids. Probably imported vessel.
M10YR. 7/4. Pot No. 184.

22. Local product. One of the local native fabric group very similar to Fabric 14 but thinner and used for smaller vessels. Hard thin fabric with reddish-brown/dark brown surfaces and a blue/grey core which in section is 'peppered' with fine grog. Possibly Caldecotte area fabric—some are similar to fabrics from kiln 2. Decoration: as for Fabric 14.
M5YR. 6/6–4/1. Pot No. 154.

23. Spain. Dressel 20 fabric. Very harsh thick pale brown on both surfaces and in section. Abundant inclusions and large mica flakes within the core and on surfaces. Some of the amphorae necks have been cut through completely, handles show partial sawing or the marks of such treatment. Dr D. Peacock has confirmed fabric.
M7.5YR. 6/4–4/1. Pot No. 157, 159.

24. Possibly Verulamium region. Black-grey fabric with mid grey core, hard and thin and well made; products appear to be mostly poppy-head beakers. The clay has fine quartz inclusions giving an even cellular appearance in section. Some other forms present but fabric uncommon. Decoration: burnishing, slip, barbotine dots.
M2.5Y. N3/0. Pot Nos. 58, 103, 106, 142, 380.

26. Local product. Native fabric very similar to the Caldecotte kiln 1 material and with strong parallels with Saffron Gardens site (Waugh *et al.* 1974). The fabric is coarse in section with large grog inclusions up to 4 mm in size and scattered sparse shell. The surface is soft with a soapy feel. Colour tends to be bright reddish brown with grey-black core. The thicker heavy fabric is used for larger vessels, jars, bowls and storage but there is a finer fabric used in the production of cups, finer bowls and small jars. Decoration: burnishing, scored lines, hollow cordons, corrugations, random slashing, stabbing and impressed patterns. Also combed and scored lines and lattice. The products vary from hand to wheel-made.
M2.5YR. 4/6. Pot Nos. 52, 120, 130, 144, 146, 149, 155, 162, 180, 199, 202, 204, 206–7, 211, 212A, 214–5, 219–21, 225–6, 228, 230–1, 234, 237–8, 241, 244–7, 249, 251, 261, 264–9, 344, 346, 364.

27. Possibly Verulamium region. Represented by one vessel only. Form 6.6 flagon, soft red/orange sandy fabric with possible slip traces and mica on surfaces and in clay.
M5YR. 7/6. Pot No. 66.

29. Colchester. Represented by fewer than five sherds and rims. Beaker fabric.

29. Probably Lezoux. Very micaceous fabric throughout, pale brown surfaces, mid grey in section. Fairly dense fabric with mica grains of all sizes, no other particular inclusions and with matt orange colour-coat. Represented by one vessel only.
M10YR. 7/3. Pot No. 191.

30. Nene Valley colour-coat fabric. Hard fired, mid grey with same inclusions as Fabric 10.
M7.5YR. N7/0.

33. Probably from Fulmer-Hedgerley area. Harsh sandy fabric usually dark bluish grey throughout but can have brown-grey surface margins. Heavy well-made pots generally decorated or slipped. In section the core has a cellular appearance with an even distribution of coarse quartz particles up to 0.05 mm. Decoration: white slip on pie-dish and platter forms, slip over rims on jars, lattice and 'wave' patterns, burnished.
M2.5YR. N5/0 to 2.5Y. 6/2. Pot Nos. 8, 16, 25, 35, 39, 113, 151, 337, 361, 367.

34. Probably Cologne. Creamy white fine fabric with dark brown colour-coat, roughcast decoration. One pot only and some sherds.
Pot No. 197.

35. Oxford. Reduced sandy fabric, fairly fine with smooth surfaces, often worn or eroded. Fabric rather soft. In section the core contains numerous fine black grits and elongated voids up to 5 mm in length. Colour variation from brownish to bluish grey. Decoration: rouletting.
M10YR. 5/1–7/2. Pot Nos. 7, 63, 132, 362.

36. Kiln uncertain. Black fabric highly burnished and with visible mica on surface and in section. In section the clay contains substantial quantities of fine quartz and shell and some very large dark grey pellets *c.*3 mm in size. Represented by one 'Belgic' platter.
M5Y. 2.5/1. Pot No. 193.

37. Oxford. Pink-white fabric, perhaps overfired, with pale brown slip and bright orange-red iron inclusions, visible on surfaces and in section. Fabric is micaceous and core contains moderate amounts of small quartz and shell, with some voids up to 1 mm in size. One vessel only and sherds. Decoration: very sharp rouletting with incised arcs giving a faceted decoration on centre panel.
M5YR. 7/4. Pot No. 99.

38. Provenance uncertain. Hard pale orange beaker fabric, darker orange in section and very micaceous. Sometimes fired with greyish surfaces. In section there is an even scatter of small angular quartz, with larger shell pieces and voids. Some indented forms with mica gilding. See also No. 75. Decoration: rouletting, indenting, mica-gilding.
M5YR. 7/6. Pot Nos. 104, 171.

39. Black-burnished ware fabric. Well-burnished surfaces with large quartz grits in section in abundant numbers, some pinkish in colour and some up to 1 mm in size. Decoration: burnishing, lattice, arcading and 'wavy' lines.
M2.5Y. N2/0. Pot Nos. 5, 21, 40.

40. Probably from the Fulmer area. Harsh fabric, dark blue-grey in colour throughout. In section the coarse quartz inclusions are visible without magnification and some measure up to 1 mm in size. Some vessels have remains of white slip. Decoration: white slip, burnish, scored lines and lattice, black finish.
M2.5Y. N4/0. Pot Nos. 17, 24, 124, 363, 374.

41. Boars Hill, Oxford. Cream ware. Hard pinkish white fabric with deeper coloured core, a scatter of pink quartz throughout, visible on surfaces and in section. Moderate numbers of black elongated inclusions and occasional pieces of red iron.
M5YR. 7/3. Pot Nos. 160, 177.

42. Uncertain provenance. Hard brown-grey fabric with reddish surface margins and grey in core. Smooth clay mix with moderate scatter of rounded quartz, sparse flint, clay pellets and black iron. Mica visible on surface. Rare fabric on site.
M10YR. 6/2. Pot Nos. 56, 167.

44. Local product. Sandy fabric with brownish or brownish-grey surfaces and a pale blue-grey or grey core. In section there are scattered angular quartz pieces up to 1 mm in size and occasionally much larger pieces. This is the most common fabric at Magiovinium producing a varied range of pottery forms, sometimes coarse in finish, but this may be due to the erosion of the surface from waterlogging. There is a finer fabric fired deliberately to obtain a bright orange surface or slipped to the same effect. Fabric can be similar to those from Caldecotte, kiln 2. Decoration: burnished lines and lattice; arcading; indentations; comb stabbing and lines; black finish/slip.
M2.5Y. N4/0 and variations. Pot Nos. 1, 2, 6, 9, 15,

26–7, 29–30, 36, 43, 101–2, 108, 114, 127, 131, 133, 135, 138, 138A, 143, 176, 336, 339, 343, 345, 352–3, 358–9, 360, 373, 376.

45. Verulamium region. Similar fabric to Fabric 9 but quartz granules are coarser and there are large red iron inclusions visible without magnification. Very heavy vessels.
M10YR. 8/3–6/4. Pot Nos. 13, 34, 54, 72, 78, 83, 136, 158.

46. Local native fabric. Similar in content to Fabric 26 but the inclusions are finer. The fabric is black-brown throughout and is used for fine and well-decorated vessels. The outer surfaces are smooth, burnished and 'leathery' in finish. Pots are often sooted. Decoration: burnishing, combing, corrugations, scored lines and some with 'wiped' finish.
M5YR. 2.5/1. Pot Nos. 3, 51, 110, 125, 129, 161, 178, 200, 205, 208–10, 212, 216, 227, 230–1, 234–5, 239, 248, 258–9, 262–3.

47. Kiln uncertain. Very coarse fabric, greyish to pale brown throughout with large pale orange inclusions visible without magnification. Sometimes well-finished with slip but fabric abrades and surface is usually lost. Uncommon fabric, used for large bowls and one or two jar forms. In section there is a moderate amount of angulate small quartz and some larger shell pieces. The orange 'grog' can be up to 4 mm in size. Decoration: reeded rims.
M7.5YR. 7/4–5/2. Pot No. 115.

48. Oxford parchment ware (Young 1977, 80). Dense micaceous fabric, creamy throughout with some sparse pink rounded quartz and red iron. Decoration: paint.
M7.5YR. 8/2. Pot Nos. 37–8.

49. Oxford white ware (Young 1977, 93). Smooth hard surfaces with pinkish-white core similar to Fabric 48 but coarser. Fine quartz inclusions and a scatter of larger pieces, some red iron. Decoration: none.
M7.5YR. 8/2. Pot Nos. 23, 76–7, 170.

50. Much Hadham. Bright orange or brownish orange throughout but sometimes with variation in core colour. Sandy smooth surface and very micaceous, fabric is heavily gritted with fine particles of quartz and black grits with some scatter of larger quartz pieces. Decoration: burnishing, white slip.
M2.5YR. 6/8–5/8. Pot Nos. 28, 31, 64, 67, 75, 81, 87, 163, 165, 347.

51. Nene Valley colour-coat. Similar in content to Fabric 10 but without red iron particles. Core is bluish white and colour-coat greyish. Decoration: as for Fabric 10.
M2.5Y. N8/0. Pot Nos. 100, 168, 174.

54. Nene Valley colour-coat with orange surfaces and core. Brown-orange colour-coat. Decoration: applied scales, rouletting.
M5YR. 7/8. Pot Nos. 85, 92.

57. S. Gaul Dressel 30 fabric. Pale brown to pale brown-orange fabric, dense in section, micaceous throughout. Surfaces 'powdery'.
M5YR. 7/4–7/6.

58. Rhenish ware. Hard thin fabric with glossy surfaces, often iridescent and dark brown. In section the core has abundant 'flecks' and can be grey or orange/red and grey. Decoration: indented, rouletted, barbotine.
M10YR. 4/1. Pot Nos. 189–90.

59. Kiln uncertain. Represented by one vessel only. Beaker in fine sandy fabric with pale orange surfaces and grey core. Contains fine quartz with some larger and some shell; mica on surface and within fabric. Darker orange slip over roughcast decoration.
M5YR. 7/6. Pot No. 91.

60. Kiln uncertain. Represented by two butt-beakers. Greyish brown fabric with fine 'soapy' finish. Section contains very fine limestone inclusions, some small red iron and some larger voids up to 1 mm in size. Burnished.
M5YR. 5/3. Pot No. 198.

61. A fairly uncommon fabric at Magiovinium—see thin report by Dr D F Williams. Fabric contains ooliths, surface colour varies from reddish brown to brown.
M5YR. 5/3–5/4. Pot Nos. 296, 313, 316.

65. Probably Oxford fabric. Fine sandy with slip, pale orange brown surfaces with greyish core. Used for beakers. Noticeable mica on surfaces. Possibly same fabric as 16.
M5YR. 6/6.

69. London. Smooth and dense with black surfaces and paler grey core. The fabric is noticeably micaceous throughout and has some red iron inclusions. Decoration: compass inscribed circles.
M2.5Y. N3/0. Pot Nos. 4, 90, 194, 196.

70. Verulamium region. Grey ware with same structure and similar sized inclusions as Fabric 9. Pale grey throughout with black 'finish' and barbotine dot decoration. Fewer than five vessels on site.
M7.5YR. 7/0–6/0. Pot No. 112.

71. Mancetter/Hartshill. Dense, soft 'chalky' fabric, breaks with uneven fracture containing in section sparse quartz and iron inclusions. Mortaria fabric with black and brown ironstone grits.
M10YR. 8/1.

72. Kiln uncertain. Very similar fabric to Fabric 13 but with finer contents and a harder surface. The finish is always burnished and the colour brownish red on surfaces and dark grey in section; grog inclusions visible without magnification. Used for smaller vessels only. Burnished.
M5YR. 6/4. Pot Nos. 60, 139, 203, 222, 250, 252.

73. Local product. Fabric in native tradition but harsher in finish and content more sandy, perhaps later in date. Allied to Fabrics 26 and 46. All vessels are wheel-made. Burnished.
M10YR. 3/1. Pot Nos. 44, 48, 201, 218, 224, 260, 366.

75. Kiln uncertain. Fabric very similar to Fabric 38 but with bright brown clear glaze. One vessel only with rouletting.
M5YR. 7/6. Pot No. 14.

77. Oxford mortaria fabric. Fine white to pale pink fabric with moderate sub-angular quartz grains throughout and some scattered larger red iron pieces.
M7.5YR. 8/4. Pot Nos. 20, 71, 80.

79. Central Gaul colour-coat. Fairly similar to samian fabric but the inclusions are coarser and some mica is visible on surface and within clay. Colour-coated with barbotine decoration and 'gilded' areas within patterns.

M2.5YR. 6/6.

81. Kiln uncertain. Fine dense hard cream fabric 'waxy' in section, with noticeable elongate black inclusions, some scatter of larger quartz particles and a sparse number of fine red iron grits. Used for fine bowls. Examples from London (D.U.A.) but provenance unknown. Decoration: marbling.
M10YR. 8/4. Pot Nos. 89, 187–8.

83. Kiln uncertain. Represented by one bowl only. Similar in content to Fabric 13 but with a considerable scatter of shell grits throughout the section, also visible on surface.
M7.5YR. 8/6. Form 5.2.

86. Nene Valley. Very similar to Fabric 10 without any iron inclusions. Decoration: as for Fabric 10.
M10YR. 8/3. Pot Nos. 79, 84, 88, 98, 172.

89. Provenance uncertain. Hard brown, orange, buff, sometimes with dark grey core containing considerable numbers of sub-angular quartz pieces, a scatter of red iron and occasional small shell inclusions. Many vessels have a thin creamy-white slip overall.
M2.5YR. 5/6. Pot Nos. 46, 164, 338, 340–1.

91. Possibly Staines. Grey even sandy fabric, sometimes with partial oxidization on margins, containing medium to fine quartz grains, with some larger quartz and a few pieces of red iron. In section, fabric has some voids and flecks of mica. Barbotine decoration under glaze, both surfaces glazed. Similar to the glazed wares from Staines.
M2.5Y. N4/0. Pot Nos. 182–3.

92. Provenance uncertain—possibly Hadham. Very coarse harsh sandy fabric, brown-orange in colour, containing large angular quartz pieces and some larger shell inclusions. All vessels are covered overall in thick cream slip.
M2.5YR. 6/8.

93. Oxford coarse gritted ware. Fabric similar in colour to Fabric 49 but surface and section are noticeably gritty. Section contains abundant rounded quartz grits which are apparently the same as those used as mortaria grits but about half the size or less at 0.05 mm.
M7.5YR. 7/4.

Form/Fabric Series

Form numbers are those allotted arbitrarily to each group as the sherds were sorted

No. on figures	*Form*	*Fab.*	*Dm.*	*Context*	*Date of Form*	*Pot No.*	*Decoration/Description*
PLATTERS							
1	2.1	44	14	17-240	2nd cent. AD	620	Burnished arcading on sides and underneath
2	2.1v	44	13	17-951	2nd	2693	Strainer
3	2.5	46	13	17-1487	Late 1st	4261	Burnished
4	2.8	69	16	17-149	Early 2nd	97	Grooved circle on centre base
5	2.3v	39	14	17-2331	4th	5766	Burnished
6	2.7	44	21	17-501	Late 2nd	1226	White slip, painted swags
7	2.2	35	21	17-149	Late 2nd	103	Slip
8	2.3	33	18	18-98		122	White slip
9	2.9	44	16	17-266	Mid–late 2nd	751	Burnished with reeded rim and interior groove
10	2.4	17	14	17-223	Late 1st–mid 2nd	353	Burnished with reeded rim and interior groove
11	2.6	18	18	18-556	Late 2nd?	1110	Rilled, sooted, faint grooves on rim
BOWLS							
12	5.11	3	18	17-1253	Late 3rd	3320	White slip, scored diagonal lines
13	5.64	45	21	17-992	Late 2nd-mid 3rd	3478	Cordoned, grooved
14	5.12	75	13	17-2331	Hadrianic	5820	Glazed and rouletted
15	5.6	44	12	17-220	Early–mid 2nd	277	White slip over incised lattice
16	5.50	33	16	17-2331	Mid 2nd	5818	
17	5.28	40	19	17-844	Mid 2nd	2153	Burnished
18	5.42	18	18	17-1569	Late 2nd	4376	Rilled, burnished
19	5.35	17	18	17-220	Mid 3rd–4th	5838	
20	5.15	77	18	17-1201	Early 3rd	2915	Traces of paint?
21	5.46	39	18	17-501	Mid–late 2nd	1188	Burnt, traces of burnishing
22	5.24	42	13	17-560		1493	Cordoned, grooved
23	5.7	49	16	17-11	Probably 2nd	5815	
24	5.3	40	15	17-2331	3rd	5846	Black slip
25	5.9	33	15	17-1230	Early 2nd	2956	White slip
26	5.2	44	16	17-662	4th	1857	Black slip
27	5.18	44	19	17-667	Early–mid 2nd	1872	Black finish

28	5.31	50	18	17-510	Early–mid 2nd	1364	Burnished
29	5.32	44	15	17-169	Late 1st–early 2nd	5810	Burnished and grooved
30	5.21	44	15	17-1378	Late 3rd	3398	Black finish, grooved rim
31	5.10	50	15	17-1804	*c.*350–400 +	4829	Colour-coat
32	5.10v	17	16	17-1351		3778	
33	5.38	9	20	17-227	Mid 2nd–early 3rd	412	
34	5.41	45	16	17-1231	Mid–late 2nd	2998	Slip/grooved
35	5.41	33	16	17-501	Early 2nd	1187	Grooved, scored zigzag and sooted
36	5.41	44	16	17-220	2nd	5828	Grooved, rilled, diagonal lines and burnished. Black finish
37	5.43	48	17	17-2331	Mid 3rd–late 4th	5989	Red paint, overfired to black in patches
38	5.43	48	24	17-101	Mid 3rd–late 4th	5791	Traces of paint
39	5.14	33	21	17-2331	2nd	5830	Vestigial cordon
40	5.51	39	15	17-501	Mid–late 2nd	1194	Burnished
41	5.5	17	14	17-240	3rd–4th	661	Colour-coat
42	5.54	9	13	17-501	Mid 2nd	1518	Grooved, cordoned
43	5.58	44	15	17-1665	Late 1st-mid 2nd	4680	Burnished, carinated, cordoned with stamped decoration
44	5.58	73	17	17-101	2nd	5792	Burnished, cordoned, scored 'wave' line
45	5.19	15	16	17-926	2nd	2301	Dimpled
46	5.23	89	16	17-567	Early–mid 2nd	1496	Dimpled, grooved, cordoned, mica-coated
47	5.65	17	14	18-492	Early 4th–5th	998	Colour-coated, rouletted, grooved, burnished
48	5.53	73	23	17-435	2nd	959	Grooved, burnished, cordoned, burnt
49	5.17	18	32	17-101	2nd	3037	Burnished, traces of rilling, rim grooves
50	5.17	18	34	17-1229	Late 4th?	3401	Burnished
51	5.59	46	15	17-1356	Mid–late 1st	3902	Burnished, hollow cordons, vertical lines
52	5.61	26	12	17-1751	Mid–late 1st	4810	Burnished, vertical zigzag lines
53	5.19	17	13	17-1222	2nd	2937	Grooved, rouletted and cordoned
54	5.56	45	21	17-869	Early–mid 2nd	2210	Slipped
55	5.52	15	26	17-227	Early–mid 3rd	445	
56	5.4	42	18	17-2331	Late 3rd-mid 4th	5799	Grooves on rim and body
57	5.1	3	19	17-2331	Late 2nd	6100	Scored lattice, carinated
58	5.13	24	19	17-91	Late 1st–early 2nd	2605	Burnished, black finish and grooved
59	5.27	17	19	18-557	2nd–late 3rd	1106	Rouletted
60	5.33	72	12	17–1333	Later 1st	3600	Burnished
61	5.8	13	28	17-2016	4th	4986	Burnished
62	5.16	14	2	17-1607	1st	4404	Burnt
CUPS							
63	11.5	35	13	17-689	2nd	1942	Copy Drag. 27, slip
64	11.3	50	18	17-1334	3rd	3665	Copy Drag. 33
65	11.1	72	10	17-1330	Late 1st–early 2nd	3653	Burnished
FLAGONS							
66	6.6	27	12	17-1356	Late 1st–early 2nd	3912	
67	6.17	50?	11	17-662	?Late 1st	1852	White slip
68	6.14	10	13	18-100		229	
69	6.7	9	9	17-567	2nd	1515	
70	6.4	10	8	17-101		3089	
71	6.12	77	5	17-1344	Mid 3rd–4th	3833	
72	6.8	45	4.5	17-936	Early–mid 2nd	2630	

No. on figures	*Form*	*Fab.*	*Dm.*	*Context*	*Date*	*Pot No.*	*Decoration/Description*
73	6.21	9	3	17-567	Late 1st–early 2nd	1514	
74	6.20	86	4	18-492	4th	970	Colour-coated
75	6.2	50	—	17-2331	4th	5650	Face mask, rim missing
76	6.11	49	5	17-240	Mid 2nd-mid 3rd	672	
77	6.10	49	7	17-221	3rd	345	
78	6.3	45	4	17-2331	Mid 2nd	6007	White slip
79	6.5	86	4	17-191	2nd	195	Traces of slip
80	6.19	77	5	18-318	2nd–mid 3rd	682	
81	6.16	50	5	17-2331	4th	5653	
82	6.24	10	4	17-1351	4th	3789	Traces of colour-coat
83	6.1	45	9	17-2331	Mid 2nd	5651	Rouletted
84	6.18	86	6	17-1340	4th	5654	Colour-coated
BEAKERS							
85	4.9	54	10	17-220	3rd	296	Slipped
86	4.8	9	6	17-501	Mid–late 2nd	1169	Burnt
87	4.4	50	6.5	17-2331	Late 3rd–early 4th	5670	Burnished
88	4.7	86	5	17-251	3rd	5678	Colour-coated
89	4.4v	81	5	17-1347	Early 2nd	3700	Burnished
90	4.17	69	10	17-1485		4236	Burnished
91	4.5v	59	12	17-1255	Early 2nd	3339	Matt colour-coat
92	4.12	54	8	17-869	Mid–late 3rd	2144	Colour-coated, indented, applied scales
93	4.1	10	9	17-501	Late 2nd–early 3rd	1115	Colour-coated, barbotine dot and scroll decoration
94	4.10	74	5	17-169	*c.*50–150	1034	Barbotine dots within raised diagonal crosses
95	4.2	44	10	17–199	Mid 3rd-early 4th	70	Indented
96	4.2v	17	8	17-501	4th	1110	Miniature form, indented, colour-coated, rouletted
97	4.5	16	11	17-247	*c.*250–300	1004	Grooved, rouletted, colour-coated
98	4.16	86	10	17-90	3rd	2560	Colour-coat, rouletted and indented
99	4.13	37	11	17-1304	Late 2nd	3522	Self-slip, 'London' ware decoration, rouletted
BEAKER JARS							
100	12.11	51	8	18-492	Probably 4th	867	Colour-coated
101	12.4	44	9	17-247	Later 2nd	1009	Lattice panel
102	12.13	44	12	17-1304	Late 2nd-mid 3rd	3319	Black finish, latticed
103	12.1	24	8	17-1333	Early–mid 2nd	3596	White slip over rim and shoulder, latticed
104	12.3	38	9	17-285	2nd	65	Mica-coated, indented
105	12.14	24	7.5	17-567	2nd	1513	Barbotine dots
106	12.14	24	5	17-992	Late 1st-early 2nd	3480	White slip, barbotine dots, rivet hole
107	12.2	35	9	17-510	Probably 2nd	1362	Traces of lattice
108	12.5	44	9	17-1253	Possibly 3rd	3326	Lattice decoration on girth, black finish
109	12.7	3	12	17-501	3rd	1243	Indented, white slip
110	12.8	46	8	17-1467	Late 1st-early 2nd	4182	Shallow corrugations, sooted
111	12.6	14	10	17-501	Early 2nd	1236	Comb-stabbing, orange finish
112	12.12	70	11.5	18-233	Up to mid 2nd	386	Black finish, grooved, cordoned
JARS							
113	3.1v	33	14	17-87	3rd	2501	Burnished lattice
114	3.1	44	11	17-199	Late 2nd–early 3rd	14	Burnished lattice
115	3.17	47	22	17-101	Mid 2nd	3273	Burnt
116	3.9	13	22	17-101	Late 3rd-early 4th	3056	
117	3.2	4	23	17-2016	Late 3rd-early 4th	4978	Burnished

118	3.30	18	15	17-1344	Late 3rd-early 4th	3791	Burnished
119	3.24	14	21	17-530	2nd–late 3rd	1391	Slip, cordoned and burnished
120	3.45	26	26	17-1458	1st–late 3rd	4134	Burnished
121	3.25	13	20	17-501	Late 1st–2nd	1145	Rilled
122	3.14	26	20	17-828	1st onwards	2094	Scored lines on shoulder
123	3.33	18	17	17-87	Later 3rd–4th	2495	Rilled
124	3.37	40	13	17-734	Mid 4th	1985	Burnished and scored, rim frilled. Arcaded decoration
125	3.34	46	12.5	17-1708	Late 1st	4758	Burnished and grooved
126	3.16	9	11	17-101	Late 2nd	3124	
127	3.15	44	13	17-488	2nd	1040	Black finish, rilled
128	3.38	18	13	17-501	Mid 2nd	1077	
129	3.39	46	13	17-164	Late 1st-early 2nd	4678	Burnished, grooved and cordoned
130	3.29	26	13	17-1485	Late 1st	4219	Burnished, grooved, cordoned and raised lattice
131	3.3	44	11	17-498	Mid 2nd-early 3rd	1046	Comb stabbing
132	3.8	35	14	17-2331	Late 2nd	6066	
133	3.32	44	17	17-991	3rd	3455	Black finish, grooved and cordoned
134	3.18	14	18	17-1782	2nd	4823	
135	3.23	44	17	17-1467	1st–2nd	4190	Black finish—ledged rim
136	3.26	45	14	17-501	2nd	1152	Burnt
137	3.10	3	20	17-2331	Early–mid 3rd	5715	Groove on rim edge, cordoned
138	3.5	44	12	17-2331	Mid 2nd	5718	Grooved
138A	3.5v	44	23	17-668	Mid–late 2nd	1886	Reeded, grooved, cordon and slip
139	3.13	72	11	17-1669	1st	4699	Burnished and cordoned
140	3.35	18	21	17-220	1st	5753	Burnished
141	3.19	3	7	17-1090	Mid 3rd-early 4th	2897	White slip over rim down to shoulder cordon
142	3.27	24	10	17-1351	Late 2nd	3666	Rouletted, grooved and cordoned
143	3.7	44	14	17-983	Mid 2nd	2786	Lattice below shoulder
144	3.31	26	9	17-1323		3568	Burnished
STORAGE JARS							
145	9.6	14	38	17-1323	Late 1st-early 2nd	3569	Burnished, cordoned, diagonal lines
146	9.3	26	36	17-1698	Late 1st	4737	Burnished, grooved, cordoned, scored zigzag
147	9.2	18	32	17-877	Possibly 5th	2236	Rilled, inner face worn
148	91	11	26	17-1351	Late 1st	3765	Rilled, shallow internal rim
149	9.7	26	34	17-1708	Late 1st	4751	Scored line decoration, burnished
150	9.8	13	23	17-591	Possibly 3rd–4th	1669	
151	9.8	13	34	18-52	Possibly 3rd–4th	358	
152	9.4	18	42	17-2331	3rd–4th	5660	Burnished
153	9.10	18	24	18-479	3rd–4th	900	Burnished
154	9.9	22	26	17-1649	Late 1st-early 2nd	4539	Burnished
155	9.12	26	20	17-1607	Late 1st	4407	Burnished, sooted
156	9.11	18	28	17-1	Antonine	3001	Rilled, grooved rim
AMPHORAE							
157	18.1	23	16	17-501		1104	Dressel 20
158	18.4	45	16	17-2331		5884	Copy Dressel 30
159	18.2	23	16	17-530		1388	Handle partly cut through
LIDS							
160	10.5	41	16	17-227		534	
161	10.3	46	15	17-1356	Late 1st	3910	Burnished, grooved, comb patterns
162	10.6	26	16	17-1266	Late 1st	3786	Burnished, grooved
TAZZAS/URNS							
163	8.1	50	10	17-2331	4th	5850	Frilled

No. on figures	*Form*	*Fab.*	*Dm.*	*Context*	*Date*	*Pot No.*	*Decoration/Description*
164	8.3	89	17	17-690		1953	
165	8.2	50	—	17-240	4th	951	Frilled
MISCELLANEOUS FORMS							
166	14.15	13	11	17-1467	—	4191	
167	14.25	42	13	17-501	Mid 2nd	1108	
168	14.5	10	13	17-101	3rd	3095	Colour-coated, rouletted
169	14.5	10	19	17-101	3rd	3093	Colour-coated, rouletted
170	14.26	49	14	17-240	Early–mid 2nd	677	
171	14.2	38	2.5	17-2331	2nd	5868	Mica on surface
172	14.14	86	7	17-73	Early 2nd	2439	Unguent jar
173	14.1	7	7	17-567	2nd	1579	Burnished
174	14.8	51	3.5	17-220		945	Shallow grooving, candlestick?
175	14.24	10	—	18-492	Probably 4th	1005	Colour-coated, barbotine decoration
176	14.1	44	4.5	18-338	2nd	721	Burnished
177	14.11	41	—	17-1344		3856	Lamp-chimney fragment
178	14.3	46	—	17-169	Early 2nd	153	Burnished, vertical lines
179	14.2	15	—	17-236	Later 2nd	61	White slip, grooved
180	14.22	26	—	17-199		5746	Diagonal slashing
181	14.4	20	1.5	17-2331	2nd	5869	
MISCELLANEOUS FINE WARES							
182	5.58	91	15	17-946	Early 2nd	2638	Glazed, slip decoration, cordoned
183	5.58	91	15	17-1306	Early 2nd	3545	Glazed, grooved
184	2.8	21	18	17-1403	Early 2nd	4041	Mica-coated
185	2.9	15	28	17-27	Early 2nd	2371	Mica-coated
186	5.19	15	18	17-501	Early 2nd	1124	Mica-coated
187	5.19	81	20	17-993	Early 2nd	3618	Marbled ware
188	5.58	81	11	18-235	Early 2nd	400	Marbled ware
189	4.16	58	8	17-2010	*c.*150–250	4973	Colour-coated, indented, Rhenish
190	4.12	58	4	17-951	*c.*150–250	2688	Colour-coated, indented, Rhenish
191	2.8	29	20	17-1351	*c.*43–70	3751	Colour-coated, Lezoux fabric
192	2.8	4	16	17-2331	Late 1st-early 2nd	5771	Burnished
193	2.5	36	20	17-1651	Late 1st-early 2nd	4547	Burnished, grooved
194	5.41	69	11	17-45	Late 1st-early 2nd	5827	Burnished, grooved
195	4.10	4	8	17-1273	Late 1st-early 2nd	3370	Burnished
196	12.2	69	9	17-965	Late 1st-early 2nd	2742	Burnished
197	4.5	34	12	17-949	*c.*70–150	1011	Colour-coated, roughcast
198	3.29	60	10	17-2008	?Late 1st	4972	Burnished, perhaps south-east fabric
Native Wares (from 1st to mid 2nd century with certain jar forms continuing to the late second century)							
PLATTERS							
199	2.1	26	24	17-1746		4793	Burnished, zigzag decoration
200	2.1	46	13	17-1465		4152	Burnished
201	2.5	73	15	17-1672		4718	Burnished, grooved, internal cordon
202	2.5	26	12	17-277		5767	Burnished, grooved
203	2.5	72	18	17-1488		4240	Burnished, grooved
204	2.5	26	20	17-1467		4178	Burnished
BOWLS							
205	5.24	46	22	17-224		362	Burnished, pattern on underside
206	5.24	26	15	17-1323		3573	Burnished, lines on underside
207	5.31	26	21	17-1901		4886	Burnished, groove
208	5.4	46	18	17-886		2258	Burnished, scored vertical lines
209	5.4	46	13	17-1018		2852	Burnished, grooved, diagonal lines

210	5.4	46	18	17-1356	3901	Burnished, corrugated
211	5.13	26	16	17-828	2096	Burnished, grooved, matt panel, 'stabbed' decoration
212	5.13	46	15	17-1353	3884	Burnished, grooved, comb diagonal lines
212A	5.13	26	19	17-1486	4242	Burnished, matt panel
213	5.27	72	14	17-1487	4255	Burnished
214	5.61	26	15	17-1623	4439	Burnished, scored vertical lines
215	5.7	26	19	17-1644	4507	Burnished, diagonal lines
216	5.16	46	32	17-1488	4288	Burnished, matt panel, crudely made
217	5.8	—	24	17-169	5727	Very worn area below inner rim
218	5.8	73	22	18-82	98	Burnished, grooved, cordoned, strainer
219	5.23	26	26	17-1708	4756	Burnished, grooved, cordoned
220	5.59	26	17	17-1625	4450	Burnished, hollow cordons
221	5.59	26	27	17-1751	4807	Burnished, hollow cordons, grooved
222	5.61	72	13.5	17-1637	4492	Burnished, grooved, scored chevron decoration
CUPS						
223	11.1	73	15	17-1467	4204	Burnished, grooved, impressed decoration
224	11.1	73	16	17-1330	3650	Burnished, grooved, impressed decoration
JARS						
225	3.3	26	10	17-1647	4525	Burnished, grooved
226	3.16	26	7	17-1372	3975	Burnished
227	12.8	46	8	17-1413	4072	Burnished
228	3.17	26	11	17-1486	4244	Burnished, traces of zigzag on shoulder
229	3.9	14	10	17-1647	4522	Grooved
230	12.15	26	8	17-1628	4459	Burnished, 'wiped' finish
231	3.26	26	12	17-1651	4545	Burnished, corrugated, incised lattice
232	3.26	46	15	17-1488	4265	Burnished, corrugated, alternate diagonal stabbing
233	3.26	46	16	17-1685	4730	Burnished, corrugated
234	3.26	26	16	17-1351	3737	Burnished, cordoned, traces of 'scratched' decoration
235	3.18	46	17	17-1746	4791	Grooved ledged rim, burnished, burnt
236	3.18	26	23	17-1708	4750	Burnished, ledged rim, sooted
237	3.23	26	15	17-1648	4537	Burnished, crudely slashed rim
238	3.23	26	14	17-1647	4528	Burnished, rim cordon, slashed rim
239	3.23	46	13	17-1938	4928	Burnished, sooted
240	3.35	72	—	17-518	1379	Burnished, traces of zigzag on rim
241	3.3	26	12	17-1353	3883	Burnished, cordoned, diagonal comb stabbing
242	3.3	72	12	17-1901	4887	Burnished, cordoned, diagonal comb stabbing
243	3.9	26	17	17-1708	4753	Burnished, grooved, neck cordon
244	3.29	26	13	17-1468	4219	Burnished, cordoned, burnished lattice
245	3.16	26	17	17-266	749	Burnished
246	3.17	26	19	17-1628	4457	Burnished, sooted
247	3.25	26	15	17-1488	4274	Burnished, grooved
248	3.17	46	14	17-852	2178	Burnished, grooved, traces of zigzag
249	3.14	26	12	17-1397	4017	Burnished, grooved, shoulder cordon
250	3.13	72	9	17-1670	4708	Burnished, faint grooving
251	3.27	26	10	17-2331	5886	Burnished, grooved, cordoned
252	3.1	72	11	17-1323	3572	Burnished, grooved, shoulder cordon
253	3.14	14	22	17-1487	4253	Burnished, grooved, scored vertical lines
STORAGE JARS						
254	9.6	14	32	17-169	5728	Burnished, 'wave' decoration, grooves
255	9.2	14	26	17-1753	4815	Grooved

No. on figures	*Form*	*Fab.*	*Dm.*	*Context*	*Date*	*Pot No.*	*Decoration/Description*
256	9.3	26	32	17-2329		1064	Burnished, grooves
MISCELLANEOUS FORMS							
257	6.1	72	5	17-1700		4747	Burnished, flagon/bottle
258	14.7	46	—	17-2331		6115	Burnished, strainer
LIDS							
259	10.6	46	16	17-101		3126	Burnished, grooves
260	10.6	73	16	17-1353		3885	Burnished, grooved, combed 'wave' decoration
261	10.6	26	17	17-1350		3872	Burnished, random stabbed decoration
262	10.7	46	21	17-1644		4510	Burnished vertical lines
BASES							
263	13.20	46	8	17-1372		3971	Burnished, grooved, wiped 'X' underneath
264	13.6	26	7	17-11		2339	Burnished
265	13.4	26	7	17-1458		4127	Burnished, cordoned, finger-marks on interior surface
266	13.4	26	6	17-1232		2961	Burnished, stabbed decoration
267	13.7	26	11	17-2331		5861	Burnished
268	14.9	26	9	17-1751		4809	Burnished, grooved
269	13.3	26	6	17-1465		4148	Burnished

For additional native forms see also Pottery Nos. 3; 44; 48; 51; 52; 60; 62; 65; 110; 119; 122; 125; 129; 130; 134; 139; 144–6; 149; 155; 161–2; 178; 180 in Form Series.

Shell Tempered Fabrics

SHALLOW BOWLS AND PLATTERS							
270	2.8	6	13	17-1567	Late 1st	4371	Burnished
271	2.8	6	19	17-1356	Late 1st	3904	Burnished, grooved
272	2.1	6	22	17-1	Late 1st	3032	Burnished, wiped finish
273	2.6	18	18	17-221	—	331	Burnished, coiled, finger-marked
274	5.4	18	23	17-2331	4th	5993	Burnished, rilled
275	5.4	18	16	17-1090	—	2899	Burnished
276	5.64	18	30	17-1381	Probably 4th	3625	Burnished
277	5.42	18	16	18-556	Late 2nd–early 3rd	1111	Burnished, rilled, shallow rim grooves
278	5.42	18	15	17-227	Late 2nd–early 3rd	402	Burnished
279	5.8	18	19	18-556	Late 2nd	1109	Rilled, strainer
280	5.9	18	20	17-2331		5823	Burnished, rilled, groove on rim edge
281	5.3	18	21	17-437	4th	2970	Burnished, rilled
282	5.6	18	16	17-651	—	1774	Burnished, rilled
283	5.28	18	24	18-122	Possibly 3rd	132	Burnished, rilled
283A	5.28	18	38	17-191	2nd–3rd	191	Burnished, sooted
283B	5.28	18	36	18-348		602	Burnished, rilled, shallow grooves
284	5.42	18	26	17-520	Late 2nd	1381	Burnished, rilled
284A	5.42	18	20	17-1218	2nd	2428	Burnished, sooted
285	5.14	18	25	17-679	*c.*160–80	1903	Reeded rim, burnished
285A	5.14	18	34	17-200	*c.*160–80	215	Grooved rim
285B	5.14	18	32	17-1344		3794	Rilled, neck cordon
286	5.17	18	30	17-88	3rd–4th	2523	Burnished, rilled, cordoned, grooved
286A	5.17	18	32	17-1351	3rd	3732	Rilled, grooved
287	5.21	18	42	17-365	4th	887	Burnished, rilled, impressed decoration
288	5.21	18	50	18-365	Late 3rd	735	Burnished, rilled, impressed decoration

JARS

289	3.3	18	11	17-1663		4666	Sooted
290	3.3	18	15	17-1646	?2nd	4520	Burnished, grooved, rilled
291	3.36	18	17	18-585		1177	Rilled, rim groove
292	3.26	18	15	17-U/S	Late 1st–early 2nd	1099	Slashed rim
293	3.26	18	11	17-1671	Late 1st	4715	Burnished, sooted
293A	3.26	18	16	17-425	Possibly 3rd	931	Burnished, unusual rim form
293B	3.26	18	17	17-1674	Late 1st	4721	Grooved rim, slashed on edge, sooted
293C	3.26	18	17	17-220	1st–early 2nd	248	Rilled, burnished, grooved ledge
294	3.18	18	15	17-510	Mid 2nd	1358	Rilled, sooted, grooved/ledged rim
295	3.18	6	11	17-1262	1st	3355	Rilled, traces of rim slashing
296	3.18	61	15	17-2028	Late 1st	5031	Rilled, finger impressions around outer rim, double groove forming ledge rim
297	3.18	18	18	17-339	Mid 2nd	872	Rilled, ledged rim
298	3.23	6	20	17-1663	Late 1st	4665	Burnished, rim slashed on top edge
299	3.38	11	9	17-1381	Late 2nd	3996	Rilled
300	3.38	18	15	17-501	Late 2nd	1073	Rilled, cordoned
301	3.38	11	20	17-542	Late 2nd	1433	Rilled
302	3.38	11	18	17-1460	Late 2nd	4145	Cordoned, shallowed rim
302A	3.38	18	16	17-543	Late 2nd	1454	Burnished, rilled
302B	3.38	18	18	17-82	Mid–late 2nd	2472	Rilled
303	3.23	18	20	17-1413	Trajanic?	2227	Rilled, grooved
303A	3.23	18	21	17-1467	Late 1st–early 2nd	4184	Rilled, grooved ledge, handmade, suspension hole
303B	3.23	18	18	17-1632	Late 1st–early 2nd	4478	Rilled, ledged rim, finger impressions
304	3.25	18	15	17-610	1st	1707	Burnished
305	3.46	18	14	17-2331	?Early 4th	6057	Finger indentations
306	3.25	18	20	18-348		712	Rilled, burnished
307	3.9	18	16	17-220	Late 1st–early 2nd	246	
308	3.9	18	12	17-221		325	Burnished, rilled
309	3.15	18	12	17-439	2nd	993	Burnished, cordoned
310	3.33	18	13	17-1030		2870	Burnished, rilled, sooted
310A	3.33	18	12	17-543	3rd	1455	Burnished, rilled
311	3.33	18	25	17-1344	Late 3rd–4th	3795	Burnished, rilled
312	3.17	18	23	17-1804	4th	4826	Burnished
312A	3.17	18	17	17-488	4th–5th	1039	Burnished, burnt
313	3.17	61	21	18-52	4th	59	Rilled
314	3.16	18	20	17-355		5701	Burnished, rim groove
315	3.16	18	16	17-101	Late 3rd–mid 4th	3045	Burnished
315A	3.16	18	13	17-227	Late 3rd–mid 4th	393	Burnished, groove near rim edge
315B	3.16	18	23	17-220	Late 3rd–mid 4th	254	Burnished, grooved
316	3.14	61	19	17-423		927	Sooted, grooved
317	3.14	18	18	17-501	Late 3rd–4th	1096	Rilled
318	12.15	18	12	17-566		1501	Burnished, rilled
319	3.30	18	11	17-685	Possibly 3rd	1920	
319A	3.30	11	14	17-1351	?3rd	3718	
319B	3.30	18	18	17-1351	3rd	3716	Burnished, neck cordon, shallowed rim interior
320	3.24	18	21	17-1940	Mid–late 4th	4933	Rilled, burnished
320A	3.24	18	15	18-505	Mid–late 4th	1053	Burnished
321	3.9	18	21	17-1017	3rd–4th	2846	Rilled
322	3.13	18	11	17-116	2nd	5745	Burnished, cordoned
323	3.37	18	19	18-100	4th	180	Outer rim edge rippled
323A	3.37	18	17	17-1804	Late 4th–5th	4825	Burnished, rilled

No. on figures	*Form*	*Fab.*	*Dm.*	*Context*	*Date*	*Pot No.*	*Decoration/Description*
324	3.5	18	18	17-852	3rd	2180	Rilled, scooped rim, outer rim groove
STORAGE JARS							
325	9.12	11	24	17-1637	1st	4494	Burnished, rilled, grooved, handmade
326	9.11	11	33	17-1607	Late 1st	4406	Outer rim slashed, burnished
326A	9.10	18	24	17-651	1st	1776	Rim very abraded
327	9.9	18	24	18-176		287	Burnished
328	9.11	11	24	17-1274	Late 1st-early 2nd	3432	Rim slashed, grooved, sooted
329	9.3	18	26	17-247	Late 2nd	2983	Burnished, inner rim worn
330	9.9	18	25	18-86		379	Shallowing inner rim
331	9.7	18	40	17-501	3rd	1058	Wavy line decoration, inner rim worn
332	9.2	18	28	17-1		3256	Burnished, rilled, burnt
333	9.1	18	24	17-651	Late 1st-early 2nd	1777	Burnished
333A	9.1	18	21	17-221		332	Burnt, inner rim worn
HANDLE							
334	16.10	18	2	18-492	4th	984	Burnished, stabbed decoration

For additional forms in shell-tempered fabric see Pottery Nos. 11, 18, 49, 50, 118, 123, 128, 140, 147, 152, 153 and 156.

Pottery Group from Context 567, Site 17 (Dated as a group from the late 1st to the mid 2nd century)

Pot No.	*Form*	*Fab.*	*Dm.*	*Site Pot No.*	*Decoration/Description*
PLATTERS					
335	2.5	3	18	1530	Zigzag decoration under rim
336	2.5	44	18	1516	Burnished, black finish, shallow grooves
337	2.5	33	20	1580	Burnished, mica-coated
338	2.8	89	16	1563	Mica-coated, grooved
BOWLS					
339	5.54	44	14	1528	Cordoned, grooved, black finish
340	5.54	89	16	966	White slip, cordoned, mica-coated
341	5.58	89	13	1569	Burnished, cordoned
342	5.1	14	16	1509	Grooved, carinated, orange slip
343	5.58	44	17	1555	Burnished, cordoned
344	5.20	26	17	1519	Burnished, faint combed lines, grooved
345	5.20	44	13	1035	Cordoned, vertical line decoration
CUPS					
346	11.1	26	15	5851	Burnished, internal groove
FLAGON					
347	6.7	50	7	5646	Cordoned
BEAKER JARS					
348	12.6	12	7	1573	Burnished, grooved, traces of barbotine dot decoration
349	14.1	7	9	1586	Ledged rim, burnt
350	14.1	7	10	1551	Ledged rim, burnished
351	3.15	33	12	1536	
352	12.11	44	11.5	1532	Faint vertical line decoration
353	3.3	44	12	1529	Grooved, cordoned, vertical combing below shoulder
354	3.18	7	14	1554	Ledged rim, rilled body, sooted
355	3.18	7	16	1556	Ledged rim, rilled body, sooted

Pot No.	Form	Fab.	Dm.	Site Pot No.	Decoration/Description
356	5.8	26	17	1520	Burnished, cordoned, grooved
357	12.12	7	8.5	1557	Grooved, cordoned, vertical line decoration
358	3.17	44	15	1517	Grooved
359	3.17	44	23	1537	Sooted
359A	3.17	3	9	1533	White slip, cordoned, grooved
360	3.15	44	15	1531	Grooved
361	3.17	33	13	1527	White slip, cordoned, grooved
362	3.27	35	6	1534	Grooved, rouletted
363	3.13	40	10	1526	Grooved, shoulder cordon with comb stabbing
364	3.1	26	18	1521	Burnished, grooved, wavy line decoration, sooted
365	9.2	14	38	1562	Orange slip

For additional forms from Context 567 see Pottery Nos. 46, 69, 73, 105 and 173.

Burial Group 660

Pot No.	Form	Fab.	Dm.	Context	Date	Site Pot No.	Remarks
366		73		18-59	2nd	1240	
367	3.9	33	17	18-64	2nd	1243	
368	4.10	9	8	18-64	Late 1st	1244	
369	Drag 35	S.G.	8.5	18-64	Late 1st	1242	
370	3.14	7	15	18-44	Late 1st/2nd	1228	
371	6.8v		3	18-44	Late 1st/2nd	1229	
372	Drag 18	S.G.	17	18-44	1st	1230	Stamped MASCVLVS

Burial Group 661

373		44		18-542		1225	
374	3.17	40	8	18-542		1226	
375	Drag 36	C.G.	17	18-542	Antonine	1227	
376		44		18-551		1234	
377	Drag 31	M de V	16	18-551	Trajanic	1236	Stamped PATERCLVSF
378	3.18	18	17	18-538		1235	
379	3.38	18	17	18-546	Mid 2nd	1232	Barbotine dots
381	Drag 18/31			18-546	2nd	1233	Stamped NICEPHOR

Mortaria

A report on the mortaria by Mrs Hartley is given on pp. 97–99 below. The following list gives Mrs Hartley's fabric numbers together with the fabric numbers (in parentheses) assigned by Mrs Parminter to identical fabrics used in the other pottery forms. The dating is by Mrs Hartley (D.S.N.).

Pot No.	Form	Fabric	Dm.	Context	Date	Site Pot No.	Remarks
382	7.1	1(45)	c.32	17-88	160–200+	2538	or ?Northants
383	7.1	1(9)		18-128	150–200+	151	
384	7.1	2(?45)	33	17-228	140–200	554	
385	7.1	5(49)	33	17-U/S	240–300	5778	
386	7.3	1(45)	c.33	17-651	80–130	1793	
387	7.3	1(9)	30.5	18-235	110–150	1221	Brockley Hill stamped BRVCCIVS
388	7.3	2(45)	30	18-167	70–110	316	or ?Northants
389	7.3	4(49)	26	17-1351	100–150	3764	
390	7.3	4/5 (?77)	25	18-556	100–170	1102	
391	7.3	5(49)	28	17-U/S	130–180	5785	
392	7.3	5(49)	?25	17-220	100–140	5779	
393	7.3	6	?38	17-928	50–80	2625	

394	7.3	10(10)	*c.*22	17-220	130–170	272	
395	7.4	5(49)	26	17-542	240–400+	1421	
396	7.4	8(17)	*c.*26	17-1094	300–400	2903	
397	7.4	8(17)		17-U/S	300–400	5782	
398	7.4	8(17)		17-U/S	300–400	5783	
399	7.6	5(49)	41	17-827	240–300	2069	
400	7.6	5(49)		17-U/S	240–300	5786	
401	7.6	5(49)	33	17-87	240–300	2515	
402	7.7	8(17)	*c.*24	18-505	240–400	1044	Headington
403	7.8	2(45)	30	18-193	150–240	329	
404	7.9	5(49)	*c.*19	17-1542	240–400	4353	or ?Northants
405	7.9	7(17)		18-492	240–300	989	
406	7.9	5(49)	27	17-U/S	240–300	5788	
407	7.9	5(49)	26	17-2331	240–300	5878	
408	7.9	5(49)	24	17-662	240–400	1863	
409	7.10	8(17)	21.5	17-255	240–400	731	
410	7.11	9(71)	33	17-87	240–320	2513	
411	7.11	10(10)	31	17-U/S	180–240	3208	
412	7.12	3(10)		17-87	Late 3rd–4th	2514	
413	7.13	5(49)	?25	17-79	180–240	2459	
414	713	5(49)	19	17-530	180–240	1389	
415	7.14	5(49)	22	17-45	180–240	2402	
416	7.15	2(45)	28	17-501	Mid 2nd	1101	or ?Northants

Correlation Table of Forms and Pot Nos.

Form	*Pot No.*
2.1	1, 2, 199, 200, 272
2.2	7
2.3	8
2.4	10
2.5	3, 193, 201–4, 335, 336, 337
2.6	11, 273
2.7	44
2.8	4, 184, 191–2, 270, 271, 338
2.9	9, 185
3.1	114, 252, 364
3.1v	113
3.2	117
3.3	131, 225, 241–2, 289–90, 353
3.5	138, 324
3.5v	138A
3.7	143
3.8	132
3.9	116, 229, 243, 307–8, 321, 367
3.10	137
3.13	139, 250, 363
3.14	122, 249, 253, 316–7, 370
3.15	127, 309, 351, 360
3.16	126, 226, 245, 314, 315, 315A, B
3.17	228, 246, 248, 312–13, 358–9A, 316, 374
3.18	134, 235–6, 294–7, 354–5, 378
3.19	141
3.23	135, 237–9, 298, 303, 303A, B
3.24	119, 320, 320A
3.25	121, 304, 306
3.26	136, 231–4, 292–3C
3.27	142, 225, 251, 362
3.29	130, 198, 244
3.30	118, 319, 319A, B
3.31	144
3.32	133
3.33	123, 310–11
3.34	125
3.35	140, 240
3.36	291
3.37	124, 323, 323A
3.38	128, 299–302B
3.39	129
3.45	120
3.46	305
4.1	93
4.2	95
4.2v	96
4.4	87
4.4v	89
4.5	97
4.5v	91
4.7	88
4.8	86
4.9	85
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4.13	99
4.16	98, 189
4.17	90
5.1	57, 342
5.2	26
5.3	24, 281
5.4	56, 208–10
5.5	41
5.6	15, 282
5.7	23, 215
5.8	61, 217–18, 279, 356
5.9	25, 280
5.10	31
5.10v	32
5.11	12
5.12	14
5.13	58, 211–12, 212A
5.14	39, 285, 285A, B
5.15	20
5.16	62, 216
5.17	49–50, 286, 286A
5.18	27
5.19	45, 53, 186–7
5.20	344–5
5.21	30, 287–8
5.23	46, 219
5.24	22, 205–6
5.27	59, 213
5.28	17, 283, 283A, B
5.31	28, 207
5.32	29
5.33	60
5.35	19
5.38	33
5.41	34–6, 194
5.42	18, 277–8, 284; 284A
5.43	37–8
5.46	21
5.50	16

5.51 46
5.52 55
5.53 48
5.54 42, 339, 340
5.58 43–4, 182–3, 188, 341, 343
5.59 51, 220–1
5.61 52, 214, 222
5.64 13
5.65 47
6.1 83, 257
6.2 75
6.3 78
6.4 70
6.5 79
6.6 66
6.7 69, 347
6.8 72, 371
6.10 77
6.11 76
6.12 71
6.14 68
6.15 81
6.17 67
6.18 84
6.19 80
6.20 74
6.21 73
6.24 82
7.1 382–5
7.3 386–94
7.4 395–8
7.6 399–401
7.7 402
7.8 403
7.9 404–8
7.10 409
7.11 410–11
7.12 412
7.13 413–4
7.14 415
7.15 416
8.1 163
8.2 164
8.3 165
9.1 148, 333, 333A
9.2 147, 255, 332
9.3 146, 256, 329
9.4 152
9.6 145, 254
9.7 149, 331
9.8 150, 151
9.9 154, 327, 330
9.10 153, 326A
9.11 156, 325A, 326, 328
9.12 155, 325
10.3 161
10.5 160
10.6 162, 259–61
10.7 262
11.1 65, 223–4, 346
11.3 64
11.5 63
12.1 103
12.2 107, 112
12.3 104
12.4 101
12.5 108
12.6 111, 348
12.7 109
12.8 110, 227
12.11 100, 352
12.12 357
12.13 102
12.14 105–6, 380
12.15 230
13.3 269
13.4 265–6
13.6 264
13.7 267
13.20 263
14.1 173, 176, 349–50
14.2 171, 179
14.3 178
14.4 181
14.5 168–9
14.7 258
14.8 174
14.9 268
14.11 177
14.14 172
14.15 166
14.22 189
14.24 175
14.25 167
14.26 170
16.10 334
18.1 157
18.2 159
18.4 158

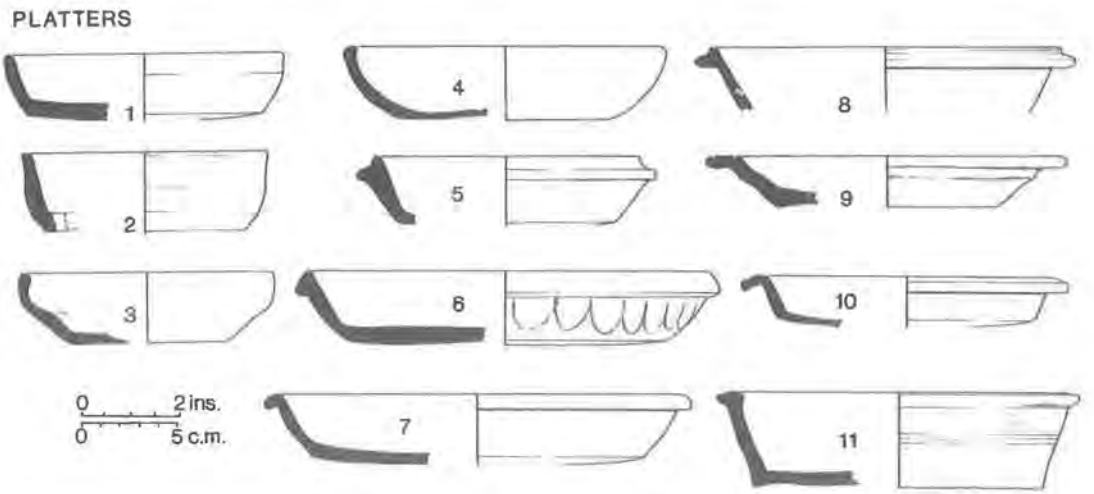

Fig. 32. The coarse pottery; Nos. 1–11, Form Series 2 (platters). Scale 1:4.

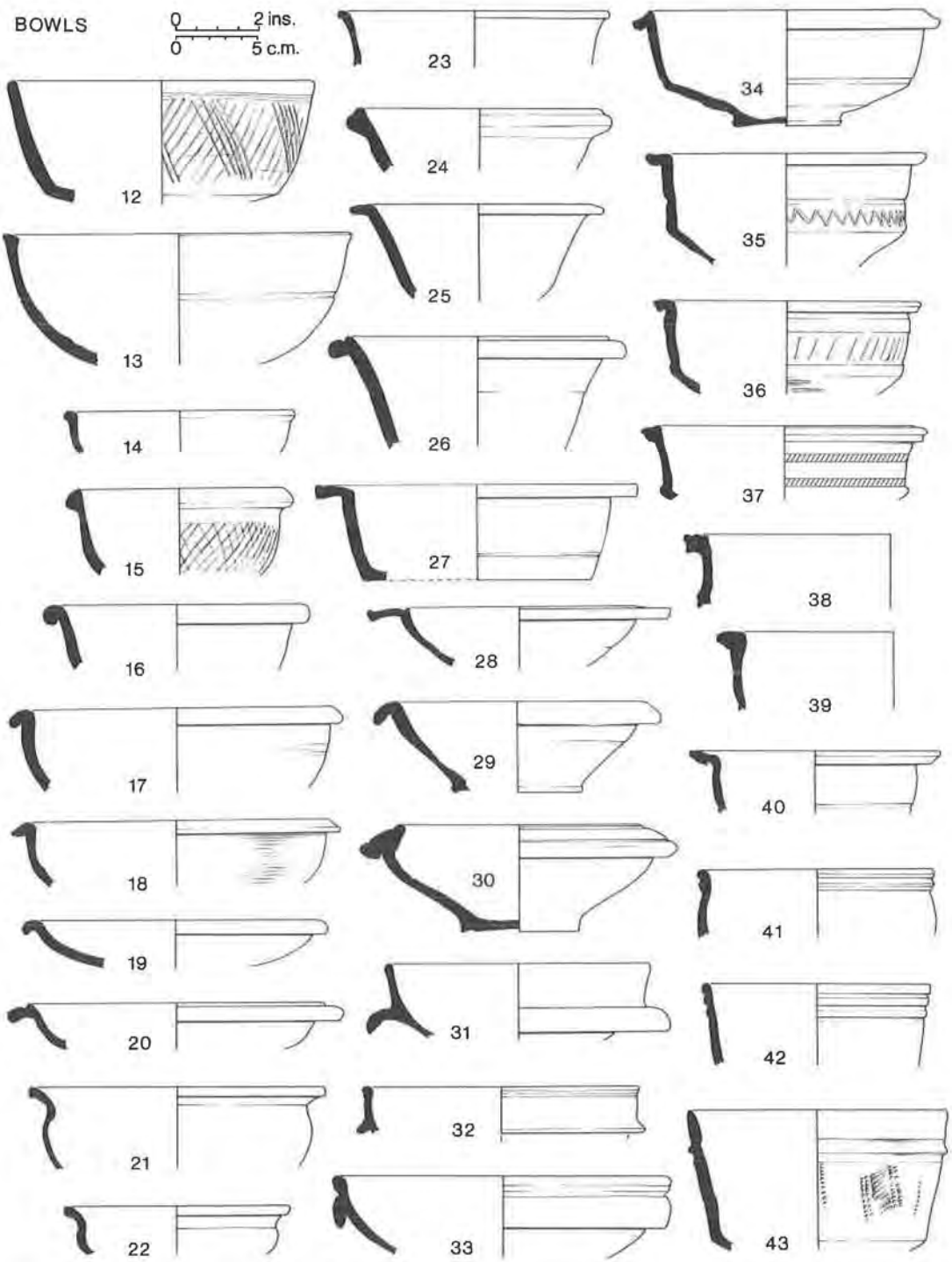

Fig. 33. The coarse pottery; Nos. 12–43, Form Series 5 (bowls). Scale 1:4.

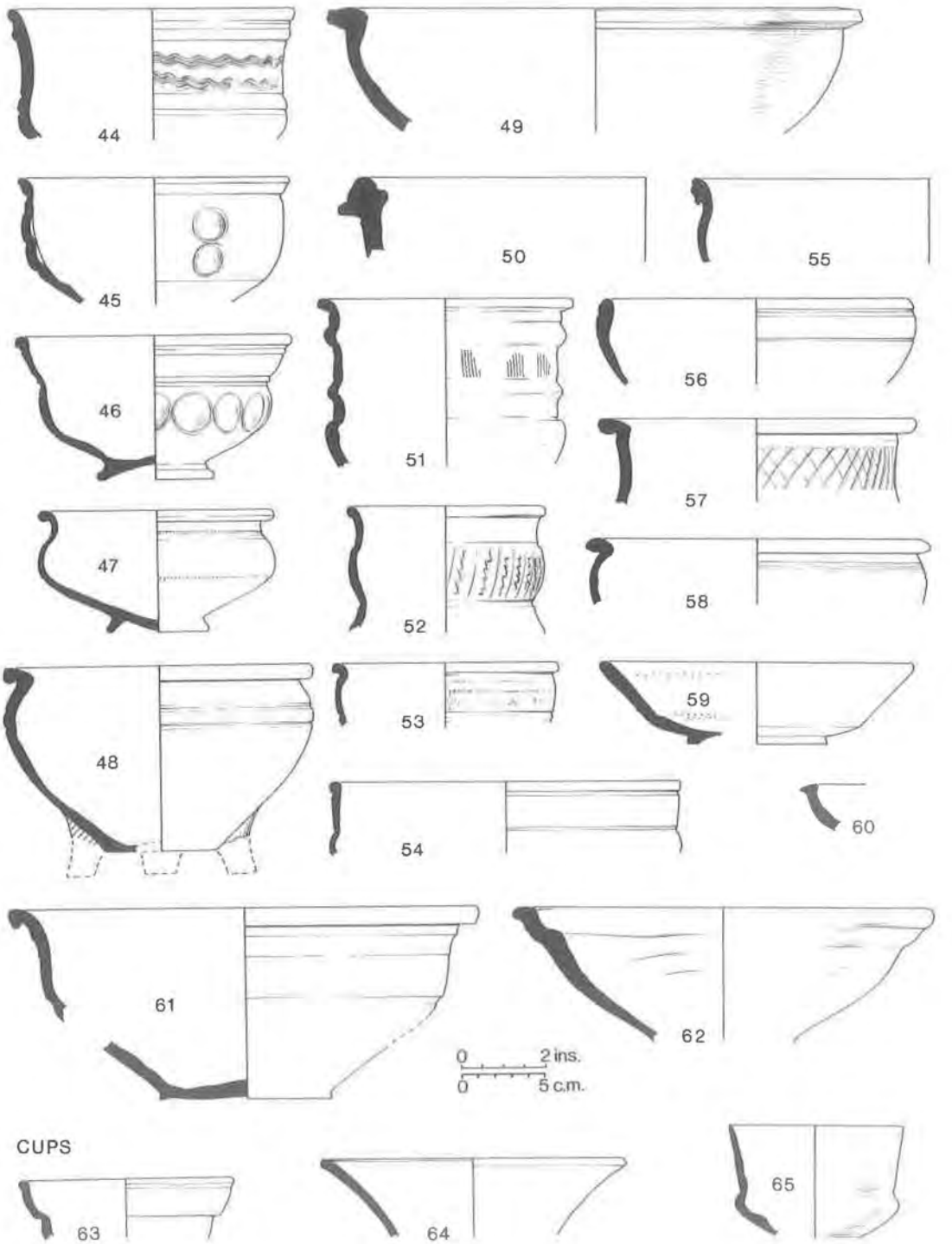

Fig. 34. The coarse pottery; Nos. 44–62, Form Series 5 (bowls); 63–65, Form Series 11 (cups). Scale 1:4.

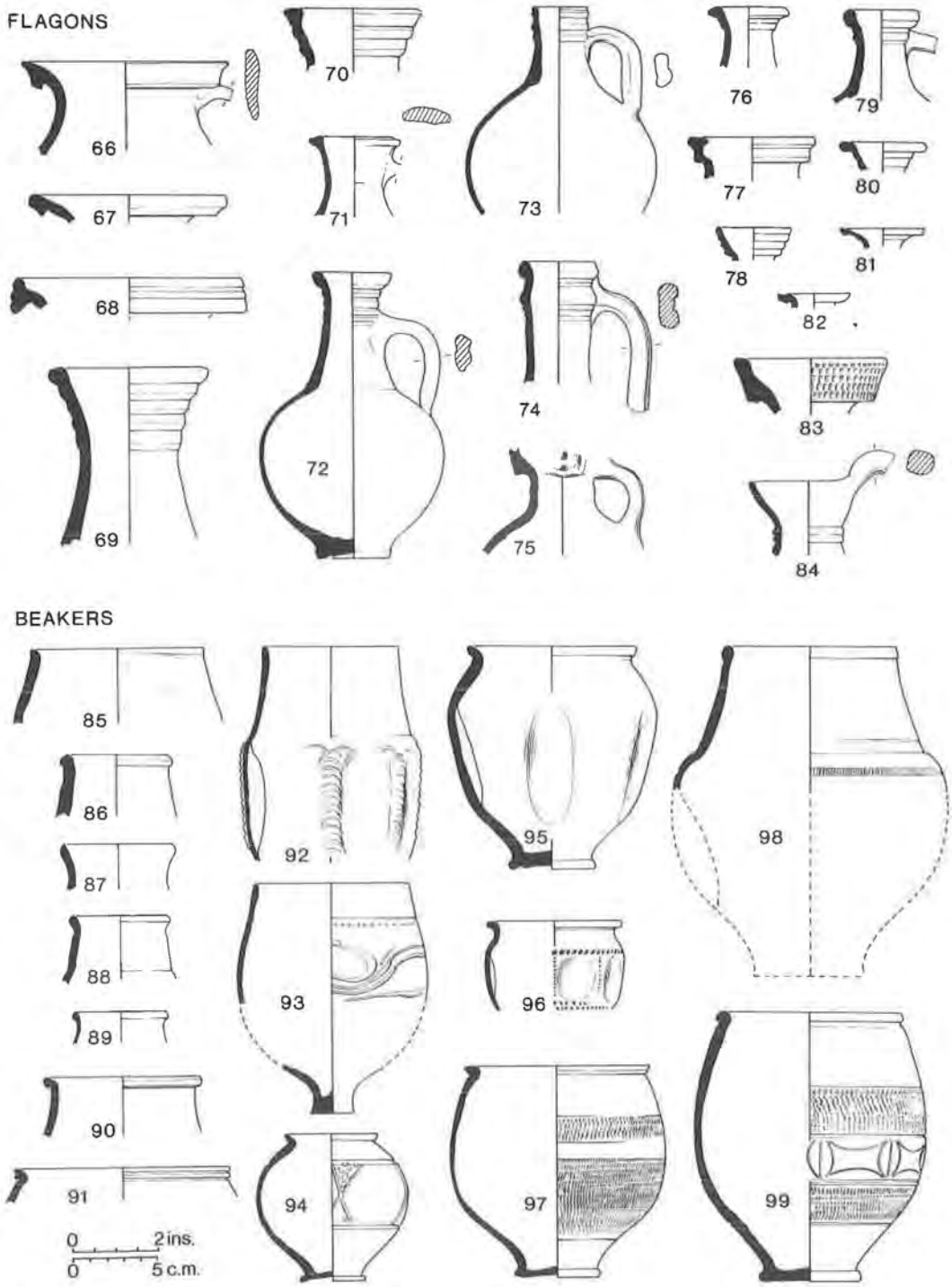

Fig. 35. The coarse pottery; Nos. 66–84, Form Series 6 (flagons); 85–99, Form Series 4 (beakers). Scale 1:4.

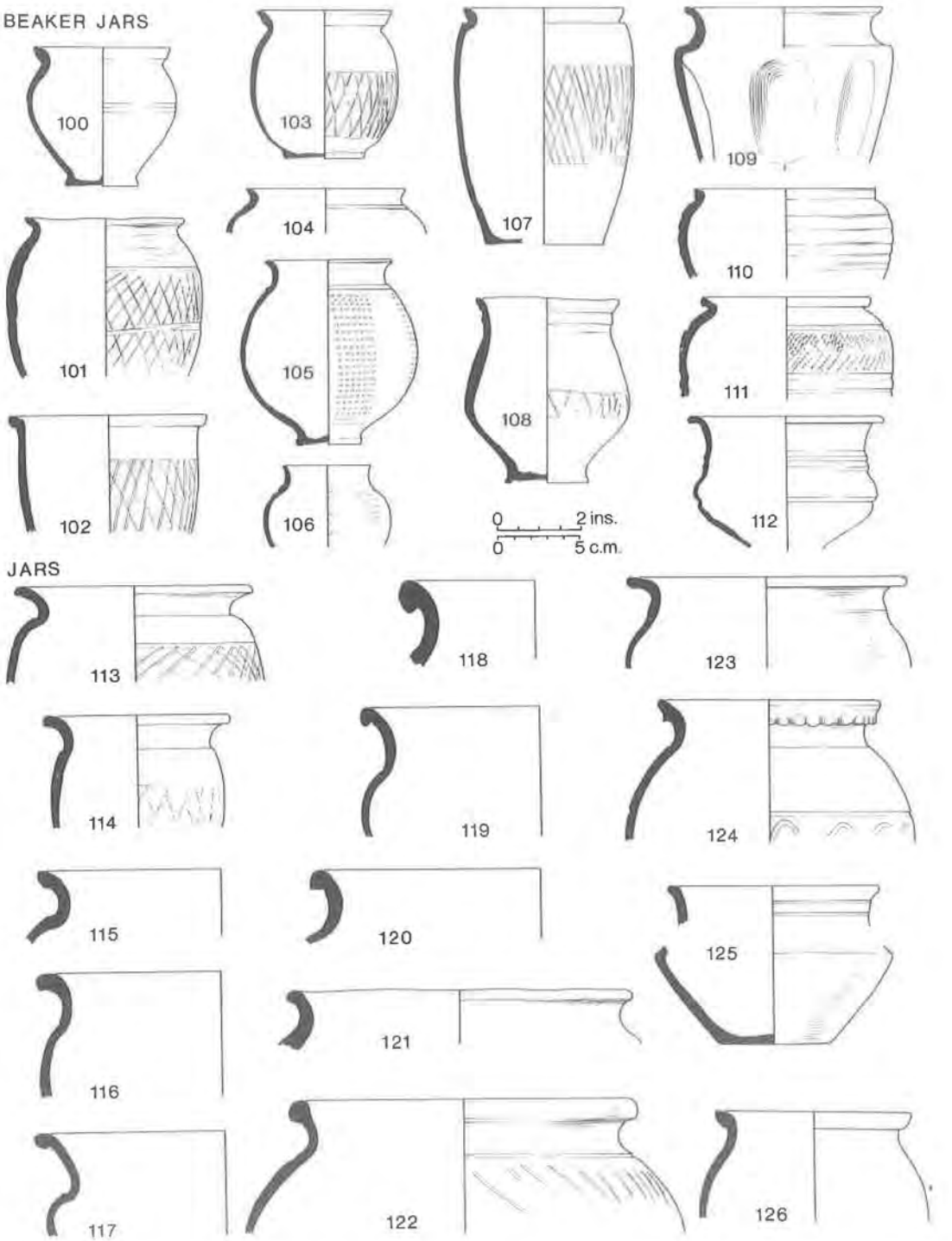

Fig. 36. The coarse pottery; Nos. 100–112, Form Series 12 (beaker jars); 113–126, Form Series 3 (jars). Scale 1:4.

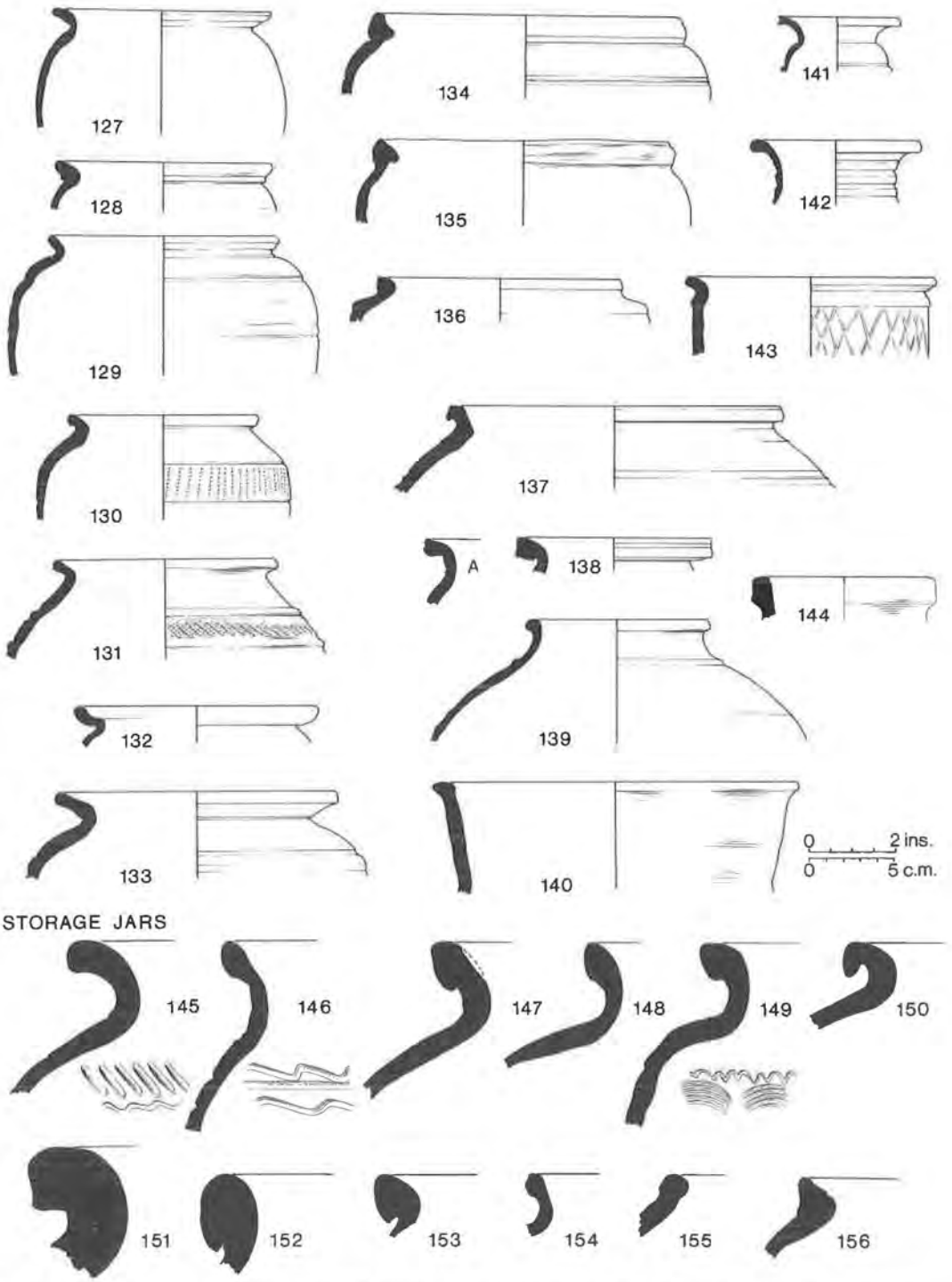

Fig. 37. The coarse pottery; Nos. 127–144, Form Series 3 (jars); 145–156, Form Series 9 (storage jars). Scale 1:4.

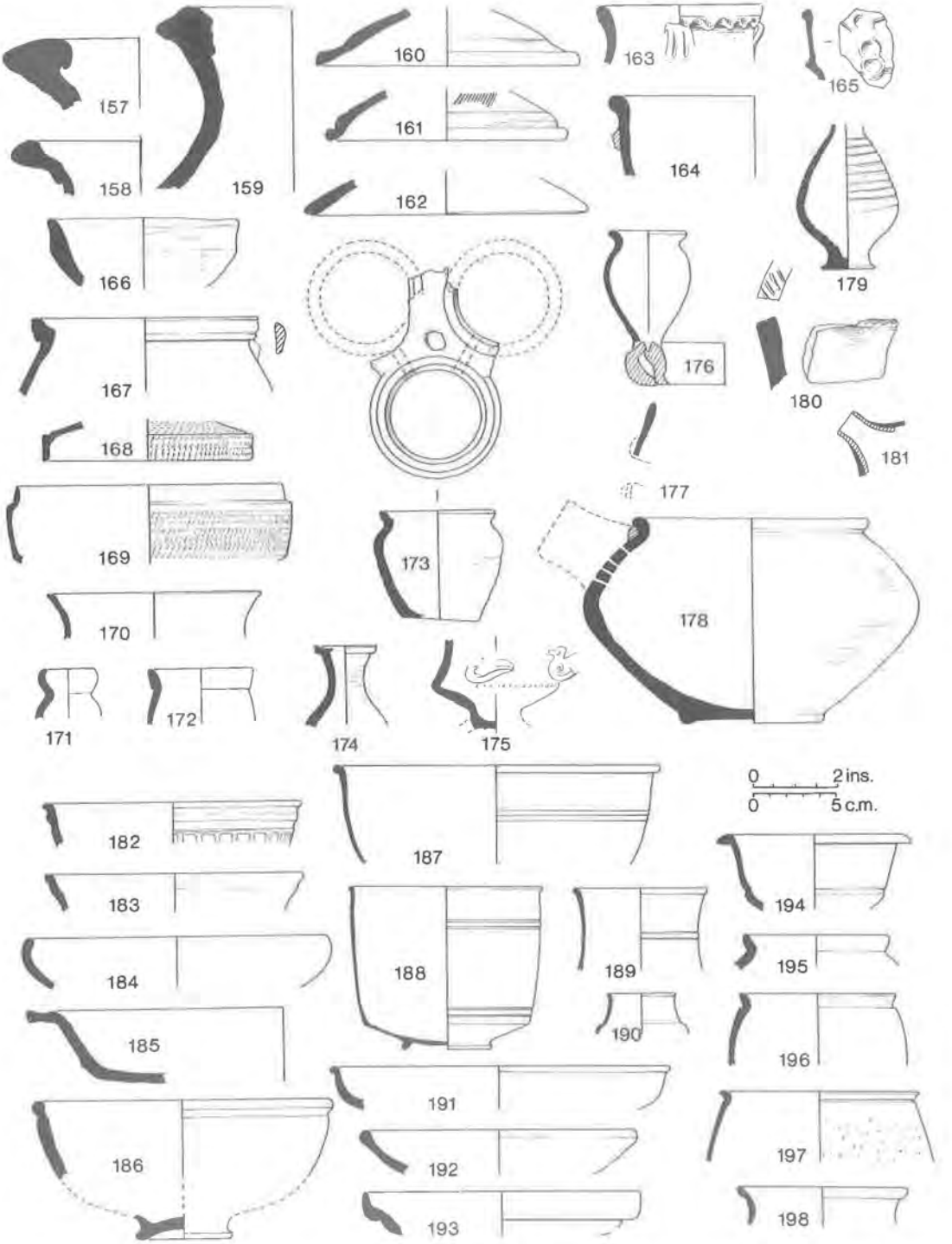

Fig. 38. Coarse pottery and finer wares; Nos. 157–159, Form Series 18 (amphorae); 160–162, Form Series 10 (lids); 163–165, Form Series 8 (tazzas/urns); 166–181, Form Series 14 (misc. coarse wares); 182–198, misc. fine wares (see p. 66). Scale 1:4.

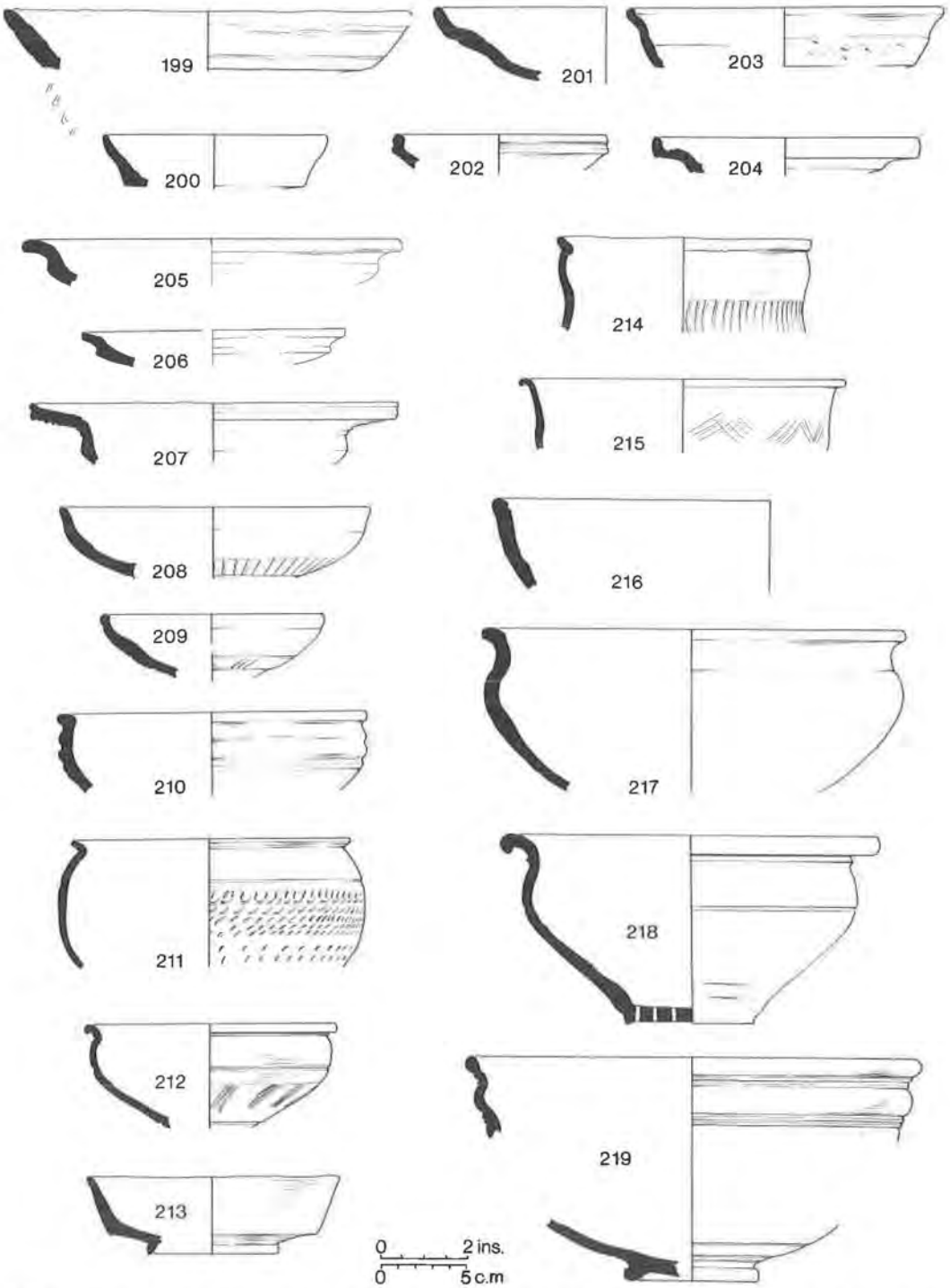

Fig. 39. The coarse pottery; Nos. 199–204, Native Form Series 2 (platters); 205–219, Native Form Series 5 (bowls). Scale 1:4.

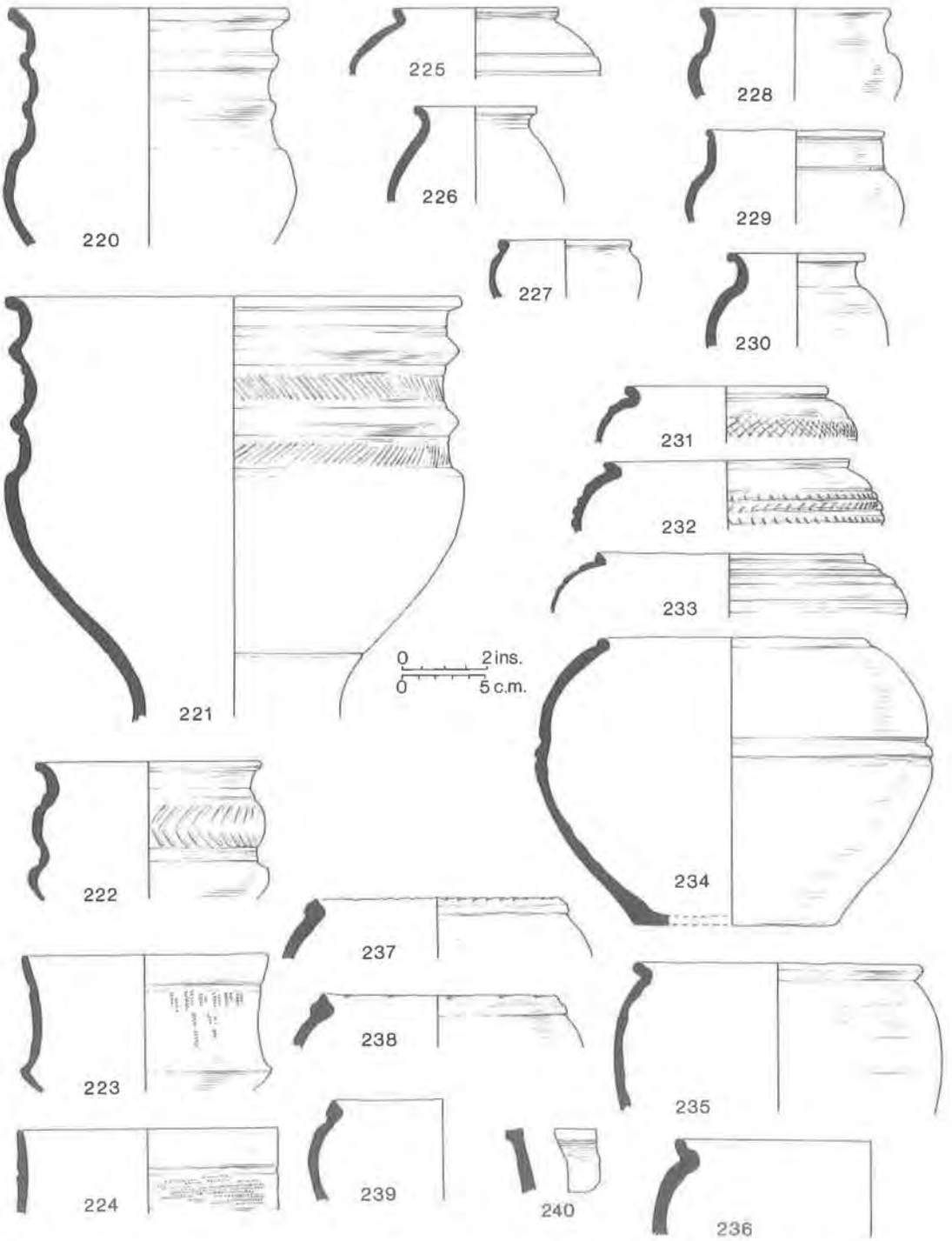

Fig. 40. The coarse pottery; Nos. 220–222, Native Form Series 5 (bowls); 223–224, Native Form Series 11 (cups); 225–240, Native Form Series 3 (jars). Scale 1:4.

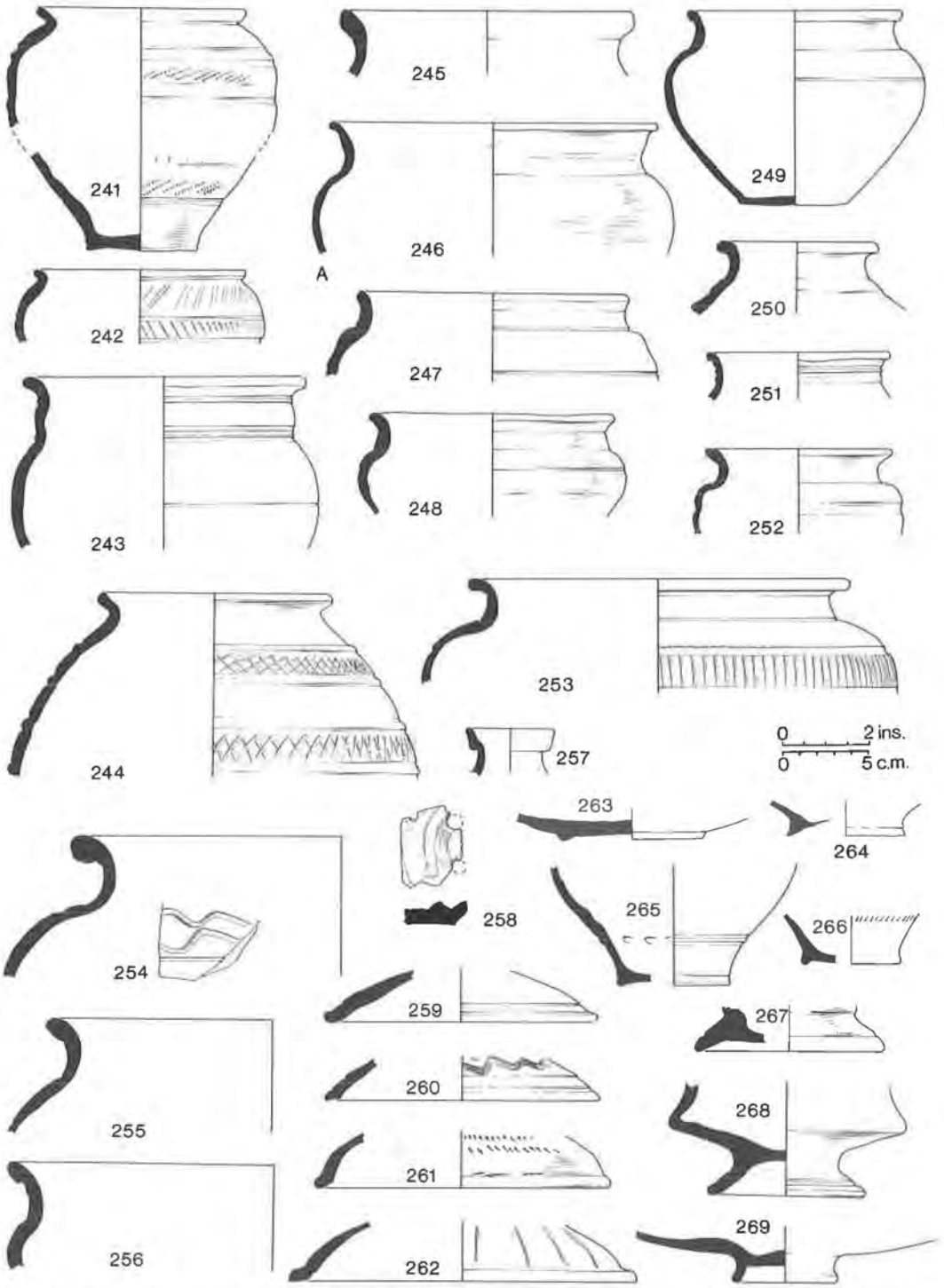

Fig. 41. The coarse pottery; Nos. 241–253, Native Form Series 3 (jars); 254–256, Native Form Series 9 (storage jars); 257, Native Form Series 6 (flagon); 258, Native Form Series 14 (misc.); 258–262, Native Form Series 10 (lids); 263–269, Native Form Series 13 (bases). Scale 1:4.

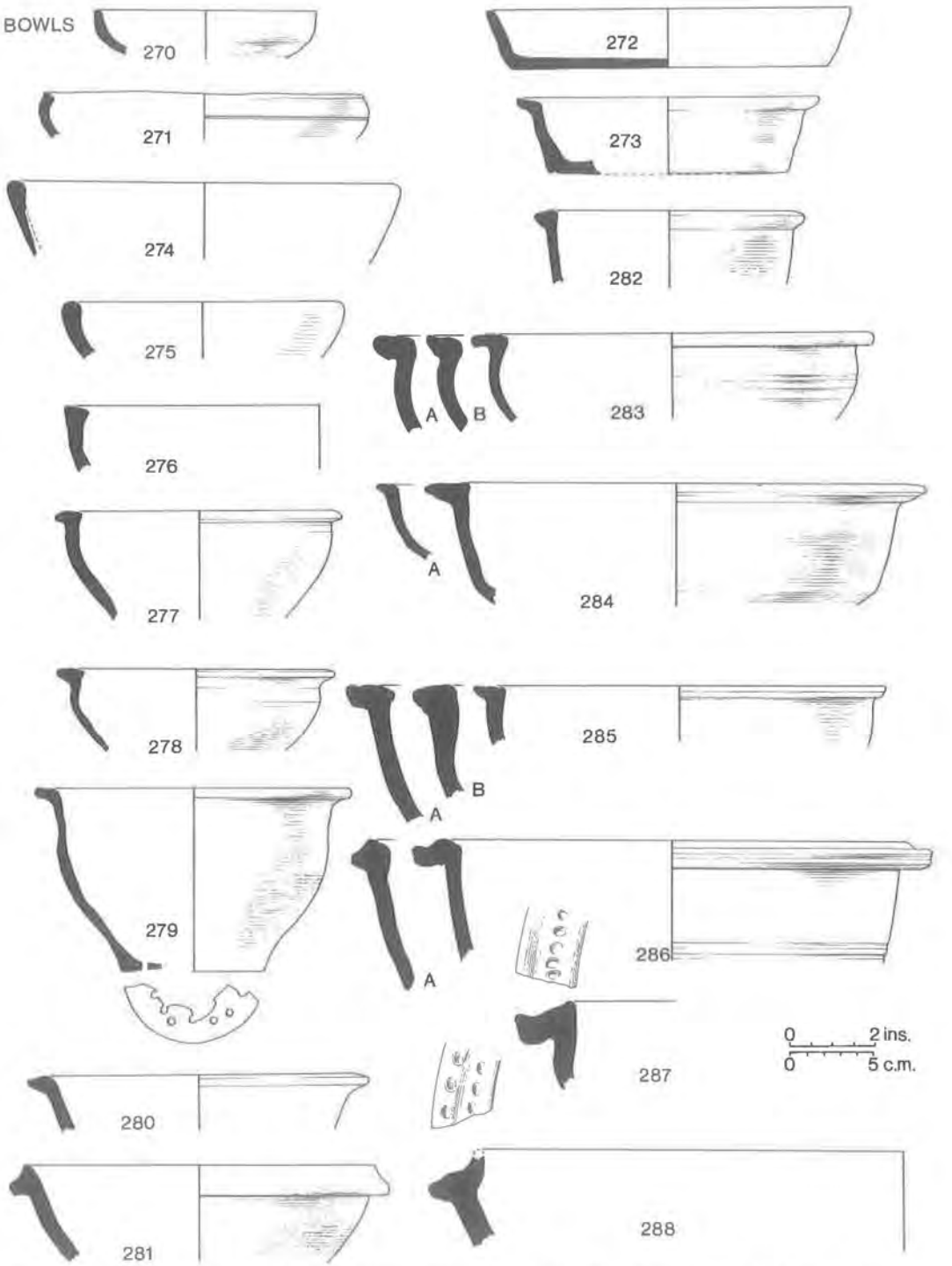

Fig. 42. The coarse pottery: shell-tempered wares; Nos. 270–273, Form Series 2 (platters); 274–288, Form Series 5 (bowls). Scale 1:4.

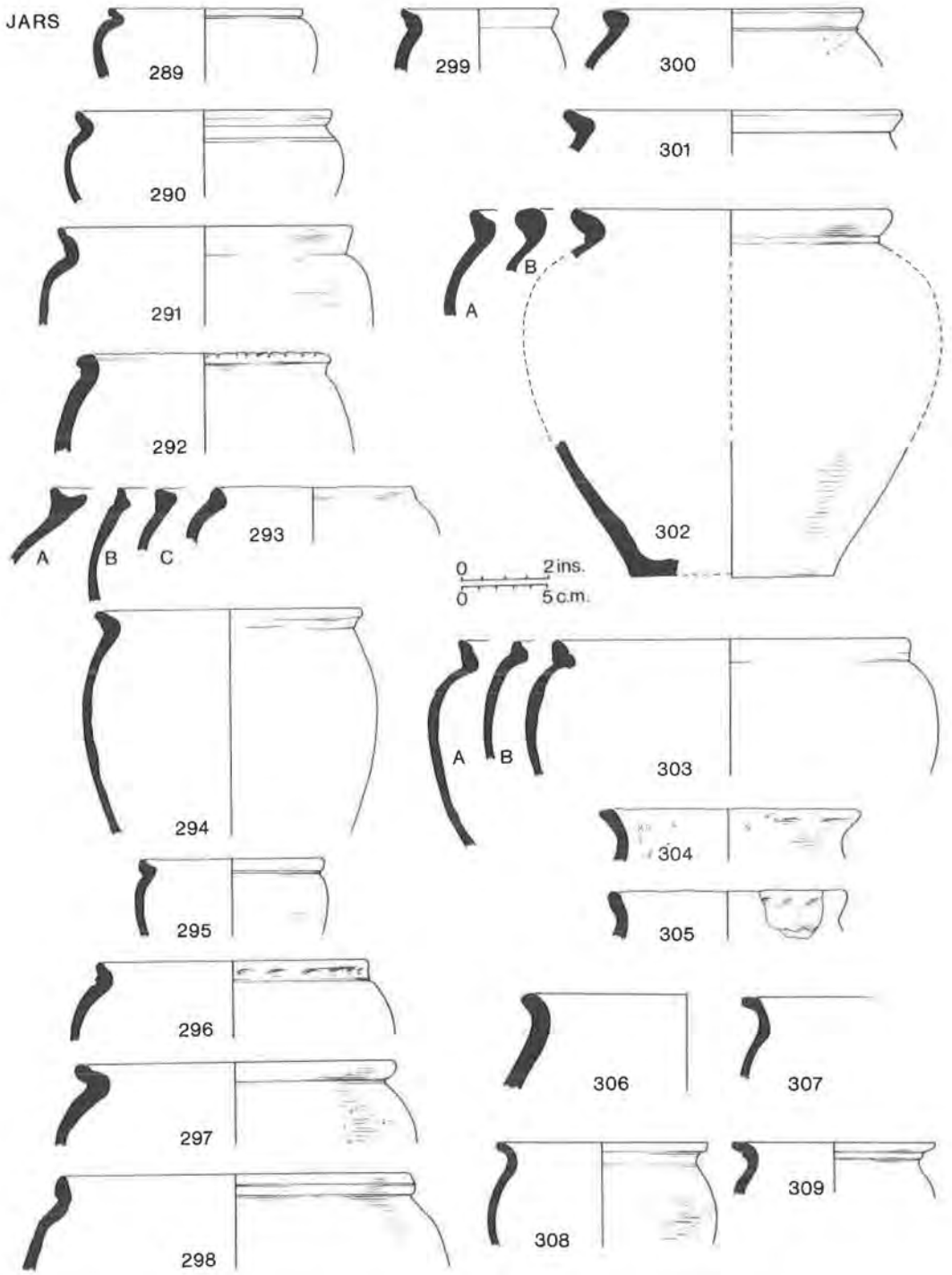

Fig. 43. The coarse pottery: shell-tempered wares; Nos. 289–309, Form Series 3 (jars). Scale 1:4.

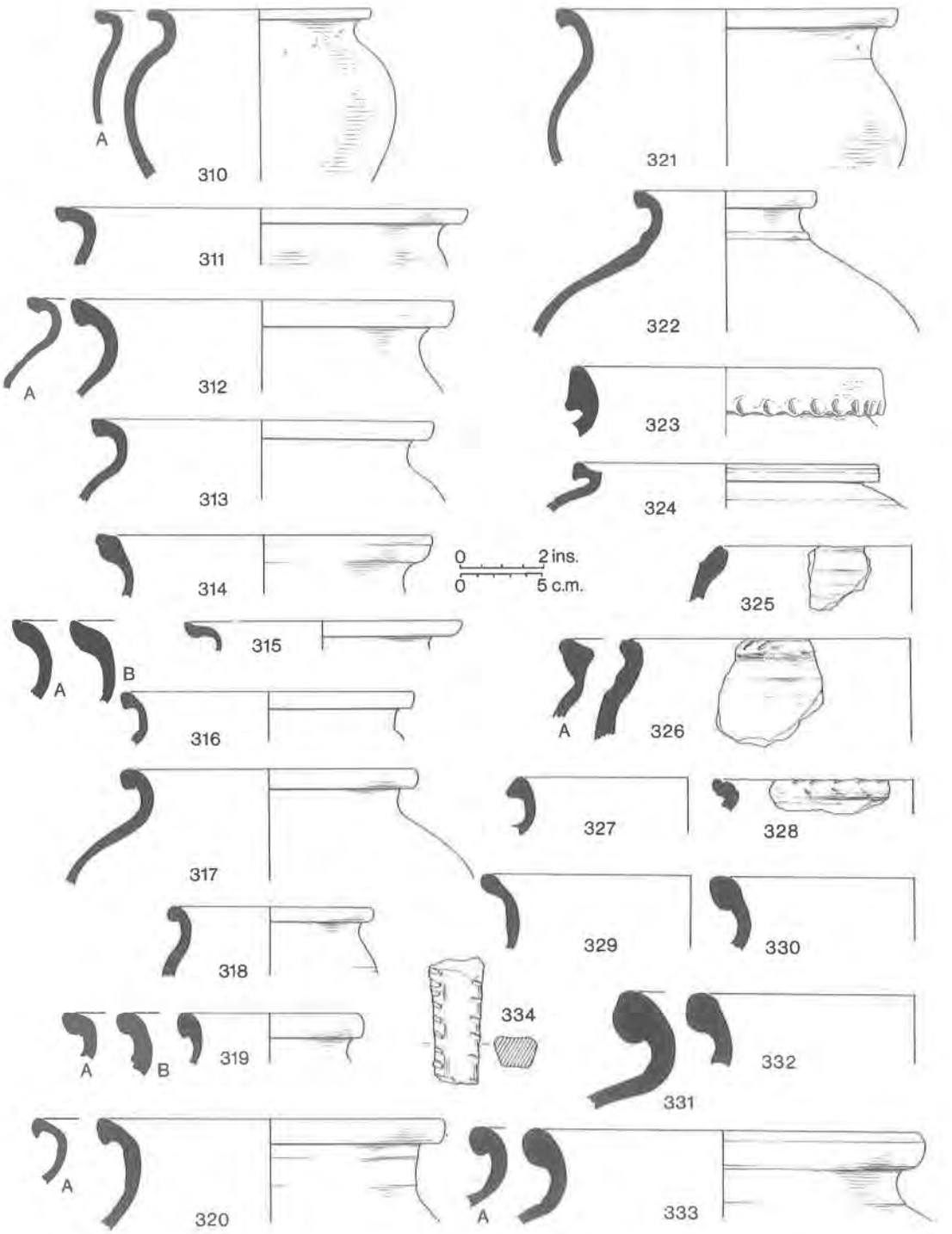

Fig. 44. The coarse pottery: shell-tempered wares; Nos. 310–324, Form Series 3 (jars); 325–333, Form Series 9 (storage jar); 334, Form Series 16 (handle). Scale 1:4).

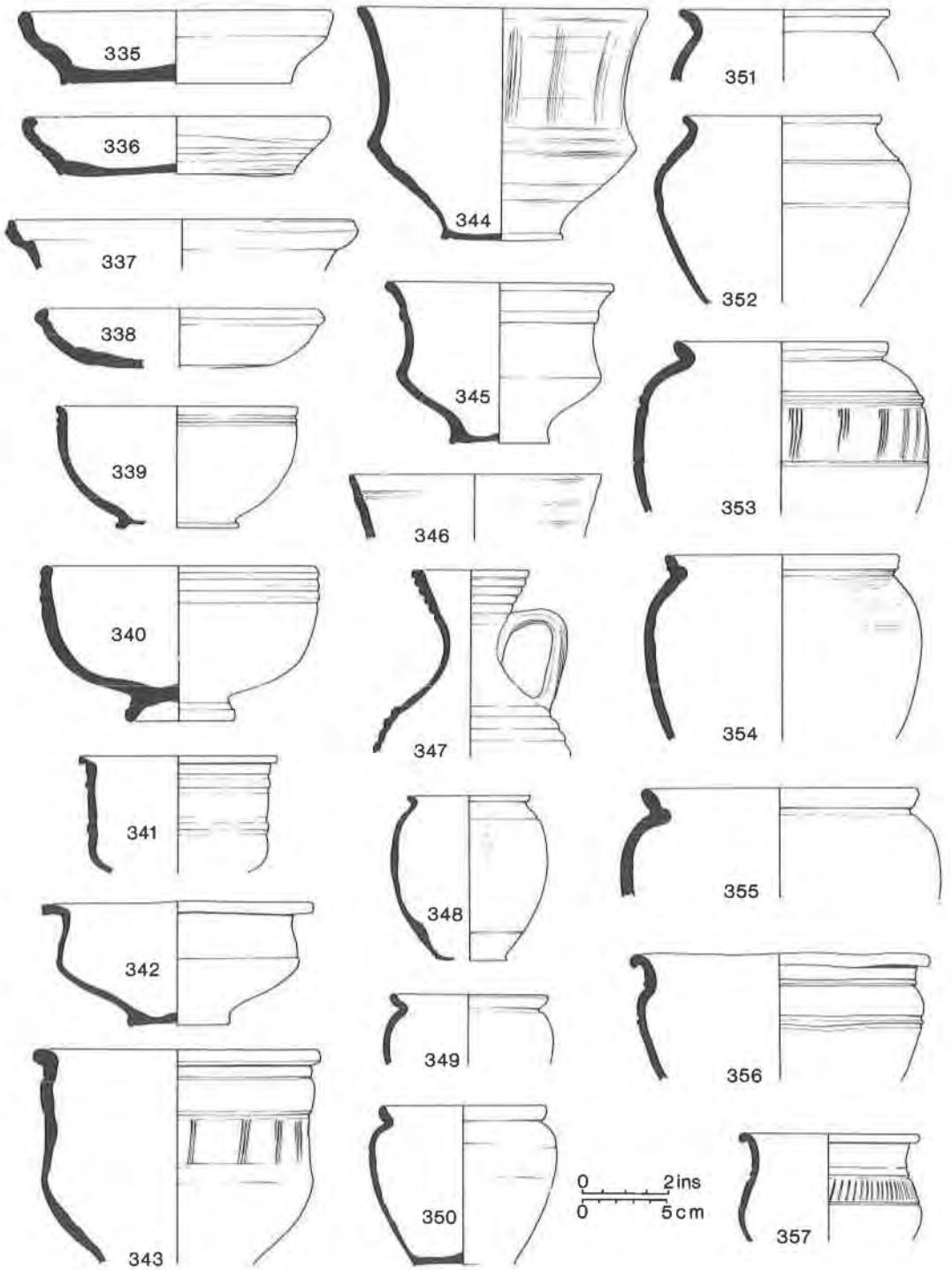

Fig. 45. The coarse pottery; Nos. 335–357, pottery group from Context 567, Site 17 (see p. 70 for forms). Scale 1:4.

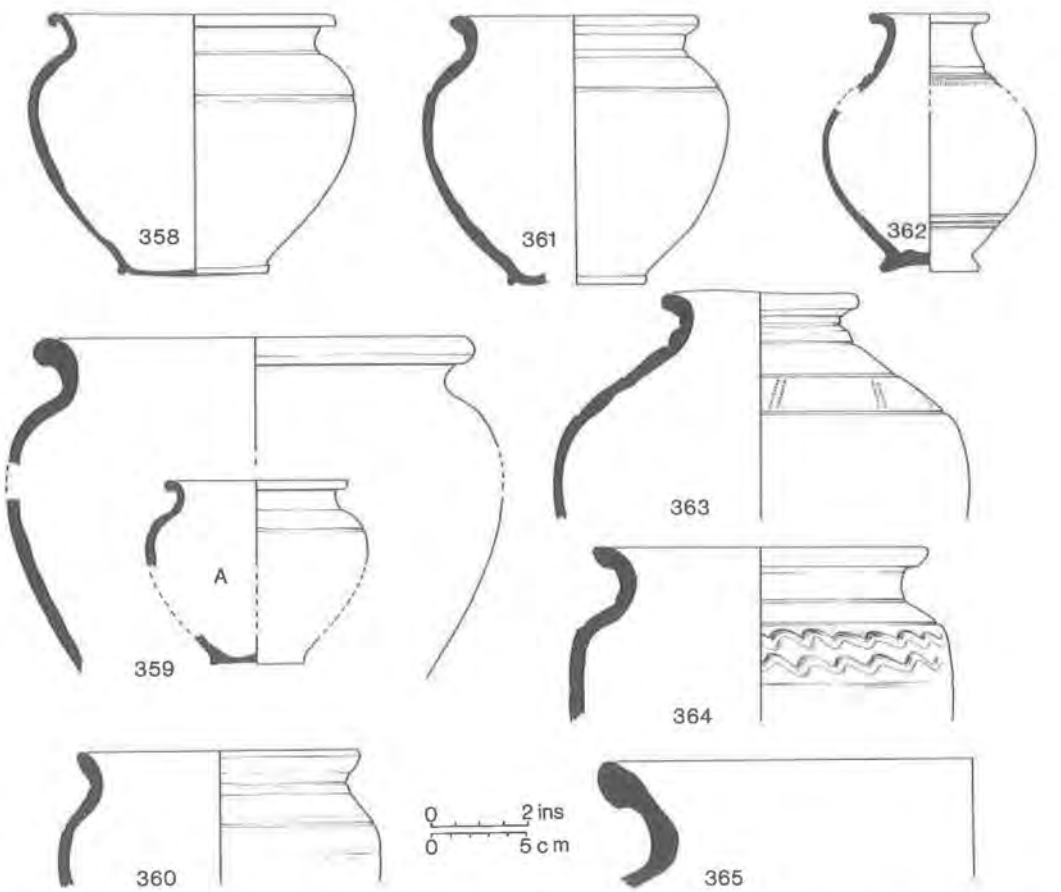

Fig. 46. The coarse pottery; Nos. 358–365, pottery group from Context 567, Site 17 (see p. 71 for forms). Scale 1:4.

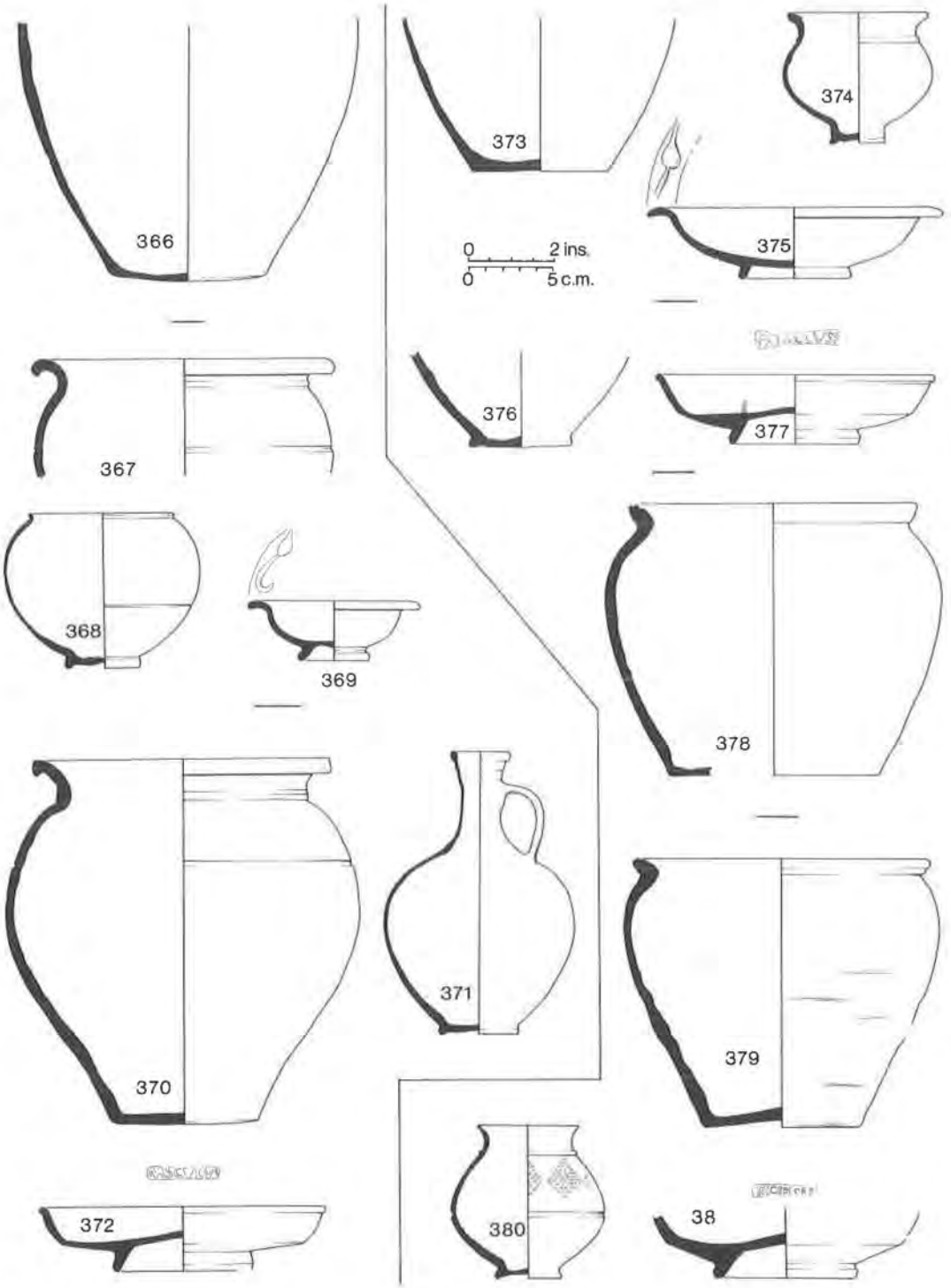

Fig. 47. The coarse pottery; Nos. 366–381, pottery from burial groups 660 and 661, Site 18 (see p. 71 for forms). Scale 1:4.

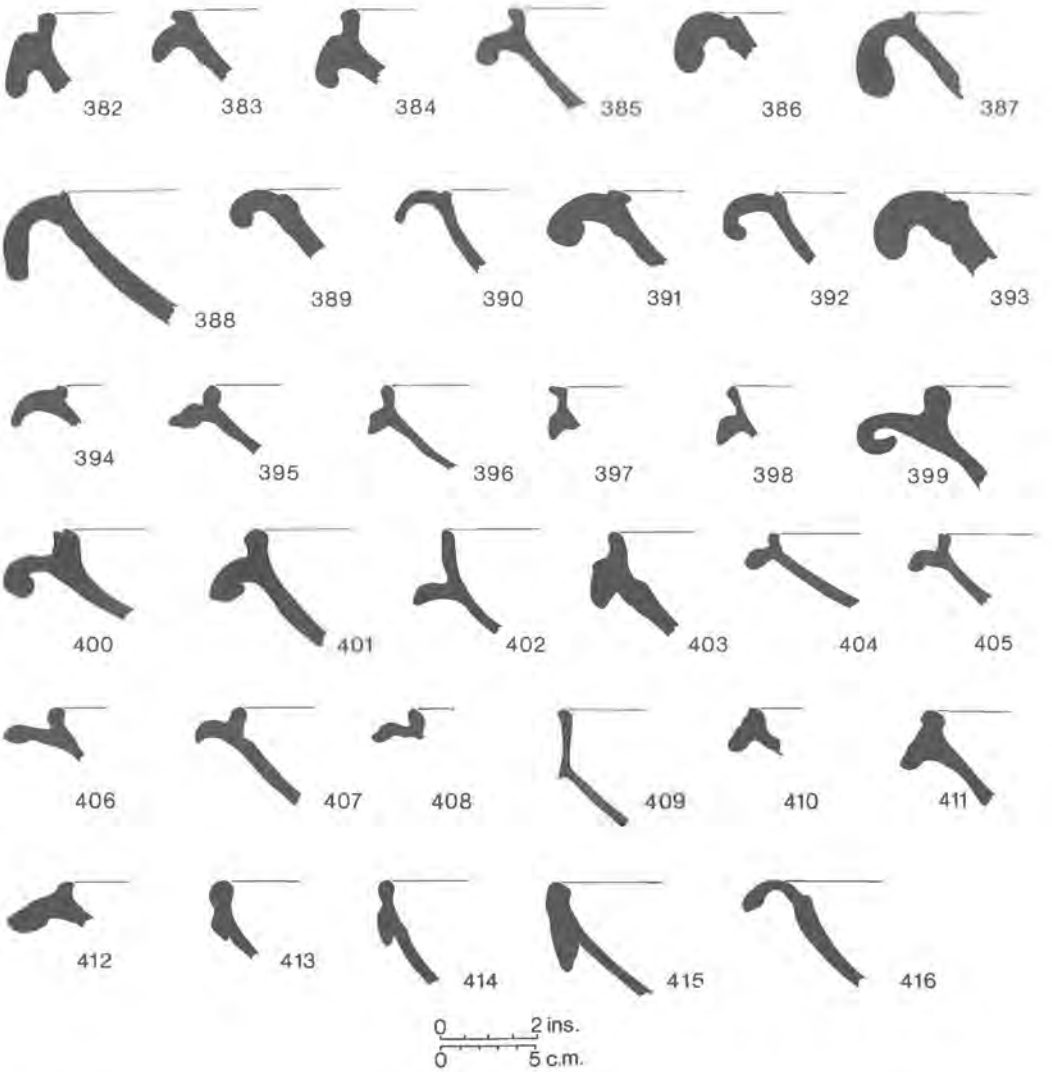

Fig. 48. The coarse pottery; Nos. 382–416, mortaria.

The Histograms (Fig. 49)

The constituent elements upon which the form and fabric tables and histograms are based are taken from the results of computer programs.

Histogram 1

This illustrates each of the *major* fabrics on Site 17 as a percentage of the total vessel rims. It will be seen that the common grey fabric 44, which may be considered as a local fabric very similar to those from the Caldecotte 2 kilns, together with its black-ware counterpart Fabric 7, produced over a quarter of the total count. These fabrics were used in a wide variety of forms, from those based upon 'Belgic' tradition to the purely Roman. Fabric 18 at 12½% was the predominant shell-tempered fabric, appearing in a wide variety of forms and rim variations but with little or no change in its fabric throughout its long date range. The 'native' fabrics 26 and 46 progressed into fabrics 14 and 73 and remained in production until the advent of large numbers of shell-tempered wares. However, storage jars, as pot Nos. 254–6, were still present in late fourth-century groups such as 18.492.

The London area material (Fabric 3) at 6% is surprisingly large but specific forms are represented including many with white slips and lattice decoration.

The six remaining major fabrics each contributed about 2% of the total rim numbers and these also tended to be from specific forms. The Verulamium region, represented by Fabric 45, supplied flagons and mortaria while the kilns from Much Hadham (Fabric 50) produced a number of late oxidized wares; Fabric 49, from the Oxford Kilns, is a white ware and Fabrics 13 and 38 are from an unknown source.

Histogram 2

This presents a count of major vessel types and gives the percentage of each form against the total number. As can be seen, jars at 44% and bowls at 22.3% dominate, with storage jars, dishes and beakers having roughly equal numbers at 8.29%, 7.96% and 7.89% respectively.

Histogram 3

This shows the wares or industries present, as represented by vessel rims, as percentages of the whole from Sites 17 and 18. It illustrates changes in the balance of wares and seems to reinforce the differences in dates of occupation, although the comparative numbers are very disparate. The later aspects of Site 18 show up particularly in the greater number of shell-gritted wares, the rise of Oxford wares and the decline of the grey sandy types, whereas the figures for the native wares remain fairly static. There is, however, some change in the native forms which have more Roman characteristics and the fabrics evolve to the more sandy Fabric 73 types (see Fig. 49.1 and list of fabric descriptions pp. 58–62). There is a significant increase in the percentage of samian rims on site 18 from 6.33% to 8.88%, proportionately a high amount. This may indicate some shift in domestic occupation because of the increasing industrialization of Site 17 but more likely the cremation burials, each with a samian dish, distort the picture.

Fig. 50 illustrates the fabric/form series by presenting the major fabrics or industries in the majority of their forms. Imported fabrics and forms are not included in the table nor are those which occur as a single vessel. In order to make the table more manageable, some similar fabrics which appear in similar forms in the major industries have been combined. Thus Oxford white wares, Fabric 41 and 49, appear as 49 and Nene Valley colour-coated fabrics as 10. Variants of forms are included within single categories in the table, thus the 5.43 (Pot Nos. 37 and 38), an Oxford parchment-ware form, covers the similar carinated bowls made from Fabrics 7 and 44. The dimpled bowl form 5.19 (Pot No. 45) and 5.23 (Pot No. 46) has counterparts in the same local fabrics, sometimes with an obvious attempt at similar decoration. The 5.21 flanged bowl (Pot No. 30) is a rare form at Magiovinium, but is paralleled at Skeleton Green and Braughing, Herts (Partridge 1981, 92, Fig. 46, form 45). In the cremation group, Context 17–1539, this form of bowl had been inverted over an urn and used as a lid, however; other reeded-rimmed bowls with deeply angled flanges have been accommodated within this form.

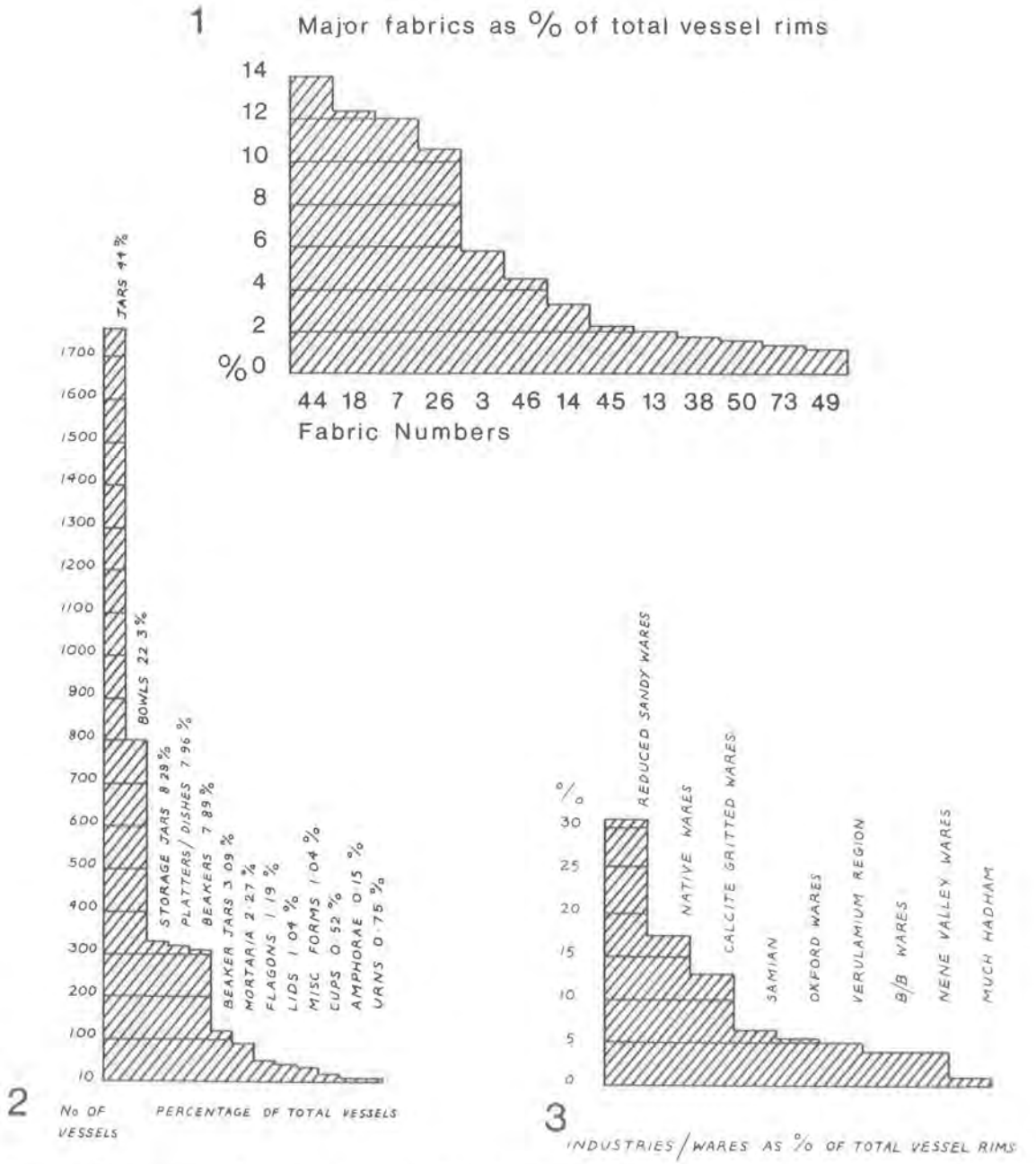

Fig. 49. Histograms 1–3: percentages of principal pottery fabrics.

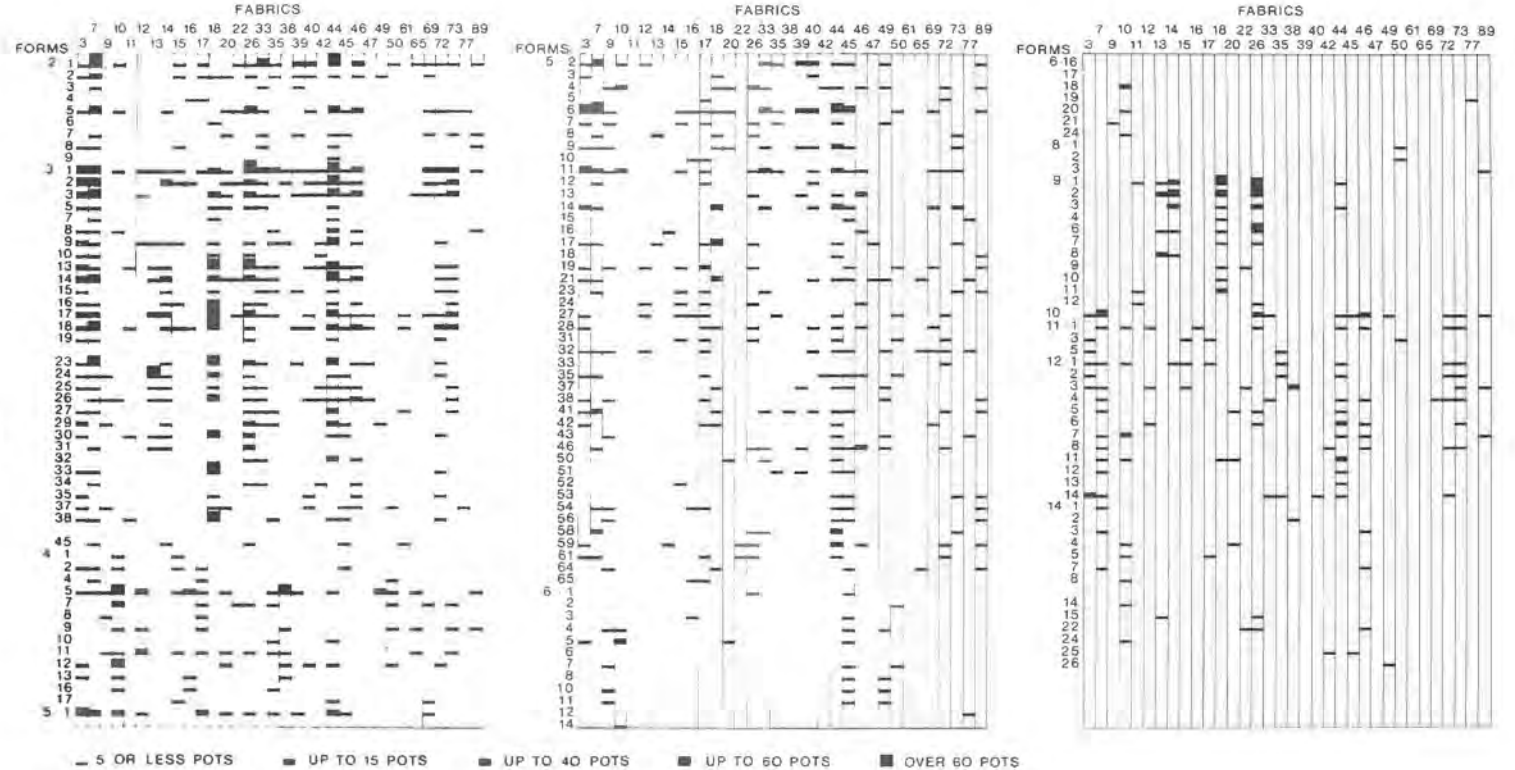

Fig. 50. Form and fabric series.

Table 1 displays the major fabrics by weight and sherd count (including rims) and again minor fabrics have been excluded. Although this information is supplied, its validity is questionable: as expected, the ratio of fabrics, weight to count, reflects the proportion of the individual vessel shown on Histogram 1.

Table 1. Major fabrics by weight and count.

Fabrics	*Weight* (g)	*Count*	*Fabrics*	*Weight* (g)	*Count*
3	20584	1335	45	14460	657
6	255	3	46	9087	613
7	46550	2744	47	2150	80
9	8060	287	48	1670	76
10	8092	838	49	7207	374
11	1540	46	50	853	86
12	1412	153	54	1086	95
13	45495	1448	57	1840	46
14	58035	1637	58	140	28
15	2767	130	65	435	38
16	920	65	69	1945	145
17	1045	75	70	523	51
18	131647	4691	71	360	8
20	825	68	72	7535	457
22	1605	100	73	5500	449
23	12040	145	74	2400	197
24	1960	131	75	205	20
26	195362	7566	77	3075	100
33	9228	588	79	100	15
35	2720	237	80	175	24
38	3169	326	81	155	20
39	1215	74	82	1490	136
40	2120	109	91	30	5
41	430	25	92	205	26
42	2670	261	93	420	22
44	102294	5396			

Discussion

There are a number of sites in mid Buckinghamshire which have produced 'native' or Belgic pottery and several of these settlements are close to Magiovinium including Saffron Gardens (Waugh *et al.* 1974, 373) located near a silted-up bed of the River Ouzel less than 1 km away (Fig. 51). The pottery here provided good parallels, both in fabric and forms, with many of the vessels present at Magiovinium, in particular two groups from the roadside ditch 2131. Contexts 1710 and 1751 produced pottery made from the 'native' fabrics only and may be considered to be of the early first century. No later pottery was present.

The most conspicuous form found at Saffron Gardens was the hollow cordoned beaker fully discussed by Waugh *et al.* (1974, 380). This form was found at Magiovinium in context 17-1751 (Pit No. 221) together with a girth beaker (Pot No. 52), a butt-beaker with shallow girth grooving and two small jars with slashed bead rims; all the pottery was in native fabric 26. The hollow cordoned beaker occurs at Magiovinium in other contexts and in later fabrics with variations in the number of cordons, the lower body form, the shape of the rim and in general dimensions. Similar types have been found at Fenny Stratford, Emberton and Thornborough in Buckinghamshire (Waugh *et al.* 1974, 375) but when found at Verulamium (Frere 1972, Fig. 100, Pot 35) in a late first to early second-century context it was considered to be residual but post-conquest. The same form has recently been found near Ampthill, Bedfordshire (pers. comm.), again in a native fabric and used there as a cremation urn. The incidence of these vessels in both pre- and post-conquest contexts and their distribution in the north of Buckinghamshire and Bedfordshire and the south of Northamptonshire is also discussed by Waugh. Among the pottery from 17-1751 were two vessels represented by bases only, both in fabric 26. The first was a highly burnished tall pedestal paralleled locally at Newton Blossomville, Bucks (Waugh *et al.* 1974, Fig. 12, 401, form 27) and at Skeleton Green, Herts (Partridge 1981, 94, Fig. 47, forms 65–6). The second was a tazza type (Pot No. 268) with a pedestal base and only the lower part of the body remaining. Its form cannot be paralleled locally but it is similar in type and dimension to pottery found at Welwyn, Herts (Birchall 1965, 335, form 105) and Billericay, Essex (ibid., 342, form 166). Context 1708 contained pottery which was still of the native 26/46 group, but with forms more comparable to those from the early post-conquest groups at Skeleton Green (Partridge 1981, Fig. 23), especially the bowl No. 219 which appears similar to an early Drag. 37, but its typically native cordons may owe more to the Gallo-Belgic tradition (Rodwell 1978, 270). See also Pot Nos. 125, 149, 219 and 244 for other vessels in the group.

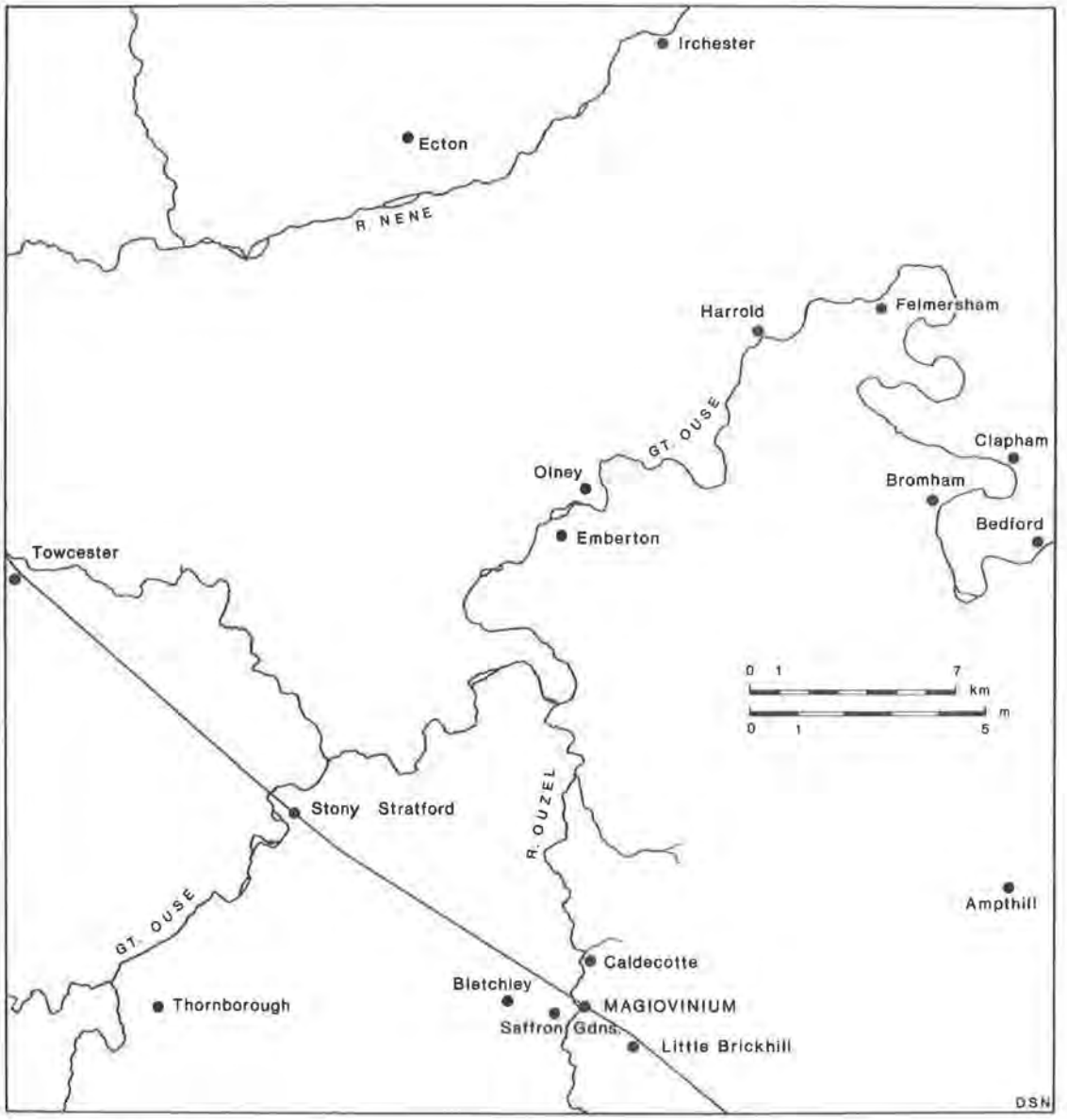

Fig. 51. Plan showing locations of pottery producing sites supplying Magiovinium.

The similarities between the material from Saffron Gardens and Magiovinium in both vessel forms and their dates would suggest contemporary occupation of both the riverside sites and those on higher land. There are indications of gradual change in the fabrics from the native ceramic-tempered material to the sandier types. In the mid to late first century the 26 and 46 change; the clays become smoother and the ceramic tempering finer. The vessel colour also changes, the highly burnished black wares become more grey or grey-brown and the oxidized wares a brighter orange-red. These fabrics are listed in the fabric discussion

under Nos. 14, 22 and 73. Their further development into true Romanized sandy wares comes with the influx of the 44 and 7 fabrics in the early second century. In these groups, however, the fabric types shade into each other, and the periods of production overlap. The forms remain much the same, indeed traditional jars including bead-rimmed, ledged and hollow cordoned beakers are still being produced, but the range broadens to include rarer types such as the tripod bowl (Pot No. 48) and the ledged triple vase (Pot No. 173).

In 1978 during excavations at Caldecotte, Milton Keynes (Caldecotte forthcoming) a small kiln was found which had been producing butt-beakers, girth-beakers and large storage jars in 'native' fabric types, similar to fabric 26. In 1982 a second kiln was excavated whose forms and fabrics were dated from the late first to the early second centuries and whose products are recognizable as having characteristics of both the 14 and 22 and the 44 and 7 groups at Magiovinium. The significance to the town of the Caldecotte kilns is that they may represent evidence for a local supplier and also that they show the transition of the Belgic fabrics to the more standard Roman types. Although the 44 and 7 groups of fabrics at Magiovinium have no definite production site, there are similarities between them and the Caldecotte fabrics which possibly indicate a fairly local origin. There are some resemblances both in the fabrics and forms to pottery from the Fulmer/Hedgerly area and indeed some vessels may have come from those kilns (Oakley *et al.* 1937; Corder 1943; Tarrant and Sandford 1972), but the forms in 44 and 7 are rather less sophisticated in finish and it seems more likely that their provenance is local, perhaps copying the more refined wares supplied to the town via Watling Street. The trading of pottery to Magiovinium from the north-east is further emphasized by the quantity of shell-tempered vessels found there. These vary little in fabric and it seems likely that their source lies along the Great Ouse. This is the major shell-tempered pottery production area and had access to markets in north Buckinghamshire, possibly by water transport. Although the value of water transport is more apparent in the pre- or early conquest period, the advance and completion of Watling Street would have opened an even wider range of markets.

This ware comprises many forms but only two distinct fabrics, Fabrics 18 and 11. The former was originally divided into three types (18, 19 and 76) but after analysis by Dr David Williams they were amalgamated under Fabric 18. Fabric 11 is coarser and tends to be confined to the cruder vessels which are paralleled for example at Bromham in Bedfordshire (Tilson 1973), Pot Nos. 325, 326 and 328 (fabric report by Dr D. Williams, p. 97). The date range of Fabric 18 is extensive—from first-century jars with slashed rims, through many variants of ledged jars to the later products of the fourth century from the Harrold kilns (Hall and Nicholson 1966). The earliest forms are well-paralleled at Thornborough (Johnson 1975, Figs. 15–18), Dansteed Way, Milton Keynes (Adkins 1977, Fig. 2) and again at Saffron Gardens (Waugh *et al.* 1974, Figs. 4–14), and at the first two are found with Fabric 26 forms. The provenance of these early shell-tempered wares could be similar to that for the later types since kilns, for example at Clapham, Beds have been given a first-century date (Tilson 1973). Indeed there is some evidence for a late Iron Age kiln at Harrold (Hall and Nicholson 1966). When the forms in the Fabric 18 were compared with the range of types produced at the Harrold kilns most were represented in large numbers, from the second to the later fourth/early fifth century. Fig. 50 gives an estimated count of these forms and the Form Series gives the appropriate dates. A few fine well-made bowls, Form 5.42 (Pot No. 278) do not appear to be Harrold products but the form itself is paralleled at the nearby site of Felmersham (Watson 1949).

The trade along Watling Street is confirmed by groups of pottery which are either specific forms from an industry or those with a particular finish or appearance. Flagons and mortaria came from kilns in the Verulamium region together with several distinct bowl and jar forms. The Fulmer/Hedgerley kilns (Oakley *et al.* 1937, 276) seem to have traded pie-dishes (Form 5.6) decorated with white slip. The fine

grey wares in Fabric 3, generally decorated with a simple white slip over the rim and neck but often treated more elaborately, seem to be paralleled at Verulamium, Fulmer and Highgate (Brown and Sheldon 1974). Many are close in form and date to vessels from Alice Holt (Lyne and Jefferies 1979) and Staines (Crouch 1976). Two late forms from Site 18, a flagon and a bowl, have been identified by M. Lynes as forms 8.11 and 5B.9 dated 270–420 from Alice Holt (pers. comm.) but are single confirmed examples only. Most of these wares are likely to be from a variety of kiln sites using geologically similar clay deposits and to have a southerly provenance, perhaps around the Greater London area. A micaceous black-grey ware, Fabric 69, appearing in a variety of well-finished forms, is now definitely provenanced as a London kiln product and must be the result of a small but regular trade from there (Dr P. Tyer, pers. comm.).

Fabric 38 produced a considerable number of vessels, the most common being a small beaker with bands of rouletted decoration and a simple rim. However, the same fabric is found in a folded beaker with a small curved everted rim and good mica gilding (Pot No. 104). Several other forms, both beakers and jars, are represented and it is possible that two small sherds with glossy brown glaze over rouletted decoration may be from the same unknown kilns.

Trading of pottery from a north-easterly direction is further indicated by the presence of second and third-century grey wares from the Nene Valley, together with a steady and continuing supply of colour-coated wares culminating in the late fourth-century group from Site 18, Context 18-492. This contained two colour-coated flagons (Pot No. 74), a colour-coated base (Pot No. 175), two colour-coated rimless bowls and a small jar (Pot No. 100). Among other wares in the group were shell-tempered jars from Harrold and several Oxford colour-coated necked bowls (Pot No. 47). There was also a skillet type handle in Fabric 18 (Pot No. 334); two accompanying coins were dated *c.*364–78.

Pottery from most of the Oxfordshire kilns is present in small numbers. White wares included, unexpectedly, one or two vessels in 'gritted white ware' but their sherd count is quite small (see Fig. 49.1). Present also is a scatter of vessels in reduced wares but the main supply appears as a range of oxidized beakers, mostly with rouletted decoration, followed by a more regular occurrence of many forms of colour-coated bowls. The miniature folded beaker Form 4.2v (Pot No. 96), although not appearing in the published corpus of colour-coated forms, has been identified by Dr C. J. Young as an Oxford product. Several oxidized vessels are also present from Much Hadham, perhaps a late trade, but if some of the unprovenanced grey wares originate from this source, it would simply be the continuation of an earlier industry.

Pottery from Context 567

This group (Nos. 335–65, Figs. 45–6) came from a small gully (760, Fig. 9) and contained about 70 vessels, of which 32 are illustrated. It was decided to publish them to show the range of material, both because of its congruity and the condition of the surviving pieces. The group is no later than the mid second century.

Fabrics 44 and 7 together make up two thirds of the vessels, marking the Romanization of the native forms and the rising ratio of sandy wares, although Fabric 26 still makes up a dozen of the heavier pots. Some of the vessels maintain strong native characteristics evident in such forms as the carinated bowls and cups (Pot Nos. 341–5), the shouldered bowl (Pot No. 356), jars with or without rim ledges, and the platters (Pot Nos. 335–7). Among the finer vessels is platter No. 337, which is mica-dusted. The forms and fabrics of context 567 are listed and illustrated separately (pp. 70, 86, 87), but the following forms in the group only appear in the main Form Series: these include a dimpled bowl as No. 46, likely to be from the same source as 340, flagons from the Verulamium area, Nos. 69 and 73, a Highgate poppy-headed beaker, No. 105, and a triple vase with ledged rim in Fabric 7, No. 173.

Conclusion

The pottery indicates an early area of 'Belgic'

settlement which may have been associated with the river valley settlement at Saffron Gardens and contemporary with it. Indeed it seems likely that the trade in pottery may have continued via the river system even after Watling Street and other road routes were available, since the preponderance of pottery still seems to come in from the north-east, and moving such a cargo on water may well have been more satisfactory. The river Ouzel joins the main stream of the Ouse at Newport Pagnell, Bucks and from there flows past the shell-tempered kiln sites of Harrold, Felmersham (Watson 1969) and Clapham (Fig. 51) and on to a wide system of rivers. The presence of the early shell-tempered wares at Magiovinium and other nearby sites may support the premise that the rivers were widely used in the late Iron Age; a map of settlements of this period shows that they were well placed along the banks of the Ouzel and on the eastern part of the Ouse in Buckinghamshire. The late first-century occupation and the rise of the small town to serve both the road traffic and the 'fort' on the south side of Watling Street were superimposed upon the older occupation areas, becoming concentrated on the line of the new road. Only a handful of medieval sherds were recovered from either site and indeed the major occupation sites at Magiovinium were simply underlying the pasture surface. Recent work by Angela Simco (1986) on sites in north Bedfordshire confirms a pattern of primal 'Belgic' occupation followed by Roman consolidation on 'high status' sites. The findings there seem confirmed by the evidence at Magiovinium; they may pertain also to other sites in north Buckinghamshire.

Thin Sections

Five sherds (Fabrics 11, 18, 19, 61, 76) were thin sectioned and studied under the petrological microscope by Dr D. F. Williams of the Department of Archaeology, University of Southampton, and his observations follow.

Fabrics 18, 19 and 76 proved to be very similar, all three containing large amounts of shell, much of which is clearly fossiliferous. Amongst the shell it is possible to recognize scattered fragments of bryozoa, a free-floating colonial marine organism. This may be chilostomata, which is known to occur in the Jurassic (Majewske 1969) and which may indicate utilization of the local Oxford clays. Bryozoa have also been recognized in Iron Age shell-tempered pottery from Chinnor, Oxfordshire (Davis 1951), as well as in medieval St Neots ware (Hunter 1979). (The three fabrics have been combined as Fabric 18 in the fabric descriptions.)

The sherd representing Fabric 11 also contains fossiliferous shell, but not such a high content as the above group. Also present are grains of quartz and a large fragment of flint or chert; no bryozoa were to be seen in the section examined. The origin of this material is likely to be the Jurassic, though possibly a different source location from the above samples.

The remaining fabric, 61, contains ooliths (clearly recognizable in the hand-specimen). In thin section it is possible to see the concentric structure of the ooliths within the limestone body. The nearest oolitic sources to the find-site are the Cornbrash and Corallian deposits which are situated about 8 km north and south of Magiovinium respectively.

The Mortaria by K. Hartley

Fragments from at least 98 mortaria dating from the Flavian period to the later fourth century were examined. Fabrics from the potteries of the Verulamium region, Oxford, Northamptonshire, Mancetter-Hartshill, the Lower Nene Valley and Gaul are represented.

Mortaria from the Verulamium kilns occur up until *c.*200–40, but the sample suggests that once the Oxford workshops started production they rapidly took over. This is perhaps surprising since Verulamium is so close. The smaller workshops in Northamptonshire would appear to have been as well placed geographically as Oxford to supply the town but the sample is very small (3), indicating negligible trade. The Mancetter-Hartshill potteries provided a normal proportion for this area; other sources, the Castor-Stibbington kilns of the Lower Nene Valley, and north-east Gaul, were of minor importance. The heaviest use of mortaria on the site seems to have been

in the third century, probably the second half, with numbers in the fourth century reduced. A summary of mortaria sold to Magiovinium is as follows:

Date	VER	OX	NOR	N/V	M/H	LNV	GAUL
50–130	8			1			1
110–60	4			?1			
140–200/240	5						
100–80		11	1				
180–240		10	2	?1	?1		
240–300		29					
240–400		20			2	1	
	17	*70*	*3*	*3*	*3*	*1*	*1*

VER: Verulamium region (50–200/240)
OX: Oxford potteries (100–400)
NOR: Northamptonshire (140–250 mainly)
N/V: Northamptonshire or Verulamium region
M/H: Mancetter-Hartshill, War. (100–370)
LNV: Lower Nene Valley (Castor-Stibbington area) (140–400)
GAUL: North-east Gaul
? means date approximated to fit in with date brackets used.

The Fabrics

1. Brockley Hill.
   Kilns are known at Bricket Wood, Brockley Hill, Radlett and Verulamium but unless the specific kiln-site is known or suspected, the term 'Verulamium region' is used.
   A granular, usually greyish-cream fabric sometimes with pink core, and often with cream to buff-brown slip; the fabric can occasionally be orange-brown. The texture is obtained by the addition of vast amounts of well-sorted, tiny quartz grit, possibly with a little flint and occasionally with very sparse red-brown material. The trituration consists of flint, red-brown material and a little quartz.

2. Verulamium region. Not produced at Bricket Wood but perhaps at the other three sites above.
   Similar in every way to Fabric 1 but with fewer inclusions, giving a slightly smoother touch.

3. Castor-Stibbington area of the Lower Nene Valley.
   Usually a hard, off-white fabric with a little fine red-brown and quartz temper; frequently with a brownish buff slip. Trituration consists of black ironstone grit occasionally with a little haematite. The single example is overfired to grey throughout most of the section.

4. Cowley etc., Oxford (Young 1977).
   Greyish-white fabric, often with pink core, with abundant tiny quartz and occasional red-brown inclusions; the surface feels like fine sandpaper. Trituration usually consists of mixed transparent and pink to brown quartz but occasional examples may vary e.g. 1102 (bis) with mostly transparent quartz and rare opaque black or brown grits. Products from more than one workshop may be represented.

5. Cowley, Headington, Sandford etc., Oxford (Young 1977).
   Slightly sandy, off-white fabric occasionally with pinkish core, and sometimes with cream to buff slip; there is very little, very fine quartz and red-brown tempering. The very distinctive trituration grit consists entirely of mixed pink, brownish and transparent quartz. When no trituration grit is present, Fabrics 2, 4 and 5 can occasionally be difficult to distinguish.

6. North-east Gaul (Hartley 1977, Group I).
   Fine-textured, slightly brownish-cream fabric with hardly any, very tiny quartz and flint inclusions; trituration consists of quartz with some flint.

7. Dorchester, Cowley, Sandford, Baldon etc., Oxford (Young 1977).
   Fine-textured, slightly micaceous, orange-brown fabric, sometimes with a grey core, and a thin cream or white slip; abundant trituration grit identical with that for Fabric 5.

8. Ditto.
   Fabric and trituration as Fabric 7 but with a red-brown, samian-like slip.

9. Mancetter-Hartshill potteries, Warwickshire.
   Usually a distinctively fine-textured fabric, often fired harder in the 3rd or 4th centuries; it is sometimes described as pipeclay but it often has some very fine quartz and occasional red-brown inclusions. Normally self-coloured but sometimes fired to pale buff and may sometimes appear to have a pale buff slip. The trituration grit before *c.*130 usually contains a lot of quartz, sometimes all quartz, but after *c.*135/40 it consists of abundant blackish to dark brown and/or red-brown grog.

10. Probably Northamptonshire.
    Fairly fine-textured cream or off-white fabric with some red-brown inclusions; trituration consists of blackish and probably some red-brown grits.

The Stamped Mortaria

Albinus (1220, 18-200, *c.*29 cm).
A flange fragment in Fabric 1 (Verulamium region), with an incomplete namestamp from one of at least eight dies used by Albinus (Frere 1972, Fig. 145, No. 5 for a stamp from the same die).

Albinus is by far the most prolific mortarium producer recorded in Britain. Over 350 mortaria of his are known from sites throughout Roman Britain, including 12 from Scotland, about 115 from London and 55 from Verulamium. There is considerable evidence to attest his Flavian date and his earliest recording is in a deposit at Verulamium dated 55–61 (Richardson 1944, 123, No. 4). His overall activity is probably to be dated 60–90. His kilns have not yet been found but the fabric used was undoubtedly produced in the Verulamium region. His son Matugenus worked at Brockley Hill, while counterstamps of the type he used are recorded in number only at Bricket Wood in the work of Oastrius (Saunders and Havercroft 1977).

Bruccius (1221, 18-235, 30.5 cm).
A mortarium in Fabric 1 (Verulamium region), complete in the upper parts with grit worn away in much of the interior; both potter's stamps survive, reading BRVCCIVS.

Bruccius had two commonly used dies and his rim-profiles strongly suggest that this is the earlier. 12 stamps, all from the same die as the Magiovinium example, are recorded from the kiln area at Brockley Hill and it may be assumed that he was active there at some time. 40 stamps of his are known from other sites in England and Wales. A date within the period 80–120 is likely for his work but the rim-profiles suggest that the die involved here was probably used *c.*80–110; the spout of the Magiovinium example is unlikely to be as early as 80 and the optimum production date for this example is 90–100.

Doinus (1659, 17-220).
A flange fragment in fabric 1 (Verulamium region), burnt throughout to dark grey. The fragmentary stamp is from the most commonly used die of Doinus (Castle 1972, 77, Fig. 5, Die D for a stamp from the same die). 64 stamps, mostly from the same die as the Magiovinium example, have been recorded from his kiln-site at Brockley Hill, Middx. (*ibid.*), 152 from other sites in England and Wales and 4 from Scotland.

There is no new evidence to add to that discussed in detail in Castle 1972 and to a lesser extent Frere 1972, which indicates an overall date of 70–110 for Doinus' activity and a date within the period 85–110 for the use of his latest die.

Sollus (1223, 18-479).
A flange fragment in Fabric 1 (Verulamium region) with an incomplete stamp from the most commonly used die of Sollus. 111 mortaria of Sollus have been found, including 4 stamps from Brockley Hill and 4 from Scotland. His primarily Flavian date is not in doubt and his rim-forms are consistently early. A date within the period 60–110 is certain, perhaps 60–100 (Frere 1972, 379, No. 38 and Frere 1984, No. 97; Castle 1972, 86).

?*Marinus* (4949, 17-1976, 33 cm).
A mortarium in Fabric 1 (Verulamium region) with an incompletely impressed stamp from an otherwise unknown die. The interpretation of this stamp is uncertain but it could well be a retrograde stamp of Marinus with MA and IN ligatured. Over 100 stamps of Marinus are known, including 5 from Scotland and 16 from Brockley Hill, Middx. where he was certainly active (Frere 1972, 376, No. 26, and Castle 1972, 86). His work can be dated 70–110. Whether or not this stamp is the work of Marinus, the rim-profile is a typical Flavian one.

? (681, 18-318).
A fragment with incomplete rim-section in a pale brownish version of Fabric 4 (Oxford potteries), with a faint and broken stamp which is not identifiable. Dated 120–80.

The Decorated Samian by G. Dannell

Over 1000 samian sherds were recovered from the excavations of Site 17 alone. (This report does not include descriptions of samian found on Site 18. Identifications of samian in the burial groups appear on pp. 27–8). They have all been identified for form, date and kiln and the complete list appears in the site archive. Apart from a few exceptions most of the sherds were in horizons mixed with coarse pottery covering a wide date range, and perhaps dumped from the town. Decorated sherds of interest have been extracted and are described below. For comparative purposes the assemblage was divided into six groups and the percentages calculated; they are as follows:

	All sherds	%	Stamps	%
Pre-Flavian	67	6.3	4	8.2
Flavian	265	24.9	3	6.1
Trajanic	145	13.6	4	8.2
Hadrianic	92	8.6	5	10.2
Antonine	429	40.2	10	20.4
Late Antonine	68	6.4	23	46.9
	1066	*100*	*49*	*100*

Descriptions

1. 17-224. Sherd 703. F.29. SG. The scroll in the upper zone is similar to ones used on bowls of MVRRANVS. There are two which are narrower, one from London (formerly Guildhall Museum: unpublished), the other from Colchester (Hull 1958, fig. 74.3). The four-pronged motif also occurs in bowls stamped by AQVITANVS, CELADVS, CRESTIO and PRIMVS (from the Cluzel 15 deposit: Haalebos 1979). The likely date for this piece is *c.*50–65.
2. 17-1663. Sherd 38. F.29. SG. The tassel in the upper zone was used by MVRRANVS (Knorr 1952, Taf. 44C). The leaves occur on a CELADVS bowl from Topsham and the tassel is on bowls of CRESTIO, AQVITANVS, RVFINVS, FELIX i (Knorr 1919, Taf. 32A), and PASS(I)ENVS (*ibid.*, Taf. 64H). The leaf-tips in the upper zone are on a bowl of CRESTIO from Hitchin. With the exception of MVRRANVS, all the examples given are bowls stamped after moulding. The connections suggest a date *c.*50–65.
3. 17-247. Sherd 668. F.37. CG. The ovolo (Rogers 1974, B31) and mask are on a bowl from Lancaster in the style of X-5 (Stanfield and Simpson 1958, pl. 67,8, where the mask is incompletely impressed). The use of an astragalus across a panel border is unusual, though not unparalleled, for him. The horseman is O.245. *c.*125–40.
4. 17-965. Sherd 599. F.37. Ovolo Rogers B20 with festoon F76. Both of the motifs are associated with SECVNDINVS I Lezoux, *c.*125–45.
5. 17-2123. Sherd 1705. F.37 in the style of SECVNDINVS I. His ovolo is Rogers B20, his fruit stand Q8, small compound stand Q78, beaded cup U57, leaf J91, leaf-wreath G2. The fabric is very similar to that of Les Martres-de-Veyre. *c.*125–45.
6. 17-690. Sherds 361–4, 366, 370. F.37. Rogers ovolo B32 here used by Potter X6. The complete figures are a lion O.1566, a bear O.1595, a doe O.1815, a stag O.1822 P

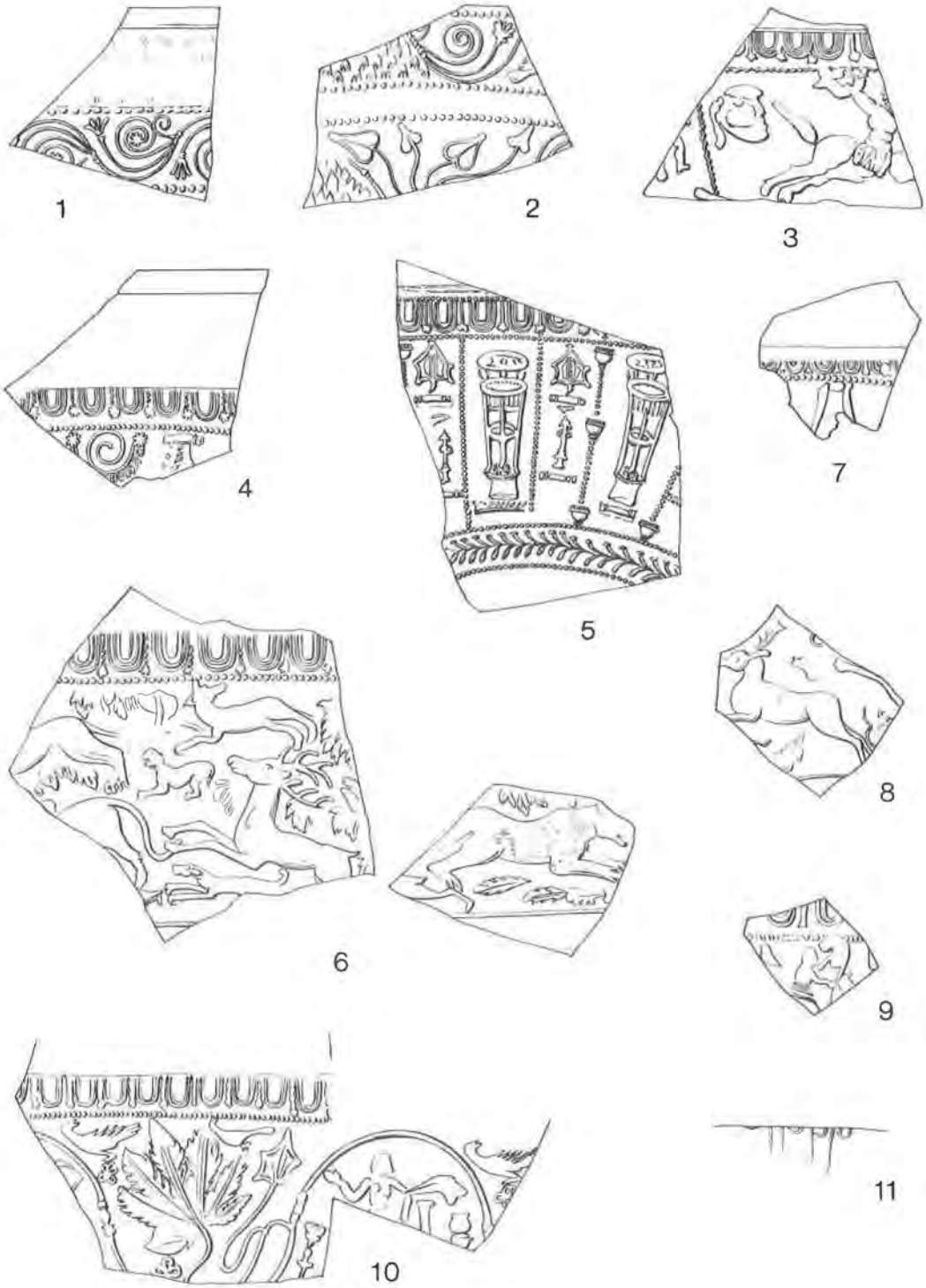

Fig. 52. The decorated samian; Nos. 1–11. Scale 2:3.

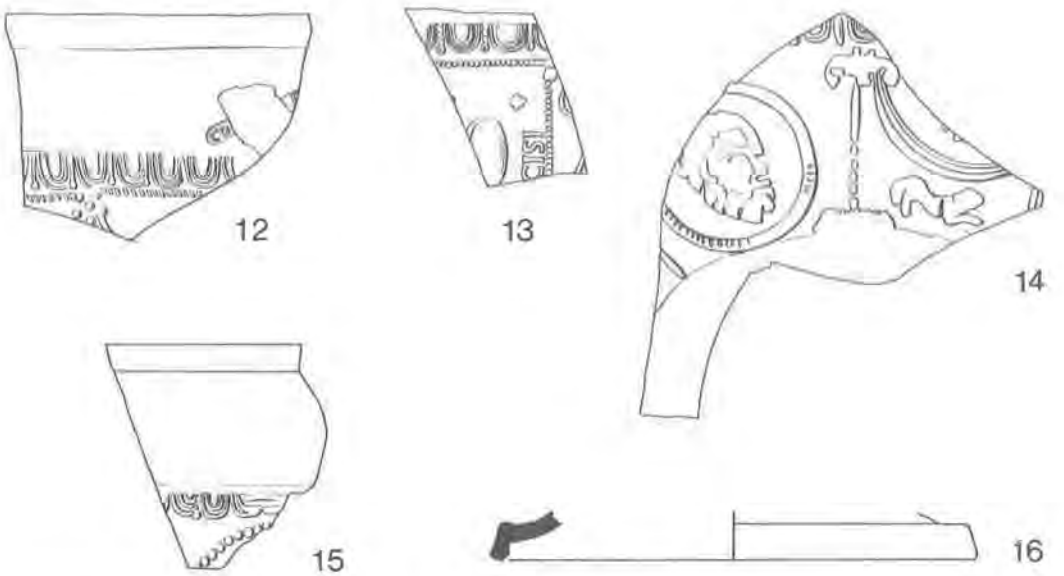

Fig. 53. The decorated samian; Nos. 12–16. Scale 2:3.

(type) and a hound O.1989A. These were used by the group of potters associated with ATTIANVS and SACER. The large stag and hound are found on the piece with cursive signature reading]LLI (cf. Stanfield and Simpson 1958, pl. 76.24). Lezoux *c.* 125–150

7. 17-1. Sherd 1301. F.37 in the fabric of Les Martres-de-Veyre. The ovolo (Rogers B97) and single festoons joined by an astralagus are on a bowl in the style of CETTVS from Corbridge, probably with the same small figure (Stanfield and Simpson 1958, pl. 144.62). The bowl is grooved in two places for mending. *c.*135–60.
8. 17-1. Sherd 1125. F.37. Stag O.1768 (type). The fabric is orange-red and 'bricky'. The background motifs indicate the work of CRICIRO but the fabric and slip suggest an Antonine date *c.*140–60.
9. 17-1. Sherd 1180. F.37. CINNAMVS ovolo (cf. Stanfield and Simpson 1958, fig. 47.3) with Amazon D.153. Lezoux *c.*145–65.
10. 17-501. Sherds 922, 920. F.37. Ovolo Rogers B12. Below, a scroll with leaves H23 and J89. In the background there are two rosettes, C22 and C23, and a candelabrum similar to Q51. The figures are Venus D184 and two birds D1018 and D1030 (type). The potter is uncertain but the leaves and larger rosette appear in the work of ATTIANVS while the ovolo was used by SACER, CINNAMVS and CRICIRO. CINNAMVS also used the Venus. Lezoux *c.*145–65.
11. 17-501. Sherd 993. F.37. Signature of CRICIRO. Part of a cross-motif (cf. Stanfield and Simpson 1958, pl. 117.2). Lezoux *c.*145–65. See No. 14 in the potters' stamps below.
12. 17-1344. Sherds 245, 249, 251. F.37. EG, with a rim-stamp CO[NSTAS].F. This stamp of Consta(n)s i is from a die (1c) used at both Heiligenberg and Rheinzabern. The bowl, in Rheinzabern fabric, is in the style of IANVS and has his commonest ovolo (Ricken and Fischer 1963, E19), striated border (*ibid.*, O242) and a rosette (*ibid.*, O41). *c.*155–75. See No. 12 in the potters' stamps below.
13. 17-530. Sherd 315. F.37 stamped [ADVO]CISI; for his ovolo cf. Stanfield and Simpson 1958, fig. 33.1.1. CG. *c.*160–90. See No. 2 in the potters' stamps below.
14. 17-90. Sherds 737–8. F.37. Ovolo of COMITIALIS (cf. Ricken and Lüdowici 1948, VI, Taf. 261/2). The head is O.1336 and for the characteristic medallion cf. Lüdowici 1901–5, K114. The panther is O.1518. Rheinzabern. *c.*160–90.
15. 17-1. Sherd 1101. F.37. REGVLINVS. Ovolo cf. Lüdowici 1901–5, R17. Rheinzabern. *c.*160–90.
16. 17-1251. Sherd 294. Samian lid in bricky fabric with orange slip. Samian lids are rare and the origin of the piece is uncertain. 2nd century. CG?

Discussion

There is a significant quantity of pre-Flavian samian but the first decorated ware belongs to the period *c.*50–65 and this may well represent the termination date for military activity. That further activity on the site grew relatively slowly is indicated by the fact that the Flavian samian does not outweigh that of the Trajanic period as heavily as in a normal distribution. By contrast, activity from the middle of the second century onwards appears to have been more intense with a number of decorated bowls present from East Gaul. None is definitely of third-century date. Supplies came from the

normal kiln sites at La Graufesenque, Les Martres-de-Veyre, and Lezoux in the second century. Peripheral sources were the Lezoux first-century kilns and Montans but this evidence is limited to only a few sherds.

Samian Potters' Stamps
by Brenda M. Dickinson

The superscript a, b, c indicate: (a) a stamp attested at the pottery in question; (b) not attested at the pottery in question, but the potter known to have worked there; (c) assigned to the pottery on the evidence of fabric, distribution, etc. The entries run: site, sherd number, potter (i, ii, etc.), die number, form, reading, pottery or origin, date.

1. 17-827. 412. L. Adn(atius?) Adgenus. 1a. 31. [L.ADN. A]DGƎNI. Lezoux.[c] *c*.160–90.
2. 17-530. 315. Advocisus. 8a. 37. [ADVO]CISI. Lezoux.[a] *c*.160–90. See No. 13 in the decorated ware.
3. 17-1. 1122. Albucianus. 6c. 79 or Lüdowici Tg. ALBV[CIANI]. Lezoux.[a] *c*.160–200.
4. 17-1229. 502. Albucius ii. 6a. 18/31R or 31R. ALBVCI. Lezoux.[a] *c*.150–80.
5. 17-1229. 487. Albucius ii. 6d. 33 (burnt). ALBVCI. Lezoux.[a] *c*.150–80.
6. 17-87. 725. Albus iii. 1a. 31. [ALBI] MΛI. Lezoux.[a] *c*.150–80.
7. 17-520. 894. Andegenus. 1a. 18/31R. ANDEGƎNIM. Lezoux.[c] *c*.150–80.
8. 17-650. 360. Apolinaris. 1a. 27. [ΛPOLI]NARIS. Vichy,[b] Les Martres-de-Veyre.[c] Probably from Les Martres, though the fabric could belong to the Vichy range (at Terre-Franche). *c*.130–50.
9. 17-1488. 99. Aquitanus. 1c. 18.]FAQV[ITAMI]. La Graufesenque.[a] A stamp from a broken die. *c*55–65.
10. 17-227. 1620. Balbinus. 2a. 18/31. ΠИI[BINƑM. Les Martres-de-Veyre.[a] A stamp from a worn die which, when new, gave BALBINI·M. *c*.100–20.
11. 17-220. 1576. Celsianus. 1a. 31R. CELSIANI.OF. Lezoux.[a] *c*.170–200.
12. 17-1344. 245, 249, 251. Consta(n)s i. 1c. 37 rim. CO[NSTAS].F. Heiligenberg,[a] Rheinzabern.[a] *c*.155-75. See No. 12 in the decorated ware.
13. 17-169. 1511. Cosius Rufinus. 8a or 8a'. 18/31. [CΦNSI.]RV] or [ΦSI.[RV]. La Graufesenque.[a] *c*.70–95.
14. 17-501. 993. Criciro. V. Cursive 37, below the decoration; retrograde. Decorated bowls with cursive signatures of Criciro are known from Lezoux. *c*.145–65. See No. 11 in the decorated ware.
15. 17-501. 990. Duppius. 1b. 80. DVꟾ[PIVSF]. Lezoux.[a] *c*.160–80.
16. 17-101. 1377. Elvillus. 1a. 31 (burnt). ELV[ILLI]. Lezoux.[a] *c*.160–90.
17. 17-1. 1288. Frontinus?. 18a. 29. [?] or [RO]ИI. La Graufesenque.[b] *c*.70–95.
18. 17-1. 1290. Habilis. 1a. 31. HAB[ILIS]M. Lezoux.[a] *c*.150–80.
19. 17-926. 461. Lallus i. 2a. 33. LALLI.MA. Lezoux.[b] *c*.145–75.
20. 17-1511. 4. Logirnus. 10a. 15/17 or 18. [LOGIR]NM. La Graufesenque.[a] *c*.65–85.
21. 17-227. 1588, 1591. Magio i. 4a. 33. MAGIOF. Lezoux.[b] *c*.155–85.
22. 17-288. 763. Marcellinus ii. 2a. 31R. MARCELLIИIΓ. Lezoux.[a] *c*.160–200.
23. 17-1. 1200. Marcellus iii. 6a. 33. MARCE[LLI]. Lezoux.[b] *c*130–60.
24. 17-101. 1374. Masc(u)lus i. 7a. 24 (burnt). [OF]MAS. La Graufesenque.[b] *c*.50–65.
25. 17-1253. 513. Muxtullus. 1a. 38 or 44. .MVXTVLLI.M Lezoux.[b] *c*.155–75.
26. 17-1467. 105. Niger ii. 3b". 27.]FNGII(I). La Graufesenque.[a] The die when new gave OFNGRI, but was modified several times in the period *c*50–70.
27. 17-1. 1291. Paterclus ii. 10a. 18/31. PATERCLOSFE. Les Martres-de-Veyre,[a] Lezoux.[b] *c*.110–25.
28. 17-1344. 272. Peculiaris i. 2a. 33. ꟾECVLIARIS(F) . Lezoux.[b] *c*.160–70.
29. 17-510. 909. Priscus iii. 9a. 33. PRIƨCV̈Ɛ. Lezoux.[a] *c*.160–90.
30. 17-501. 921. Pugnus ii. 2c. 38 or 44. PVGNIM. Lezoux.[b] *c*.130–50.
31. 17-101. 7416. Quintus v. 5a. 33. QVINTIM. Lezoux.[a] *c*.160–200.
32. 17-1. 1289. Reburrus ii. 3a. 33. [REBVR]RI.OF. Lezoux.[a] *c*.140–70.
33. 17-655. 377. Reburrus ii. 4a. 33. REBVRRI.OF. Lezoux.[a] *c*.140–70.
34. 17-501. 934. Reginus iv. 5f. 33. REG[INI.M]. Lezoux.[b] *c*.140–70.
35. 17-1351. 155. Sabinus viii. 3a. 27. SABINI◇I. Lezoux.[a] *c*.150–60.
36. 17-1815. 58. Sacerus ii. Uncertain 1. 79R or Lüdowici TgR. [SA]CERIꟾI. Lezoux.[c] *c*.170–90.
37. 17-1299. 485. Saturninus ii. 8c. 31 (burnt). [SA]-TVRNINI. Lezoux.[a] *c*.160–200.
38. 17-73. 714. Sennius 2a. 33. SENNIV[SF]. Lezoux.[b] *c*.150–80.
39. 17-827. 405. Victor iv. 1b. 31R. VIC[TORIM]. Lezoux.[a] *c*.160–200.
40. 17-277. 1674. Viducus ii. 5b. 18/31. VIDVCVSF. Les Martres-de-Veyre.[b] *c*.105–25.
41. 17-101. 1404. IΛBAȘ[or IVBVS[retrograde, on a flat base, with two broad grooves. The pale fabric and dull, orange-brown glaze suggest that this is one of the later products of Montans. Grooved for a rivet. *c*.110–45.
42. 17-501. 939.]IΛIIIIIVIΛ on form 33. Central Gaulish. An illiterate stamp. Antonine.
43. 17-1. 1222. OFΛ on form 15/17 or 18. South Gaulish. Pre-Flavian.
44. 17-223. 762. CO[on form 27(?), slightly burnt, in the fabric of Les Martres-de-Veyre. *c*.100–50.
45. 17-1. 1221.]VMVS on form 27. Central Gaulish. Hadrianic or early Antonine.
46. 17-227. 1648.]IΛIIII[on form 18/31 or 31. Central Gaulish. Probably an illiterate stamp. Hadrianic or Antonine.
47. 17-991. 531. . . . INM on form 27. Central Gaulish. Hadrianic or early Antonine.
48. 17-949. 625.]'I.M on form 27. Central Gaulish. Hadrianic or early Antonine.
49. 17-1. 1298.]MM on form 18/31R-31R. Central

Gaulish. Early to mid Antonine.
50. 17-227. 1584. An eight(?)-petalled rosette stamp, fragmentary, on form 46. Central Gaulish. Antonine.
51. 17-227. 1597. An eight-petalled rosette stamp on form 46. Central Gaulish. Antonine.

The Human Bones

by Janet D. Henderson

[Extract from AML Report No. 3548.] A large sample of inhumed bone was presented for examination. The bone fell largely into three categories: identifiable individuals (i.e. single skeletons); isolated bones found in context; and isolated bones found unstratified. The first two categories are dealt with below; the last is confined to archive only.

The Individual Burials

The state of the 31 identified, inhumed individuals from Site 17 was poor, and in many cases the bones were not sufficiently complete for detailed analysis. The results for each individual and the amount of the skeleton present are summarized in Table 1 below. Note that the measurements are only approximate.

Table 1. Bone Condition and Completeness of the Skeleton: Site 17.

Amount of Skeleton	*Bone Condition* *Poor*	*Fair*	*Good*
Up to ¼	994, 995, 1141, 1142, 1143		
⅓	29, 996, 1522, 1419, 1494, 1897, 1105, 1631, 1704	1867	33
⅓–½	1862, 1783		
½	1818, 1851, 1678	1869	28
⅔	1509, 1903, 1484, 212, 1564		691
Over ⅔	303		1870

All individuals were assessed for basic demographic data (age, sex and stature) and where possible for details of dentition, cranial and post-cranial metrics and non-metrics and pathologies or abnormalities. Details of results for age, sex and stature are listed in Appendix 1 (archive only).

Age

An assessment of age was made for all the identifiable individuals from Magiovinium. The methods used varied with age and therefore it was necessary to assign each skeleton to the class of infant, juvenile, sub-adult or adult. Ages were defined as follows: infant—from birth up to six months (this was also referred to as neonate); juvenile—from six months to the beginning of epiphyseal union; sub-adult—the period of epiphyseal union; adult—maturation and growth of the skeleton and dentition are complete.

Infants were aged by means of diaphyseal bone length (hence stature), the development of the tympanic ring, tooth crown development and vertebral development. For the correlation of infant stature with age the methods of Olivier and Pineau (1958 and 1960) and Stewart (1979) were used. The development of the tympanic ring was as outlined by Anderson (1960) and Grant (1972). Tooth crown development was taken from Morrees, Fanning and Hunt (1963) and the development of the neural arches of the vertebrae from Grant (1972), Gray's Anatomy and Frazer (1948).

Results for the material examined showed that eight individuals could be classed as infants: one was foetal, two were from term to three months, four from early post-natal to three months, and one from three to four months. Thus it can be seen that the majority of infant deaths in this group occurred during the first three months of life. Note that the disparity between those aged from term to three months and those aged from early neonate to three months was caused by lack of evidence in the former where it was not possible to establish that the individual had survived birth.

There was only one juvenile present in this series: 1869 from the double burial 1871. This was aged on dental development using Schour and Massler's chart (1941), development of the atlas bone and closure of the metopic suture. Age was placed at two to four years; it was not possible to be more specific owing to the methods employed and the normal variability that is found between human populations. There were no individuals present that could be classed as sub-adult.

Of the 22 individuals in the adult age group 10 had insufficient data for a classification other than as 'adult'. The remainder were aged

by means of dental wear, Brothwell's chart (1972) (7 individuals), the pubic symphysis, McKern and Stewart (1957) and Gilbert and McKern (1973) (4 individuals), and endocranial suture closure and degenerative joint disease (this last was used for one individual only).

The results showed a fairly even spread of individuals. It should be noted that in several cases a large age range was given (e.g. 1897). This was due to the condition of the material and the general limitations of ageing methods for adults. The size of the sample from Magiovinium Site 17 was too small for detailed analysis of the age distribution but there are a few points worthy of note. There was a noticeable absence of juveniles or sub-adults; this was emphasized further by the number of infants present. With regard to the infants it was interesting to note that all the identifiable individual infants came from Area 1, Trench 1 (with the exception of 1484 which came from the edge of that area).

Sex

Sexing was undertaken by both metric and non-metric means. In the majority of cases this involved examination of the pelvis and skull and measurement of the vertical diameter of the femoral head. Where sexing by these means was inconclusive the diameter of the humeral head, the width of the medial epicondyle of the humerus and the general size and shape of the bones were all assessed. In one case (1105) sexing was based on the size of the patella which was extremely large and therefore taken as belonging to a male. Juvenile and infant remains were not assessed for sex. The results showed that there were far more females than males present, namely: female 11 (? + 1), male 4 (? + 2), unsexed 4; total 22. The size of the sample prevents any explanation of this; for example it may be the result of sample bias or of burial practice, but it is not possible to distinguish which.

Stature

Stature was estimated on the maximum lengths of the long bones using the regression equations listed by Trotter (1970). Where possible the bones of the lower extremity were used in preference to those of the upper for greater accuracy. No correction was made for individuals over 30 years because the age estimates available covered too great a range, therefore for these individuals stature estimates must be taken as being high (by *c.*1–2 cm). Note that the standard deviation ranged anyway (according to bone used) from ±4.32 to ±3.37 cm. All estimates were rounded to the nearest whole figure. Owing to the poor state of bone preservation results were available for only 11 individuals, as follows: 9 females, 153–67 cm; 2 males, 174 and 181 cm.

Although there is a clear disparity between male and female heights the fact that only two males were assessed must be emphasized, and it is likely that a truer picture would show an area of overlap between male and female, although males would be generally taller. Thus for 130 adult males and females assessed for height from Trentholme Drive, York there was a clear margin of overlap as follows: 30 females, 142–68 cm; 100 males, 160–83 cm. However, modal heights for Trentholme Drive, 152 cm for females and 173 cm for males, show that in fact for the most part there was a fair degree of sexual dimorphism as regards stature, similar to that shown at Magiovinium. (Trentholme Drive may be categorized as a Romano-British cemetery, one of many serving the town and garrison of Eburacum. The site was in use from *c.*140 to the end of the fourth century, being used for inhumation burials (i) with cremations *c.*180–280 and (ii) inhumations only *c.*280–400. A sample of 350 skeletons was excavated. Data from Warwick (1968).)

The Dentition

Only 13 individuals had teeth available for analysis. The full list of teeth present is given in Appendix 2 (archive only).

Very little data was available for the two individuals with deciduous dentitions. 1419 was an infant of three to four months; there were only two tooth crown buds present with which it was possible to age the individual. 1869 was aged two to four years and there were seven teeth present *in situ* (the rest of the dentition was missing). There was no dental wear, caries,

abscesses or rotation or crowding of teeth. There was some very slight periodontal disease but no calculus and no observation was possible for the presence of enamel hypoplasia. The precise aetiology of periodontal disease is unknown but dietary deficiency, poor dental hygiene, dental wear and calculus deposits may all contribute (Brothwell 1972, El-Najjar and McWilliams 1978). In this case, as would be expected in a juvenile, the disease presence was not extensive; it is suggested that in the absence of calculus deposits and dental wear, nutritional imbalance and lack of dental hygiene might have been causative. No analysis was made of the morphology of the teeth since this was a deciduous dentition.

All of the permanent dentitions were assessed for details of dental wear, caries, abscesses, occlusion, dental morphology, periodontal disease, enamel hypoplasia, calculus deposits and any other anomalies. There was insufficient data for analysis of the age and sex distribution of any results to be made.

Wear was analysed both for ageing purposes and for information with regard to diet, chewing habits etc. Unfortunately only three out of the 11 dentitions available could be regarded as having a sufficient number of teeth present for analysis other than for ageing. On 303 wear was symmetrical on the maxilla but on the mandible was found to be very slight on the premolars although much more severe on the incisors, canines and molars. However, complete loss of the mandibular left molars may be a possible cause of the asymmetry observed, in particular when compared to 1522 where wear was symmetrical all round. On 1509 wear was marginally greater on the maxillary teeth than on the mandibular and on the right than on the left. The reasons for the variability seen in tooth wear may include diet, tooth structure and food preparation, but with so little evidence available it was impossible to make a more specific analysis.

Dental Disease

All teeth were assessed for dental disease, the most common example of this being caries. Of the total number of teeth present (150) 11 could be shown to be carious (7.33%) which was actually less than found by Mummery (29%) and slighly less than Brothwell (12%) (see Moore and Corbett 1971). The difference in incidence is probably a result of sample bias caused by the small sample used at Magiovinium. For possible later comparison with other sites or regions the DM rate (decayed + missing ante-mortem per 100 teeth) was calculated. This is only a very generalized statistic since it makes no allowance for the fact that ante-mortem loss of a tooth is not necessarily the result of a carious infection but may be caused by, for example, alveolar recession, dental wear or trauma. At Magiovinium Site 17 the DM rate was approximately 9/100.

Further observation was made of the teeth affected and the precise location of carious infections. The small numbers of each tooth present indicate that although they may provide data for a few individuals the pattern revealed is not necessarily true of the whole population sample. The caries rate per tooth (e.g. canines) is calculated as:

$$\frac{\text{Number of carious teeth present} \times 100}{\text{Number of teeth present}}$$

Teeth of each category being included from all four quadrants of the dentition give the following results.

Table 0. Results for caries incidence per tooth at Magiovinium Site 17.

Tooth Type	*No. of Teeth*	*Carious Teeth*	*Caries (%)*
Incisors	All incisorswere free of caries		
Canines	20	1	5
Premolars	27	1	3.7
First molars	13	2	15.39
Second molars	12	5	41.66
Third molars	11	2	18.18

As would be expected, by far the highest incidence of caries was found in the molar teeth. This result has been found elsewhere and a simple anatomical explanation postulated: molar teeth possess larger crown dimensions, thus more surface area and also more fissures in which food particles may collect (Morrees in El-Najjar and McWilliams 1978). It is not possible to analyse the greater number of caries in second molars than in any other teeth without

taking into account the age distribution of the caries and this was not considered feasible in the light of the imprecise age estimates that were available.

Examination of the sites of caries showed that they were relatively evenly distributed between buccal, mesial and distal locations. No lingual caries were observed. However, in the 11 carious teeth, six had caries at the cemento-enamel junction, two on the crown or at contact areas, and for three no data was available. Again the high prevalence of caries at the cemento-enamel junction is a common finding in population samples of this date although always with the point that the apparent absence of carious lesions from occlusal or fissure areas may be an artefact of dental wear which obscures the development of cavities. To analyse the significance of this would require a larger number of deciduous, mixed and permanent dentitions than were available at this site.

On only two individuals were abscesses found: 1522 and 1564. On 1522 the maxillary left first molar was involved and it is likely that the abscess was involved in the ante-mortem loss of that tooth.

On 1564 there were three abscesses: on the maxillary right first molar, the maxillary left second molar and the mandibular right first molar. Only in the case of the second molar was there possible association with a carious lesion. The cause of the other two abscesses remains unknown.

Owing to the small sample available further analysis was not considered justifiable.

The amount of calculus (tartar) on each individual's teeth was recorded. Its presence is significant in that it may be involved in the onset of periodontal disease and may also bring some degree of immunity from carious infection. In seven individuals from Magiovinium moderate to heavy calculus deposits could be shown to be present. In the three cases where apparently there was no calculus it is suggested that probably the true situation was masked by the small number of teeth present and possible accidental loss of any such deposits.

On the individuals for whom periodontal data was available four showed moderate periodontitis (now partially exposed), three showed severe alveolar recession (nearly complete exposure of roots) and one came between the two classes (moderate to severe). In one case (303) severe periodontal disease could possibly be associated with ante-mortem loss of the mandibular left molars. There was severe periodontitis in other individuals without loss of the teeth. However, this may reflect the ages of those concerned; unfortunately the only means for ageing 303 was dental wear so that comparison by ages would be invalid. There was insufficient data available for analysis of the causes of periodontal disease at Magiovinium other than to suggest that poor diet, bad oral hygiene, calculus deposits and dental wear were probably all contributory.

The presence of enamel hypoplasia, whether as pits, transverse lines or grooves, indicates a disturbance in the production of enamel during the period of active enamel matrix formation. Of six individuals for whom data was available five showed no trace of enamel hypoplasia and one had slight lines. Obviously on such a small sample it is not possible to say that there was no childhood disturbance (e.g. dietary deficiency or disease) sufficient to cause disruption of tooth formation in this population, merely that on the few individuals available there was no disturbance of sufficient magnitude to cause enamel hypoplasia.

Dental Morphology

Observations were made for absence of teeth, occlusion, rotation or crowding and supernumerary teeth or cusps. Unfortunately, as so many teeth were missing, it was only considered justifiable to record these features and no analysis was undertaken.

Cranial Observations

Since data for cranial metrics was available for three individuals only (303, 1522, 1851) and these involved only the cranium, it was decided

that detailed analysis of the measurements could not be justified and the information was merely recorded. (The results for the three individuals were all very similar.) Details on cranial morphology could be taken on five individuals only. Analysis could not therefore be justified and the results were simply recorded. No anomalies were found.

Post-cranial Observations

Post-cranial metrics were available for 11 individuals only and thus there was insufficient data to justify detailed analysis of the material other than to say that all femora exhibited platymeria (flattened shafts) and all tibiae were eurycnemic (wide shafts). The small number of individuals and the poor condition of the material meant that very few post-cranial morphological observations could be made. The only example of interest was on 996 where there was a rare reduction in size of the left humeral medial epicondyle.

Degenerative Joint Disease

All individuals were assessed for any pathology or abnormality including degenerative joint disease, trauma, infectious disease, stress or any other affection. Of those examined for degenerative joint disease nine had none present, in six the spine only was involved, in two the spine and hips (the latter only slightly) and in one the fingers and toes were affected as well as the hip and spine.

Arthritis in the spine for the most part was present as vertebral osteophytosis (i.e. affecting the centra only) and was confined to the lumbar vertebrae (28, 212, 994, 995, 1564, 1818 and 1867), the exception being 1851 where the osteophytosis was altogether more severe and ran from the fourth thoracic vertebrae to the base of the spine. However even in this case —where the osteophytes were more marked on the right side—there was no fusion of the vertebral centra but almost certainly compression of the centra and narrowing of the joint spaces between them. (An indication of this narrowing was found on 28 and 995 where Schmorl's nodes were present on the vertebral centra.)

Osteoarthritis of the hip joint was found in 28, 29 and 1851. On all of these there was slight lipping of the acetabular rims and the femoral heads and on 28 and 29 at the sacro-iliac articulation also.

On 29 osteoarthritic lipping was observed on the first left metacarpal and on the shafts and distal extremities of the hands and also on the first phalanges of the feet.

It is probable that the above observations are incomplete for the individuals observed, owing to the fragmentary nature of all the skeletons. On such a small sample analysis in depth (e.g. of sex and age distribution) cannot be justified.

Other Pathology (Disease, Stress, Trauma etc.)

Owing to the poor preservation of the material there was very little evidence for any other pathologies and with the exception of two individuals it was recorded throughout as absent. On 1818 there was some evidence for an increase to cortical bone thickness on the medial borders of the tibial diaphyses. The precise cause of this was not clear but there was no suggestion of any infection or disease on the tibiae or any of the other bones of the skeleton and it is likely therefore that it was the result of some local stress or trauma. On 1870 there was some slight hyperostosis on some of the cranial fragments but as there was so little of the skull present a diagnosis was not possible.

Other Skeletal Finds

Material Found with Identified Individuals

A few of the burials already described were found to include human bone which could not belong to the main skeleton.

Burial 646
The burial was of Skeleton 29 but an additional ulna bone from an adult individual was also present. It was not clear whether this represented another individual or post-excavation confusion of the material.

Burial 996
The main burial was of an adult female (996) but there was also a femur from a human foetus present. This was aged on maximum length of the bone at approximately 7½ lunar months (31 weeks).

Burial 1871
There were two skeletons in this grave, 1869 (a juvenile) and 1870 (an adult female).

The Cremations

A total of 16 samples of cremated human bone were submitted for examination; in none of these was there any evidence found to suggest that more than one individual was present.

All the samples of material were small: this is perhaps best illustrated by examination of the total bone weights which ranged from 23 g (1147) to 760 g (2254). The normal weight of the dry, fat-free skeleton varies from 2 to 4 kg, and that of a cremated skeleton averages about 1.6 kg. Clearly none of the cremated samples from Magiovinium Site 17 were even half of that weight, and therefore any analysis of observations made on that material must remain tentative (Krogman 1962 and Evans 1963).

Eleven of the cremations could be aged as being 'probably adult'. These were 1547, 1540, 1813, 2228, 2249, 2254, 1130, 1146, 1144, 1129, 449. On numbers 1581, 1172, 1147, 1148, 1140 no age estimate at all was possible. Ageing where undertaken was based on tooth fragments, cranial suture closure, epiphyseal union (1144 only) and size and thickness of the bones.

Sex could be assessed on two individuals only. 1540 was possibly a male, on the size of the scapular and vertebral fragments. 2249 was probably a male, on the approximate radial head diameter and the general size of the bone fragments. Although all the material was observed for information with regard to stature it was not feasible to assess this on any individuals. No pathology or abnormality was observed on these cremations but it must be emphasized that the evidence available was very limited, therefore it cannot be stated that any pathology or abnormality was absent.

Other information which may be deduced from these cremations concerns the mode of burial involved. All of the bones showed signs of burning but it was interesting to note that they varied in colour from black to blue-grey and white. The black, it is suggested, was a result of the presence of charcoal in the fire or of post-burial staining in the ground (if this is not the case then it is indicative of a low level of burning). The blue-grey and white reflect the degree of burning at the time of cremation. During the process of cremation bone gradually changes colour, eventually becoming white. The blue-grey bone found indicates both incomplete cremation and also the presence of organic matter.

The small size of the fragments (maximum length *c.*2–6 cm) suggests a degree of post-mortem breakage of bone, most probably to facilitate the inclusion of the material in a funerary urn or container. Analysis of whether it was the practice to include all of the remains in the final burial or only representative parts was hampered by the small size both of the fragments and the samples. However, in most individuals fragments of skull, teeth, vertebrae, ribs, pelvis and long bones could be recognized, which suggest that there was probably no discrimination. The only exception to this was 1144, where for such a small sample of bone (2279) there was an unusually high proportion of bones from the hands and feet present.

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The Animal Bones
by Alison Locker

Excavations at Magiovinium produced 11,306 bones from a series of Roman gullies and ditches, mainly dated to the second and third centuries, but with a few of first-century date. There were also a small number of unstratified bones (1,370) from the topsoil which may have received some admixture of later material but seem essentially the same as the stratified and sealed deposits.

The proportions of different anatomies recovered for each species are given in full in the site archive and AML Report No. 4543.

For the purposes of analysis ox and ox-sized fragments have been combined as it is likely that they belong to the same species. Ox-sized fragments are heavily fragmented through butchery while horse bones tend to be fairly complete. Similarly, ovicaprid and ovicaprid-sized fragments have been amalgamated; pig and roe deer, to whose size range they might also belong, occur less frequently. The term ovicaprid has been used to cover possible bones of goats that could not be positively identified; the vast majority of ovicaprids would in fact be sheep.

The following species were identified: ox (*Bos* sp.) 11.8%; goat (*Capra* sp.) 0.008%; ovicaprid (*Ovis* sp./*Capra* sp.) 8.2%; pig (*Sus* sp.) 1.8%; horse (*Equus* sp.) 5.5%; red deer (*Cervus elaphus*) 0.04%; roe deer (*Capreolus capreolus*) 0.01%; ox-sized fragments 32.1%; ovicaprid-sized fragments 11.4%; dog (*Canis* sp.) 0.8%; fox (*Vulpes vulpes*) 0.008%; cat (*Felis* sp.) 0.008%; hare (*Lepus* sp.) 0.04%; unidentified mammal fragments 27.2%; domestic fowl (*Gallus* sp.) 0.4%; domestic duck/mallard (*Anas* sp.) 0.008%; raven (*Corvus corax*) 0.008%; barn owl (*Tyto alba*) 0.08%; swan (*Cygnus* sp.) 0.008%.

Recording Methods

Each bone was encoded onto punchtape using the method outlined in Jones *et al.* 1981. The information was then transferred onto floppy disks and, using a Research Machines 380Z microprocessor, paper archives were produced of both the descriptive and metrical data.

Spatial Distribution

Although the bones were not phased through time, three groups were distinguished spatially on site, each area being composed of gullies and ditches, and each group being examined in comparison with the others. It was hoped to observe differences in carcase disposal in the groups although there was no evidence archaeologically for functional differences between them. Little success was met using chi-squared tests (used to indicate whether the differences in the recorded data could reasonably be attributed to chance variation) comparing the distribution of the most common species (divided into different anatomical groups) between areas and against the distribution of the whole site. The level of chi (or χ^2) was so high as to suggest that the data was unsuitable for this sort of analysis; perhaps the group divisions were too crude and were bound to suggest great variability. Very high values were obtained both comparing species between areas and for pairing species in different levels of fragmentation which was successfully carried out on the Brancaster material (Wall *et al.* 1985).

Cluster analysis using the weighted pair group average for certain anatomies did not reveal any significant differences between species, and observation of the distribution between different groups did not suggest any variance in carcase disposal.

The inconclusive results of some of the tests may be the result of problems with the data, such as the bias against the recovery of small bones since no sieving was carried out; for example the smaller phalanges of sheep will stand less chance of recovery than those of ox. Some bones survive better than others, for example jaws and metapodials. Grant (1975, 384) cites the proximal ends of humeri and tibiae and skull and vertebrae fragments as having a low specific gravity and therefore unlikely to survive well.

Similarly, the denser early-fusing bones should survive better than the late-fusing bones; the latter include the proximal ends of humeri and tibiae and also the distal end of the femur. There are therefore two sources of bias operating. At a more basic level the fragmentation of bone reduces the chances of recovery, especially if no sieving is carried out. If one accepts the above points the bones which stand the best chance of survival are those from animals that are not eaten, hence not butchered, and are fully mature at death so that the bones are at their maximum size and density. Horses seem to satisfy most of these requirements. In this report the assumption has been made that the distribution of species and anatomies across the site is random, and that

no deliberate disposal of bone waste related to specific activities was exclusive to any one area.

Fragmentation

Fragmentation of the major food species cannot be separated from butchery and thus the least fragmented species occurring appear to be horse and dog. Sheep require less chopping than ox to produce manageable joint sizes; the extremities of both animals tend to be complete since these areas produce little meat. The major limb bones are well fragmented both for their meat and for their marrow. In cattle some of the heaviest fragmentation occurs in the mandibles, maxillae, skull and os coxae. The hind limbs are more fragmented than the fore except for the scapulae which as well as being subject to extensive butchery easily fragment in the blade area. By comparison, most sheep bones have a higher proportion in the 50% range except for os coxae and scapulae which are heavily fragmented. None of the fragmentation of horse was due to butchery; according to Wilson (1973, 72) the Romans discouraged the consumption of horse-meat.

Pig bones were too few for any interpretation of their fragmentation, but a high level of fragmentation was suggested for mandibles and maxillae. Scapulae tended to be more complete than for ox and sheep, 46% fall in the 50% size range, possibly indicating a different butchery technique, radii are greatly fragmented with 50% in the 25% size range and 53% of humeri in the 25% size range.

Butchery

The presence of different parts of the anatomy suggests that animals for food were slaughtered locally, rather than imported as dismembered carcasses. All parts of the skeleton were reasonably well represented considering the reduced recovery of certain bones due to biases previously mentioned.

Ox

Ox skulls were heavily fragmented, without evidence of poleaxing; horncores were removed from the skull often with part of the frontal bone. Maxillae were very fragmented and mandibles often chopped through around the area of the diastema. (Apparently this is unnecessary for the removal of the tongue. Rixson (pers. comm.) has suggested that chopping through the vertical ramus and through the diastema which are often found together, may have been practised to remove the ox cheek (massetor muscles) with the main part of the mandible, being the only significant amount of meat on the head. Also the chopping of the diastema might be practised for the removal of the marrow from the mandible.)

Scapulae were often found to be chopped obliquely across the neck, or at the glenoid cavity, with the blades normally shattered; there is no evidence for the complementary chopping of the proximal end of the humerus as noted at Brancaster (Wall *et al.* 1985). The proximal humerus as mentioned previously does not survive well owing to its low density and late fusion.

The distal end of the humerus was chopped medio/laterally and also in the midshaft area; metacarpals (one of which showed evidence of canid gnawing) were also sometimes cloven across the shaft; phalanges were mainly whole. Knifecuts were noted at some proximal ends, possibly as a result of skinning.

Os coxae were heavily butchered, and femora were chopped across the midshaft and the distal end, as were tibiae. Astragali were sometimes cloven obliquely, and metatarsals chopped in a similar manner to metacarpals; in one case the distal end of a metatarsal was chopped and covered in knifecuts.

Sheep

Butchery differed from that of ox in that many of the bones were chopped across the midshaft area and not at the proximal or distal end. The mandibles were also chopped around the diastema and alveoli, presumably for marrow extraction. Vertebrae of ox, sheep and pig were cloven both axially and transversely.

Pig

There is little comment since there were so few bones. One skull was cloven axially, scapulae were chopped across the blade, indi-

cating a slight difference in butchery technique to that used on ox and sheep, and a humerus was chopped across the midshaft.

Few knifecuts were recorded from any species; some have already been mentioned, and generally speaking they most frequently occurred on the first phalanges of ox (probably associated with skinning, although knife marks need not penetrate the bone if this is done expertly). Other knife marks were noted on some rib fragments of ox and sheep, an ox scapula and a hyoid; these are more likely to be associated with boning out. No butchery marks were observed on any other species.

Many long bone splinters in the ox-sized and ovicaprid-sized categories could well be evidence for marrow extraction as suggested by Cram (1973, 151). This involved chopping a bone into fragments and boiling so that the fat could be skimmed-off. Cram also states that metapodials tend to be less broken than some of the main limb bones because they contain less marrow.

There were only a few examples of gnawing, all of them canid, including a fragment of an ovicaprid and the midshaft of an ox metacarpal. Their scarcity might suggest that bone refuse was disposed of fairly quickly and not left lying on the ground surface where it would be found by dogs.

Ageing

Ageing was based on tooth eruption, and to a lesser extent epiphyseal fusion. Although the ageing method devised by Grant (1975, Appendix B, 437–50) was used whenever possible, many of the mandibles were so fragmented that it was impossible to record sufficient to achieve a value. Consequently, tooth eruption was recorded and the information transposed into age groups (better regarded as eruption stages), using Silver's data (1969). Had it been possible to use the Grant system (1975) throughout, broadly similar results would possibly have been achieved, but with rather finer divisions.

Ox

Over 50% of the mandibles (the total number aged was 42) have the third molar in wear, indicating the majority were mature individuals, perhaps indicating that breeding was not primarily for meat, but for draught animals. Milk may have been consumed, or made into cheese, although the significance of dairy products in Roman Britain is uncertain. White (1970, 227–78) states that cows' milk was rarely drunk in Italy—sheep and goats' milk being more common. In any event cattle were used for other purposes before their slaughter for meat and hide.

Sheep

Mandibles show a greater variety of eruption stages, with a lower proportion of individuals achieving full dentition—only 19% (of a total number of 62 mandibles) had all teeth in wear. Sheep also provided a wide range of products: wool was the most important, also milk and cheese, and their manure was an important fertilizer. Sheep reproduce more prolifically than cattle, and Columella warns that where fodder is scarce cows should only be allowed to calve every second year, especially if the cows are also used for farm work (White 1970, 278).

Pig

Few mandibles were present but they indicate, as is usually the case, pigs being slaughtered relatively young, often between the eruption of the second and third molar. Using Silver's data from the late eighteenth century (1969, 299) this suggests an age of between two and three years. The pig's primary use is for meat, and as they have a high fecundity level relatively few need be kept for breeding. Scrofa thought that sows should not be allowed to breed until they were twenty months old and should be considered too old for breeding after seven years (White 1970, 317).

Horse

The mandibles were from animals with all permanent teeth in wear. The incisors were often missing due to fragmentation, but the eruption of the molars based on Silver's data (1969, 291) gives a minimum age of three and a half to four and a half years—early in a horse's

working life. Race-horses are broken in early, but working horses are usually broken in around three years, reaching their peak at eight years. Excessive wear, which might denote a very aged animal, was not seen on any horse teeth.

Evidence from epiphyseal fusion was also examined, though it is not such a reliable method as tooth eruption and wear, since it only gives a minimum age once a bone has fused. In general, however, full epiphyseal fusion in ox (except for some vertebrae which fuse very late) reflects much the same ageing as the teeth, i.e. that most animals were fully mature. For sheep, fusion suggested a wider age range than for ox (as reflected in tooth eruption). Pig showed a higher proportion of unfused and porous bones than the other species. All the horse bones were fused except for one pair of pelves, which, using Silver's data (1969, 286), suggests an age of one and a half to two years or, using Getty (1975, 298) under one year.

Metrical Analysis

Measurements were taken whenever possible using those outlined in Jones *et al.* 1981, and the complete archive is part of AML Report No. 4543.

Ox

The range of metatarsal total lengths, distal widths, and tibia distal widths from Magiovinium, Corstopitum (Meek and Gray 1910), Portchester Castle (Grant 1975) and Exeter (Maltby 1979) are summarized below. Measurements are in mm and the number of specimens is given in parentheses.

Site	*Metatarsal length*	*Metatarsal distal width*	*Tibia distal width*
Mag.	202–234 (20)	48.3–66.0 (41)	50.8–71.5 (19)
Cor.	181–244 (67)	42.0–65.0 (127)	45.0–68.0 (78)
Port.	183–240 (108)	43.0–70.0 (172)	50.0–69.0 (145)
Ex.	190–219 (15)	36.9–51.1 (49)	49.7–65.1 (10)

The Magiovinium cattle fall within the ranges for Corstopitum and Portchester but the Exeter cattle tend to be smaller, which may be a regional characteristic. The distal tibia widths give Magiovinium a slightly larger range than the comparative material. Bones from the villas at Shakenoak (Cram 1973) and Frocester (Noddle 1979) were also examined but the sites listed had the greatest number of measurements.

The total length measurements in mm and number of specimens of other cattle bones are as follows:

Metacarpal	175–230 (17)
Humerus	294 (1)
Radius	268–285 (5)
Femur	326–350 (3)

46 withers heights were calculated from the bones listed below, to give the following results (heights in cm):

Metacarpal	107.1–140.7 (17)	Fock 1966 (no sex factor)
Metatarsal	110.0–127.3 (20)	
Femur	113.1–121.4 (3)	Matolsci 1970
Radius	115.2–122.5 (5)	Matolsci 1970
Humerus	121.5 or 126.8 (1)	Matolsci 1970 (using two factors)

The varying withers heights derived from the humerus result from using two separate factors on different length measurements, so perhaps it is more accurate to compare only absolute lengths. This difficulty also occurs with the calculation of horse withers as there seems to be a large discrepancy between the methods of Kieswalter (1974) and Vitt (1967). Accordingly, to avoid error the author has only used absolute measurements for horse—except in one instance when describing their general size range.

The plotting of the distal width index of metacarpals and the midshaft diameter against length revealed no distinct sex groupings, although one outlier occurred in each case. The latter was from a slender bone of long length. Examination by Dr P. Armitage (British Museum of Natural History, Dept of Urban Archaeology) of twelve horncores from Ditch 209 suggested that both short-horned and medium-horned animals were present in sub-adult and adult classes; some castrates were also identified.

Sheep

The range of metacarpal and metatarsal lengths were compared with those from

Gadebridge (Harcourt 1974a), Exeter (Maltby 1979), Brancaster (Wall *et al.* 1985) and Frocester (Noddle 1979).

Site	*Metacarpal length*	*Metatarsal length*
Magiovinium	120.0–132.0 (5)	127.0–154.0 (6)
Gadebridge	126.0–133.0 (3)	128.0–144.0 (6)
Exeter	112.0–127.0 (3)	120.0–143.0 (9)
Brancaster	122.0–143.0 (4)	128.0–145.0 (11)
Frocester	114.0–125.0 (4)	121.0–140.0 (5)

The metatarsals from Magiovinium are larger at the top end of the range, but the numbers from all the sites are too low for this to be significant. Comparisons with other measurements of humerus distal breadth and metatarsal distal breadth show the Magiovinium range to be slightly larger.

Site	*Humerus distal breadth*	*Metatarsal distal breadth*
Magiovinium	25.5–32.6 (17)	19.7–27.6 (7)
Ashville	23.0–28.0 (2) (Wilson *et al.* 1978)	
Farmoor	30.0–31.0 (3) (*ibid.*)	
Gadebridge	25.0–28.0 (5)	21.0–23.0 (4)
Frocester	23.0–28.0 (21)	18.0–24.0 (5)

Data from 80 modern sheep suggests that the maximum distal tibia width of castrates is 4% greater than for ewes (Noddle 1975, 253). The distal width was plotted against the distal depth of the measured sheep tibia from Magiovinium, and the resultant graph suggested that there might be two possible groups with roughly equal numbers of ewes and wethers, with one ram, although they are not necessarily contemporary with one another.

Pig

Measurements were limited because of the low numbers of bones, many of which were immature, but the following ranges have been included:

Humerus distal breadth	34.5–43.3 (5)
Tibia distal breadth	30.0–37.0 (4)

Horse

There were relatively high numbers of bones, often fairly complete so that a large number of measurements could be taken. The greatest number of comparisons could be made between the length ranges of metacarpals and metatarsals for which the following comparisons have been made:

Site	*Metacarpal total length*	*Metatarsal total length*
Magiovinium	207.0–277.0 (13)	240.0–282.0 (12)
Corstopitum	217.0–235.0 (10)	226.0–290.0 (4)
Brancaster	187.0, 212.0 (2)	233.7 (1)
Frocester	210.0, 220.0 (2)	
Godmanchester*	206.0, 257.0 (2)	
Gadebridge		252.0, 280.0 (4)
Farmoor*		238.0–286.0 (4)

*Godmanchester: Westley 1974
*Farmoor: Wilson 1978

The range for Magiovinium seems to be narrow when the number of specimens is considered. The metacarpals are from ponies *c.*13–14hh, and the metatarsals show a greater range from 12 to just under 15hh (the latter would be almost the size of a small horse). These conversions may not be entirely accurate but serve to give some indication of the size of the animals.

Other comparative length ranges are as follows:

Site	*Tibia*	*Humerus*
Magiovinium	309.0–364.0 (10)	282.0 (1)
Godmanchester	342.0–345.0 (2)	259.0 (1)
Gadebridge	320.0 (1)	
Corstopitum	293.0–379.0 (4)	292.0–336.0 (8)
Parnell and Appian Road		320.0–323.0 (2) (Rixson 1972)

Although the tibiae are well within the range found at Corstopitum the radius range is rather greater.

Dog

A number of long bones were measured including a femur whose total length was 90 mm and using Harcourt's formula (1974b, 154) the shoulder height was estimated at 27 cm; an unstratified tibia of 114 mm gave a shoulder height of 34.2 cm. The range of the lengths of the lower first molar is 20.0–24.9 cm (n = 7); Harcourt's range is 15.0–24.5 mm. It is probable that these were working animals (there was no evidence for butchery).

Pathology

Instances of pathology are relatively infrequent on animal bones on archaeological sites and Magiovinium was no exception.

Ox

The proximal surface of a metatarsal was affected by a lesion; pitting was most marked on the medial side, which must have affected the conformation of the joint and led to inflammation. This appears to be similar to an infection known as tarsitis, which if it was of the aseptic variety could have affected the animal's mobility. Alternatively it may simply be a case of osteoarthritis, as this specimen shows three of the four changes characterizing this condition as outlined by Baker and Brothwell (1980, 115).

A metatarsal has evidence of exostoses over the distal anterior surface of the bone, but it does not extend to cover the joint surface. Exostosis is also evident on a fore lateral first phalanx, over the proximal medial area and over the lateral side of the proximal articulation with slight eburnation. It is possible that this is a case of ring bone as described in Baker and Brothwell (1980, 120). A rib fragment showed evidence of exostosis near its sternal end.

Sheep

A humerus shaft had become infilled with bone. In dogs the shaft of the femur can become infilled when there is a Vitamin A deficiency; perhaps this is a related condition (Bourne 1972, 201). A fragment of femur shaft was ivoried and may have part of an ossified tendon attached.

Horse

A first and second phalanx had fused. Severe exostoses occur around the distal area of the first phalanx and the proximal area of the second resulting in immobility of the foot.

A lumbar vertebra with a collapsed centrum was found, which in cattle can be an indication of tuberculosis (Greenough *et al.* 1972, 392). Perhaps this may also apply to horse.

Pig

The first premolar of a right mandible has rotated and now points towards the canine; this type of condition is not uncommon in pigs.

Dog

The ante-mortem loss of the third molar in a right mandible was observed, the alveoli had completely healed over and its shadow could be seen in X-ray. The other teeth were all normal in eruption and wear.

Other Mammalian Species

Goat was only positively identified by a single horncore, though it is feasible that there are goats in the ovicaprid category which could not be reliably separated from sheep. A fox was identified from a single fused radius and ulna. The identification was made on the basis of size so it is also possible that it is a fox-sized dog. Cat was represented by a single metapodial.

Hare was identified from five bones from a variety of contexts and together with the few bones of red and roe deer forms the small contribution of game to the economy that is represented in the animal bone. Even the evidence of red deer is not conclusive since this species is represented by fragments of antler that could be cast, plus one upper premolar. The evidence for roe deer is more convincing in the form of fragments of maxilla and mandible.

Birds

A number of domestic fowl bones were identified from a variety of contexts, the ranges of their total lengths (mm) being as follows:

Coracoid	47.0–57.0	(2)
Scapula	63.2	(1)
Humerus	62.0–76.0	(3)
Radius	63.4–68.2	(2)
Ulna	57.5–75.0	(3)
Carpometacarpus	34.9	(1)
Femur	69.6–69.9	(2)
Tibiotarsus	110.0	(1)

Domestic fowl provided eggs and meat; their size range falls within the variation for Roman sites examined by Macready (1976). According to White (1970, 322) poultry keeping was a sophisticated form of husbandry in Roman Italy and there is much ancient literature on the subject. A few bones were also found of crow and raven which may well have been scavengers around the site, also a coracoid of a swan; this species was eaten in Roman times and has been recorded from the military sites of Chester and Ribchester (Davies 1971, 130). The topsoil also

produced evidence of barn owl and duck (domestic/mallard) though these could be intrusive.

General Discussion

A number of sites have been compared with Magiovinium to compare measurements. The site itself is difficult to classify. Because of its nature and the type of deposits containing the bone, it seems justifiable to view the material as mixed in origin, some from the earlier fort and some from town clearance, but the bulk must originate from the indigenous settlement. As mentioned earlier there were no discernible differences in spatial distribution.

The high percentage of ox plus ox-sized fragments fits in with King's suggestion (1978, 211) that the more Romanized settlements such as villas, roadside villages, towns and forts tend to have fewer sheep than the native sites. The accompanying increase of pig with the dominance of ox is not seen.

The relatively high number of horse bones is both interesting and unusual. At Portchester Castle (Grant 1975, 381), horse together with red deer, roe deer, hare, fox, badger, voles, fallow deer, fish and mice formed only 3% of the total, whereas at Magiovinium horse alone forms 5.5% which in real terms may be relatively higher since the numbers of fairly complete horse bones are being directly compared with heavily fragmented bones. Grant (1975, 383) thought that horses might be buried outside the area of occupation which would explain their rarity in domestic refuse at Portchester Castle and possibly their abundance in the extra-mural ditches and gullies at Magiovinium.

Horses were used by the Romans for cavalry, riding and pulling carriages (White 1970, 288). They were rarely employed for draught purposes, for which donkeys and mules were used. Presumably most of the horses at Magiovinium were for transport, riding and breeding. No mules were identified from the lower first and second molars (Armitage and Chapman 1979, 342). Columella describes three classes of horse (White 1970, 288), noble stock for circuses, breeding stock for mules (the offspring commanded a high price) and ordinary mares and horses. The Magiovinium horses are most likely to belong to the latter group. The role that the mule played in the Roman world appears to be important from the literary and pictorial sources (Armitage and Chapman 1979, 345), but seems to be almost absent from the bone evidence. The difficulties of identification have been pointed out by Armitage (1979, 339) and it may be that many limb bones of mule remain categorized as horse. At Magiovinium stock for transport was vital both when the fort was in use and especially later when heavy traffic passed up and down Watling Street. Ox, and horse (and/or mules) must have been frequently used in this capacity.

APPENDIX: A BIBLIOGRAPHY OF MAGIOVINIUM

by Andrew R. Pike

1. *Itinerarium Provinciarum Antonini Augusti* [Antonine Itinerary], probably written some time in the 2nd century A.D., lists *Magiovinto*, *Magiovinio* in three of the Itineraries (471, 476, 479) (see A. L. F. Rivet, 'The British Section of the Antonine Itinerary', *Britannia* **1** (1970) 34–82).

2. W. Camden, *Britannia* (1586 and subsequent editions). Mentions Magiovinium, identifying it with *Madning mony*, *Madning-boure*, *Madin boure* (i.e. Maiden Bower, Beds).

3. Early commentaries on the Antonine Itinerary (W. Burton 1658, P. Wesselingio 1735) follow Camden (2 above) in placing Magiovinium at Maiden Bower, but also suggest Ashwell, Herts.

4. J. Horsley, *Britannia Romana, or the Roman Antiquities of Britain* (1732) 422. Traces the Antonine Itinerary along Watling Street. He considers Stony Stratford 'which has generally had one of the stations in the Itinerary allotted to it. The situation by a river, where Watling Street crosses it, and some

coins found thereabout, are the strongest arguments for it. It is too near to Towcester to be made another mansion in the Itinerary. Probably the Romans might have some small guard here. Our distance along the military way carries us beyond it. If we adhere to the present numbers and order of the Itinerary, sixteen of its miles, as in the 6th and 8th itinera, or seventeen measured, according to Ogilby, from Towcester to Brickhill; a mile less than this will bring us almost back to Fenny Stratford, and I confess I am here inclined to pay so much regard to authority and etymology as to suppose a transposition of names in this *iter*, and to place Durocobrivae here near the water, and Magiovintum at Dunstable, where there is a chalky hill and no river near it.' [In the Itineraries themselves he describes Magiovinto (MP XXVIII) as being at Fenny Stratford.]

5. [Browne Willis MSS 98 fo. 35v and 100 fo. 133v, Bodleian Library, Oxford, *c.*1740.] Refers to Horsley's account (4 above) of Fenny Stratford being a Roman town. Willis says he has had about 100 Roman coins brought to him which were found there. The next station beyond Dunstable must lie on the north side of the river where all maps place it. It cannot be at Stony Stratford which is doubtless a new town, and Old Stratford is at too wide a distance to answer to the Roman stadia.

Willis does not consider there is enough evidence to establish the Roman town of Lactodorum's site at Stony Stratford. All maps place it on the north side of the river which excludes its being in Buckinghamshire. Some authorities place it at Old Stratford, Northants. But the distance from Dunstable is too great whereas Fenny Stratford is the correct distance. As well as the 100 Roman coins, other Roman remains have been found there. No coins have been found at Stony Stratford.

6. W. Stukeley, *Account of Richard of Cirencester* (1757) 41, 68, 85. The itineraries attributed to Richard of Cirencester are in fact a contemporary forgery by C. J. Bertram, who deceived Stukeley. Magiovinium is equated with Dunstable, and Lactorodum [*sic*] with Stony Stratford.

7. W. Stukeley, *Itinerarium Curiosum* (1776). In recording his travels in England in 1725, Stukeley identifies Magiovinium with Dunstable.

8. Society of Antiquaries of London, *Minute Book*, vol. 25 (1793–6). The proceedings for 27 March 1794 included the exhibition to the Society by Walden Henry Hanmer, Esq. of a bronze bust of Roman workmanship, recently found together with a ring and several Roman coins 'in a field near Fenny Stratford in Bucks in the parish of Little Brickhill by the side of the Watling Street.'

9. T. Reynolds, *Commentary on the Itinerary* (1799). Identifies Magiovinto as lying near Fenny Stratford, perhaps at Bletchley or Sympson, although he notes that no Roman remains have been found at either place. He believes the site might be at Water Eaton [which is, of course, adjacent to the actual site!]. Durocobrivis is identified with Dunstable and Maiden Bower is interpreted as a precursor of either Magiovinium or Dunstable.

10. [H. Hatcher,] *Commentary on Richard of Cirencester's Itinerary* (1809). Hatcher's edition of the Itinerary (see also 6 above) places Magiovinium at 'Old Fields', south of Fenny Stratford.

11. D. and S. Lysons, *Magna Britannia* 1 (pt. 3, Buckinghamshire) (1813) 483, 485. A communication is published from the Bishop of Cloyne who mentions Magiovintum, twelve miles from Dunstable 'which will fall certainly within the limits of Buckinghamshire' at Fenny Stratford, quarter of a mile from the village 'at the Auld fields on a small elevation on the south side of the rivulet, where coins and foundations of buildings have been dug up there in abundance. Browne Willis [the 18th-century Buckinghamshire historian] had many of the former in his possession.'

12. H. Brandreth, 'Observations on the Roman Station of Magiovintum', *Archaeologia* **27** (1838). Considers the available evidence, together with suggestions of Magiovinium being at Maiden Bower, Totternhoe Castle and Dunstable. Place-name evidence is summarized with the suggestion that Magiovinium may have been at or near Well Head, Dunstable, although no definite conclusion is reached.

13. G. Lipscomb, *History and Antiquities of the County of Buckingham* 4 (1847) 29–30. The first detailed county history to be published merely quotes Lysons (11 above) in its discussion of Magiovinium.

14. Society of Antiquaries of London, *Proceedings* **1** (1843–9). Communications by Charles Roach Smith and Edward Pretty suggest that Magiovinium was 'at or near Fenny Stratford where numerous Roman coins and other Roman remains had been found in the vicinity, particularly near the White Hart Inn [now Dropshort Farm]. On one field the figure of an eagle was found.

15. J. J. Sheahan, *History and Topography of Buckinghamshire* (1862) 25, 532. In his general survey of the county Sheahan, who relied much on earlier printed sources, confirms the siting of Magiovinium as being at Dropshort. He adds that there are no traces remaining but Roman remains are frequently discovered here, the last in 1857, and that coins of Nero, Claudius, Caesar Augustus, Constantine, etc., are in the possession of Mr John Morris of the White Hart Inn, Fenny Stratford.

16. Society of Antiquaries of London, *Proceedings* (2nd series) **2** (1861–4) 60. Notes the exhibition to the Society in February 1862 of a small intaglio and portions of a fibula and *armilla* from the site of 'a Roman station near Fenny Stratford, considered by some antiquaries to be the site of Magioventum'.

17. *Associated Architectural Societies Reports and Papers* **11** (1871) xliv–xlvi. A paper by Dr Prior summarizes existing information and suggestions of the siting of Magiovinium. Careful study of the Antonine Itinerary which places Magiovinium as xii Roman miles from *Durocobrivae* and xvii from *Lactodorum* (Towcester) firmly locates it on Watling Street, by Dropshort Farm. There there is a field called Chester's Piece where Roman remains—a brick, pottery and coins—exist in great profusion. During the last twenty years at least a thousand Roman coins have been found, as well as rings, gems, weights and bronzes. Foundations, probably those of the north wall of the station, were traced across the field, though the ground was not opened for more than a foot or so in depth. The Roman station was probably eight acres or more in extent.

19. *Victoria History of the Counties of England: Buckinghamshire*, vol. 2 (1908) 2–5; vol. 4 (1927) 275. Summarizes the principal writings on Magiovinium to date and concludes that the station has now definitely been proved to be at Dropshort, Little Brickhill, and not at Fenny Stratford.

20. Society of Antiquaries of London, *Proceedings* (2nd series) **24** (1911–12) 35–7. Professor F. Haverfield notes a small piece of samian ware from Fenny Stratford (type 29) in Little Brickhill parish close to Dropshort House. Several other Roman remains have been found here. He also notes that Messrs W. Bradbrook and J. Berry made a small excavation in a grass field close to the Ouzel and south of it and of Watling Street where they found painted wall plaster, tesserae and tiles. Here lie the 'Auld-fields' described by Lysons (11 above). He believes Magiovinium stood close to Dropshort and hopes that Berry and Bradbrook will find the site of actual houses.

21. W. Bradbrook, *History of Fenny Stratford, Bucks* [reprinted from the *Leighton Buzzard Observer*, 16 May–19 December 1911]. Bradbrook is certain that Magiovinium does not lie in Fenny Stratford but in the parishes of Little and Bow Brickhill, bounded on the north by the Ouzel and on the south by Galley Lane and the Bow Brickhill road. Dropshort was probably just outside the line of the north wall or boundary. He summarizes earlier writers' comments on the Roman station and mentions his own finding of a path or roadway 2½ ft below the surface at the orchard at Dropshort, together with much pottery and animal bone.

22. *Records of Buckinghamshire* **10** (1912) 149. Notes the acquisition of coins found on the site of Magiovinium—broken denarius of Heliogabalus, three indecipherable Roman bronze coins—by Buckinghamshire County Museum in 1911.

23. Royal Commission on Historical Monuments, *An Inventory of the Historical Monuments in Buckinghamshire* 2 (1913) 174. Notes the 1911 excavations at Dropshort (20 above). No remains now visible above ground except stray tiles, potsherds, etc., each side of Watling Street, south of Fenny Stratford and Dropshort hamlet. The entry concludes: 'If the fields were excavated or prepared for building, larger discoveries would follow, and the site should be carefully watched; it ought to be scientifically explored.'

24. J. P. Wyness, *A Watling Street Village—Little Brickhill, Bucks* (1933) 11–12. [A series of articles reprinted from the *North Bucks Times*, September–December 1933.]

25. R. C. Morell, *Bow Brickhill, Buckinghamshire* (1934) 7–12. These two parish histories summarize existing information and mention the finding of Roman pottery at the site during road widening operations in 1933. Previous finds including samian, Belgic and the common Castor ware are noted, together with bowls, amphorae, etc. Morell notes the finding, in 1934, of a 2nd-century A.D. glass bead which he illustrates, and lists as other recent finds fibulae, a bronze bracelet, and a 3rd-century intaglio with the device of Jupiter holding a sceptre. He also illustrates five Roman coins—of Trajan, Postumus, Victorinus, and Constantinus, and mentions a cabinet of coins presented by Browne Willis in the 18th century to Oxford University, known as the Numismata Willisiana and which apparently includes coins from this site.

26. I. D. Margary, *Roman Roads in Britain* 1

(1955) 156–8. The alignment of Watling Street and its relationship to Magiovinium is discussed.

27. *Bletchley and District Archaeological Society Bulletin* **1** (1955). This typescript sheet describes excavations from March 1955 by O. Tapper to determine the centre of Magiovinium. His work concentrated on the 'Bathing station site' at Fenny Stratford. The first trench uncovered a human skeleton of unknown date. Other trenches located forty coins, ranging in date from A.D. 260 to 380, pottery (including amphorae, samian and Castor wares), roof and flue tiles, wall plaster and tesserae. Tapper proposes to open up more of the site where aerial photographs suggest the presence of foundations of quite a large building. Preliminary work on the skeletons suggests a Saxon context.

28. *Bletchley and District Archaeological Society Bulletin* **2** (1956). Survey of the Roman pottery from Magiovinium by M. Carter.

29. C. W. Green, 'Romano-British Sites and their Communications: The Ouse Valley', *Records of Buckinghamshire* **16** (1956) 99–103. Possible lines of Roman roads in North Bucks are discussed, including those converging on Magiovinium from Irchester and Buckingham. Green mentions recent excavations on the fringe of the site which only located collections of coins, pottery and bones, with evidence of Saxon and later habitation much mixed up among them.

30. B. A. Kettle, 'Preliminary Report of History of Magiovintium, Fenny Stratford, Bucks' [typescript *c.*1957, at Bucks County Museum, Aylesbury]. The principal writings on Magiovinium are summarized, together with archaeological work at the site. The 1955/6 excavations (27 above) are described and criticized, since the 'finds' were dispersed to the various homes of members of the Society and no report was made. Mention is also made of a number of unofficial 'digs' on the site. Kettle describes new trenches opened on the Bathing station site, again revealing much pottery—some of which was mediaeval. By the end of 1956, thirteen skeletons had been removed from the Bathing station site. A report on the skeletons by Mr T. Gardner is appended.

31. *Bletchley District Gazette*, 12 August 1961. Records the unearthing of a skeleton, thought to be 1,000 years old, during excavations by a Bletchley archaeological group. Finds included much pottery, a bronze brooch, bone needles and pins, coins, and a silver ligula. The site under excavation was believed to lie outside the Roman settlement, being used as an early Saxon burial ground. The actual settlement is believed to lie astride Watling Street and under Dropshort Farm.

32. T. Gardner, 'Notes and Observations on Burials from "Bathing Station" Site, Fenny Stratford, Bletchley, Bucks' [typescript *c.*1961, at Bucks County Museum, Aylesbury]. A report is made on the twenty-six burials discovered so far from the site. Some children are included. No precise dating is possible, though a wide date range, from the 5th to 10th centuries A.D. is postulated.

33. H. W. Pengelly, *The Bletchley Archaeological and Historical Society Bathing Station Excavations 1964. Report* (*c.*1964). A building of stone and timber was excavated, together with a shallow, flat-bottomed ditch. Five further burials were found, bringing the total so far to forty-four. Separate reports on the pottery, small finds, animal remains, plant remains and coins are appended.

34. Viatores, *Roman Roads in the South-East Midlands* (1964) 273, 311. The routes of the Roman roads from Dorchester-on-Thames to Alconbury House (Beds) and Fenny Stratford to Buckingham are described in relation to Magiovinium. 'Until more research has been done on the site of Magiovinium, it will not be clear whether this road left the Roman station by an independent river crossing on its west side, or from Watling Street north of the Ousel Bridge.'

35. *Records of Buckinghamshire* **17** (1963–5) 204, 303, 411. Excavation at the Bathing Station site by the Bletchley Archaeological and Historical Society are noted in 1963, 1964 and 1965. Rubbish pits, rubble foundations, late Roman walks, late 3rd–4th century coins, Romano-British sherds, animal bones and a further five graves, three cut into a late Roman floor, were found.

36. R. W. Griffiths, 'Fenny Stratford Hoard, Found 9th July 1962', *Wolverton and District Archaeological Society Newsletter* **11** (1967) 27–8. The finding of a hoard of some 251 coins of 4th-century date is described, found in association with a 4th-century building, probably a temple. The hoard had indications of being in a bag when concealed —a metal clasp being found with them. Skeletons of the same date were also found on the site, buried just before destruction of the building.

37. *Records of Buckinghamshire* **18** (1967) 165, 166.

38. D. R. Wilson, 'Roman Britain in 1967', *Journal*

of Roman Studies **58** (1968) 192. A note records the finding, by members of the Bletchley Archaeological and Historical Society during laying of a gas pipe in 1967, of a hoard of 296 Roman silver denarii, subsequently declared to be Treasure Trove. Also a group of five Romano-British tools associated with a hearth, and two cobbled areas, two pits and a ditch containing 2nd-century A.D. pottery and animal bones. Further sherds and a piece of whetstone were found subsequently. The coins were declared Treasure Trove. Five were bought by the British Museum. The remainder, and the tools, are in the Bucks County Museum.

39. M. H. Crawford, 'Bletchley Treasure Trove of Roman Imperial Denarii', *Numismatic Chronicle* (7th series) **9** (1969) 113–22. The coin hoard (noted in 37–8 above) is listed and fully described. It was found at the junction of Watling Street and Galley Lane. The latest dated coin is of A.D. 183. Condition of the coins ranges from worn to excellent with the early coins generally being in poor condition and the later ones in good condition.

40. D. R. Wilson, 'Roman Britain in 1969', *Britannia* **1** (1970) 288–9.

41. *Records of Buckinghamshire* **18** (1970) 439–40. These two notes both record rescue excavations in 1969 by the Bletchley Archaeological and Historical Society during widening of Watling Street in the vicinity of Magiovinium. Remains of timber and stone buildings of the 2nd–4th centuries were found, and also a mid-1st century A.D. timber building. The south-eastern ditch of Magiovinium, containing a fill of building debris and some late 3rd to 4th-century pottery, and showing evidence of a palisade, was located.

42. C. Green, 'Upper Ouse Valley: The Roman Scene', *Wolverton Historical Journal* (1970) 55–9. Green considers Magiovinium and other Roman sites in North Bucks and South Northants. He believes Magiovinium to have been a small, insubstantially-built town with a straggling suburbia to the west.

43. D. R. Wilson, 'Roman Britain in 1970', *Britannia* **2** (1971) 268. Notes a sewer-trench parallel with Watling Street intersecting more than 100 Roman features including the north-west and south-east defences of Magiovinium. A floor associated with 3rd–4th-century pottery was also found.

44. *Records of Buckinghamshire* **19** (1971) 94 and Pl. VIII. A cropmark on an air photograph is recorded as probably a 'fort'.

45. *Records of Buckinghamshire* **19** (1972) 219. 2nd–4th-century A.D. pottery, building debris, the base of a pseudo-Venus pipe-clay figure and an inhumation, found on the Bathing station site in 1971 when a sewer trench was dug, are noted.

46. D. C. Mynard, 'Archaeology in North Bucks 1970/71', *Milton Keynes Journal of Archaeology and History* **1** (1972) 5, 6, 16. The excavations at the Galley Lane crossroads (40–1 above) are noted, together with a well-cambered late 1st or early 2nd-century road.

47. W. H. Manning, 'Ironwork Hoards in Iron Age and Roman Britain', *Britannia* **3** (1972) 224–50. The group of tools (37–8 above) found in 1967, which contained two lugged axes, a chisel and large spoon-bit is discussed in context with other hoards. It might be earlier than other known hoards in Southern Britain, perhaps of the 1st or 2nd centuries.

48. *Records of Buckinghamshire* **19** (1973) 346. Roman pottery from the forecourt of the Pullman Café is noted.

49. J. Bertram, 'Magiovinium 1974' [typescript 1974, at Bucks County Museum, Aylesbury]. Summarizes the results of a watching brief in November 1974 when field drains were being laid in the field east of the bridge carrying Watling Street over the Ouzel. The boundary of Magiovinium, a deep ditch probably revetted with stone, was located. Outside the ditch little trace of occupation towards the south was found, but towards the east a consistent scatter of pottery and some building material was located. Inside, two buildings were identified, with a third standing virtually in the ditch.

50. *Records of Buckinghamshire* **20** (1975) 137. Notes the observing by P. Westcombe of a recently recut ditch on the south side of Watling Street and within the town of Magiovinium when four walls were recorded. Unstratified pottery included a pre-Flavian samian rim of Drag. 24/25. The watching brief by J. Bertram (49 above) is also noted.

51. *Bletchley Archaeological and Historical Society*, 'Representations to F. H. Clinch . . . concerning the London and Holyhead Trunk Road (Diversion through Milton Keynes) Order 197' (n.d.). This objection to the proposed A5 Diversion summarizes the available information on Magiovinium and considers that the proposed road would interfere with the outlying post of the town, which is unique in Southern England by being hitherto virtually untouched.

52. *The Times*, 11 July 1975 (article by M. Horsnell).

53. *The Daily Telegraph*, 21 July 1975 (article by C. Dover). Both newspaper articles (52–3) summarize the growing archaeological resistance to the proposed A5 diversion.

54. 'An Excavation at Dropshort Farm, Summer 1975: A report on the trial excavations of Magiovinium made along and beside the line of the proposed A5 Diversion' [typescript 1977, at Bucks County Museum, Aylesbury]. The record of an inconclusive excavation which had to be left uncompleted, with little post-excavation work undertaken. Under the general direction of Dame Kathleen Kenyon, the site was supervised by Miss D. M. Hudson, Mrs A. P. Tapper and Mr N. Farrant.

Three main periods were established: (i) Roman timber-framed buildings parallel to a north–south road of the 1st century A.D., which were burnt down; (ii) two parallel ditches dug diagonally across the site, cutting remains of earlier timber-framed buildings, probably for drainage or boundary purposes and silted up in early 2nd century; (iii) a stone structure later erected across some of these earlier features. The early buildings are interpreted as being part of a larger plan, perhaps part of a fort for the XIV legion.

A note on pottery recovered from the excavation by H. Pengelly is appended, as are two statements from Dame Kathleen Kenyon and N. Farrant pointing out the threat to Magiovinium from the proposed A5 diversion.

55. A5 Action Council, Magiovinium and the A5' [typescript, n.d.]. Summarizes the evidence for Magiovinium and the destruction that the proposed new road would wreak. The inaccuracy of the scheduling of the site is stressed.

56. *The Times*, 18 May 1977 (article by P. Howard).

57. *The Guardian*, 5 September 1977 (article by G. Linscott). Both articles (56–7) reiterate the threat to a hitherto virtually undisturbed Roman town and point out that a much larger than the officially scheduled part of the site should be considered.

58. C. Woodfield, 'A Roman Military Site at Magiovinium?', *Records of Buckinghamshire* **20** (1977) 384–99. A water-pipe trench laid in 1976 clipped the corner of a 5½ acre ditched enclosure south-east of Magiovinium. The profile and construction of the ditches indicate, though not conclusively, that it is military work, and finds suggest construction in the Neronian period, probably related to military consolidation after the Boudiccan rebellion. The military structure was apparently deserted in the Flavian period, and deliberately backfilled, in the area sectioned at least. There are indications of either alterations to the main enclosure, or possibly a second ditched enclosure on the same site. Civilian occupation of the site from the conquest, or just before, to the 2nd century is also attested.

59. S. S. Frere, 'Roman Britain in 1976', *Britannia* **8** (1977) 400. Notes the discovery of two possible Roman fort ditches [described in 58 above].

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