

THE CAERLEON *CANABAE*

EXCAVATIONS IN THE CIVIL SETTLEMENT 1984-90

EDITH EVANS



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BY

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from the Riding School Field site

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PREFACE

In November 1981, Gwent County Council obtained outline planning permission for a residential development on the site of Cambria House, the former County Council Offices, and adjacent land in the possession of the council off Mill Street, Caerleon. Caerleon is now a satellite settlement of the town of Newport, Gwent, in South Wales, but in Roman times it was the site of *Isca*, the permanent base of the Second Augustan Legion in Britain for over two centuries. The modern Mill Street runs just outside the line of the defences on the eastern side of the Roman fortress, and is occupied for much of its length to the north and west by buildings, mostly houses. At the time that the application was granted, most of the land behind the eastern frontage was open. Although only the council's land was included in the initial planning permission, suggestions that the whole block of land from Cambria House to the Usk Road should eventually be included in the development area were already being mooted: this land consisted of a number of parcels in separate ownership. The northernmost parcel, fronting on to the Usk Road, was a works depot belonging to Newport Borough Council. Adjoining it to the south was a bungalow and stable, next to a field laid down to pasture previously attached to the riding school, whose foundations survived at its western side (the Riding School Field site). The next field, the property of the Borough Council, was laid down to allotments (the Allotments site), then came a pasture which had recently been divided into two, although the grazing on both halves had been let to the same smallholder (the Smallholding site): the western half belonged to Gwent Health Authority, whose ambulance station occupied the adjoining parcel, and the eastern half to Gwent County Council. The County Council also owned the pasture fields behind the ambulance station and its old offices in Cambria House as well as the site of Cambria House itself (all the Cambria House site).

Prior to the submission of the planning application, no archaeological investigations of any kind had been carried out in this area of Caerleon. The initial response by the Glamorgan-Gwent Archaeological Trust, as the archaeological body responsible for commenting on the proposal, was to note that a continuation of the *via principalis sinistra* was likely to cross this area, and that an attendant extra-mural settlement might be present: the opportunity to carry out assessment was therefore not to be missed.

As development in the area was not scheduled to start immediately, no funds were forthcoming for any work on the proposed development site other than a visual inspection and a watching brief on the demolition of Cambria House. The way the land was used meant that field-walking was not possible, and although Roman pottery and tile was recovered from the topsoil when the turf was stripped from the field behind Cambria House, local reports that spoil from the Wheelers' amphitheatre excavations in the 1920s had been dumped in this area made interpretation of the finds difficult.

The first effective stage of assessment took place at the beginning of 1984, in response to a request for further information by the Technical Services Department of Newport Borough Council, who were preparing a planning brief on the whole of the proposed development area between Cambria House and the Usk Road. Accordingly, a resistivity survey was carried out by P. Glover, a student from the Department of Archaeological Science in Bradford on placement with the Trust, assisted by a member of Trust staff, J.M. Oetgen. The results of this survey are summarised on p.7.

The proposed development at Mill Street was only one of a series of developments with major archaeological implications planned for Caerleon and the nearby hamlet of Great Bulmore, also the site of Roman occupation. The Glamorgan-Gwent Archaeological Trust therefore put forward proposals to the Conservation and Land Division of the Welsh Office (now Cadw: Welsh Historic Monuments) and the Manpower Services Commission, for a project of twelve months' duration to investigate the archaeology of this area, with the additional purpose of providing work for 20 long-term unemployed persons. The project began in April 1984 under the management of J.D. Zienkiewicz, who was responsible for the direction of work on all the sites dealt with in the first six months. These were Bulmore (Macdonald forthcoming); Carlton Terrace, immediately outside the *porta praetoria*; Isca Grange (report forthcoming) in The Village on the left bank of the River Usk, an area known in the middle ages as *Ultra Pontem*; and trial excavations on the Riding School Field.

Trial excavations on the first of the Mill Street sites, the Riding School Field, were begun in July. After this work had demonstrated the archaeological potential of the site, an area was opened for full-scale excavation at the end of October, at which point Mr Zienkiewicz left the project and was replaced by E.M. Evans, who directed work until the conclusion of excavations in October 1986. The excavation project was renewed in 1985 and 1986 (as the Gwent Excavation Project) and increased in numbers, initially to 30, then 50, then 75 employees. A small amount of further work was carried out in November 1986 (trial investigations at the Social Club on the right bank of the Usk opposite *Ultra Pontem*), and in March–April 1987 in the east field of the Smallholding, when the Gwent Excavation Project was under the direction of A.G. Marvell. In addition, a watching brief together with limited salvage excavation was carried out by E.M. Evans in April 1988 during preliminary groundworks for development on the Cambria House site, the Riding School Field, the eastern side of the Allotments and the Smallholding East field. The Gwent Excavation Project was also responsible for trial excavations at The Great House (1985) and 'Avalon' (1988), both in *Ultra Pontem*.

Apart from this major campaign of excavation, other work on the eastern side of the civil settlement which has been carried out since 1988, is also included in this volume. A series of watching briefs in *Ultra Pontem* have added further detail to what is known about this area of the Roman settlement. In 1989, archaeological field evaluation was commissioned as part of an environmental impact assessment for a proposed development between the eastern side of Caerleon and the two rivers above Caerleon bridge. A geophysical survey was carried out by Geophysical Surveys of Bradford, followed by the digging of test pits by the Trust in Millmead, the field adjacent to Tanhouse Drive and the field adjacent to the Uskside pumping station. In 1993 when the site of the stables was developed for further housing, an archaeological mitigation strategy was devised which involved the building up of the ground levels and an archaeological watching brief to be carried out during groundworks. The watching brief was carried out by J.D. Zienkiewicz (for the National Museum of Wales), but the disturbance did not penetrate to Roman ground levels.

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CHAPTER ONE

THE BACKGROUND TO THE EXCAVATIONS

INTRODUCTION

This introduction is concerned only with the physical setting of the site in terms of the natural topography and the Roman-period development of the area, and with the strategies adopted to recover the evidence: an account of the relationship between the excavations and the local government planning process is to be found in the preface. A short note explaining the layout of the report and the numbering system used is appended for the convenience of the reader. The excavation remains reported here are centered NGR ST 341909 (Mill Street) and ST 344904 (Castle Street)

PHYSICAL SETTING AND TOPOGRAPHY

The Roman fortress at Caerleon was built on a slight plateau rising above the floodplains of the River Usk and Afon Lwyd ('Grey River' in Welsh; it has no English name) at their confluence.¹ The modern confluence is almost exactly due east of the sinistral corner of the *praetentura*, but there is evidence to suggest that the course of at least the Afon Lwyd was somewhat different in Roman times (see below, pp.33–4).

On the eastern side of the fortress, the ground begins to fall away to the river almost immediately beyond the defences, except in the area of the *porta principalis sinistra*. Here a tongue of land extends out in the direction of the Afon Lwyd, sloping away more gradually to the river and standing up above the alluvial flats on either side. This tongue now terminates abruptly immediately east of the Smallholding site, probably as the result of erosion (see below, p.175). Just downstream of the confluence of the two rivers, the Usk flows in a rock-cut channel. The modern ground level immediately to the west of this point is at least partly the result of terracing; trial excavations at the Social Club indicated that the gradient in Roman times was 5.7% (see below, p.175), rising towards the *porta praetoria*.

On the opposite bank of the river the ground is also low-lying, and the present height of the bank is at least partly due to modern make-up.

SURFACE GEOLOGY

The deposits encountered in the Mill Street sites consisted entirely of alluvium, for the most part probably estuarine in origin, although at the extreme west of the Riding School Field, river terrace deposits were encountered, dipping below the edge of the estuarine clay. Trial excavations off Castle Street at Uskside indicate that the estuarine clay formed the substrate here too. Trial excavations at the Social Club did not reach the undisturbed subsoil.

¹ Excavations on the site of St Cadoc's Orphanage, in *insula XXII* of the system devised by Boon (1972, 15), suggest that this plateau may have been artificially extended in places, since the lower levels consisted entirely of a massive dump of clay mixed with sandstone chips (see *Britannia* **18** (1987), 307).

HYDROLOGY

Far more important than geological factors for an understanding of the Mill Street sites is its hydrology. These sites lie on the floodplain of the Afon Lwyd, well within the tidal reach at today's extent, although in Roman times it may have been above (Toft 1992). At the time of excavation all the land below the 8m contour (i.e. almost the entire area) was liable to regular periodic flooding, governed both by the tidal regime and by flash-floods in the Afon Lwyd (PL. II). Because of its present marshy nature, it has previously been assumed it would have been unattractive to settlers in the Roman period (G.C. Boon *in litt.*), but the results of the Mill Street excavations show that conditions must have been somewhat different in Roman times. The height of the modern water-table and the problems caused by the periodic flooding were factors in the formulation of the excavation strategy (see below).

THE CAERLEON AREA IN ROMAN TIMES

The focus for Roman occupation at Caerleon was naturally the fortress, situated on its plateau. The exact orientation of the fortress may well have been determined by the location of the best crossing-points of the two rivers. From the *porta praetoria* a continuation of the *via praetoria* led to the crossing of the River Usk (assumed to be on the site of the pre-1806 Caerleon Bridge), some 150m upstream of the present bridge, since a continuation of the *via praetoria* can be observed in the present Isca Road on the eastern bank of the river: the modern Bulmore Road, which also appears to be on the line of a Roman road running along this bank to the settlement at Bulmore, meets Isca Road at right-angles. An outcrop of rock cut by the Usk at this point forms a suitable bridging point, although no evidence has ever been observed for any Roman structures. The *porta principalis dextra* is also situated to exploit the configuration of the ground, in that it lies at the root of the tongue of land projecting towards the (present) Afon Lwyd, which carried a continuation of the *via principalis* (see below, p.35).

Evidence for occupation is now known outside all sides of the fortress except for that of the *porta decumana*, where trial excavations and watching briefs have consistently failed to locate any signs of settlement (see FIG. 125). The first evidence for extra-mural settlement came from the so-called Castle Baths, outside the *porta praetoria*, which were dug in 1849, but most excavations since then have been concentrated within the fortress. Until 1984, the most extensively examined area was that outside the *porta principalis dextra*, excavated by Nash-Williams in the 1950s but never published, and in view of the absence of detailed records, likely to remain so. Further excavations were undertaken by Boon in 1958, and a watching brief carried out when the area was levelled in 1962.² A manuscript by Boon, held by the National Museum of Wales, attempts to pull together the results of the work in this area (Boon n.d.), and a summary of it is given by him in Boon 1972 (31–3, 44–5, 59–60). Boon identified some of the earlier activity as military; he also deduced from the apparent low density of building, and from the lack of other extra-mural activity known to him, that the development of the civilian settlement at Caerleon had been inhibited by the presence of the *civitas* capital of the Silures at Caerwent, only 13km away to the southeast (*ibid.*, 61–2). Recent excavations at Caerwent and at Bulmore on the eastern side of the River Usk opposite Caerleon, as well as the excavations reported here, have however shown that the situation is considerably more complex. The fortress not only attracted an extra-mural civil settlement at least twice the size of that known to Boon in 1972, but also a second separate settlement at Bulmore 2km away along the road to Usk (Macdonald forthcoming); this is a pattern known from the Rhine-Danube frontier, as well as elsewhere in Britain, at Chester (Mason 1988, 176–8, 181). Furthermore, although the *forum/basilica* at Caerwent and therefore probably the *civitas*-capital status of the town was established in the early 2nd century (Brewer 1993, 65), the recent investigations at Caerwent have established that the street grid did not reach its final form before the 3rd century, that significant areas of the town remained open until

² Summary reports appeared in the *Journal of Roman Studies* for both Nash-Williams' and Boon's excavations: vol. 45 (1955), 112 and fig. 6; vol. 46 (1956), 122, figs 21, 22 and pl. 13.1; vol. 49, (1959) 102–3; vol. 53 (1963), 125–6.

the 4th century, and that even in the 4th century there does not appear to have been much pressure on building land within the town defences (Brewer 1993, 56, 58, 59). The nature of civilian settlement in and around Caerleon will be discussed more fully below (p.459).

THE GEOPHYSICAL SURVEY

Sample areas were surveyed in three fields: the Smallholding, where one 20 × 20m grid square was examined on the east of the dividing fence and an area 13 × 17m on the west; the Riding School Field where a total area of 3,200m² was surveyed; and the field behind Cambria House where the sample area measured 40 × 40m.

The survey work on the Riding School Field produced the results with the clearest potential. A major band of high resistivity was identified, running approximately parallel to Mill Street and the fortress defences; this was also identifiable on the ground as a very slight rise. From this two narrower bands of high resistivity, approximately 10m apart, ran off to the west at angles close to 90°. Three low-resistance anomalies were also noted, one to the east of the major high and the other two at the west of the area, but slightly overlapping the narrower bands of high resistance. As the field appeared to be part of the floodplain, it seemed likely that the high-resistance anomalies represented a major road with side streets, possibly associated with ribbon development, but it was unclear whether the low-resistance anomalies represented cut features, absence of occupation connected with a 'clear zone' surrounding the fortress, or merely the accumulation of water in superficial dips of no archaeological significance. It was judged that this field had the highest potential for trial excavation.

Results from the other two areas sampled were less clear-cut. A further band of high resistivity parallel to Mill Street was noted in the field behind Cambria House, petering out towards the south as if it were covered by an increasing depth of overburden. Other anomalies, even less susceptible to interpretation, occurred to the west of this feature. The Smallholding showed a clearly-marked pattern of anomalies, with a band of high resistance following the southern boundary and a series of small, regularly-arranged and roughly rectangular low-resistance anomalies. It was judged at the time of the survey that the high-resistance anomaly probably related to a well-documented modern episode of rubble dumping and the lows to abandoned allotments: however, subsequent excavation demonstrated that all these anomalies were archaeological in origin, representing the road from the *porta principalis sinistra* of the fortress and the buildings along its northern frontage.

Key -

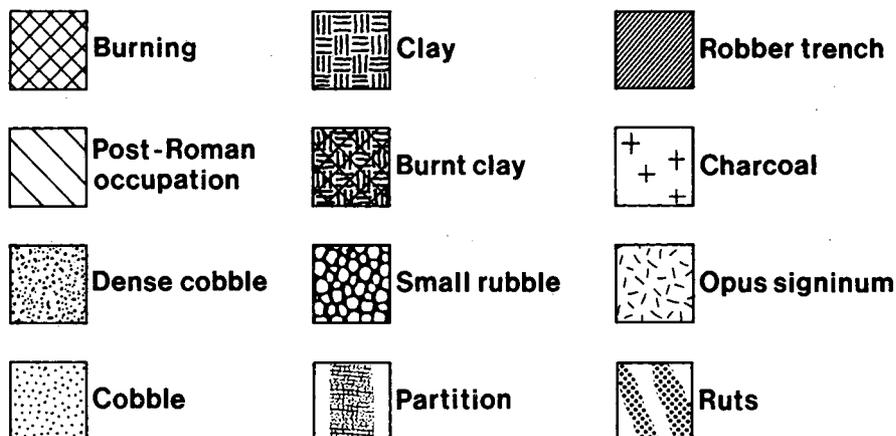


FIG. 1. Key to plan conventions.



PLATE I. The Mill Street area during trial excavations on the Riding School Field. The Cambria House site lies beyond the buildings to the extreme right of the picture. The settlement at Bulmore is situated on the side of the ridge overlooking the site.

EXCAVATION STRATEGY

Although the majority of these excavations began in 1984, before it was the usual practice to prepare a research design in advance of excavation, all were undertaken to answer specific questions. Because of the length of the Mill Street excavations, periodic reviews were held and the excavation strategy adjusted in the light of the results obtained.

MILL STREET (FIGS 2–4, PL. I)

A strategy was devised during the course of the excavation, based upon (1) the nature of the archaeological remains themselves; (2) the damage to them likely to be caused by the proposed development; (3) the requirement to reconsolidate to building standards on the Cambria House site and (4) logistical considerations, in particular the high level of the water-table combined with the probability that high spring tides would flood the site (PL. II), and the relative availability of labour (albeit initially unskilled) and scarcity of other resources.

The initial purpose of the trial excavations carried out on the Riding School Field in the late summer of 1984 was to determine whether Roman occupation had existed there, and once this had been proved to be the case, to identify the most suitable area for further work. This programme of trial work was interrupted by flooding caused by the October tides before Roman levels had been reached in all areas of the site. The southeastern corner of the field was selected for further excavation as it was believed, erroneously, to be better drained, and an area (Cutting DA) opened up by machine at the end of October. Two months' work here showed not only that excavation would be severely hampered by the high water-table, but also that this area had apparently been used only for agriculture or horticulture. Freezing conditions in the New Year halted all work in this corner, and an area was opened by hand in the middle of the field where

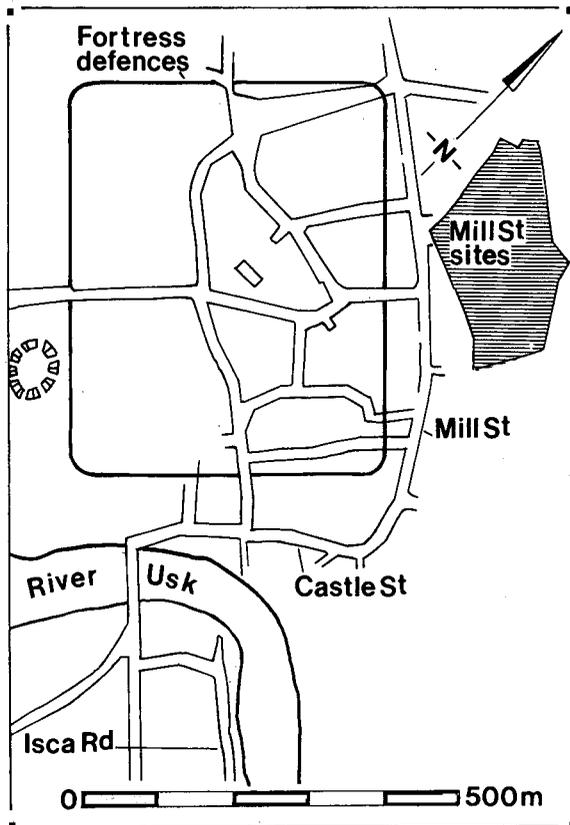
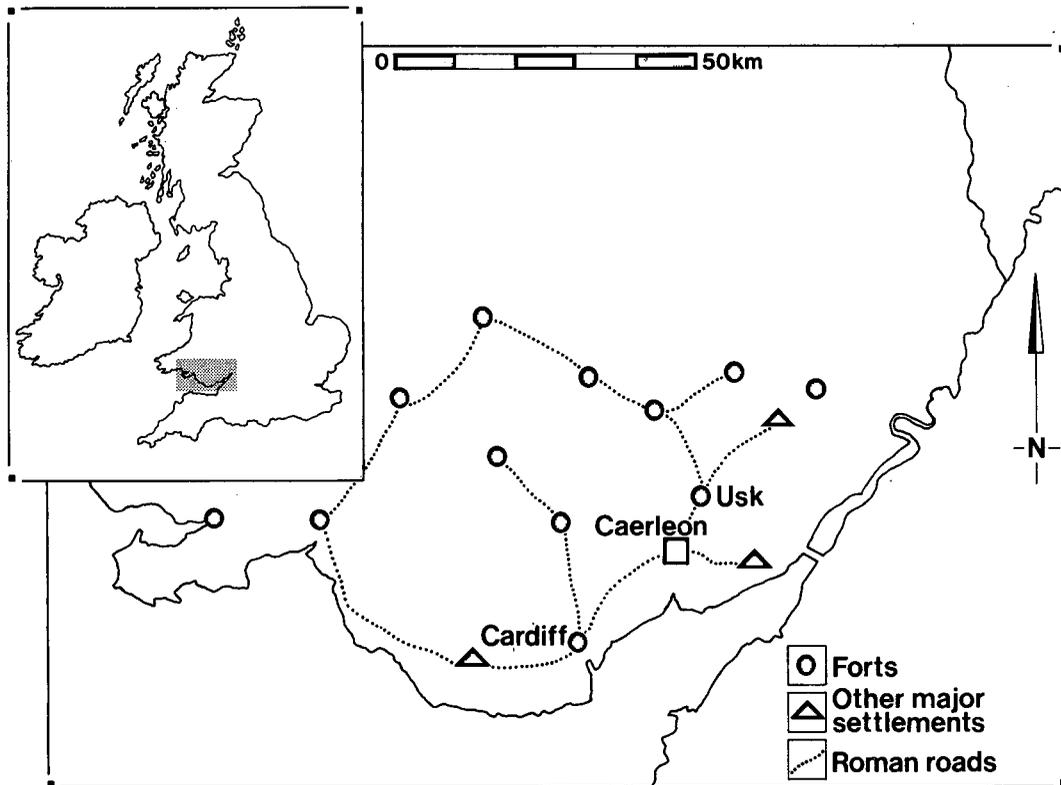


FIG. 2. Location plan a: (above) Caerleon b: (left) The Mill Street sites.

the trial excavations had indicated the likelihood that structural remains survived, an assessment which was vindicated with the uncovering of Building 12. Further problems with flooding led to the formulation of a general strategy of clearing the site to the latest levels during periods at which the water-table was high, and excavating in depth when it was lower. It was recognised that this would result in a more extensive study of the later periods of occupation than of the earlier ones, but since an enquiry to Newport Borough Council

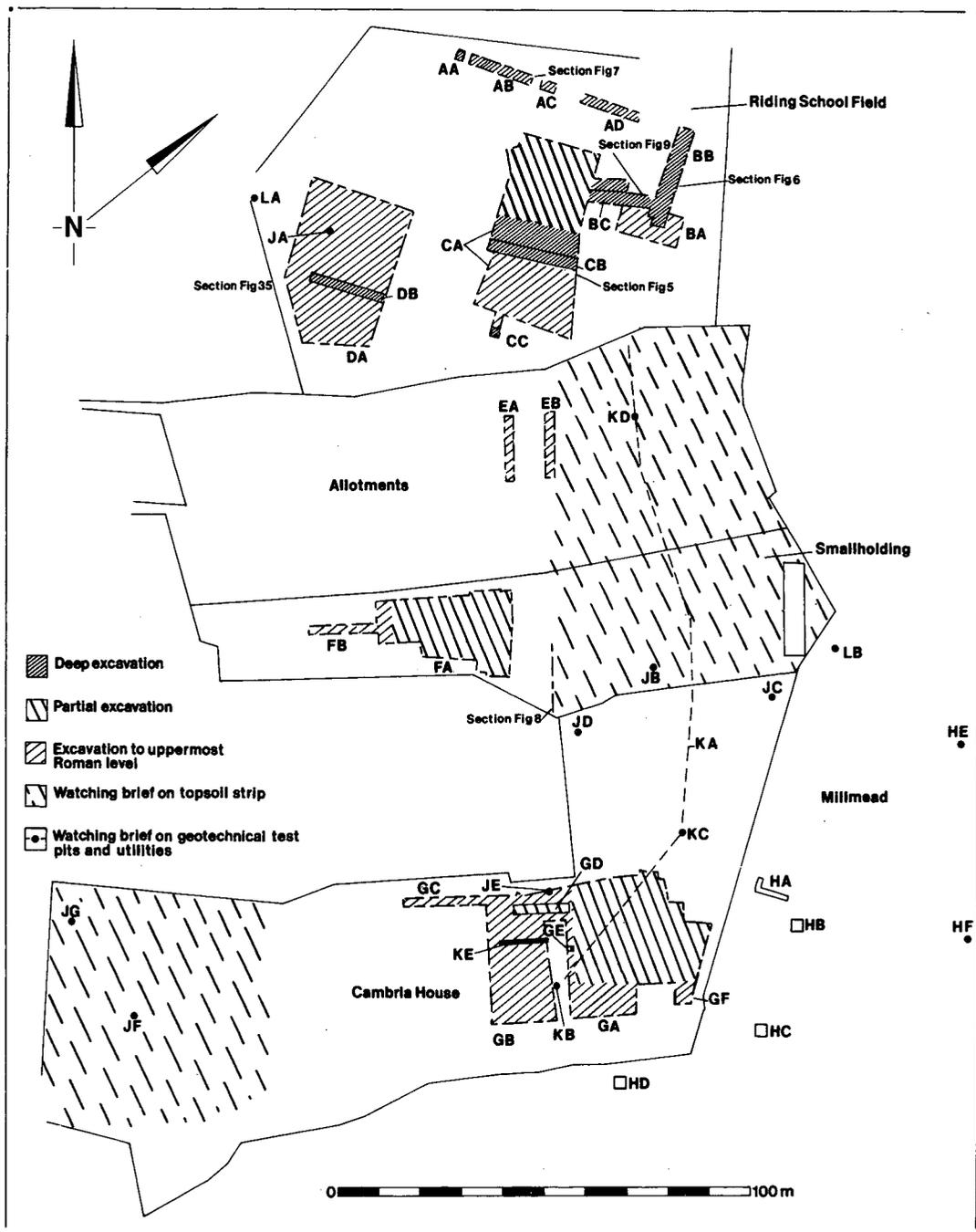


FIG. 3. Mill Street: excavated areas and depth of excavation. Site north is shown as the vertical arrow, with true north at *c.* 45° to this. All other plans (except FIGS 4, 40 and 125) show site north.

established that any developer would be required to raise the level of the area to 8m OD before development, it was considered that it was the latest levels which were most at risk of damage, from initial topsoil stripping, whereas the lower levels were likely to be reasonably well-protected by the dumping, except where services had to be put in. This strategy therefore was considered to be the one which would best address the problem of recording archaeological material before destruction as well as making the most efficient use of the available resources.

The digging of geotechnical test pits (JC, JD, JE, JF, JG) by a potential developer in the Cambria House site in the early summer of 1985 gave some indication of the degree of preservation of organic materials likely to be encountered over at least part of the area. The digging by hand of test pits (AA, CC) in the Riding School Field established both that this potential for preservation appeared to be widespread, and that significant understanding of the earlier material was unlikely to be achieved from excavation on a small scale. A series of cuttings



PLATE II. 'In modern times the site has been prone to flooding': Completion of recording of Building 1 at the end of the excavation during the October spring tides.

examine the upper levels of this, and was particularly useful from a logistic point of view as it was above the area affected by floods and was therefore potentially available when work was impossible on the lower-lying sites. The trial excavations on Cambria House revealed a 0.8m-wide wall of coursed rubble, indicating the existence of a much more massive building than anything noted previously. A larger area was opened out here, in order to obtain the widest cross-section possible of occupation types. It should be noted, however, that permission to excavate on Cambria House was subject to a condition of re-instatement, which precluded deep excavation, with the exception of a sump which was necessary to drain the site sufficiently for work to proceed.

The final few months of excavation took place in the summer and early autumn of 1986, when the ground was dry enough to permit work on the Riding School Field to conclude with two pieces of excavation necessary for an understanding of the development of the site. These were a section through the main north-south road (BC) and a section through the early sedimentary sequences (CB). Although both had initially been examined in machine cuttings, the results were not entirely satisfactory. It had become clear during the final stages of the excavation of Building 12 that a complex sequence of lensed and graded flood deposits could be seen between Buildings 12 and 14. The attempt to record a machine-cut section (AD) through the road had to be abandoned when the sides became unsafe, and conditions during the excavation by hand of a section further south had been so wet that the recording of the development of the road in any detail had proved impossible. The observations made on other geotechnical test pits dug by a potential developer during this period (JA, JB) added further details to the record. The circumstances of the watching brief carried out during 1988 precluded the recording of more than a few of the features in the area of the Allotments and the eastern field of the Smallholding.

CASTLE STREET

All the work done in this area was carried out for the purpose of evaluation prior to development. In the case of the Social Club site, agreement was reached with the developers that the Roman levels would not be disturbed. The work at Uskside was carried out as part of a larger evaluation which extended across the land east of Tanhouse Drive to Millmead east of the main Mill Street sites. As a result of this evaluation, the development proposals were drawn up in such a way as to leave the archaeologically-sensitive areas as open space. Proposals for this development have since been withdrawn, and the Roman building which was identified at Uskside has been scheduled as an ancient monument.

STRUCTURE OF THE REPORT

The main part of the report deals with the Mill Street excavations, where the results are presented thematically rather than on a site-by-site basis. The initial section (pp.22–34) deals with the sedimentary history of the site up to the construction of the main north–south road across the Riding School Field (comparable material is lacking from the other sites since no deep excavation was carried out, see above). There then follow sections on the roads, streets and property boundaries (pp.34–52), the buildings (pp.52–154), evidence for metalworking (pp.154–8), and other evidence for land use pp.158–73). This is followed by an account of the work which took place in the area of Castle Street pp.173–6). The finds reports for the Mill Street sites pp.177–58) are followed by a discussion section pp.459–89) which attempts to draw together the material related to all these topics and to provide an overview and chronology for the Mill Street sites. A concluding section pp.489–505) attempts an overview of the civil settlement as a whole in the light of the results of the excavated evidence. The results of specialist study of plant macrofossils, metallurgical waste and human remains are integrated within the structural text. A gazetteer of all known extra-mural but non-funerary structures at Caerleon is presented in Appendix 1.

The method of presentation of the structural text is an attempt to solve the perennial problem of providing sufficient data to support the interpretation offered without overloading the text with unreadable detail. The primary text is provided in the main typeface with standard margins and presents the discussion and interpretation. A secondary text in a smaller typeface and indented margins presents the data upon which the interpretation is based. This has inevitably led to a certain amount of duplication for the sake of clarity, but the result should enable readers to follow more easily the principal arguments, but still judge the validity of the conclusions by recourse to the data on which they are based. This secondary text is itself based on the much fuller account to be found in the site archive, and omits minor layers and lenses of material with no published finds.

Context numbers are included in the primary text to enable the plans to be followed; numbers not included here are only needed for a detailed reading and will be found in the secondary text. Contexts in the text but not illustrated are marked \$, unless the whole group has been marked 'not illustrated'. Some contexts were recorded by more than one number during the course of excavation; however, only a single number is normally used in this report unless the alternative numbers were used to record finds.

All contexts discussed in the secondary text have been aggregated into stratigraphic groups, which are prefixed SG and numbered in the margin sequentially from the beginning of the structural description. For the most part, each of these groups of contexts represents a single process, action or related group of actions (such as the erection of a building), but occasionally stratigraphic groups are composed of contexts representing isolated activities in different part of the site, actions which in the opinion of the writer were probably related. The presentation of each published find also cites the stratigraphic group so that it can be traced to its provenance without undue difficulty. A list of contexts in stratigraphic groups is presented in TABLE 1.

Each structure or group of deposits has been phased separately, as no overarching arrangement into periods can be discerned. A general chronological overview can be found on p.474.

REPORTING CONVENTIONS

The fortress at Caerleon is oriented at almost 45° to the cardinal points, as is much of the modern settlement. Consequently site grids following property boundaries on most sites at Caerleon are not aligned on true or magnetic north, but on the *decumanus maximus*, which is deemed to run north–south with the *porta praetoria* at its southern end (see also Evans 1991, 105; and Evans and Metcalf 1992, 4). For ease of reference, this site north or ‘fortress north’ is used to describe the Mill Street excavations.

During excavation, each site was recorded by a separate series of context numbers prefixed by a site code (79 for the Riding School Field, 81 for the Allotments, 82 for Cambria House, 94 for the Smallholding and 156 for Uskside); those contexts not illustrated are marked \$ (see above). During the post-excavation stage, the decision was made to produce a unified database, with the site codes replaced by a site prefix except in the case of the Riding School Field whose numbers thus became 0001–1999 of the new series. The Cambria House prefix is 2, and its number sequence was thus transformed into a series between 2001 and 2999; the Smallholding prefix is 3, and the number series now runs between 3001 and 3999.⁴ The Smallholding sequence was extended to cover the watching brief on the Allotments, since the removal of the boundaries between the two parcels made the attempt to distinguish the two in recording unhelpful (the boundary between the Smallholding and Cambria House was taken as the south side of the road from the East Gate (*porta praetoria sinistra*). Very few numbers had in fact been used for the trial works on the Allotments; these are now all in the 4000s. The number 5000 was allocated as a general designation of the main north–south Roman road which ran across all the sites. However, when the decision had been made to publish the results of the Millmead and Uskside evaluation with the Mill Street sites, the sequence was extended to include Millmead as 5001 onwards, and Uskside as the 6000s. Using this system, a single sequence of numbers has been employed for all contexts in this report, with the site distinguished by the first digit of the four-digit sequence: three-digit numbers are all from the Riding School Field.

001–1553	Riding School Field
2001–2650	Cambria House
3001–3586	Smallholding
4001–4017	Allotments
5001–5106	Millmead
6000–6126	Uskside

A parallel sequence has been used for individual find numbers (see p.178).

Cuttings were originally allocated context numbers, but in the report are distinguished for ease of reference by double letters. The sequences prefixed A, B, C and D (Riding School Field), E (Allotments), F (Smallholding), G (Cambria) House and H (Millmead) were all archaeological cuttings. The other sequences were watching briefs: those prefixed J the geotechnical pits; those prefixed K the sewage pipeline; and those prefixed L the electricity pole pits.

In the description of the buildings, rooms are numbered with the building number first and the room number second, separated by a point. Rooms are renumbered every time their boundaries change.

⁴ Photographs taken on site still have the original site codes.

SITE ARCHIVE

The site archive will be deposited at Newport Museum.

TABLE 1: LIST OF CONTEXTS BY STRATIGRAPHIC GROUP (FIG. 4)

Context information is presented in the form of *stratigraphic groups* (SGs) running in a continuous number sequence through the report. For the most part, each of these groups of contexts represents a single process, action or related group of actions (such as the erection of a building); but occasionally SGs are composed of contexts representing isolated activities in different part of the site, actions which in the opinion of the excavator were probably related (see above, p.13). Not all the numbers listed below will appear in the text, since this omits many lenses and duplicate numbers used for the same context.

Note: X Y Z are used for phasing the ends of sequences where there is insufficient information about earlier phases to make possible a continuous numbering sequence from the beginning.

MILL STREET

Sedimentary sequence

SG	Phase	Brief description/cutting	Context nos	Page
1	1	Features cut into substratum	1493, 1499, 1517, 1518, 1541, 1542, 1550, 1553,	24
2	1	Features cut into substratum	1106, 1107, 1108	24
3	1	Features cut into substratum	062, 063, 064, 065	24
4	2	Grey deposits (CB)	1105, 1106, 1451, 1481, 1485, 1486, 1487, 1488, 1489, 1492, 1494, 1495, 1496, 1497, 1500, 1514, 1515, 1516, 1522, 1529, 1534, 1535, 1536, 1537, 1539, 1543, 1545	28
5	2	Grey deposits (AD)	121	30
6	2	Grey deposits (BC)	474, 475, 476, 477, 478	30
7	2	Grey deposits (BB, AD)	066, 135, 173, 174, 175	30
8	3	Red deposits (CB)	1242, 1450, 1491, 1498, 1511, 1521, 1533, 1538, 1544, 1546, 1547, 1548, 1549	31
9	3	Deposits over road edge	1531, 1532, (192)	32
10	3	Red deposits (AB/AC)	109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 123, 124, 125, 126, 404, 405, 410, 411, 412, 413	32

Roads and building plots

Via principalis continuation

11	1	Initial phase	3561	35
12	X	Penultimate phase	3541, 3542, 3564, 3570	36
13	X	Modification	3535, 3536, 3565, 3566, 3568, 3569, 3582	36
14	X	Modification	3023, 3528,	36
15	Y	Final phase	3503, 3517, 3526, 3527, 3537	36
16	Y	Final phase	3007, 3017, 3021, unstratified 3503	36
17	Y	Modifications	3019	36
18	Z	Abandonment	3024, 3051, 3074, 3079, 3501	36

North-south road, to north of *via principalis* continuation

19	1	Earliest deposits (CB)	1475, 1519, 1520, 1528	38
20	1	Earliest deposits (BC)	470, 471, 472, 1478	39
21	1	Earliest deposits (AD)	172	39
22	2	Deposits (BC)	468, 469, 473	39
23	2	Deposits (CB)	1526	39
24	3	Deposits (BC)	461, 462, 463, 467	39
25	3	Deposits (CB)	878, 1266, 1456, 1474, 1524, 1527	39
26	3	Deposits (AD)	162	40
27	3	Resurfacing (BC)	452, 460	40
28	3	West drain fill (CB)	1524	40
29	4	Final surface & drains	004, 006, 017, 395, 450, 451, 455, 456, 457, 491, 805, 853,	

SG	Phase	Brief description/cutting	Context nos	Page
			855, 871, 877, 911, 913, 931, 994, 1028, 1029, 1051, 1055, 1230, 1232, 1236, 1256, 1258, 1312, 1411, 1412, 1413	41
30	4	Final surface (Allotments)	3510, 3544, 3545, 3553,	43
31	4	East drain (Allotments)	3546, 3547, 3548	43
32	4	East drain (Allotments)	3533, 3573, 3575	43
33	4	East drain fill (Allotments)	3532, 3530	43
34	4	East drain recut (Allotments)	3574	43
35	5	West drain fill (RSF)	007, 009, 037, 040, 846, 879, 914, 951, 957, 975, 991, 1302, 1454	45
36	5	Culvert fill (RSF)	1257, 1414	45
37	5	East drain fill (Allotments)	3512	45
38	5	West drain fill (Allotments)	3529, 3531, 3540	45
39	5	East drain fill (RSF)	466	45
40	5	Overlying deposits (RSF)	458, 459, 912, 933, 993, 996, 997, 1036	45
Main north-south road, to south of main road <i>via principalis</i> continuation				
41		Deposits underlying road	2581, 2596, 2639	46
42	?	Metalling	2592, 2593, 2595	46
43	?	Metalling	2256, 2402, 2456, 2467, 2497	46
44	?	Deposits post-dating Bldg 3	2004, 2393, 2637, 2638	47
Side street between Buildings 3/5 and 6				
45		Lower surface	2250, 2270, 2380	47
46		Upper surface	2019, 2181, 2182	47
Possible side street (Smallholding/Allotments)				
47			3509	48
Property boundary between Buildings 12 and 13				
48	1	First cut of ditch	1470	48
49	1	First fill of ditch	1468, 1469	48
50	2	Recut of ditch	1467	48
51	2	Fill of ditch recut	864, 1465, 1466	48
52	3	Cobbling over ditch	1243	50
53	4	Deposits over cobbling	015, 860, 887, 927, 928, 929	50
Property boundary between Buildings 12 and 14				
54		Final fills	1052, 1229, 1231, 1452, 1453=1076	51
The buildings				
Building 1				
55	1	Original exterior walls	2149, 2200, 2222, 2401	53
56	1	Internal deposits	2444, 2491, 2499	54
57	2	Makeup	2498, 2601	55
58	2	Walls	2228, 2234, 2235, 2236, 2237, 2350, 2351, 2407, 2462, 2463, 2618	55
59	3	All main modifications	2201, 2244, 2245, 2246, 2248, 2465, 2466, 2467, 2469, 2490, 2496, 2497	59
60	3	Features outside building	2439, 2440, 2452, 2453, 2492, 2493 (2456)	60
61	4	All modifications	2238, 2239, 2242, 2243, 2260, 2494, 2495, 2451	62
62	5	Deposits over demolition	2433, 2434, 2435, 2446, 2447, 2448, 2450	65
63	5	Room 1.11 & door blocking	2202, 2259, 2400, 2411, 2412, 2436	65
64	5	Deposits S. of Building 1	2437, 2438, 2455	66
65	-	Building 1 Annexe	2457, 2458, 2461, 2462	67
Possibly pre-Building 2				
66			2323, 2373, 2374	68

THE BACKGROUND TO THE EXCAVATION

17

<i>SG</i>	<i>Phase</i>	<i>Brief description/cutting</i>	<i>Context nos</i>	<i>Page</i>
Building 2				
67		External walls	2271, 2272, 2273	68
68		Internal walls	2057, 2151, 2152, 2153, 2154, 2249, 2611	68
69		Internal deposits?	2369, 2371, 2372, 2374, 2375, 2376, 2377	68
Building 3				
70	1	Construction yard wall	2007, 2017, 2020, 2112, 2143, 2203, 2247, 2299, 2387, 2388, 2391, 2398, 2399, 2441, 2442, 2460, 2562	71
71	1	Strip house walls	2006, 2056, 2058, 2059, 2060, 2061, 2062, 2063, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2205, 2206, 2224, 2225, 2240, 2241, 2388, 2610, 2612, 2613, 2614, 2615	72
72	1	Destruction Building 1	2179, 2352, 2381, 2382, 2383, ?2384, 2386, 2389, 2392, 2397, 2405, 2406, 2410	73
73	1?	Lower deposits, Room 3.1	2066, 2174, 2175, 2253, 2254, 2255, 2256, 2345, 2368, 2370	75
74	2	Upper deposits, Room 3.1	2074, 2170, 2173	75
75	1/2	All deposits, Room 3.2	2171, 2172, 2177	76
76	1/2	All deposits, Room 3.3	2102, 2104, 2105, 2106, 2107, 2108, 2113, 2161, 2163, 2164, 2257, 2394	76
77	2?	All deposits, Room 3.4	2114, 2115, 2116, 2117, 2118, 2119, 2121, 2122, 2127, 2129, 2158, 2395, 2396	77
78	2	Floor deposits, Room 3.5	2096, 297, 2162	79
79	2	Floor deposits, Room 3.6	2048, 2123, 2124, 2125, 2126, 2148, 2159, 2160	79
80	2	Floor deposits, Room 3.7	2051, 2099, 2606	80
81	3	Destruction Rooms 3.4/3.6	2041, 2042, 2043, 2045, 2076, 2120, 2128	85
82	3	Destruction Room 3.5	2035, 2036, 2037, 2098	85
83	3	Destruction Room 3.7	2014, 2033, 2069	85
84	3	Destruction Rooms 3.1/3.2/3.3	2046, 2065, 2095, 2103? 2192	85
Building 4				
85	1	Building 4	2338, 2339, 2359, 2365, 2366	86
86	1/2	East of Building 4	2321, 2322, 2360, 2346, 2347, 2348, 2349, 2356, 2357, 2367, 2403, 2404, 2409	86
87	1/2	S. & W. of Building 4	2302, 2303, 2304, 2305, 2311, 2324, 2325, 2326, 2327, 2329, 2340, 2341, 2342, 2343, 2344, 2353, 2354, 2358, 2359, 2361, 2362, 2363	87
Building 5				
88	1	Original Building 5	2194, 2195, 2196, 2197, 2300, 2301, 2307, 2315, 2316, 2317, 2318, 2319, 2328, 2337	88
89	1/2	Alterations to culvert	2296, 2312, 2390	91
90	?	Addition of blocks	2443, 2445	91
91	2	Refurbished Building 5	2093, 2188, 2189, 2190, 2191, 2193, 2306, 2314	91
92	2	Additions to Building 5	2026, 2169, 2176, 2180, 2217, 2309, 2310, 2333, ?2178, ?2186	92
93	2	Eastern culvert fill	2111, 2379	94
94	3	Abandonment Building 5	2081, 2082, 2085, 2086, 2087, 2088, 2092, 2100, 2167, 2168, 2198, 2199	95
Building 6				
95		All structural contexts	2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2226, 2277, 2320, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2622	96
96		Building 6 destruction	2183, 2355,	100
Building 7				
97	7	All building	3515, 3518, 3519, 3520, 3521, 3522, 3551	100

<i>SG</i>	<i>Phase</i>	<i>Brief description/cutting</i>	<i>Context nos</i>	<i>Page</i>
Building 8				
98	8	All building	318, 319, 320, 479, 480, 1503, 1504, 1505, 1506, 1507, 1508, (?305)	102
Building 9				
99	9	All building	3533	102
Building 10				
100	9	South end Cutting BB	056, 057, 060, 061, 149, ?322 (?305)	102
101	9	North end Cutting BB	136, 137	102
Building 11				
102	10	South end Cutting BB	144, 145, 147, 148	103
103	10	North end Cutting BB	159	103
Building 12				
104	1	Construction main building	816, 817, 865, 874, 888, 893, 898, 1222, 1223, 1269, 1270, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1418, 1449, 1471, 1472, 1483, 1484	105
105	1	Construction outshut	1261, 1262, 1279, 1297, 1298, 1299, 1406, 1407, 1416, 1417	105
106	1	Internal deposits and hearth	881, 882, 890, 891, 892, 894, 897, 1201, 1205, 1206, 1207, 1209, 1246, 1260, 1271, 1291, 1293, 1401, 1415	107
107	1	Outshut deposits	872, 873, 1278, 1402, 1405, 1408, 1409	107
108	1	Yards S. and W. of building	837, 1217, 1218, 1263, 1265, 1267, 1280, 1294, 1400, 1403, 1490, 1510, 1513	111
109	1	Yards S. and W. of building	848, 850, 857, 858, 1211, 1214, 1220, 1227, 1237, 1253, 1264,	111
110	1	Yard E. of building	1216, 1235, 1276, 1277, 1282, 1284, 1292, 1404, 1457	111
111	1	Yard E. of building	842, 843, 862, 870, 1208, 1254, 1272, 1273, 1274, 1275, 1296	111
112	2	Room 12.5	006, 807, 812, 849, 863, 1258, 1281	113
113	2	Internal walls	818, 820, 885, 1221	113
114	2	Deposits Room 12.1	851	114
115	2	Deposits Room 12.6	1200	114
116	2	Deposits Room 12.7	815, 833, 841, 866, 884, 886, 889, 1202, 856?	114
117	2	Outshut (12.8)	032, 394, 810, 835, 836, 861, 867, 868, 869, 883, 1210, 1212, 1213, 1268, 1283, 1295, 1402, 1405, 1409, 1410	114
118	3	Room 12.7	813, 827, 829, 856?	117
119	3	Room 12.9	819, 821, 822, 823, 824, 826, 1203, 1204	119
120	3	Room 12.10	808, 809	119
121	3	Outshut (12.8)	825	119
122	3	Room 12.5	806	119
123	2-3	Yard S. and W. of building	845, 852	121
124	2-3	Yard S. and W. of building	020, 811, 830, 831, 832, 838, 859, 1021	121
125	4	All abandonment	396, 397, 814, 828, 834, 1226	121
Building 13				
126	1	Wall sills main building	905, 911, 915, 920, 978, 979, 995, 998, 1312, 1318, 1321, 1339	123
127	1	Outshut wall	916, 918, 938, 939, 952, 989, 1356, 1357, 1358	123
128	1	Floor room 13.1	922, 923, 961, 1350	123
129	1	Room 13.2	963, 965, 973, 999, 1306	125
130	1	Destruction 13.2	947, 949, 960, 964, 966, 967, 968, 990, 1305, 1307, 1308, 1309, 1310, 1320; 1338	125
131	1	Destruction 13.3	950, 970, 1337, 1363, 1364, 1365, 1366, 1367	125
132	1	Floor of outshut (13.4)	941, 960, 984, 985, 1313, 1315, 1317, 1319, 1359	125
133	1	Destruction of outshut	936, 937, 948, 954, 955, 956, 958, 959, 983	125

<i>SG</i>	<i>Phase</i>	<i>Brief description/cutting</i>	<i>Context nos</i>	<i>Page</i>
134	1/2?3	Yard	939, 938, 989	129
135	1-5	Areas N. and W. of building	910, 969, 971, 976, 1352	129
136	2	Flagging E. end	943	129
137	2/3/4	W. end of building	903, 924, 925, 942, 962, 988	129
138	2	Yard	014, 919	129
139	3	E. end of building	908, 944, 945, 974	131
140	3	Yard	946	131
141	4	Building	906, 907, 909, 953, 1339	133
142	4	Yard	914, 917, 934, 935	133
143	5	Abandonment	904, 921, 926, 932, 977	134
Building 14				
144	Y	All building	1005, 1007, 1008, 1009, 1010, 1012, 1017, 1017, 1018, 1019, 1020, 1031, 1032, 1033, 1034, 1035, 1037, 1041, 1043, 1045, 1049, 1050, 1068, 1053, 1056, 1057, 1058, 1064, 1068, 1078, 1079	134
145	Y	Surrounding area	1011, 1013, 1014, 1027, 1030, 1042, 1044, 1047, 1059, 1066, 1067, 1104	135
146	Z	Abandonment	1018, 1026, 1031, 1038	138
Building 15				
147		All deposits	3514, 3545, 3539, 3581	138
148		Over building	3516	138
Building 16				
149		All deposits	3523, 3556, 3557, 3558	138
Building 17				
150		All deposits	3505, 3507, 3549	139
Building 18				
151		Pre-building deposits	3058, 3063, 3065, 3067, 3068, 3071, 3073, 3077, 3078, 3080, 3090, 3092, 3095, 3099?, 3100, 3115, 3124, 3140	140
152	1	Walls Room 18.2	3003, 3004, 3008, 3018, 3038, 3158	142
153	1	Walls Room 18.1	3006, 3009, 3019	142
154	1	All deposits Room 18.1	3103, 3104, 3105, 3106, 3109, 3110, 3111, 3112, 3113, 3114, 3119, 3120, 3126, 3122, 3125, 3127, 3128, 3129, 3130, 3160, 3162, 3163, 3164, 3168	142
155	1	Area N. of Rooms 18.1 & 2	3045, 3047, 3048, 3049, 3050, 3060?, 3061?, 3066, 3102	143
156	2	Walls of E. range	3010, 3011, 3012, 3053, 3064	143
157	1/2	All deposits Room 18.2	3005, 3037, 3070, 3101	144
158	2?	All deposits Room 18.3	3040, 3041, 3081, 3082, 3084, 3087, 3089, 3091	144
159	2?	All deposits Room 18.1	3026, 3086, 3117, 3141, 3169, 3093, 3094	144
160	2	All deposits Room 18.4	3030, 3042, 3052, 3062, 3075, 3076	145
161	2	All deposits Room 18.5	3031	145
162	2	Courtyard (18.6)	3046, 3054, 3056, 3057, 3059	145
Building 18/19				
163	3	Abandonment	3026, 3027, 3029, 3032, 3038, 3043, 3044	145
Building 19				
164		All building	3033, 3034, 3035, 3150, 3151, 3154, 3155,	146
Building 20				
165		All building	3014, 3138	148

<i>SG</i>	<i>Phase</i>	<i>Brief description/cutting</i>	<i>Context nos</i>	<i>Page</i>
Building 21				
166		All building	2473, 2477, 2478, 2479, 2480, 2481, 2484, 2508, 2509, 2514, 2515, (2523) 2605	148
Building 22				
167		All building	2478, 2489, 2500, 2501, 2502, 2504, 2505, 2506, 2518, 2525, 2529, 2570, 2603	151
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Metalworking				
169		Building 6 hearth/furnace	2416, 2417	154
170		Building 21 hearth/furnace	2523, 2430, 2431, 2432, 2449	155
171		Other hearth/furnace	2522	155
172		Slag pits	2510, 2511, 2512, 2513	156
173		Other metalworking	2574, 2575, 2576, 2577, 2578, 2588, 2589	156
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174		Cutting DA before culvert	628, 629, 631, 659, 660, 661, 662	159
175		Geotechnical pit	728 729, 730, 731, 732, 733, 734, 735	159
176		Culvert	639, 640, 641, 643, 645, 649, 658	160
177		Deposits to sides of culvert	642, 644, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 663, 664, 666	160
178		Culvert fill	636, 637, 638	160
179		Second phase culvert	618, 620, 623, 624, 627	161
180		Second phase fill	625	161
181		Above second phase	621, 622, 623, 626, 632, 633, 634, 635, 665, 667, 668	161
182	Y	Gullies etc. (DA)	601, 602, 603, 604, 608, 609, 610, 611, 613, 614, 615, 616, 617, 671, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 713, 715, 716, 717, 721	163
183	Z	Lower topsoil/dump (DA)	600, 605, 700, 714	163
184		Top deposits (AB)	105, 106, 109, 410	165
185		Layer with medieval pot	103, 403	165
186		Cremation	122, 127	165
187		Allotments (trial) (EB)	4003, 4008, 4009, 4010, 4011, 4012, 4013, 4014	166
188		Allotments (trial) (EA)	4002	166
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189		East of N–S road (west)	303, 304, 305, 306, 307, 308, 311, 312, 313, 314, 315, 317, 318, 453, 454, 464, 465	166
190		East of N–S road (east)	309, 310, 322, 324	166
191		Sewer trench section	3576, 3577, 3578, 3579, 3580	167
192		Electricity pole (LB)	2641, 2642, 2643, 2644	167
Southeast area				
193		Geotechnical pit (JC)	2629, 2630, 2631	167
194		Geotechnical pit (JD)	2632, 2633, 2634, 2635	167
195		Sewer trench (KA)	2645, 2646	167
196		Manhole (KC)	2597, 2598, 2599	167
197		Sump (GF)	2530, 2531, 2532, 2533, 2534, 2535, 2536	167
198		Test pit (HE)	5005, 5006, 5007, 5018	168
199		Test pit (HA)	5009, 5010, 5011, 5012, 5013	168
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Southwest area

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202	Z	Poss. reoccupation	2024, 2025, 2028, 2029, 2103?, 2258	170
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Building 3

203	Z	Robbing and pits	2018, 2077, 2078, 2167, 2168, 2198, 2199	170
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204	Z	Poss. reoccupation Building 5	2011, 2012, 2021, 2022	170
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205	Z	Robbing (all buildings)	2009, 2023, 2038, 2039, 2067, 2068, 2070, 2071, 2072, 2073, 2101, 2156, 2157, 2330, 2313	171
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206	Z	Burial	2049, 2050, 2055	172
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207		Building	6013, 6014, 6015, 6016, 6029, 6030	173
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208		Cutting SW of building (MD)	6017, 6018, 6019, 6020, 6021, 6022, 6032, 6033, 6034	175
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209		Cutting SW of building (MF)	6023, 6024, 6025, 6026, 6027, 6028	175
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210		Cuttings MA and MC	6001, 6002, 6003, 6004, 6005, 6006, 6007, 6008, 6041, 6042, 6043	175
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CHAPTER TWO

THE EXCAVATIONS

LAND EAST OF MILL STREET

THE SEDIMENTARY SEQUENCE UP TO THE END OF THE SECOND CENTURY A.D.

The earliest deposits on the Riding School Field were investigated initially by means of two 2 × 2m sondages (AA, CC: see FIG. 3 for location of cuttings), which showed that the top of the estuarine clay was between 1.0m and 1.3m below present ground level, at *c.* 6.4m OD and that there was a continuous sequence of archaeological activity with waterlogged organic material in the lowest levels. As these sondages were too small to allow for any interpretation, they were followed by a series of sections. The first east–west section (Cutting AB/AC/AD) was cut by machine along the north side of the site. For logistical reasons it was dug in three parts with baulks between; only the western (AB) and central (AC) parts could be recorded fully, as pockets of loose gravel in the eastern part (AD) made this section unstable, and it had to be backfilled for safety reasons before measured drawings and full descriptions of the deposits had been obtained. The north–south section (Cutting BB) which was dug to the east of the main north–south road was also machine cut, and although a full record was obtained of its eastern face, the recording of the northwest corner also had to be curtailed here for safety reasons. To the west of this road, an east–west section (Cutting CB) was cut by hand through the yard between Buildings 12 and 14 and environmental samples taken. Useful additional information on the stratigraphy in the southwest corner of the Riding School Field was obtained from a contractor's geotechnical test pit and a pit dug for a replacement electricity pole (JA, LA).

A second section (Cutting BC) was cut through the main north–south road. Most of the data from this are discussed below (p.38). A further east–west section (Cutting DB), cut mainly by hand in the southwest corner of the site, produced results which appeared initially to complement those from CB and AB/AC, but examination of the coarse pottery showed that consolidation of this area did not begin before the 4th century. It is therefore described below (p.159).

No systematic programme of investigation in depth was carried out on the Allotments, Smallholding and Cambria House sites (see above, p.10), but glimpses of the earlier deposits were obtained in geotechnical test pits and during the watching brief on the sewer trench.

THE SUBSTRATUM (FIGS 5, 6)

In most of the area, the substratum consisted of flood deposits, probably estuarine in origin, although this was never proved. On the western side of the area, they were replaced by river terrace deposits.

The lowest deposit generally encountered over the whole of the Mill Street area was a blue-grey clay (067, 489\$, 1109\$, 1551), containing no evidence for human activity. This apparently extended over almost the entire area available for excavation. At the extreme eastern side of the Riding School Field there was a change in the drift geology. The pit for the electricity pole (LA) was not cut through alluvial deposits, but through a red clay deposit, more typical of the river terrace deposits upon which the fortress was built. During the cutting of the contractor's test pit

(JA), the grey clay was observed to overlie a layer of red clay, apparently the same as that encountered in LA. It overlay in turn a yellow clay with stones. The Mill Street frontage of the Cambria House site was covered with brown clay, also containing no evidence for human activity.

The heights OD of these deposits and the main deposits of the following groups can be found in Appendix 2.

DEPOSITS FORMED UNDER THE INFLUENCE OF HUMAN ACTIVITY (FIGS 3, 4, 5, 6, 7; PL. III)

The deposits above the blue-grey clay can be divided into two main groups: the lower group consisted mainly of clays and silts and were predominantly grey and grey-brown in colour; and the deposits of the upper group contained much less clay and were predominantly reddish in colour. The lower group, which had been waterlogged since deposition and therefore preserved organic material, pre-dated the construction of the main north-south road, and can also be seen on its eastern side. These are described under Phase 1 (features cut into the substratum) and Phase 2 (deposits above the substratum). The upper deposits, which occur only on the western side of the road, are described under Phase 3. On the eastern side of the road, buildings seem to have been erected during the course of Phase 2, and none of the subsequent deposits appear to be sedimentary in origin.

Phase 1

Description (FIGS 5, 6, PL. III)

The earliest human activity identified on the site was represented by features cut into the blue-grey clay. These were noted in Cutting BB (a feature of unknown type 062), Cutting CB (three gullies or small ditches 1517/1518, 1499/1541/1542, 1493/1550/1553) and Cutting CC (a small pit, or possibly the end of a gully 1106/1007/1008\$). Samples were taken for plant macrofossil study and for radiocarbon determinations (TABLES 2 and 3).



PLATE III. Cutting CB, north-facing section: Ditches 1542 and 1550.

SG1 (FIG. 5) Cutting CB cut at right-angles three north–south ditches or gullies (1518, 1542, 1550). At this point the upper surface of the blue-grey clay into which they were cut (1551) sloped down from 6.16m OD at the western end of the section over a distance of some 12m to 5.69m OD and then rose to 5.81m OD at the eastern end, under the edge of the main north–south road. Slight hollows were visible in its upper surface.

The easternmost gully (1542) was the most regular, with straight sides and a flat base. The bottom third contained dark brown clay (1541) and a jumble of wood fragments. The rest of the feature was filled by mottled grey-green-purple silty clay indistinguishable from the overlying layer (1485) except insofar as another lens of wood fragments, twigs, roots and other vegetation (1499) had accumulated with its upper surface level with the top of the cut.

1550 was also flat-bottomed and straight-sided. A recut (1553) may have partially removed the original fill, a dark grey-black clay sand smelling strongly of sulphides (1493). This deposit extended not only over the bottom of the ditch but also out beyond it in places, and possibly represented a mass of decaying vegetation which had accumulated in a hollow at this point where the top of the 'natural' 1551 was at its lowest. This deposit contained wood and animal bone. The recut 1553 was filled with 1485, like the upper part of ditch 1542.

1517/1518 was the westernmost of the three, and the narrowest. The sides were irregular, but it is not possible to say whether this was its original shape or whether it had been caused by erosion. Whereas 1541 and 1550/1553 had filled during the deposition of 1485, this layer did not extend beyond the eastern rim of 1518.

Plant macrofossils were noted in the gully fills 1493 (1550) and 1517 (1518), and samples were taken for examination and for radiocarbon dating. Samples of bone were also submitted for dating from fills 1493 and 1499 (1542). The results are presented in TABLES 2 and 3.

SG2 (Not illustrated) Cut into the lowest grey clay layer in Cutting CC was a small, flat-bottomed feature (1108) with a thin layer of brown silty clay containing waterlogged wood and other organic debris in the bottom (1107), and the rest of the fill was grey silty clay containing coarse sand or fine grit (1106). This feature appeared to be a pit, but might possibly have been the end of a gully continuing under the southern end of the cutting.

SG3 (FIG. 6) In Cutting BB east of the main north–south road, and cut into the blue-grey probably estuarine clay, was a feature interpreted as a flat-bottomed ditch (062). Its width is estimated at 1.6m, but it was not clear at which angle it was cut by the section, particularly since the upper edges of the cut were difficult to trace. A band of dark grey clay containing organic material (065) in the bottom was overlain by a grey silty clay with no man-made inclusions (064) which had gleyed to a greenish shade (063) at its top, suggesting a stabilised horizon.

Although these gullies were cut into a deposit which appears to have been estuarine in origin, it should be noted that in neither 1493 or 1517 was there any indication from the plant macrofossil assemblage (below) that the area was influenced by brackish or saline water other than in the form of occasional flooding. There does not appear to be any form of transitional period between the two regimes. This in turn may suggest that scouring took place between the deposition of 1551 and the cutting of the three gullies.

The plant macrofossil evidence from 1493 and 1517 By Julie Jones

Samples were examined from two of the gully fills, 1493 and 1517 (numbered 1518 in error). The samples were processed as described on p.515, and the results are presented in TABLE 2. A greater quantity of material was processed from 1493 as only low numbers of plant macrofossils were recovered from the first 250g sample. The material was processed by the method described in Appendix 3.

The plant remains from 1493 and 1517 indicate a predominantly damp environment with flowing water, perhaps in a tributary stream, with muddy margins allowing water-edge species to become established. These include Celery-leaved Crowfoot (*Ranunculus sceleratus*), which is characteristic of muddy places on the margins of slow moving streams, Spike-rush (*Eleocharis palustris/uniglumis*), which particularly likes shallow water, and a range of sedges (*Carex* spp.). Rushes (*Juncus* spp.) are particularly abundant, numbering over 6,000 in 1517. Aquatic plants are represented by Water Crowfoot (*Ranunculus* subg. *Batrachium*), Green Watercress (*Nasturtium officinale*) and high concentrations of duckweeds (*Lemna* sp.) in 1493. Duckweeds are

small, freshwater, submerged or floating herbs, and are therefore easily removed by currents and are often restricted to still backwaters and sheltered bays. Other species which show a preference for damp grassy meadows include Fool's Watercress (*Apium nodiflorum*) and Hairy Buttercup (*Ranunculus sardous*), with a few other species also suggesting a drier environment further away from the river margins. These include weeds more typical of disturbed ground, such as Stinging Nettle (*Urtica dioica*), Fat Hen (*Chenopodium album*) and Chickweed (*Stellaria media*), so some drying out of the area in summer is likely, allowing these ruderals to survive.

Sea Arrow-grass (*Triglochin maritima*), found in small numbers in both samples, is common today along the tidal banks of the River Usk and the Severn shoreline (Wade 1970, 192). It prefers saline conditions, and seasonal high tides may account for its presence in these deposits. This is, however, seen to be a predominantly freshwater environment with damp grassy areas in the immediate vicinity.

TABLE 2: PLANT REMAINS FROM THE MAIN SEDIMENTARY DEPOSITS

HABITATS: A: Aquatic. B: Bankside. C: Cultivated. D: Disturbed ground. Da: Disturbed ground, including arable. G: Grassland. H: Hedgerow. M: Marsh. S: Shrub. W: Woodland.
OTHER ABBREVIATIONS: C: Carbonised. E: Estimated. F: Fragment.

Botanical name	Common name	Context/sample no.						Habitat
		1518/ 04 (Sample size)	1493/ 11 250g	1493/ 13 250g	1511/ 14 1000g	1492/ 17 250g	1496/ 12 250g	
RANUNCULACEAE								
<i>Ranunculus acris/repens/bulbosus</i> L.	Buttercup	1	1	0	16	0	9	Damp G, W, D
<i>Ranunculus flammula</i> L.	Lesser Spearwort	0	0	1	4	0	0	M
<i>Ranunculus sardous</i> Crantz	Hairy Buttercup	2	0	0	5	0	34	Da (damp)
<i>Ranunculus sceleratus</i> L.	Celery-leaved Crowfoot	11	5	16	407	3101	251	A, B
<i>Ranunculus</i> subg <i>Batrachium</i>	Water Crowfoot	2	0	1	11	1	1	A, B
NYMPHAEACEAE								
<i>Nuphar</i> sp.	Water Lily	0	0	0	0	0	7	A
PAPAVERACEAE								
<i>Papaver</i> sp.	Poppy	0	0	0	1	0	0	Da
CRUCIFERAE								
<i>Capsella bursa-pastoris</i> (L.) Medic	Shepherd's Purse	0	0	3	4	0	0	Da
<i>Nasturtium officinale</i> R. Br.	Green Watercress	1	0	0	0	0	0	B, moving water
<i>Rorippa islandica</i> (Oeder) Borbas	Marsh Yellow Cress	0	0	3	1	0	1	B, esp. where water stands intermittently
HYPERICACEAE								
<i>Hypericum</i> sp.	St John's Wort	0	1	0	0	0	0	
CARYOPHYLLACEAE								
<i>Agrostemma githago</i> L.	Corncockle	0	0	0	1	0	0	Da
<i>Cerastium</i> sp.	Chickweed	1	0	0	3	0	0	Da, G
<i>Lychnis flos-cuculi</i> L.	Ragged Robin	0	0	0	1	0	0	M, wet G & W
<i>Sagina</i> sp.	Pearlwort	0	2	0	0	0	0	
<i>Stellaria graminea</i> L.	Lesser Stitchwort	0	0	1	5	0	0	G, W
<i>Stellaria media</i> agg. (L.) Vill	Chickweed	4	0	1	229	1	91	Da
PORTULACAEAE								
<i>Montia</i> sp.	Blinks	0	0	0	2	0	0	B, wet places
CHENOPODIACEAE								
<i>Atriplex</i> sp.	Orache	1	2	1	2	1	0	Da
<i>Chenopodium album</i> L.	Fat Hen	0	1	1	2	0	1	Da
<i>Chenopodium ficifolium</i> Sm	Fig-leaved Goosefoot	0	1	0	8	0	4	Da, esp. manure heaps
<i>Chenopodium polyspermum</i>	All-seed	1	1	2	7	1	1	Da

Botanical name	Common name	Context/sample no.						Habitat
		1518/ 04 (Sample size) 250g	1493/ 11 1000g	1493/ 13 250g	1511/ 14 1000g	1492/ 17 250g	1496/ 12 250g	
<i>Chenopodium rubrum/glaucum</i> L.	Red/Glaucous Goosefoot	0	1	0	1	0	2	Da, rubbish tips near sea
<i>Chenopodium</i> spp.	Goosefoot	0	0	0	2	0	0	
MALVACEAE								
<i>Malva</i> cf. <i>sylvestris</i>	Common Mallow	0	0	0	2	0	0	D
<i>Malva</i> sp.	Mallow	0	0	1	0	0	0	
LINACEAE								
<i>Linum catharticum</i> L.	Purging Flax	0	0	0	1	0	0	G, esp. calcareous
<i>Linum</i> sp.	Flax	0	0	0	2	0	0	
VITACEAE								
<i>Vitis vinifera</i> L.	Grape	0	0	1	0	0	0	C
ROSACEAE								
<i>Aphanes arvensis</i> agg. L.	Parsley Piert	0	1	1	0	0	0	Da
<i>Malus sylvestris</i> Miller	Crab Apple	0	0	0	3	0	0	H, S, W
<i>Malus/Pyrus</i> sp.	Apple/Pear	0	1	0	0	0	0	H, S, W
<i>Potentilla</i> cf. <i>erecta</i> L. Rausch.	Common Tormentil	0	0	0	3	0	0	G, bogs, fens
<i>Potentilla</i> spp.		0	1	3	19	0	3	
<i>Rosa</i> sp.	Rose	0	0	0	1	1	1	H, S, W
<i>Rubus idaeus</i> L.	Raspberry	1	0	0	0	0	0	W, S, D
<i>Rubus fruticosus</i> agg.	Blackberry	0	0	1	48	1	0	W, S, D
UMBELLIFERAE								
<i>Anethum graveolens</i> L.	Dill	0	0	0	2	0	0	C
cf. <i>Anthriscus caucalis</i> Bieb.	Bur Chervil	0	4	0	0	0	0	Da, H near sea
<i>Apium graveolens</i> L.	Wild Celery	0	0	2	16	0	2	B, damp places
<i>Apium nodiflorum</i> (L.) Lag	Fool's Watercress	10	0	9	10	0	0	A, B
<i>Coriandrum sativum</i> L.	Coriander	0	0	0	1	0	0	C
<i>Oenanthe aquatica</i> (L.) Poiret	Fine-leaved Water Dropwort	0	0	1	1	0	0	A, B
<i>Oenanthe</i> sp.		0	0	0	1	0	0	
Umbelliferae gen. et sp. indet.		0	0	0	1	0	0	
POLYGONACEAE								
<i>Fallopia convolvulus</i> (L.) A. Love.	Black Bindweed	0	1	0	1	0	0	Da
<i>Polygonum aviculare</i> agg. L.	Knotgrass	1	1	10	16	0	1	Da
<i>Polygonum hydropiper</i> L.	Water Pepper	3	1	12	51	3	7	B, shallow water
<i>Polygonum lapathifolium/nodosum</i> L.	Pale Persicaria	0	0	0	0	0	1	Da, by ponds
<i>Polygonum persicaria</i> L.	Redshank	1	2	4	34	0	4	D, B
<i>Polygonum</i> sp.		0	0	0	0	0	0	
<i>Rumex acetosella</i> agg. L.	Sheep's Sorrel	0	1	1	8	0	1	G
<i>Rumex conglomeratus</i> Murr.	Sharp Dock	0	1	4	3	0	0	Damp G
<i>Rumex</i> cf. <i>obtusifolius</i> L.	Broad-leaved Dock	0	0	1	1	0	0	D, H, field margins
<i>Rumex</i> spp.	Dock	2	3	17	54	1	45	
URTICACEAE								
<i>Urtica dioica</i> L.	Stinging Nettle	2	7	5	234	9	69	D, W, S, B, nitrogen & phosphorous rich soils
<i>Urtica urens</i> L.	Small Nettle	0	0	0	13	1	1	Da, often dry light soils
MORACEAE								
<i>Ficus carica</i> L.	Fig	4	0	1	16	0	1	C
COYLACEAE								
<i>Corylus avellana</i> L.	Hazel	0	0	1F	3F	0	0	S, W

Botanical name	Common name	Context/sample no.						Habitat
		1518/ 04 (Sample size)	1493/ 11 1000g	1493/ 13 250g	1511/ 14 1000g	1492/ 17 250g	1496/ 12 250g	
SOLANACEAE								
<i>Solanum dulcamara</i> L.	Woody Nightshade	0	0	0	14	0	1	D, H, W
<i>Solanum nigrum</i> L.	Black Nightshade	0	1	0	1	0	0	waste places
SCROPHULARIACEAE								
<i>Odontites/Euphrasia</i> spp.	Bartsia/Eyebright	0	0	2	0	0	1	Da, G
<i>Pedicularis palustris</i> L.	Marsh Lousewort	0	0	0	1	0	0	wet meadows
<i>Veronica</i> spp.	Veronica	0	0	0	0	20	0	
LABIATAE								
<i>Lycopus europaeus</i> L.	Gipsywort	0	0	1	1	0	0	M, B
<i>Mentha</i> sp.	Mint	0	0	0	2	0	0	
<i>Prunella vulgaris</i> L.	Self-heal	1	2	3	33	0	1	G, D
<i>Satureja</i> sp.	Savory	0	0	0	2	0	0	C
<i>Stachys</i> cf. <i>palustris</i> L.	Marsh Woundwort	0	0	0	1	0	0	B, fens
<i>Stachys/Salvia</i> spp.	Woundwort/ Clary	0	0	0	1	0	0	
PLANTAGINACEAE								
<i>Plantago major</i> L.	Great Plantain	1	3	2	6	0	2	short or grazed Da farmyards
COMPOSITAE								
<i>Bellis perennis</i> L.	Daisy	1	0	0	0	0	0	short Da
<i>Bidens cernua</i> L.	Nodding Bur- marigold	0	0	0	17	0	0	B, standing water in winter
<i>Bidens</i> cf. <i>cernua</i> L.		0	0	0	0	4	20	
<i>Bidens tripartita</i> L.	Tripartite Bur- marigold	0	0	0	3	0	0	B, ditches
<i>Bidens</i> cf. <i>tripartita</i> L.		0	0	0	0	0	7	
<i>Bidens</i> sp.	Bur-marigold	0	0	1	16	2	13	
<i>Chrysanthemum leucanthemum</i> L.	Ox-eye Daisy	0	0	0	1	0	0	G
<i>Cirsium</i> sp.	Thistle	0	0	1	0	0	0	Da, M, G, S
<i>Cirsium/Carduus</i> sp.	Thistle	0	0	0	1	0	0	Da, M, G, S
<i>Hypochaeris</i> sp.	Cat's Ear	0	0	0	2	0	0	Meadow, pasture
<i>Lapsana communis</i> L.	Nipplewort	0	0	0	3	0	0	Da
<i>Leontodon</i> sp.	Hawkbit	0	0	0	5	0	1	G
<i>Senecio</i> cf. <i>aquaticus</i> Hill	Marsh Ragwort	0	0	0	1	0	0	marshes, wet meadows
<i>Sonchus arvensis</i> L.	Field Milk- Thistle	0	0	0	2	0	0	B, brackish marshes
<i>Sonchus asper</i> (L.) Hill	Spiny Milk- Thistle	0	1	0	76	2	15	Da
<i>Tripleurospermum maritimum</i> (L.) Koch	Sea Mayweed	0	0	0	1	0	0	maritime
ALISMATACEAE								
<i>Alisma</i> spp.	Water Plantain	0	0	1	1	31	25	A, B, shallow water
JUNCAGINACEAE								
<i>Triglochin maritima</i> L.	Sea Arrow-grass	7	2	15	0	0	3	maritime
<i>Triglochin</i> sp.		0	0	0	37	0	0	
JUNCACEAE								
<i>Juncus</i> spp.	Rush	E6760	138	86	13	342	E2192	M
LEMNACEAE								
<i>Lemna</i> spp.	Duckweed	1	400	291	10	21	2	A

Botanical name	Common name	Context/sample no.						Habitat
		1518/ 04 (Sample size)	1493/ 11 1000g	1493/ 13 250g	1511/ 14 1000g	1492/ 17 250g	1496/ 12 250g	
CYPERACEAE								
<i>Carex</i> spp.	Sedge	1	2	5	8	1	0	M, damp places
<i>Eleocharis palustris/uniglumis</i> L.	Common Spike	1	0	1	11	1	1	A, shallow water, M, wet G (open veg.)
	Rush							
Cyperaceae indet		0	0	0	0	0	5	
GRAMINEAE								
Gramineae gen. et sp. indet.	Grass	20	14	18	80	175	34	G
Indet.		4	4	1	0	0	4	
TOTAL		6845	606	532	1604	3732	2854	

Dating

No pottery came from fills contained within these features, with the exception of a single Roman greyware base from 1517 (not published). Samples of wood from 1499 and of wood and bone from 1493 were submitted for radiocarbon dating. The results are shown in TABLE 3.

TABLE 3: RADIOCARBON DATING OF THE MAIN SEDIMENTARY DEPOSITS

Context	Material	Lab. no.	Uncalibrated (years BP)	Calibrated	Calibrated
				1 sigma confidence level	2 sigma confidence level
1493	Bone	CAR-1082	1970 ±60	36 cal. B.C.—282 cal. B.C. 258 cal. B.C.—156 cal. B.C. 140 cal. B.C.—120 cal. B.C.	382 cal. B.C.—50 cal. B.C.
1493	Wood	CAR-1083	2180 ±70	32 cal. B.C.—16 cal. B.C. 8 cal. B.C.—86 cal. A.D. 98 cal. A.D.—118 cal. A.D.	100 cal. B.C.—148 cal. A.D. 160 cal. A.D.—212 cal. A.D.
1499	Wood	CAR-1984	2050 ±60	156 cal. B.C.—142 cal. B.C. 118 cal. B.C.—20 cal. A.D. 48 cal. A.D.—50 cal. A.D.	192 cal. B.C.—76 cal. A.D.

Analysis of probability distribution by Seattle/Groningen Method

Phase 2

Description (FIGS 5, 6, 7)

This phase is characterised by a series of grey and blue-grey deposits (1485, 1486) occurring mainly underneath the main north-south road and to its west where they formed a complex sequence, intercut by gullies (1500, 1514/1545) and wooden stakes (1495, 1534, 1536, 1537) and containing lenses of decayed vegetation (1492, 1535, 1543). Not all extended as far as the drawn section. To the east of the road at least one and possibly two such deposits were noted in Cutting BB, after which Buildings 10 and 11 were erected (SG100-SG103, see below) and no further sediments were deposited.

SG4 (FIG. 5) The layer overlying the blue-grey clay throughout the greater part of Cutting CB, and filling the upper part of two of the gullies discussed above, was a silty clay, varying from light to medium grey-green to purplish in colour (1485). It contained some Roman material, and a number of lenses of jumbled wood and vegetable matter similar to 1499 in SG1 (1487\$, 1488\$, 1492, 1494\$, 1496\$, 1535) were either contained within 1485 or lay on its upper surface. At the interface of 1485 and the layer above was a dump of dark brown clayey sand containing lumps of coarse grit (1539) 0.61m wide and 0.28m deep.

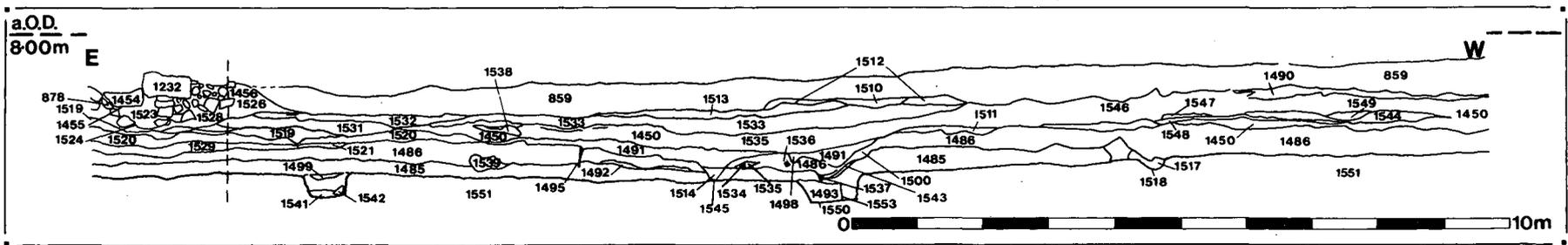


FIG. 5. Section of Cutting CB.

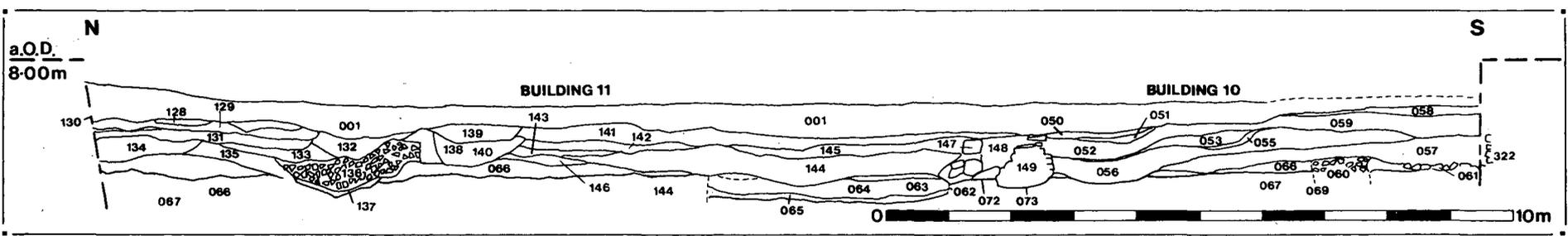


FIG. 6. Section of Cutting BB.

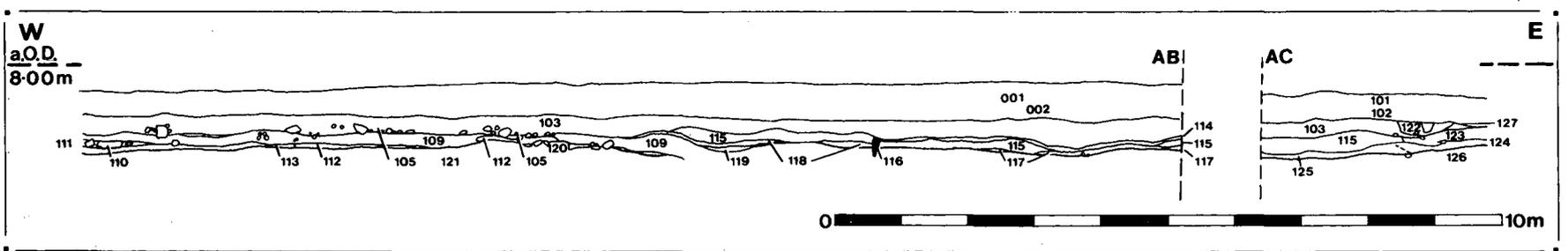


FIG. 7. Section of Cutting AB/AC.

1486 extended throughout the cutting. It was composed of clay containing patches of brown and grey, becoming gradually greyer in colour towards the west where it directly overlies 1551 and the fill of ditch 1517/1518. To the east, the layer was not only a deeper brown in colour, but also contained much more evidence for probable human activity in the form of flecks of charcoal. This seemed to be most concentrated towards the eastern end of the section in the area which was later overlain by 1520 and 1529. The layer of blue-grey clay (1105) overlying pit 1108 in Cutting CC was probably a continuation of 1486.

Six stakes (1495, 1515, 1516, 1534, 1536, 1537) were excavated in Cutting CB. They had probably been driven through 1486, possibly during its formation, into 1485. The stakes were between 30mm and 120mm in diameter. Stakes 1495, 1515 and 1516 formed a line running directly across the cutting. The spacing of 0.3m between these stakes suggests that they may have been intended as uprights for a fence. Stake 1495 had a sharpened and charred point. It is possible that the other stakes may have formed another line approximately at right-angles to 1552.

In the upper surface of 1486 were two gullies situated towards the centre of the section. The best defined (1545) had a V-shaped profile, and had been cut through 1486 into the underlying layer 1485. Gully 1500 was a double channelled cut with a W-shaped profile. The initial fill of 1545 (1514) was overlain by the deposits of SG8 (see below): 1500 was entirely filled with SG8 deposits. The uppermost deposit of the 'grey/brown series' was 1529 at the west end of the section, underlying the main north-south road.

Two further deposits (1451, 1481) belonging to the upper part of this series were noted under Building 12.

Plant macrofossils were noted in 1492, and a sample was taken for examination.

SG5 (FIG. 7) Cutting AB/AC to the east was also excavated down to just below the surface of a clean blue-grey clay layer (121), from which no artefacts were recovered. It was assumed at the time that this was the substratum, but it could have corresponded to 1485.

SG6 (Not illustrated) In the main section through the road (Cutting BC), the deposit overlying the blue-grey probably estuarine clay was a deposit of grey-brown clay (477). This was separated by a very thin layer of waterlogged vegetation (476), incorporating a stake (478), from a grey-green clay silt layer above (474). Layer 474 incorporated a large piece of timber (475) but, unlike the stakes and planks encountered elsewhere in the waterlogged levels, it did not appear to form part of any *in situ* structure.

A deposit of grey-green silty clay (1301) which was noted below the Phase 4 drain of the main north-south road (see below, p.40) may also belong to this sequence.

SG7 (FIG. 6) In Cutting BB east of the main north-south road to the east and west of the negative feature 062, the blue-grey clay substratum was overlain by a layer of light grey sticky clay with black flecks (066). This was of variable thickness and was absent in places, including over the ditch 062, but there was no evidence that it had been deposited before the ditch was cut. A layer of light brown sticky clay with flecks of charcoal (135) overlying 066 at the northern end of the section (and apparently cut by one of the footings of Building 11) may also belong to this sequence, but this is not certain.

Further north, in the unfinished section through the road (Cutting AD: not illustrated), the deposit above the undisturbed blue-grey clay (175) was another blue-grey layer containing flecks of charcoal (173). This was probably a continuation of 066. The two layers were separated by lenses of waterlogged vegetation (174).

The general appearance of the central part of Cutting CB suggests that there may have been a palaeochannel with its east side somewhere east of 1495 and its west side just west of 1550.

Although Cutting AB/AC was not excavated to the same depth, the sudden dip in the surface of the blue-grey clay (121) suggests that there was a hollow at this point at the northern end of the site too: it is not possible to say, however, whether these two marshy areas were connected.

The plant macrofossil evidence from 1492 and 1496 By Julie Jones

Samples were examined from 1492 and 1496. They were processed by the method described in Appendix 3, and the results are presented in TABLE 2.

The species recovered again suggest a damp environment. The large percentage of Celery-leaved Crowfoot, a species characteristic of nutrient-rich mud at river margins, suggests muddy areas of shallow pools. Other species such as Water Plantain (*Alisma* sp.), Water Pepper

(*Polygonum hydropiper*) and large numbers of rushes suggest a marsh-type environment, where the water level would have been near the surface in the summer, but flooded in the winter. The presence of Water-lily (*Nuphar* sp.) is more suggestive of quiet, still water areas. Low numbers of Sea Arrow-grass (*Triglochin maritima*) are again present; this is generally found close to the sea, often on saline marshes, and it seems likely that these seeds would have been washed in at very high tides.

These deposits include increased numbers of those species which prefer drier conditions. These include members of weed communities of better-drained, often nitrogen-rich, soils such as Stinging Nettle (*Urtica dioica*), Fat Hen (*Chenopodium album*), Redshank (*Polygonum persicaria*) and Pale Persicaria (*Polygonum lapathifolium/nodosum*). Many of these species are typical of disturbed environments. Spiny Milk-thistle (*Sonchus asper*), for example, is a weed of fields, cultivated land and wasteland, while Chickweed (*Stellaria media*) requires continual or periodic soil disturbance and enrichment, such as in arable habitats, and today is also an important component of ruderal habitats such as waste places, farmyards and rubbish tips (Sobey 1981).

These samples suggest an environment around a freshwater river with flowing water supporting aquatic and bankside species, although with some quiet, still water areas. It is suggested that it was prone to temporary flooding probably in winter, but not within the normal tidal reach, although it is possible that occasional high tides may have washed in some species more typical of saline conditions. Drier areas further away from the river may have been liable to periodic disturbance by humans and domestic animals, such as meadows used for grazing, and would also have been prone to flooding.

Dating

There was very little pottery from this phase. The samian (cat. nos 1–15) and coarse pottery (cat. nos 1–8) assemblages from SG4 suggest a deposition date in the mid to late 2nd century.

Phase 3

Description (FIGS 5, 7)

In Cutting CB, the division between Phases 2 and 3 was marked by the construction of the main north–south road (SG19, see below). It was probably at this stage that Buildings 10 and 11 were erected on its eastern side: the stratigraphy above the Phase 2 deposits appears to be entirely related to the construction and use of masonry buildings and is therefore not described here (see SG100–SG103). West of the road, however, the area still seems to have remained as a marshy hollow, in which the gullies of the previous phase continued to silt up (1489\$, 1491, 1498). The Phase 3 deposits contained a higher proportion of sand and were generally reddish in colour. They were most extensively studied in Cutting CB, where they were characterised not only by pink, yellow, orange and red-brown colours, but also by a generally laminar structure in which sands tended to dominate. For much of the section the predominant Phase 3 formation was 1242\$, within which a number of layers formed distinct lenses (1450, 1544, 1549, 1547, 1548, 1546, 1511, 1533, 1538). It petered out, however, as it approached the main north–south road, and the layers which replaced it contained a much higher proportion of stone (1531, 1532). This whole series of deposits eventually filled the hollow of the postulated palaeochannel, but were themselves eroded at their eastern side (1450, 1533) at the interface with the main north–south road deposits SG23 (see below). Plant macrofossils were noted in 1511, which was sampled for further study.

The Phase 3 deposits further north in Cutting AB/AC were of much simpler formation, lacking the laminar structure and the multiplicity of lenses noted in Cutting CB.

SG8 (FIG. 5) 1242 was dominated by a red clay-sand deposit (1450) extending over almost two-thirds of the length of the section (17m) and varying in thickness, to a maximum depth of 1.02m. It contained thin layers of charcoal and fine bands of clay. Other sedimentary deposits within this sequence were (from west to east): 1544, 1549, 1547, 1548, 1546, 1511, 1533, 1538. These sediments ranged in colour from orange (1547) to predominantly red, although 1546 was

grey/dark brown. The particle size ranged from coarse to very fine, and some deposits exhibited graded bedding. The section clearly indicated that 1538, 1544, 1547, 1548 and 1549 were lenses within 1450: if examination could have been carried out over a wider area, it is quite likely that others of the layers listed above would have proved to be the same.

A number of layers were visible immediately above the top of the 'grey-brown' deposits and the bottom of 1242. The most extensive of these was a red-brown/purple layer 1489, 1491, 1498 which extended for a distance of approximately 6m over the centre of the section to a maximum depth of 0.42m, filling the SG4 gullies 1500 and 1545 and covering the remains of stake 1495. The laminar structure of this layer was well marked, with the coarse sand which predominated being interleaved with silts and clays. Where it filled 1500 its composition was more patchy than laminar, and a yellow-brown coloration was noted alternating with the red and pink. Layer 1521 had formed in a hollow at the western end of 1529 above ditch 1542, although this was probably coincidence since there was nothing in the section to suggest that the levels between had slumped into the underlying feature. It consisted of water-sorted coarse sands, yellow, brown and pink in colour, and was 0.08m deep and 0.84m across at its widest.

Two deposits overlay 1450. One of these was connected with activity at the side of the main north-south road and is therefore described below (SG9). The other (1533) graded from coarse particles of yellow-brown at the bottom to fine particles of pinkish-brown at the top and also contained pebbles and cobble.

- SG9 (FIG. 5) Two deposits consisting of a mixture of clay and sand interdigitated with the SG8 deposits at their eastern end. The lower one, 1531 was a yellow-brown sediment in which the clay predominated, and it did not appear to have been water-sorted. It overlay the three lowest layers of make-up for the road (1520, 1519, 1528 see below), but its western tail was overlain by 1450. The eastern side of 1450, together with the eastern side of 1533 which overlay it, had apparently been eroded, and the resulting depression was overlain by a red-brown layer (1532) in which the sand predominated. This deposit showed evidence for particle grading only towards the bottom. A similar layer (192) was noted on the east side of the road in the unfinished Cutting AD (not illustrated).

The sequence of deposits in the northern section (AB/AC) was much less complex, and although the most extensive deposit (109/126) resembled 1242 in Cutting CB, no lenses of different sediments were noted.

- SG10 (FIG. 7) The surface of the grey clay of SG5 dipped away from its level at the west side of the section to form a hollow. At the point at which this dip occurred was a deposit of rubble blocks (120), of unknown function. Partly overlying this and partly to its east was a deposit of grey/reddish grey sandy clay containing charcoal (113) and iron panning (112). Overlying 112 at the western end of the cutting was another localised area of rubble blocks in grey sandy clay (110, 111). These were laid in a single layer, possibly to form a surface. Layers 110, 111 and 120 were covered by a sandy clay/silt deposit whose colour varied from shades of red through orange to pink and pinkish grey, and which contained some cobbles. No lenses of different sediments were observed, but patches of coarse sand were noted. This layer (109, 126) extended across the whole of the section.

Over the dip to the east of 120 there were no stone features, but there was a more complex sequence of deposits. A stake (116) driven into 109 some 4m west of 120 divided the stratigraphy into two parts. There were three deposits to the west. A hollow in the top of 109 was filled with grey sandy clay (118) over a thin layer of charcoal (119): 118 reappeared outside the hollow where it abutted stake 116. The uppermost layer, of red sandy clay (115), continued around the stake (or the stake was driven into it: the relationship was not entirely clear). To the east of the stake, 115 overlay a patchy deposit of charcoal (117), and was in turn overlain by another thicker layer of charcoal (114). This continued as far as the east end of the western part of the section (AB) but did not reappear in the central part (AC) on the other side of the baulk.

In Cutting AC it could be seen that both 115 and the grey silty clay deposit (125), which underlay it and which seems to correspond to 118 further west, had been truncated. Apparently overlying the tail of the truncated 125 was a deposit of mottled pink and grey sandy silt (124), though the exact relationship was difficult to determine. The deposition of 124 had apparently been completed before 115 was deposited, and whatever process truncated the latter may have been responsible for a hollow which formed in the top of 124. A similar layer to 124 overlay it and the tail of 115 (123).

The plant macrofossil evidence from 1511 By Julie Jones

An initial 250g sample was examined from 1511, but since only low numbers of plant macrofossils were recovered a second sample of 750g was also examined. They were processed as described in Appendix 3, and the results are presented in TABLE 2.

Large numbers of Celery-leaved Crowfoot (*Ranunculus sceleratus*) are again present in this sample. It is characteristic of nutrient-rich mud at the margins of rivers where there is no disturbance, and is often associated with Tripartite Bur-Marigold (*Bidens tripartitus*) and Red Goosefoot (*Chenopodium rubrum*), both present here, as part of a nitrophilous weed community subject to periodic inundation. Other margin edge species include Lesser Spearwort (*Ranunculus flammula*), Gipsywort (*Lycopus europaeus*) and Fine-leaved Water Dropwort (*Oenanthe aquatica*), a shallow freshwater species which likes to have its basal leaves submerged. These species again suggest a marsh-type environment, where the water level is near the surface in the summer, but flooded in the winter. Spike-rush (*Eleocharis palustris/uniglumis*), also present, requires water at or above soil level for rhizome growth in spring but can tolerate drier conditions during the rest of the year. Wild Celery (*Apium graveolens*), also a species of damp habitats, can be found on fertile, but often brackish, soils such as saline meadows inland, and occurs today on the banks of tidal rivers and salt marshes in the area (Wade 1970, 122). Sea Mayweed (*Tripleurospermum maritimum*) is also found on saline marshes generally close to the sea. It seems likely that the macrofossil remains from these plants would have been washed in at times on high tides.

Other species suggest a drier environment further away from the river margins. A weed flora of disturbed ground is indicated by high numbers of Stinging Nettle (*Urtica dioica*), Chickweed (*Stellaria media*) and Spiny Milk-thistle (*Sonchus asper*). Marsh Yellow Cress (*Rorippa islandica*) grows in moist places, especially where water is present in winter only, so it is possible that there was some drying out of the area in summer allowing these ruderals to survive.

This sample is similar to 1492 and 1496, indicating a freshwater environment but with areas nearby supporting a weed community more typical of better-drained and drier soils. This environment is likely to have been affected at times by flooding from the river, bringing in the remains of plants from downstream typical of more brackish conditions.

Dating

Study of the samian (cat. nos 16–33) and coarse pottery (cat. nos 9–49) from SG8 in Cutting CB indicated that the date of the material to be found in the upper red sandy deposits did not differ greatly from that in the lower grey and more clayey deposits, and that they do not therefore seem to be significantly later in date. The coin of Commodus (cat. no. 89) provides a *terminus post quem* of A.D. 181. The pottery from SG10 (samian cat. nos 34–48, coarse pottery cat. nos 50–1) are in line with these results. These deposits therefore would seem to date to the 2nd century, closing in the mid/late or late 2nd century.

DISCUSSION PHASES 1–3

Phase 1

The radiocarbon dates obtained from material in the Phase 1 gullies (SG1) tend to suggest that the activity which they represent took place in the pre-Roman Iron Age, as does the absence of Roman pottery from all but gully 1517/1518 (a single sherd), given that it is otherwise ubiquitous over the site. Supporting a later date is the sherd from 1517/1518. The other anomalous feature of this part of the section is the hiatus in the dates of deposition between the fills of gullies 1542 and 1550 and the 2nd century date of the Phase 2 deposits directly above (see below, pottery report p.206). These anomalies can perhaps be resolved if it is assumed that the following sequence of events took place. The area sectioned by Cutting CB had been on the fringes of a meander of the Afon Lwyd when 1542 and 1550 were originally cut and filled in the 1st century B.C., and were possibly then overlain with other sediments, represented in cuttings other than CB. Subsequently the course of the river shifted to flow over the area of the cutting and truncated the earlier deposits. An alternative hypothesis is that the artefacts which

found their way into the deposits are not in their true stratigraphic position. Whilst there is a certain amount of mobility in waterlogged deposits, observations made on other such sites suggest that there is not enough to account for wholesale displacement of material, although there may be some contamination caused by artefacts dropping down deep cracks created by seasonal drying (N. Nayling, pers. comm.).

Phase 2

During the 2nd century A.D., the course of the river altered. Although still in the form of a channel, the previous meander was now no longer a part of the river bed and held water only during flood conditions; when 1492 and 1496 were laid down, salt water was only occasionally finding its way into the area. Gully 1517/18 would have been dug early during this period, before any of the sediments had been laid down. The palaeochannel gradually filled with sediments as the result of natural silting processes, trapping items of rubbish which were tipped in the vicinity.

There are two possible reasons for the change in the course of the river: it was either the result of natural river movement or deliberately straightened, possibly by military engineers attached to the Second Augustan Legion. The deposits in Cutting DA (see below, SG174–SG175), which showed a very similar sequence of deposits, but dating to the 4th century, suggest that natural movement may have been responsible, with the course of the river moving towards the fortress. It is clear from the deposits to the south of the Riding School Field that any earlier river channel must have swung eastwards before it reached the *via principalis* continuation which ran from the East Gate of the fortress; a possible course lies at the point where the deposits noted in SG191 were observed (see below).

Phase 3

Deposition of river sediments ceased with the construction, probably in the 3rd century, of the main north–south road which must have acted as a flood barrier. The area to the west of the road was still low-lying and prone to flooding, but the water was coming from some other source. Although flooding was still mainly seasonal, at one stage the area of Cutting CB was crossed by a north–south or south–north stream of water which flowed in a hollow formed in the top of the Phase 2 deposits and deposited 1450; this episode lasted long enough for suitable vegetation to establish itself. It is something of a puzzle where this stream came from. One possibility is that it came from a rise in ground water. In the current hydrological regime, springs occur readily in this area when the water table is high, a phenomenon which may account for this running water. Another possible source might be either deliberate or accidental discharge from the fortress drainage system. Work at Carlton Terrace outside the *porta praetoria* revealed the presence of two successive drains, of much larger cross-section than the normal road-side culverts, which ran along the western side of the continuation of the *via praetoria* (Zienkiewicz 1984, 24). Zienkiewicz suggests that these two drains were a continuation of the main drain which ran under the centre of this road within the fortress. The amount of levelling which took place across the continuation of the *via principalis sinistra* (see below p.35) was not sufficient to reveal a similar drain if one had existed, although this seems likely.

The area eventually became dry enough to permit the erection of Buildings 12–14 (see below pp.103–38) in the late 3rd century.

ROADS AND PROPERTY BOUNDARIES

THE PRINCIPAL ROADS

The site was crossed by at least two main roads, and possibly three. One was the continuation of the *via principalis sinistra*, running eastwards from the east gate of the fortress towards the Afon Lwyd. This road is referred to here as the *via principalis* continuation. The other road(s) ran north–south, roughly parallel to the fortress defences, and is referred to as the main

north-south road. Parts of a road on this line were examined in the Riding School Field and the Smallholding (East) to the north of the *via principalis* continuation, and another part was examined on the Cambria House site. However, since little of the junction was available for examination, and that part had been badly damaged by a later disturbance, it was not possible to determine whether these represented a single road or two roads with a slightly staggered junction with the *via principalis* continuation.

In the following account, the fills of the associated drains are regarded as forming a secondary development of the phase in which the ditches were in use, although it is possible that the ditches were filled as the first step in the construction of the surface and drains of the following phase. The exception to this is the final phases, when the filling of the drain must represent a stage at which the road ceased to be maintained.

THE CONTINUATION OF THE *VIA PRINCIPALIS* (3016/3506) (FIGS 4, 8; PL. XXV)

At the point at which the *via principalis* left the *porta principalis sinistra*, a marked ridge runs towards the river from the plateau upon which the fortress was built. It ends at the eastern boundary of the area under investigation with an abrupt drop to the alluvial flats of the Afon Lwyd. Until the ground-clearance works undertaken as the first stage of the 'Centurion Gate' development, this ridge was followed by a modern field boundary which ran from Mill Street as far as the drop to the flats; at the time of writing both the ridge and the boundary are still visible in the western part of the Smallholding still in the ownership of Gwent Health Authority.

A small area of the northern side of the road fell within the area of excavation in the Smallholding (West) (3016\$). Given the limited time available for excavation on this site, it proved possible to investigate only the latest drain: two road surfaces were observed and described but not excavated. During the groundworks on the Smallholding (East), the topsoil stripping exposed an extensive area of the latest surface; grading operations created a section through the latest levels of the road; and the digging of a sewer trench provided the opportunity to check the thickness of the road deposits already established at approximately 3m by a geotechnical pit (JB). However, because of the conditions in which both the trench and the pit were dug, it was not possible to examine the section in detail.

A full account of the stratigraphy cannot be given for this road. A note is given on the initial rafting, followed by a fuller account of the two last phases. In the penultimate phase, the carriageway had a carefully-laid and compacted surface with a slight camber to the north, flanked on the south side at least by a ditch. No ditch was noted on the north side. Following a resurfacing which levelled out the camber, the road was remade in the final phase, again with a slight camber to the north. At this stage it was 9m wide between kerbs formed from massive blocks of sandstone. There was a shallow drain lined by similar blocks to the north, but in this phase no drain was noted to the south.

Description

Initial phase

The road was constructed on a raft of brushwood (3561\$), which was noted in both cuttings.

SG11 (Not illustrated) The brushwood raft (3561) lay in pink sandy silt. Over it was the bottom layer of road make-up, set in grey clay (3585).

It was not possible to determine how the road construction proceeded after the laying of this initial layer. However, a band of charcoal (3584\$) was noted, apparently running all the way across the road about half-way up the sequence.

Penultimate phase of road modification (FIG. 8)

This phase was characterised by a carefully-laid surface of graded cobbles and pebbles (3570) with a slight slope to the north. An unlined roadside ditch (3542) was noted on its northern side.

The road was repaired twice (3568, 3569), but neither repair involved more than the construction of a new surface (both of a quality equal to the initial one): no making-up was required. A possible post-hole was dug into the roadside ditch after the ditch had been filled in.

- SG12 (FIG. 8) The cobbled surface (3570) formed the northern side of the contemporary drain or roadside ditch (3542). Its southern side was formed by a band of cobbles (3541, 3564).
- SG13 (FIG. 8) The two new road surfaces (3568, 3569) were of uniform thickness. In the drain a single layer of fill was identified (3536), consisting of silt and sand with rubble. Within this was a feature which looked like the packing of a post-pit with four fragments of sandstone slab placed upright to form a hollow square, but no pit was visible, and the soil around and within the stones was identical with the ditch fill (3565\$, 3566\$, 3582\$). At the south side was a band of rubble (3535\$) which pre-dated the final phase, but whose relationship to 3536 was unclear.
- SG14 (Not illustrated) Two patches of finely laid cobbling pre-dating the modifications of the next phase were noted, one (3528) some 16m east of the section and the other visible (3023) at the bottom of the later northern drain in the Smallholding (West). These may be equivalent either to 3570 or, more probably, to 3568 or 3569.

Final phase of road modification (FIGS 8, 32)

This phase involved a complete remaking of the road, the most striking feature being the new kerbs (3007, 3503\$) which were made out of massive blocks of sandstone and conglomerate. Similar blocks also formed the northern lining of the drain on the north side of the road; but it was not possible to establish whether there had been a southern drain. The average width of the road was 10.0m (over the kerbs but not the drains). Neither the kerbs nor the surface survived at the section (FIG. 8), but work of this phase is represented by the make-up (3537).

- SG15 (FIG. 8) Rubble and cobbles (3537) were laid down to make up the level for the final surface. This make-up was seen in section at the southern side of the road, but any corresponding layer of make-up/new surface at the northern side of the road appears to have been removed by the later disturbance which had destroyed the northern edge of the road at this point. A similar deposit was encountered some 16m to the east at its northern side (3527\$), against the kerb. However, signs of wear were seen on the surface of this deposit, and it may represent a metalling even though it underlay the main identified road surface of this phase.

As revealed in the topsoil strip in the Smallholding (East), the road had a surface of cobbles set in yellow sand and gravel, possibly derived from crushed pebbles (3526\$). There was again a slope from south to north. The carriageway was edged by kerbs (3503\$, 3517\$) formed of massive sandstone and conglomerate blocks, usually 0.4m wide and 0.5–0.6m long. It was not always possible to trace these kerbs, as both had been robbed in places and there was a considerable depth of overburden over some parts of the southern kerb.

- SG16 (FIG. 32) A continuation of the northern kerb (3503) was seen in the Smallholding (West). Running roughly parallel with this structure, at a distance that varied between 0.3 and 0.5m, was another row of similar blocks (3007), which defined the northern edge of a drain (3017), whose maximum depth was 0.15m.
- SG17 (Not illustrated) A subsequent resurfacing (3019) was noted in the Smallholding (West).

Road abandonment (FIGS 8, 32)

This was marked by the filling of the drain (3024, 3079\$). No signs of any encroachment over the carriageway was noted.

- SG18 (PL. XXV) The drain contained a single fill (3024/3079\$), although lenses of slightly different composition (3051\$, 3074\$) were noted.

A bank of stones (3543) piled against the southern side of the road and under the topsoil (3500) seems to post-date the use of the road and may be relatively recent, possibly field clearance.

Dating

The salvage excavations produced no datable groups of material, so it was not possible to assign dates to any phase except the last one which is dated by the pottery in the drain fill. Study of

the coarse pottery from this final phase indicates that the fill of the drain contained pieces which are likely to be early 4th century in date, but that the collection as a whole (cat. nos 412–37) is unlikely to extend much beyond that.

Discussion, all observed phases

The depth of road deposits noted on the line of this road contrasts markedly with those on the line of the main north–south road which were only half the depth (see FIG. 9). Observations made during the digging of the sewer trench (SG195, see below p.167) suggest that the level of the road and adjacent buildings, otherwise unknown, rose together; but otherwise there is insufficient information to assess any of the road's development until near the end of its use. The existence of a cobbled surface at the base of the final-period drain suggests that the precise boundaries of the road may have shifted to some extent.

The use of massive blocks used as kerbs in the final period suggests that this refurbishment may have been carried out as part of the operation that provided similar blocks along the main north–south road (SG29 and SG31, see below pp.41–3). Such blocks were also used to line the northern drain. A corresponding drain on the opposite side of the road could not be identified. Since the surface was higher on the south side than the north, it could be that the road was designed to shed surface water in a single direction. However, since only limited examination could be made of the southern edge of the road, this is by no means certain.

THE MAIN NORTH–SOUTH ROAD

To the north of the continuation of the *via principalis* (FIGS 3, 4, 5, 9, 10, 26, 29, 30; PLS IV–VI)

The stratigraphy of the main north–south road was studied in greatest detail on the Riding School Field, where a series of sections were dug across it. The clearest results were produced by Cutting BC although (because of the high water-table when the initial work was being done) this section had to be dug in spits making interpretation of the upper and more complex part of the stratigraphy all but impossible. Therefore FIG. 9 also shows the re-excavated upper section (dug stratigraphically) as well as the initial cut through the full thickness of the road. The recording of Cutting AD could not be completed for safety reasons, and therefore only limited information is available from it.¹ Cutting CB related the construction of the road to the series of sedimentary deposits discussed (p.31).

The exact position of the road varied from period to period, and it was not always possible to define the edges with any certainty.

Phase 1

Description (FIGS 5, 9)

The construction of the main north–south road post-dated the deposition of the grey/grey-brown series of deposits (SG1) in Cutting CB (see above, p.24). At the time it was constructed, the overlying series of sandier reddish deposits (SG8) had started to form, since one of the lowest of these (1521) underlay the lowest deposit connected with the road. The road itself consisted, in its first phase, of a cobbled surface (470, 1477) over a bottoming variously of cobbles or rubble (471, 472, 1478, 1520). It had been patched (1528). The deposits between the surfaces of Phases 1 and 2 (see below) suggest that destruction deposits may have been spread over the road.

SG19 (FIG. 5) The lowest deposit at the western side of the road in Cutting CB was a 0.35m thick band of cobbles set in blue-grey silty clay with patches of charcoal (1520). Above this was a 0.25m thickness of more cobbles, pebbles and rubble, including brick/tile, set in a matrix of brown clay

¹ Finds from the road were allocated two context numbers, 190\$ (upper levels) and 191\$ (lower levels), but are regarded as being unstratified.

- (1475\$, 1519). A depression in the upper surface of 1519 was overlain by a red-brown sandy deposit containing cobbles and rubble fragments (1528). This may be no more than localised patching.
- SG20 (FIG. 9) The lowest deposits in the main section (Cutting BC) consisted of an initial bottoming of sandstone blocks 472, 1478, covered by a layer composed of pebbles and cobbles with only a few larger stones (471). These two together formed the make-up for the lowest road surface (470), which was a compact layer of metalling. It is not certain exactly how this three-layer construction related to the simpler arrangement further east.
- SG21 (Not illustrated) In the incomplete northern section (Cutting AD) the blue-grey pre-road layers were overlain by a layer or layers consisting of cobbles at the western side and rubble at the east (172), but it was not possible to determine whether this constituted a single deposit or two separate ones.

Dating

The construction of the road must post-date the deposition of SG4, dated to the mid to late 2nd century by the coarse pottery (cat. nos 1–8) and samian (cat. nos 1–15). One piece from context 174 which underlay the road deposits in the unfinished north section (Cutting AD) might suggest a somewhat later date, in the 3rd century, but the identification was not sufficiently certain for this piece to be catalogued (see below p.210).

Phase 2 (FIGS 5, 9)

Description

The second identifiable road surface (468) did not extend throughout Cutting BC, but seems to have been partly removed, probably through wear. It was laid over a deposit of loam (469), which may represent a period of disuse, although it incorporated material possibly derived from the destruction of buildings. It is unclear how this relates to the Phase 2 deposit (1526) in Cutting CB.

- SG22 (FIG. 9) The second road surface identifiable in the main road section (Cutting BC) had been laid over a deposit of loam patched in black, brown and pink and including patches of charcoal (469). It consisted of a layer of pink sandy clay and cobbles (468). It is possible that a lens of pink clay (473) which appeared further east may originally have been part of the same deposit.
- SG23 (FIG. 5) In Cutting CB, the deposits of SG9 (1531, 1532) overlay the eastern part of 1528 and 1519 (see above, p.32). They were covered by a deposit of cobbles, pebbles and brick/tile in yellow-brown sand and loam (1526).

Phase 3 (FIGS 5, 9; PL. IV)

Description

The next phase of the north–south road consisted of a cambered carriageway, probably with ditches on both sides. The surface (462) did not survive well, being represented by a patch of what appeared to be the original surface together with some patches (452, 460) derived from resurfacing. Elsewhere the Phase 3 carriageway was represented by the make-up (461). The western ditch (1524) could be much more clearly seen in Cutting CB than in Cutting BC, and like the ditch of the penultimate phase was bounded by cobbles on both sides. The eastern ditch (467) had no special treatment of its edges.

- SG24 (FIG. 9; PL. IV) A layer of cobbles (461, 463\$) formed the make-up for a 0.10m thickness of fine metalling composed of small pebbles and slag rammed tightly together forming a concreted surface (462). Only a limited area of 462 survived, towards the eastern side of the road. The eastern ditch that seems to have been in use in this phase was 467\$. A small patch of metalling similar to 462 occurred on its eastern lip but, as it had no make-up, it may have been a chunk displaced *en bloc* from the road. This ditch was 0.7m wide and 0.15m deep
- SG25 (FIG. 5) On the western side, the corresponding ditch appears to be 1524, which had been cut into 1526 (SG22). This ditch was bounded at its western side by a band of cobbles (1266\$, 1456,



PLATE IV. The main north–south road: Phase 3 camber, looking northeast.

- 1527\$), which seemed to have been inserted into the side of the cut. On the east, the edge of the drain was formed by another band of cobbles (878\$). Both were 0.60m wide and 0.50m deep.
- SG26 (Not illustrated) In Cutting AD a surface (162) was identified which was made from small compacted stones and had a marked camber. It seems likely that it corresponded to 462. If the cambered surface (162) identified in the northern section belonged to this phase, the crown of the road would appear to be at least 2m further east than that defined by 452 in the main section.
- SG27 (FIG. 9) Two areas of resurfacing were noted, 460 (eastern side) and 452 (western side). The surface 452 was particularly well preserved. It consisted of pebbles, fragments of brick/tile and slag rammed together to form a very compacted surface. Because of its position on the flank of the road, the camber was particularly well marked, rising from 6.90m OD at the west to a level area at 7.25m OD in the centre of the road, where the quality of the surface was best.
- SG28 (FIG. 5) The only fill which could definitely be associated with the western drain (1524) was a deposit of black/brown soil containing pebbles, cobbles and fragments of sandstone flagging (1523). This was examined in Cutting CB. This drain may have remained in use in Phase 4 (see below, SG39).

Phase 4 (FIGS 5, 9, 10, 26, 29, 30; PLS V and VI)

Much of the information about the construction comes (as previously) from the main section across the road in the Riding School Field and Cutting CB, but here the information produced by the sections could be linked by examination of the surface of the road and drain exposed between the two. In addition, stretches of the latest surface, kerbs and drains were revealed by the topsoil stripping on the Allotments/Smallholding (East) site. After the topsoil stripping, the road was clearly visible for a length of 5.5m southwards from the northern boundary of the field and less clearly thereafter for another 22m. South of this point there was too much overburden for it to be visible uninterruptedly, but the eastern drain was picked up again 46m south of the northern boundary, where it was sectioned.

Description

A layer of loam (450), not present everywhere, divided Phase 4 from Phase 3. Over this had been laid a band of rubble (491) to level out the camber before the surface was laid (004, 804, 855\$, 871\$, 913, 994, 1051, 3510\$). The most striking feature of this phase was the provision of a stone-lined drain. Where the lining survived, it consisted of large blocks of sandstone and conglomerate like those used in the final renovation of the *via principalis* continuation (SG15). In places, this

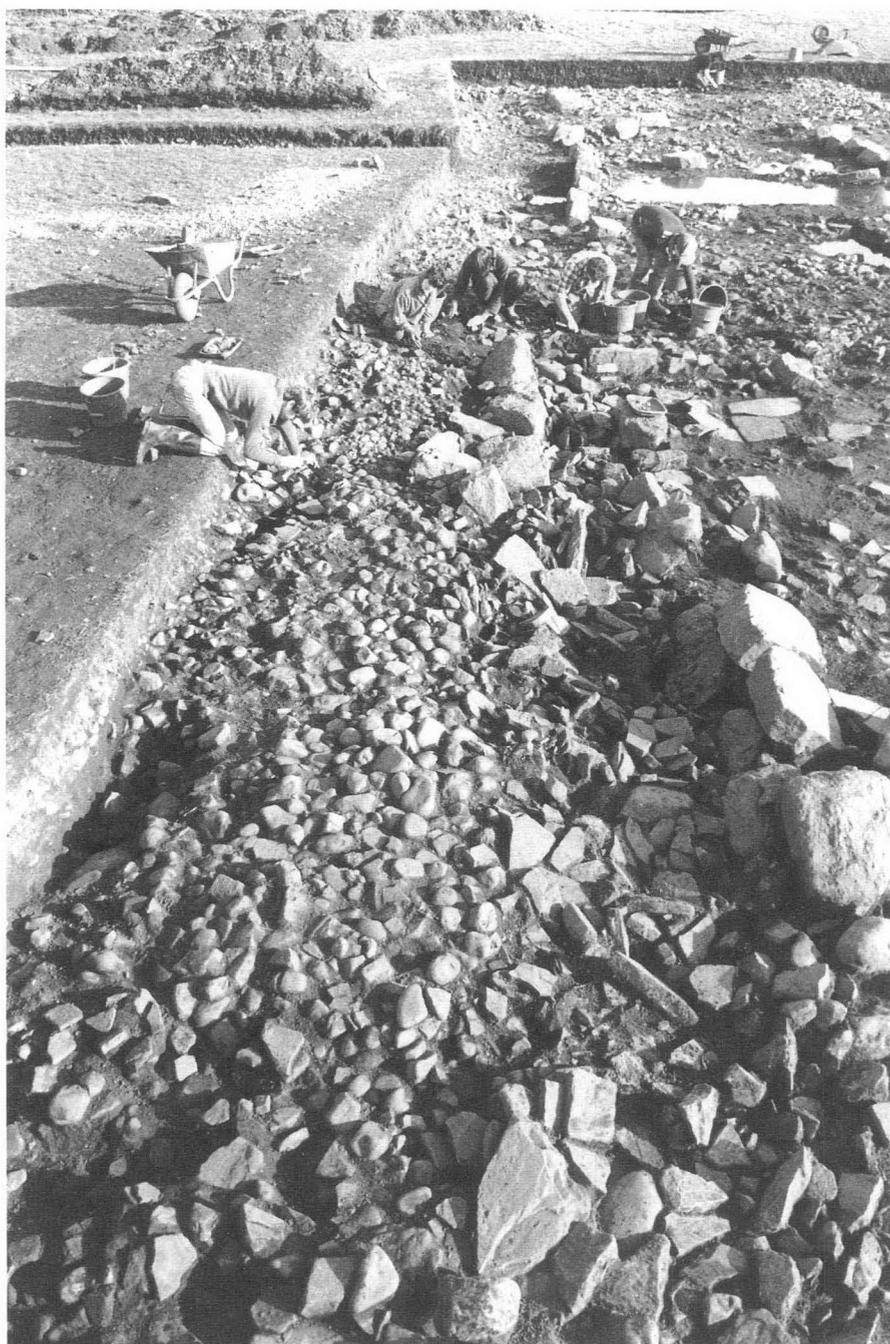


PLATE V. The main north–south road: final surface and stone-lined drain, filled with rubble.

row of blocks which formed the west side of the drain (006, 911) also served as the east walls of Buildings 12 and 13 (see below, SG112, SG126), but there had been considerable displacement and robbing both on this side and on the west (931). A small cobble-lined culvert (1256) running across the width of the road was also noted on the Riding School Field.

Examination of the main section in the Riding School Field suggests that the treatment of the road was different on its east and west sides. There is evidence for a stone-lined drain only on the western side; on the eastern side the Period 3 ditch (467) seems to have continued in use. The width at this phase was 9.5m, excluding the drains. On the Smallholding/Allotments site, the eastern drain was noted opposite Building 15, whose west wall also doubled as the eastern lining (SG147).

SG29 (FIGS 5 and 9) A layer of loam (450) was deposited over the cambered road surface 452, but it is not possible to tell whether this was part of the deliberate making-up for the final surface or whether it represents an episode of abandonment. Certainly a deliberate attempt seems to have



PLATE VI. The main north–south road: the culvert. Scale unit 0.1m.

been made to eliminate the camber before the stone-lined drain was built. Make-up consisting principally of a band of rubble (491), which contained a barbarous radiate imitating a type of Tetricus I (coin cat. no. 269), levelled the surface of the road. A lens of burnt clay and charcoal (451) was also present. A small patch of rammed slag (457\$) overlay this near the western side and may represent the remains of another surface. Otherwise the only surface belonging to this phase was the latest one to survive (004, 804, 855\$, 871\$, 913, 994, 1051), which consisted of small stones and cobbles, with some fragments of brick and tile, in a pink/orange brown silty sand. This abutted the lining of the drain constructed for this period (853, 931) on the western side, and the lining to the contemporary culvert (1256). No clear edge to the road surface could be seen at the eastern side of the road.

The new west drain (1455) was lined on either side by a row of massive sandstone and conglomerate blocks, which had been extensively robbed on both sides of the drain. The blocks on the eastern (road) side (853, 931, 1028) were inserted into a cut (456\$) made through the rubble (491). Where the blocks were smaller than the cut, the resultant void was backfilled (455\$). No cuts of this nature were seen on the western side of the drain (006, 911, 1029, 1232, 1236). A lower course of similar blocks was visible in part of the western edge (notably alongside Building 13) and appeared to overlie directly the sedimentary sequence 1242\$ (SG8). Where there was only one course of blocks, they appeared to be set over the bands of cobbles identified as the drain edge of the previous phase (see above, SG25). They were not, however, on exactly the same line: the western edge of the new drain 835 was slightly further east. Opposite Building 12, an additional load of cobbles (1230\$) had been deposited in the western side of the drain, abutting the stone edge (1236) and the earlier cobbled edge (1266\$) for a length of 2.1m, forming a sloping side to the drain.

Incorporated in the road surface opposite Building 12 was a culvert (1256). This consisted of two parallel lines of large cobbles forming either side of a channel 0.20m wide and 0.22m deep, running at an angle southeast/northwest across the carriageway. It was traced for a distance of 1.35m from the drain as far as the edge of the excavation, where it continued under the baulk.

SG30 (Not illustrated) Only one road surface (3510) was seen during the topsoil strip on the Allotments/Smallholding (East). This consisted of graded cobbles and pebbles rammed together with yellow-orange coarse sand to form a well-consolidated surface very similar to the uppermost surviving surface of the *via principalis* (see above, p.36). This surface ran right up to the kerb at the western side (3553), which survived for a distance of 5.5m: extensive robbing at both ends prevented it from being traced further. No kerb or drain could be seen on the eastern side of the road opposite to 3553, but there was a definite edge to the metalling, unlike in the Riding School Field. The total width of the road at this point from the western kerb to the surviving edge at the east between the drains was approximately 8m. The existence of this clearly marked edge suggests that there may originally have been a kerb (now robbed), and possibly also a stone-lined drain on the east side at this point. The appearance of the deposits to the west of the kerb on the west side of the road were consistent with their being drain fill, but no western drain edge was located: this is also assumed to have been robbed. The question of drains on the east side of the road is discussed more fully below (p.45).

The eastern drain (3546) was examined in more detail in two points further south.

SG31 (Not illustrated) Where the drain lay adjacent to Building 15 its west wall (3545) formed the eastern drain lining: the other lining (3547) was parallel and lay 0.57m to the west. The channel itself was not excavated at this point.

SG32 (Not illustrated) At a point approximately 46m from the northern boundary of the Allotments, the drain was sectioned. At this point its eastern side 3533 consisted of two courses of fairly small sandstone rubble blocks of the size used in Buildings 1–11, rather than the massive blocks employed further north. These blocks showed signs of fire damage, and probably functioned as both the side of the drain and the west wall of a building of coursed rubble (SG99, see below). Two phases of drain channel were visible in section, but in the earlier of the two (3573) the drain, which was of the standard depth of 0.4m, was unusually wide (1.05m) and there was no western lining other than cobbles (3575). It is therefore possible that an earlier phase or phases existed, during which the drain was lined and the lining was robbed, but as far as could be ascertained, this drain was a Phase 4 feature as there was no sign that a road surface had been laid over the initial fill.

SG33 (Not illustrated) This initial drain cut had two fills, the lower consisting of coarse pink sand (3532) and the upper mottled orange and grey sand and gravel (3530).

SG34 (Not illustrated) The recut used 3533 as its eastern edge, but this time the drain was only 0.8m wide at its widest point and 0.3m deep (3574).

Dating, Phases 2–4

The collection of coarse pottery from all these phases (cat. nos 85–90 contained material which should be late 3rd century or later; the final surface is given a *terminus post quem* (after A.D. 272) by the barbarous radiate, which was sufficiently far down in the make-up layer 491 to suggest that it was not intrusive. A late 3rd to early 4th century date is therefore suggested for them as a whole.

Discussion

Phases 1–2

It is not easy to correlate the deposits in the main cutting (BC) with those encountered in the western edge of the road in Cutting CB. Four deposits (including the Phase 1 patch 1528) are stratigraphically earlier than the earliest identifiable ditch in Phase 3, but two of them (1531, 1532) are not clearly associated with road construction and are therefore described above under the sedimentary sequence (SG9). From the nature of these deposits it seems likely that this edge of the road was prone to flooding.

Phases 3–4

The Phase 3 road is most notable for its steeply cambered carriageway. This, and the provision of proper drainage ditches, is unlikely to have been a response to the flooding of the previous

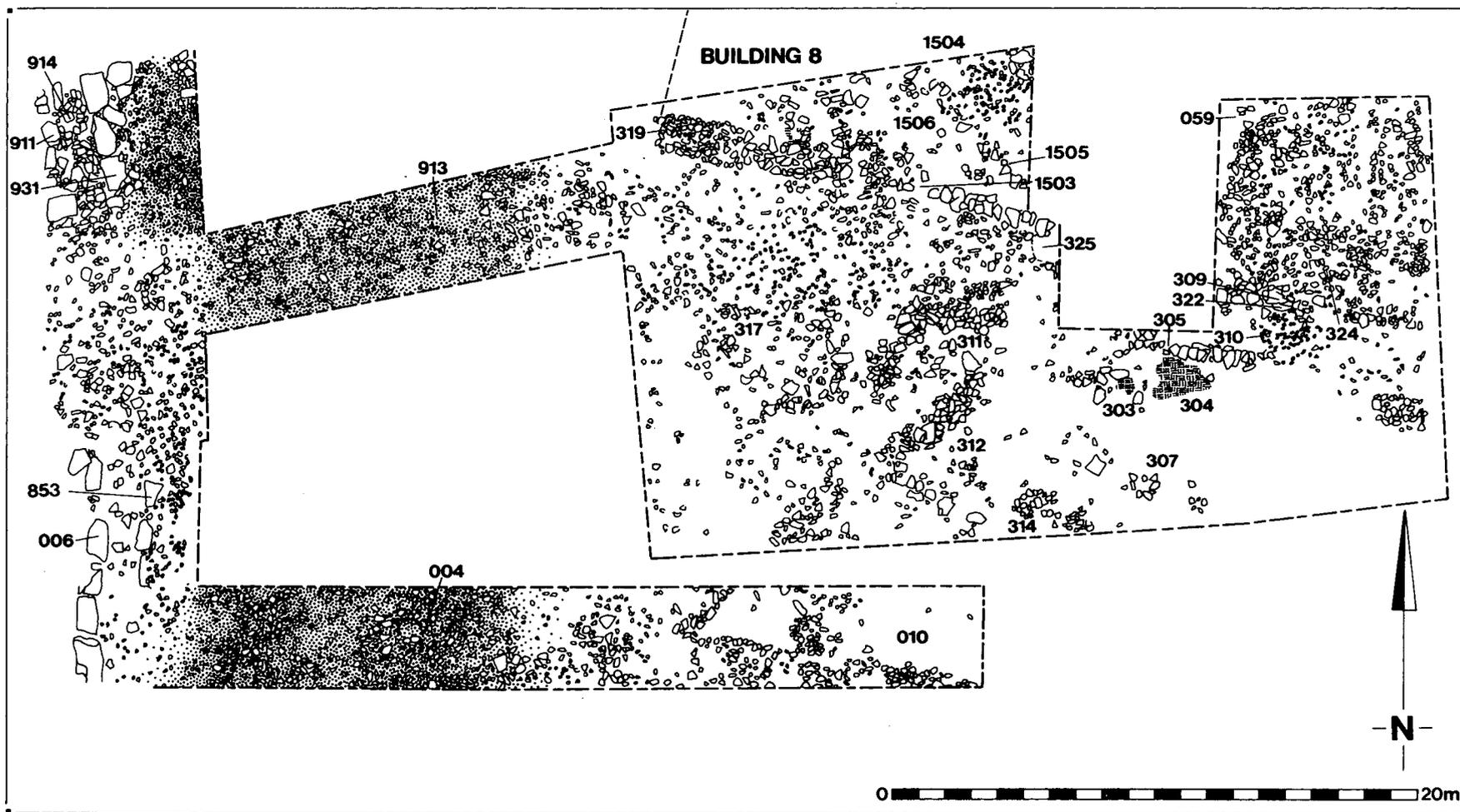


FIG. 10. The main north-south road and Building 8.

phases since the area to the west of the road was sufficiently dry well before this time to enable buildings to be erected (see below, Buildings 12–14). The camber was eliminated in Phase 4, when the stone-lined drains were provided. The most striking feature about this refurbishment is the fact that, whereas there is no evidence for a stone-lined drain in the Riding School Field, one certainly existed at the southern side of the Allotments/Smallholding (East) site, possibly extending over 20m further north. It seems possible therefore that there may have been at least one side street between the point at which the drain is known to exist and the point at which it was definitely absent, and that the drains continued off to the east at this point.

Phase 5: abandonment of the road (FIGS 5, 10, 26, 29, 30; PL. V)

Most of the material from Phase 5 relates to the filling of the drains, but some activity was noted on the carriageway.

Description

Cessation of maintenance of the road was marked by the filling of the drains (007, 040\$, 846\$, 879\$, 914, 951\$, 957\$, 991\$, 994\$, 1302\$, 1454) and the digging of pits (458/459, 933\$/996, 993/997\$) in the carriageway. The filling of the drain in the Riding School Field alongside Building 13 at least seems to have been deliberate, and most of the pits were noted here too, but as little of the carriageway was excavated, this may not be significant.

- SG35 (FIGS 5, 10, 26, 29 and 30; PL. V) Much of the fill of that part of the western drain adjoining Buildings 11–13 on the Riding School Field was excavated, and it could be seen that its nature varied depending upon its position. At the northern end of the excavated area opposite Building 13, the lower part of the drain had been tightly packed with flat fragments of sandstone in mid brown clay-silt (951\$ 957\$). Further south opposite Building 12 the fill contained much less rubble: the lowest fill (879\$, 1302\$) was a silty clay with little rubble, and the deposit (846\$) which overlay it consisted of about two-thirds clayey silt and one-third rubble. Above all these deposits was a fairly uniform layer of rubble, mostly pieces of flagstone, in black silty loam (007, 040\$, 914, 991\$). Further south again, on the line of Cutting CB, a single fill of dark yellow-brown silty clay (1454) was noted, again containing rubble.
- SG36 (Not illustrated) The culvert (1256) had two layers of fill; the lower 0.05m consisted of about 90% stone chippings (1414), which may represent the remodelling of the drain as a soakaway, whilst the upper fill (1257) was sandy clay.
- SG37 (Not illustrated) A deposit of black/brown silty clay containing rubble (3512) was noted to the west of the only recorded length of the western kerb on the Allotments/Smallholding (East). It seems likely that this was a drain fill, but it was not possible to confirm this in the absence of evidence for the west side of the drain, since there was insufficient time to section this deposit.
- SG38 (Not illustrated) On the other side of this length of road two fills were recorded for this phase in the section through the eastern drain. The lower was sandy silt (3531), and the upper silt containing pieces of rubble (3529). A sandy silt with rubble (3540) appeared further south alongside Building 15, but was not excavated.
- SG39 (FIG. 9) In the main section through the north–south road in the Riding School Field, the Phase 3 eastern drain (467) had been filled with brown loam containing occasional pebbles, cobbles and fragments of sandstone slab (466), identical with the lower topsoil which overlay it (002). It therefore seems likely that this ditch continued in use from Period 3, through Period 4, until the road was abandoned.
- SG40 (FIGS 29 and 30) Overlying the western edge of the road on the Riding School Field were a number of patchy deposits (912, 1036) consisting of rubble (mostly pieces of sandstone slab) and loose cobbles.

Three pits (458/459 (FIG. 9), 933\$/996, 993\$/997) were cut into the latest surface opposite Building 19, and were possibly connected with it since this was the point at which the drain had been carefully packed with rubble (see above, SG35). It was also noticeable that, although the road surface at this point was in a poor state of repair, a band of much better maintained cobbling ran between the building and the line of pits 996 and 997.

Dating

The coarse pottery from the deposits connected with the filling of the Phase 4 ditches (cat. nos 91–101), and with other features symptomatic of an abandonment of the road or at least the end of its upkeep (cat. nos 102–3), includes some of the latest pieces from the site. This phase cannot be dated to earlier than the early to mid 4th century, and could easily be mid 4th century.

To the south of the continuation of the *via principalis* (2544) (FIGS 3, 4, 14, 33, 34; PLS XIII and XX)

This stretch of road is poorly understood compared with that to the north of the main road. Two sections were dug, one (Cutting GE) immediately west of the west wall of Building 5 (2017) and the other (Cutting GD) further north: this cutting was designed to explore the relationship between the road and the cobble spreads to the west, and in particular to locate the western side of the road. Neither was very informative: the area available for Cutting GD was too small and Cutting GE had not been completed before flooding towards the end of the excavation period severely disrupted work. In addition, some further information was provided by the reinterpretation of one of the geotechnical test pits (JE), and by the watching brief carried out during the excavation by the contractors of a sewer trench and a manhole (KE, KB), although most of this is difficult to interpret. It does, however, seem clear that the history of this road was at this point rather different from that observed in the Riding School Field.

Description (FIGS 14, 33, 34; PL. XX)

Like the other roads on the site, it had been surfaced many times with cobbles, and there were traces of a ditch pre-dating the final period on the west side. No definite road drains were noted at all on the east side, adjacent to Building 1 during its Phases 3–5 and Building 5, but it is possible that there may initially have been one (Phases 1–2) which was not reached during the excavation (see below, p.60). A short length of ditch (2497) bordered the east side of the road surface (2456, 2467) during Phase 3 of Building 1, but it stopped short at the south wall of the building.

In the final phase it seems likely that the western side of the road was at least partly defined by a row of massive sandstone and conglomerate blocks (2477) which lay some 6m from the eastern side of the road, and which, where it survived, appeared to limit the extent of the final surface (2004). This row of blocks also seems to be related to Building 21 and is described below under SG166. Although there was no obvious continuation of the west side to the road to the south of this building, the eastern side ran alongside Building 6.

- SG41 (Not illustrated) Apparently pre-dating the road were deposits of pink sand and silt (2581), red clay silt and cobbles (2596) and red clay (3639).
- SG42 (Not illustrated) A 3.4m wide deposit of cobbles in sand and gravel (2593) 1.2m below modern ground level was noted during the watching brief on the sewer trench (KE), when it was interpreted as road metalling. Its western edge was 8.5m from the western wall of Building 5, but it was not possible to establish whether it had been contemporary with that wall or (more likely) with one of the successive west walls of Building 2. This surface was overlain by deposits of pink/greyish pink sand and silt (2592) and greenish sand and gravel (2595). It seems possible therefore that the road here may have gone out of use at some time. Another, earlier, western road edge in the form of a filled-in ditch was noted in the unfinished section at a point 9.8m west of the west wall of Building 3, but no corresponding surface was identified.
- SG43 (FIG. 14) A surface contemporary with Phase 3 of Building 1 (SG59, see below) was examined on the eastern side of the road, within the area later occupied by Building 3/5: it could not be traced definitely west of the west wall of the yard attached to Building 3 (2017). This surface (2456) consisted of tightly packed stones, and although its continuity had been broken by foundation trenches relating to later phases of this building and to Building 5, it apparently continued south of Building 1, where there were two successive surfaces of tightly packed cobbles (2467, 2402),

the latter contemporary with Building 1 Phase 5. They were bounded to the east by a gully (2497) which was much narrower (0.23m) and shallower (0.15m) than any of the other road drains. It was on the same line as the original west wall 2200, and although its northern end appeared to terminate against wall 2401, it is possible that further examination might have indicated a different relationship with the building.

SG44 (Not illustrated) Because of the small size of the cutting against wall 2017, it was not possible to identify individual episodes of resurfacing, but a build-up of approximately 0.5m (2393) post-dated the construction of wall 2017. A similar sequence could be seen in the geotechnical test pit where approximately 0.5m of road surfaces (2637) overlay 0.4m of heavy cobbling (2638).

The extent of the final surface (2004: FIGS 33 and 34) was not clearly defined on the western side: on the eastern side it extended up to the west wall of Buildings 3 and 5.

During the trial excavations on Millmead, it could be seen that the road did not continue running south from the Cambria House site. We therefore assume that, unless a part of the settlement has been lost to river erosion (see below, p.175), the road must either have turned to run round the southeast corner of the fortress, or have terminated shortly after the furthest point south reached in the Cambria House excavations.

MINOR ROADS OR STREETS

The only minor road whose presence can be demonstrated definitively is the road which ran between Buildings 1–5 and 6. It is possible that another side-street may have been located at the eastern end of the Smallholding (East): a cobbled surface was noted in this position during the topsoil strip, but it was not possible to determine whether it was Roman or was connected with the adjacent 20th century agricultural buildings. There is also a possibility that there may have been another east–west road branching off from the eastern side of the main north–south road somewhere between Building 15 (where the main road is provided with a drain) and Building 8 (where it is not).

Side street between Buildings 1–5 and Building 6 (FIGS 3, 4, 20, 21, 34; PLS VIII, XVII, XIX and XX)

Description

Very little of this street could be explored in the time available: excavation was limited to the removal of the final cobbled surface (2181) and the fill of its northern drain (2385), which took the form of an open ditch. No drain was noted on the southern side. The width was 4.85m. The relationship between the Building 1 Phase 3 and 5 extensions and the main north–south road (see below, pp.59 and 64, and FIG. 15) suggests that either the side street was not metalled before Building 5 had been constructed, or (less likely) that there was a vacant strip between it and Building 1.

SG45 (FIG. 34; PLS XVII and XIX) The lower surface (2270) consisted of rounded river cobbles and pieces of rubble. It was contemporary with a drain (2385) which had been cut to a level part way down the foundations of the south wall of Building 3/5 (2007), and had cut away any sign of a foundation trench on the south side of the wall. It was traced for a distance of 16.8m; its width was variable, but was generally around 1m. The drain as excavated took the form of a ditch without edging or revetment, but there is no evidence to determine whether there was originally a stone lining which was robbed out or whether there was never anything more than a ditch here. Two very similar fills of sandy clay loam (2380\$, 2250\$) were removed.

SG46 (FIGS 20 and 21) The upper surface (2181, 2182\$) was similar in composition to 2250 and extended patchily to wall 2007, being most carefully laid at the point at which there was probably a doorway into Building 3/5 (SG70, see below). On the other side of the 'street', outside the west end of the south wall of Building 6 was a row of six massive sandstone blocks (2428). It is not certain whether these were connected with the road or with Building 6. Immediately to the north and east of these was a single paving slab (2019) lying on the top of the 2181/2182 surface.

Possible side street to the north of the continuation of the *via principalis*

A cobbled surface lay directly under the topsoil immediately to the north of the main road from the *via principalis* continuation. It was not however possible to ascertain whether this was Roman or whether it was a modern hardstanding connected with the recent agricultural buildings at the eastern end of the Smallholding.

SG47 (Not illustrated) The surface (3509) consisted of cobbles and pebbles in silty clay. No edges were defined.

EVIDENCE FOR THE LAYOUT OF THE SETTLEMENT

There was enough evidence from the excavated buildings and the associated properties to suggest that there may have been some sort of ordered layout to the settlement. This is discussed more fully below (p.467). On the Riding School Field, the complete excavation of Building 12 included an examination of the eastern end of the associated property with the two ditches which appeared to form its northern and southern boundaries. As the stratigraphy of these boundaries and the yard around Building 12 does not compare closely with that within the building, it will be discussed separately here, together with the yard of Building 13 and the external surroundings of Building 14.

Identification of individual properties (FIGS 4, 11)

The best evidence for individual properties comes from the Riding School Field. The property which was examined in the most detail was that in which Building 12 stood (see below, p.103), although only the eastern end of the property, the area immediately around the building, was excavated. It was bounded by ditches and occupied at this point by the building surrounded by yards, initially on three sides, and then on two. On its east side, the property extended up to the main north-south road; on its north and south sides it was bounded by ditches. The north-south measurement of the property was some 12.5m to 15m, but it was difficult to give a precise measurement as the original line of neither ditch was established. The east-west measurement is unknown.

The ditch bounding the property to the north (399) ran immediately to the north of Building 12 and its southern one (1076) immediately to the north of Building 14. Ditch 399 was examined in more detail than 1074.

Ditch 399 (FIGS 11, 23, 26; PLS VII, XXI)

Description

This ditch was probably originally cut when Building 12 was put up. It originally had a U-shaped profile (1470). It was allowed to silt up (1468, 1469) before being recut (1467); after the recut had silted up in turn (1465, 1466), it was abandoned and an attempt seems to have been made to lay a cobbled surface (1243) over its fill. This was not very successful as the cobbling slumped into the underlying fills. Into the fill (860) of the resultant depression three large stones (927) were thrown, possibly to act as stepping-stones.

Phase 1

SG48 (FIG. 23) The ditch in its initial phase (1470) cut through the 1242 sequence and was of irregular U-shaped section.

SG49 (FIG. 23) Two layers of fill were noted, the lower (1469) 0.15m of dark brown silt, and the upper 0.13m of yellow-brown silt (1468). Plant macrofossils were noted in 1469 and a sample was taken.

Phase 2

SG50 (FIG. 23) The second phase of the ditch was represented by a recut (1467).

SG51 (FIG. 23) The recut had also been allowed to silt up and contained two further silty fills (1466, 1465).

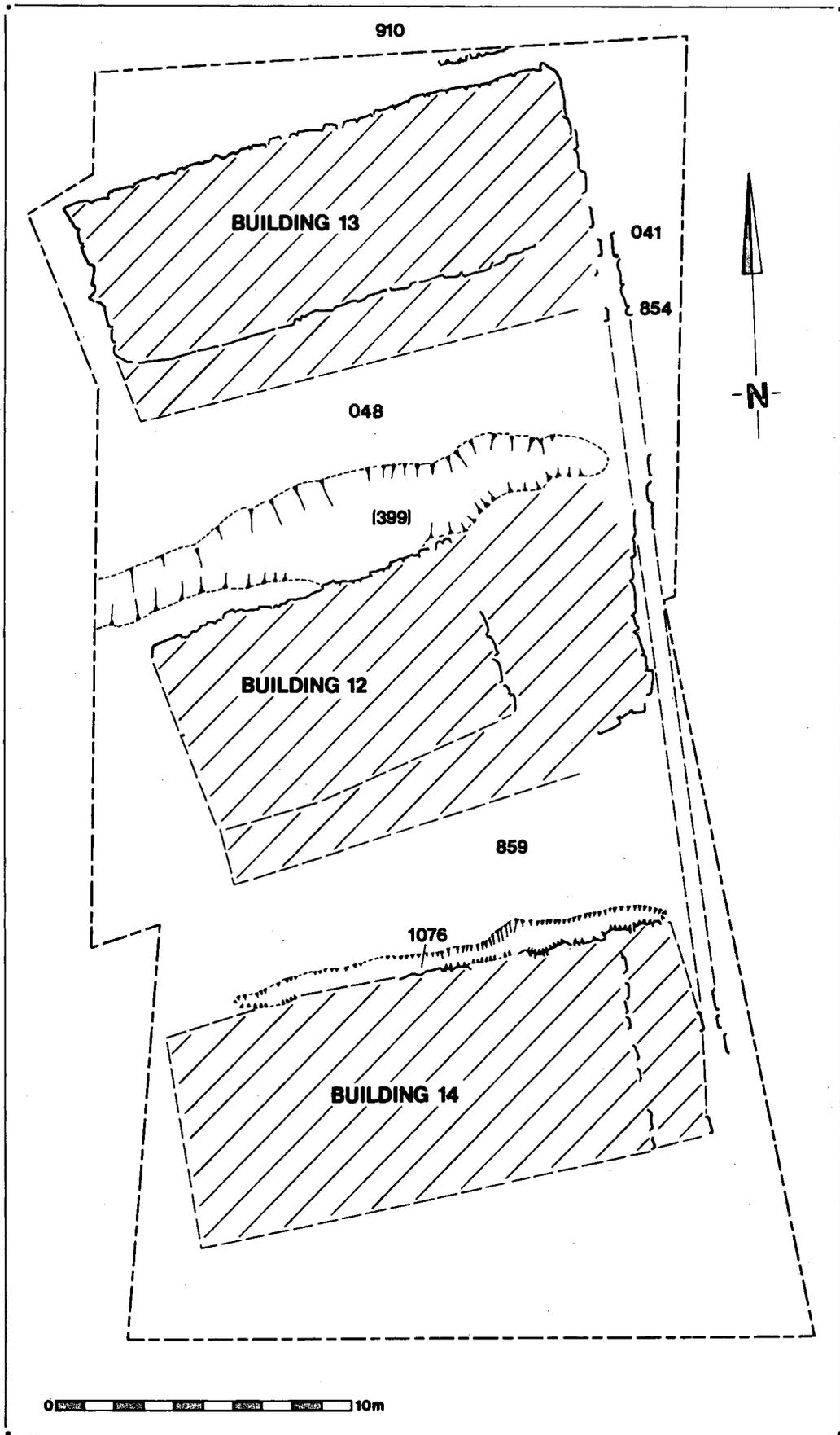


FIG. 11. Property boundaries between Buildings 12, 13 and 14.



PLATE VII. Buildings 12 (right) and 13 (left) looking northeast. The cobbled surface 1243 between Buildings 12 and 13 (foreground) has slumped into the underlying Ditch 399. Scale unit 0.5m.

Phase 3

SG52 (FIGS 11 and 23; PL. VII) Overlying 1270 and the upper of the two fills in the recut (1265), was a cobbled surface (1243). This seems to suggest that at this stage the ditch was perceived to be redundant. However, a marked depression persisted in this position, caused by subsidence into the underlying soft fills.

Phase 4

SG53 (FIGS 23 and 26; PL. XXI) Subsequently a deposit of soft dark silty clay (860, 927\$, 928\$) accumulated in the depression over the line of the ditch with a similar, paler deposit (887\$) in a small hollow at the back of the lining to the drain of the north–south road. As no attempt was made to remetal the surface or to fill the depression with solid material, it may be concluded that this feature was again considered to be a ditch. However, three large blocks and some smaller stones (927) were thrown into the fill where they had the appearance of ‘stepping stones’; so it seems possible that it was still considered necessary to cross it. Plant macrofossils were noted in 860 and a sample was taken.

The plant macrofossil evidence By Julie Jones

Two samples were examined from the bottom fill of ditch 399 (1469), and a further small sample from the uppermost fill (860). The samples were processed as described in Appendix 3, and the results are presented in TABLE 4.

The bottom fill contained a large number of rush seeds and a mass of small charcoal fragments. This suggests a predominantly damp environment, with material being washed in from elsewhere, accounting for the charcoal fragments. It is possible that the rush seeds were derived from thatch on the roof of Building 12 (p.110), but their preservation shows that the ditch contents were waterlogged, and reeds could therefore have grown *in situ*. The plant remains from context 860 were confined to four apple pips.

TABLE 4: PLANT REMAINS FROM THE BOUNDARY DITCH (399) BETWEEN BUILDINGS 12 AND 14

Botanical name	Common name (Sample size)	Context/sample no.			Habitat
		1496/5 250g	1469/6 250g	860/7 250g	
RANUNCULACEAE					
<i>Ranunculus sceleratus</i> L.	Celery-leaved Crowfoot	0	1	0	A, B
ROSACEAE					
<i>Malus sylvestris</i> Miller	Crab Apple	0	0	4	H, S, W
POLYGONACEAE					
<i>Rumex</i> spp.	Dock	1	0	0	
URTICACEAE					
<i>Urtica dioica</i> L.	Stinging Nettle	0	3	0	D, W, S, B, nitrogen and phosphorous rich soils
CORYLACEAE					
<i>Corylus avellana</i> L.	Hazel	1FC	0	0	S, W
JUNCACEAE					
<i>Juncus</i> spp.	Rush	E6992	E4700	0	M
GRAMINEAE					
Gramineae gen. et sp. indet.	Grass	1C	0	0	G
Indet.		4	4	0	
		6997	4704	4	

HABITATS: A: Aquatic. B: Bankside. C: Cultivated. D: Disturbed ground. G: Grassland. H: Hedgerow.

M: Marsh. S: Shrub. W: Woodland.

OTHER ABBREVIATIONS: C: Carbonised. E: Estimated. F: Fragment.

Discussion

It was not possible to examine Phases 1–2 of the ditch other than by a section of rather limited extent, but examination of the pattern of subsidence of the overlying cobbled surface of Phase 3 suggests that it may not have extended for much more than the length of the building, and may not have been intended to have any outlets. The alternative is that it originally ran into the 3rd century drain of the main north–south road Phase 3 (1524 — see above, SG25) and that the end had been blocked with solid material before the cobbled surface was laid. The first hypothesis seems the more likely if these property boundaries were laid out at about the same time as Building 12 was constructed, probably no later than the end of the 2nd century A.D. Very little datable material was recovered from the fills of the first ditch phase, and this does not greatly aid interpretation. None of the pottery has been separately catalogued, but a discussion of the group can be found on p.219.

At some stage during the history of this ditch, a band of chippings (1270: see FIG. 23) was deposited along its southern lip, overlying the base of the northern wall of Building 12 and probably associated with its construction (SG104 see below). This deposit does not relate stratigraphically to any of the fills or cuts.

Ditch 1076 (FIGS 11, 30; PL. XXXV)

Only the final phase of this ditch was excavated, corresponding to Phase 4 of Ditch 399. Like 399, it apparently did not extend as far as the Phase 4 stone-lined drain of the main north–south road. This ditch cannot have extended as far as the western side of Building 14 either, as its length was only 14.8m. Its southern side was formed by Building 14.

SG54 (Not illustrated) The northern edge of this ditch was formed by band of cobbles (1231). Although the sides were originally near-vertical they had been eroded in places. Both fills, the lower one (1452) and the upper (1229, 1052) were silty and contained rubble.

Other property boundaries

The limited amount of work that was done immediately to the north of Building 13 found no corresponding ditch, so it seems that, in the final phase at least, there was either no boundary here or it was marked in a different fashion.

Little evidence was seen for any comparable boundaries on the other two excavation sites: Buildings 1 and 2 on the Cambria House site and Buildings 18/19 and 20 on the Smallholding (West) were divided by no more than a space 0.5m–0.6m wide. This may in both cases have been intended to take the eavesdrip from the buildings at either side, but it was not constructed as a drain or even a ditch. There is no information about plot sizes from the Smallholding, but on the Cambria House site the plots upon which Buildings 1/4/5 and 2/3 were erected were measured at 11.2m and 11.4m respectively. These measurements may have been intended to be rather closer, but the layout of the plot was rather irregular (see below, p.83), and because of the survival of walls and the extent of the area available for excavation the former measurement was taken at the west end and the latter at the east end.

THE BUILDINGS

Twenty-two buildings were identified on the Mill Street sites. In addition there were four other fragments of walling or other features which may be parts of additional buildings (SG135, SG187, SG189, SG201) but where the evidence is not definite. This section provides descriptions and discussions of individual buildings: an overview of all buildings can be found on pp.469–73 as part of the general discussion of the Mill Street sites. Buildings 1–6 lay in the main area of excavation to the east of the main north–south road (Cutting GA), Buildings 7, 9, 15, 16 and 17 were noted during the topsoil stripping on the Allotments/Smallholding sites, the excavated part of Building 8 lay in Cutting BC, and that of Buildings 10 and 11 in Cutting BB. Buildings 12–14 lay in the main excavated area in the Riding School Field alongside the main north–south road (Cutting CA), Buildings 18–20 on the Smallholding (Cutting FA), and Buildings 21–22 in the area to the west of the north–south road on the Cambria House site (Cutting GB). See FIGS 3 and 4 for details of location.

Time, resources and the problems with the water table meant that full excavation of all the buildings was not possible. The excavation strategy on each of the two main sites (Riding School Field and Cambria House) was to excavate one building fully, and sufficient of another building to determine whether the construction histories were the same or differed significantly within the same site. It was immediately apparent after the topsoil strip that there were significant differences in the appearance of the most prominent buildings between the two sites, although subsequent work showed that there was not as much zoning of building types as had initially been believed. On the Smallholding, the aim was to excavate sufficient of the main building to allow its history and method of construction to be determined. Buildings 4, 5 and 12 were therefore fully excavated. Buildings 1, 3, 13 and 18/19 were more selectively excavated, but sufficiently to permit a fairly detailed understanding of their structure. The overlying rubble was stripped from Buildings 6, 14, 21 and 22 and the latest occupation phase recorded; Buildings 7, 9, 15, 16 and 17 were cleared of topsoil only to the extent that the lines of surviving stone walls could be established. Only a tiny fraction of Buildings 8, 10, 11 and 21 lay within the excavated area, and the only parts of Building 2 to be recorded were those which were visible with Building 3 *in situ*.

Only five of the buildings, Buildings 1–5, were stratigraphically related. They are described in the order of construction. The remainder of the buildings are grouped initially by construction technique and then by location. Overall sizes of buildings can be found on TABLE 31, with general discussion of the buildings on p.473.

BUILDING 1 (FIGS 4, 12, 13, 14, 15, 16; PLS II, VII–XII, XX)

Building 1 was a strip-building fronting on to the main north–south road south of the *via principalis* continuation. Its remains were characterised by a paucity of surviving floor surfaces,

and it had been through at least four phases of modification before it was demolished, when the ground on which it stood was amalgamated into the same building plot as the site of its neighbour to the north, Building 2. Most of these modifications were concerned with extending its area to the west and, to a lesser extent, to the east. At the western side of the building several phases can be identified in the extensions, whilst no identifiable structural changes were made in the original part of the building.

Part of Building 1 had been severely robbed, sections of the walls being completely removed in the centre of the plot. There was therefore a discontinuity which ran through the middle of the building, where not only had the internal walls been removed, but also the external walls had been robbed out in antiquity. As the parts of most of these walls remaining to the east and west of the robbed area did not correspond, it seems likely that there would have been a cross-wall dividing the west end from the east end, and that this cross-wall had been completely robbed out when Building 1 was demolished. It is therefore possible that the structure was functionally two buildings although structurally it was only one.

This building was particularly difficult to analyse partly, though not entirely, because of the robbing. Although the exterior walls of the building were usually straightforward, the interior arrangements were highly complex, varying from period to period and depending for their recognition on how the evidence for the structure is interpreted. The layout thus depends upon the interpretation of the structure, but the structure is not easy to describe unless extensive reference is made to the layout.

Excavation of this building was not completed because of flooding (PL. II), and there is therefore no material which is certainly connected with its construction. The dating evidence for its period of use is poor, and is summarised at the end of the description and discussion of the whole building.

Phase 1 (FIG. 12; PL. VIII)

Description

In the initial phase of the building, the external walls (2200, 2222, 2401, 2619) were of coursed sandstone rubble, with the remains of more finely worked sandstone quoins. It measured 19.7 × 9.1m. The internal features, two floors (2491, 2499) and a low rubble platform (2444), may have been somewhat later than the construction of the external walls, but this was not possible to determine; they were certainly stratigraphically earlier than the earliest identifiable internal walls.

Interpretation of the Phase 1 structure will be deferred until the Phase 2 structures and deposits have been described, as some of the material from the second phase clarifies the situation in the first.

SG55 (FIG. 12; PL. VIII) The external walls of this phase (2149, 2200, 2222, 2401) were *c.* 0.45m in width, and mostly survived for several courses. All had an offset foundation course which projected on the inside, but not, as far as could be ascertained, on the outside. They survived to a maximum height of 0.49m (four courses) above the offsets, although when excavation was halted, the west wall (2200) was still largely overlain by floor deposits post-dating its construction. The exact relationship of the east wall (2222) to the south wall (2401) is uncertain, as only a single block at the southern end of wall 2222 survived the attentions of stone-robbers.

Both walls and offsets were constructed of coursed rubble, with two outer faces of sandstone blocks roughly dressed by splitting, supplemented with axe or adze and the occasional use of the point, and a core of smaller pieces of sandstone. In spite of the fairly crude technique used, the overall quality of the rubblework was quite high; the faces of the blocks were reasonably rectangular and they were fairly neatly set and coursed. It was not possible to identify the original bonding medium. The soil chemistry did not favour the preservation of mortar and, as none of these walls was dismantled, it was not possible to see whether they contained any deposits which might have been derived from an original mortar.

Incorporated into the northwest corner, part of the northeast corner, and the middle of the west wall were a number of blocks of higher quality and larger size. These blocks, which were also



PLATE VIII. Building 1 Phases 1–2, looking east: the west wall of Building 3 and the ditch flanking the side street can be seen at the right.

of sandstone, were properly squared and had been dressed with a point. The whole of the northwest corner was constructed using these blocks; the northeast corner incorporated two, though the rest of the quoin was in the rougher blocks used elsewhere. Two square and dressed blocks were incorporated in the west wall, one in each face of the only visible course; the southern end was 2.15m from the northwest corner.

The north wall of the building incorporated what appeared to have been a socket (2619) approximately 1.3m from the western end, immediately above the lowest course. This remained as a gap 0.37m wide at the bottom and 0.66m wide at the top where stones had been displaced at either side and had slumped into the void. It is not clear whether this was an original feature or whether it was made later, because the course above had been disturbed and the superstructure above this point had disappeared.

SG56 (FIG. 12) The earliest identified internal deposit (2499) was a pebble floor running across the middle of the west external wall. As this lay south of the finely-worked blocks in the middle of the west wall, it could have been part of the original building; alternatively it could be a secondary feature. There was also a rectangular rubble platform (2444) situated parallel to the north wall and 0.5m from it, and approximately 5m east of the west wall. It consisted of a surround constructed like a wall in faced sandstone blocks, with an infilling of smaller pieces of sandstone rubble; it was 2.30×1.70 m and approximately 0.17m high. This platform was abutted, and the initial floor was in part overlain, by a second floor composed of larger pebbles and cobbles along with some larger stones (2491). When excavation halted, 2491 had not been revealed for the full width of the building, where its southern end appeared to be overlain by the main Phase 2 internal deposits (see below, SG57).

Phase 2 (FIGS 12, 13; PLS VIII, IX)*Description*

This phase saw the rebuilding of the eastern end of wall 2401 (2618) and construction of internal or sleeper walls (2228, 2350, 2351, 2407). The internal walls survived as rubble walls of between one and three courses but without foundations. There is evidence to suggest that they may have been founded on wooden beams, which had been socketed into the exterior walls and rested upon a deposit of red clay (2489) overlying the cobbled floors of Phase 1 and probably deliberately laid as make-up. These walls had been heavily robbed in the centre of the building, making interpretation of the internal arrangements difficult, but it is clear that the eastern end of the building had been divided from north to south into four alternately wide and very narrow sections (1.1, 1.2, 1.3, 1.4). The southernmost of these continued into the western end of the building; and the rest of this end was divided into two unequal parts (1.5, 1.6).

The Phase 1 platform seems to have continued in use.

SG57 (FIG. 12) Much of the interior of the building, as excavated, was covered with a red clay layer (2498) with lenses of pink, orange and dark brown, some containing flecks of daub and charcoal, some of which can be distinguished as separate layers (2601\$). These deposits overlay 2491 and 2499.

SG58 (FIGS 12 and 13; PLS VIII and IX) Part of the south exterior wall seems to have been demolished and rebuilt in the phase although, because of the robbing which had taken place at either end of this section of wall, it was not possible to examine its structural relationship with the rest of the building. The western 5.36m of the south wall (2147) has been described above, as part of the original construction, but the eastern part (2618) was constructed in a different style of rubblework of markedly poorer quality. For a length of 6.96m this wall consisted of blocks of sandstone without properly cut faces, arranged so that some of them ran almost all the way across the width of the wall. The blocks themselves were very irregular in shape and characterised by the use of pecking to detach flakes. There was virtually no separate core. No offset or foundation was visible.

The interior of the building was divided by a series of rubble walls (2228, 2350, 2351, 2407) running east–west. As far as could be determined, none had conventional foundations. None of these walls was complete and most of them had no direct relationship with any other wall. The wall which bounded the southern space at both the east and west ends of the building (2407) looked as though it had originally been continuous, although a large section of it had completely disappeared in the middle of the building. Otherwise the walls at the eastern end of the building did not line up with those at the western end.

The only point at which part of a relationship survived between internal and external walls was between the eastern exterior wall 2222 and the internal wall 2350, where the easternmost block in the northern face of 2350 projected over the line of the eastern exterior wall 2222 (FIG. 13). Between the projecting block and the masonry of 2222 was a continuation of the upper part of the deposit (2463) which underlay 2350 throughout its length, but did not extend beyond it to north and south. The lower part of 2463 abutted the west face of the offset. The underlying layer (2463) was a dark brown/black mixture of clay and coarse sand; its thickness at the face of 2222 was observed to be up to 0.10m thick, but more generally around 0.08m, and its width was the same as that of the overlying wall 2350. The neighbouring internal wall (2351) similarly lay on a corresponding layer 2464. In neither wall was there any trace of masonry foundations (PL. IX) although under 2350, 2463 was replaced on one side for a short distance by cobbles.

Three courses survived in both walls, giving a maximum height of 0.42m in wall 2350 and 0.30m in 2351. The width ranged from 0.52m to 0.55m. The blocks employed were similar in shape and in their manner of working to those in the rebuilt section of the building's south wall, 2401. However, the stones were set in a rather more conventional way, with two faces and a core of smaller pieces of sandstone.

Wall 2407 seems to have been slightly wider but of similar construction, with no apparent foundations. Excavation did not proceed far enough to enable any deposits like 2463 and 2464 to be identified. A single course of wall 2228 survived, but it was not possible to tell whether or not any foundation was present. This wall was, at 0.40–0.41m, noticeably narrower than the others and had no core. It overlay 2491, the cobbled floor of Phase 1.

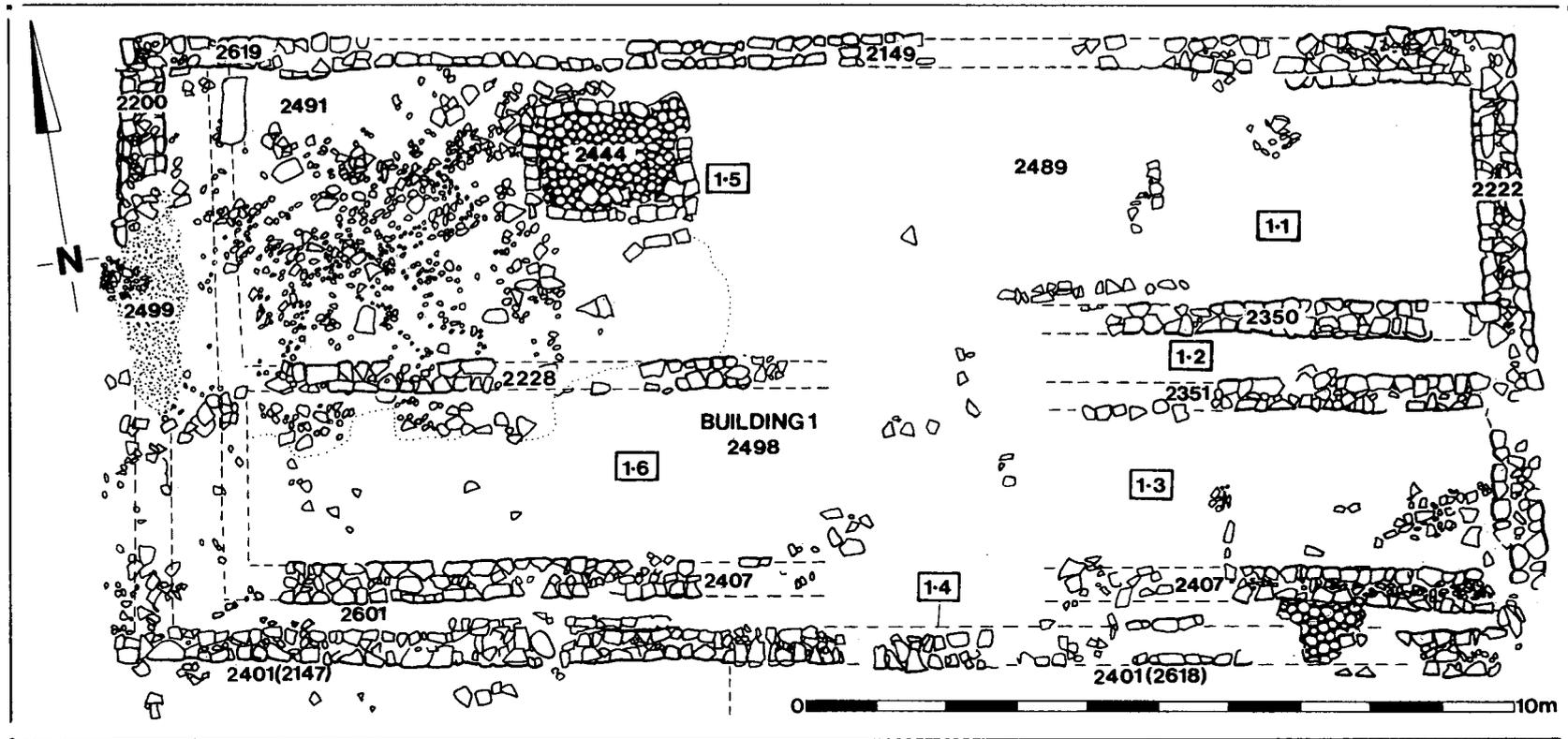


FIG. 12. Building 1: Phases 1-2.

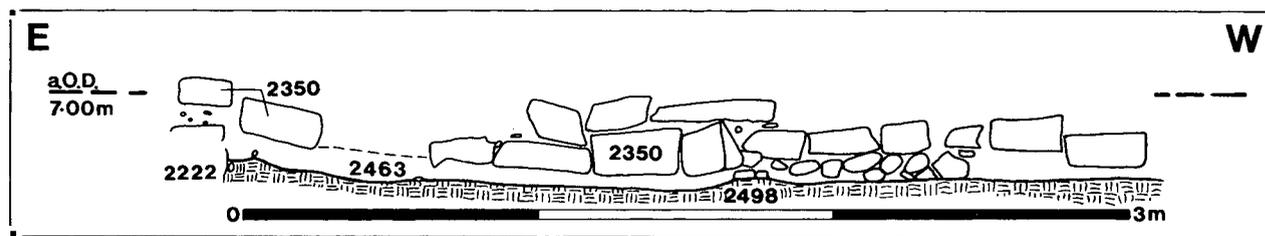


FIG. 13. Building 1: Phase 2, internal wall 2350, underlying deposit and main E wall 2222.



PLATE IX. Building 1 Phases 1–2 looking north: the internal walls at the eastern end of building had no masonry foundations. Scale unit 0.1m.

Discussion: Phases 1 and 2

Walls

The Phase 1 external walls were of entirely conventional construction. The only uncertainty is whether they were originally mortared, or were drystone. Since mortar does not generally survive on the Mill Street sites (see below, p.71), it is not possible to tell which type of construction was used.

The Phase 2 rebuild of the eastern end of the south wall, in spite of its inferior technique, was also fairly conventional, but the same cannot be said of the Phase 2 internal walls. The most unusual feature of these walls is their lack of masonry foundations; the deposits which immediately underlay them were completely inadequate to provide support. We therefore suggest that these walls had originally been founded on timber beams which had been socketed into the external walls. As the timber decayed, the weight of the masonry caused it to break at the point at which it was socketed into the south wall (see FIG. 13), and the free section settled by *c.* 0.25m (presumably on to the subfloor = the upper surface of the clay deposit 2498). The timber was then gradually replaced by soil, but the depth of the replacement deposit will have been less than that of the original timber, since the stonework would have settled as the beam decayed.

This hypothesis would appear to fit all the available evidence, and is preferable to the alternative explanation, that the walls were without foundations. It also helps to explain the complete absence of a north–south cross-wall, a necessary component if the building's plan is to make any sense at all. We assume that such a wall existed, also founded on a timber which lay above the make-up 2498, and was probably socketed into the north and south exterior walls and jointed into the timbers underlying the east–west walls. We also assume that this wall and its timber foundation were removed, causing damage both to the ends of the adjoining internal east–west walls and to the north and south external walls.

Such an arrangement would help to make sense of the socket in wall 2149 (2619), which may also have been designed to house a timber for use as a foundation. If the line of a beam is projected from socket 2619, it would run north–south on a line which would take it close to the west ends of walls 2228 and 2407. The position of such a wall, 1.3m from the external wall, is analogous with the position of 2407 with respect to 2401, and the width would have been close to that of 2228. If this was the case, it would have been completely removed when Building 1 was demolished.

None of the external walls survived to a height greater than 0.5m, and the nature of the superstructure is conjectural. The width of the external walls was typically 0.45m; if they were mortared, they could easily have risen for the full height of one storey. If they were drystone, they are not likely to have been stable above *c.* 1m in height (Evans 1991, 114). Most of the internal walls were rather wider (0.50–0.55m), but less well built. The destruction deposits (see below, SG72), however, provide further clues. These contained some rubble but by far the greatest bulk was made up of a heavy pink sandy clay. A strong candidate for the origin of this deposit must be the walls; the use of one of a number of possible construction types utilising clay, such as mud brick and clay mass walls (both types with or without timber uprights), or wattle-and-daub (see Perring *et al.* 1991, 82–3) above the stonework would account for the proportions of clay and stone noted. There is no evidence for vertical framing, in either the external or internal walls, unless the post-hole (see below, SG86) in wall 2350 dates to this phase of construction, rather than being cut through the wall later as seems likely. It cannot in any case be regarded a part of any systematic framing.

Floors

The hypothesis that the internal walls were founded upon beams also has implications for the construction of the floor. There was no indication that the main clay deposit (2498) was a floor proper: there are no signs of wear or any traces of activity, even though this area continued in use unchanged until the building's demolition. The best explanation of the observed evidence would appear to be that the floor was a timber floor, remaining *in situ* throughout the building's use, and that it was removed when this part of the building was demolished.

Roof

Given the long, narrow, shape of the building, the roof is most likely to have been double-pitched with the ridge running east–west. The destruction deposits (SG72), which are probably derived from this building with little extraneous material (see below, p.466) produced 136kg of probable ceramic roofing tile.² Unless this material was used as hardcore in the walls, a possibility which cannot be ruled out, it must have come from the roof.

Layout

Even allowing for the insertion of at least one north–south wall, the layout of the Phase 2 building remains enigmatic.

The first problem is the loss of the central part of the building coupled with the fact that no north–south walls survive. It is possible that the positions of the linear spreads of rubble on the surface of 2498 represent the position of walls, as seems to be the case with the linear spread immediately to the north of 2350. If so, it is possible to suggest that there may have been east–west walls:

- at the north side of the building between walls 2149 and 2350, 4.5m from wall 2222;
- in the middle of the building around the area of walls 2350 and 2351, 7.3m from wall 2222;
- at the south side of the building between walls 2351 and 2407, 3.7m from wall 2222.

² Some of this may be half-box tile; it is frequently not possible to distinguish this from tegulae. (E.M. Evans 1997, 192–3).

The second problem concerns the nature of the internal east–west walls in the eastern half of the building. As excavated, the eastern side of the building was divided from north to south into a wide space (Room 1.1) 3.39m on its east wall and widened slightly to the west, a narrow space (Room 1.2) 0.57m wide at the east side and widening towards the west, a second wide space (Room 1.3) 2.30m wide and narrowing slightly to the west, and a second narrow space (Room 1.4) which was a mere 0.24m between walls at the east, although it was nearer 0.40m in the west half of the building. Room 1.4 appears to have extended all the way to the western side of the building, although the middle section of its north wall, 2407, is missing.

If all the internal walls were in existence at the same time, the internal divisions would include the two narrow spaces, Rooms 1.2 and 1.4, which seem to be too narrow for any effective use, even as corridors: the same is also true of wall 2200 and the hypothetical wall founded on the proposed beam in the socket of the north wall (2619). However, the fact that all the internal walls are characterised by the same form of construction and the same masonry technique suggests that they were all built as part of the same operation. If our hypotheses, that the walls were built on sill-beams and the floor was of timber, are correct, the floor joists would probably be jointed into the sill-beam. The original wall would therefore have projected at least two courses above the floor after having been replaced. In order for the remains of a demolished wall to be concealed under a timber floor, the floor would have had to have been at least two courses of masonry up the wall. It is for this reason that we reject the alternative interpretation of these walls, that they were designed as sleepers to support the floor.

In addition, it seems unlikely that wall 2401 went out of use and was replaced by 2407, since the first deposits to overlie 2401 were 2389 and the other dump deposits of Phase 6 (SG72, see below), implying that 2401 was not demolished before the rest of the building. There is also a potential stability problem, since wall 2407 was probably founded on a beam socketed into the east wall.

The western part was divided north–south into three spaces. At the south, wall 2407 and narrow space (Room 1.4) appeared to continue through from the eastern half of the building. It may also have turned through a right-angle to continue along the western frontage. The area north of this was divided into two further, wide, spaces: Room 1.5, to the north of the wall, was approximately 4.30m wide, and Room 1.6 to the south measured approximately 2.5m.

Phase 3 (FIG. 14; PL. X)

Description

In Phase 3 the western end of the building was restructured. This involved the demolition of the original west wall (2200) and its replacement by a new one (2244), 1.7m further west, while the north and south walls were lengthened accordingly. The north wall for this phase (2201\$) was subsequently demolished, probably to form a doorway in the next phase, but its line is marked by its later replacement (2202). These new external walls were constructed of coursed rubble. Two new rooms (1.7, 1.8) were created from this extension and a strip of the western end of the original building. They were divided by a clay partition (2466). None of the internal deposits (2465, 2469, 2490) was certainly a floor.

Two post-holes (2452\$/2453, 2492\$/2493) in the contemporary surface for the main north–south road (2456, 2467) seem to represent some form of further but less substantial extension (1.9) at the street frontage. This surface extended over the south wall, indicating the position of an external doorway.

There was no change to the eastern end of the building.

SG59 (FIG. 14) Wall 2200, the original west wall of the building, was demolished to its bottom course at its south end and centre; the remains were overlain by floors and other deposits relating to the next phase of construction. The north end may have been demolished to the same height at the same time, but this is not clear. The new walls (west 2244, south 2245) had not been completely revealed when excavation was halted, neither had the third north–south space postulated between wall 2220 and the line through socket 2619. The masonry was characterised by a fairly high

proportion of blocks of a similar thickness to flagstones, mixed in with the more usual thicker rubble blocks. All the stonework was shaped by splitting supplemented by dressing with the adze or axe, and the bonding medium appeared to be reddish-brown sandy clay.

The partition dividing Rooms 1.7 and 1.8 was represented by a strip of heavy red clay (2466) 0.12m wide, running between the new west wall (2244) and the line of the previous one (2200) and stood to a height of 0.17m. Against the south side of this was set a row of roughly-shaped pieces of sandstone standing almost upright. To the north, in Room 1.7, the infill layers consisted of a make-up (2490) over which was a patchy spread of cobbles (2469), and to the south in Room 1.8 a spread of cobbles and rubble (2465) covered an area *c.* 3.4 × 3.1m, extending to walls 2245 and 2401 (FIG. 12) at the south, and from wall 2244 at the west to a point east of the line of the original west wall of the building (2200), which it overlay, terminating in a fairly straight line. Towards the southwest corner of the room over the surface of 2465 an isolated patch of cobbling was noted, very similar to the layer of metalling (2467: see SG43) which lay outside the building to the south, and extended over part of the south wall. During excavation, the cobbling within Room 1.8 was assumed to be the same deposit as that outside, although continuity could not be established.

SG60 (FIG. 14) During this period, an initial further extension (Room 1.9) appears to have encroached into the main road. This took the form of a structure supported on posts whose post-holes (2452\$/2453, 2492\$/2493) were cut into the contemporary road metalling (2456) 1.4m west of wall 2454 and were 2.2m apart (centre to centre). The road metalling 2456 was probably the same

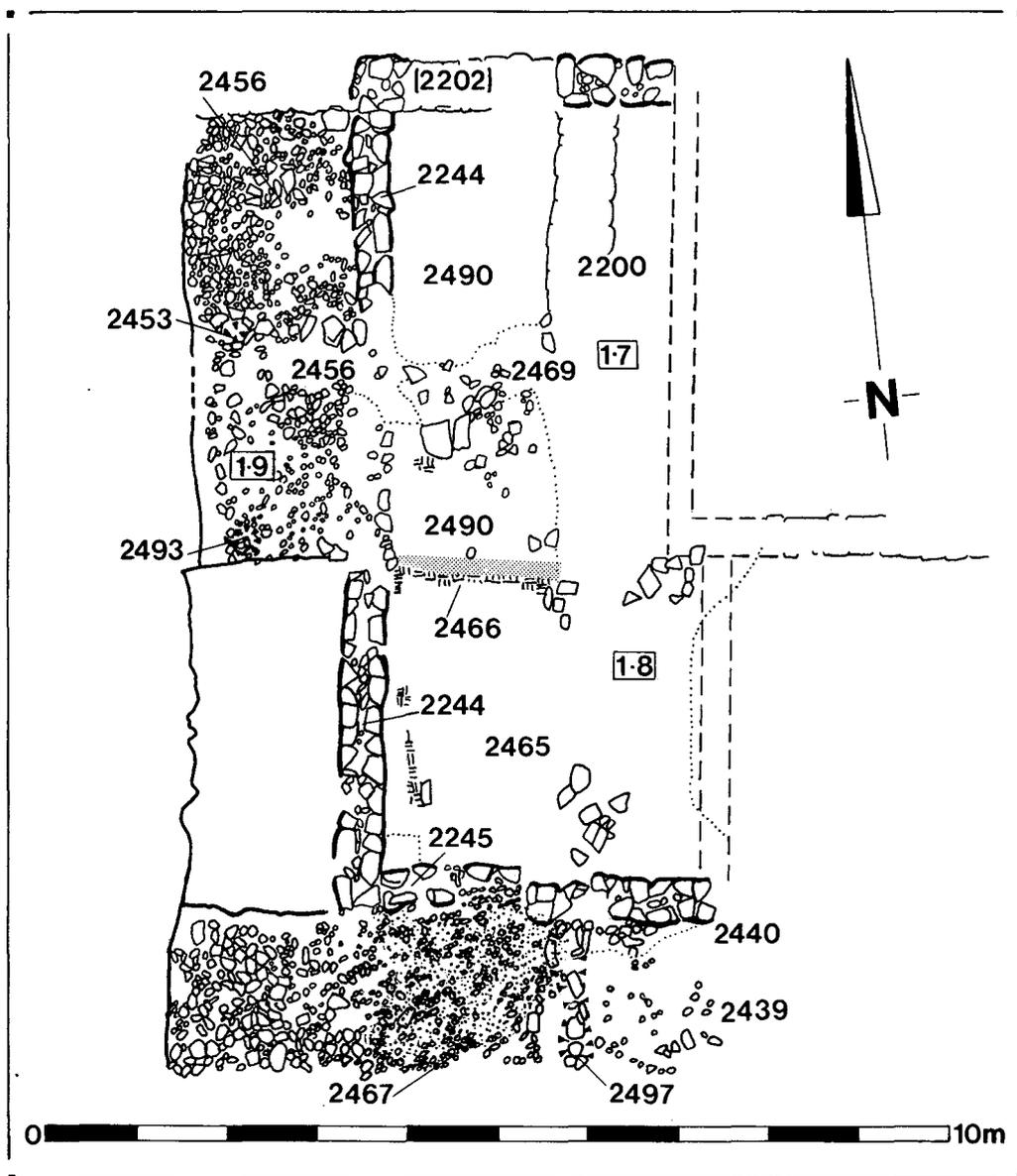


FIG. 14. Building 1: Phases 3-4.

surface as 2467, or possibly 2402 (SG43), but continuity could not be established because the area between had been cut away during Phases 5 and 6. It overlay the central section of the new west wall (2244). The 2m of wall to the north of the cut, however, appears to have been upstanding.

To the south of the building, east of the doorway was a layer of silty clay sand containing very small pebbles and occasional small pieces of sandstone (2439), overlying a black deposit with charcoal and rubble (2440).

Discussion

Walls

The extensions to the north and south walls followed much the same technique as the Phase 1 external walls. What survived of the new west wall was of the same construction; there is some evidence, however, that suggests it may have been a sill-wall for a horizontal beam (see below, p.63), but the situation is not clear.

The internal wall was of completely different construction. The clay which formed its base had been preserved after the rest had been demolished by the infilling of the areas on either side. There were no traces of any stake-holes, so it seems likely that it was constructed of mud brick or clay mass, possibly tied in above ground level by timbers into the main walls since it was rather narrow to stand to any great height unassisted.

Floors

None of the stone spreads within the building was particularly well laid, with the exception of the patch of cobbling in the surface of Room 1.8. It is possible that this originally extended to cover the room and join up with the road surface 2467 outside, but this is by no means certain. The cobbling 2469 in Room 1.7 is more likely to have been an *ad hoc* surface laid to consolidate the ground surface at the point at which traffic passed through the main western entrance of the building, during either construction or use, although one possible interpretation of the layout (see below) implies a timber floor.

Layout

Little can be said about the two new rooms which occupied the new frontage. It is not entirely clear how far east they extended. The northern room (1.7) was bounded to the south by the clay partition 2466 and to the west by the new wall 2244. On the east it was probably defined by its main deposit, the make-up layer 2490, which extended slightly over the line of the original west wall of the building. The arrangements on the north side are not clear, since 2490 was not traced all the way to the northern wall. Possibly the northern part of the original west wall (2200) was still standing and formed the eastern wall of the new building: at 1.7m wide this room would have been narrow, but perfectly usable for some purposes, e.g. as a storeroom. Alternatively, this part of wall 2200 was demolished and its remains were covered by a new timber floor (for which there is no independent evidence). In this case, Room 1.7 may have extended as far as the socket on the north wall (2619).

We assume that the eastward extent of Room 1.8, which occupied the southern third of the frontage, is related to the extent of its deposit 2465, since this does not extend beyond the western ends of the Phase 2 walls 2228 and 2407. The eastern edge of 2465 is not quite on the same alignment as that postulated for a beam socketed into the north wall at 2619, and it is possible that some modification to the design of the building in the previous phase should be envisaged. Room 1.9 must have been some sort of verandah or porch structure.

Doorways

Room 1.7 probably had a doorway to the main road, marked by the extension of the road metalling (2456) over the part of the middle of the west wall (2244) for a width of some 2.5m. The two post-holes dug into the cobbled surface later in the same phase are in line with the north and south ends of the opening, which adds weight to the suggestion that this might have been

an opening. Room 1.8 had an external doorway in its southern side, also marked by the extension of road metalling for a width of 1.08m over the wall (PL. XI). It is possible that there may have been an internal doorway between the two rooms beyond the eastern end of the clay partition.

Phase 4 (FIG. 14; PLS X and XI)

Description

The western frontage was again remodelled. The extension 1.9, marked only by two post-holes in the previous phase, was converted to permanent form. This was signalled by the extension to the west of the north and south walls (2201/2202 and 2245) by a further 1.6m (2242, 2238). If there had been a west wall, it must have been destroyed by the building of wall 2017 in Phase 5, so it is not clear what form the frontage took in this phase. There is little evidence of the form of the interior of the new extension as no Phase 4 deposits were noted in the northern half of the building, and any deposits in the southern half were cut away in the following phase. There was again no change in the eastern part of the building.

SG61 (FIG. 14; PL. X) The cobbled road surface (2456) and both post-holes were covered by an irregular spread of grey and grey-green sand (2451\$) which lay between the previous west wall of the building 2244 and the line of the later one. In view of the soil chemistry on this site, and the fact that the new north wall extension 2242 was built directly on top of this layer, it seems likely that it may represent the remains of mortar bedding laid down during the next phase of building.

Two stubs of walling (2238 at the south, 2242 at the north; FIG. 15) were now inserted. The masonry of the walls was similar in character to that of Phase 4, but even greater use was made of small flat slabs. The north wall (PL. XI), which stood to 0.37m, consisted of five courses and appeared to have been built directly on the sand layer 2451: no foundation trench could be identified. With a thickness of between 0.52m and 0.58m, this wall was slightly wider than the south wall (between 0.45m and 0.50m), which had been constructed in a foundation trench. It was not possible to identify a bonding medium in the north wall, but the south wall was bonded with reddish-brown sandy clay. In the final form of the extended north wall of the building (PL. X), a void appears between 2201 and 2242 over the line of the west wall of the previous phase (2244).



PLATE X. Building 1 Phases 3–5 looking north: the northern walls to the extensions, showing the void over the Phase 3 west wall. Scale unit 0.1m.

Discussion

Walls

The external walls were again of fairly standard rubblework, and the main point of interest in this phase is the void which was noted in the northern wall (PL. XI). There seem to be two possible structural explanations for this: either 2244 continued in stone and the void was caused by the removal of blocks which continued through the line of the north wall, or 2244 continued as a timber-framed wall on a sill-beam which created the void when it was removed. In either case, it is clear that at the time when 2242 was built, the west wall of the previous phase (2244) had stood at least 0.3m higher, and there appear to have been no immediate plans to demolish it.

Floors

The absence of internal deposits for this phase shows either that the metalling from the previous period was still being used as a floor surface, or that there was a timber floor which does not survive in the archaeological record.

Layout

Since the west wall of the original extension in Phase 3 appears to have still been standing (see above), the new extension 1.9 must be seen as an additional unit attached to the Phase 3 building, rather than as part of a complete remodelling of its western end as had happened previously.

Doorways

The doorway in the southern wall probably continued in use, since there was a doorway in this position in the following phase. There was now a doorway facing it in the northern wall. The evidence for this is quite complex. Part of the south face of the northwest corner of the original



PLATE XI. Building 1 Phase 3 looking east: door from the side street (right), leading to Room 1.8. Scale unit 0.1m.

building (2149/2200) had been carefully dismantled, presumably so that the new extension to the north wall could be keyed into it in Phase 3. However, at the time of excavation the gaps thus created between the surviving blocks were found to have been filled with red clay, and no attempt appeared to have been made to bond in the surviving section of wall. The length of masonry which constituted that part of the north wall which bounded the first extension actually overlay the make-up layer of Phase 5; the topmost block on the southern end of 2202 appeared to project over the south face of the return of 2454 at the corner, and there was another gap beneath (PL. XI). It therefore appears that an opening, probably a doorway, had been made in the wall between Phase 3 (when the original northwest corner was prepared to receive a new length of masonry) and Phase 5, when the surviving section was built.

Phase 5 (FIG. 15; PLS X, XI and XII)

Description

This phase saw the complete demolition of the south and west walls of Phase 3, the blocking of the doorway in the north wall (2202) and the restructuring of the west end of the building to include a new room (1.11) with a clay floor (2400) in the southwest corner (the rest of the areas

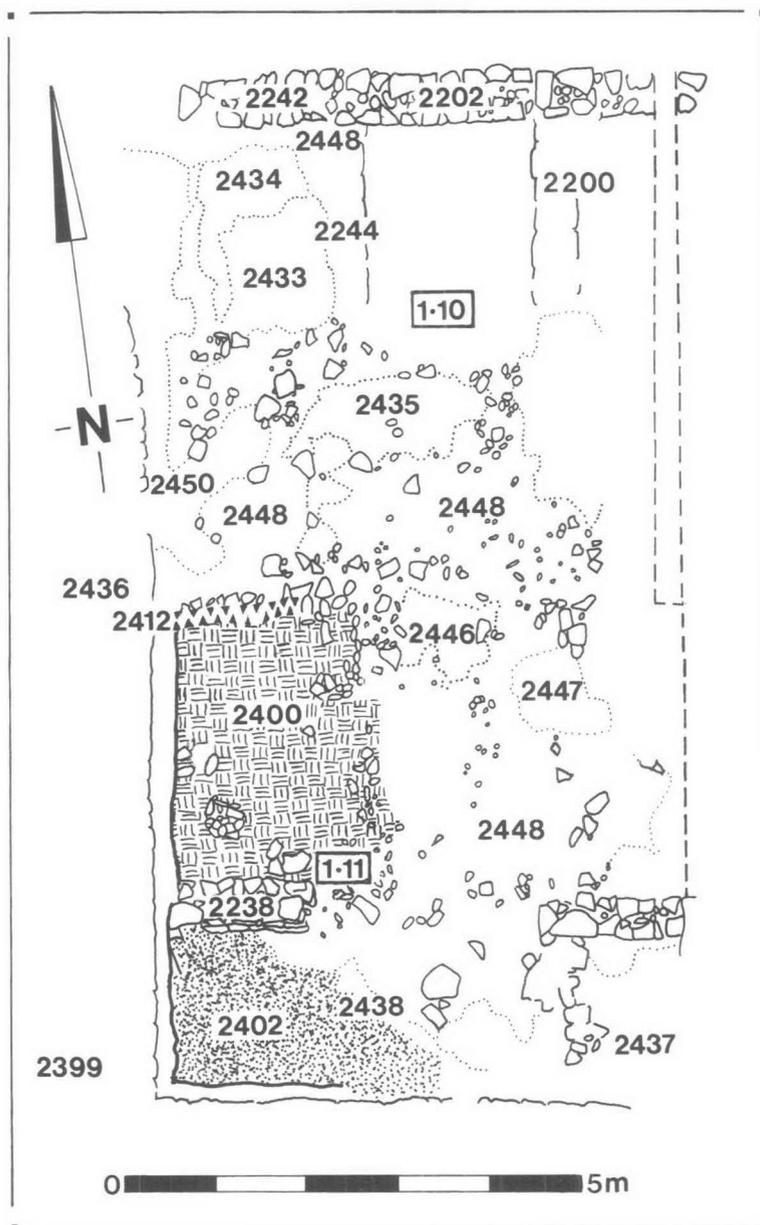


FIG. 15. Building 1: Phase 5.



PLATE XII. Building 1 Phase 4 looking southwest: clay floor in Room 1.11 and partition. Scale unit 0.5m.

is designated 1.10). The clay floor was laid on a cobbled foundation (2436) into which the timber sill of a partition wall, represented by a beam-slot (2411\$/2412) was set. These activities may not have happened at the same time. None of the other internal deposits (2433, 2434, 2435, 2446, 2447, 2448, 2450) could readily be interpreted.

There was no change to the eastern end of the building.

SG62 (FIG. 15; PL. XI) The demolition of the Phase 3 west wall 2244 took place before the deposition in the northwest corner of the building of a series of localised deposits of small stones, clay and sand (2433, 2434, 2435, 2450), none of which seem to be structural in nature. The rest of the west end of the building for approximately 4m, as far as the west end of 2407, was covered by a make-up layer (2448) of variable thickness (0.07 to 0.15m), which overlay the demolished west and south walls (2244 and 2245) of Phase 4 and the cobbled surface of Phase 3 (2467). It also ran through the doorways in the north and south walls (PL. XI). This deposit was associated with two patches of rubble and fire debris (2446, 2447), one of which contained two almost complete antefixes of Boon (1984) Type 3, possibly a votive deposit.

SG63 (FIG. 15; PLS X and XII) After 2448 had been deposited, wall 2202 was built to block the doorway in the north wall, and room 1.11 was created. The masonry of 2202, which survived to a height of 0.52m, was keyed into that of Phase 4.

The make-up layer 2448 and the construction trench for wall 2238 were both cut away by a 0.48m deep hollow (2259\$) covering an area bounded by walls 2238 and 2244 to the south and east. At the west side its precise extent is unknown, as it was itself cut by the foundation trench of wall 2017 in Building 2; and to the north it terminated 3.1m north of wall 2238 on a line which was not exactly parallel with it. This hollow was filled with large tightly-packed cobbles (2436) which extended eastwards over wall 2244. This cobble spread appeared to have been laid as a foundation for the floor surface of mixed yellow and brown clay (2400) covering room 1.11, but had not prevented differential settlement, since where the floor overlay the wall it was roughly 0.2m higher than it was to the west. On the surface of the floor was a patch of cobbles, 0.4m across, 0.5m from the south wall, and a small depression in the surface was partially surrounded

by three large squareish cobblestones. Other, more random, cobbles lay on the surface over the wall. The floor was bounded to the north by a beam-slot 2411\$/2412. The cobbles and beam had been laid together: after the hole had been filled with cobbles to a depth of approximately 0.35m, the beam was put in, and the remaining cobbles were laid, being placed carefully against the beam. The clay floor 2400 was then laid over the cobble up to the edge of the beam. From the void (2412) left when the beam had decayed (the lack of disturbance to the cobbles shows that it had not been removed), it can be seen that the beam was 2.07m long and 0.20m wide. The depth below the top of the clay surface was 0.15m, but it is possible that the beam may have projected above this level.

SG64 (FIG. 15) The area to the south of the building was covered by stone and sand deposits (2437, 2438) coterminous with 2448 which extended though the doorway 2248. It seems to have been laid down before the rest of wall 2245 was demolished, as it respects the doorway.

Discussion

Walls

The new section of the north wall was built to match the other exterior walls. Since the internal wall on the north side of 1.11 was marked only by a timber-slot (2412), it must have been of timber-framed construction. It would appear that a deliberate attempt had been made to protect the timber by mounting it on the lower part of the cobbled floor foundation.

Floors

The clay floor of Room 1.11 is one of the few clearly identifiable floors in this building. Since it lay on top of a substantial cobble foundation, the builders probably anticipated heavy wear.

No information is available about the rest of the western end of the building (1.10). Given the extremely mixed nature of the deposits, and the fact that the area between the superseded west walls 2200 and 2244 is represented by a hollow, it seems likely that this area may have been floored in timber.

Layout and doorways

Room 1.11 extended from the beam-slot 2411/2412 at the north to wall 2238 at the south, a distance of 2.74m. No east or west walls survived, but its extent in this direction can largely be defined by its clay floor. From this, it is clear that the room extended eastwards over the demolished wall 2244 and was approximately 2.2m wide. It is unclear what happened in its southeastern corner, where the Phase 3 south wall extension (2245) had been demolished with 2244: the floor here does not extend to the line of the wall, and may have respected some pre-existing fitting which does not survive in the archaeological record. In the northeast corner of Room 1.8, the eastern edge of 2400 lay initially on the line of the eastern face of the underlying wall 2244, but further south a slightly irregular tongue of clay, some 1.6m wide, extended up to 0.5m further east. This may represent the position of an internal doorway to Room 1.10. An external doorway led from the south into Room 1.10, whose deposits extended across the opening.

Possible annexe to Building 1

Description (FIG. 16)

A further room, a possible annexe (1.12), was attached to the eastern end of the building. It was separated from the main part of the building by the main east wall 2222 and it was therefore not possible on stratigraphic grounds to fit this area into the structural sequence established west of this wall, other than that it underlay the final rubble layer. The southern and western extent is uncertain. As no south wall was encountered, it may have been open to the side street along its south side. The northern wall (2458) was on the same line as the main part of Building 1. There were two masonry bases (2461, 2462) in this annexe.

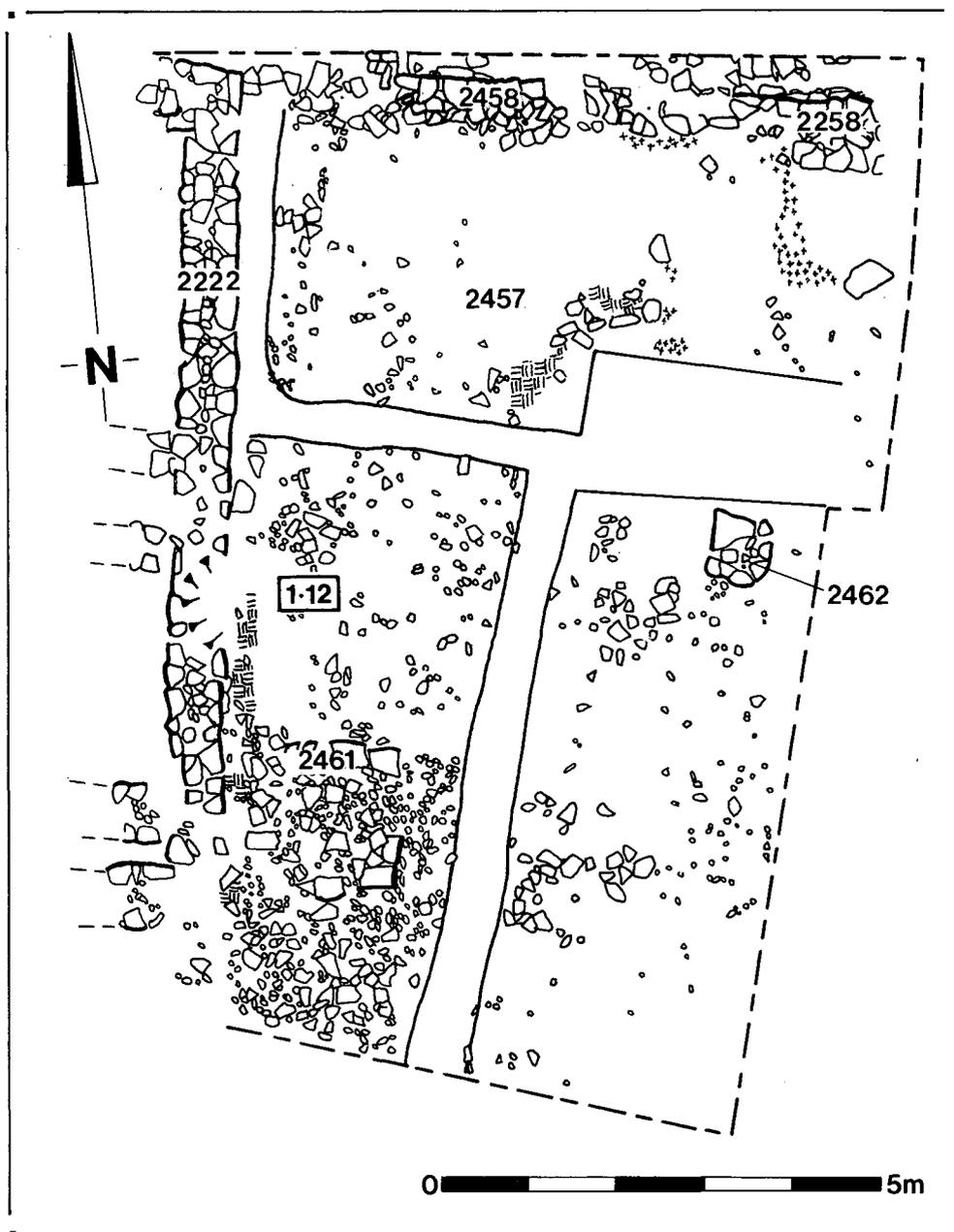


FIG. 16. Building 1: Annexe.

SG65 (FIG. 16) The northern side of this structure was formed by a wall (2458) abutting the eastern wall of the main part of the building. A length of 7.20m lay within the excavated area, but the wall continued beyond the eastern baulk. It was 0.64m wide at its greatest extent and at least 0.37m high, and consisted of at least three courses of roughly-dressed sandstone blocks with a face on its northern side.

The only excavation carried out within this area was the removal of overlying topsoil and rubble. Only three definite features were noted. Most of the area was covered by a patchy layer of metalling (2457), surviving best at the south side. Two rubble platforms with faces of roughly-cut blocks surrounding a core of smaller, more irregular fragments of stone lay within the area. The larger of the two, 2461 (1.80 × 1.70m), lay close to wall 2222 and the other, 2462 (0.75 × 0.70m), was approximately 5.5m from 2222 and 4m from 2458.

Dating of Building 1

What little datable samian and coarse pottery there is from this building suggests that it was in use from the early to mid 2nd century (samian cat. nos 49–77, coarse pottery cat. nos 196–210). The one coin (no. 326), a worn 1st or 2nd century piece, adds nothing to this picture. As there

is so little material from each phase, it is not possible to date individual phases. A better date can be provided for its demolition (Phase 6), which was carried out in conjunction with the construction of Building 3 (see below, SG72) in the mid to late 2nd century, probably no later than A.D. 180

BUILDING 2 (FIG. 17)

Only very limited parts of this building were examined, as generally speaking excavation on this part of the site did not extend below Building 3. However, during the investigation of Building 3, a few structures and deposits were discovered which clearly pre-dated it. These are described in this section, although there are indications that one deposit at least might actually pre-date the Building 2 structures.

Deposits pre-dating Building 2

SG66 (Not illustrated) One feature may pre-date Building 2. This was 2373, which appeared to underlie wall 2057. It was a large patch of very dark brown/black clay-sand with a humic content, in the southeast corner of the room, provisionally interpreted as the fill of a pit.

Description

Little could be seen of Building 2 beyond one wall (2057), one possible wall (2153) and small sections of two others (2272, 2273). They were constructed from coursed rubble masonry, of a similar type to that employed in the Phase 2 interior walls of Building 1, with rather uneven setting of the stones and the use of red clay in the offset. Very few internal deposits could be attributed to this building, but a possible floor and hearth were identified (not illustrated). However, as they not only lie below the earliest surviving floor levels in this part of Building 3 but are also the only deposits in the area to contain fire debris, they may perhaps best be seen as belonging to Building 2 or its demolition, although they could represent localised burning, possibly related to the hearth 2376 in the area which later became Room 3.1.

SG67 (FIG. 17) A short length of what appeared to be the south wall of a building pre-dating Building 3 (2272) was noted during the excavation of a small cutting between Buildings 1 and 3. Underlying the loam deposit to the east of Building 3, parts of two walls were noted, one running east-west, and apparently a continuation of 2272 and the other north-south (2273). They were bonded at right-angles and had a neat face on the south side, formed from sandstone rubble blocks, with the inner side composed of cobbles, and had the general appearance of an offset foundation course. The most likely purpose of these two fragments of wall is that they formed the lower part of a south wall to a building pre-dating Building 3, but on the same site.

SG68 (FIG. 17) During study of Building 3, it was noted that two of the internal walls (2057, 2153) at the junction between four rooms formed a corner which underlay the two walls (2060, 2063) forming the adjacent corner. The masonry of which 2057 was composed was also different from the rest of the masonry in Building 3, resembling as it did wall 2618 in Building 1 (SG58, see above). Wall 2057, which survived to a height of 0.21m (one course) had no separate core, but consisted of very crude, irregularly shaped rubble facing blocks set with large blocks on one face (usually the west) opposing small blocks on the other, arranged so as to interlock. No bonding material was noted, and it is possible that it may have been of dry-stone construction. The stones of the offset were set in a manner which was much more similar to the eastern walls and were bonded with reddish brown sandy clay. The offset was bonded to the only surviving visible part of wall 2153. Only a single row of stones was visible: the western section had a well-defined north face, but the eastern section did not.

SG69 (Not illustrated) The internal deposits consisted of a hearth represented by a couple of superimposed flat slabs (2376), cracked and (partly) removed, with traces of scorching, partly overlain by a spread of burnt clay (2377). A group of similar deposits (2369, 2374, 2375) occupied the rest of the room in this phase, the most extensive (2369) overlapped the other two and may represent a floor surface. An interpretation as collapsed burnt wattle-and-daub was considered, but is thought less likely. The other context in this group (2372) was a line of stones

at the northern edge of the excavated area, possibly a sill-wall, though it was much more roughly constructed than anything else in the building (but cf. Building 6 below, p.95). It was abutted by 2374. All these deposits were overlain by a deposit containing much burnt clay.

A linear deposit immediately east of the Building 3 west wall (2323) may also belong to this phase, but this is not certain.

Discussion

The information available for this building is insufficient to allow any interpretation to be offered, except for the extent of the building to the east. To judge from the position of the corner between walls 2272 and 2273, the eastern wall of Building 2 would have been further east than that of Building 3 and on the same line as the east wall of Building 1.

Dating

A *terminus ante quem* of mid-late 2nd century for this building is provided by the construction of the overlying Building 3 (see below, p.80).

BUILDING 3 (FIGS 17–19; PLS XIII–XVI, XIX)

Building 3 and its attached yard seem to have been built in the mid or late 2nd century across the site of two previous buildings, Buildings 1 and 2. Building 3 was constructed in coursed rubble, and consisted of a seven-room strip-building which occupied the northern side of the combined plot with an open area at the southern side; this open area was bounded to the west and south by an enclosure wall which was a continuation of the façade (west) wall of the strip-building. The enclosure wall on the south side had a culvert incorporated against its northern face. No eastern boundary to this open area was noted: either none existed or the plot extended further east than the excavated area. There is some evidence that a small, insubstantial timber building (Building 4) was erected within the open area, followed by a more substantial one (Building 5).

It is difficult to be sure of the precise size of the complex. The surviving 4m section of the west wall of the strip-building is not parallel with its east wall, the measurement varying from 20.4m to 20.5m. The north-south measurement of the double plot is even less certain (FIG. 18), since the southwest corner was not a right-angle, and only part of the north wall of the strip-building was excavated and that was at the east end, mostly east of the point at which the south wall survived. However, at the only point where a measurement could be taken it was 23.46m (allowing 0.66m for the thickness of the north wall, whose north face lay beyond the edge of the excavation). The projected length along the main north-south road façade was 23.7m. The width of the strip-building was 11.4m at its eastern end.

The construction of the building took place as a single operation, with no extensions or refurbishments to the fabric. The structures and deposits within the various rooms were not necessarily related either to the building's construction phase or to one another. For this reason, the description of structures and stratigraphy has been divided into two sections — construction/building fabric and deposits within the individual rooms — rather than into the more conventional phases. A section on the dating of material from both sections follows, and then a general discussion. Deposits in the yard, where Building 4 and Building 5 were erected subsequently, are described with these buildings, to which they are more directly related (SG86, SG87). The history of the culvert subsequent to its construction is also described in the section on Building 5 (SG89, SG93).

Construction and building fabric (FIGS 17–19; PLS XIII, XVI, XIX)

Description

This phase represents the construction of Building 3 and the destruction of Building 1 (Building 3 Phase 1 = Building 1 Phase 6). From the stratification of the relevant construction and destruction deposits it appears that at least part of Building 3 was erected before Building 1 was

pulled down; the material subsequently used to infill the open area to the south of the strip-building seems to have been derived from the demolition. It may be that Building 1 continued in use while construction was going on (apart from the extreme west end which would have been disrupted by the building work), and was not demolished until Building 3 was ready for habitation. Some at least of Building 2 remained standing and was incorporated in Building 3, but excavation did not proceed far enough to identify any certain destruction deposits for Building 2, although it is possible that the deposits of SG69 (see above) could be regarded as such.

The first stage of the operation was the construction of Building 3, comprising the strip-building (walls 2006, 2056, 2058, 2059, 2060, 2061, 2062, 2063) and the new south and west walls (2007, 2017) which defined the enlarged plot. The south wall construction incorporated a culvert which ran along much of its northern side, and there also seems to have been an entrance in this wall from the side street immediately to the west of the culvert. All the walls were all of coursed rubble on offset foundation courses. Walls 2057 and 2153 were reused from Building 2.

SG70 (FIGS 15, 17 and 18) The building of the new boundary walls (2007 south, 2017 west) was done in one operation, as the foundation trench 2399 could be seen to be continuous. The foundations (2460\$) consisted of large cobbles and pitched rubble blocks laid in a matrix of red clay. The depth was variable, but can be generally estimated at something over 0.30m. Over the top of the foundations where the offset was removed was a layer of coarse sand (2247\$) between 0.05 and 0.10m thick, probably representing the remains of a mortar bedding from which the lime had been removed by the action of the soil chemistry.

The construction of wall 2007 was complicated by the fall in the ground level from west to east: in order to maintain the coursing at least approximately level, the wall had been built in three sections. Initially the structure continued straight on from 2017 with the same offset level, though there was a third course below this to maintain the height. This section ended with a straight joint. To the east of this, the number of offset courses is reduced to two. The wall above generally survived to four courses. Beyond this section of walling, the offset course was discontinued and the foundations rose to a comparable height. The structure at the western end had subsequently become badly disorganised. The width of this wall was between 0.47m and 0.49m on offsets of 0.57–0.59m; wall 2017 was slightly wider (between 0.51m and 0.56m).

Two features were visible in wall 2007, a probable doorway (2143) and a possible socket (2203\$). The probable doorway 2143 extended from 4.25m from the southwest external junction of wall 2007 with 2017, and for approximately 1.45m. There were two pieces of evidence for this: a variation in masonry technique on the west side of the possible opening, and an extension of the final phase metalling of the side street over its drain (SG46, see above and FIG. 20). The variation in masonry, probably a quoin (2020), consisted of two blocks of noticeably finer workmanship in the topmost surviving course of the wall (fourth above the offset) with a narrow stone infilling the space between the two. This survived on the outer face only, as the inner face of this course has been robbed out. Eastwards of 2020, the standard masonry technique resumed for a distance of 1.45m, which corresponded almost exactly with the extension of the metalling across the drain. East of this point, the wall had been robbed and it was not possible to see whether there had been another quoin.

The socket (2203\$) was evidenced by a gap in the third course from the bottom on the north face of the wall, 4m from the west corner. As this was surrounded on all sides by *in situ* blocks, including above where a stone of greater length than usual extended over both the gap and the stones on either side, it seems certain that it was an original feature.

The most important feature linked to wall 2007 was a culvert 2562 which ran along the northern side of the wall for much of its length. It seems originally to have been around 11.5m long, but it is difficult to be certain because its eastern end was badly damaged. The southern side of the culvert was formed by wall 2007. Against this was laid a base formed of flat slabs (2442). They were irregularly shaped, but an attempt had been made to fit them reasonably closely together; some were missing, especially in the western end, where they were probably grubbed out when this part of the culvert went out of use (see below). Overlapping the edge of the base was the northern side of the culvert (2441), built from roughly dressed sandstone blocks. These were of a size comparable with those used in the wall and were set on a tightly-packed surface of

visible (0.84m wide), and what little remained of the wall above (immediately south of the junction with wall 2153) was the same thickness as 2017. None of the other walls of the strip-building survived well enough to demonstrate their relationship to 2006. The western end of the north wall (2058) lay outside the excavated area, the western end of the south wall (2059) had been comprehensively robbed, and enough of the median wall at the western end (2153) had been removed to mean that the remainder did not physically touch 2006: there are however reasons for supposing that 2153 had been retained from the previous building (see above, p.68).

The other external walls of the strip-building, 2058 and 2061, were of one build with 2059, and although the relationship of the internal walls 2056, 2060, 2062 and 2063 is one of butt-joints, there is no reason to suppose that they were not part of the same building operation. Walls 2006, 2007, 2017, 2056, 2058, 2059, 2060, 2061, 2062 and 2063 were all built using the same technique. Rubble blocks, mostly subrectangular in shape though some were triangular and trapezoidal, were laid to form a wall with two faces, between which was a core composed of small pieces of sandstone and sometimes incorporating pieces of brick or tile. The external ones, though apparently not the internal ones, also included cobbles in the core. Most of the stone used was sandstone, but there were occasional pieces of conglomerate; the blocks had mostly been formed by splitting, although there was some evidence for the use of the adze or axe for additional shaping. The main body of wall 2017 was set asymmetrically on the offsets which projected further on the east side than the west: those in the strip-building seem to have been less regular, though it is difficult to be certain of this.

Wall thickness varied. The west wall (2006/2017) has been discussed above; other external walls of the strip-building were between 0.60m and 0.72m, with the offsets projecting for a further *c.* 0.10m. The width of the internal walls was between 0.49m and 0.54m.

Wall 2153 which divided the north and south sides of the western half of the building, consisted apparently, in this phase at least, of a single row of stones with one face only (north). It is however possible that further excavation would have established that this wall had originally had a south face. On the evidence of the second-phase floors, which were laid in the rooms on either side up to a clearly-defined 1.25m wide gap, wall 2153 formed the foundation for a wooden sill-beam or some other biodegradable walling material. The area to the south of 2153 was divided into two rooms, but the division was represented only by a cobble foundation. This may also have been reused from Building 2, but this remains uncertain.

Demolition of Building 1 (Building 1 Phase 6) and deposition of make-up layers (FIG. 19)

The western end of Building 1 was demolished and completely covered with dumps of rubble and clay (2386\$, 2389, 2405\$, 2410\$). The amount of demolition which took place at the eastern end of the building is uncertain, as parts of the internal walls of Building 1 were visible above the dump material. It may be that this part of the building was indeed demolished but that there was less dumping in this area since it was not destined for further structural work, and therefore make-up comparable to that undertaken on the western part was deemed unnecessary. Certainly, if any of the eastern part of Building 1 remained standing, it would have required structural modification if it were to remain stable.

SG72 (FIG. 19: for demolished features see FIGS 12 and 15) Demolition appears to have started with the complete removal of any eastern continuation of wall 2228, any western continuation of walls 2350 and 2351, parts of walls 2401 and 2407, together with the postulated north-south wall between the east and west parts of the building; and the demolition of any parts of the surviving walls which rose above the level at which they were found when they were excavated. The demolition of the clay-floored room in the southwest corner of the building (1.11) was marked by a spread of charcoal (2392\$) overlying the clay floor and beam-slot fill.

Against wall 2401, 2.75m south of the doorway to Room 1.11, was a small area of cracked slabbing (2406\$), probably originally a single slab, overlain by a 0.14m thickness of sandy clay turned orange-pink and yellow through heat, and mixed with burnt rubble and ash (2397\$). This seems to have been a small hearth, probably connected with the demolition process.

Above these deposits was laid the main bulk of the make-up for the next building. This consisted initially of localised rubble dumps (2386\$, 2405\$, 2410\$), overlain by the main bulk of the make-up (2389), which comprised up to 0.5m thickness of heavy pink sandy clay mixed with

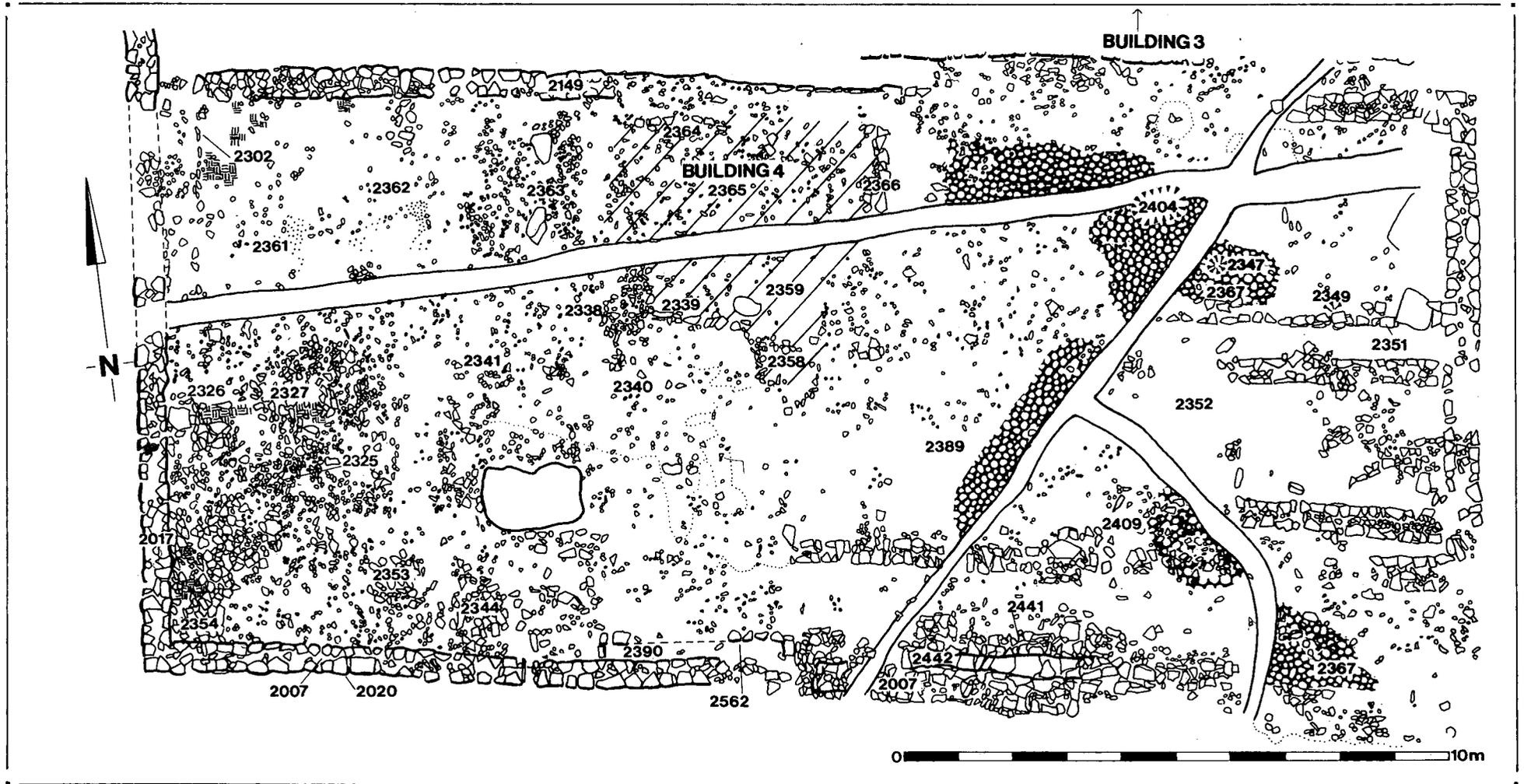


FIG. 19. Building 3 yard and Building 4.

yellow, containing lenses of darker soil and charcoal, stones, cobbles, brick, tile and bone as well as noticeable quantities of rubble near the walls. The strip between the north wall of Building 1 and the south wall of Building 3 was filled with similar material (2381\$) which overlay the foundations of wall 2059. At the east side of the site, a 0.4m thickness of orange clay silt (2352\$) was noted filling in between, and partly overlying, the walls of the eastern end of Building 1.

Deposits within the individual rooms (FIG. 17; PLS XIV–XVI)

Seven rooms were identified. There appears to have been a difference between the east and west ends of the building, and the three rooms at the west end are described first, followed by the four rooms at the east. Room divisions in the western half of the building were less clearly marked than those in the eastern half: the upper surface in Room 3.1 clearly respected a now-vanished timber sill over 2153 which divided it from Room 3.2, but although there appeared to be a clear distinction between the sequence of events in Rooms 3.2 and 3.3, the fact that the distinctive deposits had been reduced to fragments only made it difficult to establish the division in the absence of clear indications of a wall. Room sizes are given in TABLE 5.

The deposits in all the rooms were removed to the level of the material (mostly uniform sandy clay deposits) filling in below the upper surface of the offset foundation courses, i.e. below the level of any likely floors. This material was then sectioned in some of the rooms. Where this was done, a small but significant amount of pottery was recovered, dating to appreciably later than the construction of the building. Similar material was also retrieved from the upper levels of some of the other rooms (coarse pottery cat. nos 340–2 and discussion). It is not always possible to determine when any particular internal structure or layer was formed. This room-by-room description therefore encompasses all the internal deposits other than the destruction deposits: interpretation by phase (where possible) is offered in the discussion section.

Description

Room 3.1 (FIG. 17; PL. XIII)

Some deposits in this room may relate to, or even pre-date, the earlier Building 2. These are described above (SG66, SG69). Activity contemporary with Building 3 is represented by a flagged floor (2066\$/2174) which had been repaired and subsequently worn away before it was replaced by a cobbled floor (not illustrated), itself considerably worn. The flagged floor was associated with a post-hole (2256) near the street frontage.

SG73 (FIG. 17) Above the group of contexts described as SG69 were the remains of a flagged surface (2066\$/2174), set over two patches of sandy clay and chippings which appeared to be make-up (2368\$, 2370\$). A third patch of sandy clay loam and chippings at the eastern end of the room (2175) may also have been make-up for the flags, although they did not survive in this part of the room. The flagged surface itself appears to have had a complicated history. It consisted partly of badly cracked sandstone flagging in which the outlines of some of the original flagstones were visible, and partly of other fragments of stone, amongst which were a quernstone which had cracked across into quarters, apparently after having been laid. There is nothing stratigraphically which would show that the stone elements were not a single deposit, but in terms of its appearance it is perhaps best considered as an original flagged surface which became damaged in use and was patched by other stone, including the quern.

The flagged surface apparently continued at least as far as the line of wall 2006. This wall had been removed north of the line of wall 2153. Probably contemporary with 2174 was a post-hole 2253\$/2254\$/2255\$/2256 set to the north and west of the currently surviving areas of the flagging. It was centred 1.75m from the projected line of the frontage and 2.5m from the south wall.

SG74 (Not illustrated) 2174 was eventually replaced by a cobbled surface (2074, 2170) which was separated from it by a deposit of silty sand (2173\$), possibly the remains of a layer of mortar. The cobbled surface was considerably worn and sections of it had disappeared. The relationship of the robbing of 2006 to the two successive floor surfaces was not very clear: 2074/2170 appeared to terminate on a line with the eastern side of 2006, but the uppermost road surface outside seems to have continued down over the line of its western face. There was no sign of a robber trench at this level and it is possible that there may have been an opening at this point.



PLATE XIII. Building 3 looking northeast: with attached yard and Building 4. Scale unit 0.5m.

Room 3.2 (FIG. 17; PL. XIII)

This room contained two superimposed cobbled surfaces (2171, 2172). There was no other indication of activity, unless the single flagstone within the underlying clay deposit (2177\$) was the remains of an earlier floor.

SG75 (FIG. 17) The earliest deposit relating to this room was a layer of clay loam/sand (2177\$) containing a single flagstone. Overlying this layer was a spread of cobbles (2172). Above this was a finer surface composed of smaller cobbles and large pebbles (2171). This did not survive over the whole room, but a fairly extensive patch at the northern side of the room showed that this surface had obviously respected a wall on the line of 2153, although 2171 was at a higher level than the surviving indication of walling.

Room 3.3 (FIG. 17; PL. XIV)

This room contained more in the way of surviving fittings than any of the others, in the form of three rectangular masonry bases, one (2105) against the north wall and two (2104, 2257) against the south. Some very small areas of possible floor or subfloor deposits were noted (2106, 2107\$, 2108\$, 2113\$), but these may have been displaced from elsewhere in the building.

SG76 The lowest deposit excavated was a cobble layer (2106). This may represent a subfloor though it was much slighter than cobbled surfaces in other rooms of the building: two patches of what may have originally been upper surfaces were noted. These consisted of a scatter of broken paving slabs (2107) and a small roughly circular patch of crushed brick/tile fragments (2108). There was also an even smaller patch of sand (2113), but given the small size of these remains it is possible that they may not be *in situ*, but were derived from pieces of *opus signinum*, deposited during the disintegration of the building. Between these and the cobbles were mottled deposits of clay sand (2161\$, 2163\$, 2394), possibly representing degraded mortar.



PLATE XIV. Building 3 looking east: Room 3.3, showing masonry bases. Scale unit 0.5m.

Three platforms or bases were found in Room 3.3. Two were abutted to form an L-shaped structure; the larger of the two (2257) measured 1.7m north–south and 1.4m east–west, and the smaller (2104) 0.77m east–west and 0.70m north–south. Platform 2257 was situated in the southeast corner of the room and probably would have abutted both walls. It was built from sandstone rubble, with facing stones on the north and west sides enclosing a fill composed of large pieces of angular rubble in a mixture of sandy clay loam and lighter sandy clay. Platform 2104 abutted the western side of 2047 and again would have backed on to the south wall if it had not been robbed. It was also built of brick and tile: an L-shaped wall of three courses faced on both sides formed the perimeter to the north and east and enclosed an infill of brick/tile fragments set in sandy clay loam (2164). The third platform (2105) was also built of sandstone rubble with faced stones defining the edges and filled with rubble. It was backed on to wall 2153 to face 2104.

Room 3.4 (FIG. 17; PL. XV)

The deposits in this room were considerably more complex than those in the other rooms of the east end. Pitched rubble and cobbles in the southern end of the room (2118, 2127) probably represent some form of subfloor, but it is difficult to establish whether other deposits were connected with surfaces. An L-shaped brick platform or base (2158) extended across most of the north end of the room.

SG77 (FIG. 17) The lowest deposit encountered at the northern end was a layer (2118) of pebbles and small cobbles in dark brown sandy clay loam over a foundation of larger cobbles, and possibly corresponding to the cobble subfloors of Rooms 3.5, 3.6 and 3.7 (see below). At the southern end was a much more substantial deposit (2127) of pitched rubble fragments and cobbles, which extended for about two thirds (1.0m) of the width of the room. It overlay the offsets of the adjacent walls. Time did not permit exploration of the relationship between these two deposits, but as the surface of 2127 projects some 0.1m above the level of 2118, it seems possible that the former may overlie the latter. A small patch of light brown sand (2116\$) lay against the east end of 2127, and



PLATE XV. Building 3 looking south: Room 3.4. Scale unit 0.5m.

there were a few other small patches of the same sand elsewhere in the room. Immediately north and east of 2127 were two deposits of reddish clay (2115\$, 2117\$/2119\$), one over and one under 2127. Further patches of clay with signs of burning were noted to the northeast and northwest of 2118: these were interpreted as being part of the same original deposit as 2115. Immediately to the north of 2127, 2115 was in part overlain by a broken sandstone slab (2114\$), obviously once part of a larger slab. A second broken slab (2121\$) overlay 2118 against the west wall of the room. A patch of crushed tile (2122) lay against the opposite side of the room (not excavated) and another small patch overlay 2118.

At the north end of the room, partly cut away by a later pit which had intruded into the underlying sandy silty loam deposit (2395), was an L-shaped structure (2158/2396\$). Its east–west arm measured $1.40 \times 0.70\text{m}$ and the north–south one, which abutted the east wall, measured $1.20 \times 0.45\text{m}$. It may originally have extended further north, but any continuation had been cut away by the pit. It was not clear whether the full height of the platform had been revealed. It was composed of at least four courses of brick and tile fragments and sandstone rubble blocks, bonded with red clay: more red clay (2129) extended westwards to the west wall of the room.

Room 3.5 (FIG. 17)

This room retained the remains of a floor of *opus signinum* (2096) over a cobbled subfloor (2097), but there were no other traces of activity in the Roman period.

SG78 (FIG. 17) The cobbled subfloor 2097 appeared to overlie the offset to wall 2060, but abutted the offset to wall 2062. The matrix was light brown coarse sand admixed with a little clay: this same sand, containing some small fragments of brick/tile also formed a distinct layer (2162\$) above the cobbles, but mostly only where it had been protected by the floor surface 2096. The floor surface (2096), which survived only as small isolated patches, consisted of fragments of crushed brick/tile. It seems reasonable to suppose that this represented the remains of a floor of *opus signinum* in which the lime component of the bedding mortar had been attacked by the chemical composition of the surrounding soils, and had completely disappeared leaving only the sand component, the sand grains being vulnerable to dislocation by earthworm action and other soil processes. In view of the state of preservation of comparable floors elsewhere on the site, it is necessary to postulate that the floor had already been broken up before this stage, and that most of the brick/tile fragments of which it was composed had been removed (possibly by sweeping) before the room went out of use and was covered in destruction debris.

Room 3.6 (FIG. 17; PL. XVI)

Room 3.6 was defined by four masonry walls (2056, 2058, 2060, 2061) of the main phase of construction, but its floor deposits showed that it was divided into two, probably when its *opus signinum* (2048) floor was laid, over a cobbled subfloor (2123) which extended over the whole room. The southern, narrower, section of the room was divided from the northern section by a slot and square cutting (2126, 2148) in the *opus signinum*, which was of poorer quality (2160) to the south of the slot. The southeastern corner was paved (2124).

SG79 Excavation terminated at the cobble subfloor (2123), which abutted the walls on all sides. The overlying *opus signinum* surface (2048) did not cover the whole of the subfloor, and shows the position of now-perished fittings. At the north, east and west of this room there was a narrow

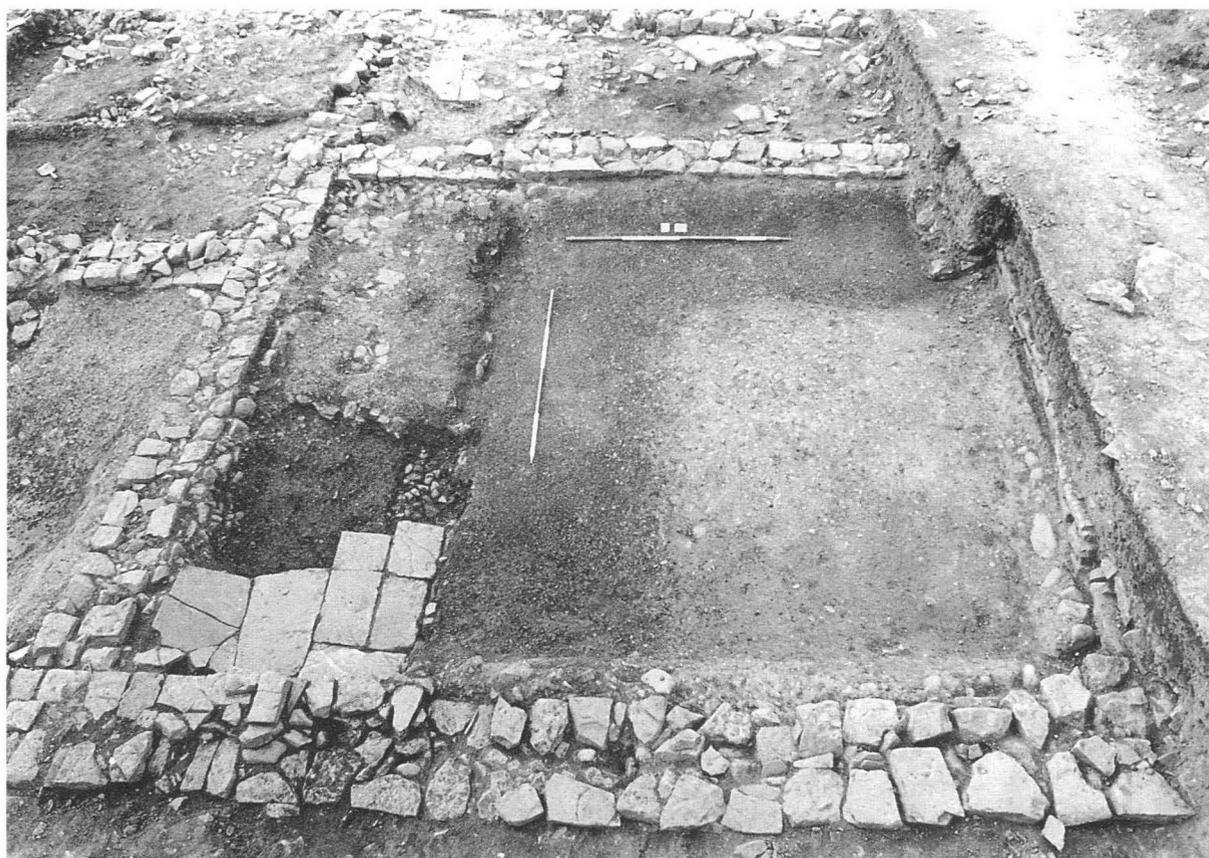


PLATE XVI. Building 3 looking west: northeast corner with Room 3.6 in the foreground. Scale unit 0.5m.

band (ranging from 0.12 to 0.25m wide) at the base of the walls into which the *opus signinum* did not extend, exposing the cobble subfloor. At the south side of the room, a strip measuring 1.8m wide at the east and 1.4m at the west was separated from the remainder. It was defined at its western end for 2.8m by a slot (2125\$/2126), approximately 0.18m wide over most of its length. It was not clear whether the slot was cut through the surface or whether the *opus signinum* had been laid on either side of a horizontal timber which had already been positioned; as the floor surface was not removed in this half of the room, it was not possible to be certain whether the cobbles which formed its base were actually a part of 2123. At its eastern end the slot joined the northwestern corner of an approximately rectangular void (2148) in the *opus signinum* measuring 0.69×0.39 m and having a cobbled base which was probably a part of 2123. At the junction between 2126 and 2148 a shallow step in the floor surface, at the edge of which the subfloor was visible, divided this southern strip into two. East of this the surface (2160) was slightly lower and of much poorer quality, the brick/tile fragments accounting for only approximately 10% of its composition. This may originally have underlain the flagging (2124) abutting the east wall of the building in the southeast corner, which consisted of the remains of apparently two sandstone flagstones, cracked *in situ* and set in sandy clay (2159\$). As these were not removed during excavation, it is not possible to determine whether they overlay 2160 or 2148: inspection suggested that the former was likely, but not the latter.

Room 3.7

This room had a well-preserved floor of *opus signinum* (2051) over a cobbled subfloor (2099), but there were no other traces of activity in the Roman period.

SG80 The lowest deposit excavated, a sandy clay, probably infill (2602): no foundation trenches were noted cutting through it. Above this was the cobbled subfloor (2099), which also incorporated fragments of sandstone and lumps of brick/tile, and was 0.10m thick. The *opus signinum* floor surface 2051 was represented by a 0.07m thick layer of crushed tile fragments: no mortar survived (see above, SG70). It was virtually intact except where it had been cut away by a 6th century grave (SG205, see below) and a later pit. This floor overlay the offsets of the surrounding walls, although there was a gap (of maximum width 0.22m) on the east side between wall 2133 and the *opus signinum* surface. The offsets supported the edges of the floor at a level of approximately 7.57m OD round the sides of the room; the middle of the floor, however, had subsided dramatically to a depth of 7.08m OD, probably into earlier pits or ditches below.

Dating

A construction date in the mid to late 2nd century, no later than A.D. 180, is firmly established for the main building phase by the dumps of destruction debris (SG72) from Building 1 which were associated with the construction of Building 3 (samian cat. nos 85–127; coarse pottery cat. nos 213–14). What little material that came directly from the construction deposits accords with this date (samian cat. nos 79–84; coarse pottery cat. nos 315–16).

Pottery and coins from the deposits within the building divided into material dating to the 2nd century and material dating to the late 3rd to 4th century (cat. nos 340–2 and discussion). A forged coin of Severus Alexander (no. 135) came from the make-up under the first phase flagged floor in Room 3.1. However, because considerable sections of the flagging were missing, this cannot provide a reliable *terminus post quem* for the laying of the floor: it may have been dropped after the removal of some of the flagstones. The upper, cobbled, floor surface produced pottery from the later group, including a Black Burnished ware bowl of the late 3rd to early 4th century (coarse pottery cat. no. 340). This would fit with the obvious long life of the flagged floor, which had been patched at least once and then had time to fall into disrepair again before it was replaced. Other coarse pottery of similar date came from the cobbled subfloor of the *opus signinum* floor of Room 3.7 (cat. no. 342): the loss of the mortar from the *opus signinum* and the cutting of the later grave through this level makes it impossible to consider this as a truly sealed context, but intrusion from later levels does not seem especially likely. If all the *opus signinum* floors were laid at the same time in a single episode of refurbishment, this date also applies to the others in Rooms 3.5 and 3.6.

Discussion

Construction technique

Walls and other structural elements

Only the bases of the walls survived, most of them consisting of coursed rubble. No bonding medium survived, though the sand layer between the foundation and the wall 2007 indicates that the wall was probably originally mortared: soil conditions on the Mill Street sites, as in many other areas of Caerleon, were not conducive to mortar preservation (Evans 1991, 114 n.20).

Study of the destruction deposits (see below, SG81–SG84) provides further evidence for the form of the superstructure. Most of these deposits were composed entirely of stone rubble and loam, although there is a little evidence for wattle-and-daub (see below). There is no reason to suppose that, given their width, the walls at the eastern end did not rise to their full height in stone. Walls of this size (typically 0.66m for external walls and 0.50m for internal walls) could have risen more than one storey: there is some evidence for a staircase in Room 3.6 (see below), connected with the (probably) secondary *opus signinum* floor but an upper storey could have been an original feature.

Two walls were clearly of different construction: those between Rooms 3.1 and 3.2/3.3, and the partition dividing room 3.6 into two. The evidence of the cobbled floors in Rooms 3.1 and 3.2 shows that wall 2153 which divided them was a sill for a timber-framed structure. Another timber-framed partition seems to have been inserted into Room 3.6 where the scar of its sill-beam (2126) could be seen in the *opus signinum* floor. These two walls seem to have had a clay-based infill, traces of which survived in the destruction layers, along with the remains of burnt wattlework, which also survived in other rooms. Patches of charcoal appeared in the destruction debris in each of Rooms 3.4, 3.5, 3.6 and 3.7 below the stone rubble (SG81–SG84, see below). In the first three of these rooms, what appeared to be a system of woven poles or laths could be seen during excavation, although the structure of the wood had not been sufficiently well preserved to allow any of the individual constituents to be retrieved. These timber elements were clearest in Room 3.5, where it was noted that the poles or laths appeared to be c. 0.02m across; there was a layer of clay between two layers of charcoal. The charcoal in Room 3.7 had no recognisable structure.

Although the most obvious interpretation of such material is as a constituent of wattle-and-daub, no burnt daub was associated with it except in Room 3.6; and if wattle-and-daub had been burned severely enough for charcoal formation, some traces of burnt clay could be expected. We conclude that there was no daub on the wattlework in the other rooms when it was burned, either because it had become detached through weathering, or because there had been none there in the first place. There is no certain evidence that this wattlework was derived from the building itself: it might have been brought from elsewhere for burning. The nature of the deposit upon which the charcoal was lying in each case was such that *in situ* burning may have left no other trace.

The floors

Unless the flagstone in Room 3.2 represented the remains of paving, only in Room 3.1 did floor surfaces definitely survive from more than one phase. The earlier of the two was a layer of paving. This seems originally to have consisted of properly cut and laid flagstones, but it had been patched by irregular pieces of stone. The upper surface was cobbled.

None of the excavated floors in Rooms 3.5, 3.6 and 3.7 were primary. All took the form of a cobble foundation overlain by *opus signinum* and were probably, although not certainly, the result of a single phase of work. There is no trace of original floors at or above the offsets where they might be expected, indicating that they must have been removed, probably when the new floors were inserted. This being the case, it seems reasonable to suppose that, at least in Rooms 3.6 and 3.7 where they were half-sectioned, they may have been of timber: solid floors would have been more easily renewed by laying a new surface over the old one (as in Room 3.1). Room

3.7 provides the clearest evidence. The *opus signinum* surface overlay a cobbled foundation which in turn overlay a layer of sandy clay. If the earlier floor had been of timber, some infilling would have been needed to make up the level for the new solid floors, and this may be the function of 2602. The *opus signinum* in Room 3.6 was of two qualities: the normal type with a high proportion of crushed tile in the larger, northern, part of the room, and a poorer-quality type containing a lower proportion of tile in the southern part of the room south of slot 2126. The southeastern corner was flagged.

The latest floors in Rooms 3.1 and 3.2, as they survived, were of cobbles. Both were very patchy and worn: it is possible that they originally had *opus signinum* surfaces, but there is no proof of this. Two layers of cobbles were noted in Room 3.2; the lower (2172) may represent an earlier surface than the upper (2171), but as 2171 was finer than 2172, it could also have been a contemporary upper surface to the make-up of 2172. In the case of Rooms 3.3 and 3.4, there is some evidence that a cobble floor (or subfloor) may have been inserted at this point. In Room 3.4 this took the form of a pitched stone foundation (2127) at the southern end of the room, and the cobbles elsewhere in the room. Room 3.3 also had some evidence for cobbling. If the floors were a secondary feature in these rooms, the fittings which survive here would also belong to the second phase.

Probable staircase in Room 3.6

The evidence for a wooden staircase in Room 3.6 consists of the slot and rectangular void (2126, 2148) in the second-phase *opus signinum* surface, together with the associated variation in the floors. The flagged surface 2124 in the southeast corner of the room and poorer-quality *opus signinum* in the rest of the southern strip to the south of 2126 suggest that this area was being used for a different purpose or purposes from the rest of the room. We suggest that the rectangular void 2148 marks the position of a newel-post, and that the staircase ascended from the flagged area 2124. The slot 2125/2126 was for the sill of the partition enclosing the area under the stairs: the poorer-quality floor to the south of it would be perfectly suitable for a walk-in cupboard where little wear would be expected. The relationship of this postulated staircase to the rest of the building would depend upon the location of the entrance. If we are correct in identifying a doorway at the southern end of the eastern external wall, it would have led to an independent flat. Alternatively, access was from Room 3.6, in which case it would have led to an integral upper floor. The cupboard under the stairs would have been accessible from the doorway in wall 2056 (see below).

Roofs and ceilings

Evidence for roofs is scanty. We assume from the shape of the building that it originally had a double-pitched roof with an east–west ridge beam. The quantity of ceramic roofing tiles (109.82kg) recovered from this building was similar to that from the destruction deposits of Building 1, in approximately the same volume of debris.³ A roof of ceramic tiles is therefore probable.

The remains of wattlework/woven laths in the destruction deposits, if from the building and not from wattle-and-daub walls (see above) could have been used as the framing for suspended ceilings (Vitruvius VII, 3).

Layout and access (FIG. 18)

Design analysis and metrology

The internal dimensions of the rooms and the wall-widths were measured on site. It was sometimes difficult to determine where precisely measurements should be taken, because of

³ There was also a similar quantity (101.82kg) from the neighbouring plot (previously Building 3's yard); ceramic tiles are unlikely to have come from the building which was erected there (see below), and therefore possibly also came from Building 3.

robbing. The 1:20 plans were therefore used at the post-excavation stage to clarify some of the measurements, but it is not possible to give measurements for the lengths of all the walls of the rooms at the west end of the building. An average measurement has been provided for these rooms. The results are presented in TABLE 5.

TABLE 5: ROOM MEASUREMENTS IN BUILDING 3

Room	N. wall length	S. wall length	E. wall length	W. wall length	NE/SW diagonal	NW/SE diagonal
3.4	2.38	2.65	5.81	5.74	6.23	6.35
3.5	4.10	4.09	3.66	3.62	5.42	5.51
3.6	5.15	5.20	5.79*	5.80	7.60*	7.96
3.7	3.61	3.65	3.76**	3.65	5.14	5.17
3.1	10.3#		5.75 (# -taken from adjoining room to East)			
3.2	5.8#		4.1#			
3.3	4.4#		4.15 (# -taken from adjoining room to East)			

* Corner indistinct

** To robber trench

Approximate size of room: could not be measured accurately

Wall survival in the eastern half of the strip-building (Rooms 3.4, 3.5, 3.6 and 3.7) is good enough for a detailed analysis of the planning to be carried out, using measurements taken along walls, including the thickness of cross-walls. A module of 1.60m was identified (see Evans 1994, 153–4). The building and associated yard with a grid of 1.6m imposed is shown in FIGURE 18. It is clear that the north–south walls are not quite at right-angles to the east–west walls, so adjustments have to be made to allow for this laying-out error. If this is done (see angled north–south lines), the match is extremely close at the east end of the strip-building (Rooms 3.4–3.7), but not over the west end (which was probably retained from Building 2 (see above, p.68), or the yard).

The design of the interior of the new west section of the building consisted of two rooms based on a square of side three modules, one on a square of side four modules and one rectangular room of two by four modules. The internal proportions of the rooms were somewhat distorted by the need to allow for wall thickness. Room 3.7 remains the closest to a square since the setting-out square was laid out over the walls on all four sides. The other two square rooms, 3.5 and 3.6, each had three of their walls included within the setting-out square. The rectangular room, 3.4, had one long and one short wall included. It is difficult to be certain of the baseline. At the west end of the building, Room 3.1 seems to have occupied four of the north–south units.

The much poorer survival of walls in the eastern half of the building, together with the fact that the excavated area did not extend as far as the northern wall of the building, makes analysis problematical. The western side must have been the same as the eastern measurement noted for the western block (11.21m), though the thickness of the northern wall here is only a projection. The only side where the entire length of this part of the building lies within the excavated area is the south, which was 10.8m including the width of the west wall 2006 but not the wall with room 3.5 (2063). The western wall 2006, however, was not parallel to the eastern wall 2057/2063, so the length of the north wall must have been different. If the lines of walls 2006 and 2058 are projected, the northern wall would be approximately 10.6m long. It is notable that the addition of the width of walls 2057/2063 would bring this to approximately 11.2m, or the same as the length of the west side: this would however mean that this wall would be counted twice, once in each half of the building. If, however, the western part of the building was retained from Building 2, the retained section of Building 2 measured over the walls (provided the façade walls of Building 2 and Building 3 were on the same line) would be square; whoever laid out the new west end, which involved the demolition and rebuilding of the north wall, took the measurement for the new section over the reused wall 2057.

The 1.6m module identified at the east end of the building does not correspond exactly to any rational measurement in either of the systems of measurement identified as being in use in Roman Britain (Walthew 1978), the *pes monetalis* of 0.296m (5.41ft) or the *pes Drusianus* of 0.332m (4.81ft). The accuracy of measurements, however, is dependent upon the accuracy of the equipment used to take them (Evans 1994, 49–50), and the 1.6m module is equal to 5ft with a notional foot of 0.32m. Wall thickness measurements, however, cluster around 0.66m for external walls and 0.5m for internal walls; this suggests that the *pes Drusianus* was used in their construction (2' pD = 0.664m, 1' 6" pD = 0.498m). This does not need to imply that different standards were used to lay out the building and to construct the walls: because of the lack of precision employed in marking out Roman measuring equipment it is quite feasible to envisage that the building was laid out using a five-foot measuring rod 1.6m long, on which at least one foot subdivision as marked was at or close to the *pes Drusianus* standard.

Doorways

The regularity of the masonry and the generally good survival of floor surfaces permitted parts of the access system within the building to be studied. All surviving walls and floor surfaces were carefully examined for evidence of doorways. The assumption was made that any doors would be at approximately the same level as the floors, and at least 0.9m wide. Four criteria were used to establish whether a door was likely:

- Flooring extending over the wall between two rooms;
- Breaks in the laying of the stones of the wall which might indicate the presence of a jamb;
- Sections of the first course of the wall, with no courses above, in which the relatively smooth face was broken by irregularly placed stones suggesting they had been inserted to level up a threshold;
- Wear patterns on the floors, or provision for withstanding the wear caused by additional traffic.

Using these criteria, seven possible doorways, of varying degrees of probability, were noted in the strip-building. These were:

1. 2137 at the northern end of wall 2062 between Rooms 3.5 and 3.7 (0.91m wide);
2. 2610 at the northern end of wall 2063 between Rooms 3.3 and 3.5 (0.85m wide);
3. 2611 at the southern end of wall 2057 between Rooms 3.1 and 3.4 (1.55m wide);
4. 2206 at the southern end of wall 2056 between Rooms 3.4 and 3.6 (1.60m wide);
5. 2240 into the southeast corner of Room 3.6 from the east through the middle of wall 2061 (1.07m wide);
6. 2612 into the northeast corner of the same room 3.5 from the north through the eastern end of wall 2058 (0.97m wide);
7. 2651 into the southwest corner of Room 3.2, from Building 5 (1.4m wide): appears to be at the end of a short passage leading from Building 5.

It is notable that these possible doorways, with the exception of the last two, were immediately adjacent to the median wall: they seem to have connected the rooms as two files, rather than connecting the northern pair to the southern pair.

It is also possible that there was an eighth, wide, doorway (2276) from the main north–south road to Room 3.1, created by the removal of a section of the façade wall, and obscuring whatever the original arrangements had been. No robber trench was noted until the probable builders' levels were reached. Post-hole 2256 in Room 3.1 may be connected with this possible doorway, since it lies in the angle between the main area of flagging and a tongue of flagging extending towards the gap in the wall. However, the cobbled surface (2074/2170) of the refurbishment phase overlay the post-hole and also appeared to have been laid against a continuous barrier along the line of the façade: this might have been a threshold, but it is also possible that the wall may have been in place while the building was in occupation. A ninth doorway (2143) led into the yard from the side street. This was up to 1.45m wide.

Use of the building

The only room for which a function can be suggested is the staircase/cupboard at the south side of Room 3.6. Rooms 3.3 and 3.4 were provided with masonry platforms or bases which definitely seem to have been in use in this phase. There was no obvious purpose for these platforms. As there were three in Room 3.3, it seems unlikely that they were the bases for domestic shrines (Boon 1983, 33–8). Both these platforms and the one in Room 3.4 were too small and wrongly sited to be counters. Some industrial purpose seems likely, but there is nothing to indicate what it was. Some of the pieces of brick and tile forming 2104 had been burned, but the burning had not been *in situ*. Interpretation of the L-shaped base in Room 3.4 is hampered by the fact that part of it was destroyed. There is nothing else in the building, either in the way of fittings or of finds, to suggest what it had been used for. If Room 3.1 was open to the main north–south road at any period, it is possible that it may have been a yard.

One of the most striking aspects of Building 3 was the extent to which it had been kept clean. There were no ‘occupation’ deposits in any of the rooms. The gap of at least 100 years between the date of construction and the laying of the second floor in Room 3.1 is represented in the archaeological record only by the damage and repair to the original, flagged, floor.

Destruction deposits (Not illustrated)

The destruction deposits extended over the whole building and consisted largely of stone rubble, though the remains of other structural elements were also found. The presence of loam deposits between the floors and the rubble suggests that the building became derelict and was allowed to collapse rather than being deliberately demolished.

Description

The deposits in two rooms (Rooms 3.5 and 3.7) were completely separated from their neighbours by the remains of their walls. Rooms 3.4 and 3.6 shared the upper part of their destruction deposits but not the lower, showing that the wall between the two had been partly robbed at a relatively early date. The deposits in the western end of the building were continuous through Rooms 3.1, 3.2 and 3.3, showing that none of the walls between these rooms survived into the period at which rubble accumulated on the floors. There are slight traces to suggest that there may have been subsequent occupation of this part of the building; this is described below (SG202).

- SG81 (Not illustrated) The wall between Rooms 3.4 and 3.6 seems to have been partly robbed at a relatively early date, and the upper part of the destruction deposits are therefore continuous. In Room 3.4 the lower deposits consisted of rubble overlying two patches of charcoal (2120, 2128). In the latter traces of individual poles could be seen, but 2120 had no distinguishable structure. In Room 3.6 the lower deposits in this room consisted of a layer of mottled yellowish brown/reddish brown clayey sand and charcoal (2042), possibly representing further remains of wattlework. Above was a layer of rubble in a very dark brown clay-loam (2041) indistinguishable from the topsoil. The lower part (2043) of this deposit was sandier and relatively free from stone; the upper part (2041) overlay the remains of the west wall of the room (2056) and continued westwards to cover Room 3.4. A similar topsoil-like deposit (2076) with few stones underlay 2045 in Room 3.4.
- SG82 (Not illustrated) The destruction debris in Room 3.5 was fairly complex in nature. There were two discontinuous deposits of charcoal (2037, 2098), both apparently derived from interwoven poles or laths, each 20mm across where they could be identified. The lower charcoal deposit (2098) lay directly on top of the cobbles, but 2037 overlay a 26mm deposit of orange sandy clay 2036 which, although it also contained occasional fragments of charcoal, showed no signs of having itself been burnt. These deposits were overlain by 0.21m of building rubble (stone blocks and brick/tile) in a very dark brown clay loam (2035) apparently identical with the topsoil.
- SG83 (Not illustrated) In Room 3.7 the destruction deposits consisted of a charcoal deposit with no recognisable structure (2069), overlain by a rubble deposit (2033/2014).
- SG84 (Not illustrated) Because of the absence of dividing walls rising above the structural deposits in the western half of the building, a single deposit of rubble (2046/2095/2192), with a relatively

stone-free layer of very dark brown sandy clay loam (2065) underneath, overlay rooms 3.1, 3.2 and 3.3. A patch of burnt clay (2103) overlying platform 2257 in the southeast corner of Room 3.3 also seems to belong to this phase. No charcoal deposits were noted.

Dating

The coarse pottery from the destruction deposits (cat. nos 381–96), whilst including considerable quantities of residual material, suggests that the building was abandoned in the first half of the 4th century, possibly within the first quarter.

BUILDING 4 (FIG. 19; PL. XIII)

Although the southern half of the double plot occupied by Building 3 seems to have been designed as an open area (see FIG. 18), its only structural feature being its enclosure walls and the culvert, some evidence does exist for an insubstantial building (Building 4), constructed in the northern part of this open area, 8.5m east of the western enclosure wall (2017).

Description

No structural elements were identified, with the exception of lines of flat stones and stone fragments (2338, 2339, 2364, 2366) at the north, south and east sides of the area of clay-sand with chippings and cobbles (2359, 2365) which marked the extent of this possible building. Two large conglomerate blocks to the west may also have been connected.

SG85 (FIG. 19) The area of this possible building was marked by an approximately rectangular (5.7 × 2.4m) deposit of clay-sand and chippings (2365) overlying the SG70 destruction deposit 2389 and oriented east–west. Lines of flat stones were set into its surface at its south side (2339) and near its north and east sides (2364 and 2366 respectively), and the southwest corner was marked by a patch of closely packed stone fragments (2338). In the southeast corner of the possible structure, the chippings of 2365 were replaced by cobbling (2359), which extended the area into an L-shape.

To the west, 1.2m from the western side of 2365 were two large conglomerate blocks 0.8m apart, surrounded by small stones. The northernmost block lay slightly to the south of the line of 2364, and the southern one was 1.5m north of the line of 2339. These blocks were very similar to those used in Buildings 13, 14, 15, 16, 17, 21 and 22 (see below, pp.122–39 and 148–54); their size and weight makes it unlikely that they had been deposited casually. It is feasible therefore that the blocks here may have been associated with the possible Building 4, but what part they would have played in the structure is unclear.

Discussion

The scanty nature of the evidence for this building makes interpretation difficult. It is possible that what has here been taken as a separate building phase was actually a laying-out stage for the construction of the succeeding Building 5, though the fact that it was seen only under the northern part of Building 5 has led us to interpret this as a separate building. Any such building must have been of very slight construction, probably of timber, and standing on the ground. Dating cannot be fixed more precisely than between the construction of Buildings 3 and 5.

The area to the east of Buildings 4 and 5 (FIG. 19)

Very little activity is represented in the archaeological record in the area to the east of Building 4, later the area east of Building 5. Considerable lengths of the walls of Building 1 must have been either visible or covered only in topsoil. A few areas of metallurgy (2321, 2322, 2360, 2367, 2409) were present, and there were a number of cut features (2346\$/2347, 2348\$/2349, 2403\$/2404). Some of the spreads of metallurgy overlay other features, but there was no readily-interpretable stratigraphy and examination of the coarse pottery did not resolve other aspects of the sequence.

SG86 (FIG. 19) Three post-holes were recorded (2346\$/2347, 2348\$/2349, 2356/2357), one of which (2349) cut wall 2351 in such a way as to suggest that this wall may still have been standing; if not of this phase it may have been a feature of Building 1, although this is considered less likely (see

above, p.58). There was also a small pit (2403\$/2404). The layers of metalling (2321, 2322, 2360, 2367, 2409) all consisted largely of cobbles and pebbles, frequently mixed with small fragments of rubble, in a dark matrix. The earliest was 2367 which was partly overlain by some of the other deposits; 2360 was late in the sequence as it overlay the pit.

The area to the south and west of Buildings 4 and 5 (FIG. 19; PLS XIII, XVII)

The area to the west was also characterised by areas of metalling (2311\$, 2324\$, 2325, 2327, 2329\$, 2340, 2341, 2342\$, 2343\$, 2344, 2353, 2554, 2361, 2362, 2363). Most of these were much more substantial than those to the east, and activity was much more intense. The deposits in the southwest corner, south of a possible sill-wall (2326) appear to have become damaged and had been patched or replaced at intervals as and when repairs became necessary; this seems to have been a continuous process rather than one in which clear breaks can be recognised, and continued after Building 4 had been replaced by Building 5. The full sequence is described here, including material contemporary with Building 5.

SG87 (FIG. 19) Three areas of light cobbling (2361, 2362, 2363) lay along the north side of the open area and were bounded to the west by a 1.9m-long row of small elongated cobbles (2302) running parallel with, and 0.8m west of, the line of wall 2017. This row of stones defines the area which was later to form a passage between Buildings 3 and 5 (see above, p.84, and below, p.94) and may represent the position of a doorway at an earlier phase. South of Building 4 were other patchy spreads of cobbles (2340, 2341, 2342\$).

The southwest corner of the open area was much more heavily metalling (2311\$, 2324\$, 2325, 2327, 2329\$, 2343\$, 2344, 2353, 2554) and probably served as a yard. One of its deposits (2326) consisted of a 0.45m-wide band of rubble extending east-west from wall 2017 for 2.85m, and it is possible that it may have had a structural function.

The slumping which occurred between the successive west walls of Building 1 must have contributed to the need to resurface the southwest corner of the area at intervals. It is probable that the upper levels (particularly 2324, 2325, 2326) were contemporary with the replacement of Building 4 by Building 5.

BUILDING 5 (FIG. 20; PLS XVII–XIX)

Building 4 was replaced by Building 5, which initially occupied a north-south strip across the middle of Building 3's yard to the culvert which was built against its south wall (see above, SG70), and was later extended to the west as far as the boundary wall 2017. The construction of this building was very different both from the preceding Building 1 and the neighbouring Building 3 in whose grounds it was built. Building 5 was characterised by its cobbled foundation platform in which the positions of internal partitions could be made out, but this had been considerably damaged, and in consequence some of the detail is unclear, especially in the initial phase. This applies especially to its eastern edge where the worst damage occurred, and also to its southern edge, where its relationship with the culvert in Phase 1 is difficult to determine.

Phase 1 (FIG. 20; PLS XVII and XVIII)

The building in this phase was restricted to the cobbled platform which formed its foundation slab, and seems to have consisted of four rooms. It occupied an area of approximately 6 × 9.5m, but was originally larger. The area to the west continued as a yard: the cobbled spreads 2311/2325, 2324 and 2329, and the possible structural feature 2326 (see above), must have been contemporary with this first phase of Building 5.

Description

The cobbled platform seems to have formed the floor of the building in this initial phase. The form of most of the external walls is unclear, but the internal walls were timber-framed with beam-slots (2197, 2319) let into the top of the platform, dividing it into discrete areas (2194, 2195, 2300, 2307).



PLATE XVII. Building 5 looking east: cobbled foundation raft, with yard in the foreground. Scale unit 0.5m.

SG88 (FIG. 20; PLS XVII and XVIII) The cobbled platform 2317\$/2318\$ was *c.* 0.18m thick, formed in the main by large, pitched cobbles with smaller stones and pebbles filling in the spaces between them. Four main areas were identified on the surface of the platform: 2194 in the southwest corner; a narrow east–west section in the middle of the platform (2300); an area to the north of 2300 (2307); and an area in the southeast corner, badly damaged on its eastern side (2195). These sections were divided by shallow slots, which appeared on the surface as stone-free strips, and which were presumably designed to take the bases of sleeper-beams. Each of these slots was approximately 0.1m wide and its edges were defined by neatly-set rows of cobbles. The slot defining 2194 on the north and east sides was L-shaped (2197), with the north–south arm being 4.0m in length and the east–west arm 3.6m. A similar slot between 2300 and 2307 seems to represent a similar partition (2319). A line of unworn cobbles running north–south within the northern part of 2307, with its northern end curved towards the east, but did not reappear to the south of the modern pipe-trench.

The northern exterior wall was represented by a 0.30m wide and 5.3m long strip of crushed sandstone (2337) overlying the demolished north wall 2149 of Building 1, probably the foundation for a sill-beam. The cobbled platform abutted this strip. At the western side, the platform ended as a straight line raised at its northern end *c.* 0.25m above the SG87 cobbled surfaces to the west. The position of any structural element at this side is not clear, although a 0.42m wide band 1.90m long stone-free band (2301) between the platform and the SG87 deposits may represent the position of such an element; a narrower strip containing few stones was noted south of 2301 extending to the south enclosure wall 2007.

It was not possible to determine the position of the south and east walls: the south side of the platform ended in a ragged line 1.0–2.0m north of wall 2007, with a 0.97 × 0.40m area of unworn flat stone slabs (2328\$) between. South of 2328 was the western section (2390) of the culvert (2562). There is nothing to indicate whether it was still in use when Building 5 was put up, and if so, whether it was inside or outside the building.

Cut into 2317 just north of 2319 was an approximately oval post-hole measuring (2315\$/2316\$), with a flat bottom, near-vertical south side and more gradually sloping northern side. The structural purpose of this is unknown and although it dates to this phase, there is no indication as to whether it was part of the building as originally planned, or a later modification.

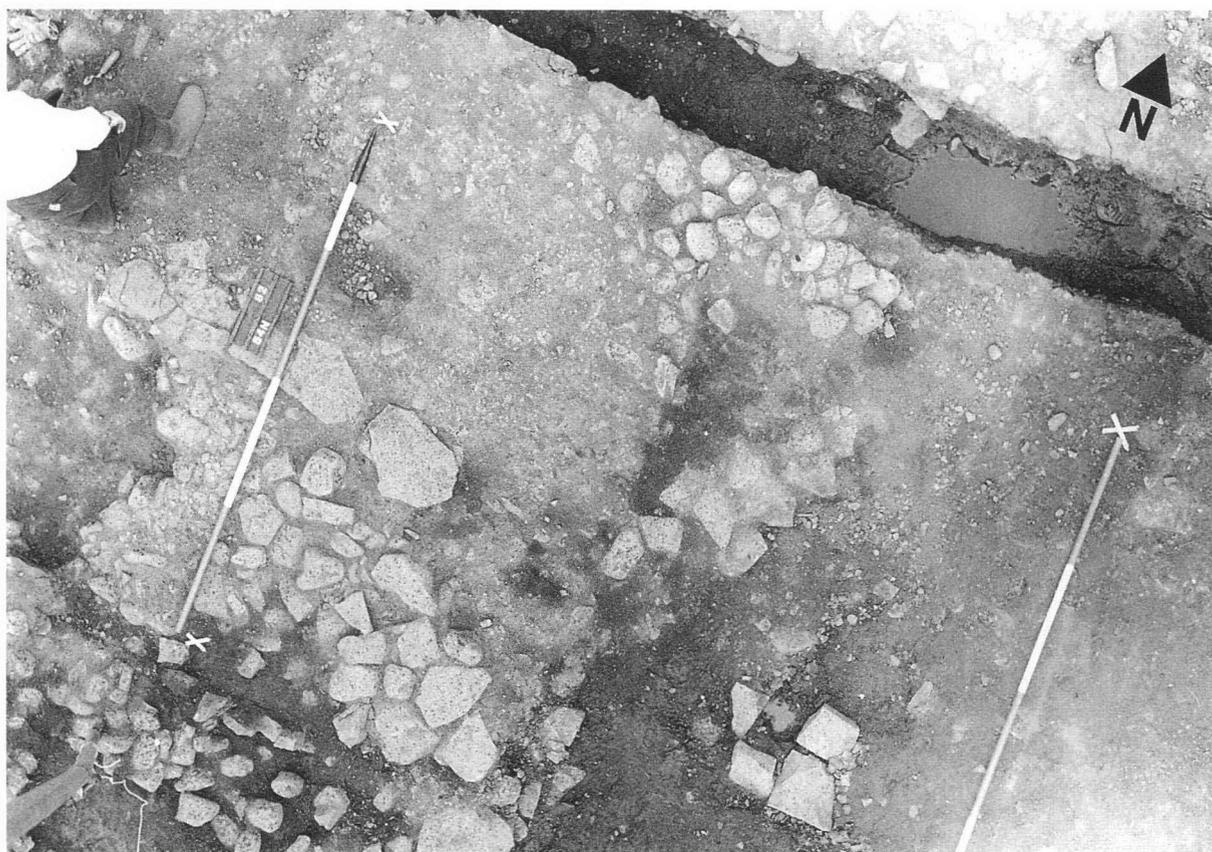


PLATE XVIII. Building 5 looking vertically: Room 5.2, showing partitions of Phase 1 (left) and Phase 2 (right). Scale unit 0.5m.

Discussion

Walls and floors

All the evidence available suggests that the building was timber framed, and that the sill-beams were laid at the same time as the cobbled platform which formed its foundation slab. This is certainly the case for the internal walls: the fill of their beam-slots was sandy clay-loam with some charcoal, more likely to have been either replaced wood or backfill deposited after the structural elements had been removed than the remains of earth mass walling. Only timber elements are likely to have been worth grubbing out.⁴ From the size of the slots, the sill-beams seem to have been approximately 0.1m wide (4 inches). With a ground-sill of these dimensions, an infill of mud brick or wattle-and-daub is likely (see Perring *et al.* 1991, 72–3, 77, figs 15, 70b and c). Although the cobbles forming the floors of all the rooms in this phase were numbered separately, they proved to form part of the cobbled foundation platform.

Layout

The foundation platform terminated in a straight line on its western side, but the damage which it had suffered makes it impossible to reconstruct the original form of the eastern side, but it seems probable that the southern third of this extended further east than the rest. On the basis of the divisions within the platform, Building 5 can be seen as being made up of a possible four rooms, one of which is an east–west ‘corridor’. This corridor, Room 5.2 (PL. XVIII), occupied a roughly central position, and at the eastern end where it was clearest, it measured 1m wide internally. The floor was formed by 2300; slots 2319 and the east–west arm of 2197 marked the positions of the north and south walls, and 2301 that of the west wall. The room to the north (Room 5.1) measured *c.* 4.5 × 4.2m: the floor was 2307, the north wall 2337 and the south wall

⁴ The base of the clay wall 2466 from Phase 3 of Building 1 (SG59) was left *in situ* when the wall went out of use.

2319; the exact position of the east and west walls were not identified. The line of unworn cobbling within the northern part may have represented a further partition, but this does not seem very likely. To the south of the corridor were two rooms, of which the western one (Room 5.3) may have measured $3.5 \times 3.3\text{m}$, if the south wall was represented by 2328. The east and north walls were marked by 2197, and the floor was 2194. The northern half of the west wall may have been marked by 2301. So little remains of the southeast room (Room 5.4, floor 2195, west wall 2197) that nothing can be said of it beyond the fact that its east wall is likely to have projected beyond the line of the east wall of 5.1. It was not possible to identify any doorways.

Dating

The coarse pottery from this phase contains little that is not residual. Some pieces, however, appear to be significantly later, and a mid 3rd century date is tentatively suggested (cat. nos 324–8).

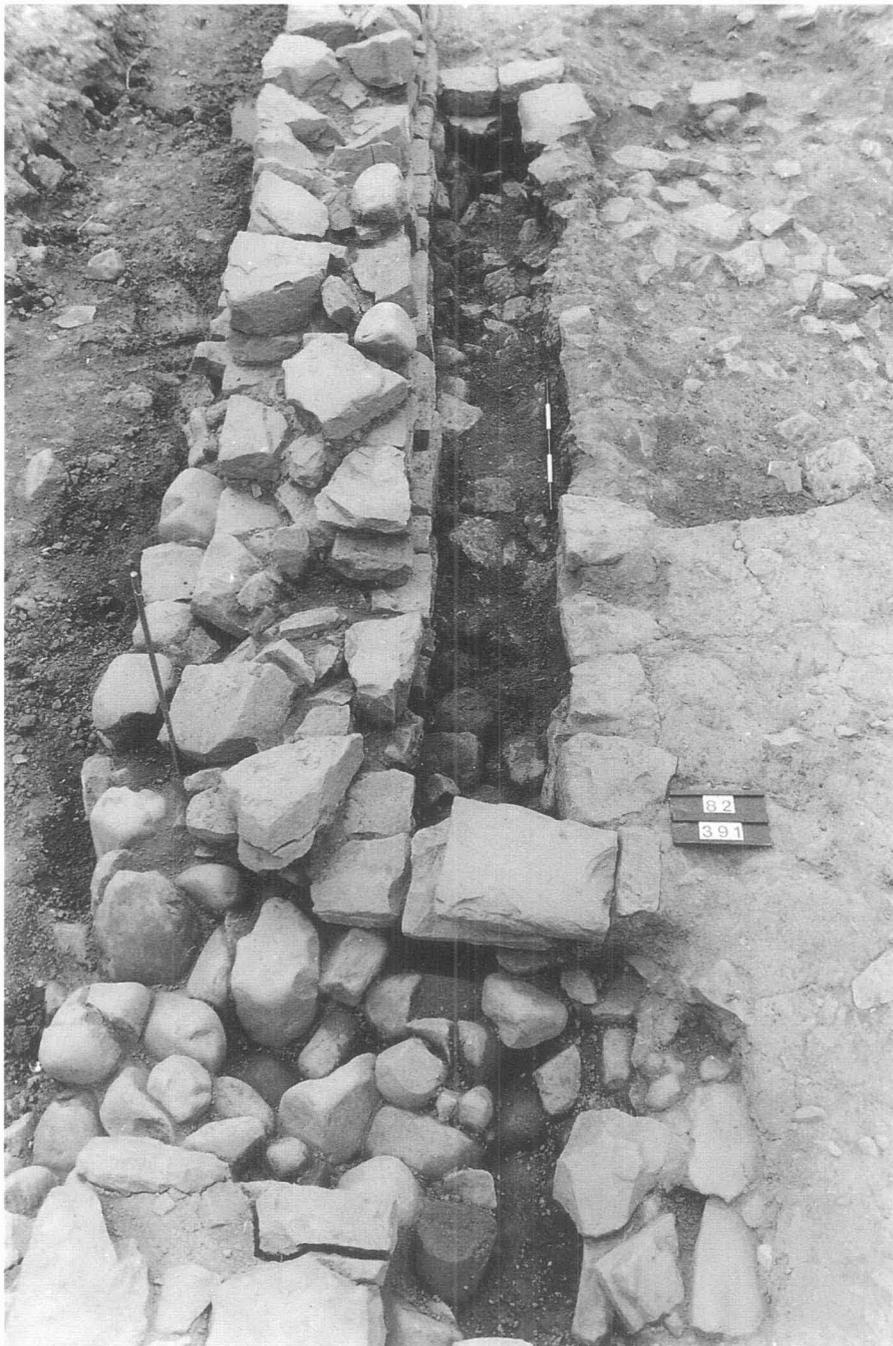


PLATE XIX. Building 5 culvert, looking west, showing outfall (foreground), blocking, and western end. Scale unit 0.1m.

The culvert (FIGS 19–20; PL. XIX)*Description*

It is difficult to relate the history of the culvert (2562) to the construction of Building 5, since it was not until the second phase of this building that any of its surviving deposits overlay the culvert fill. The western end (2390) was the first part of the culvert to go out of use and be filled in with cobbles as far as the debouchment of the drain, which lay immediately west of the line of the partition between Rooms 5.3 and 5.4.

- SG89 (FIGS 19 and 20) A blocking (2296) composed of two large blocks of sandstone was inserted 3.38m from the original west end of the culvert. To the west of this, the culvert was then filled with large rounded cobblestones: a concentration of dark brown silty clay sand (2391\$) below the cobbles may represent a water-laid sediment deposited during use. As the lining of the culvert did not survive very well on its northern side, it is possible that some demolition took place before the channel was filled in. The fill (2391\$) was covered by a deposit consisting of rubble in dark brown sandy clay loam (2312\$), at about the same level as the cobbled foundation platform of Building 5. The section of the drain from the debouchment eastwards continued in use.
- SG90 (FIG. 20) Possibly connected with some of these alterations to the culvert, but structurally separate, was the insertion of a row of massive blocks immediately south of the easternmost surviving section of culvert. Four large conglomerate blocks (2443) were laid in a row 1.86m long on the line of wall 2007. They lay on a rubble foundation (2445\$).

Dating

The blocking of the eastern section of the culvert is given a *terminus post quem* of A.D. 259 by the coin in its primary fill (cat. no. 150).

Phase 2

This phase saw both the refurbishment of Building 5 by the renewal of some partitions and the insertion of *opus signinum* floors (2306, 2314) in at least some of the rooms, and also the construction of one, or possibly two new structures between the Phase 5 Building 5 and the western enclosure wall 2017, over the earlier yard. The evidence for the new structures to the west of the original Building 5 consists only of a length of crude wall (2026), which together with an even cruder agglomeration of blocks (2217), divided a cobbled surface (2169) on the north from a paved surface (2309) on the south. These contrasted markedly with the rather *ad hoc* approach to the surfacing of this area which had previously been taken. Whether these new structures actually formed an extension to Building 5 is uncertain, though it does appear that there was a doorway between Room 5.3 and the more southerly of the two new units. There was however a doorway into Building 3 (see above, p.87).

Although these activities are described together as a single phase, there is no proof that they took place at the same time.

Description

- SG91 (FIG. 20) In the original Building 5, partitions 2197 and 2319 were redesigned. The beam-slots of the first period were covered by lines of roughly-shaped sandstone blocks set without touching each other, presumably to support sill-beams. Over the east–west arm of partition 2197, a single block remained at each end, but more of the line was preserved over the north–south arm. The blocks of partition 2319 were well preserved: almost the complete row remained *in situ*.

It seems the redesigned partition foundations were put in at the same time as the *opus signinum* floors, since some of the *opus signinum* of 2093/2306, the new floor in room 5.1, overlay the blocks of partition 2319, and some underlay them. Three patches of this floor survived, one to the north of the modern pipe-trench and the other two to the south. Taken together, they covered an area of 4.3 × 4.2m, or most of the room, overlying also the line of unworn cobbles noted in the northern part of this room. The other *opus signinum* floor, 2193=2314, in Room 5.3, survived as one main patch and a number of smaller ones covering an area of 3.5 × 3.0m. The largest area overlay not only the cobbled foundation platform of the original Room 5.3, but also the slabs to

the south and the rubble over the infilled east end of culvert 2312: this rubble may have been inserted as a foundation for the floor. One of the smaller patches extended westwards slightly beyond the edge of the foundation platform. Neither Room 5.2 nor Room 5.4 had an *opus signinum* floor: as far as could be ascertained no new floor surface had been laid in Room 5.4. Room 5.2 had a small patch (2196) of flat stones and pebbles together with tiny patches of *opus signinum*. It is possible that the *opus signinum* represents the floor level for this phase, whilst the flat stones and pebbles are repairs.

SG92 (FIG. 20) The northern half of the area was covered by a cobbled surface (2169), set in brown clay sand (2176\$) which was bounded to the west by the Building 3 enclosure wall, to the east by the edge of platform 2317/2318, and to the north by the northern edge of the north wall of Building 5 which underlay it, with an extension next to the west wall 1.5m wide running northwards over the line of the demolished south wall of Building 3 (see above, p.87). It consisted mainly of small cobbles, and its density varied from closely set in the extension to much more patchy further south and east.

Over the southern edge of this cobbled surface had been constructed a rough wall-sill (2026) with a single face, on its northern side. It was 2.75m long, and consisted of a single row of nine sandstone/conglomerate blocks laid approximately 5.5m from, and not quite parallel to, wall 2007. Another feature (2217), consisting of four blocks lay on a line with 2026 and 1.79m east of it, against the southern edge of the cobbled platform of the initial phase but it was not clear whether this was a real structural feature or merely a patch of rubble. Wall 2026 was one course high over the buried wall 2200, and two courses where the ground had slumped to the west. Between 2026 and 2217, the cobbled surface ended at a fairly neat edge on a line with the southern edge of 2126, but between 2026 and the western façade wall (2017) the cobbles continued for roughly another metre, and there was a similar tongue of cobbling approximately 0.8m wide extending under wall 2026.

The remains of a flagged floor (2180\$, 2309) lay to the south of 2026 and 2217. Much of this had been robbed out exposing the bedding (2310), but an extensive patch remained in the middle of the area against the south wall (2007), where it had subsided into the softer deposits between the successive west walls of Building 1. The relationship of this paved floor with pit 2178/2186\$ (FIG. 20) is not clear: there were pieces of flagstone over the pit, but it is not clear whether they were *in situ*. South of the pit was a small platform composed of cobbles and rubble blocks (2333): it abutted wall 2007 and was separated from the building's foundation slab by the 0.3m gap in line with 2301, which may represent the position of the west wall (see above). It extended for 2.0m along the wall, and for 1.3m towards the north, with fairly straight sides at the east and west, converging as they went further from the wall. The north side was not clearly defined. Within the area of 2333 was a 0.5m wide and 0.4m deep post-hole (2331\$/2332) which stood immediately against the wall and was probably integral to the construction of the platform. The purpose of the platform and post-hole was unknown.

Discussion

The refurbishment of the original building

The refurbishment of the original building must have involved a considerable amount of work but the result was a building which, whilst upgraded structurally, does not seem to have undergone much alteration to the plan, except perhaps on the south side. It seems likely, therefore, that this work was prompted by structural factors such as the decay of the original sill-beams; this would explain why the slots of the first phase had been replaced by a sill allowing for ventilation underneath.

New building works to the west of the original Building 5

The new area consisted of two units; the paved unit at the southern side (5.5) and the cobble-floored unit at the northern side (5.6). They are described for convenience here as 'rooms', but there is, however, insufficient evidence to be able to tell whether they were roofed or open. Presumably the south and west sides made use of the walls 2007 and 2017 which had been built as part of the construction of Building 3, and the east side was probably the west side of the original Building 5. The nature of the north wall is completely unknown: possibly the south wall of Building 3 may have been used as the northern wall of the new area.

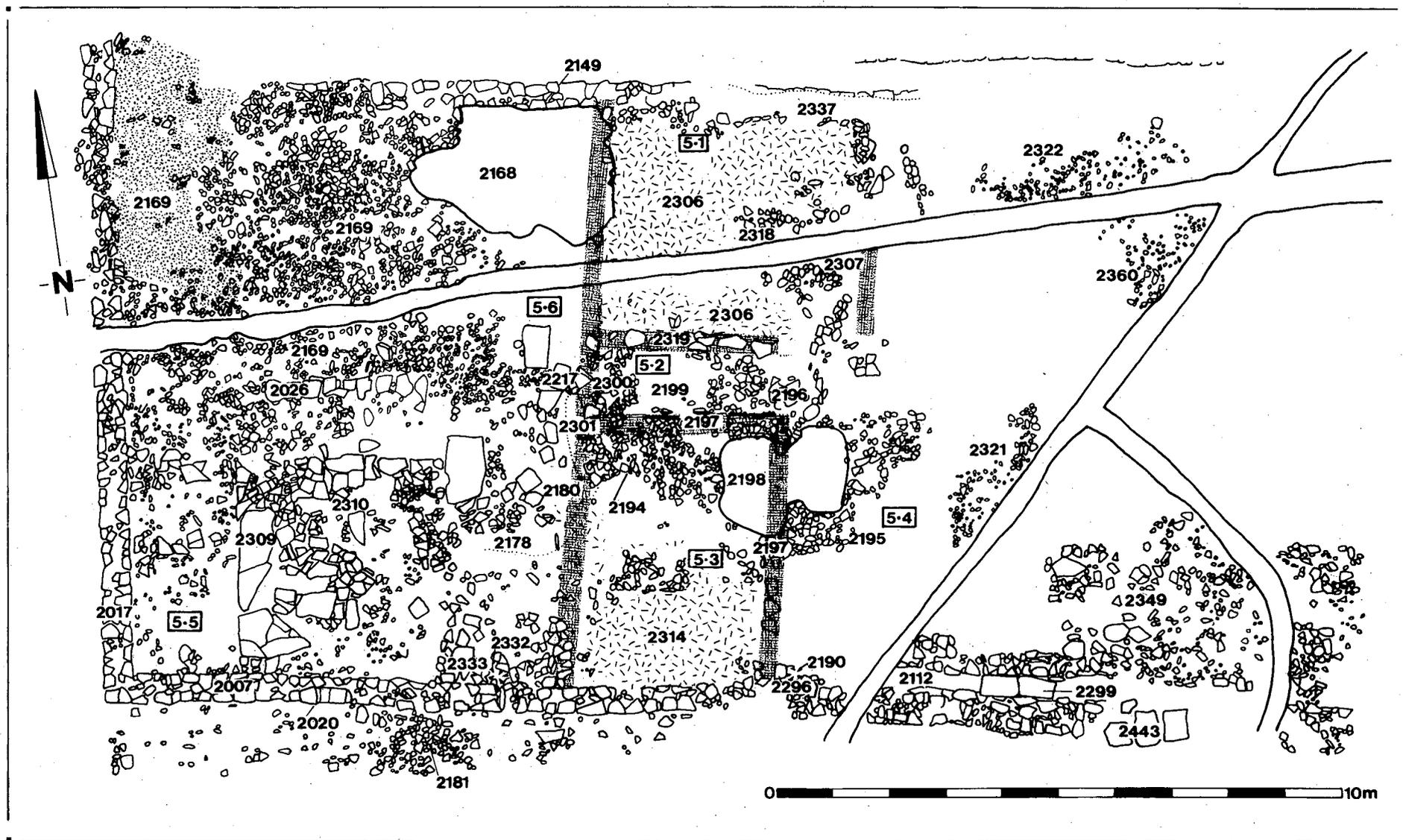


FIG. 20. Building 5: Phases 1-2.

Internally the two 'rooms' seem to have been divided by a wall on the massive block sill 2026 (and possibly also by the less clearly structured collection of blocks 2217); elsewhere on the Mill Street sites such sills were used to support walls in mud-brick (see below, p.126). It is possible that this wall may have been longer than the excavated length of 2.75m: as it was founded on the cobbled surface, the removal of one or more blocks would have left no trace. Since the cobbled surface was in existence before the wall was built, it is possible that this line may have been defined by some flimsy partition which has not survived in the archaeological record.

It is not possible to determine how far the flagging originally extended on the other side of the wall. There is no evidence, however to suggest that this area had been subdivided at all. The southeast corner was occupied by platform 2333 with its post-hole.

A probable doorway to Room 5.3 in the original part of the building may be seen in the extension of the *opus signinum* floor beyond the western edge of the cobbled foundation platform. Access to the building from outside was either from Building 3 to 'Room' 5.6 (see above), or from the side street to 'Room' 5.5 through the original doorway whose western quoin was 2020 (SG70): the extension of metalling across the filled-in drain of the side street to this point remained noticeable even after the building had been abandoned. If the sill-wall 2026 did not extend the full width between the two 'rooms', access would have presumably have been possible around its ends.

Dating

Although the coarse pottery relating to Phase 2 was almost all residual, there was enough such pottery believed to date between the late 3rd and mid 4th century (cat. nos 330–6) to suggest that occupation continued into the 4th century. It is possible that the renewal of the floor surfaces took place at the same time as the similar work in Building 3. Both collections fall within the same time-span (see above p.80), though the main reason for making this suggestion is the fact that the same technique was used, although this may not be relevant if the buildings were not in common ownership or occupation.

The culvert

Description

The eastern section of the culvert was allowed to silt up gradually; there was no indication that it had ever been deliberately filled. A post-hole (2190) appeared right at its western end, but it is uncertain whether it was cut into the fill or had been formed by wedging the post in the open drain. It lay on the line of the partition between Rooms 5.3 and 5.4.

SG93 (FIG. 20) The eastern half of the culvert (2112) was filled with very dark brown/black silty clay sand with few inclusions (2111\$, 2379\$). The fill extended right up to the flagged capping (2299) where this remained *in situ*. The hoard (see below) came from the body of the fill at a point where the capping was no longer *in situ*: it appears to have been deposited after the drain had gone out use and had filled up. Disruption and damage to the base and east end of the culvert had apparently taken place before 2111/2379 was deposited.

Dating

A collection of coins, probably a hoard (cat. nos 141–3, 146, 148–9, 154–5, 163–4, 166–7, 169–71, 174, 176–80, 182, 188, 190–5, 197–203, 206, 208–9, 211, 213–21, 223–5, 228, 232, 234, 236–8, 240, 243, 322) appears to have been deposited in A.D. 269. What this means in the history of the drain is uncertain: it is not clear whether it was deposited before or after the drain went out of use, though certainly not after it had silted up, since there was no cut. It had probably been disturbed some time in antiquity, since a considerable number of coins of a similar date range (cat. nos 144, 147, 152, 173, 183, 185, 187, 205, 207, 233, 241–2, 448) came from the destruction deposits over Room 5.3.

Phase 3 (FIG. 20)*Description*

Phase 3 saw the abandonment of the building. Considerable damage had been done to the *opus signinum* floors of Rooms 5.1 and 5.3 and the paved floor of Room 5.5, though attrition was probably speeded by subsidence in those areas which were not supported by the walls of Building 1. It is not possible, however, to be certain whether this damage happened when the building was in use, or after it had been abandoned and perhaps left roofless.

SG94 (FIG. 20) The building was covered with a uniform spread of rubble (2081\$, 2082\$, 2085\$, 2086\$, 2087\$). In Rooms 5.1 and 5.3 a layer of sandy clay loam was recorded between the floors and the rubble (2092, 2100). Cutting into the upper contexts relating to Building 5 were three pits (2167\$/2168, 2198, 2199). Their fills were identical with the rubble deposits, with the result that two of the pits (2198, 2199) whose bases were just below the level of the cobbled platform were not distinguished until they had been emptied.

Discussion

How much of the rubble was derived from Building 5 and how much from its neighbour, Building 3, is uncertain. Roughly equal quantities of ceramic roofing tiles were recovered from approximately the same volume of destruction debris over the two buildings, and whereas a ceramic tile roof over the 2nd century Building 3 need occasion no surprise, it would be unusual in Building 5, which was not put up before the mid 3rd century when ceramic tiles had generally gone out of use (J.D. Zienkiewicz, pers. comm.).

Dating

The coarse pottery from the destruction deposits (cat. nos 343–80), whilst including considerable quantities of residual material, suggests that this building, like its neighbour, was abandoned in the first half of the 4th century, possibly within the first quarter.

BUILDING 6 (FIGS 4, 21, 22; PL. XX)

Part of a third building with external walls of coursed rubble (Building 6) lay within the Cambria House site, separated from Buildings 1–5 by the side street. The overlying rubble, uniform throughout the building, was removed and the underlying deposits described and drawn, but time did not permit any further work to be carried out. This building appeared to have been divided by slight partitions, but they were not always certain. All structures and deposits relating to the use of the building are therefore classed as a single stratigraphic group (SG95) divided into sections lettered a–d for ease of reference (SG95a represents the walls and SG95b–d the deposits of the different internal areas).

Only the northern part of the building was revealed, as its continuation southwards lay under the baulk. The area was criss-crossed by modern pipe-trenches which had contained field drains. A massive wall running north–south near the eastern baulk was taken to be the east wall, but post-excavation analysis casts some doubt on this interpretation. If it was the east wall, the building's frontage on the side street was 12.6m. It is not clear exactly how many rooms were represented: certainly at least two, and possibly as many as five. Four seems to be the most likely number.

Room 6.1 at the eastern end of the building was the most clearly defined and measured 1.6m east–west and 3.6m north–south. The arrangements at the western end of the building were less clear. There may have been a single room occupying the entire area west of Room 6.1, the east–west measurement of which was 9.7m. There are indications however that this area may have been divided into three (Rooms 6.2, 6.3 and 6.4). The largest of these, Room 6.2, was also defined by its pitched stone surface. Room 6.4 in the northwest corner of the building measured approximately 3.2 × 3.2m, and Room 6.3 to the south of it measured 9.7m east–west with a possible width north–south of 1.2m.



PLATE XX. The Cambria House site looking north: Building 6 is in the foreground and Building 3 and 5 (during excavation) in the background. Scale unit 0.5m.

Description

Walls

The external walls on the western and northern sides of the building (2209, 2210) were of coursed rubble resembling most of the walls of Buildings 3 and 5. A row of massive blocks (2428) alongside the north wall may have had a structural function (see below, Buildings 13–17), but this is uncertain, as is their relationship with a large flagstone (2019) overlying the uppermost street surface. There is some doubt regarding whether the east wall was located by the excavation: it was not possible to determine if the massive masonry construction (2211) at the eastern end was an external wall or an internal feature. The internal partitions (2226, 2420, 2425, 2426) survived only as sills of slight construction.

SG95a (FIG. 21) The west (2209) and north (2210) walls were constructed of two faces of roughly-squared sandstone blocks with a core of smaller pieces of sandstone. Two courses, with a typical width across of around 0.45m, survived over offsets of similar composition. The northern wall had been robbed at its eastern end but, although the western wall survived for a length of only 2.1m and did not reappear south of the pipe-trench, it seems likely that at least part of this gap was a deliberate opening rather than robbing, since cobbling extended through it. For a distance of 3.90m eastwards from the northeast corner of the building, a row (2428) of six massive sandstone blocks, typically 0.75m long, lay parallel to wall 2210, which it either abutted or partly overlaid, but the functional relationship between the two structures is uncertain.

The assumed eastern wall was an L-shaped structure with a rounded internal corner (2211), though a robber trench, dug through rubble 2183 had removed the majority of the stones in the corner. The southern side of the east–west arm (2427) lay under the baulk, but the north–south arm (2215) was 1.05m wide. Only the tops of the facing stones were visible: the western side of the north–south arm was also fairly neatly faced, but at the western side the face was irregular. It abutted wall 2210 to the north, but the relationship of the other arm to the internal wall 2226 was uncertain.

Rooms 6.1 and 6.2 were divided by wall 2226, of which only a single rough face (the eastern one) was visible. It was composed of sandstone rubble blocks. Rooms 6.2 and 6.4 were divided by

a row of flat stones 0.32m wide (2420), possibly intended as the sill for a timber-framed partition, or a mud-brick wall. The wall between rooms 6.2 and 6.3 (2425) consisted of a single row of roughly shaped hewn stones generally one course high, though occasionally two. This seems to represent the foundation for a sill-beam or mud-brick or clay mass wall. A fragment of what appeared to be the same sill-wall continued to the west, beyond the presumed west side of Room 6.2, although it had been cut through at this point by the modern pipe trenches: its relationship with 2420 is unclear. This wall forms the postulated division between Room 6.4 in the northwest corner of the building, and Room 6.3 to the south of it. A stone linear feature (2426) composed of sandstone slabs may represent the southern wall of Room 6.4, but insufficient was seen to confirm this.

Deposits within the individual rooms

Room 6.1

This room was very narrow in proportion to its length, and even if 2211 was not its eastern wall, it will have considerably restricted the floor space. The southern end had an apsidal appearance caused by the rounded southeast corner of wall 2211: the southwest corner was indistinct, but may also have been rounded. The floor was covered by a deposit of brick/tile fragments (2320) over pitched stone rubble (2468). It is not possible to suggest any function for this room.

SG95b (FIG. 21) This room was covered by a deposit of fragments and larger lumps of brick/tile (2320), overlying a layer of closely packed and pitched stone (2468). It is possible that one or both of these deposits may represent the remains of a floor foundation, though most of the brick and tile fragments are too large to suggest that they are the remains of *opus signinum*.

Rooms 6.2

Most of Room 6.2 was occupied by two main features, a surface of pitched rubble (2422) and a possible hearth (2277).

SG95c (FIG. 21) The pitched rubble surface (2422) was L-shaped and occupied all but the northeastern corner of the room. It overlay the offset to the northern wall 2210 to the west of the possible hearth. It may have been the foundation for a floor surface but, if so, nothing remained of it. The possible hearth (2277) comprised a rectangular (3.55 × 1.27m) area of building debris, some of which showed signs of burning (2424), and an L-shaped surround of stones, none of which were burnt (2423). There was a narrow gap between 2424 and the northern wall, and a larger clear space of approximately 1m between its eastern side and the east wall of the room (2226). The surround apparently consisted of no more than one course. A single flagstone lay on the surface of 2424 at the middle of the west end, nearly touching 2423. An alternative, but less convincing, explanation for 2277 is that it was a small inner room overlaid by a destruction deposit.

Rooms 6.3 and 6.4

The principal deposit in this area (2418) ran across both rooms. The other main feature within this area was a shallow bowl-shaped feature (2417) associated with ironworking (SG169, see below p.154). A small patch of clay (2419) may have been derived from the superstructure of one of the walls.

SG95d (FIG. 21) The main deposit in this area was a spread of clay loam containing patches of rubble and cobbles (2418). It was not clear whether the wall between 6.3 and 6.4 terminated at this point and 2418 extended around its end, or whether this wall had been built after it had been deposited. Overlying 2418 in the middle of the north side of the area was an amorphous patch of clay (2419), probably daub or the remains of clay mass walling.

Discussion

Given the limited excavation of this building, only limited interpretation can be offered, but there is sufficient information to permit reconstruction of several aspects of its plan and structure.

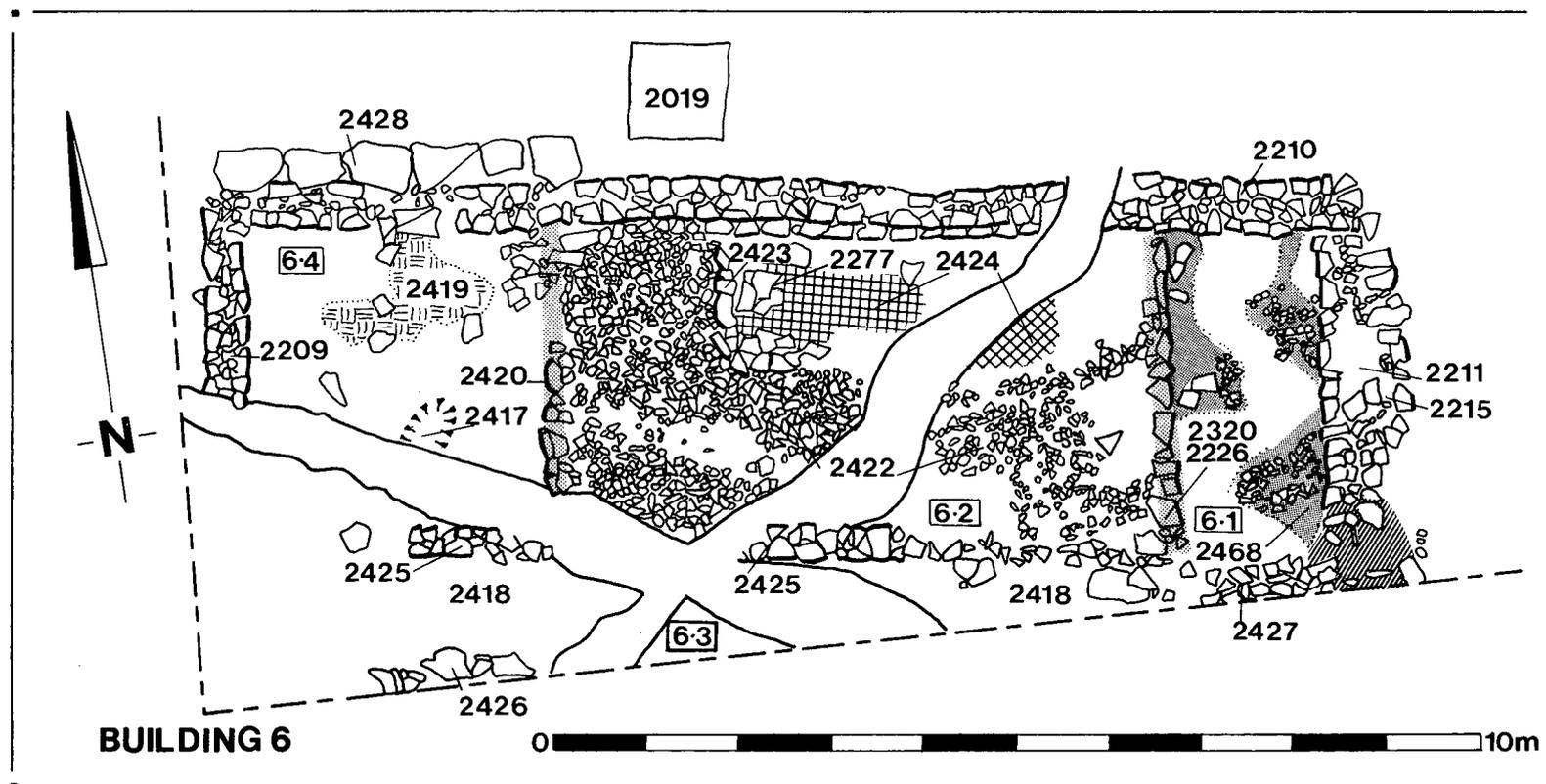


FIG. 21. Building 6.

Wall structure

The north and west external walls were of coursed rubble construction, and with a typical width above the offset of around 0.45m would have been sufficiently substantial to stand to at least one storey. Wall 2211 is something of a puzzle. If it was an external wall, it is not of the same build as the others, evidenced both by the straight joint at the junction with 2210 and by its disproportionate width (more than twice that of the other two): for this reason it cannot have been an internal wall. One possible interpretation is that it was some other masonry feature, such as the remains of a solid staircase, which was intended to abut a north–south wall beyond the south baulk.

The internal walls were much less substantial, with a maximum width of *c.* 0.38m. More usually they seem to have been single-width rows of much less carefully finished and placed stones, although the visible remains may have been only one side of a more conventional wall. As they survive, however, they find their closest parallels in the internal walls of Building 13, which were probably intended to carry a superstructure of mud brick infilling in a timber frame (see below, p.126).

Floors and roof

Rooms 6.1 and 6.2 were covered in pitched stone, possibly the foundation of a now-vanished floor surface. No floor was clearly identifiable in Rooms 6.3 and 6.4, although the rather sparse cobbling in 6.3 which continued out over the line of the west wall may have been a floor. A clay floor is a possibility, particularly if the area was used for iron-working.

There is no clear evidence for the roof. The overlying rubble contained amounts of ceramic roofing tile comparable with those overlying Buildings 3 and 5, so a roof of ceramic tiles is a possibility.

Doorways

Only part of the building's western wall was visible on excavation: no continuation was seen south of the modern pipe trench which truncated the southern end of the existing section of wall, but excavation did not continue far enough to ascertain whether there was a robber trench. It was, however, notable that light cobbling in the surface of the possible clay floor of Room 6.3 continued out through the gap. This may therefore have been an entrance to the building from the main north–south road. That there was possibly another external doorway in the north wall is suggested by the position of a 1m-square flagstone (2019), which lay over the latest surface of the side street directly opposite that section of the north wall of Room 6.2 which was not occupied by the possible hearth. There is no evidence for the positions of internal doorways, apart from the apparent connection between Rooms 6.4 and 6.3 at the western end of the building.

Layout (FIG. 22)

Since the identification of internal partitions is not entirely certain, interpretation of the layout of the building is difficult. It is possible, for example, that the feature interpreted as a hearth in Room 6.2 may be a small inner room, separated from the rest of 6.2 by a wall standing on what we have interpreted as the hearth surround. However, a further interpretative tool is available in the shape of metrological analysis, which enables some deductions to be made about the way in which the building was laid out.

The identification of standard units of measurement and layout schemes are as usual hampered by the irregularity of the walls. As far as the internal divisions are concerned, multiples of 1.6m can be recognised in the east–west divisions, although it is not possible to superimpose a grid as it is with Building 3. Room 6.2 was approximately 3.2m square internally, or 2 × 2 modules (10ft on the notional 0.32m foot which was postulated for Building 3, see above, p.83). The width north–south of Room 6.2 appears to have been intended as the same,

but walls 2210 and 2425 were not exactly parallel. The length of this room was approximately 6.4m north–south (4 modules, or 20ft). The position of the hearth surround (or wall) also falls one module east of the west side of Room 6.2 and one module south of its north side, though the spread of the burnt deposit within it does not correspond to any modular division. Room 6.1 was 1 module (5ft). The thicknesses of the walls are not apparently to be included within these measurements, but together they add up to equal another 1.6m modulus. The total east–west measurement of the building would therefore be 8 modules or 40ft, if 2211 is the eastern wall.

Abandonment of Building 6: Dating

The coarse pottery from the rubble overlying the building suggested that at the earliest its deposition finished in the early 4th century (p.242).

SG96 (Not illustrated) The building was covered with a layer of rubble (2183/2355).

THE OTHER MASONRY BUILDINGS

Other remains of coursed rubble construction, probably representing another five buildings, were revealed during the watching brief/salvage excavations on the Allotments/Smallholding East (Buildings 7 and 9), and during the excavation of the section through the main north–south road (Building 8) and in the side of Cutting BB on the Riding School Field (Buildings 10–11).

Building 7 (FIG. 4)

Part of two coursed rubble walls at right-angles, bonded at the corner, were revealed during the salvage excavation, together with a possible foundation for a third wall, a destruction deposit derived from clay and woodwork, and an external cobbled surface. Unlike the other buildings studied, this building did not lie on an identified street frontage, but was situated approximately 36m north of the *via principalis* continuation and 32m east of the north–south road. It is not clear how it fitted into the overall plan of the settlement.

SG97 (Not illustrated) Both the walls were constructed of roughly-shaped sandstone rubble blocks forming two faces but with very little in the way of core material, and were 0.45–0.50m wide. The northern wall (3518), of which two courses survived, was rather better constructed than the western wall (3522), which was not so carefully faced. Wall 3522 ended with a single stone laid across the full width of the wall 2.2m south of the corner, possibly indicating the position of a doorway. Wall 3518 survived for a distance of 3.6m ending with a straight joint, though not one formed by a single header. For 0.7m west of this, the upper surviving surface of the wall was worn smooth: it had been incorporated in a worn surface of flagstones and rubble blocks (3520), which overlay this wall to the west and continued for an unknown distance into the interior of the building. It seems likely that this represented the position of a doorway. The line of 3518 was continued westwards by a robber trench for another 2.7m, at which point a feature which may be a cobbled foundation for the east wall (3519) ran off at right-angles for 0.94m to the south. The distance between foundation 3519 to the east and wall 3522 to the west was 7.9m, but there was no indication whether this represents the full width of the building.

Within the building a destruction deposit containing fragments of burnt clay and flecks of charcoal (3551) was uncovered immediately south of wall 3518. The nature of the destruction deposit suggests that at least some of the walls may have been of wattle-and-daub, or possibly of mud-brick or clay mass walling, with the charcoal deriving from roof timbers or timber fittings. The widths of what are assumed to be the external walls are similar to those of Building 6, which does seem to have had mud brick or timber-framed internal walls on very slight foundations. However, only a very small area of the destruction deposit was uncovered, so it is not possible to be certain of its derivation. Outside the building, to the north of 3518 was a cobble surface (3521), set carefully against the wall.

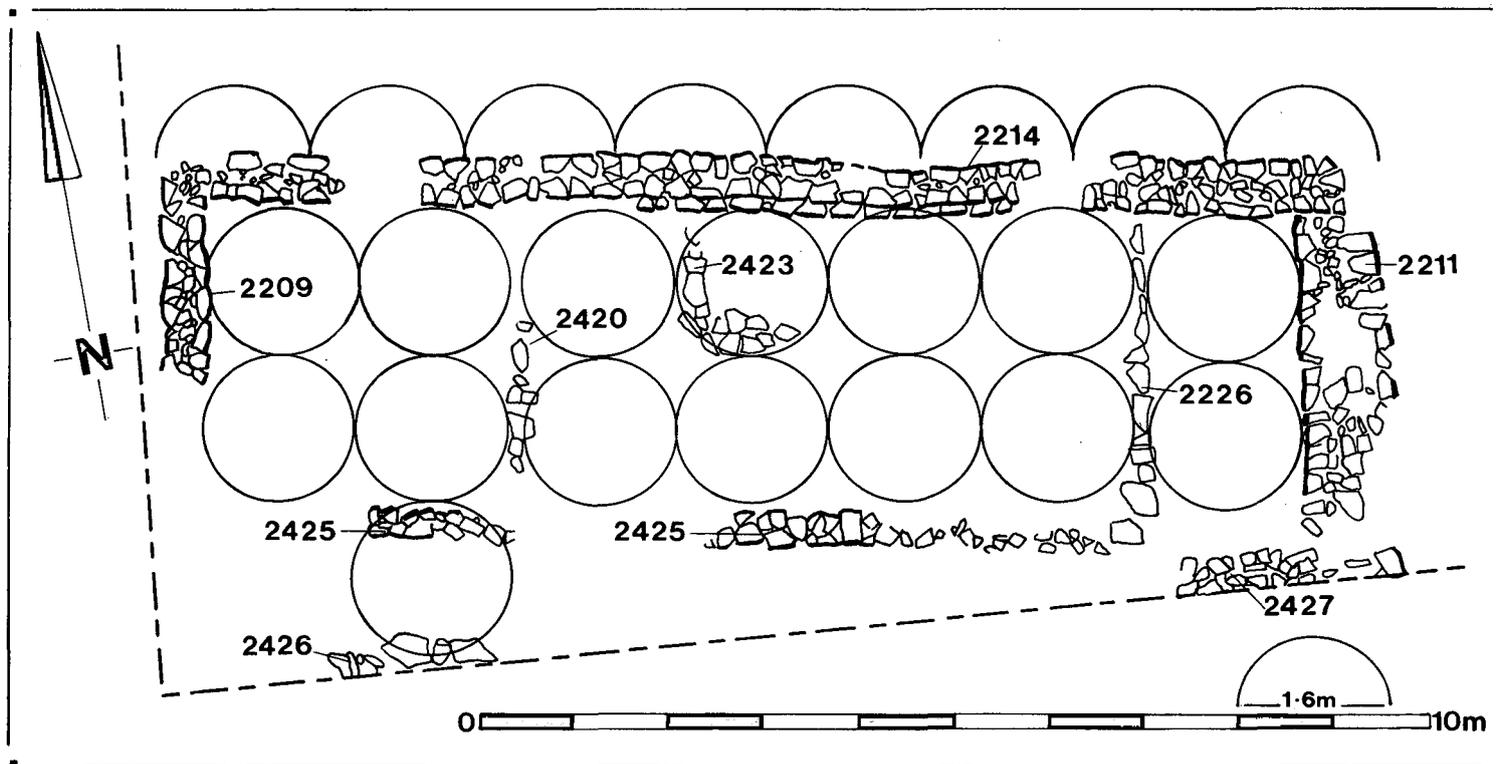


FIG. 22. Building 6: Analysis of plan.

Building 8 (FIGS 4, 9, 10)

This building, which lay to the east of the north–south road was represented by one wall (1503) with an extension formed by a raised cobbled foundation (319);⁵ and possibly part of another wall, represented by a cobble-filled trench which may have been a more conventional foundation (479/480). These walls appear to represent the south and west walls of a building, of which nothing else was noted.

SG98 (FIGS 9 and 10) Wall 1503 consisted of at least four courses of rubble masonry composed of sandstone flag fragments at its eastern end, where it was cut by Cutting BB. Only a south face was noted, but as this southern end was not excavated further, it is not possible to say whether this was because of robbing, or because only one face had ever existed. The total surviving length of the feature was c. 7.8m, including a raised cobbled foundation c. 0.7m wide at its western end (319), which appeared to be an extension to the earlier 1503. Although no return was noted at its western end, it seems likely that if this is indeed part of a building, the western side is represented by a cobbled feature (479/480) seen only in section. It consisted of large, loosely-packed cobbles in a negative feature: it was not seen in plan, so it was not possible to determine whether it was indeed a trench-built foundation; but it lay 4m north of the western end of wall 1503, in a position where a return wall might be expected. Within the area of the possible building was a red-brown silty clay deposit (1506, 1507\$, 1508\$) overlain by a small area of sandstone chippings (1504) and an area of tile fragments (1505), but the purpose of these is unknown. The northern end of the foundation (319) was covered by a spread of cobbles which extended to the south (317/318\$), presumably post-dating the use of the building.

Building 9 (FIG. 4)

This possible building is represented by a single wall, which was noted in the side of the section dug through the eastern drain of the main north–south road during the watching brief. Lack of time precluded further examination.

SG99 (Not illustrated) The eastern side of the drain (3533) at this point consisted of two courses of sandstone rubble blocks which showed signs of fire damage. As it seems unlikely that a roadside drain would have been damaged by fire, this section of wall probably also formed part of a building.

Buildings revealed in section in Cutting BB (FIGS 4, 6)

These possible buildings are represented by fragments of walling which had been cut by the section. The only masonry which was noted while the section was being dug was wall 322 (see below), and the section was halted at this point to avoid damage. It seems likely therefore that any continuation to the other walls had been comprehensively robbed. It was not possible to determine whether the walls were square to the excavated section, so widths are not given. The minimum number of buildings represented is two.

Building 10

Four masonry structures (060, 136, 149, 322) may represent a single building with a complicated structural history in which some walls were demolished while others remained in use. A further fragment of coursed rubble wall (305) noted to the south of the cutting (FIG. 10) might belong either to this building or to Building 8.

SG100–1 (FIG. 6) Structures 060 and 136, which were cut by the section, appeared to be foundations upon which no wall survived: they were some 15m apart and the foundation trenches of both had been cut from the top of the uppermost layer (066) of the sequence of grey-blue-grey clays. Although they are in the same stratigraphical position, it is not possible to prove that they both belonged to the same building. Foundation 060 could also belong to the same building as wall 322, if the wall represented by 060 was demolished while wall 322 remained in use. A short length

⁵ This type of construction is discussed more fully under Building 14 and Building 18/19, see pp.134 and 146.

(1m) of this wall was visible in the southern side of the cutting. It ran east–west, and at this point four courses of it survived. It had either been laid over the cobbled surface 061, which in turn overlay 066, or it was abutted by 061. Wall 322 was apparently abutted by the make-up deposit 056/057, like wall 149 which was some 6.8m away: it seems likely that 149 represents a rebuild of the building in which 322 was a wall reused from an earlier period. The northern part was not rebuilt, but may have been replaced by Building 11.

Building 11

A second building, to the north of Building 10 is represented by a wall (147) at a higher stratigraphic level. It must have been constructed after at least the northern part of Building 10 had been demolished. It lay approximately 0.5m from wall 149, and the deposits between these walls and on either side of them suggest strongly that they did not belong to the same building. It seems preferable to regard them as separate buildings on adjoining plots, built very close together as in the case of Buildings 1 and 2.

SG102 (FIG. 6) This structure, of which both foundation and wall appeared to be present, consisted of sandstone slabs (147): no foundation trench was visible. Two layers abutted its northern side: the lower (144) was of orange silty clay with charcoal inclusions and may represent a destruction deposit; the upper (145) was of pebbles, possibly a floor surface. The deposit between wall 147 and wall 149 of Building 10 (148) was similar in nature to 148 and, though it lacked the charcoal, could also have been deposited as the result of an episode of destruction.

SG103 (Not illustrated) A second wall of roughly dressed sandstone blocks and showing signs of fire damage (159) appeared in the northern end of the opposite section. It was not possible to establish whether it belonged to the same building.

BUILDING 12 (FIGS 4, 23, 24, 25, 26, PLS XXI, XXII AND XXXV)

Building 12 lay to the east of the main north–south road, in an area which had previously been prone to intermittent flooding (represented by SG8, see above, p.31), and which may have been reclaimed from the Afon Lwyd. By the time the building was put up, this flooding had ceased.



PLATE XXI. Building 12 looking east during excavation: Rooms 12.1 and 12.2 (Phase 1) can be seen in the foreground, with Rooms 12.5 and 12.8 (Phase 2) to the right and in the background. Scale unit 0.5m.

The building was rectangular, and originally measured $6.4 \times 10.6\text{m}$ externally. Its main axis lay at right-angles to the road, and although the east end was initially some 4.75m from the road, the building was later extended so that its east wall was coterminous with the west side of the latest road drain. A cobbled yard lay to the south, west and (initially) east of the building; immediately north of its northern wall was a ditch. The yard was continually being made up and patched, and its phases do not accord well with those of the building except on the occasion when the building was extended over the yard.

The number of rooms within the building varied from phase to phase, but the basic arrangement was of a row of rooms, each occupying the full width of the main structure, arranged in a row along the length of the building, with a long narrow room running along the south side outside the main south wall. The relationship of this room to the main part of the structure makes it virtually certain that it was a lean-to or outshut. With the exception of the main north and south walls, most of the walls were of relatively light construction, but their precise composition changed with time.



PLATE XXII. Building 12 looking north: hearth. Scale units 0.1m and 0.5m.

This building was fully excavated, but the tops of the main north and south walls directly underlay the lower topsoil, and though in places parts of the 'black earth' layer associated with the settlement's abandonment (003) extended across these walls, they effectively divided the stratigraphy of the property into the separate areas between the walls and to the north and south.

Phase 1 (FIGS 5, 23, 24; PLS XXI, XXII)

Description

The phase saw the construction of the main building directly over the silts of SG8. If any topsoil had accumulated, it was removed before construction began. The long outside walls (the north and south walls, 816 and 817) were built on cobbled foundations (1471, 1472) which seems disproportionately heavy for the rather slight, poorly-constructed rubble walls which they supported. The east and west walls were each initially represented by a row of broken stone slabs (865, 1289), over which was a linear negative feature (888, 1285) formed by the deposition of layers inside and outside the building against a timber which had entirely disappeared. The walls of the outshut and the internal partitions were represented in this phase by conventional beam-slots (1298, 1299, 1409, 1415, 1417). The building had two rooms in its main part with another two in the outshut. The main room was dominated by a large clay and cobble structure (897/1207/1246), probably the base of a hearth or oven with attached cistern, whose prominent placing within the layout of the building suggests that it also dominated its use.

SG104 (FIGS 23 and 24) The cobbled foundations for the north and south walls (1471 and 1472 respectively) were built in trenches cut into the water-laid deposits 1450. These foundations were extremely heavy (0.7m wide, 0.55–0.6m deep), but the walls which they supported were relatively slight. They consisted of roughly-dressed blocks of sandstone of variable size laid in one or two courses, depending on the height of the blocks; the upper surface of the wall did not normally vary by more than 0.03m). There is no sign of any bonding/bedding medium, though the soil chemistry is such that any lime mortar is likely to have been completely degraded (see above, pp.71 and 79). The north wall (817) was 0.45m wide and the south wall (816) 0.6m, though the width at any point depended on the size of the blocks employed there. Neither wall was preserved to a height greater than 0.5m, and there is nothing to indicate whether the wall would originally have continued any higher.

The walls stood on the outer edges of the foundations: up against them, and overlying the inner sides of each foundation for its full length was a thin layer of chippings (1288, 874), each of which was overlain in turn by a slightly thicker layer of cobbles (1287, 1223). The chipping layer 874 was also overlain by two localised patches of sand (898\$) and sandy clay (893\$). A layer of chippings corresponding to 1288 and 874 overlay the base of wall 816 at its southern (outer) side (1222\$), and another (1270) overlay the base of wall 817 at its northern (outer) side, extending also along the lip of the boundary ditch 399 (see above, SG48–9 p.48).

The east and west walls were marked at this level only by a row of sandstone slabs (1289 east, 865 west) which had been placed over the water-laid deposits: 1289 also partly overlay the cobbles over the north foundation (1287) and the bottom make-up layer of the yard east of the building (1457, SG110). Incorporated within 1289 was a single massive sandstone block (1286), 0.9m long and 0.38m wide, and 0.18m deep rather than the 0.4m of the slabs. At a higher level, the east and west walls were each marked by a linear negative feature (respectively 1285 and 888), a 'beam-slot', which was not a cut feature but seems to have been the void left after the decay of a beam lying on the row of slabs and against whose base deposits had accumulated both inside and outside the building (815, SG106; 832, SG134; 890, SG113). Both were 0.1m deep: 888 was 0.25m wide and 1285 had a mean width of 0.19m. It is not certain whether the deposits which form the internal limits to these voids are to be seen as relating to the construction period, although 1418\$ against the western 'beam-slot' was a deposit of chippings similar to those against the north and south walls. In a corresponding position at the eastern side were two clay deposits (1269\$, 1290).

SG105 (FIGS 23 and 24) The initial stage of work to the south of the main south wall was marked by the digging of a wide shallow cutting (1407) marking the interior of the outshut, and a slot 0.2m wide and 0.2m deep for the sill-beam of its southern side (1298). This slot was cut into the yard make-up on approximately the same line as the southern edge of the larger cutting (1407), but not quite coinciding. A similar slot, apparently for a timber of the same scantling (1299), defined the

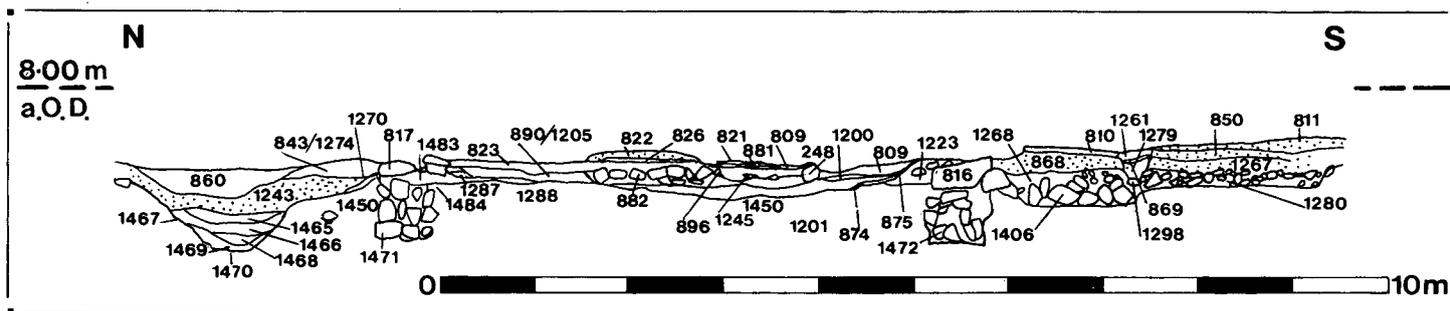


FIG. 23. Section through Building 12 and Ditch 399.

western side of the outshut. The eastern side had apparently been defined by a third slot (1417) which had, however, largely been cut away by the later foundation trench for the wall which replaced it. The cutting which covered the interior of the outshut was filled with cobbles (1406).

SG106 (FIGS 23 and 24) Within the main part of the building, close to the north wall 817 and overlying the chippings at its base was a ring-shaped pink clay feature of oval plan (1207). It measured 1.6m on its long (east–west) axis and 1.2m on the short (north–south) axis, and was 0.3–0.4m thick. The diameter of the area within the ring was 0.6–0.7m, and the clay showed no signs of burning or scorching. A grey sandy silt-clay layer (894\$) accumulated or was laid all over the interior, partly overlying 1207, before the beam-slot (1415) was created for the internal partition dividing Rooms 12.1 and 12.2.

Above 894, the deposits were different on either side of 1415, suggesting that they had built up or had been laid on either side of a beam projecting above the surface of 894 (875\$, 891\$, 1271\$, 1293, 1401\$ to the east and 890/1205, 892\$, 1201\$ to the west). Most of these consisted of grey and brown sandy clay with nothing to suggest their origin, but there was one small patch of charcoal (1401\$), and two patches of clay, one yellow (891\$) and one pink (892\$). These lay one on either side of the beam-slot and may have been derived from the superstructure.

The only structure of any note within the building consisted of a large clay and cobble base (897) with a pit lined with stone slabs (1246) attached to its southern side (PL. XXII). Although this structure was built over 890/1205, it was probably connected with the ring-shaped feature 1207 which lay directly behind it and was of the same width: a semicircle of sandstone flagstone fragments (1206) set into 890/1205 above the southern edge of 1207 followed not only the outline of 1207, but also that of 897. It seems likely therefore that both 894 and 890/1205 were deposited during the installation of the fittings, and that 1207 was put in before 897/1246.

The base (897) consisted of a heavy oval foundation constructed for the most part of a single layer of cobbles set in dark grey clay, with an orange-pink clay horseshoe-shaped surround, largely open at the north side opposite 1207, but with a short spur at the west. The whole structure measured 1.3 × 1.2m. The attached pit 1246 was approximately 1.0 × 1.0m. Its north side was formed by the surround to the base 897, and the other sides consisted of lines of cobbles or pieces of flagstone, all held together with the same orange-pink clay. In the bottom was a fire-blackened and fragmented piece of sandstone slabbing (1245) which was renewed during the structure's period of use (881). There were no signs of burning on the cobbled base 897.

SG107 (FIGS 23 and 24) Within the area of the outshut a floor had been laid running up to the beam-slot marking the southern wall of the outshut and the south wall of the main part of the building, and over the chipping layer at the base of the latter. For the most part it consisted of tightly packed small stones set in yellow-grey sandy clay (872), but running across the middle of the outshut there was a strip of sandstone slabbing (1278/873) which interdigitated in section with the cobbles and must therefore have been laid at the same time. This partly overlay the south wall and probably represented a doorway; there was certainly a doorway here in the later phases. Cut through 872 immediately east of 1278 was a slot (1409), shallower than those forming the external walls of the outshut, which divided it into two unequal areas (Rooms 12.3, 12.4). A small oval pit (1405, fill 1402) had also been dug in the middle of the eastern half.

Discussion

Walls

The structural technique employed in Building 12 is not directly comparable with that of any of the other excavated buildings, except perhaps Building 8, but so little was excavated of this that a discussion of its affinities is difficult. There are two main points of difference; the type of rubblework in the long walls, and the variation in treatment between these walls and the two cross-walls. There is nothing in the appearance of the two long walls to suggest that they were of coursed rubble, like Buildings 1, 2, 3 and 6. The wall of Building 12 had been constructed as an outer face only, from very crudely worked blocks: no attempt had been made to standardise size and shape, or even to provide a proper wall face, and there was no systematic attempt at coursing. Given the crudeness of the surviving masonry, it seems highly unlikely that it could have continued to any height, even if it had originally been mortared. The superstructure therefore must have been in some other medium. The most likely materials to be used are timber, clay, or a combination of the two.

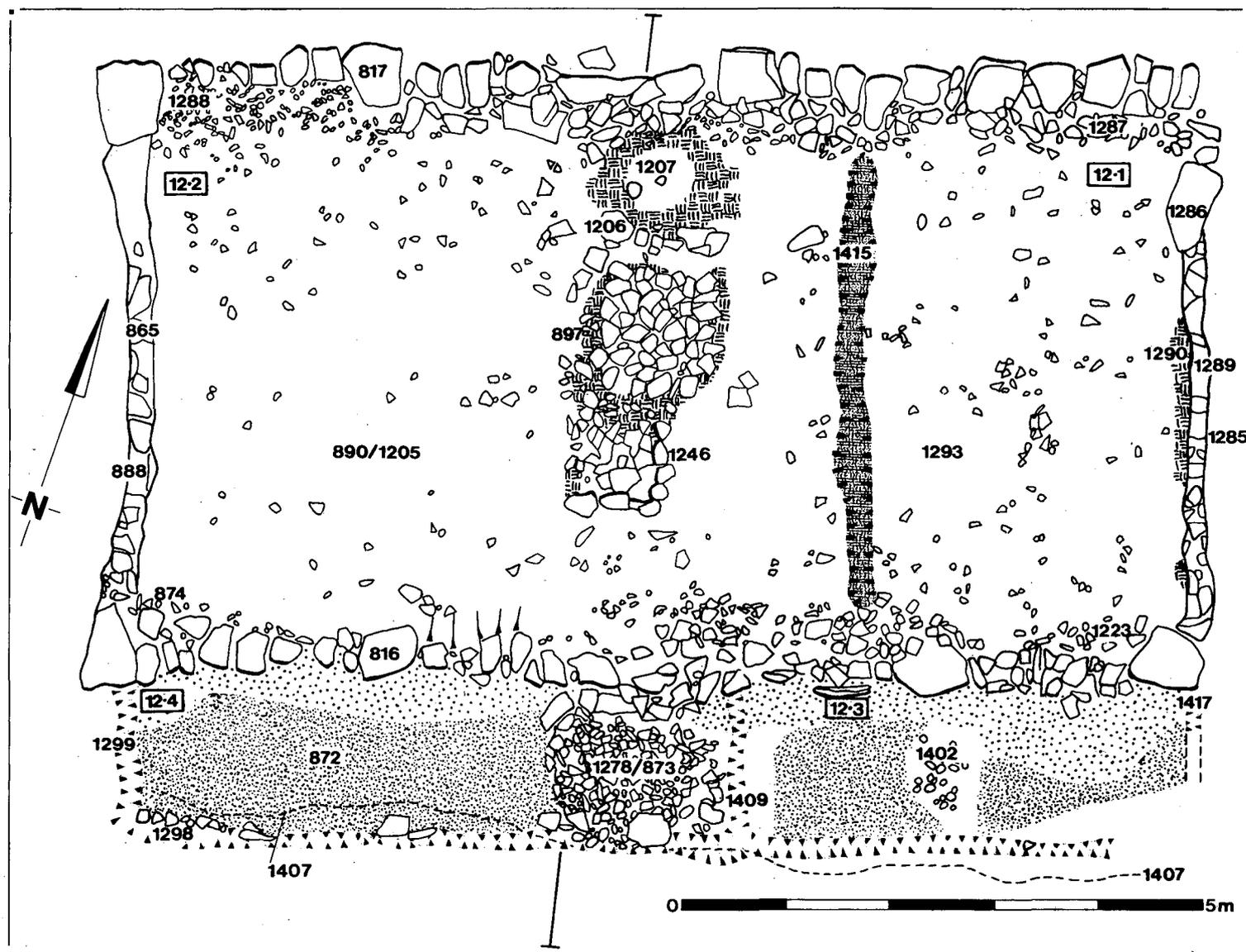


FIG. 24. Building 12: Phase 1.

There is evidence from elsewhere at Mill Street that buildings were constructed with mud brick or clay mass walls, with or without timber supports, most particularly Buildings 13, 14 and 18 (see below, pp.126, 137, 146). However, not only is the form of the sills in these buildings different, but the sill construction is comparable on all sides of any one building; there was no radical alteration at the corners. Since it would be necessary for the end walls, which were certainly founded on sill-beams, to have been tied in some way to the long walls, whose surfaces were some 0.3m above the flagstone underlying these beams, some form of timber-framed construction seems likely. Spot-heights taken on adjacent stones on the upper surviving surface of the long walls shows that there was normally very little difference in height along their length, usually no more than about 0.03m. The same was true of the two end walls (apart from the subsidence at the north end of the west wall). However, other details in the long walls suggest that the approach adopted was not so much that of laying a single beam along the top of each of the long walls, as of interrupted sill-beams. This would also have been a more practical method of connecting sill-beams at different levels in the corners of the buildings.⁶ The wall alignments appear to have been broken into short straight sections punctuated at fairly regular intervals by slightly larger blocks, possibly representing the position of uprights. There was a particularly large block at all corners of the building, apart from the northeast.

The construction of the outshut clearly post-dates the construction of the main part of the building, but there is no way of determining from examination of the stratigraphy whether this was a matter of logistics in the building process, or whether it represents a second, separate phase of building activity. All the walls of the outshut were marked by trenches. As these were only 0.2m deep, and there was no evidence for post-pipes, it seems most likely that they were trenches for sill-beams rather than post-trenches. These walls were therefore probably continuous rather than being formed of individual posts, since a great deal of unnecessary work would have been entailed in order to joint into sill-beam uprights between which no infilling was envisaged: the whole structure was therefore probably closed on all sides rather than being an open verandah.

There is no information about the infill of any of the walls.

Floors

Apart from the cobbled surface in the outshut, no floor surfaces appeared to have survived from this phase: the patchy and discontinuous nature of most of the deposits within the main building suggests that they were unlikely to have been floors. The only deposit which did extend over most of the interior of the building (894) did not cover the chipping and cobbled deposits over the bases of the walls and is more likely to have been a subfloor, particularly as the beam for the partition was laid upon it. There are two possible ways in which the floor could have been surfaced; either flagstones which have been removed leaving no trace, or timber. Flagged floors are normally only renewed after they have broken up (cf. the floor in Building 3, Room 3.1, SG73), and then the new floor is likely to be laid over the top, particularly since the second phase alteration involved the insertion of a new partition, which would have benefited from being laid over a pre-existing flagged floor (see below, p.115). A timber floor seems mostly likely, as this would explain not only why it completely disappeared, but also why the north and south walls of the building were constructed on the outer edge of their foundations; the inner edge (together with the chipping and cobbled deposits which overlay them) could have been used to support the ends of the joists.

Roof

The roof in a building of this basic plan would have to be double-pitched with the ridge parallel with the main north and south walls and equidistant between them, and gables (or hips) over the east and west walls. If we are correct in interpreting the walls as timber framed, the building was almost certainly built in bays and the roof therefore constructed with fairly evenly-spaced

⁶ We are indebted to Bob Meeson for suggesting this model.

trusses (Bob Meeson, *in litt.*). One of these will have coincided with the internal partition between Rooms 12.1 and 12.2. There is no sign in this phase of a partition running across the centre of Room 12.2, but a roof-truss should still be expected in this position. The roof of Rooms 12.3 and 12.4, which lay outside what are presumed to be the building's main load-bearing walls, almost certainly took the form of a lean-to.

Hardly any roofing material was noted in the sparse destruction debris from this building, but numerous rush seeds came from the lowest fill of the ditch which ran immediately to the north of the building (SG49). If not washed in from somewhere in the vicinity which had remained prone to flooding (possibly the ditch itself) while the site of the building had dried out, it is possible that these seeds may be derived from rushes used to thatch the roof.

Fittings

The only fittings noted comprised the complex made up of the clay and cobble base (897), its attached slab-lined pit (1246) and probably also the ring-shaped clay feature (1207). The reasons for supposing that the 1207 feature was associated with the other two features are discussed above (SG106, p.107). We interpret the base as being that of a hearth or oven. Its surviving remains had no evidence for burning but the attached pit was clearly the receptacle of burnt material, although it was not a feature in which burning took place. That it was used as such over an extended period of time is suggested by the renewal of its lining in the bottom. The cobbled base was so closely associated with it that any interpretation needs to take this use into account. We suggest that the pit was an ashpit for a hearth or oven, subsequently removed, which stood on the base. If the floor of the building was of timber, as we argue above, it would certainly have been prudent to provide any hearth or oven with a substantial non-inflammable structure to protect the floor from damage. The ashpit would have been below floor level, and could not have been easily emptied unless it was designed as a container for a removable receptacle, like the modern Baxi fire.

The purpose of the clay ring 1207 is rather more difficult to determine. The most likely interpretation is that it was a bedding/waterproofing for the base of some sort of water-tank, possibly a metal one which was removed after it had gone out of use.⁷ The composite feature would thus be a hearth or oven stoked from the south side and with a water-tank at the back. The stratigraphy indicates that this presumed water-tank was placed in position before the hearth was built. If this interpretation is correct, it is irrelevant that part of the clay ring was overlapped by a deposit (890/1205) which was laid before the base was built, since it is the inner edge and the space within the ring which would be significant for the use of this feature.

Other interpretations were considered, but none seems likely, particularly since the fact that the pit was deliberately used as a receptacle for fire debris needs to be taken into account. The shape of the base is too rounded for a likely stair base, and neither does the form of construction seem especially suited to this use, whilst the position, away from all four walls, would be highly unusual. The position of this complex requires some comment. It is clear that it must have dominated the building in general and Room 12.2 in particular, and thus is also likely to have been dominant in the building's use, particularly if it was immediately inside the entrance (see below). No obvious function can be recognised, beyond the fact that it was one which needed both heat and water.

Layout

The main part of the building was approximately 5m wide internally (north–south). In this phase, it consisted of two rooms. The smaller one (Room 12.1) to the east measured 2.6m east–west; the larger one (Room 12.2) to the west, which contained the hearth and associated structures, measured 6.5m wide. The outshut ran the full length of the building and was 1.2m wide. It was divided into two sections (Rooms 12.3 and 12.4) respectively 5.7m and 4.1m long. The width would have limited how these rooms were used.

⁷ We are indebted to Martin Lawler for this suggestion, which is based on a similar deposit in a medieval context at Kirkstall Abbey, Yorkshire, where the water-tank survived.

Doorways

There are two possible doorways in this period. The clearest is one at the northern end of the east wall, where the 'beam-slot' gave way to the block 1286, assumed to have served as the threshold. This doorway opened to the yard on the east of the building, the side of the main north-south road. In later phases the main external entrance was on the south side through the middle of the outshut. In Phase 1 there is an area of sandstone slabbing in this position, suggesting that this entrance was already in existence; if it was, it opened directly opposite the hearth feature with a distance of only 1.5m between the two.

Dating

The group of coarse pottery from this phase (cat. nos 72-3 and general comments) is broadly similar to that from SG8 (see above, p.31) in the main sedimentary sequence, which precedes it stratigraphically (mid-late 2nd century). Although there are a few later pieces, they are probably intrusive. The samian (cat. nos 146-68) is also late 2nd century. A coin of Geta (cat. no. 119, A.D. 200-202) from context 891 (SG106) suggests that the building was put up around the turn of the century. There is unlikely to have been a long gap between the drying-out of the area and the construction of the building.

The yard

The area around Building 12 was prone to subsidence and was therefore continually being patched and made up: its Phase 1 extends to the time at which a new room was built over the area of yard to the east of the original building. The material employed was mainly cobbles, but small pieces of building rubble were also used.

- SG108 (FIGS 5 and 23) The first phase of the yard to the south (859) and west (838\$) of the building is represented by a layer of cobbles with tile fragments in a matrix of brown-grey sandy silt (1280) over sporadic patches of cobbles (1510), rubble (1512) and iron panning (1513). This extended slightly into the cut made for the outshut foundation (SG105, see above), and seems to have been a make-up layer rather than a surface. Over this, to the west of the building, was a widespread if patchy layer of sandy silt (1403\$), overlain in turn by an untidy layer of cobbles and brick/tile fragments (1294\$/1400\$). The first identifiable surface overlay this, and consisted of close packed small stones (1265\$/1267), but it only survived in patches. Repairs were noted to this surface 1265/1267 (837\$, 1218\$), and it was also overlain to the south of the building by patches of silt and sand (1217\$, 1263\$).
- SG109 (FIGS 23 and 26) Above was another surface composed of small cobbles, small stones, fragments of brick and tile, and gravel (858\$, 850). This had been further and repeatedly patched, partly with the object of filling a depression (857\$/1214\$, 1264\$, 1211\$, 1220\$, 848\$/1227\$, 1215\$). The surface 850/858 had been cut by two stone-packed post-holes 1237, 1253 (FIG. 25), both 0.24m deep and apparently for posts approximately 0.15m square, although some displacement of the packing stones made this difficult to judge.
- SG110 (Not illustrated) The first stage of activity in the yard area to the east of the building was marked by a dump of cobbles (1216/1404) running along the eastern lip of the drain of the main north-south road, and a cobble layer similar to 1280, but in a yellower matrix (1457). Overlying this, and partly filling the north-south depression, was an area of sandstone slab fragments (1292): other patches of cobbles and chippings (1276, 1282, 1284) occurred towards the edges of the area. A layer of small stones and silty clay (1277/1235) extended over the whole of the area.
- SG111 (FIG. 26) These deposits were overlain by a cobbled surface (1254\$/1275\$). This seems unlikely to represent the original yard surface, since it overlay the block which probably formed the threshold to the original east door into the Building (SG104, see above). This surface had also subsided into the depression. Above it at the northern side of the yard, continuing north of the northern wall of Building 12 over the cobbled capping to the ditch (SG50), was a deposit of cobbles, fragments of sandstone roofing slate and brick/tile in sandy clay (842\$/843\$/1272\$/1273\$/1274\$/1296\$). In addition, a massive sandstone block (862), 1.2m long, was set into the yard surface on a patch of clay overlying 1235.

Phase 2 (FIGS 23, 25; PL. XXXV)

Three groups of structural modifications were made to Building 12. These consisted of:

- a) The addition of a new room (12.5) at the east end of the building;
- b) Internal modifications, involving the division of Room 12.2 into two new rooms (Rooms 12.6 and 12.7);
- c) The rebuilding of the external walls of the outshut and the removal of its partition wall to create a single room (Room 12.8).

The lack of stratigraphic continuity between the different rooms of the building means that it is impossible to demonstrate whether these modifications were made at the same time or piecemeal. The differing structural techniques employed, however, suggest that they were the result of ongoing repairs and refurbishment.

Description

Room 12.5 and the new east wall of the building

The new work in this part of the building took the form of the replacement of the sill-beam forming its original east wall by a new sill-wall of massive blocks (807), together with the addition of a new room (Room 12.5) in the same structural technique (006, 849) to the east of the original building, apparently open to the north. This was the only part of Building 12 to make use of the technique of constructing wall sills from a single row of massive blocks which was used extensively in Buildings 13–17 (see below for discussion p.126).

SG112 (FIGS 23 and 25; PL. XXXV) The original timber-slot at the eastern side of the building was backfilled (1281\$) and the new east wall was built so that its east edge corresponded with the east side of the backfilled timber-slot. It respected the position of 1286, which had marked a possible doorway in Phase 1. The new wall sill (807) consisted of a row of five massive sandstone blocks. The south and west walls of the new room 12.5 were constructed in the same technique (849, 006). There was no clear indication of a north wall, although a row of irregularly-spaced fragments of sandstone slab (863) over a distance of *c.* 4.2m continued the line of the north wall of the main part of the building. The construction of 807 and the deposition of 863 was followed by the deposition of a layer of black silty clay containing cobbles and chippings (812) which extended over a larger area than the eventual room. Three large blocks which formed part of this layer may have had a structural function. The cobbles were more prevalent in the eastern half of the deposit, and the new south wall (849) was constructed over this cobbled surface. This may have been because it was felt necessary to consolidate this area, where subsidence had already occurred, before the construction of this wall. The south wall of Room 12.5 lay roughly 0.6m south of the south wall of the main block, but to the north of the south side of the outshut. The east wall (006), possibly also doubled as the lining to the drain of the main north–south road; its blocks, unlike those of the other walls, were bedded in clay (1258\$).

Internal rearrangements

The work inside the original building comprised the replacement of the internal partition between Rooms 12.1 and 12.2 by a new one (820), on the same line but apparently for a raised sill-beam rather than one lying directly on the ground, and the insertion of another partition (818) to divide Room 12.2 into two (Rooms 12.6 and 12.7). The technique employed for both partitions was the same, and consisted of a series of small blocks spaced at intervals along the line of the wall. A clay structure (841/889) of unknown purpose was constructed back-to-back with the hearth structure 897/1246 on the other side of the new wall 818.

SG113 (FIGS 23 and 25) At the east end of the building the foundation trench which divided rooms 12.1 and 12.2 in the previous phase (1415) was filled in (885). Over the top of this a row of small rubble blocks were arranged at intervals of approximately 0.6m, forming an interrupted sill-wall with a height of approximately 0.2m (820). The southernmost block (1221) was approximately twice as wide as the others. A layer of sandy clay (815, see SG116) was laid down over the area which was to become Room 12.7, and on top of this a second wall of similar form was constructed (818),

abutting the west side of the hearth structure 897/1246 and dividing the old west room 12.2 into two. The blocks in this sill-wall were slightly more regular and closely set, but again there was a larger block at the southern end.

Room 12.1

This room remained unchanged, apart from the replacement of the partition.

SG114 (FIG. 25) There was only one deposit which appeared to relate to this phase of activity. This was a sandy clay (851) which abutted both the new walls 807 and 820.

Room 12.6

The hearth or oven structure 897/1246 seems to have continued in use, together with the structure behind it represented by the clay ring 1207.

SG115 (FIG. 25) As in Room 12.1, there was only one deposit which definitely related to the central room in this phase. This was a sandy clay containing fragments of brick/tile (1200) and lay to the south of 897/1246, abutting both it and the new wall 820.

Room 12.7

The room where the most evidence for contemporary activity survived was Room 12.7. This was provided with a new flagged floor, and also contained some sort of structure on its east wall, backing on to the hearth structure 897/1246.

SG116 (FIG. 25) Over the top of the bedding layer 815 which extended virtually over the whole room were patches of fragmented sandstone flagging (1202), possibly a floor. A fragmented flagstone in the middle of the room (833) may be part of the same floor, or it may have been a post-pad. Against the middle of the east wall, backed up against the hearth structure 897/1246 and overlying 815, was a D-shaped feature measuring 1.80m north–south along the back where it would have touched the wall, and 1.45m east–west. It consisted of a 0.05m thick layer of dark grey clay (866\$) covered by a layer of brownish-yellow sandy silty clay (841) 0.07m thick. A 0.4m wide strip of the same brownish-yellow clay (889) extended along wall 820 to the north wall.

Two further small, patchy, yellow clay deposits in this room (884\$, 886\$) may or may not be connected with this phase. The former overlay the sandstone flagging 1202. Over the top of the beam-slot which formed the western side of the building, and near its northern end, was a single massive sandstone block (856). There is no evidence that there were ever any more blocks here: it seems more likely that this block formed a threshold, similar to that in the west wall of the Phase 1 building (1286).

The outshut (Room 12.8)

The new work in this area took the form of the replacement of two of the earth-fast sill-beams forming the outer walls of the outshut by sill-walls (861, 1212/1213), and the third by another earth-fast timber (slot 394). Since all the new walls of the outshut were of different construction, it is likely that they represent not wholesale reconstruction at a single time, but the replacement of each wall as it became necessary. The partition was removed, and a stone structure formed by successive layers of cobbles (868, 1268\$) topped by a flagstone (810) was created in the middle of the outshut. It is not clear whether the layers in this feature represent a single phase of activity, or whether they were successive modifications, possibly extending into the next phase.

SG117 (FIGS 23 and 25) The west wall of the outshut seems to have remained in timber form. The original beam-slot was filled (1297\$) and replaced by a new one (394, fill 867) of the same size and on exactly the same line as the timber-slot of the previous phase, the only difference being that it was at a higher level. The other beam-slots were filled (1261, 1279\$ south wall, 1416\$ east) before the new sill-walls were built, although a section of the original southern sill-beam may

have remained *in situ* at the entrance to the building. The new southern wall (836\$/1212/1213) was in two parts with a break in the middle for the entrance, where the underlying timber-slot of the previous phase was overlain by a thin (0.03m) layer of chippings (869). It consisted of a row of irregularly spaced rubble blocks and large cobbles set in yellow-brown sandy clay. The structure of 836 was not clear enough to determine whether it had been truncated by the foundation trenches for the new east and west walls.

The eastern wall (861) was much more substantial and consisted of five sandstone rubble blocks, together with cobbles and rubble, in a foundation trench (1295\$/1410\$) which had been cut through the Phase 1 cobbled surface 872, destroying most of the first-period timber-slot 1416/1417 in the process.

The main feature within the outshut was the entrance. Although this had probably existed in Phase 1 (see above p.111), the arrangements were now much clearer. The slabbing of the previous period was covered by a thin layer of silty clay (1283\$), over which were two layers of cobbles 1268\$ and 868 supporting a large broken flagstone (810). The rest of the outshut was covered by a layer of dark orange sandy clay (835) in the top of which were a couple of small patches of rubble (883\$, 1210\$). This was laid after the beam-slot marking the Phase 1 division of the outshut into two (1409) was filled in (1408\$).

Discussion

Walls

The new walls fell into two categories, those replacing Phase 1 walls and those constructed to extend the building to the east. The walls to the extension employed the same technique as was used in the neighbouring buildings, 13 and 14 (sills of massive blocks), but was not otherwise used in Building 12. Evidence from these other buildings suggests that the most likely form of superstructure would have been mud brick (pp.126, 137).

In the original building, all the walls with timber sills lying on the ground, or in slots within it, were replaced, with the exception of the west wall which apparently remained in its original form. For the most part the replacements probably consisted of walls with sill-beams, but this time all but one were raised on some sort of stone sill. The new sills of the two internal walls consisted of small blocks with regular gaps between; the purpose of this type of structure may have been to provide ventilation under the sill to protect against rot. The southern sill of the outshut was of similar construction. The stones here were set much more irregularly, although some of the original complement may have been displaced. In the east wall, the stones are much more closely set. This wall may have been designed as a continuation of the new east wall of the main building, and in this case the superstructure would be the same as for Room 12.5. That the west wall of the outshut was replaced in timber requires some explanation: possibly it, like the remaining section of timber-slot in the south wall, marked the position of a secondary doorway (see Perring *et al.* 1991, 96).

Although very little changed in the sill-walls of the north and south sides of the buildings, there may actually have been fundamental changes in the superstructure. The reason for suggesting this is that the large blocks at the east and west ends of the south walls, suggested as possible post-pads for major timbers (see above, p.109), were completely obscured at the west end and half obscured at the east end. Under these circumstances, it seems unlikely that the south wall at least could have continued in its original form, and a reconstruction of the superstructure in some other material (?mud brick) would presumably be necessary. This may also explain why a post-pad may have been needed in the middle of Room 12.7.

Floors

The new Room 12.5 had a roughly-cobbled floor. There is no evidence for a change of floor-type in Room 12.1, and Room 12.6 also seems to have employed the same floor-type as its parent room 12.2. There is some evidence that the floor of Room 12.7 may have been flagged, but this may not have been the case when the room was first created. If we are correct in supposing that the purpose of the gaps in the sill-wall between 12.7 and 12.6 was to aid ventilation under the sill-beam, it would have made little sense to provide a solid floor in one of the rooms.

The Phase 2 surface of Room 12.8 (the outshut) was roughly cobbled at either side of the central entrance, but is not certain how this surface would have related to the entrance itself. Either or both of the two successive cobbled layers in the entrance may have represented floors, or they may have been no more than make-up for the uppermost layer, of flagging. It should be noted that this flagging stood much higher than all the surrounding deposits. This would not have posed a problem if the main floor was of timber, and if this was the case the rough cobbling at either side of the entrance would have been a subfloor.

Roof

The piecemeal reconstruction of the main structural elements of this building may well have had some effect on the roof, but the overall form, as a ridge roof over the main part of the building, with a lean-to over the outshut, is likely to have remained consistent. How the new Room 12.5 was roofed is a matter of some conjecture. It is not certain how far north this room extended, and it is unlikely that the roof of the main building was simply extended, since there was no wall at the northern side on which to support the ends of the additional trusses or couples. A roof at right-angles to the original building therefore seems likely, probably a lean-to against the east side of Rooms 12.1 and 12.8.

Fittings

There is no indication that the hearth 897/1246 and the associated ring-shaped feature 1207 had gone out of use, and we therefore assume that it continued in spite of the fact that the new wall 818 had been built up against it. The position of 841/866 in Room 12.7 against the party wall and backing onto 897/1246 suggests that it too might have been connected with this structure, although in what capacity it is not possible to say, as the use of 841/866 is unknown.

Layout

It is not possible to determine the reason why the original Room 12.2 was divided into two. Both rooms occupied the full width of the building north–south. The new Room 12.7 at the west end of the building was 4m east–west and Room 12.6 was 2.8m. The extension (Room 12.5) measured 4.3m east–west, but it is not possible to establish its exact size north–south in the absence of a clearly-defined north wall. If the north side of the room extended as far as the north wall of the original building, it will have measured 6.4m north–south, if to the north end of wall 807 it will have measured 4.9m.

Room 12.5 appears to have been partly open along its southern side and completely open at the north. Later deposits in the area between walls 006, 807 and 849 show that it was being used in a different manner from what remained of the yard, but was this use as a room or an inner yard? The reason for supposing that it was a room is the nature of its walls. Whilst the row of blocks marking its eastern side might be no more than the side of the drain to the north–south road, the fact that it was deliberately continued through a change of alignment of 90° indicates that there was the intention that it should have a dual function, and that its purpose should be to enclose a space attached to Building 12. The blocks themselves can have acted as no more than the base, and must have carried a superstructure which, it is argued above, was probably of mud-brick, a material which is not well-adapted for a stand-alone wall in the British climate since it needs to be protected against water penetration: an unroofed enclosure could have been built much more easily and effectively using ground-fast posts. Some sort of roof therefore seems likely, but whether it extended as far north as the north side of the original building is uncertain. An alternative interpretation is that the room extended no further north than the end of 807, and that 006 functioned as the drain-lining only beyond a line drawn through here. The evidence from this room in the following phase (see below, p.119) suggests that this may have been the case. If this was so, the large blocks in 812 may mark the northern limit of the room.

Doorways

The main access to the building was now certainly through the middle of the outshut. It is possible that there may have been a second external entrance to Room 12.7, through its western end (see above, p.114). The doorway in the north end of the east wall seems to have continued in use, though its threshold had been covered by a surfacing of the yard to the east of the building before Room 12.5 was constructed. Depending on the position of the north wall of Room 12.5, this door would either have remained an external entrance or have provided access to Room 12.5 itself; this room seems to have had an external doorway at the west end of the south wall.

There is some evidence from the succeeding phase to suggest that there was an internal doorway in the southeastern corner of Room 12.7, leading into Room 12.6 (see below, p.121), and it is probable that this doorway existed in Phase 2 as well, although this cannot be proved. The same evidence suggests that there may also have been an external doorway into Room 12.7 at the northern end of the west wall, marked by the large block 856 which may have been designed as a threshold.

Dating

The coarse pottery (cat. nos 74–6) suggests that the activity subsumed under the heading of Phase 2 was taking place between the late 3rd century and mid 4th century. As stated above, it is not possible to determine stratigraphically whether all three modifications took place at the same time, and the dating given by the pottery is not precise enough to determine this either. The addition of Room 12.5 should date to the 4th century from the pottery incorporated in its cobbled floor (cat. nos 77–8).

Phase 3 (FIGS 23, 26)

Description

Only one possible new wall was built in this phase, but the structural alterations involved the complete gutting of the centre of the building and the removal of parts of two walls (816, 820). Only Rooms 12.7 and 12.5 remained as they had been in Phase 2, together with the western half of the outshut. The middle of the building (Rooms 12.1 and 12.6 of Phase 2 and the outshut east of the entrance) was remodelled to form one very small unit, possibly a room (Room '12.9'), created out of the northern half of Room 12.6, and a large, roughly L-shaped room ('Room 12.10') out of the rest of former Room 12.6, all of Room 12.1 and the east half of the outshut. However, these are suggestions only, and therefore 'Room 12.9' is quoted with inverted commas, as is 'Room 12.10', which, although a separate unit, is almost certainly not a room at this phase.

Room 12.7

The most noticeable feature within this room was the pattern of wear around the central stone slab (813), represented by a hollow which had been worn into the surface of the underlying deposit 815 (see FIG. 25) before being filled by a deposit (827) which may represent either the cessation of this activity, or material spread on the floor.

SG118 (FIG. 26) The stone slab (813) which lay in the middle of the room was set into a mottled dark brown/orange loam (829) with a diameter of about 1.6m. The evidence for wear around it took the form of a dark brown silty clay (827) in a hollow in the top of the bedding layer of Phase 2 (815, SG116). The layer 827 extended over an area of roughly lozenge shape with the ends in the northwest and southeast corners. The stone slab 813 was in almost the same position as the earlier slab 833 (SG116), although 829 intervened between the two. The massive block 856 was certainly in position in this phase close to the northwest corner of the room, over the timber-slot which represented the west wall of the building, although it may have been laid in Phase 2 (see above, p.114) rather than in this phase.

'Room 12.9'

The division of Room 12.6 to create 'Room 12.9' seems to mark the end of use of the oven or hearth structure (897), or at least a complete change in the manner in which it functioned, as the ashpit 1246 and the feature represented by 1207 were no longer in use. Both the cobbled base and the ashpit were covered by flagstones (821, 826), that over the base being covered by a further layer of cobbles (822). The surrounding area was covered in red clay (823), bounded to the south by a vestigial wall (819).

SG119 (FIGS 23 and 26) An east–west linear structure (819) was built across Room 12.6 on the line of the ashpit. The ashpit itself was covered by a (fragmented) flagstone (821) and the wall ran from the east of the flagstone as far as the east wall of Room 12.6. Wall 819 consisted of a line of small rubble blocks with no foundation. Two small deposits of charcoal and red clay (1203, 1204) under this new wall may be remnants from the original oven superstructure. An assemblage consisting of a layer of cobbles over a slab (822/826) was laid over the top of the Phase 1–2 hearth base 897, though its form and purpose were much less clear than 897/1246. To the north of 821 and partly underlying it was an area of red clay (823) into which the slab 826 was set. If the clay was a floor surface, it must have undergone considerable degradation as it extended neither to the eastern side nor to the northwest corner of 'Room 12.9'; instead, these areas were covered by a layer of mottled light yellow/dark brown sandy clay (824) deposited between 823 and the wall 820.

'Room' 12.10

This 'room' was now L-shaped and completely open along its southern side. Its northern arm may have had a roof supported on a fragmented sandstone slab (808) but otherwise it must have functioned as an inner yard.

SG120 (FIG. 26) The only feature in 'Room 12.10' besides a layer of silty clay (809), which extended over both the disused sections of internal wall, was a small patch of fragments of sandstone slab (808). This lay half-way between the southeast corner of 'Room 12.9' and the east wall 807, on a line with the south wall of 'Room 12.9'. The mechanisms governing the formation of 809 are not clear: the deposit accumulated within the room to a point at which it covered the southern part of wall 820, but 808 was half-way down in the deposit. This suggests that the layer was formed by a process akin to the 'black earth' formation in Building 13 (see below, SG137), although 809 was lighter in colour. This layer continued through the presumed doorway into Room 12.5.

The outshut (Room 12.11)

This now consisted only of the area to the west of the entrance, the eastern part of the outshut having been subsumed in 'Room 10'.

SG121 (FIG. 26) The deposit in the outshut, a sandy clay layer (825) was not very clearly distinguishable from 809 in Room 12.10. It partly overlay the south and west walls of the outshut.

Room 12.5

This room appears to have continued with very little change, provided that it had never extended beyond the northern end of wall 807. The cobbled floor was replaced (806).

SG122 (FIG. 26) The only deposit in this room was another cobbled surface set in black silty clay (806). The cobbles were concentrated particularly towards the east and south of the area, reinforcing the suggestion that this room was of limited extent.

*Discussion***Walls**

There was only one possible new wall, the linear feature 819. If this was indeed a wall (see below) it would have been of the same type as wall 836/1212/1213 in Phase 2, and therefore was probably a sill-wall for a sill-beam structure. More interesting are the implications for the

existing walls of the changes made in this phase. Since the deposit in the new Room 12.10 overlay the east end of the sill of wall 816 and the south end of the sill of wall 818, their above-ground structure at these points must have been demolished. This will have had structural implications. It is difficult to see how Room 12.10 could have functioned as an enclosed space, as not only was the superstructure of the south wall demolished at this end, but also there is no evidence for an upright in the southeast corner of the original building at the junction between walls 816 and 807, so the weight of the roof could not have been taken on a beam carried over the opening. Room 12.10 was therefore presumably an open yard or garden, possibly with a roof over the northeast quarter supported on the corner of 'Room 12.9', on 808 and on the wall between Rooms 12.10 and 12.5.

Floors

The cobbled floor of Room 12.5 was relaid. The flagging which probably formed the floor of Room 12.7 in Phase 3 had largely disappeared before the end of the phase, but it was quite obvious from the wear recorded on the surface of its bedding 815 that the bedding itself was functioning as the floor in Phase 3. No floor survives in 12.10, but there are no wear patterns on 809 to show that it was actually being used as a surface. The red clay surface in 'Room 12.9' may have been a floor, but in that case either it had never extended to the east wall and into the corners of the room or it had been removed at these points. An alternative interpretation of this layer is considered below.

Roof

The demolition of the walls also has implications for the roof structure, which can no longer have survived in its original form. We suggest above that the east–west arm of 12.10 was open and that its northeastern corner may have had a roof supported on 808: 'Room 12.9' may have been under the same roof. It is possible that Room 12.7 preserved the west end of the roof structure from Phase 2. In the Room 12.5 area, only the southern end can have been roofed, extending no further than the northern end of 807 and the cobbles in 806, since the eastern end of the north wall of the main part of the building (816), which would have been necessary to support any roof in the northern part, does not appear to have been in service in this phase.

Layout and fittings

The new yard 'Room 12.10' measured $6.8 \times 5.3\text{m}$ at its maximum. The northwest corner of this space (*c.* $3.1 \times 2.25\text{m}$) was taken up by 'Room 12.9'. Room 12.7 remained unchanged, and Room 12.5 may also have done so, depending upon its form in Phase 2. 'Room 12.9' is the most difficult part of the building to interpret, as it is not certain whether it was actually a room or an elaborate structure within the building, possibly replacing the Phase 1–2 hearth structure 897/1246.

As a room, 12.9 would be the successor to 12.6, using the same walls with the exception of the south wall, for which the linear feature 819 would be employed. The red clay layer 823 would be the floor and the slab 821 the threshold, there being no other likely reason for the line of a sill-wall to be interrupted by a flat slab. The southeast corner of this room would have been rounded, but the main problem in interpreting 12.9 as a room is the presence of the slab and cobble feature (822/826) directly in line with the presumed doorway and only 0.5m away.

An alternative interpretation is that the walls surrounding 12.9 were an outer casing to the slab and cobble feature, of which the red clay and slab (823, 821) also formed a part. The purpose of this ensemble is not clear, though it is possible that it continued to perform the same function as 897/1246 over which it was set. The hearth 897/1246, as it survived in the archaeological record, was a substructure only, and without the ashpit there would have been no clue to its function. It may be that 822/826 also was nothing more than a base and that, if it served the same function, an ashpit⁸ was incorporated into its superstructure and was removed with it when the ensemble went out of use.

⁸ Slab 821 is too far from 822/826 to have acted as a receptacle for raked ashes from 822/826, if the latter was still a hearth in this phase.

Doorways

The position of any door into 'Room 12.9' is discussed above. Room 12.7 provides evidence for the probable position of two doorways, which may have been in existence from Phase 2 (see above), although they cannot be proved at that level. The evidence consists of the wear pattern on 815, which ran from the southeast corner of the room adjacent to the main entrance into the building, to the northwest corner where a large block (856) set over the beam-slot marking the west wall may have served as a threshold. It is suggested that doorways existed at both of these points. There is no evidence for any change to doorways into Room 12.5: Room 12.10, in addition to the probable doorway in its northeast corner, may have been accessible through the south side from the yard, though the evidence for this is best from Phase 4 (see below).

Dating

The coarse pottery from this phase (cat. nos 107–9 and discussion) is broadly similar to that from the previous phase. Although a few pieces may be later, this phase is unlikely to be later than the mid 4th century.

The Yard, Phases 2–3 (FIGS 23, 26; PL. XXXV)

The yard continued to be made up in patches, but subsidence does not appear to have been as severe a problem as it had been previously.

SG123 (FIG. 26) The first deposits at the eastern end of the yard to post-date the construction of Room 12.5 consisted of two deposits, one (845\$) which was very similar in nature to the underlying 812, and a firmer layer of cobbles and rubble (852\$) which extended as far as the drain of the main north–south road. Both layers abutted the massive sandstone block (862).

SG124 (FIGS 23 and 26) Small areas of cobbles and stone fragments (830\$, 831\$, 832) overlay 845, although it is not very clear whether these were patches or the fragmentary remains of more extensive surfaces. Above them, a major resurfacing horizon was marked by a cobble layer (811/1021\$).⁹

Dating

The coarse pottery from these deposits (cat. nos 146–8) would suit an early to mid 4th century date in accordance with the construction of Room 12.5.

Phase 4

The single major change at this phase was the encroachment of the yard over the eastern half of the outshut; otherwise a general running-down of the building seems to be represented. There is very little rubble overlying this building.

Description

SG125 (FIGS 23 and 26) In Room 12.7, the fill of the depression in the floor was covered by a further deposit (814\$), over the top of which a scatter of stone chips (828\$) accumulated against the middle of the west wall. The timber-slot forming the west side of the main building went out of use and was filled by dark brown sandy clay (834), partly encroached over by the yard surface. There was also a small amount of rubble overlying 809 in Room 12.5, possibly deposited at this stage.

The latest yard surface (811) extended across the eastern half of the outshut. Leading into this extended Room 12.10 were two ruts (396, 397) which ran north–south, apparently entering Room 12.10 of the building immediately east of the entrance slab 810. A deposit of cobbles, small stones and brick/tile fragments (1226) over 811 may represent abandonment.

⁹ The numbers 838 and 859 were initially used for finds made during cleaning over the yard to the south and west of the building respectively. These finds should be attributed to this phase.



PLATE XXIII. Building 13 looking north: remains of burnt wall superstructure over centre of building (Room 13.2). Scale unit 0.5m.

Dating

The coarse pottery from this phase (cat. nos 110–14 and discussion) does not extend the dating of the building beyond the middle of the 4th century.

BUILDING 13 (FIGS 4, 27, 28, 29; PL. XXIII)

This building lay to the north of Building 12 from which it was separated by a ditch (described above, SG48–SG53) and a cobbled yard sloping up from the ditch to the building. Like Building 12, it lay end-on to the main north–south road. It was rectangular, occupying an area of 16.9 × 8.0m, but 2.0m of this was occupied by an outshut which, like that of Building 12, lay outside the main walls of the structure.

The most characteristic feature of this building was its external walls. These were represented in the archaeological record by sills formed from massive sandstone and conglomerate blocks. The building had burned down and then been rebuilt on the same sills. The construction levels were not reached, since the water-table within the building was high even in relation to the surrounding area, and time did not permit excavation of the layers below the destruction deposits.

Phase 1 (FIG. 27; PL. XXIII)

This phase represents the building at the time it burned down and probably, though not necessarily, as it was originally constructed. One possible interpretation of the evidence for the conflagration suggests that it may have happened during building work (see below, p.128). At this stage the building seems to have consisted of a row of rooms, probably three (13.1, 13.2, 13.3), against one long side of which there was an outshut (13.4) with its entrance in the middle. The destruction deposits took the form of spreads of burnt clay, which on excavation were resolved into a series of ‘panels’ (949, 954, 955, 956, 958, 959, 964/967, 966, 983, 1336, 1337, 1338), providing valuable information about the superstructure of the walls above the massive stone sills (905, 911, 915, 920). Patches of unburnt clay (981, 982) were probably also derived

from the superstructure. The south wall of the outshut was of clay (916), and had been founded in a trench cut into the cobbled surface to the south of the main part of the building. Other walls were represented only by rows of smaller stones (940, 998, 1321). Clearly identifiable pre-fire floor surfaces were reached only in Rooms 13.1 (961) and 13.4 (not illustrated).

Description

Main structure

SG126 (FIG. 27) The external walls (905 on the north side, 911 on the east, 915 on the south and 920 on the west) were represented by their sills which were formed from lines of massive sandstone and conglomerate blocks. Most of these were 0.4–0.5m wide and typically at least 0.7m long, but there were also some smaller stones between the larger blocks. Where stones had been robbed from the wall, it could be seen that the foundations were of flat slabs. The north, south and west walls each consisted for the most part of a single course of blocks with, at the northern end of the west wall and the eastern end of the north wall, some small supplementary blocks to keep the sills approximately level. The east wall 911 was bedded in grey clay (1312) and consisted of two courses of blocks, the upper one partly robbed, separated by a layer of pink clay and flat slabs (995/1318\$). This wall seems to have been constructed with the dual function of house wall and lining to the drain of the main north–south road (see above, SG29). Probably because of this dual function, wall 911 continued southwards, and thus also formed the east wall of the outshut.

Although the tops of the blocks appeared on visual inspection to be reasonably level (except where individual examples were tilted), readings taken on them showed a variation of some 0.3m overall on the north, south and west walls, with differences between adjoining blocks sometimes greater than 0.1m. In the east wall, the slabs which formed the part of the intermediate layer between the two courses of blocks were at roughly the same level as the exposed section of foundation in the southwestern corner of the building, but what remained of the upper course of this wall appeared to rise some 0.14m higher than the other walls.

Although they were of approximately the same width as the external walls of the main part of the house, the internal walls were less substantial. The sills of the wall between Rooms 13.1 and 13.2 (1321) and the wall between Rooms 13.2 and 13.3 (998) each consisted of a line of broken pieces of flagstone. Wall-sill 998 had at least two courses, but the height of 1321 could not be determined. These walls abutted the external walls; the position of 1321 was marked on the north wall (905) as the block at this point (930) was placed with its long axis on the line of 1321 rather than 905.

SG127 (FIG. 27) The base of the south wall of the outshut was of completely different construction. It was marked by a strip of red clay (916) of variable width, up to 0.40m. A sandstone block (953, FIG. 28), 0.30 × 0.40m in size, overlay 916 1.0m from its eastern end, but this was probably associated with the final phase of occupation (see below, SG141). No post- or stake-holes were seen associated with this feature at any point. When the clay was removed, it proved to be contained within a linear slot (1357\$) in the cobbles which formed the lowest identified surfaces in the outshut and the yard to its south and was apparently created at the time that this surface was laid, since its southern side was formed by a row of cobbles which seem to have been deliberately laid to form an edge (918\$). Under the clay was a packing of small pieces of sandstone flagging (1358\$). The west wall of the outshut (940) was represented only by a short length of very crude walling consisting of one large block and a number of smaller ones.

Running alongside 916 for a distance of 5.65m to the east of the entrance was a narrow (0.14m) slot containing fragments of roofing slate set on edge (952/1369\$). This did not however penetrate below the destruction levels, and its function and relationship with 916 is unknown.

Deposits within the individual rooms

Room 13.1

This room had a cobbled floor (961), which had subsided towards the centre. There were no destruction deposits.

SG128 (FIG. 27) The cobbled floor (961/922\$/923\$) was bedded into a layer of sandy clay (1350).

Room 13.2

The destruction deposits in this room were extensive, and appear to represent the superstructure of the clay walls in which separate panels (949, 964/967, 966, 1338) could be identified: excavation was halted part-way through their removal. Few deposits which might pre-date the fire were excavated, and none appear to represent floor surfaces, unless two patches of flagging (965, 1306) do so (see below, p.127).

SG129 (FIG. 27) Two patches of broken flagstone (965, 1306) bedded into loamy deposits (963, 973\$/999\$) underlay the destruction deposits.

SG130 (FIG. 27) The destruction deposits over the central area of the room contained three very well-defined 'panels' (949, 966, 1338). The best-defined panels (949 and 966) occupied areas of 3.5 × 3.0m and 1.6 × 1.1m respectively. In addition there was a less well-defined patch (964/967) to the north of 966. The western side of 949 had a pocket of charcoal (947\$) over part of its upper surface. A band of black silty loam (968) 0.15m wide ran between panel 966 and its neighbour 1338, forming a straight edge, and a similar band running diagonally (990) edged 1338 to the north and east.

Although most of the area was not excavated below this point, 949 was removed and proved to cover what appeared to be an area of intense burning (1320\$), marked particularly by heavily-degraded sandstone blocks (1307\$, 1308\$, 1309\$, 1310\$). Another debris deposit at this level was a spread of brick/tile fragments (1305\$) under the southern edge of 949.

Room 13.3

Excavation in this room did not penetrate below the destruction deposits. The main clay deposit had not been so extensively burnt as those in Rooms 13.2 and 13.4 and did not display the same panel structure, though traces of such a structure may be visible in the H-shaped stone alignment (970) between two patches of clay (1336, 1337).

SG131 (FIG. 27) The main deposit was 950, in which patches of burning were more intense (1336, 1337). There was also an H-shaped alignment of stones (970) measuring 1.65m north-south and 1.0m east-west. A post-hole (1364\$/1365\$/1367\$) approximately 2m from the north wall 905 and 0.45m from wall 998, suggests that there may have been some sort of fitting in this area.

The outshut (13.4)

This room had a cobbled floor (960\$/984\$/1359\$) which underlay the slight platform (941/1313\$/1315\$) marking the central entrance. This had been covered by destruction deposits in which separate panels (954, 955, 956, 958, 959, 983) could be distinguished, as in Room 13.2.

SG132 (FIG. 27) Underlying the fire debris was a cobbled surface (960\$/984\$/1359\$). This ran on continuously from the cobbles of the yard (see below, SG134). A small patch of sand (985) was noted overlying 984 towards its northern end at a similar level to the remains of the superstructure. It is possible that this may have formed part of a mortar surface to which 984 was the bottoming and from which the lime component had leached out. Over the top of the cobbles in the middle of the outshut was a layer of fragments of flagstone and cobbles laid up against a row of sandstone blocks (1317\$, 1319\$), which did not extend as far as the south wall of the main part of the building, or to the south wall of the outshut. These were covered by a 2m wide strip of cobbles (941/1313\$/1315\$). It was not possible to determine whether 1317 and 1319 formed the bottoming to this strip, or whether it was an earlier feature, such as a sill for an internal partition, but since they were at the same level as the surrounding surface, the latter interpretation does not seem particularly likely. The cobble platform extended as far as the outer wall of the outshut to the south, but stopped slightly short of the south wall of the main building.

SG133 (FIG. 27) The general destruction deposits of burnt clay (937\$, 948\$) extended over most of the outshut, apart from immediately west of the entrance. Initially they appeared fairly uniform, but were resolved with further investigation into a series of 'panels' (954, 955, 956, 958, 959, 983). There was also a small scatter of rubble (936).

Discussion

Walls

The type of construction represented by the main walls of Building 13 recurs in four other buildings (Buildings 14–17) as a major structural component, and with more limited application in three others (Building 12, Building 18 and Building 21). For the most part, the only element of the walls which survived was a single course of massive blocks, but because Building 13, unlike the others, had burned down, it also preserved elements of the superstructure.

It does not seem at all likely that the massive sandstone and conglomerate blocks continued above the surviving course: they probably formed a sill, but not for a timber. The example of Building 12 shows that the difference in level between the east wall and the others is not an insuperable obstacle to effective building construction in timber; the differences within individual walls are more telling. There is no evidence to suggest that the tops were levelled with smaller pieces of stone. It is possible that some movement may have occurred in the walls after they had been constructed, but the general impression is that they had moved very little, particularly in comparison with the internal deposits in Room 13.1, and it seems likely that the foundations were sufficiently massive to prevent subsidence, as in Building 12.

The superstructure appears to be represented by the burnt clay 'panels' which constituted the destruction debris in Rooms 13.2, and 13.4. On cleaning, these were resolved into roughly rectilinear shapes; but although the general outline of each was clear enough from a distance, this clarity was lost when the panels were viewed from close up and it was not possible to reconstruct their original size or appearance, nor to determine their exact relationship to the wall before its collapse. Panels 949, 964/967 and 966 each preserved what appeared to be one straight side edged with stones, either cobbles lying horizontally as the panels lay on the ground (panel 949) or fragments of flagging standing vertically (panels 964/7, 966): here the distance between panels was a fairly consistent 0.15m. Similar in nature was a rectilinear feature in Room 13.3, consisting of rows of small stones and pieces of broken flagstone, all apparently lying horizontally, and arranged in an H-shape (970). The two uprights of the 'H' formed edges to two areas of burnt clay (1336 and 1337). It is not certain whether any of this represents the base of the wall superstructure or whether it was derived entirely from collapsed material.

As none of the clay had been burnt hard enough to preserve the original structure (it behaved like an ordinary soil/sediment on excavation), it seems probable that these deposits represent only surface burning of the wall elements. It was noted during excavation that there was a pronounced 'veining' effect in darker material incorporated within the predominantly red/orange/yellow clay which formed the body of these contexts. This appears to preserve some detail of the surface of a wall made from mud brick reinforced by a timber framework (Perring *et al.* 1991, figs 66, 70c), timber uprights perhaps being wedged between the blocks of the sills where considered necessary. An alternative explanation is that the walls were of wattle and daub, with the 'veining' representing wattling, but not only is the appearance less suggestive of this technique, but the sills are also unsuitable for a wattle-and-daub wall.

By comparing the distribution of these panels with the position and condition of the wall bases, it is possible to make some suggestion about the walls from which they may have been derived. The outshut wall, to the east of the entrance and for approximately 2m to the west of it, seems to have remained standing during Phases 2, 3 and 4 (see below p.129); therefore the destruction deposits in the eastern half of the outshut would appear to have come from the wall between the outshut and the main part of the building (915). The deposits immediately adjacent to this wall within room 13.2 (966, 1338) probably also came from it. Further west, there were no destruction deposits within Room 13.1, so if the superstructure of 915 collapsed in the same manner, it must have fallen outwards into the outshut to form 937. However, 937 could also have been derived from the outshut wall opposite Room 13.1, which does not appear to have survived the fire in its original form (see below, p.129), especially as it does not extend into that area where part of this wall did survive. There is insufficient evidence to determine from which walls the other destruction deposits were derived. Patches of unburned pink clay occurred against the northern end of the west face of the west wall (981), against the south side of wall

905 in the northwest corner of Room 13.2 (982), and in the southeast corner of the outshut. It is possible that they may be connected with the demolition of unburned sections of the superstructure.

The southern wall of the outshut had no stone sill; its base was of clay, and the superstructure probably the same. There is no evidence that it had any timber supports. This wall is relatively narrow, and it is therefore unlikely that it stood to any great height. The plan, however, suggests that the outshut probably took the form of a lean-to, for which a narrow and relatively low wall would be adequate provided the roof was constructed so as not to produce too great an outward thrust.

Floors

Only in Room 13.1 could a contemporary floor (a cobbled surface) definitely be identified. The cobbles in the outshut Room 13.4 (960/984/1359) could have been a floor surface, but it is also possible that they represent an extended yard surface which pre-dated the construction of the outshut, particularly since they are below the level of the entrance. There is a slight possibility that there may have been some sort of mortar surface over these cobbles (see above, p.125), but if this was the case, the surface must have been broken up before this phase of the building was destroyed, as it covered only a very small area.

By analogy with Building 12, it seems likely that the cobbled surface (941/1313/1315) marked the entranceway into the building. This surface was slightly higher than the top of the sill of the south wall, probably a deliberate measure to facilitate access over it. It is not possible to determine whether 941 was covered by a flagstone, as was the case in Building 12.

The form of the floor in Room 13.2 is more difficult to establish. The only possible traces of a surface noted were two small patches of flagging (965, 1306), the former in the southwest corner (at a height of 7.11m OD) and the latter under one of the possible collapsed wall panels (949) near the east side (6.94m OD). However, we have shown that the entrance through the outshut was deliberately constructed at a level (7.40m OD) which took it over the sill-wall. It therefore seems reasonable to suppose that the internal floors would have been at a similar level. Subsidence could be a factor, as in the adjacent Room 13.1. However, levels (between 7.30m OD and 7.42m OD) recorded around the sides of the cobbled floor in Room 13.1, where it was supported by the wall foundation, suggested that it had originally been laid at a level approximating to the mean level of the sill on all three external sides, although it had slumped to 7.11m OD in the middle of the room. Any solid floor would have been below the destruction debris, but readings taken on the top of the destruction debris in Room 13.2 immediately inside the entrance showed that the top of this lay at 7.01m OD, approximately 0.3m below the entrance. There must therefore be a strong possibility that any floor, whether solid or of timber, had been removed. There is evidence (p.128) to suggest that when the building burned down, it did not have a roof, and in this case it is possible that Room 13.2 may not have had a floor either.

Other structural elements

There is no direct evidence for the roof. Given the plan of the building, it is most likely to have had a double-pitched roof with an east–west ridge over the main part of the building, and a lean-to over the outshut. The roof structure of the outshut is likely to have incorporated horizontal beams across its width: since the south wall was relatively thin and apparently without any supporting timberwork, this arrangement would have been necessary to avoid an outward thrust.

Plan and layout

The total area occupied by the main part of the building at wall-sill level was 16.9 × 8.0m. Because of the irregularity of the sills, it is difficult to determine which were the wall lines, and therefore how the building was laid out. The radical difference in treatment between the walls surrounding the basic block of three rooms and the relatively thin walls of the outshut suggests that the latter were of minor importance in the structure.

The main part of the building seems to have contained three rooms. The divisions between these three are clearly marked by the wall-sills 998 and 1321; in addition Room 13.1 is defined by its cobbled floor. All the rooms were the full width of the building (approximately 4.2m north–south): Room 13.1 measured approximately 4.2m east–west, Room 13.2 measured 6.8m and Room 13.3 measured 4.0m, though the walls were not exactly parallel.

The internal width of the outshut was approximately 1.6m, but its layout is less clear than that of the main part of the building. There is a slight possibility that it may initially have been divided into two roughly equal halves by a wall standing on 1319 (like the outshut of Building 12). Once the doorway had been made (see below), it is unclear whether the entrance was a separate little corridor (defined by the cobbled surface 941/1313/1315), with a long narrow room on either side, or whether it was an open-sided ‘gangway’ through a space extending the full length of the building.

Doorways

The only doorway whose position could be defined was the main entrance from the south through the middle of the outshut. If the opening was the width of the cobbled surface (941/1313/1315), it would have been wide enough for double doors. It is probable that this doorway was not an original feature, as the outer wall of the outshut continued across the end of the cobbled surface; if it had been original, it is likely that a timber sill would have been inserted into the foundation trench at this point (cf. Perring *et al.* 1991, 95–6 and fig. 33).

There is nothing to indicate the positions of any internal doors.

*The fire*¹⁰

The most striking feature of the destruction deposits, apart from the collapse, or partial collapse, of the walls, was the absence of any significant quantities of charcoal in the deposits. Only low weights of charcoal were recorded, consisting of small fragments. This indicates that the roof timbers were not significantly affected, and this in turn suggests one of the three following situations:

- the building was burned during construction, before the roof was put up;
- it was burned after it had become derelict, and after the roof had been removed;
- the fire involved some sort of stored inflammable material, such as hay, which produced an intense heat quickly, but did not burn long enough to ignite the roof timbers.

As has been demonstrated above, there may not have been a floor in Room 13.2 when the fire occurred, and therefore either the first or the second suggestion seems most likely.

Wall collapse, if not caused by roof collapse, may have been the result of differential stresses set up when the inner side of the wall was baked while the outer side remained undamaged. This would cause the wall to lean. The other sort of damage likely to occur in this situation is that the surface of the wall would spall, but since large, relatively coherent, areas of burnt clay were formed, this does not seem to have happened.

Dating

This building is dated entirely by the coarse pottery (cat. nos 149–60) which suggests that it was in use in the late 3rd–4th century.

The yard and other adjacent areas (FIGS 28–29)

As with Building 12, there was little correspondence between what was happening in the building and in the cobbled yard to the south, though in this case there appeared to have been less construction activity in the yard than in the building, probably because the ground drained better and was less liable to subsidence than the yard of Building 12, which had been

¹⁰ We are indebted to Station Officer John Richards of West Glamorgan Fire Service for the interpretation put forward in this section.

constructed over buried gullies. Building 13's yard did not continue round its western side. The northern side was marked by a short length of wall in massive blocks. It is not clear whether this had any relation to Building 13.

SG134 (FIG. 28) The cobbles of the yard were laid over the higher flood deposit sequence 1242 (SG4, see above p.28) like those of Building 12. A patch of clay (939\$) visible below the cobbles may have been part of this sequence, bedding for the yard surface. In contrast with Building 12, there was a relatively thin build-up of cobbling (0.2m). The lower of the two layers of cobbles identified (938/989) was set in reddish-orange clay which appeared to run continuously on from the cobbled surface of the outshut (see above, SG132). It is not certain at what point during the development of the building this cobbled layer was replaced by the upper one (014/919, SG138).

SG135 (FIG. 29) The small area visible to the west of the building was overlain by a 'black earth' deposit (969/1352\$) similar to those which developed over the interior of the building (903: see below, SG137). The north wall of the building (905) was separated from a parallel wall of similar construction (910) by a 1m-wide gap. A deposit of pink-orange sandy clay (971) lay against the south side of 910, with a dark brown loam deposit against the north side of 905. To the west of 910, associated with 971, there was an area of cobbling (976) which continued beyond the northern limit of the excavation.

Phase 2 (FIG. 28)

After the destruction of the building by fire, it seems to have been completely rebuilt using the original wall-sills. The outshut seems to have remained in use as it was respected by the surrounding deposits, and the area of the yard adjoining the entrance was resurfaced at some stage (see below, SG140), while the rest of the yard was not. The outshut itself provides no evidence for activity.

Description

There is no evidence for any subdivisions in this phase: there are traces of flagging (925, 943, 988) over the whole building, which may have formed a continuous floor. The main problem in understanding this period is caused by the conversion of the upper levels to 'black earth' (903), in which most of the flagging, probably derived for the later floor surfaces, appears to float. This is particularly the case at the western end for this phase; more of the stratigraphy seems to have been preserved at the eastern end under the masonry structures of succeeding phases (SG139, SG141). It is not possible to be certain what form the outshut took in this phase. Its structure was certainly somewhat different. Since the line of the outshut wall to the west of the entrance was still respected by the yard deposits (938/989), it seems likely that this side had been rebuilt in some fashion, although no direct evidence survived for either walls or floor. A structure such as one founded on a sill-beam laid on the ground seems likely.

SG136 (FIG. 28) At the eastern end of the building was a layer of soft black clay into which had been set flagstones, only fragments of which remained (943). Some of the pieces of flagstone were over 1m across, and probably represent the remnants of a floor.

SG137 (FIG. 28) The western three-quarters of the building (over the previous Rooms 13.1 and 13.2) contained very little evidence for any activity post-dating the fire, although it is clear that it must have been used since the integrity of the walls to the main part of the building and of the space bounded by them, was preserved. The only deposit over this part of the site was the 'black earth', a dark brown/black clay-silt loam (903/962\$) which overlay the whole of the building. It seems most likely that this part of the building was covered throughout in some kind of flooring which was not removed until the building was no longer used. The only features noted were a single large block (924), approximately 0.5m square and situated roughly in the middle of this area, patches of flagstone fragments (925, 988) which occur throughout the area, and a small patching of cobbling (942) in the northeast corner.

SG138 (FIG. 28) The clay/mud brick wall 916 remained in use to the east of the entrance, but to the west it was demolished apparently to ground level, since part of the resurfacing of the yard (014/919) overlay it.

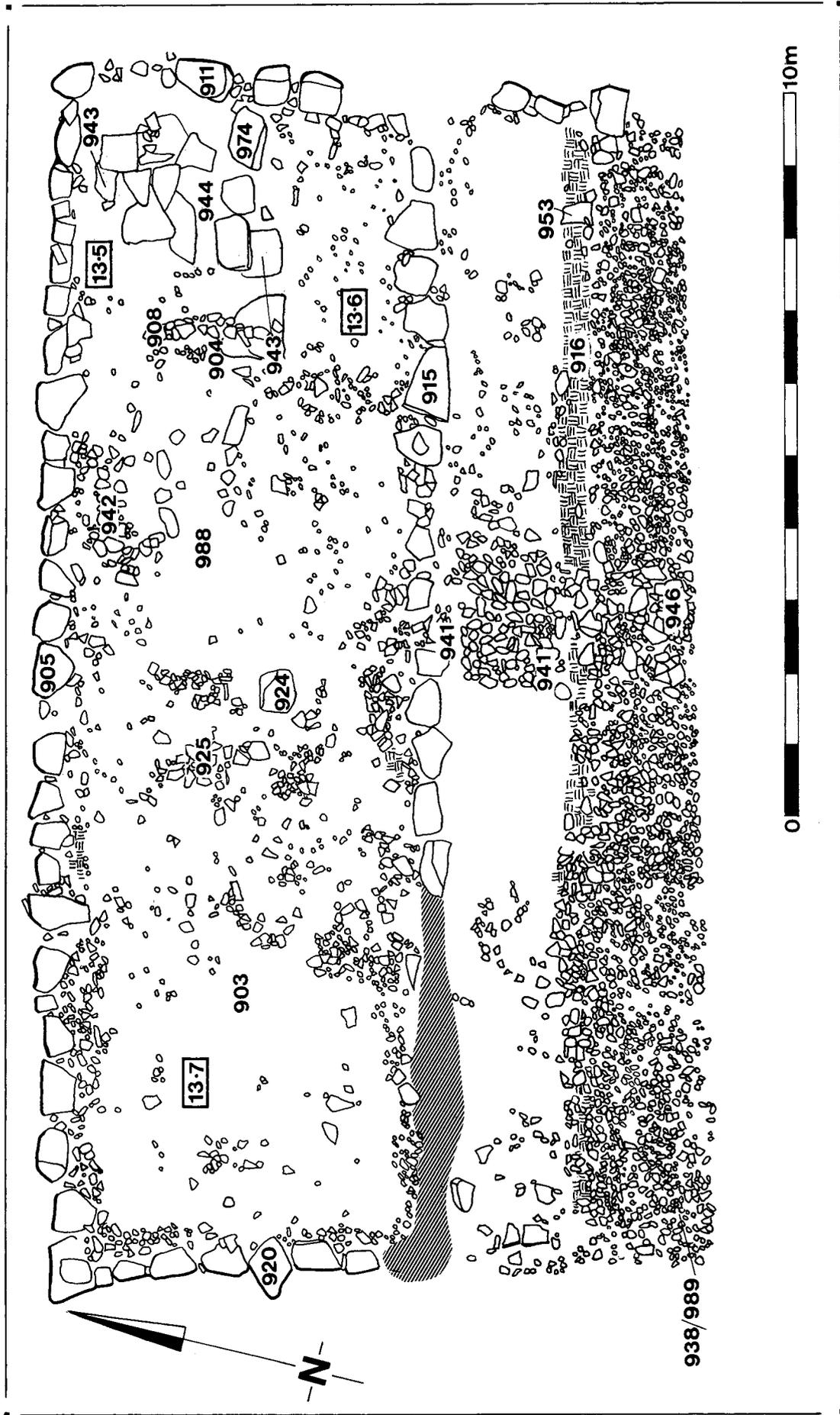


FIG. 28. Building 13: Phase 2.

Discussion

There is no direct evidence from this or subsequent phases for the replacement superstructure. As the massive block sills (905, 911, 915 and 920) continued in use for the external walls, it is likely that their superstructure was rebuilt in the same way. The outshut seems to have partly survived the fire and partly required reconstruction in some other form, but the evidence for this is found in Phase 4. The roof was probably reconstructed in the same form; as there is a general absence of permanent roofing materials (ceramic tiles, stone slates) from the building, it seems likely to have been covered in biodegradable material such as thatch or shingles.

The evidence for internal deposits is very poor: only the flagging (943) at the east end of the building post-dates the fire and pre-dates the division of the building into a probable three rooms. It is for this reason that a Phase 2 has been postulated, when the interior of the building consisted of a single undivided space.

Phase 3 (FIG. 28)

The eastern end of the building was partitioned off to form two small rooms (13.5, 13.6). The partitions were built over the flagging of the previous phase. The rest of the building to the west of 13.5/13.6 formed a single room (13.7) in which it is not possible to distinguish the activity relating to this phase from that of the previous and following phases: SG137 encompasses all three.

Description

Although there is only very slight evidence for the main internal wall dividing the west end of the building from the east (908), the difference in the development of the two ends indicates that there must have been such a partition. The eastern end was further divided by a row of massive blocks (974) of the same size used in the outer wall of the main building. There are traces of a flagged floor (944). The yard outside the entrance was consolidated by a deposit of sandstone roofing slate fragments (946).

SG139 (FIG. 28) The main north–south division is represented only by a row of cobbles (908), 1.8m long and between 0.12m and 0.15m wide, approximately 3m from its west wall, but not extending to the north or south walls. They were on roughly the same line as the earlier wall 998. It seems likely that these cobbles may have been placed at the base of a wall which had been entirely removed, and which must therefore have been founded entirely upon the ground, probably as a mud-brick or clay mass. A row of three massive conglomerate blocks (974) was laid east–west from the east wall 911 for a distance of 3m over the flagstones of 943. Abutting this to the north was a patchy yellow-brown layer of silty clay (945) over which was another layer of broken flagstone fragments which had the appearance of another floor level (944).

SG140 (FIG. 28) An area of sandstone roofing slate fragments (946) approximately 2m square was laid over the cobbles to the south of the entrance metalling 941, indicating that the entrance was probably still in use.

Discussion

The very different natures of the two postulated partition walls suggest that they may not have been built at the same time. Each of the two new rooms was approximately 2.0 × 2.0m, the northern one (13.5) having a flagged floor. The placing of the stone in 908 would have allowed the more southerly of the two (13.6) to have a doorway from the main room at the west, but there is insufficient space between the northern end of 908 and the north wall of the building for a door into 13.5: access seems more likely from 13.6, provided the partition between 13.5/13.6 and 13.7 was on the east side of 908. There are few options for the use of rooms of this size, and it is most likely that they would have been storerooms. The outshut appears to have continued unchanged.

Dating

A limited amount of coarse pottery came from 945 (cat. nos 161–2), but was sufficient to suggest a tentative date of the mid 4th century.

Phase 4 (FIG. 29)

This phase saw the complete remodelling of the east end of the building. Most of the area which had previously been Room 13.5 was now occupied by a platform: the rest of the room was amalgamated with Room 13.6, and probably also the eastern end of the outshut, to form a single large room (13.8) with a flagged floor. The western side of the outshut went out of use. The remainder of the outshut may have formed a small room (13.9). Room 13.7 continued as it had been in the previous two phases. There are slight traces of activity to the south and east of the southeast corner of the building, suggesting that occupation may have been extended into this area as some sort of timber structure resting on the ground.

Description

The platform in the new Room 13.8 was formed by filling in (907) the area to the north of the east–west massive-block partition wall (974), after a second row of massive blocks (1339) had been laid at right-angles to the first. To the south of this platform, a new flagged floor was laid (909), apparently extending over the east end of the main south wall of the building into the outshut.

SG141 (FIG. 29) The first phase in the construction of the platform (906) was the laying of two blocks (1339), slightly smaller than those employed in 974, at right-angles to 974 and overlying the western edge of the flagged floor 944 closing off half of the west side of Room 13.5. (It is possible that this unit could have been used as a room in this state.) The final stage of the operation was the filling in of the area bounded by the rows of stone blocks with a mixture of large cobbles and small pieces of rubble (907) to a depth of 0.3m, forming a platform.

At various places over the eastern end of the building were patches of fragmented flagstone (909). For the most part, these overlay the 'black earth' (903), though some of them were overlain by it. For a distance of 3m from the eastern end of the building the tops of the blocks forming the main southern sill-wall (915) were either on a level with or under, this paving or the black earth. In the outshut some of them directly overlay the destruction deposits of Phase 1. A sandstone block (953) was placed over the clay wall base 916, 1.0m from its eastern end.

SG142 (FIG. 29) Apart from the east end, most of the area previously occupied by the outshut (including the entrance) was covered by a rough cobbled surface (934), but the areas of 13.9 and 13.8 were clear. Over the cobbled yard to the south of the building was a rubble spread (917/935). At the east end of the building the rubble formed a slight platform extending 1.2m from the south wall 916 for a length of 8.0m. The section of road drain adjoining what had been the east end of the outshut, was tightly packed with rubble (914; PL. V): the three blocks of its eastern side (931) were the only ones to survive unrobbed. It is possible that this area may have been added to the building.

Discussion

The evidence for the extension of Room 13.8 into what had previously been the outshut lies in the continuation of the last phase of flagging (909) across the original main south wall 915 as far as the clay wall base (916) which had originally formed the south wall of the outshut. This wall base was still being respected by the surrounding stone deposits for a distance of some 4m west of 953 (although 909 extended over the line of the adjacent slot 952/1369), and therefore probably formed the south wall to the room. However, because of the structural problems involved in roofing such a room (see above, p.127), it is unlikely that the whole height of 915 would have been removed; it is more likely that an opening would have been made through 915 and the wall above supported on a beam.

The possible new Room 13.9, formed from the rump of the outshut, was marked by little more than the absence of rubble, which differentiated it from the area to the west, and by the obvious continued use of the stone sill-wall 915 at its north side and the clay wall 916 at its south. It was approximately 2m long. The slight platform of rubble to the south may represent the position of some short-lived structural elements, but there is no way of proving this. The same is true of possible activity over the drain.

Room 13.7 remained unchanged. Room 13.8 covered an area of some 7.0m north–south by a

maximum of 3.0m (east–west), and Room 13.9 an area of 3.0m (east–west) by 1.7m (north–south). One possible doorway was noted. This was to the east of the block overlying the clay wall base where, for a distance of approximately 1.0m, the clay wall base was overlain by cobbles.

Phase 5

Abandonment was marked only by a scatter of building debris, probably because most of the superstructure of the building was biodegradable. Parts of the main wall-sills were robbed.

SG143 (FIG. 29) The only certainly later activity represented in the archaeological record was the robbing of the southwestern corner of the building and the ends of its eastern wall (921/977). However, the deposition of a layer of clay loam containing some rubble (926/932) may date to this phase. The red clay deposit (904) adjacent to the partition wall between Rooms 13.7 and 13.8 may represent the remains of its superstructure.

BUILDING 14 (FIGS 4, 30, PL. XXXV)

Building 14, which measured 18.5 × 7.0m externally, lay to the south of Building 12, with its long axis at right-angles to the main north–south road. The external walls of the building were marked in part by massive sandstone and conglomerate blocks, similar to those used in Building 13, and in part by bands of cobbles. It probably consisted of two rooms (14.1, 14.2), although no continuous partition feature was noted between them. There are also indications that there may have been an extension of light construction (14.3) on the east (short) side, opening to the road. The uppermost deposits were cleared from this building to reveal its layout in the final phase of occupation, but no further excavation was carried out. All deposits which form part of the building have been included in a single stratigraphic group.

Description

Structural elements and internal deposits

The eastern end of the building was constructed from massive blocks on cobbled foundations, and the western end from bands of cobbles, the level of whose surface approximated to that of the surface of the row of blocks. The construction technique changed part-way along the two long walls, but at different points. A flagstone lying across the line of the east wall at its southern end probably represented the main entrance. Two single massive blocks (1032, 1033) probably represent the line of an internal partition. The line of the northern wall was continued to the east to mark a possible extension: two isolated blocks (1035, 1037) mark points along its eastern side. Few internal deposits were identified, but an L-shaped arrangement of flagstone fragments and sherds of amphorae (1034) against the south wall to the west of 1032 may represent some kind of fitting.

SG144 (FIG. 30) The north wall sill (1078) was constructed partly of cobbles and partly of massive blocks on cobbled foundations at a lower level than the cobbled sills. The row of blocks, which had been partly robbed, extended for a length of 9.4m from the east. It seems, however, that some block-work had continued for another 3m or 4m before it had been robbed. Under this robber trench, the surface of the cobbled foundation remained at the same level as under the blocks. West of this, however, the surface of the cobbles rose to a height more closely approximating that of the surface of the row of blocks. No additional stonework survives in this section, and if any originally existed over this section of foundation, it can have been no more than thin slabs. The outer face of the block at the junction between the two sections was approximately in line with the outer edge of the cobble strip. On the south side (1079) only two single blocks had survived the attentions of the stone-robbers, but the block-work could be traced for about 4m from the eastern end through the robber-trenches. At the western end, after an initial length of low foundation probably intended to support additional blocks, the surface of the cobbles rose again to the same level as the top of the blocks. The western wall was represented by a cobbled strip (1043) only, with no evidence for any other type of construction, and the eastern sill (1007) was constructed exclusively of massive blocks, apart from a (broken) flagstone (1041) which had been incorporated in its southern end.

A possible internal division was marked by two large blocks (1032, 1033) situated approximately one-third and two-thirds of the way across the width of the building respectively, 4.1m from the western end of the building. Respecting this line was an L-shaped arrangement of fragments of flagging (1034), with the long (3.80m) arm running parallel with the south wall of the building (1079) and approximately 0.4m away, and the short (0.34m) arm running along the line of 1032/1033. At the eastern end of the gap between 1034 and 1079 for a distance of 1.6m was a row of amphora sherds (1068\$). The rest of the area to the west of 1032/1033 was occupied by a patchy spread of stone chippings (1045) with the greatest concentrated in the northeast corner of the building, and a clay-silt deposit. It was not possible to establish the relationship between these two deposits.

At the east end of the building there was a patchy spread of fragments of flagstone (1017) with two main clusters, the smaller one against the north wall and the larger one in the southeast corner.

The north wall of the main building (1078) continued for a further 1.7m to the east of the east wall. To the south of this was an L-shaped area of clay loam (1050) where stone fragments were relatively scarce and consisted mainly of flagstone: to the east of this area the stone was denser and included cobbles and small blocks of rubble partly overlying the main north-south road (1030). This relatively stone-free area was roughly defined on its eastern side by two isolated blocks (1035, 1037) and the western edge of the road drain (1029). Block 1037 was at the intersection of a line continuing the southern wall of the building and a line through the the east end of the northern wall (1078): 1035 lay slightly to the east of the latter line, roughly half-way along. Block 1035 had a 0.05m × 0.05m socket cut into its upper surface close to the centre, but there is nothing to indicate whether this was connected with its function here, or whether it was reused from elsewhere. There were also two blocks which lay approximately 0.9m north of 1078, straddling the gap between the end of that row of blocks and 1029.

The surrounding area

The treatment of the area to the south of Building 14 was different from those areas to the south of Buildings 12 and 13. Not only was there no outshut, but there was also no cobbled yard; instead there was a path, which may not have had the same plan during two different phases (1013, 1014). The rest of the area, which was relatively stone-free, may have been cultivated, though there is no other indication of this.

SG145 (FIG. 30) South of the western half of the building was a damaged and patchy flagged surface of uncertain extent (1014). This was overlain by one of the most interesting of the extra-mural features, a worn strip of fragments of flagstone and brick/tile, and cobbles (1013), which was interpreted as a path. It was separated from the south wall of the building (1079) by a gap around 0.4m, and led from a point approximately one-third of the way from the eastern end of wall 1079 to the western end where it petered out. The maximum width was 1m, but it was narrowest at the eastern end, where it overlay two large fragments of sandstone flag which appeared to be set obliquely into the ground (1012). The existence of this path strongly suggests that there was a doorway in the wall here, perhaps with a threshold whose outer side was supported on the flagstone fragments 1012.

The rest of the area was covered by 'black earth' type deposits (1011\$, 1027\$, 1042\$, 1067\$), apart from two small deposits of reddish clay loam (1047\$, 1066\$) of unknown origin, and a strip of red clay (1044) extending westwards from the southwest corner of the building. This may have had a structural origin, like 916 in Building 13 (see SG127), but the area available for excavation was not large enough to determine this.

Discussion

Walls

The most unusual feature of this building is the combination of massive blocks and cobbles in its sill walls. That the one was regarded as an equivalent of the other can be deduced not only from the relative heights of these features, but also from the fact that, although the blocks were generally at the east end of the building and the cobbles at the west end, their distribution along the north and south walls does not correspond: there is a section in the middle of the building where a cobble-constructed sill wall at the southern side would have faced one of blocks on the north.

There are no surviving remains of any superstructure. The similarity of the massive-block section of the sills with those of Building 13 suggest that mud brick may have been used here too: the cobble sills would also have been suitable for a mud brick or earth mass superstructure (cf. Perring *et al.* 1991, fig. 70g and h), particularly if they had originally been mortared (see above, p.71).

The two massive blocks within the building (1032, 1033) may represent a partition, but there is nothing to indicate how they would have functioned if they were structural. The two blocks to the east of the main part of the building had a similar spacing. The function of these blocks within the building structure is uncertain; although both blocks of each pair probably had the same function, there is no indication if both pairs were used for the same purpose. The position of 1035 and 1037 strongly suggests that they were the bases of posts or mud-brick piers: the two internal blocks (1032, 1033), however, were smaller and more irregular.

Floors

No deposits were encountered which could conclusively be identified as floors. The patchy chipping deposit at the west end of the building (1045) had a general level some 0.05–0.10m below the tops of the wall sills. The deposit of fragments of flagstone (1017) at the east end of the building were at approximately the same level as 1045. These may both constitute the remains of floors. It is not certain how far 1017 originally extended, particularly whether it continued westwards into the centre of the building.

Other structural elements and fittings

There is again no evidence for the roof other than the shape of the building, which could be most conveniently covered by a double-pitched roof with an east–west ridge, extending over Room 14.3. The lack of roofing debris in the destruction deposits (see below) suggests that it was made of biodegradable material. The most notable internal fitting was the L-shaped spread of slabs and other stones (1034) which lay parallel with the south wall of Room 14.1 and the southern end of the east wall. The purpose of this is unknown.

Layout

Inside the building the room divisions are rather obscure, and exact measurements cannot be given because of the irregularity of the wall lines. The main internal width of Building 14 was some 5.5m. Room 14.1 was defined by the two blocks 1032 and 1033, the chipping surface 1045, and the position of 1034, whose east side respects a line drawn along the west sides of the two blocks. It seems best to consider the remaining area of the building as a single undivided unit (14.2) measuring 10m east–west, although the only possible floor surface 1017 was limited to the eastern side; this may, however, be no more than an accident of survival.

There is no evidence for an outshut running along the south side of the building as in Buildings 12 and 13. It is, however, possible that there may have been a verandah (14.3) at the eastern end of the building, defined by the isolated blocks 1035 and 1037 and the continuation of 1078. This verandah would have been 1.8m wide, comparable with the outshut extensions in the other buildings.

Doorways

Two possible external doorways were noted. One was between the verandah (14.3) and room 14.2, and was marked by the flagstone (1041) which was incorporated in the southern end of wall 1007, between two blocks. A second entrance into the building appears to have existed roughly half-way along the southern side of the building. This is marked by what appears to be a path (1013) running from the southwest corner, along that side of the building, swinging in to the wall at this point.

Abandonment (Not illustrated)

As in Buildings 12 and 13, there was very little in the way of post-abandonment deposits.

SG146 (Not illustrated) A deposit of grey-brown clay loam (1031) overlay 1017, in the interior of the building, with a patch of tile fragments (1018) near the southeast corner over 1071, with which it might be connected. A deposit of cobbles and small blocks of rubble (1026) overlay 1030 to the east of the east wall of the building. Outside the building, to its south was a deposit consisting of small pieces of rubble (1038).

BUILDINGS FOUND DURING WATCHING BRIEF

Three buildings marked by rows of massive blocks, of similar size to those used in Buildings 13 and 14, were discovered during the watching brief on the Allotments/Smallholding East. There were insufficient resources to carry out anything more than a very superficial examination.

Building 15

This building appeared to be *c.* 5.7m wide and longer than 9.3m, and aligned east–west, though the south wall had been severely disturbed and was represented only by a single block. The west wall also functioned as the lining to the drain of the main north–south road, as in Buildings 12 and 13. The third surviving wall was the north wall. After the building had been demolished, it was covered by a cobbled platform.

SG147 Two walls were definitely identified, the north wall (3514), and the west wall (3545). The assumed line of the south wall was represented by a single block (3581). The eastern side of the building was not identified. A single context was identified within the area of the building. This was a possible destruction layer (3539) consisting of rubble, predominantly sandstone roofing tile, overlying wall 3545.

SG148 Over the top of the rubble layer and of both walls was a cobble deposit 0.35m thick (3516) forming a roughly level platform 15.0m long and 6.2m wide above the building. It gave the impression of having been deliberately laid.

The destruction layer within this building may have been derived from roof collapse: if so, it is the only building with massive block foundations to give any indication of roofing material. It is possible that the overlying cobbled platform may represent a reconstruction of the building in a form which did not require sill walls (see below, p.151); and as the north–south measurement appears to be related to the width of the underlying building, it is possible that the same applies to the length.

Building 16 (PL. XXIV)

It was difficult to determine the form of this building, the evidence for which was two parallel rows of massive blocks running east–west, with a third running north–south between them, and a single surviving block probably marking the line of another row across the west end. The east–west dimension of the building was probably greater than its surviving length of 8.1m. It is not clear whether the north–south measurement over the extant remains represented the full width of this building or merely a room: if the former, it would be unusually narrow at 3.2m.

SG149 Parts of three possible external walls (3523, 3556, 3557) were extant. The western wall lay close to the assumed line of the eastern edge of the road, but no relationship could be traced. There was an internal feature (3558), consisting of a worn flagstone and another large block forming a north–south line which extended from the fourth stone from the west of the north wall. There was a cobbled surface, possibly a yard, southwest of wall 3523.

The internal feature may represent an internal wall with a threshold, but too little survived for this to be offered as more than a tentative hypothesis.

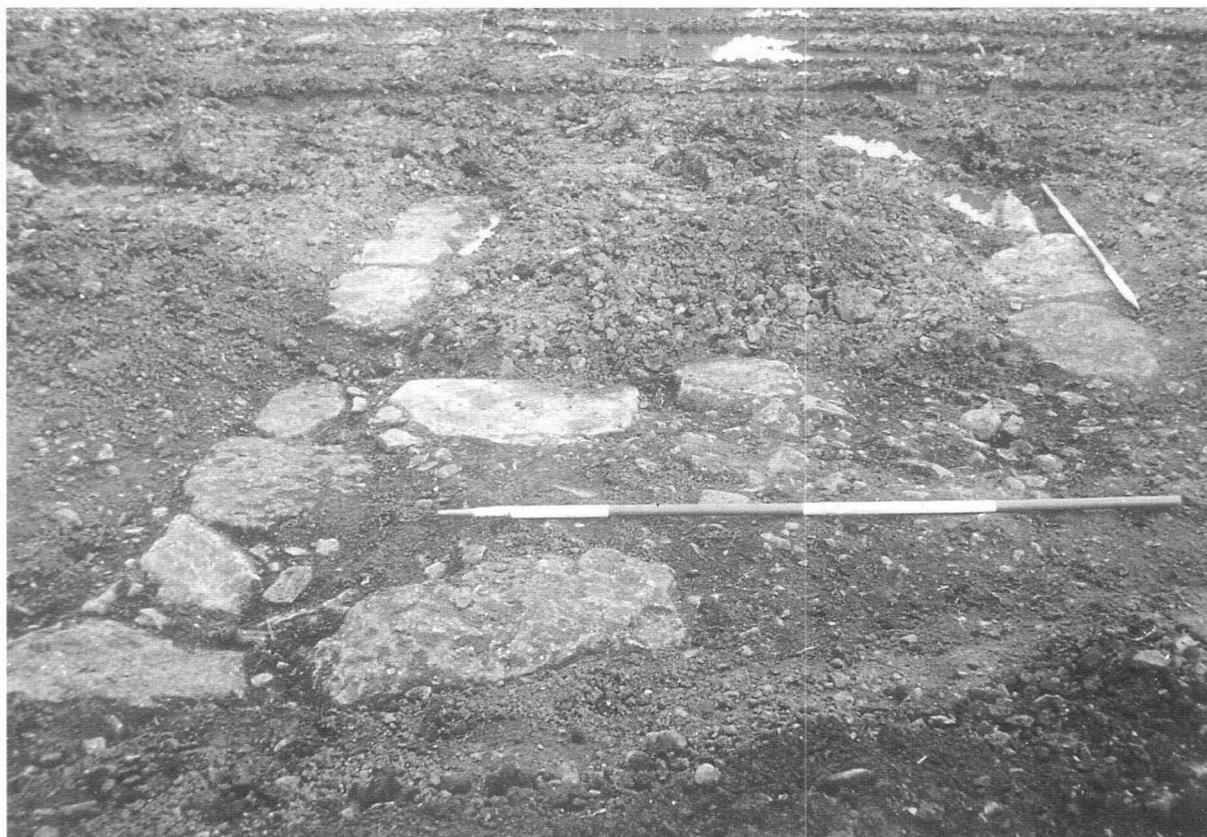


PLATE XXIV. Building 16. Scale unit 0.5m.

Building 17

This building was represented by a single corner only, comprising five stones in all, with a cobbled surface in the angle. The topographical relationship of this building with other features on the site is unknown: it did not lie close to any of the roads which were traced.

SG150 The two walls which were extant extended 2.2m on the south side (3505) of the presumed building and 2.0m on the presumed east side (3507). A cobbled spread, possibly a floor (3549), lay in the angle between the two walls. No other possible elements were seen.

It appears likely that this building had been extensively robbed.

BUILDINGS 18 AND 19

The area excavated on the Smallholding (West) contained a considerable area of one building (Building 18) which extended beyond the area of excavation and consisted of at least two ranges. There were also two corners of buildings. One of these (Building 20) was definitely a separate structure. The other (Building 19) may be the corner of a third range of Building 18 lying mostly beyond the area of excavation. It is not possible to determine whether this was the case or not, but it does not affect the interpretation offered except insofar as the overall plan is concerned.

In addition a number of pre-building deposits were revealed and were sectioned, but the site was not excavated in depth.

Deposits pre-dating Building 18 (PL. XXV)

Description

These were the deposits into which the foundation trenches were dug. For the most part they consisted of sandy clay, but daub and fragments of sandstone were also present. The only pre-building structure noted was a stone-lined drain.

SG151 (Not illustrated) The clay deposits were mostly pink and tan sandy in colour, and contained varying amounts of cobbles and pebbles (3063, 3065, 3067, 3068, 3071, 3073, 3077, 3080, 3092, 3095, 3100, 3115, 3140): there were also deposits of sandstone rubble fragments (3058, 3124), daub (3078) and sand (3090). The drain (3099) was 0.5m wide and built of sandstone slabs set in pink clay, in the area later to be the yard of Building 18.

It is possible that some of the deposits described under SG154 may also pre-date the building.

Discussion

It is possible that these deposits, which resemble the destruction deposits of Building 1 (SG72, see above p.73), may represent an earlier structure on the site of Building 18, but there is insufficient evidence to prove this.

Dating

The coarse pottery from these deposits (cat. nos 438–52) suggests that they date to the later 3rd century.

BUILDING 18 (FIGS 4, 31, 32; PL. XXV)

Building 18 consisted of at least two ranges. The south range, which fronted onto the *via principalis* continuation, contained two rooms (18.1, 18.2) divided by a corridor (18.3). The east range in the area of excavation contained one complete room (18.4) and part of a second (18.5). Others may have existed to the north. The area in the angle between the two ranges (18.6) is here taken to form an integral part of the building complex and is thus referred to as the courtyard. The frontage of Building 18 was *c.* 27m, and the depth from front to rear greater than 14m.

The wall lines were marked by cobbled foundations raised above the contemporary ground surface, like those employed as wall-sills at the western end of Building 14. These were sectioned, and could be seen to have been laid in fairly deep foundation trenches. Few deposits survived in the rooms.

A section was dug at the junction of the south and east ranges section through their party wall (3009) and the east external wall (3012/3013) showed that the north and east walls of the south range (3009, 3013) were of one build, whereas the east wall of the eastern range (3012) was a later addition: there was a slight change of alignment in the eastern wall at the point at which the east wall of the south range (3013) met the east wall of the east range (3012). The structural technique employed was the same, however, and the interval between the two phases was too short to register in the coarse pottery assemblages.

Details of crucial importance for the interpretation of the structure of the building occur in all three phases of the building, and discussion of this will therefore be reserved until after all phases have been described.

Phase 1 (FIG. 31; PL. XXV)

The features relating to this phase comprise the raised cobbled foundations and a series of metalling deposits in the area which later became the courtyard. Rooms 18.1 and 18.3 were structurally separate, at least at ground level, and it is not clear whether they were in fact part of the same building in this phase. Room 18.1 contained a series of features which are not paralleled elsewhere in the building and may belong to this phase, although it is also possible that they could belong to the pre-building phase. Room 18.2 contained very few deposits, which are described below under Phase 2.

Description

Main structure

Most of the cobbles making up the raised foundations (3003, 3004, 3006, 3008, 3009, 3013, 3018) were laid in the foundation trenches at random, although some deliberate placing was

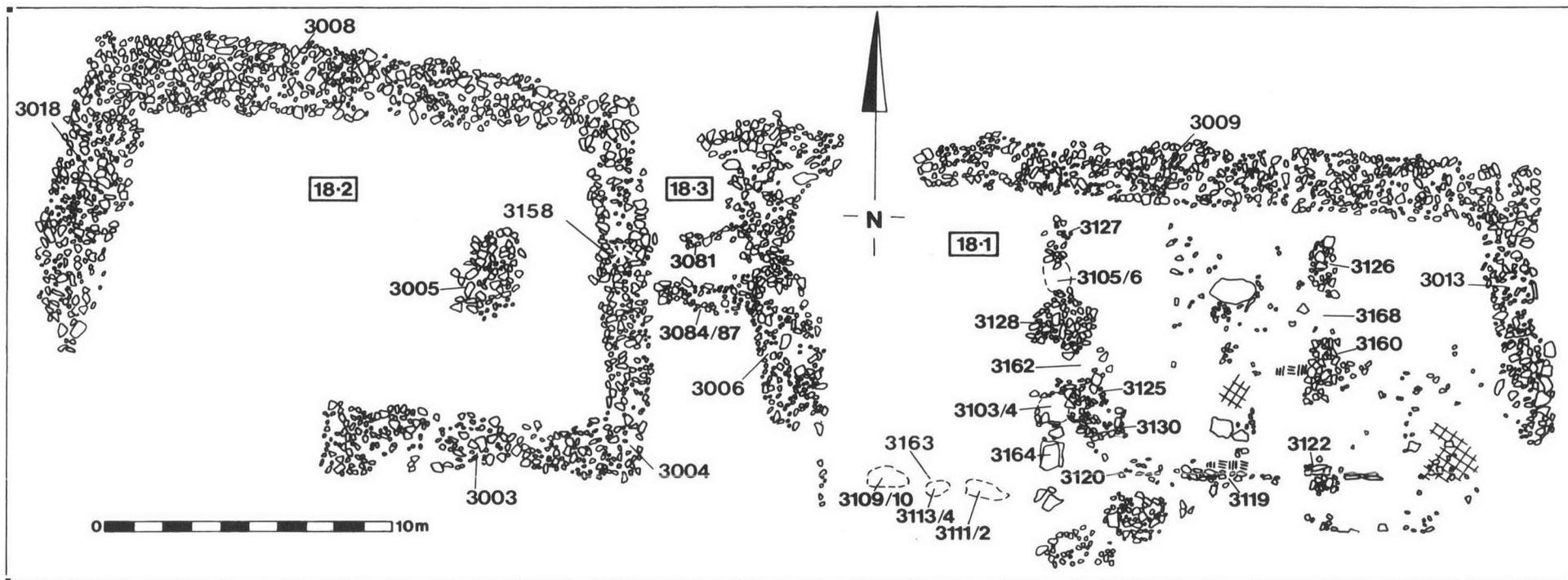


FIG. 31. Building 18: Phase 1.

noted: in the two foundations which were sectioned (3004, 3009) larger cobbles were laid in the bottoms of the trenches. The width of the foundations was mostly between 1.1m and 1.2m.

SG152 (FIG. 31) The raised cobbled foundations of Room 18.2 were 3003, 3004, 3008 and 3018. All except 3003 were of standard width; 3003 itself (or at least that part of it within the area of excavation) was only 0.8m wide. Foundation 3004 was sectioned and proved to be 1.1m deep. A small oval pit (3083/3158) was noted half-way along this foundation.

SG153 (FIG. 31) The raised cobbled foundations of Room 18.1 (3006, 3009 and 3013) were like those of Room 18.1, but 3009 was 0.6m deep.

Features within the individual rooms

Room 18.1

Room 18.1 was completely open to the street on its southern side and had a second, narrower, opening at the western end of the north wall. It contained a series of cobbled features (3119, 3120, 3122, 3125, 3126, 3127, 3128, 3160) and cut features (3103/3104, 3105/3106, 3109/3110, 3111/3112, 3113/3114), lying directly on and cut into the pre-building layers, and arranged roughly in lines (3162, 3163, 3168). A possible doorway in the northwest corner can be identified in the following phase (SG159), but it is not certain whether it existed in Phase 1.

SG154 (FIG. 31) A line running north–south for 4.7m (3168) was composed of two rectangular blocks of cobbles (3126 and 3160) set in cuts in the pre-building layer (3115), with a further patch of cobbles (3122), squarish in shape and one cobble thick overlying 3115 to complete the line (3168). A second line running north–south for 4.2m (3162) consisted of two negative features 3103 and 3105 (respectively rectangular and oval), three irregular patches of cobbles (3125, 3127, 3128) and a sandstone block (3164). The fills of 3103 (3104) and 3105 (3106) were virtually identical with the overlying layer 3086 (SG159); it is possible that they may have been cut down from a higher level.

Running east–west roughly from the south end of 3162 was another line of features, consisting of a double line of cobbles (3119) with a small less structured cobbled area (3120): these were in



PLATE XXV. Building 18 looking west during excavation: Room 18.1 is in the foreground. The stone-lined drain of the *via principalis* continuation can be seen to the left.

line with the patch of cobbles (3122) at the end of line 3168. The other line of features (3163) ran east–west for 2.6m and was made up of three negative features; 3109/3110, 3111/3112 which were two roughly oval voids, and an irregular slot 3113/3114. Like 3103/3104 and 3105/3106, none of these could have held a self-supporting post as none was deeper than 0.19m. Some had irregular bottoms and they all lacked packing.

Area to the north of Rooms 18.1–3

This area was later to become the courtyard in the angle between the south and east ranges, but it is not clear what its relationship was with the building in its first phase. It had a metallised surface which levelled depressions in the underlying pre-building layers.

SG155 (Not illustrated) The earliest surface in this area was a metalling of sandstone chips and cobbles (3047/3048/3050/3066), overlying a layer of light brown sandy loam (3045) which had been deposited when the north wall of the southern range (3009) was already in position but before the west wall of the eastern range (3010, 3053) was laid. It is not clear whether this surface was connected at all with three other patches of cobbling, one to the east of the building (3022), and the other two lying close to the west end of the south wall (3060, 3061).

Discussion

The two most noticeable characteristics of Room 18.1 were firstly that it had no southern wall and therefore lay completely open to the main east–west road, and secondly its very large size. Internally it measured 11.5m by 5.0m (and was therefore larger than Building 12 in its original form). It is possible therefore that this room may have constituted a building by itself in its initial form. The identity of Room 18.2 as part of the same structure depends on the interpretation of 18.3 as a corridor giving access to the courtyard area 18.6 (see below p.146), but this does not necessarily apply to the first phase, when the east wing had not yet been built to associate 18.6 with the south range. It is possible that these lines of features may represent partitions, or alternatively they could have accommodated some sort of fittings. The wide-open façade of this room would have been suitable for a shop or workshop.

Phase 2 (FIGS 31, 32; PL. XXV)

This phase saw the addition of the east range. Apart from the earlier phase of material from Room 18.1, all internal features are described under this phase, although it is not possible to determine whether those in Rooms 18.2 and 18.3 belong to Phase 1 or Phase 2. The rooms are described starting from the western end of the south range, running anticlockwise to the northern end of the east range.

Description

Main structure

The raised cobbled foundations (3010, 3011, 3012, 3053) were of exactly the same construction, and mostly of the same size, as those of the south range, although there were differences in the matrix for the cobbles. The cobbles were again put into the trenches in a largely random fashion, but there were some sections which were more carefully laid.

SG156 (FIGURE 32) The cobbles in the walls of Room 18.4 in the east range (3010/3053, 3011, 3012) were set in darker and less silty matrix than those of the foundations marking the wall lines of the rooms of the southern range. The cobbles in some areas, such as the outer row of cobbles in parts of 3010, were carefully laid to edge the foundation. A discontinuity (3064) was noted in 3012, where cobbles had been arranged so that they surrounded two bare areas, associated with two flat stones placed against 3012 in the interior of the room.

The western wall of Room 18.5 (3053) was rather narrower than the other cobbled strips (0.76m), and did not appear to be so deeply founded. Its matrix was more similar to that of the Phase 1 foundations.

Room 18.2

This room lay at the western end of the southern range. The southeast corner and the southern edge of the room lay beyond the area of excavation. It contained a single feature, a rectangular area of cobbles (3005).

SG157 (FIG. 32) A rectangular patch of tightly-packed cobbling lay 1.3m from the east wall, and approximately half-way between the north and south walls. It consisted of a single layer of cobbles (3005) on a foundation of closely-compacted sandstone fragments (3101\$). Otherwise the room contained a single layer of grey/brown sandy loam containing occasional pebbles and fragments of rubble (3037\$/3070).

Corridor 18.3

This 'room' had only two walls, the east and west (3006, 3004), and was open to the north and south. The long axis lay north-south. The western wall, at approximately 6.0m, was longer than the eastern wall (*c.* 5.0m) and the internal width of the room was 1.6m. Approximately one-third of the way from the courtyard, a flagstone (3082) supported on patches of cobbles extended across the width of the corridor. Another area of flagging was noted at the outer end (3040).

SG158 (FIGS 31 and 32) Most of the area was covered by a layer of sandy silt loam (3041). Above this layer were the two separate areas of sandstone flags, at the southern end of the area (3040), and two-thirds of the way along it (3082). Whereas the former was made up of small fragments, the latter consisted of parts of two slabs, one nearly complete, placed so that they lay between the two walls and across the area. Removal of 3082 showed that it overlay two patches of cobbles which had been carefully positioned to support the slabs at the northern (3081) and southern (3084/3087) edges. This feature adjoined the oval pit (3158) in foundation 3006 on the eastern side of the corridor.

Room 18.1

This room occupied the eastern side of the frontage, at the junction between the two ranges. Most of the features within it have been described under Phase 1 since, unlike the features in the other rooms, they either directly overlay, or were cut into, the pre-building layers. The remaining features seem to constitute a second phase and are therefore described here, although the method of construction is different from that employed elsewhere in this building. A row of massive blocks (3141) of the type used in the construction of Buildings 12-17 was inserted across part of the frontage; there was a patch of flagging (3026) adjacent to this probable wall, and another, more fragmentary, patch (3117) over the west end of the northern wall, probably representing a doorway.

SG159 (FIG. 32) A deposit of black sandy loam (3086) containing lenses of rubble (3093\$, 3094\$) overlay the Phase 1 features. At the south side of the room a construction trench (3169\$) had been dug into this layer to take a short length (3.36m) of wall formed by five massive (*c.* 0.7 × 0.45m) sandstone and conglomerate blocks (3141): this did not extend to either side of the room. No evidence for robber trenches was noted but, as very little of this side of the room could be explored in the time available, and the fill of such trenches elsewhere in the Mill Street area was very similar to 3086, the possibility of such features cannot be ruled out. Against the northern side of 3141, and overlying 3086 was an area of paving (3.7 × 1.8m) formed by large rectangular sandstone flags (3026), each of which originally measured *c.* 0.8 × 0.6m. Traces of paving were also visible in the northwest corner of the room (3117), overlying the cobbled wall foundation.

Room 18.4

This was the more southerly of the two rooms visible in the east range, and was trapezoidal. It also contained traces of flagging (3030), as well as traces of a possible east-west partition represented by a row of rubble blocks (3052).

SG160 (FIG. 32) A layer of mid brown-grey sandy loam (3042/3062\$) covered most of the room and had been used as a bedding for a fragmentary layer of flagging (3030) which may once have covered the entire area of the room. The only other feature was a row of four sandstone rubble blocks (3052), set in a line running east-west with an apparent face on the south side. These blocks lay on a layer of rubble and clay loam (3075\$) which had been set in a trench (3076\$) cut through 3042. The level of the surface of the stones of 3052 was the same as that of the adjacent flagstones.

Room 18.5

Only a very small part of this room lay within the area of excavation, and there were no internal features. This room, like Room 18.4, was trapezoidal.

SG161 (FIG. 32) Only a single context was noted, a layer of sandy silt loam (3031), which had been deposited over the edge of the western wall.

Courtyard 18.6

The courtyard area was not very clearly differentiated from the area outside the building to the east: it is likely that these two areas were not divided in the building's earlier phase, before the east wing was built. During the latest phase when the courtyard was in existence, its extent was probably defined by its paved surface, parts of which remained *in situ* (3046, 3059).

SG162 (FIG. 32) Only two patches survived of the Phase 2 flagged surface (3046, 3059). Within the area of the courtyard were three separate sandstone blocks (3054, 3056, 3057), two of which had shallow circular or oval depressions on the surface (3054, 3056). There was nothing to indicate whether they had a structural function or if they had been reused from elsewhere.

Phase 3 (FIG. 32; PL. XXV)

There were few deposits which related to the abandonment or destruction of Building 18 and none to Building 19. Most of the rooms contained no such deposits, which were most extensive in the courtyard, where they included a deposit of sandstone roofing slates similar to one immediately outside the building. The latter deposit included the remains of at least sixteen nails.

SG163 (Not illustrated) Small patches of rubble were noted in Rooms 18.2 (3038) and 18.1 (3026), but apart from this the rooms around the courtyard were free of destruction deposits. 'Black earth' formation in Room 18.1 seems to have destroyed any bedding for the Phase 2 flagging. The rubble over the courtyard was also contained within a 'black earth' formation (3044) and included a deposit consisting entirely of roofing material, mostly sandstone tiles (3032), in the same matrix. This was concentrated at the eastern end of the courtyard over 3044, where it overlapped the edge of the cobbled wall-sill. To the west of Room 18.4 was an almost identical deposit (3043) in a similar stratigraphic position. The small amount of rubble in the narrow gap between Building 18 and Building 19 and behind Building 20 (3027, 3029) may have been derived from either building.

The two deposits of sandstone slates appear to have fallen off the roof of Room 18.4. It seems that at the time at which the roof cladding fell, the timber work was sufficiently well preserved to ensure that it all fell outside the area of the room.

BUILDING 19

Description (FIG. 32)

All that was visible of this building was a corner lying at an angle of approximately 60° to the road and projecting only 2.10m into the excavated area. The walls were defined by raised cobbled foundations (3033, 3034) of the same type as those used in Building 18.

SG164 (FIG. 32) The two visible cobbled foundations (3033, 3034) were constructed in trenches (3150, 3151). Within the corner which they formed, three successive layers were investigated (3035, 3154, 3155) all loamy in texture with few inclusions. None of them appeared to be pre-building layers.

Discussion: Building 18/19, Phases 1–3

Walls

The walls are represented only by deep cobbled foundations whose upper surface was raised above the contemporary ground surface. This can be seen both in the corridor, where the paving at the entrance was at roughly the same height as the tops of the cobbled foundations on either side, and in the courtyard, where the paving was some 0.2m below the top of the nearest foundation. The condition of the underlying deposits suggests that this was not caused by subsidence: in the courtyard, the largest patch of paving was partly supported on the edges of the stone-lined drain of the pre-building phase. The edge of the roof-fall deposits lay directly over the edge of the wall between the courtyard and Rooms 18.4 and 18.5 with no intervening deposits, showing that the upper surface of the cobbles was exposed at the time when the building fell into disrepair. We have argued above (p.137) that raised cobbled foundations of this type were used in Building 14 as sills for walls of mud brick or clay mass; the bases of such walls would have had to be raised above the surface of the ground to prevent water penetration (Michel 1986, 173).

Since nothing remains of any superstructure in Building 18/19, its exact nature must be a matter of conjecture. The two other possibilities besides clay mass or mud-brick are masonry or a timber-framed structure. A timber-framed structure would have needed sills with a more level surface to take a sill-beam without some sort of intervening levelling layer, and the width of the sills is far in excess of anything which would have been required to support a sill-beam. In a masonry structure it is not usual for the foundations to stand proud above the contemporary ground surface; in addition, in order to account for the fact that there was very little rubble overlying the building, it would have had to be demolished completely when it was abandoned. With mud-brick, provided that the building decayed gradually, the material from which it was composed would be completely biodegradable and leave few or no traces.

Floors

Evidence for floors survived in some of the rooms. The courtyard and Rooms 18.1 and 18.4 were paved in Phase 2. The interpretation of the paving in the corridor 18.3 is more problematical. The fragments of flagging at the southern end of the room were probably the remains of a conventional layer of paving laid on a normal earthen bedding. The other paved feature (3082) appears to have been completely different in conception: it was formed of two slabs set as one, with the edges supported on strips of cobbling with earthen bedding underlying the middle of the slab (see above). Under these circumstances, the juxtaposition with the void (3083/3158) in foundation 3004 seems more than purely coincidental. This post-hole was too shallow to have supported a post by itself and should perhaps be seen as evidence for a timber upright built into the wall structure. Given the rather specialised nature of this small area of paving, what was its function? It seems unlikely to have been merely part of a standard floor surface along with 3040, since from nowhere else in the building is there any evidence for the edges of flagstones being supported directly on patches of cobbling. One possibility is that it represents a threshold to a doorway set back from the street and leading to the courtyard.

There was no information about the floors in Rooms 18.2, 18.5 and Building 19, although all contained deposits very similar to the bedding for the paved floors in the other rooms. Alternately they may have been fitted with timber floors of which nothing remains. The apparent absence of doorways perhaps adds weight to the suggestion that most of the rooms had suspended timber floors.

Roof

Building 18 was the only one to contain unequivocal evidence for its roof. Amongst the destruction deposits immediately to the east and west of Room 18.4 were deposits of stone tiles



FIG. 32. Building 18/19: Phases 2-3; and Building 20.

and nails (3032, 3043). These apparently represented fallen roof-cladding from the eastern range (or more specifically Room 18.4). Although there were some ceramic tiles among the destruction deposits, the quantities were much smaller than those coming from Buildings 1, 3 or 5.

Fittings

Apart from possible Phase 1 partitions in Room 18.1 (SG154), and the possible threshold in Room 18.3 (SG1157), the building contained two fittings, a rectangular patch of cobbling in the middle of the east end of Room 18.3, and the row of blocks set in a trench running east–west across Room 18.4. Both are of unknown purpose.

Layout

Since some of the building lay outside the excavated area, its exact form must remain subject to speculation. Rooms 18.1, 18.4 and 18.5 definitely formed part of a single structure. If our inference with regard to the function of 18.3 as an entrance passage (see above) is correct, 18.2 and 18.3 should also be seen as part of the same building. It is not possible, however, to determine whether Building 19 is part of the same structure. Assuming that the south range consisted of Rooms 18.2, 18.3 and 18.1, this was built to run parallel with the *via principalis* continuation. The east range was not built at right-angles to the south range: indeed the angle at which its northern wall 3011 was aligned suggests that there may have been progressive adjustment in order to match the angle at which 3135 was built, whether this was because the two were (or became) part of the same structure, or merely to fit in with the topography of the area lying north of the excavation.

The frontage of the building was approximately 27m (90 pM), but the nature of the cobbled foundations which mark the wall lines, the state of preservation of the southeast corner, and the fact that the southwest corner lay outside the area of excavation, makes it impossible to give a precise figure. The entrance passage Room 18.3 lay approximately in the middle of the façade. None of the rooms was rectangular. Room 18.2 was trapezoidal with the southern side longer than the northern side. The northern side measured 7.9m and the eastern one 5.4m: conjectural measurements for the south and east sides are 9.0m and 5.5m respectively. The west wall in Room 18.3 was approximately 1m longer than the east wall (6.0m as opposed to 5.0m) and the internal width was 1.6m. In Room 18.1, the northern wall measured 11.5m inside the room, the eastern one 5.0m and the western one 4.0m. Room 18.4 measured approximately 5.0m at the north wall, 4.25m at the south, 6.4m at the east and 4.8m at the west. It is not possible to assess the area of the courtyard since it extended beyond the area of excavation to the north, and there was no clear separation from the area to the west.

Doorways

If we are correct in our interpretation of the flagstone across the middle of 18.3 as a threshold, this was probably the main door to the building, recessed into the entrance and possibly with a door-jamb in post-hole 3083/3158 (although no corresponding feature was found in the opposite wall). Room 18.1 appeared to have been completely open to the street in the initial phase, and even when it was provided with a south wall it still may have preserved a wide opening. This room also had an entrance to the courtyard. Evidence for doorways elsewhere in the building was poor. At the western end of the north wall of Room 18.2 the cobbles were covered, although very patchily, by fragments of flagstone, the upper surfaces of which were worn, suggesting that there may have been a doorway in this position leading to the courtyard. The discontinuity in the east wall of Room 18.4 may mark the position of a doorway, since the arrangement of the cobbles recalled the cobbles under the possible threshold in Room 18.3, and this feature was on almost exactly the same level as the paving in Room 18.2.

Function

The only two rooms for which a function can be suggested are 18.3, the possible entrance corridor, and 18.1, which may have been a shop or workshop.

Dating

It was not possible to discriminate between the dates of Phase 1 and Phase 2 walls on the basis of the coarse pottery. That associated with the pre-building deposits and the foundations (cat. nos 438–57, 491–2) contained a great deal of 3rd century pottery. However, some of the material from the SG155 deposits post-dating the construction of the south range and pre-dating the construction of the east range (cat. nos 458–90) seems more likely to be 4th century.

BUILDING 20 (FIG. 32; PL. XXV)

This building lay to the east of Building 18, separated from it by an extremely narrow space, varying from 0.3m to 0.5m: it can hardly have had any purpose other than the collection of water from the roofs. All that was visible of this building was the line of the west wall (3014) and the very beginning of its corner with the north wall (3138), both represented by raised cobbled foundations.

SG165 (FIG. 32) The cobbled foundations (3014, 3138) appeared to be of the same construction as those of Building 18/19, but no excavation was carried out to determine this.

The walls, like all but one in this area of the excavation, consisted of a band of closely-packed cobbles. The relative positions of the wall and the edge of the excavation prevented its width from being assessed accurately, but at the corner where the largest amount was visible, it was estimated at 1.0–1.25m, though it is possible that some distortion was introduced by the corner. The depth from the road frontage to the north wall was approximately 9m. No further work was done on this building.

BUILDINGS 21 AND 22

Building 21, like its neighbour Building 22, was less well defined than most of the other buildings. Although some walls were visible at ground level, it was only possible to make out the full plan of the building from the vertical photographs (PL. XXVII). These buildings were cleared of overlying rubble, but no other work was done on them. Building 21 lay on the opposite side of the main north–south road from Buildings 1 and 5, with its long axis running north–south parallel with the road, rather than having its short end on to the road frontage as was the norm with the other buildings. Building 22 lay immediately to its west, and the two buildings seem to have shared a wall. It is indeed possible that Building 22 was in fact the earlier, but Building 21 is described first since the evidence for it is rather clearer.

BUILDING 21 (FIGS 4, 33, 34; PLS XXVI, XXVII)

This building occupied a rectangular area measuring approximately 8 × 5.5m (the southwest corner was not very clearly defined). It seems to have consisted of four rooms, a row of three (21.1, 21.2, 21.3 north to south), with a fourth, corridor-like, room running along the eastern side (21.4).

Description

Most of the surviving walls were marked by rows of closely-set massive blocks (2477, 2479, 2480, 2481) but in one of them (2478) the blocks were more widely spaced. All these represent wall-sills, but there may have been differences in the superstructure. Other walls had disappeared completely and their positions can be established only from the difference between the deposits on either side, especially between 2515 and 2605 at the south end of the building. Sill 2478 appears to have been a party wall with Building 22.2, where it was numbered 2505.

SG166 (FIG. 33) Four wall-sills of massive sandstone and conglomerate blocks similar to those employed in Building 13 and Building 14 were noted (2477, 2479, 2480, 2481). There were gaps between some of these blocks, but it was not possible to determine whether they were deliberate or the result of robbing. Sill 2477 ran for 8.17m along the east side of the building. Three other rows of



PLATE XXVI. Cambria House: Buildings 21 and 22 and the metalworking area looking north. Scale unit 0.5m.

blocks ran east–west and abutted 2477 on its western side, 2479 and 2480 *c.* 1m apart at its northern end and 2481 roughly half-way along its length. The fifth sill, 2478/2505, ran parallel to 2477 and 4.7m to the west, but the blocks were differently set, with gaps between them: where robbing had taken place, the positions of the blocks were visible, and the gaps occurred between the robbed blocks too. This sill also formed part of Building 22 (SG167).

At the western side of the northern half of the building, and projecting further 2.5m beyond the line of 2479, was a cobbled surface (2514), with the cobbling becoming more compact to the east (2509). To the east of this, two patches of flagging were visible (2473, 2508), the former partly overlying walls 2477 and 2480. In the corner between the walls 2477 and 2481, on the northern side of the latter, was a pinkish-brown clay deposit (2484) of no clearly defined shape or function, possibly a floor or destruction deposit. In the southern half of the building was a red clay deposit (2605), the extent of which was not defined. The most conspicuous feature within this area was the bowl furnace/hearth bottom 2523 (SG170, see below), although it is by no means certain that it is actually contemporary with the use of the building. South of 2523 was a deposit of cobbles and sandstone fragments with a distinct east–west alignment (2515). This is believed to represent the southern end of the building.

Discussion

The eastern and northern exterior walls of the postulated building seem to be represented by 2477 and 2479 respectively, with 2478/2505 as the west wall. Sills 2480 and 2481 seem to represent internal walls. No south wall or southern end to the east wall survives. At the south end of 2477, the presumed southern limit to the structure was marked by an abrupt change in deposits, with a fairly stone-free deposit inside the structure giving way to the cobbles and sandstone fragments of 2515. It was postulated that 2515 lay outside the building in a similar relationship to it as context 832 has with Building 12 (*i.e.* that it was deposited up against a wall which has now disappeared, see above p.105).



PLATE XXVII Building 21: vertical photomosaic. Part of Building 22 can be seen to the left. Scale unit 0.5m.

Walls

Interpretation of the building's structure is difficult. Excavation did not proceed far enough to determine whether any material from the wall superstructure remained on the site (unless this was the origin of the clay deposits 2484 and 2605). It seems clear, however, that a number of different structural techniques were used. This suggests that the building was either repaired and rebuilt piecemeal, or that an original core was extended without any regard to producing a unified whole, possibly as an extension to Building 22.

Elsewhere in this report (pp.126, 137), we have suggested that mud-brick or clay-mass walls were used in conjunction with sills of massive blocks, and this seems to be the most likely explanation of sills 2477, 2479, 2480 and 2481. The use of mud brick on the interrupted sill 2478/2505 would be more problematical. It is possible that the bricks could be carried over the

top of interruptions to the sill at ground level, as suggested by Perring *et al.* (1991, fig. 77f). The other main candidate for the superstructure is timber-framing. Here the main problem is the fact that there were differences of up to 0.12m between adjoining blocks (no evidence was noted for subsidence), and there does not appear to be scope to lay even interrupted sills. There is no evidence for the form of west or south walls to Room 21.3: timber framing standing on the ground would appear to be the most likely candidate.

Floors

The fragmented flagstones of 2473 and 2508 may represent the remains of a flagged floor. Its continuation over walls 2477 and 2480 may represent doorways, or else occupation of the area after these walls (and possibly the whole building) had gone out of use. Because no further excavation was carried out on this building, the problem could not be resolved. Other possible floor deposits were the clay layers 2484 and 2605, if they were not connected with the walls.

Layout

It is suggested that this building may have consisted of four rooms. Room 21.1 was across the north end and measured 2.3×1.0 m, with sill walls 2479 and 2480 as its long walls and extending no further than the eastern edge of 2509/2514. This cobble surface is seen as being the floor of a 6×2 m room running along the northern half of the western side of the building (Room 21.4). The centre of the building was occupied by a third room, Room 21.2, bounded to the north and south by the sill walls 2480 and 2481 and to the west by 2509/2514. The fourth room (Room 21.3) ran the full width of the building at its southern end.

Doorways

In the layout suggested above, Room 21.4 would have provided access into all the other rooms, the doorways being represented by the absence of sills. If the flagging 2473 did represent a floor surface within the building, there may have been further doorways at the eastern end of walls 2479 and 2480.

Function

The small size of Room 21.1 severely limits the possible range of functions. Use as a verandah, corridor or storeroom appear to be the only possible options. If the hearth/furnace 2523 was contemporary with the use of the building, Room 21.3 will have been a workshop.

BUILDING 22 (FIGS 4, 33, 34; PLS XXVII, XXVIII)

Only the southern half of this building overlapped with Building 21; and the party wall (2478/2505) finished at the southeastern corner of Building 22, even though Building 21 continued to the south. The other walls are represented by 2506, 2603, and possibly 2489, all of which, like 2478/2505 consisted of interrupted rows of massive blocks. Building 22 also appeared to be divided into four rooms, and was characterised not so much by the walls as by cobbled platforms (2500, 2525) which defined two of the rooms (22.2, 22.4). The remainder of the building (Rooms 22.1 and 22.3) may have been paved (2501, 2502, 2518).

SG167 (FIG. 33) The building was defined on the north, east and west sides by interrupted rows of sandstone and conglomerate blocks 2506, 2478/2505 and 2603. There was no clear line of blocks at the south end, although the six blocks (2489) which lay in a staggered arrangement at the southern side of the cobbled surface 2525, irregularly spaced and not well aligned, may represent a wall line.

Most of the northern end of the building was defined by an L-shaped surface of tightly compacted cobbles (2500) covering an area of 4.67×4.55 m. No other features were visible within it. Between 2500 and sill 2505 was a largely cobble-free area, 1.0m wide, in which there were two patches of flagging (2501, 2518): 2518 was situated in a gap of nearly 1m between two of the

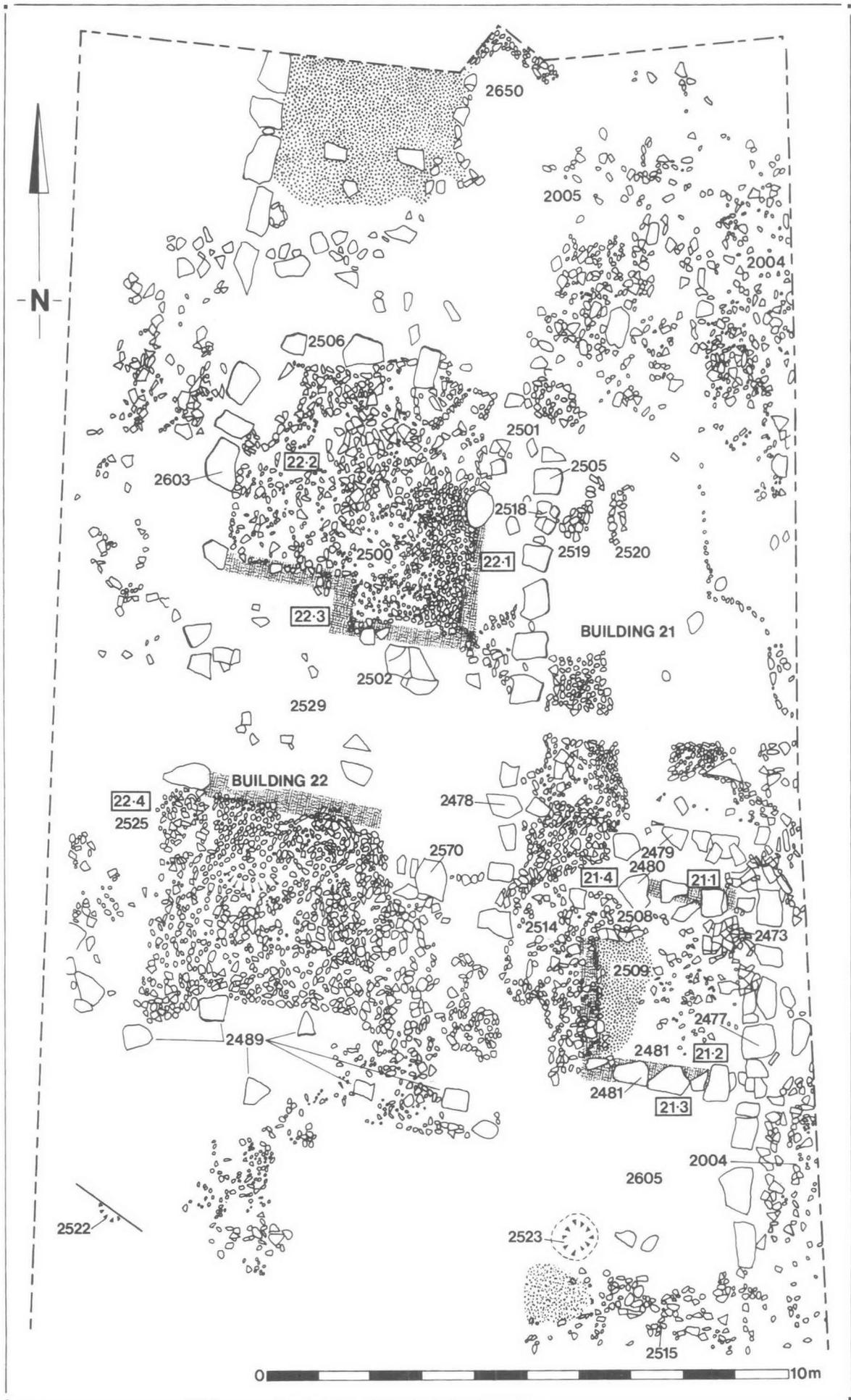


FIG. 33. Buildings 21 and 22.

blocks. A cobble deposit 2504 appeared to underlie at least part of 2501. There was another cobbled surface (2525) at the southern end of the building. The easternmost 2.5m of this cobbled surface projected for some 1.5m south of the rest (apart from a small projection at the extreme west). Opposite this on the northern side of 22.4 was a feature (2570) composed of a large block of sandstone against the west side of which were three stones whose configuration suggested the packing of a post-hole.

The area in between the two main cobbled surfaces (2500 and 2525) contained the remains of flagging (2502) over a layer of dark brown soil (2529). This flagging may well be a continuation of 2501, which had a similar bedding.

Discussion

Walls

The problems in understanding the structural potential of interrupted rows of blocks are discussed above (p.150): this applies to the external walls of the buildings. There is no evidence, other than the changes in the treatment of floors, for internal partitions, which must have been entirely above-ground.

Floors

The two main cobbled areas 2500 and 2525 appear to have been floors. The smaller cobble deposit (2504) may also have been part of a floor, pre-dating a flagged surface represented by the patches 2501 and 2518. A further patch of flagging (2502) in the middle of the building may have been the floor to the central part of the building, and possibly extended to link up with 2501 and 2518.

Layout

On the basis of the well-defined cobbled floors and their relationship with the lines of the external walls, it is possible to determine that the building was divided into three parts, and that the northern third was further divided into a 5.0×1.0 m strip at the north (22.1) and a much



PLATE XXVIII. Building 22 looking south: Room 22.2 with Room 22.1 to the left. Scale unit 0.5m.

larger (4.7 × 4.6m) room to the south (22.2). The central room (22.3) measured 5.8 × 4.0m and the southern room (Room 22.4) measured 3.5m north–south over most of its length, apart from the projection in the southeast corner. Rooms 22.2 and 22.3, which were both L-shaped, interlocked at the south side.

Doorways

If the flagging in Room 22.1 was continuous with the possible flagging in Room 22.3, then 22.1 and 22.3 could have been continuous or have been separated by a door level with the south side of 2500. A possible external door was noted at the north side of Room 22.1, where the cracked flagstone (2518) may represent a threshold.

Destruction deposits, Buildings 21 and 22 (Not illustrated)

SG168 (FIG. 33) A thin layer of rubble and related deposits (2005, 2308\$, 2429\$, 2459\$, 2470\$, 2471\$, 2482) overlay both buildings, but did not extend over much of the rest of the area. Below the rubble overlying the northern end of Building 21 was a deposit of dark brown clay loam containing flecks of burnt clay and charcoal (2474\$), possibly also a destruction deposit.

METALWORKING

By E.M. Evans with contributions by G. McDonnell and A. Russell

Although slag was discovered in various parts of the excavated area, most of it was spread around randomly or used as hardcore. On the main north–south road on the Riding School Field it was used as metalling in Phase 3, where one replacement surface (452) had been concreted with the slag fragments which had been incorporated into it (SG27, see above p.40). Definite evidence for metalworking activity came only from Cambria House, where three bowl-shaped heat-associated features were found, two of them in association with buildings. These are described as SG169–SG171 and discussed under the section ‘technological analysis’.

STRUCTURAL EVIDENCE FOR METALWORKING (FIGS 21, 33, 34; PLS XXV, XXVI)

In Building 6 (FIGS 21, 34)

Building 6, of coursed rubble construction, lay only partly within the area of excavation, and only the latest phase of occupation was revealed (SG95, see above, p.96). Evidence for metalworking came from one room in the northwest corner of the building at the junction between the main north–south road and the side street, and consisted of a single bowl-shaped feature (2417) to the southeast of the centre of Room 6.4. The base had been burned and the fill included slag.

SG169 (FIGS 21 and 34) The bowl-shaped heat-associated feature (2417) was shallow (diameter 0.50m, depth 0.10m). It was filled by a series of lenses of gritty sand, much of it mixed dark brown and black and including lumps of slag (2416\$). The bottom of the feature had been burned orange.

The feature was in use during the latest phase of activity within the building. It was subsequently covered by the layer of rubble which overlay the whole building.

Area of Building 21 (FIGS 33, 34; PLS XXV, XXVI)

Building 21 lay on the opposite side of the north–south road from Building 6 and its precise nature is much more difficult to determine (SG166). Investigation was limited to the latest phase of activity. Lying towards one corner of the room at the south end of this building (Room 21.3) was a bowl-shaped feature with a burnt lining (2523), similar to the one in Building 6 and which also contained slag in the fill.

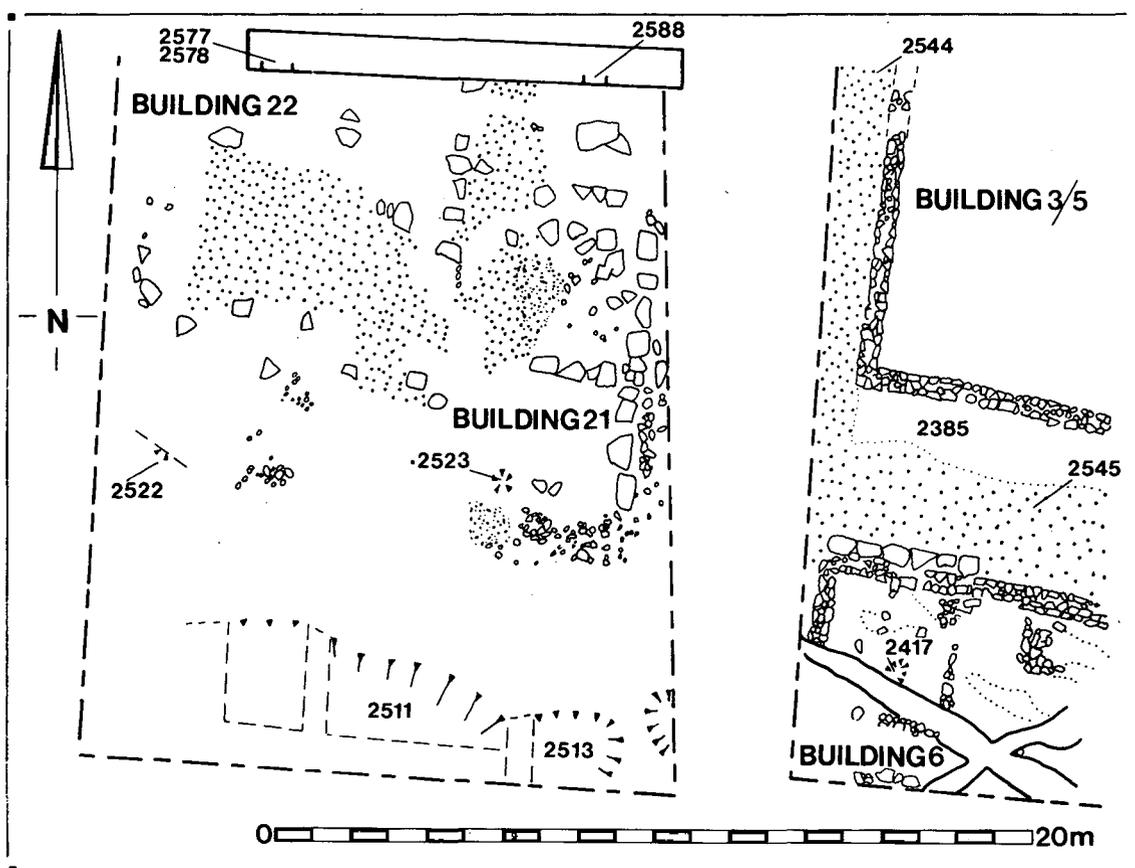


FIG. 34. Metalworking area, showing Buildings 6 and 21, Pit 2511, the main north-south road (2544) and the side street (2545).

SG170 (FIGS 33 and 34) The heat-associated feature (2523) consisted of a shallow circular bowl (diameter 0.91m, depth 0.15m). It was lined with clay (2449\$) which had been burned orange and grey. A deposit of slag adhered to the southern inner face of the lining. Three layers of fill were noted. The lowest (2432\$) was a 0.08m depth of fairly clean blue-grey clay with only occasional flecks of charcoal and fragments of slag. The cleanness of this deposit, and the absence of traces of burning in it, suggests that it represents deliberate infill. Above this was 0.11m of mixed pink, red and orange clay containing occasional lumps of fired clay and slag (2431\$), possibly demolition debris. The uppermost fill was a fairly uniform layer of mid brown sandy clay containing infrequent stone chippings, fragments of fired clay and slag (2430\$).

Because of the insubstantial nature of this building, it is difficult to determine whether the feature actually lay within it, or merely occupied the same site after the building had gone out of use or was demolished. The rubble deposits overlying this area (SG168 — see above, p.154) may not have been derived from this building, and in any case extended only to the edge of the bowl-shaped feature.

A third bowl-shaped feature of similar type (2522) was located west of Building 21 immediately under the topsoil, but was only partly preserved.

SG171 (FIGS 33 and 34) Only a small part of the lining (2522) of this feature was preserved. No fill was noted, and it did not appear to be contained within a structure.

Pit containing slag (FIG. 34)

This pit (2511) lay to the south of Buildings 21 and 22, and continued beyond the southern limit of excavation. It was only partly examined. Some layering in the fill suggested it had been deposited as discrete dumps, but no individual layers were defined.

SG172 The pit (2511) was longer than 7.6m (east–west), wider than 2.6m (north–south) and deeper than 1m. The fill (2510) consisted largely of lumps of slag, predominantly small in size, plus occasional stones in a matrix of clay. The eastern end was cut by a later pit 2512\$/2513 filled with the same slag and distinguishable only by the post-medieval finds it contained.

This pit also appeared to belong to the latest phase of activity on this part of the site.

Other evidence for metalworking (Not illustrated)

Some evidence for metalworking was noted during the watching brief on the sewer trench (KE), where small deposits of slag appeared in section. It is not clear whether they related to metalworking *in situ* or whether they had been redeposited.

SG173 (Not illustrated) A pit (2574/5) 0.90m deep with a 0.1m band of dark grey concretion including slag (2576) at its base appeared below the deposits of Building 22. A band of further slag (2577) lined to the east by a fawn-coloured concretion (2578) lay immediately to the east, but their precise relationship with 2576 was uncertain. A further lens of grey concretion (2588) with a fill of grey-green sandy silt (2589) occurred further east.

TECHNOLOGICAL ANALYSIS By Gerry McDonnell and Adam Russell

All the slags associated with SG169–SG171 were examined (see TABLE 6), together with a sample of material derived from the pit (SG172). Other contexts containing less than 2kg of slag were also examined; a 1kg sample was taken from larger context assemblages. The slags were visually examined and the classification is solely based on morphology. Only the slags associated with SG169–SG172 are published here, together with a summary of the types and quantities present. The report was completed in 1994. Details of slag from other contexts can be found in the archive report. The twelve crucible fragments identified during the excavation were examined by X-ray fluorescence for copper, zinc, tin, lead, antimony, arsenic, gold, and silver.

Slags and furnaces

Slags

In general slags and residues are divided into two broad groups, diagnostic and non-diagnostic slags, both of which were present in SG169–SG172 and on the site as a whole. The diagnostic slags can be attributed to a particular industrial process. These comprise the ironworking slags (smelting or smithing slags) and the non-ferrous residues (e.g. crucibles). Although the non-diagnostic residues cannot be directly ascribed to a process, they may be identified with one by association with its diagnostic residues, as in the case of clay furnace-lining with smelting slag.

The quantities given here include material recovered from the Riding School Field and the Smallholding as well as Cambria House; the figure in brackets after each entry is the total quantity recovered.

Ferrous diagnostic slags and residues

Tap slag: This is the characteristic form of iron-smelting slag. It has a ropy flowed upper surface, is usually black/blue in colour and has a fine crystalline fracture. (16.040kg)

Smelting slag: Spongy masses of fayalitic slag formed within the furnace during smelting. It may contain pieces of charcoal, unreduced ore, or iron, and it may have furnace lining adhering to it. (18.235kg)

Smithing slag: Randomly-shaped pieces of fayalitic slag generated by the smithing process. (3.500kg)

Iron metal: Some slags contain significant amounts of metallic iron. These were separated from the slags. (5.635kg)

Non-diagnostic slags and residues

Cinder: A high-silica slag that could either form in the smithing hearth or by high-temperature reaction between silica and ferruginous material. It can be ascribed to either the non-diagnostic slags or the diagnostic slags depending on its iron content and morphology. (2.670kg)

Furnace lining: The clay lining of an industrial hearth, furnace or kiln which has been subjected to high temperature oxidising conditions. It is characterised by a vitrified-surface inner face. In some cases the tuyère mouth may be preserved. Furnace lining is considered non-diagnostic: it cannot be ascribed to a process on grounds other than archaeological association, since there is as yet no diagnostic feature which will distinguish between vitrified lining from a smithing hearth and that from an iron-smelting furnace. (2.970kg)

Potential ore: A highly-ferruginous stone that may have been used as an ore. It took the form of a magnetic stone, usually red-brown in colour. Without chemical analysis it is not possible to determine whether it was rich enough in iron to be used as an ore. (1.250kg)

TABLE 6: SLAGS AND RESIDUES FROM AREA OF METALWORKING (SG169–SG172)

Context/SG	Description	Slags		Residues	
		Tap	Smelting	Furnace lining	Potential ore
2397/SG169	Fill from over 2416	30g	700g*		
2430/SG170	Fill of 2523		1250g		
2470/SG170	Deposit associated with 2523	850g			
2459/SG170	Deposit associated with 2523	450g	2125g		
2471/SG170	Deposit associated with 2523		140g		
2482/SG170	Deposit associated with 2523		150g*	40g	
2513/SG173	Pit fill (from pit 2511)	310g			50g

* with high iron content

No smithing slag, iron metal or cinder was present

Discussion

The predominant slag type was tap slag. This was generally not as dense or flowed as is the norm for tap slag, suggesting that when molten, it was fairly viscous. The rest of the slag was either cinder or spongy fayalitic slag. This spongy slag was of an indeterminate character, and on visual examination alone proved hard to categorise as either a smelting slag or a smithing slag. The majority of these slags were ascribed to smelting, although this diagnosis must remain tentative.

It is possible that the three bowl-shaped heat-associated features (SG169–SG171) were the remains of furnaces. A shaft furnace of the time would usually be a free-standing clay-walled structure between 1m and 2m in height with an internal diameter of between 0.3m and 0.5m, with walls up to 0.30m thick. In a number of cases furnaces were built into shallow banks for support/thermal insulation. After demolition, all that would remain would be the base of the furnace, a 'bowl-like' structure of baked or vitrified clay. No traces of tuyères or tuyère holes were noted during excavation, and the material examined is not sufficient to say definitely whether any of these features were the remains of smelting furnaces, hearths or bases of some kind. However, their close proximity to the large pit full of slag (2510) suggests that these were smelting furnaces. The fill described in SG170 could be interpreted as deriving from the degradation/demolition of a furnace.

The material that was noted as smithing slag was difficult to distinguish from the smelting debris. It would be expected that primary smithing debris would have been generated on the site. However, such slags have rarely been identified, either because of their similarity with some of the smelting debris or possibly because, since they were rich in iron, they would have been recycled.

The lumps of slag containing a high metal content may either be extremely corroded artefacts or slag pieces containing a high metal component. They are extremely important because they are the direct evidence of what was being produced on site (e.g. ferritic iron,

phosphoric iron or steel). Although a number of corroded artefacts were found amongst the sample, without more detailed individual analysis it cannot be said that they were connected with the smelting operations on-site.

Crucibles

A number of fragments of crucible were identified during the excavation. These were manufactured from clays ranging from grey to light red-brown in colour, and appeared to be wheel-made. Preliminary analysis by X-ray fluorescence has confirmed the presence of copper, zinc, lead and tin in varying quantities — one crucible showed traces of lead only, another copper and tin only. Zinc was the major peak, but this is quite usual since it readily becomes volatile during heating and condenses in the crucible fabric. The analysis confirms the use of these vessels for the melting of copper-based alloys.

Catalogue

Note: the context number precedes the stratigraphic group number. Individual find numbers are in brackets.

1. 001/unstratified (1375) — trace of Cu detected, faint trace of Sn
2. 002/unstratified (375) — Zn detected, traces of Cu and Pb
3. 106/SG184 — Zn detected, traces of Cu and Pb, faint trace of Sn
4. 627/SG178 — no elements detected
5. 835/SG177 (531) — Zn detected, trace of Cu, faint trace of Pb
6. 1102/SG145 (889) — Zn detected, trace of Cu, faint traces of Pb and Sn
7. 2001/unstratified (2728) — trace of Pb detected
8. 2437/SG64 (2895) — no elements detected
9. 3001/unstratified (3328) — no elements detected
10. 3037/SG157 (3261) — faint trace of Zn detected
11. 3051/SG18 (3262) — Zn detected, faint trace of Pb and possibly Cu
12. 3510 (3194) — no elements detected

Conclusion

The amount and nature of the slags recovered would indicate that iron smelting was carried out on or near the site. It is also possible that the clay-lined and burnt features found on the site were the remains of the smelting furnaces which produced the slag, although this cannot be said for certain.

The crucible fragments show that small-scale working of copper alloys, most likely brasses or gunmetals, was probably carried out in the vicinity. No pattern could be identified in their distribution which might hint at the workshop location.

See also report on objects of copper alloy, cat. nos 192–6, and report on iron objects cat. nos 47, 151–2 and TABLE 28

OTHER EVIDENCE FOR LAND USE

By E.M. Evans with contributions by J.L. Wilkinson

THE AREA TO THE WEST OF BUILDINGS 12 AND 14: CULVERT AND POSSIBLE AGRICULTURAL ACTIVITY (FIGS 3, 4, 7, 9, 10, 35, 36, 37)

The topsoil was stripped by machine over an area of *c.* 720m² (Cutting DA), which was then cleaned by hand to the point at which the latest phase of Roman ground disturbance could be identified. In this phase the area was covered with a network of ditches and gullies, of which a sample number were sectioned. Cutting DB, which cut through the middle of the area to examine the stratigraphy below, was largely hand-dug. It was intended that the information

provided by Cutting DB should supplement that of Cutting CB (pp.22–34), but study of the coarse pottery (cat. nos 163–94) indicated that the deposition history of this area was different. The implications for the changing topography of the area are discussed below (p.161). Further information was provided by the geotechnical pit JA.

The substratum

The substratum at this point was seen in a geotechnical pit (JA). It consisted of layers of clean yellow and red clay, which appeared to be the edge of the terrace deposits. The upper, red, level was also noted further west, when a pit was dug for a new electricity pole. This was overlain by a grey alluvial deposit. This area would appear to be the interface of the flood plain with the higher ground. The height OD of this and the principal deposits in the following group can be found in Appendix 2.

The stone-built culvert and associated deposits (FIGS 35, 36, 37)

The line of Cutting DB coincided with that of a stone-built culvert running east–west across Cutting DA. Since no construction trench was apparent, it was initially assumed that the culvert was constructed by lining with stone a trench which had been cut into water-laid deposits.

The culvert was constructed in coursed rubble (623/639), mainly of fairly small, roughly-shaped sandstone blocks, with a capping of flat sandstone slabs (624), replaced at the eastern end by a plank (620). No bonding medium was apparent, but it is not clear whether the culvert had originally been of dry-stone construction, or whether mortars had been destroyed by soil action. The internal width varied from 0.14m to 0.30m. The walls appeared to have two phases of construction, the upper part having been added after the lower part had silted up.

Contexts preceding the construction of the culvert

The contexts pre-dating the construction of the culvert, and those with a similar stratigraphic position, had been permanently waterlogged. They consisted for the most part of clays, generally greyish in colour, and included deposits either wholly of peat (728, 729) or with a high peat content (658). A stake (733) and a number of planks (661, 662, 734, 735), one of them charred (660) were preserved: 733, 734 and 735 may have formed a fence.

SG174 (FIG. 35) The contexts preceding the construction of the culvert consisted of layers of grey clay overlain by a scatter of large rounded stones (659\$) and a charred plank fragments (660\$), and a layer of light brown/pink clay with another fragment of plank (661\$, 662\$). The grey layer 659 may be related to a layer of similar composition (629\$) underlying peat (628\$) beyond the eastern surviving portion of the culvert, but continuity was not established. It was overlain by a dark grey/brown peaty layer (658).

SG175 (Not illustrated) The geotechnical pit (728) also had organic material in a similar stratigraphic position. A layer of peat (729) was observed over the grey alluvium: at the same level two planks (734, 735) were observed abutting a stake (733), possibly the remains of a fence. A pit filled with cobbles (731/2) was observed cutting into the peat layer.

The culvert: description (FIGS 35, 36)

Phase 1

The base of the culvert was set into the peaty layer, 658. The construction of the sides in this phase (639) was as described above, but no capping survived. The base was of pink clay (643), and was fairly level for the first 10m from the west, and then fell away more sharply. A series of stakes (640, 641, 645, 650) driven into or close to the culvert walls may have formed part of its structure. There were also a further ten stakes outside the culvert (642, 649, 651, 652\$, 653, 654, 655, 656, 663\$, 664\$), two of which (663, 664) were associated with a plank and may have formed part of a fence in the southern section of the cutting (not illustrated). The lowest deposit outside the culvert on both sides was a layer of pink clay (657). It is not clear whether this layer

pre-dated the construction of the culvert, or represents the filling of a construction trench. Above 657, the fills on the north (646) and south (644) sides of the culvert were different. Two lenses of peat (647, 648) were noted on the northern side. The first phase of the culvert contained three successive water-laid deposits (636, 637, 638).

SG176 (FIGS 35 and 36) The culvert-lining 639 was constructed fairly carefully. The walls were of coursed rubble formed from roughly shaped sandstone blocks. The larger blocks were laid on their sides, and the number of courses varied depending on the size of the blocks. At this stage of construction, the height of the culvert appears to have been approximately 0.35m. The base of the culvert was formed by a layer of pink clay (643), which had been laid after the walls. The bases of two stakes (640, 641) were incorporated within the south side of the culvert wall, and a third (645) was immediately outside the culvert wall, driven into the make-up layer 644.

SG177 (FIGS 35 and 36) Two stakes (663\$, 664\$) had been driven into the pink clay layer (657) on the south side of the culvert. Butted against these two stakes was a length of plank set on its edge and running east–west (666\$). The stakes ran up through 644, the layer above 657 on the south of the culvert. Above 657 to the north of the culvert, two peat lenses (647, 648) were noted. Both of these deposits underlay 646, the layer of make-up corresponding to 644 on the other side of the culvert, and it seems likely that they were derived from the disturbance of 658 rather than having formed *in situ*.

A further two stakes (650, 652\$) had been driven into 644, but were completely outside the culvert area. On the other side of the culvert, in a similar stratigraphic position, seven stakes cut 646 (642, 649, 651, 653, 654, 655, 656).

Deposits at this level and above in the geotechnical pit appeared to be the same as those observed in Cutting DB, and were therefore not recorded separately.

SG178 (SG34) Three layers of silty fills accumulated within the Phase 1 culvert (636, 637, 638). All appeared to be water-deposited. The uppermost layer (636) extended over the south side of the lining to overlie the stakes 640, 641 and 645.

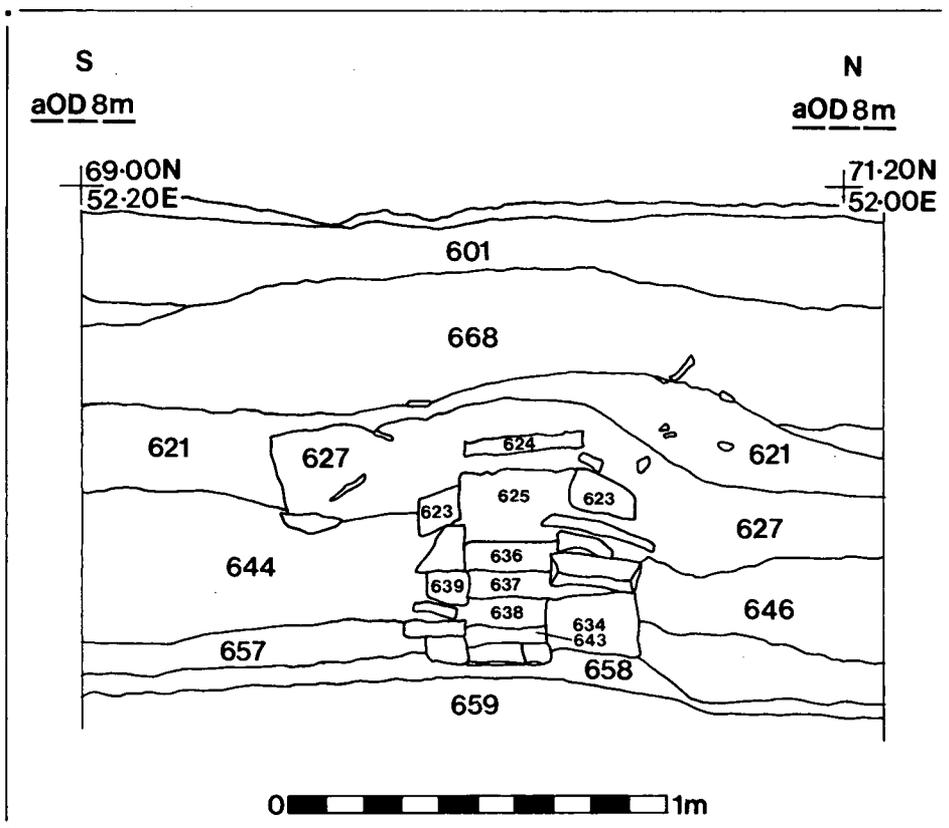


FIG. 35. Stone-lined culvert: Section.

Phase 2 (FIGS 35, 36)

The masonry of the second phase (623) was similar to that of the first, but much cruder, and some blocks of limestone were incorporated. There was a slab capping (624) over most of the excavated length, but it was replaced at the eastern end by a plank (618/620). The base was formed by the uppermost fill of the previous phase and sloped down from 7.04m OD at the western end to 6.59m OD at the eastern end. A series of lengths of alder pole (622) had been laid end to end along the southern side of the culvert, cut into the deposit which overlay the capping (627). There was only one layer of fill (625).

SG179 (FIGS 35 and 36) The second phase of masonry (623) was built over 639, raising the height by about 0.2m. The slab capping (624) extended for 13m from the west before giving way to a wooden plank (618/20). The capping was covered by a layer of grey clay (627), which also extended over some of the stakes associated with the first phase.

SG180 (FIG. 35) The fill of this phase consisted of light brown silt (625) with a smell reminiscent of sewage. A sample was taken for plant macrofossil analysis, but results were negative.

SG181 (FIGS 35 and 36) The clay deposit overlying the second phase culvert (627) had been cut back on its southern side to receive a wooden pole (622) 0.18m in diameter, which lay parallel with the culvert and to its south. The total length of this feature was 11m, but it was made up of sections, each of approximately 2m in length. Also cutting through 627 were at least two, and possibly three, pits filled with peat (626/634\$, 633/635\$, 627\$/632).

Above 627, the pole, the rest of the stakes and the pits, three deposits of sandy and silty clay were recorded (621, 667\$, 668), but it was not possible to provide any interpretation for these.

Dating

Two contexts preceding the construction of the culvert contained datable material. These were the clay layer 629 and the overlying peat into which the base of the drain was set (658). Both contained quantities of residual material, but the coarse pottery (cat. nos 163–9) indicates that the initial construction of the culvert is no earlier than the early 4th century. It is not possible to determine how much later the second phase was added (cat. nos 171–89).

Discussion

The date of the deposits pre-dating the construction of the culvert makes it clear that there is a difference in depositional history between this area of the site and that further east in Cutting CB (pp.22–34). Observations were made during the digging of the geotechnical pit JA, but it was not possible to carry out detailed recording with levelled heights OD as the sides of the pit collapsed immediately after being dug. However, it seems unlikely that the presence of the culvert caused any appreciable distortion in the stratigraphy observed; it does not seem, for example, that there was a construction trench on the same line as the archaeological cutting, but wider than it. It is not possible to determine what was happening on this part of the site earlier than the end of the 3rd century A.D., though there may have been river erosion if our hypothesis of shifting river channels is correct (see above, p.34). Deposition was taking place in the late 3rd century; construction of the culvert seems to have taken place shortly afterwards at the beginning of the 4th century, in conjunction with a general making-up of the area, represented by SG177. The relatively quick silting-up of the interior of the culvert, and possibly also the decision to heighten the sides, suggest that this area may have continued to be subjected to alluviation.

As neither the beginning nor the end of the culvert lay within the area of excavation, its origin and purpose must remain conjectural. It ran from the direction of the fortress, but there is nothing to indicate whether it came from there or from a building outside, between the fortress and the main area of the civil settlement. Given its likely construction date, it may well have been designed to run into the stone-lined drain alongside the main north–south road, although it was not itself a road drain.

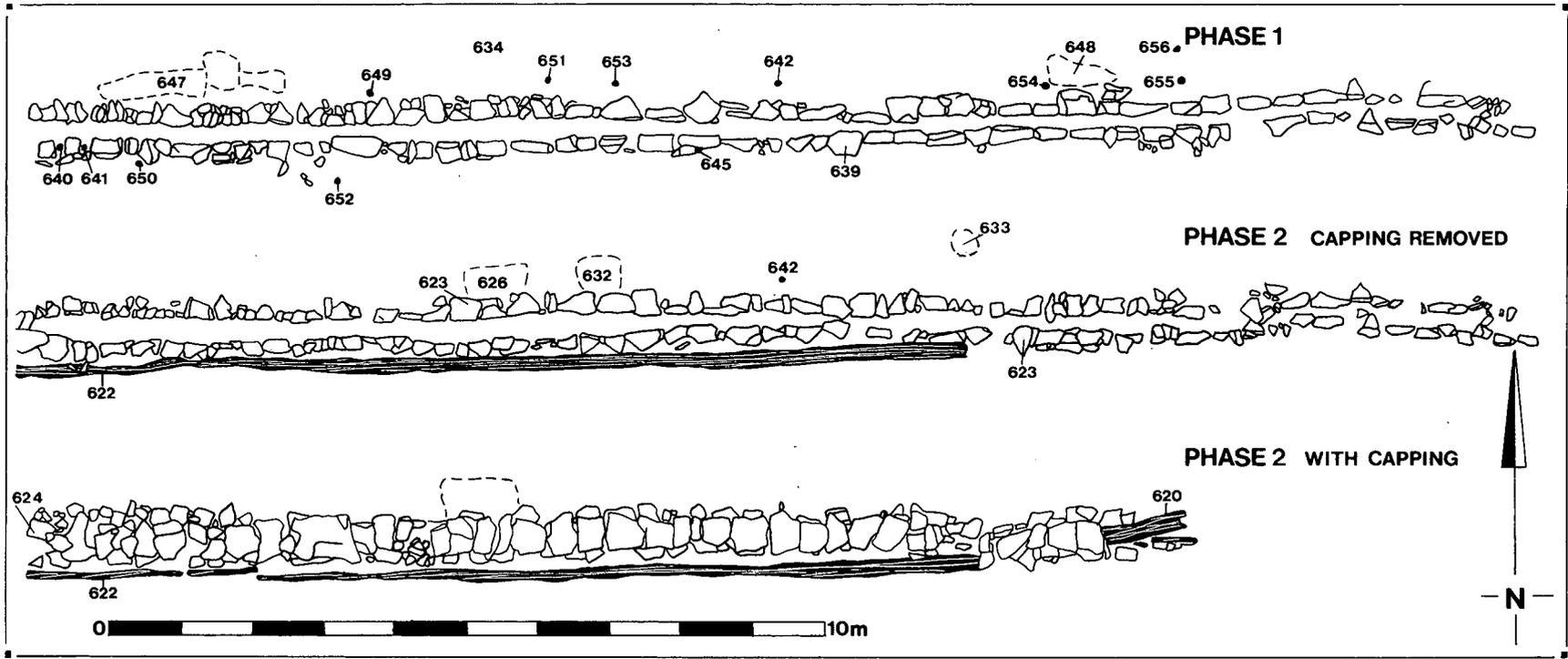


FIG. 36. Stone-lined culvert: Plan, Phases 1-2.

The late gullies (FIG. 37)

At some stage after the modification of the culvert, the area was criss-crossed by a series of drainage gullies, associated in places with lightly metallated areas and other miscellaneous features in the surface of a sandy clay deposit (601/721).

Description

Most of the clearly identifiable features were short lengths of gully, U-shaped or V-shaped in section (where excavated) and with dark brown/black silty clay and loam fills (610\$/613, 617\$/671, 703, 705, 710, 704\$/716, 711\$/717). Another linear feature of uncertain purpose (603/616) had a red clay lining (615): red clay was also associated with a further three features (614, 708, 713). The nature of other, more amorphous, features (702, 704, 705, 706, 707, 712, 715) is also unknown.

SG182 (FIG. 37) Three of the gullies (610\$/613, 617\$/671, 711\$/717) which lay entirely within the area of excavation were between 6m and 8m long and all on the same alignment (north-northwest to south-southeast), 613 and 671 being in line with a 3.7m wide gap between. They were both U-shaped and approximately 1m wide; 717 was narrower (0.5m at its narrowest) and its sides had been heavily eroded. A fourth feature on the same alignment (710) was not excavated. Other features (705, 704/716) ran east-west, continuing beyond the western limit of excavation. Between the eastern ends of the two was a series of small amorphous features (706, 707, 708, 715) whose nature was not determined. Gully 716 was sectioned and proved to be 0.7m deep with a V-shaped profile. Two features (702, 703) ran on a more northwest-southeast alignment, but in others the extent was unclear (712). Not all the features planned were fully described because of flooding.

The other linear feature which was excavated (616) was rather more complex. It was flat bottomed and straight sided with a patchy red clay lining (615) and was filled by reddish clay patched with brown (603). It was on approximately the same alignment as 613 and 671 and some 3m to the south. It was 0.6m wide and 0.22m deep and approximately 14.3m long. Other features filled with orange clay were 614, 708 and 713, all of which ran east-west.

Other deposits overlying 601/721 included small spreads of rubble in the southwest corner of the site (604, 611\$, and 608\$ which overlay the fill of 613), a stone surface (609), and patchy bands of stone fragments with cobbles (709, 719\$) running northwest-southeast. A 1.5m square feature east of 616, formed from sandstone roofing tiles (602), including some complete ones, may have formed the base of a tank.

SG183 (Not illustrated) Above these features the lower topsoil (600, 605, 700, 714) contained an enormous quantity of finds, many of them of high quality. It seems likely that this area was used for rubbish disposal after the features of SG182 had gone out of use.

Dating

Examination of the coarse pottery from 600/700 suggests that much of the material from this deposit was discarded in the 4th century. None of this pottery was considered worthy of publication.

Discussion

The general character of the area suggests some kind of low-intensity occupation, possibly horticulture or small-scale agriculture. The quantities of finds recovered from SG183 would be consistent with the dumping of midden material for manuring; any extension of the features of SG182 into this level is likely to have been destroyed by normal soil processes.

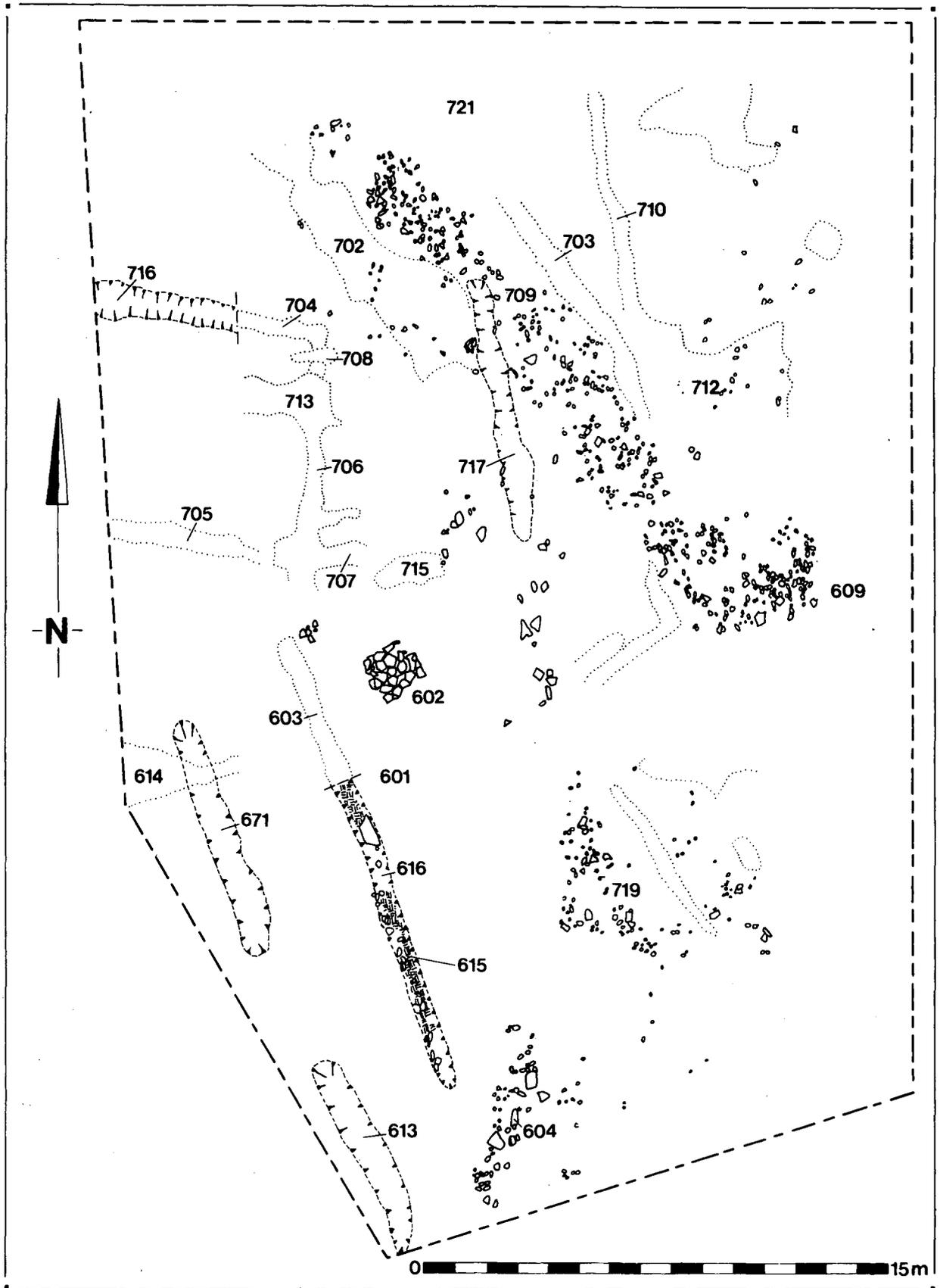


FIG. 37. Area DA.

FURTHER EVIDENCE FOR LAND USE (FIGS 3, 4, 7, 10)

For the most part, the buildings described on pp.52–154 occupied the road frontages. Less time was available to investigate the areas behind these frontages, with the exception of Cutting DA, described above (p.159) and much of the activity detailed below belonged to the final phase in each area, obtained by cleaning of the latest levels. However, some information on the stratigraphy was obtained from observations made during the digging of pits both for archaeological and geotechnical purposes and is detailed here.

Description of the activity identified is divided into four sections. These correspond to the quadrants into which the area appears to be divided by the *via principalis* continuation and the main north–south road. See FIG. 3 for the location of the cuttings described below.

THE AREA TO THE NORTH OF THE VIA PRINCIPALIS CONTINUATION AND TO THE WEST OF THE MAIN NORTH–SOUTH ROAD

The most extensively studied area was Cutting DA, which has been described above. Other information on the topography of this quadrant was provided by the two trial trenches cut in the Allotments (Cuttings EA, EB) and the east–west trial trench (Cutting FB) cut in the Smallholding (West). There was also some information from the section at the northern side of the Riding School Field (Cuttings AA, AB, AC).

Cuttings AA, AB and AC (FIG. 7)

The lower deposits in these cuttings are described under the main sedimentary sequence (SG5, SG10). The most significant later feature was a cremation burial (122), possibly redeposited, whose pit (127) had been cut into a deposit (103) overlying a scatter of cobbles and flat pieces of stone (105).

Description

SG184 (FIG. 7) Little information on the latest phase of occupation could be gained from the machine-dug cuttings at the northern side of the field (AB/AC), beyond establishing the presence of a patchy layer of cobbles and flat pieces of sandstone (105) over the earlier sedimentary sequence SG10 (see above). It was thinner at the west end, but better laid and more coherent.

SG185 (FIG. 7) These deposits were overlain by a mid brown/orange silty clay loam (103). This contained medieval pottery, but a Roman cremation burial was also cut into it: either the pottery is intrusive, or the cremation was redeposited.

SG186 (FIG. 7) A pit (127) containing a cremation (122) had been cut into 103, but it was not clear where exactly it had been cut from, and the eastern side was indistinct. The preserved depth of the pit was 0.8m, and it directly underlay the lower topsoil. The urn, a Black Burnished vessel (now lost), appeared to have been truncated at the shoulder. There were six fragments/objects of iron in the pot with the cremated remains.

The cremated remains from 122 By J.L. Wilkinson

General: Weight 900g. All the bones are blackened; the degree of charring suggests inefficient combustion, possibly because of shortage of fuel. Following cremation the bones were crushed, but not always into very small fragments.

Sex: Probably male (based on thickness of cranial vault, robust long bones).

Age: Adult

Trial Trenches EA, EB and FB (Not illustrated)

A band of cobbles was noted running east–west across Cutting EA in the Allotments (East). This may represent a cobbled wall-sill as in Buildings 14, 18/19 and 20, but it could also be the edge of a more extensive cobbled area.

The east–west trial cutting (FB) on the Smallholding (East) was sterile apart from a few

stones. However, in view of the relationship of this cutting with Building 18/19, it is probable that it may have fallen within an open area behind buildings of the frontage of the *via principalis* continuation.

SG187 (Not illustrated) Little interpretation is possible of the features in the trial cuttings on the Allotments. A band of cobbling (4014) at the southern end of Cutting EB may be part of a cobble wall sill. Two adjacent stone surfaces (4010, 4011) occurred in the central area of Cutting EA, and a linear cut feature (4008/4009) ran across the northern end of both cuttings.

SG188 (Not illustrated) All these features were overlain by a deposit of red-brown silty clay (4002), which may be analogous to 103 in SG185 (above).

THE AREA TO THE NORTH OF THE *VIA PRINCIPALIS* CONTINUATION AND TO THE EAST OF THE MAIN NORTH–SOUTH ROAD

The main area explored here was Cutting BA, to the east of the main north–south road, immediately south of the angle formed by Cutting BB and BC. It was stripped of topsoil and cleaned down to the latest phase of occupation. The stratigraphy of Section BB (SG100–SG103, see above) suggests that the feature noted here overlay masonry buildings which fronted on to the north–south road. The watching brief on the sewer trench (KD) and another (LB) on the pit for a replacement pole for an electricity cable in the adjoining field (Millmead) gave a glimpse of the stratigraphy further south, closer to the road from the East Gate.

Area BA (FIGS 9, 10)

This area encompassed 135m². Its northern side was occupied by Building 8, to the south of which lay a number of cobble features, including 317/318 which continued from the building. Although these features were clearly defined, it is not possible to suggest any interpretation. No features of note were located between Building 8 and the road. There was also another wall (305), possibly but not certainly part of another building, but it is not certain whether this would have been to the north where a cobbled surface (324) overlay Building 10, or to the south where there was a series of cobbled features and patches of clay and broken flagstone (303, 304, 306, 312, 313, 314) with no clear function. The building or buildings here may have been connected with Buildings 8 and 10, but insufficient evidence was recovered to make any such interpretation certain.

SG189 (FIGS 9 and 10) Wall 305 was 0.40m wide and consisted of thin blocks or slabs of sandstone rubble, of which four courses and a length of 3.5m survived, associated with small patches of red clay. The area continuing its line to the north looks very much as though it may have been disturbed by a robber trench, but it could not be examined because of the lack of time. The cobbled features to the south of 305 (312, 313, 314) appeared to follow a definite alignment, though not that of any of the walls. In addition this area contained small patches of burnt clay and broken flagstones (303, 304, 306) set in the surrounding red-brown clay (307). Towards the road, the clay was more red and pink in colour (465), also overlain by scatters of stones and cobbles (453, 454).

SG190 (FIG. 10) The northeast corner of the area, east of Cutting BB, was occupied by a cobbled surface (324) whose southern side was formed by a coherent line of large cobbles and flagstone fragments (309) overlying Building 10. It may represent a period of subsequent occupation on the site of this building, analogous to Building 5 over the site of Building 1. Between 309 and 305 was a small patch of pebble metalling (310), possibly a floor surface.

Watching brief on utilities (KD and LB) (Not illustrated)

Very little information is available about the southern part of the area, and neither cutting reached the substratum. The stratigraphy of the sewer trench KD, which contained a series of grey and pink silt deposits similar to those in Cutting CB, would be consistent with its being on the course of the postulated 1st–early 2nd century watercourse (see above, p.34). No dating material is however available to confirm or refute this. The deposits in the cut for the electricity pole (LB) did not appear to be water-laid, and sloped down from north to south.

- SG191 (Not illustrated) At the point at which detailed observations were made in the sewer trench (KD), it lay entirely within the Roman occupation deposits, the lowest deposit being grey clay-silt and charcoal (3580). Two silt deposits, the lower brownish pink in colour and the upper pinkish grey (3579, 3578), suggest that the history of this part of the site may have been more similar to that on the other side of the road in the Riding School Field (see above p.23). The existence of rubble (3576) and red clay with burnt daub and charcoal at the top of the sequence suggests that there may have been some sort of structure at this point in the latest phase, although nothing was seen during the topsoil strip.
- SG192 (Not illustrated) In the pit cut for the electricity pole (LB) the lowest deposit encountered was a light brown clay (2628) with no apparent traces of human activity. This sloped down from north to south. Three deposits, successively dark grey-brown clay loam, red clay and sandy silt with cobbles (2643, 2642, 2641) overlay it. No interpretation was possible.

THE AREA TO THE SOUTH OF THE *VIA PRINCIPALIS* CONTINUATION AND TO THE EAST OF THE MAIN NORTH-SOUTH ROAD

The open-area excavations within this quadrant were entirely taken up by Buildings 1-6 and the side street. These have been discussed above (pp.52-100 and p.47). All that remains to be considered are two geotechnical test pits (JD and JC) at the northern side of the Cambria House site close to the road from the East Gate, the watching brief on the sewer trench (KA) and manhole (KC) further south but still north of Buildings 2-3, the sump to the south of Building 1 (GF), and a series of six archaeological test pits (HA, HB, HC, HD, HE, HF) excavated in Millmead to the east of the Cambria House site.

Watching brief on geotechnical pits and utilities (JC, JD, KA, KC) (Not illustrated)

The results from the geotechnical test pits and the sewer trench close to the *via principalis* continuation suggest that in the angle between the two roads there had been a building or buildings, which had subsequently burned down. All these cuttings contained deposits of red, pink or orange clay similar to daub, together with seams of charcoal. Pit JD also contained a deposit of cobbles: the sequence here resembled Cutting BB in the Riding School Field. The manhole (KC) slightly further south also contained cobbles, which were overlain by a pink silt and sand deposit resembling the upper flood deposits on the Riding School Field (Cutting BB SG8, see above).

SG193-5 (Not illustrated) The stratigraphy in Pit JC showed that there was a sequence of pink clay, charcoal and orange clay similar to daub (2631, 2630, 2629) over the grey clay. In Pit JD bands of clay and charcoal (2634) appeared directly above the waterlogged grey clay deposits (2635) and were themselves overlain by red clay and cobbles (2633, 2632). Similar red clay banded with charcoal (2645, 2646) was noted slightly further east in the sewer trench (KA).

SG196 (Not illustrated) Above the grey clay in the manhole (2559) was a 0.3m thickness of cobbling (2598), with pockets of dark brown organic material (2599) between the two. Approximately 0.5m of pink silt and sand (2597) overlay the cobbles.

The sump (GF) (Not illustrated)

The sequence of deposits encountered in the sump indicated that the side street had not continued beyond the length which had been excavated. A possible wall ran across the cutting from north to south.

SG197 (Not illustrated) The lowest archaeological deposit revealed at the south side of the sump was a cobbled surface, overlain by a deposit of brown silty sand (2535, 2534). Above this the stratigraphy at the east side (a layer of stones 2533) was divided by a possible wall (2532) from the sandy clay (2531) at the west.

Millmead (HA, HB, HC, HD, HE, HF) (Not illustrated)

The work in Millmead was commissioned in 1990 as a preliminary step in the preparation of an archaeological mitigation strategy for a development proposal. An initial geophysical survey

suggested that there had been Roman activity in the area immediately to the west of Buildings 1–5, but that it had not continued to the south. However, since the tithe map of 1843 shows that the area in which no geophysical anomalies were recorded was attributed to Christchurch parish rather than Caerleon, it is probable that the course of the Afon Lwyd had at one stage run as far west as this point, and it is possible that it may have eroded any Roman deposits originally extending into this area.

A series of test pits were dug to establish the depth of deposits closest to Buildings 1–5, where they might be expected to be deepest; and to determine whether the main north–south road could be traced to the south of the Cambria House site. Cuttings HC, HD and HF revealed no evidence of any structural activity, and the only sign of human influence which they produced was the presence of a single sherd of Roman pottery in Cutting HC and a little charcoal in Cutting HF. The clearest evidence for Roman occupation was obtained from Cuttings HA and HE.

Cutting HE, on what appeared to be the fringes of the occupied area, contained a circular pit with vertical sides cut into the substratum. It had the general appearance of a well-pit, but if so, it had been abandoned before completion. Cutting HA contained a depth of *c.* 1m of deposits showing evidence for human activity, in the shape of charcoal and Roman pottery, but no function could be assigned to any of the deposits. The character of the much less extensive deposits in Cutting HB suggested non-intensive activity, possibly on the edge of the occupied area.

SG198 (Not illustrated) In Cutting HE, which was dug to a depth of approximately 5m OD, the undisturbed substratum was a light pinkish-brown clay, which first appeared at 5.9m OD. Into it was cut what appeared to be a 0.9m-deep circular pit with vertical sides (5007). The fill of this was clay with flecks of brick/tile and charcoal (5006), the same deposit as overlay the feature. Dark brown clay loam and sterile light brown clay (5005, 5018) completed the stratigraphy.

SG199 (Not illustrated) Cutting HA, which was close to the hedge which separated Millmead from the Cambria House site, had by far the most complex stratigraphy. The cutting was excavated to 4.99m OD, at which point it had penetrated to a deposit which appeared to be the undisturbed substratum, a grey clay with an orange cast (5013). At the level at which this deposit was first recognised (6.24m OD), it was orange in colour and contained some charcoal, but the overlying layer, also orange clay (5012) contained an estimated 30–40% charcoal. The three successive layers above 5012 were grey-brown clay, brown-grey clay loam and light brown clay (5011, 5010, 5009) all with flecks of clay, and the two upper layers also contained small stones.

SG200 (Not illustrated) The lowest identifiable level encountered in Cutting HB was a grey clay with flecks of brick/tile and charcoal and occasional pieces of rubble (5004). This merged gradually into the overlying pinkish brown clay (5003) from a level of 6.54m OD; 5003 also contained flecks of brick/tile and charcoal.

THE AREA TO THE SOUTH OF THE *VIA PRINCIPALIS* CONTINUATION AND TO THE WEST OF THE MAIN NORTH–SOUTH ROAD

Little of this quadrant was explored other than Buildings 21 and 22, and the associated metalworking activity on the frontage of the main north–south road. There are slight indications of what might be another building north of Building 22, on a similar alignment to Building 19, but too little was visible for certainty. A trial trench (GC) was extended westwards from this area, but proved to be sterile. A watching brief carried out on the two geophysical test pits JF and JG suggested that there had been no activity at this point in Roman times: when the area was stripped for development nothing was seen other than a scattering of cobbles which may have been of Roman date, although this could not be proved. The only point at which any depth of deposits was noted was during the watching brief on the sewer trench (KE). Deposits relating to the north–south road and industrial activity are described elsewhere (SG42 and SG173). The other deposits to the west of the road appeared to represent a similar sequence to that observed on the other side of the road from the East Gate, with a general sequence reminiscent of the more extensively studied deposits in the Riding School Field, particularly SG10 (see above). None of these deposits is illustrated.

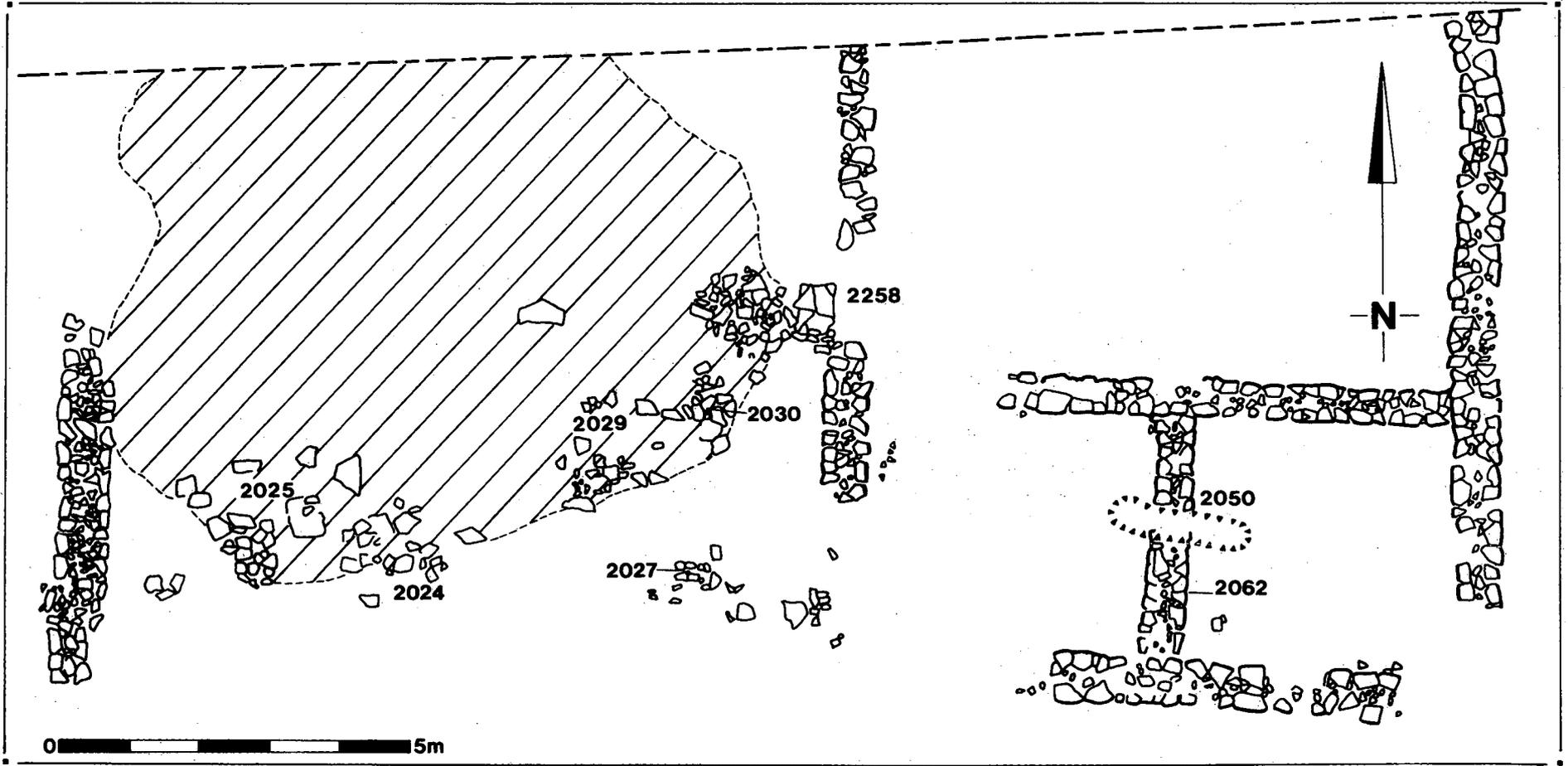


FIG. 38. Building 3: Post-destruction occupation.

SG201 (Not illustrated) Grey/grey-brown deposits were encountered only rarely (2594\$ below the road; 2587\$ further west), but this was probably because this cutting did not penetrate to any great depth. Most of the deposits encountered were pink or orange silts and clays (2571\$, 2573\$, 2581\$, 2590\$), or deposits of more 'occupation' character (2585\$, 2586\$), but the sequence was not sufficiently clear to allow any interpretation.

The edge of an area of cobbles (2650; FIG. 33) was noted at the extreme northern side of Cutting GB. It was initially believed to be a part of the final surface of the main north–south road (2004), but could possibly be the edge of a cobble wall sill or cobble floor.

POST-DESTRUCTION UTILISATION OF THE SITES OF BUILDINGS 3 AND 5

There were slight traces of possible reoccupation on the sites of both Buildings 3 and 5 near to the main north–south road. In addition the other (east) side of Building 3 had been used for a burial.

Possible reoccupation (FIGS 17, 20, 38, 39)

After demolition, the western side of Building 5, and part of the western side of Building 3, were covered by destruction rubble. There was also rubble over what had originally been the connecting doorway between Rooms 3.2 and 5.6. The central section of the south wall of Building 3, which had formed the boundary between the two buildings, was robbed below-ground in the middle ages and it is impossible to determine whether it was standing at this stage. The rubble over both buildings had also been cut by pits (2078 FIG. 17; 2168, 2198, 2199 FIG. 20), though it is not possible to determine whether they were related to the possible reoccupation.

On the sites of both Buildings 3 and 5, on the upper surface of the rubble, there were traces of occupation of some sort. In Building 3 the evidence for this consisted mainly of patches of flagging (2024, 2029, 2030 and 2258) over the main area of rubble which was concentrated in a roughly oval area running the length of what had been the wall between Rooms 3.1 and 3.2, which it largely covered, and with its axis east–west (FIG. 38; cf. FIG. 17). This rubble also contained a tightly-packed patch (2025), and it should be noted that the upper surface of the brick/tile platform 2104 (SG76) showed signs of wear. It should also be noted that 2258 was immediately north of wall 2057, at the point where it is suggested that there may have been a doorway (see above, p.84); this may have served as a threshold. Traces of reoccupation were much clearer in the area of Building 5, Room 5.5, and occurred in a roughly triangular area in the corner of walls 2007 and 2017, bounded on the north by wall 2026 (FIG. 39; cf. FIG. 20). Here a patch of possible 'black earth' or fire debris incorporated two patches of paving (2021, 2022).

SG202 (FIG. 38) The rubble over the west end of Building 3 (Rooms 3.1, 3.2, 3.3) was overlain by a series of small worn patches of slabbing (2024, 2028, 2029, 2258), consisting of fragments of flagstone and sandstone roofing slates. A patch of tightly packed pieces of rubble (2025) appeared to be related to these rubble patches.

SG203 (FIGS 17 and 20) A pit (2077/8) seemed to have been cut into the rubble overlying Room 3.5 in Building 3, damaging the underlying floor surface, although no cut could be traced in the rubble.

The same was true of three pits in the rubble overlying Building 5 (2167/2168, 2198, 2199). It is not certain whether all these features represent damage to the buildings' floors before the rubble accumulated, or pits dug through it and backfilled with exactly the same material.

SG204 (FIG. 39) The area of reoccupation in Building 5 was covered with a layer of black loam (2012). Two patches of possible paving (2021 and 2022) were incorporated within 2012, which may possibly be a 'black-earth' deposit, though its colour was at least partly due to the presence of finely-divided charcoal. The paving 2021 took the form of a row of four broken and worn flagstones, close to and parallel with wall 2007, and 2022 was a single large slab fragment surrounded by rubble blocks. These deposits were overlain by a further layer of rubble (2011\$).

Although it seems clear that at least part of the area of these two buildings was being utilised, it is not apparent what form this use took. The roughly oval patch of rubble with associated paving over Building 3 recalls the round-cornered building above the latest Roman levels on the

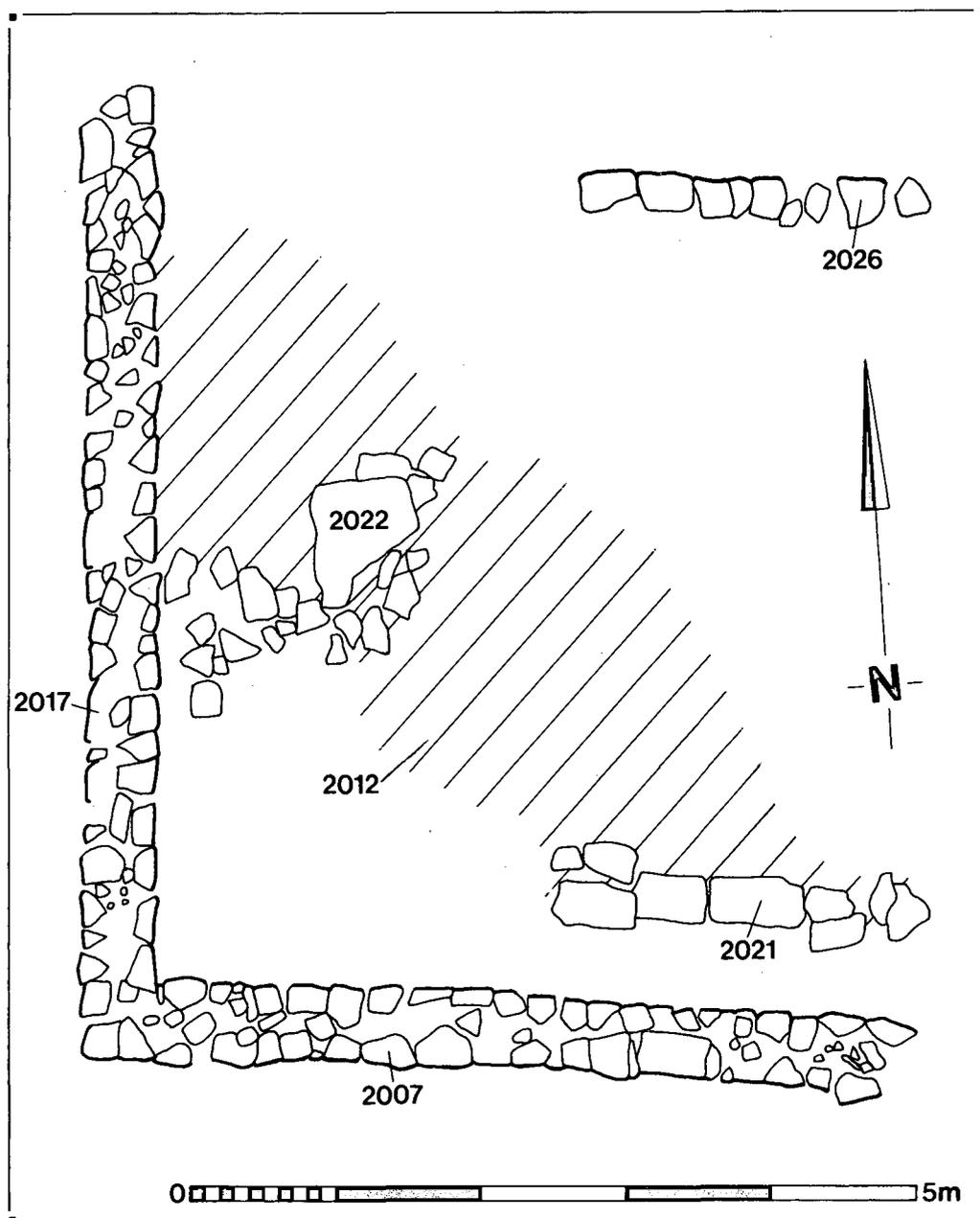


FIG. 39. Building 5: Post-destruction occupation.

'Roman Gates' site some 200m to the northwest (Evans and Metcalf 1992, 75 and fig. 20). A careful search was made to establish whether there were any associated structural features, but the only feature which might have been a post-hole had been cut from a higher level.

SG205 (Not illustrated) All the buildings showed signs of robbing, but in most cases it is not possible to determine when it took place. It probably took place over a considerable period of time. Removal of stone had obviously begun before significant quantities of rubble had accumulated over Building 3 (see p.85), but its south wall was robbed at least partly in the middle ages.

The inhumation burial (FIG. 17)

The grave for an inhumation burial (2050) was cut through wall 2062 in Building 3 and through the rubble in the rooms either side. It was oriented 55° east of True North, with the head to the east.



PLATE XXIX. The inhumation burial cut through the floors of Rooms 3.5 and 3.7. Scale unit 0.5m.

SG206 (FIG. 17; PL. XXIX) The inhumation was supine. The head was turned to rest on the left shoulder, the left arm was straight and the right arm was placed across the body with the hand resting on the pelvis. The lower legs had become detached from the rest of the body: they had apparently been broken at the west face of the wall, probably when rubble was thrown back into the grave (2050) as it was being backfilled (2049\$, 2055\$).

The skeletal remains By J.L. Wilkinson

The bones were fragile, embedded in soil. When washed, many fragments broke into small pieces.

Sex: Male (based on thickness of cranial vault and very robust long bones, pelvis).

Age: Range 35–45 years (according to degree of dental attrition, but this evidence is limited).

The severity of arthritis would suggest an age over 40 years. Skull sutures are all fused endosteally — although an unreliable criterion by itself, it supports the above estimates.

Pathology: Osteoarthritis of lumbar spine, sterno-clavicular joints, shoulders and hip joints. Eburnation of the bone only occurs when all articular cartilage has been worn away and would not be seen in a modern man under the age of 60 years.

Stature: It is not possible to estimate height as no long bone is intact; the thickness of these indicates a generally robust build of a type often found amongst Celtic groups.

Genetics: Torus formation in the mandible.

A sample of bone was submitted for radiocarbon dating. The results are shown in TABLE 7.

TABLE 7: RADIOCARBON DATING OF THE INHUMATION

Lab. no.	Uncalibrated (years BP)	Calibrated 1 sigma confidence level	Calibrated 2 sigma confidence level
CAR-1044	1400	562 cal. A.D.—584 cal. A.D. 588 cal. A.D.—676 cal. A.D.	452 cal. A.D.—484 cal. A.D. 506 cal. A.D.—512 cal. A.D. 526 cal. A.D.—776 cal. A.D.

Analysis of probability distribution by Seattle/Groningen Method

The fact that no attempt was made to avoid the wall suggests that not only was it not visible, but also that its presence was not suspected. It is impossible to determine whether there was any connection between this burial and the apparent re-occupation in the buildings, but the association of post-Roman occupation and a (possibly earlier) burial of late 7th or early 8th century date at 'Roman Gates' should be noted (Evans and Metcalf 1992, 75).

TRIAL EXCAVATIONS IN THE CASTLE STREET AREA

On the southern side of the fortress the presence of a large, well-appointed masonry bath-building has been known since 1849, and should be seen as belonging to the civil settlement (Boon 1987, 16). Otherwise the only information about occupation on this side of the fortress is provided by a series of trial pits dug in 1990 in the fields to the west of the pumping station at Uskside and Tanhouse Drive, and a cutting made in the car park of the former Social Club in 1987 (FIG. 40)

Tanhouse Drive

A series of test pits was excavated mechanically in the field to the east of Tanhouse Drive. All indicated that the alluvium in this area extended to below 3m from the present ground surface. There was no evidence for Roman occupation.

Uskside

This area was examined as part of an environmental impact assessment commissioned by the Caerleon Land Development Company Ltd. An initial geophysical survey identified a number of areas of archaeological potential, and ten 1 × 1m test cuttings were dug mechanically to examine the geophysical anomalies and other areas of interest. Cuttings MG, MH and MK proved to be sterile, and Cuttings ME and MJ cut through recent make-up, probably connected with the construction of the adjacent pumping station. The most notable feature (in Cutting MB) was a massive masonry building (Building 23); a succession of cut features was noted in its vicinity, below a rubble deposit which was probably derived from the building. Substantial cobble deposits were also noted.

The building in Cutting MB was visible on the ground surface as an earthwork. Two walls (6029, 6030) were discovered, running at right angles to each other and constructed from high quality mortared rubble. The high water-table precluded further exploration of this building. Fragments of tufa and a piece of painted wall-plaster with a curved surface from this pit suggested that the building was vaulted and perhaps apsed.

SG207 (Not illustrated) One of the two walls (6029) was 0.7m wide, but only one face of the other (6030) lay within the cutting. The smooth mortar layer finishing the upper surface as it survived (at 7.64m OD) suggested that a bonding course may have been robbed out from this level.

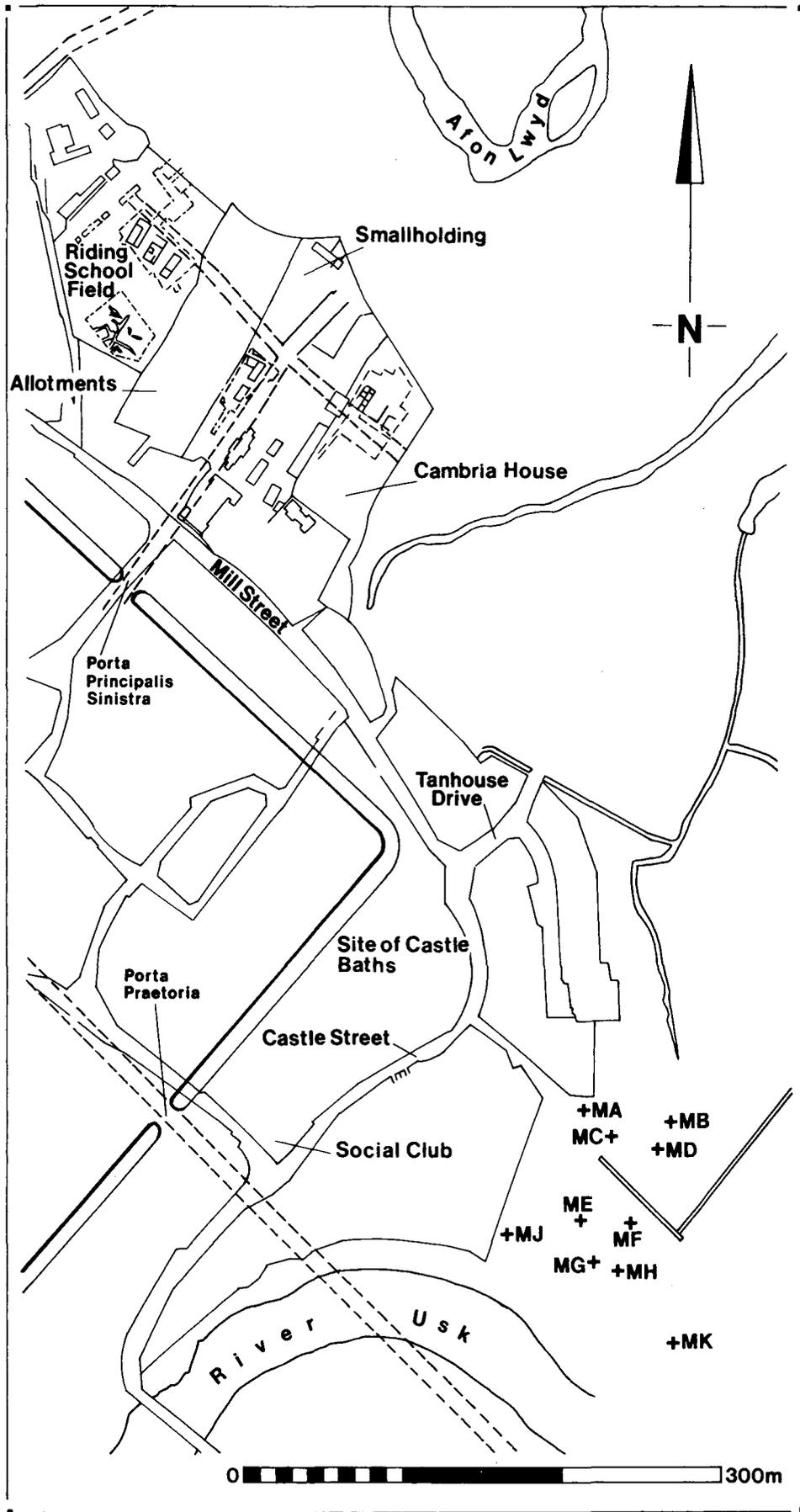


FIG. 40. Trial excavations in the Castle Street area.

Information on activity in the vicinity of Building 23 was provided by Cuttings MA, MB, MD and MF. Cuttings MD and MF contained quantities of rubble, probably derived from the building. In Cutting MD, the rubble overlay two successive linear features, possibly boundary ditches, the upper running northeast-southwest and the lower northwest-southeast. Cuttings MA and MC produced evidence of cobbling, probably of Roman date, since in neither case did the cobble deposits contain any later material, but the raised water-table and the instability of the deposits precluded further examination.

SG208 (Not illustrated) Cutting MD lay some 20m to the southwest of the building and was excavated to the blue-grey clay substrate, which appeared at 6.95m OD. Into the orange-grey clay deposit above (6021) had been cut two successive linear features at right-angles to each other. The lower (6022/6033), which ran northeast-southwest, had gone out of use and been filled before the second (6020/6032) was cut: for this reason it is possible that 6021, which had a total thickness of 1.2m, may represent two layers of very similar composition rather than a single one. The second linear feature (6020/6033) had been cut from the top of 6021. A thickness of 0.4m of rubble (6019, 6018) overlay 6021, containing in its lower half blocks of the size and type of most of those used in masonry buildings in Caerleon.

SG209 (Not illustrated) Cutting MF lay 40m south of Cutting MD, close to the edge of the occupied area. The most notable feature of the stratigraphy was the quantity of rubble, four successive deposits of which were noted (6027, 6026, 6025, 6024), but it was not possible to determine the nature of activity, if any, contemporary with the building's use.

SG210 (Not illustrated) Cuttings MA and MC, in the area to the west of the building, both contained dumps of modern rubble over cobble deposits which appeared at a level of *c.* 7.4m OD (6008, 6042-3) and were probably Roman in date.

Social Club

An L-shaped trial cutting was made at the north and west edges of the car park of the Social Club in order to determine whether any archaeological response would be required to the proposal to develop this site.

In the northern end of the trial cutting, archaeological deposits were observed some 0.6m below the existing ground surface. The main archaeological features noted were a wall running north-south, some 0.3m wide and constructed of sandstone blocks, towards the western end of the northern arm of the cutting; and a layer of charcoal containing Roman tile, which extended for some 9.6m in the northern half of the eastern arm. The level of the Roman deposits fell away from the north, being 0.9m lower at the southern end of this arm of the cutting than at the north. Although most of this cutting was only excavated to the top of the Roman levels, a sondage towards the eastern end of the northern cutting indicated that the deposits were at least 1.1m thick.

Discussion

Given their very limited character, these trial excavations do little more than indicate the presence or absence of Roman occupation or rather the surviving evidence for it. Examination of the field to the east of Tanhouse Drive shows quite clearly that it is situated within an old meander of the Afon Lwyd. There is therefore a strong possibility that the alluvium encountered here is of post-Roman formation, and that at some time since the Roman period the river flowed close to the foot of the steep slope south of the modern Mill Street. Any Roman occupation in this area is therefore likely to have been removed by erosion (see also above, p.168). Study of the tithe map for the parish of Caerleon (Gwent Record Office D.1602) shows that its boundary with the parish of Christchurch, the village on the opposite side of the river, appears to have run along the line which today forms the southern boundary of the properties at the south side of Tanhouse Drive (FIG. 40). The most likely explanation for this is that the boundary fossilises an earlier course for the Afon Lwyd. (It has however probably been subjected to some modification, since the Uskside building lies slightly outside.) Potentially, therefore, there could also have been erosion of Roman occupation south and west of Uskside.

Little can be said about the nature of Roman occupation in the Castle Street area. The cobble deposits in SG210 at Uskside may represent a road or roads. The remains in SG207 are clearly those of a substantial building; those at the Social Club are probably also structural in origin. Another very substantial building is known in the shape of the Castle Baths. Potentially, therefore, there may have been a significant Roman presence in this area.

CHAPTER THREE

THE FINDS

INTRODUCTION

The quantity of finds from the Mill Street sites was extremely large. However, study of those categories of material which can be dated readily has shown that a high proportion of these are residual (see below, pp.178, 198), and it therefore seems likely that a considerable percentage of all artefacts described here may have originated in the fortress rather than the *canabae* (for a fuller discussion of this problem see pp.460–7).

Some pieces from the site have already been published elsewhere, and no more than a summary is therefore included in this report. The objects involved are: coarse pottery report nos 306, 370, 380, 404, 405, 580 (Tomlin 1997, 470–1 nos 53, 52, 54, 49, 48, 44); amphora report no. 2 (Hassall and Tomlin 1994, 310–12, no. 92 for dipinto; Heron and Pollard 1988, 429–47 for resin lining); coin report nos 141–3, 146, 148–9, 154–5, 163–4, 166–7, 169–71, 174, 176–80, 182, 188, 190–5, 197–203, 206, 208–9, 211, 213–21, 223–5, 228, 232, 234, 236–8, 240, 243, 322 = hoard (Besly 1992, 101–4) lead report nos 1, 2, 3, 4 (Tomlin 1997, 467–9, nos 43, 41, 40, 42) and nos 5, 6 (Hassall and Tomlin 1992, 322, nos 43, 44); leather report no. 15 (van Driel-Murray 1988). Also published by Tomlin (1997) but not catalogued here are two tombstone fragments (Tomlin 1997, 458–9, nos 2–3), two sherds of samian with post-firing graffiti (Tomlin 1997, 470, nos 50–1), and an unstratified Black Burnished jar sherd with graffiti (Tomlin 1997, 470, no. 45).

Certain classes of finds are not reported at all; the groups affected are brick and tile, animal bone and waterlogged wood. Most of the huge quantities of Roman brick, tile and other building materials which were not found *in situ* are likely to have arrived on the sites from elsewhere as hard-core, and their relevance to the excavated structures is therefore low. It is hoped that a fuller study can eventually be carried out of this assemblage as part of a project designed to look at Roman brick and tile production and distribution in southeastern Wales. In this report, only the material which can be shown to have direct relevance to excavated buildings is included, and has been incorporated into the structural report on the relevant building. Soil conditions were generally not conducive to the survival of animal bone (this is reflected also in the very small assemblage of worked bone which was recovered), apart from in the waterlogged deposits low in the sedimentary sequence in the Riding School Field. These deposits are probably the result of tipping of rubbish which originated elsewhere, whether in the *canabae* or in the fortress. The wood, from the same deposits, was of limited interest and none of it was suitable for dendrochronology; there is a catalogue in the archive.

The finds are presented according to materials, which are grouped as ceramics, metals, and other materials. Individual items are also cross-referenced where applicable with similar objects of different materials. Most reports can be found in an extended version in the project archive. To enable the makeup of assemblages to be compared with those of other sites 'total number of objects recorded' has been added to all classes of object except sherds; this number is drawn from the archive report and does not necessarily correspond to the number of published objects.

In most categories of finds, the majority of objects reported on have been drawn; undrawn items have been marked 'not illustrated'. However, in those reports where the situation is reversed, drawn objects have been marked with an asterisk.

The numbering sequence is as follows: catalogue number, [archive number] context number/stratigraphic group number (individual find number); except in the case of some of the pottery which is published by context, with the archive and individual finds numbers, where applicable, in square and round brackets respectively. Further details of stratigraphic groups can be found by reference to TABLES 1, 30 and 32. During excavation, each site was recorded by a separate series of context numbers prefixed by a site code. When a unified database was produced during the post-excavation stage, the site codes were replaced by a site prefix except in the case of the Riding School Field. This was done for both the contexts and the finds, which now form two unified series of numbers (see above, p.14).

Riding School Field: numbers below 1999

Cambria House: numbers 2001–2999

Smallholding: numbers 3001–3999

Allotments: number 4001–4999

None of the other sites produced material worthy of publication.

No hard and fast decision was made as to how the finds in any given category should be ordered; the general preference was for finds in each category of material to be ordered by type, but specialists were left free to order the material by site if they felt that it would be more appropriate to present it thus.

CERAMICS

THE SAMIAN (FIGS 41–3) By B.R. Hartley

The Mill Street sites produced a very large quantity of samian (13 standard 'ministry' boxes). This was all studied and an archive catalogue compiled, together with a list of stamps. The discussion which follows and which was submitted in 1994 is based on this archive catalogue, only a fraction of which has been reproduced here. It should be noted, however, that clearly there is a high proportion of residual samian in almost all groups, and that many of the contexts in which samian occurs can be dated by other means to considerably later. A number of examples may be quoted. A late 2nd century group from context 638 (SG177) contained five Flavian or Flavian-Trajanic pieces out of nine: this was associated with early 4th century coarse pottery (see p.223). An Antonine group from context 658 (SG176) has eight pieces out of seventeen and is also associated with coarse pottery of the early 4th century (p.220). Even a group which was deposited at a date compatible with its closure, such as that from context 2405/SG72 (after A.D. 150) contained 16 Flavian or Trajanic vessels out of 47. (For a fuller discussion of this problem, see pp.460–7.)

In spite of this the large quantity of samian ware from Mill Street allows a statistical approach to its general features. In view of its quantity, the samian should give a reliable picture of what was being discarded on the sites, whether it was used there or dumped from the fortress, for instance.

It is clear, for instance, that samian was already being discarded in the 70s, witness the stamps of Damonus (residual in context 667/SG181) and Labio (residual in context 1284/SG104) which must have been in use for some time before Caerleon was occupied, or the form 24 of context 1501 (unstratified). Probably the rate of discarding increased toward the end of the century, judging by the relatively high proportion of Flavian-Trajanic material (i.e. of vessels made *c.* A.D. 90–110). These were then joined by the early products of Les Martres-de-Veyre, made *c.* A.D. 100–125. The end of imports from La Graufesenque about A.D. 110 suggests that the quantity of samian reaching the site in the second decade of the century would be lower, and so it no doubt was in terms of supply, but one must remember that much of the latest South Gaulish ware would have been discarded throughout that time, so that although the quantity of imports, now virtually all from Les Martres, will have dropped, it is unlikely, in view of the figures for average annual loss (TABLE 8) that there was a drop in the quantity of samian being dumped before the end of the decade. The effect of the reduced quantity of samian

Form	Riding School Field				Cambria House				Smallholding			
	SG	LM	LEZ	EG	SG	LM	LEZ	EG	SG	LM	LEZ	EG
31			180	43			74	19			41	25
31R			125	44			30	16			68	19
32				5				1				3
32 etc.				6				3				
33	8		124	11		8		61	6		33	5
35	1		4			3		4	2			
35/36	1		10			6	2	3		1		
36	1	3	20	2				2	2	1		9
38			31	7			13	4		9	2	
38 or 44			18					4	1		2	1
40			1	2					1			
42	1		1			3	4		1			
44			2				1	1				
45			37	39			11	9			7	1
GSM (45?)			32	21			6	2			13	2
46						2		1		2		
72			1				3				1	
Jar (72?)	1		10	1			5		1		4	
79			5	1			4				2	
79 or Tg			9				4				5	
Lud. Tg			1				2				1	
80			1									
Lud. Tx			1									
81		2	2			9						
Curle 11	6	3	7		1	4	2	5				
Curle 15			4							1		
Curle 15/23			1			3						
Curle 21			5	2							1	
Curle 23			8			5				6		
Inkwell	1											
Scraps	9	7	158	52	8	1	40	13	5	1	55	4
	136	38	897	249	98	45	396	82	36	10	272	62

* Probably 1st century Lezoux ware.

**Including one from Montans.

If we summarise the position for suppliers in percentage terms, we arrive at the data in TABLE 10.

TABLE 10: ALL SAMIAN BY SOURCE

	SG	LM	LEZ	EG
Decorated ware	24.0	7.8	63.0	5.3
Stamped samian	19.8	4.1	68.6	7.4
Plain ware	11.6	4.0	67.4	16.9

The relatively high proportions of decorated ware for South Gaul and Les Martres is noteworthy, as is the relatively low proportion of such bowls for East Gaul. The supply of decorated ware was evidently drying up by the 3rd century, scarcely surprising in view of its quality, though changes in drinking habits may possibly have affected the matter. The other figures are obviously of the same order of magnitude in all classes of samian.

Clearly from A.D. 150 or 160 onwards much greater quantities of samian were being thrown away on the sites. Many groups have high proportions of the characteristic Central Gaulish forms of the later 2nd century. Forms 31R and 45 (and sherds classed as 'gritted samian mortaria' in general) are particularly useful indicators here, but the deep examples of form 31, akin to those in the Pudding Pan Rock deposit, are almost equally useful. Some of the latest Central Gaulish imports will have continued in use into the 3rd century with the usual hyperbolic wastage. Unfortunately, much of the later East Gaulish samian is not capable of being dated closely yet. Current hypotheses suggest that both Rheinzabern and Trier were active down to 260, and even beyond, but activity at the potteries does not necessarily mean

continued export; and analogies with La Graufesenque, Montans and Lezoux might be taken to suggest continued production on a small scale for very local markets. However that may turn out, it is clear that East Gaulish ware was in use and being discarded at Caerleon well into the 3rd century, and very probably as late as 260 or so.

The sources of supply to Caerleon are notably clear. Apart from one 1st century sherd probably from Lezoux, everything of that period is South Gaulish and from La Graufesenque, with the proviso that a few sherds might be from a neighbouring satellite, such as Le Rozier. As has been implied already, the supply from La Graufesenque must have continued down to about A.D. 110. Meanwhile the pottery at Les Martres-de-Veyre had begun exporting about A.D. 100 and Caerleon has a fair quantity of its early products of A.D. 100–120/125, as does much of southern Britain. What is almost entirely missing is the work of the Hadrianic-Antonine potters of Les Martres, such as Cettus (one sherd only) and the corresponding makers of plain ware, again only represented by one identified sherd. Lezoux clearly dominated supply to Caerleon, as is normal in Britain, from A.D. 125 to the end of the century. The list of potters' stamps makes the point very clear.

The decorated ware of the Antonine period has, as usual, a high proportion of work from Lezoux by Cinnamus and associates on the one hand and Paternus v and related potters on the other, but the end of the century seems to have been dominated by Doecus. The rarity of the bowls of the Quintilianus group is noticeable, but not easily explained. A study of their distribution in Britain might be interesting. The one thing that is clear is that we are not involved with a purely chronological factor, as the contemporary work of the Sacer Group is well represented.

There is no certain material from any of the other Central Gaulish sources other than Les Martres, though a bowl in the style of Tetturo (or possibly Immunus) could theoretically come from Toulon-sur-Allier, where his moulds were undoubtedly used. However, the general distribution and contexts of his decorated ware strongly suggests activity at Lezoux, too.

However, there were some other minor suppliers. Montans supplied two decorated bowls, stamped by Chresimus, in the Hadrianic or early Antonine period (no. 126), and one cup of form 27 has been noted, too. These may or may not be the first late Montans products recorded at Caerleon, but their presence makes sense, as there was undoubtedly some distribution of 2nd century Montans pots up the west coast, as their occurrence in quantity in the vicinities of Chester, Wilderspool, the Ribble, the Solway and the Clyde suggests.

Banassac may be responsible for one decorated bowl (no. 168), but in general Banassac ware is very uncommon in Britain, and there is much doubt about many of the suggested pieces. Moulds from La Graufesenque were certainly used there, and equally certainly some potters from that centre either migrated to Banassac or had branches there. But many of the so-called Banassac styles have parallels at La Graufesenque itself.

Another supplier in a minor way in the Hadrianic-Antonine period was the pottery at La Madeleine, near Nancy. Considerably more of its plain ware is known in Britain than its decorated ware, and so it is at Caerleon. All the East Gaulish examples of form 18/31 seem to have the characteristics of La Madeleine ware, but unfortunately they do not have a potter's stamp between them. No decorated ware from that source is to be found at Mill Street and, although it does occur in Britain, it always seems to be rare compared to the plain ware, mainly dishes of form 18/31. Form 27, made in quantity at La Madeleine, seems curiously rare in comparison in Britain. This, as with so much else to do with the distribution of East Gaulish ware in Britain, needs to be investigated further.

The other East Gaulish suppliers to Caerleon include the Argonne (marginally, with two decorated sherds, including D31, and a very few pieces of plain samian), Rheinzabern, to which the bulk of the East Gaulish ware is to be attributed, and Trier.

There is little of the earliest Rheinzabern decorated ware, only Ianus being represented and that by two small sherds. The impression that a much higher proportion of Rheinzabern plain ware than decorated ware was being imported to Britain in comparison to Lezoux is borne out by the Caerleon figures (TABLE 9).

Suspected Trier plain samian, especially mortaria of form 45 and dishes of form 31, had been

noted several times before the two sherds of decorated ware by Dexter appeared to support the attributions. It is only fair to point out that some Trier fabrics are not always easy to distinguish from Lezoux ones on the one hand, or from Rheinzabern fabrics on the other. However, the proportion of Trier plain ware to decorated ware is already very high, and it may be doubted whether the contribution of the plain ware has been underestimated.

As for the distribution between forms, a few points may be made. First, there is an unusually high proportion of decorated to plain ware, even for a site with clear military connections, at 27.9%. The result is the more surprising in view of the comparative rarity of East Gaulish decorated ware among the relatively high proportion of East Gaulish samian. Again, this is a matter needing further consideration and it calls for statistics for a wide range of types of site. The snag, of course, is that many sites do not produce samian in statistically significant quantities.

For the Caerleon South Gaulish ware the proportion of cups to dishes seems about normal, judging by the statistics prepared for South Gaulish stamped pots in general by Christopher Hartley (unpublished). There is some doubt about whether the same is true for the 2nd century, when the proportion of form 27 is very low for the Hadrianic-Antonine period and very few of the cups of form 33 are as early as Hadrian (TABLE 9). Even in the Antonine period, when form 33 was the normal cup, the proportion seems low in comparison to the dishes, but we do not yet have the general comparative figures which we have for the 1st century. Were samian cups less used at Caerleon than at some other classes of sites? Any explanation of the possible differences is likely to have to do with function and dietary and drinking habits.

The apparent high proportion of samian mortaria (TABLE 9) may not be very significant. Because of the large quantity of late groups, coinciding in date with the date-range for samian mortaria in the late 2nd and 3rd centuries, it is not yet easy to judge the matter securely. Perhaps the point should be made here that almost all the sherds classed as 'gritted samian mortaria' will have been of form 45, possibly with rare examples of form 43 and the gritted variant of Curle 21.

Two minor surprises are the low figures for form 79 and related forms such as 80, Ludowici Tg and Tx, and the rarity of form 32, usually common among East Gaulish ware (TABLE 9). There is tolerably clear evidence that the former group of forms had a differential distribution in the northwestern provinces. The same could conceivably apply to form 32, but this still needs careful investigation.

It will be seen that a large group of material, such as that under review, can raise some interesting problems, not all of them capable of solution on our present evidence. The statistics being incorporated in the new *Index of Potters' Stamps* (Hartley and Dickinson forthcoming) will help with some of the problems for stamped vessels, but unstamped forms or forms customarily given rosette stamps, such as Curle 23, will always need statistics from the sites. At the moment we can only guess that the proportion of Curle 23 at Mill Street (just over 2% of the plain ware) is unusually high (TABLE 9).

Catalogue

The material catalogued here is divided into two sections. The first consists of pieces which provide a date for the stratigraphic group in which they occur. The second consists of pieces from elsewhere on the site which are of intrinsic interest. For what it is worth, it is distinctly uncommon, both with the decorated ware and with unusual and distinctive plain forms, to find sherds of the same vessel scattered through several deposits.

Most of the material has not been drawn. Only those pieces for which there are no good parallels are illustrated: these are marked *.

'Form' refers to the Dragendorff classification extended by Déchelette, Knorr and Walters. The term 'scrap' has been used for those sherds, however large or small, which cannot be identified with a particular form, but which can be assigned to a pottery and sometimes dated approximately. For the other conventions used see the bibliography and abbreviations.

The poor state of much of the samian, due to the soil conditions, has made identification of details, and sometimes even schemes of decoration, difficult. This applies to many of the ovolos particularly.

Samian from stratigraphic groups

The material is listed by context. Within each context pieces are ordered as follows: decorated samian, potters' stamps, plain samian. Groups are published in their entirety (see p.178), with the exception of a few scraps which do not add to the overall picture. Most of the pieces are catalogued individually; but some entries also contain notes on duplicate types, and where plain samian is present in a context in very large quantities the types present are listed (with number of occurrences) rather than being catalogued individually.

Main sedimentary sequences (see TABLE 1)*Phase 2*

Context 1105 (SG4)

1. Form 18, South Gaulish, Flavian-Trajanic.

Context 1451 (SG4)

2. Form 29 rim, South Gaulish, without visible rouletting. *c.* A.D. 70–85.
3. Form 30 fragment, Les Martres-de-Veyre, with a horse which may be an unrecorded type, though cf. D.901. The type is delicate enough to be one of X-2's creations, and the wavy border would fit his work. *c.* A.D. 100–120.
4. Form 30 or 37 base (2), Central Gaulish, Hadrianic or early Antonine.
- *5. [D20] Form 37, Central Gaulish, in the intermediate style used by Pugnus (or Mapillo) and represented by Stanfield and Simpson 1958/1990, pl. 153. The panther (D.799) in the festoon is characteristic, as is the use of the trilobe on the borders and the Diana (D.64). However, what is not normal is the use of a devolved version of ovolo Rogers B35, which began life with the Catul-potter of the X-6 amalgam. However, this is just one of many demonstrable links between the X-6 group, Pugnus-Mapillo and Tittius and Cassius which need much elucidation. *c.* A.D. 130–150.
6. Form 37, Central Gaulish, with vertical border of astragali and a scarf-dancer D.373, used by Mapillo, though not, so far as we know, with this kind of border. Hadrianic-Antonine?

Three other examples of form 37 were noted, all South Gaulish; one Flavian, the others Flavian-Trajanic.

7. (1439) Stamp of Carantinus of Lezoux (5a) on form 33, A.D. 150–180.
8. Form 15/17, South Gaulish, close to some Inchtuthil examples, Flavian.
9. Form 18/31, Les Martres-de-Veyre, Trajanic.
10. Form 18/31, Central Gaulish, Hadrianic.
11. Gritted samian mortarium, Central Gaulish, *c.* A.D. 170–200.

Context 1485 (SG4)

12. Form 37, South Gaulish. Almost half a bowl in the style of Mercator i of La Graufesenque, *c.* A.D. 85–110.
13. Potter's stamp:]SΛ[or]VS[on form 33 with internal moulding, Central Gaulish, Hadrianic, possibly the work of Severus v of Lezoux.

Context 1486 (SG4)

14. Form 18/31 or 31, Central Gaulish, Hadrianic or early Antonine.

Context 1494 (SG4)

15. Form 31(R?), Central Gaulish, Antonine.

Phase 3

Context 1242 (SG8)

16. Stamp of Venerandus of Lezoux (5a) on form 80, A.D. 160–200.

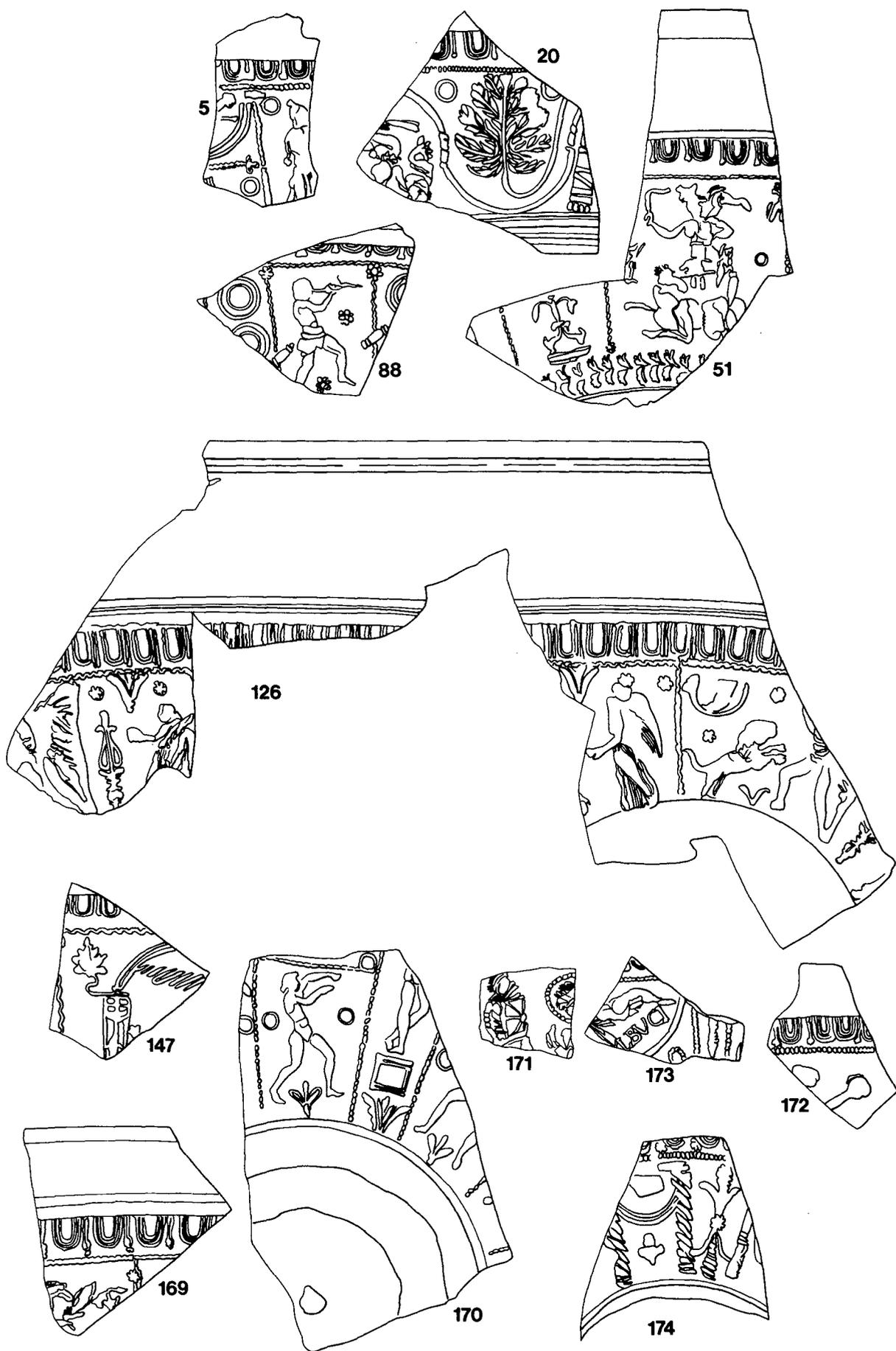


FIG. 41. Figured samian, nos 5-174. Scale 1:2.

Context 1450 (SG8)

17. Form 29 rim, South Gaulish, *c.* A.D. 70–85.
18. Form 30 base, South Gaulish, Flavian or Trajanic.
19. Form 30 (2), Central Gaulish, in the style of Cinnamus. *c.* A.D. 150–180.
- *20. [D19] Form 30, Central Gaulish, from a mould with the large Paternus (7a) stamp. This small bowl has unusually neat decoration for Paternus *v.* The ovolo is Rogers B107, the Triton in the lower scroll is D.17 and the unusual leaf of the scroll is not known to me and is not in Rogers. *c.* A.D. 60–190.
21. Form 30 or 37 rim, South Gaulish, Flavian or Flavian-Trajanic.
22. Form 37, South Gaulish, Flavian-Trajanic. With four other examples.
23. Form 37, Central Gaulish, in the style of the Sacer Group *c.* A.D. 125–145. With a second example in the same style and another possibly by Vegetus.
24. Form 37, Central Gaulish, in the style of Cinnamus. *c.* A.D. 150–180. Two other examples, in the styles of Divixtus and Laxtucissa, were noted.
25. Form 37 (2), Central Gaulish, in the styles of Iullinus ii. *c.* A.D. 160–190. With another example in the style of Paternus *v.*

Sixteen other sherds of Central Gaulish form 37 were noted, all Hadrianic or Antonine.

26. Form 37, East Gaulish. The square beads and the two unusual medallions separated by them were used by Victor of Rheinzabern (Ricken 1948, Taf. 242, 11). The medallion recurs, as Miss Brenda Dickinson tells me, on a bowl at Cowbridge with the ovolo of Victor.
27. Illiterate stamp IIXIXII, South Gaulish, on form 27g.
28. (1283) Stamp of Crucuro ii of La Graufesenque (5a) on form 33, A.D. 130–160.
29. (1409) Stamp of Cambus i of Lezoux (2d: a stamp in an internal frame) on form 38 or 44, A.D. 150–180.
30. Stamp of Habilis of Lezoux (5d) on form 33, A.D. 150–180.

This context also contained a large quantity of plain samian. This is not catalogued here in detail, but comprised the following types (the brackets refer to number of examples):

Form 27, South Gaulish, Flavian.

Form Curle 11, South Gaulish, Flavian or Flavian-Trajanic.

Form 18/31 (2) and form 33, all from Les Martres-de-Veyre, Trajanic or early-Hadrianic.

Forms 27 (3); 27? (4); 35 and 35/36. All Central Gaulish, Hadrianic-Antonine.

Form 18/31 (8); Curle 23 (early variant). Central Gaulish, Hadrianic or early-Antonine.

Forms 31 (16, one with rivet-hole); 33 (11); 38 (4); 38 or 44 (rim, with rivet-holes); 44 (3 fragments join). All Central Gaulish, Antonine.

Form 18/31R (6), Central Gaulish, Hadrianic to mid-Antonine.

Forms 18/31R-31R and 31, Central Gaulish, early- to mid-Antonine.

Forms 31R (12 sherds, three burnt) and 79 or Ludowici Tg Central Gaulish, mid-to late-Antonine.

Forms 18/31 and 18/31R (with end of unidentified stamp), East Gaulish, Hadrianic-Antonine.

Forms 33 (2) and 38, East Gaulish, Antonine.

Form 27 or 40, East Gaulish, 2nd century.

Form Curle 21 or 43, probably the former, East Gaulish, after A.D. 160.

Forms 31 (2), 32?, 38, 81? and a scrap, East Gaulish, late 2nd or early 3rd century.

Context 1491 (SG8)

31. (1504) Stamp of Censor i of La Graufesenque (3b) on form 15/17, A.D. 70–90.
32. Stamp: either V[or]Λ ret. on form 31, Central Gaulish, Antonine.
33. Form 31, Central Gaulish, Antonine.

Context 112 (SG10)

34. Form 30, Central Gaulish, probably by Cinnamus, A.D. 150–180.
35. Form 30 or 37 base, Les Martres-de-Veyre, Trajanic.
36. Form 30 or 37 rim, Central Gaulish, Hadrianic or early-Antonine.

37. Form 37, by X-13, Les Martres-de-Veyre, Trajanic. With another example by an unidentified potter.
38. Form 37 (2) in the style of Cinnamus (A.D. 150–180).
39. Form 37 in the style of Paternus v? (A.D. 160–190?).

A form 37 rim (Central Gaulish, Antonine), with an unidentified ovolo, was also noted.

40. Forms 18R and 18/31, South Gaulish, Flavian-Trajanic.
41. Form 18/31R-31R, Central Gaulish, mid-Antonine.
42. Form 35/36, Central Gaulish, Antonine.
43. Form 38, Central Gaulish, Antonine.
44. Form 27, East Gaulish, probably La Madeleine, Hadrianic-Antonine.
45. Form 31 (2 examples), East Gaulish, late 2nd or early 3rd century.

Context 114 (SG10)

46. Form 37 base, South Gaulish. Flavian.
47. Form 37 rim with ovolo Rogers B20, used at Les Martres-de-Veyre by X-2 and Drusus i, but also at Lezoux by members of the Quintilianus Group; as this seems to be in Lezoux fabric, it will be *c.* A.D. 125–145.
48. Stamp of Sacirotus of Les Martres-de-Veyre (1a), *c.* A.D. 100–120.

Building 1

Phase 1

Context 2491 (SG56)

49. Form 37 base, Central Gaulish, Hadrianic?
50. Form 36, South Gaulish, Flavian.

Phase 2

Context 2498 (SG57)

- *51. (D30) Form 37, Central Gaulish, in the style of Butrio of Lezoux. The ovolo (Rogers B109), combined with the closing wreath (Rogers K35) are enough to settle the attribution, which is lucky, as neither the Diana and chariot, a variant of D.73, nor the stand (Rogers Q6) are attested for him. *c.* A.D. 125–145. Other fragments of this vessel occurred in the destruction deposits of this building (SG72, context 2410) and the metalling of the north–south road (SG43, context 2439).
52. Unidentified stamp:]?II, on the collar of form 81, Central Gaulish, Hadrianic-Antonine.

Phase 3

Context 2490 (SG59)

53. Form 37, South Gaulish, Flavian-Trajanic.
54. Form 37, Montans, joins a sherd in the context 2405.
55. (2691) Stamp of Albinus iv of Lezoux (6a) on form 33, A.D. 125–145
56. Form 18, South Gaulish, Neronian or early-Flavian.
57. Form 27 (3 joining sherds), Les Martres-de-Veyre, Trajanic.
58. Form 18/31, Central Gaulish, Hadrianic or early-Antonine.
59. Form 27, Central Gaulish, Hadrianic or early-Antonine.

Phase 4

Context 2451 (SG61)

60. Form 37 scrap, South Gaulish, Flavian-Trajanic.
61. Form 37 rim, Central Gaulish, with an ovolo perhaps suggesting Austrus or one of the Sacer Group. *c.* A.D. 125–150.
62. Form 18-18/31, Les Martres-de-Veyre, Trajanic.
63. Form 18/31 (3 examples in 4 sherds), Central Gaulish, Hadrianic or early-Antonine.

Phase 5

Context 2448 (SG62)

- 64. Form 18/31 joins no. 127.
- 65. Form Curle 23, Central Gaulish, Antonine.

Context 2411 (SG63)

- 66. Form 37, Central Gaulish, in the style of Pugnus, with his ovolo (Rogers B233), partly cut away, and a leaf (Rogers J33), used by him. *c.* A.D. 130–150.

Context 2437 (SG64)

- 67. Form 29, South Gaulish, *c.* A.D. 70–85.
- 68. Form 37, derived from the Germanus style, but by a later potter. South Gaulish, Flavian or Flavian-Trajanic. With another South Gaulish example of the same date.
- 69. Form 37, Central Gaulish, a small sherd in the style of Butrio, but not from the same bowl as no. 51. *c.* A.D. 125–145.
- 70. Form 37, Central Gaulish, in the style of Docilis, with ovolo Rogers B24 and paired birds as on Stanfield and Simpson 1958/1990, pl. 91, 1), in a lattice arrangement not unlike *ibid.* 2. His work is usually careless but this is badly made, even for him. *c.* A.D. 125–150.
- 71. Form 37, Central Gaulish, with an ovolo apparently unique to Criciro (Rogers B43), the seated Fortuna (D.472 or O.802) and a tripod with python (Rogers Q15?). *c.* A.D. 135–165.
- 72. Form 37 (2 scraps), Central Gaulish, probably Antonine.
- 73. Two joining sherds of form 18/31, Central Gaulish, Hadrianic-Antonine. With two other examples.
- 74. Form 18/31 or 31 base, Central Gaulish, Hadrianic-Antonine. There has been some secondary use of the base, after the wall was chipped off.
- 75. Form 33, Central Gaulish, Antonine.

Context 2438 (SG64)

- 76. Form 30 or 37 rim, Central Gaulish, probably Antonine.
- 77. Form 18R, South Gaulish, Flavian.

Building 2

Context 2377 (SG69)

- 78. Form 30 or 37 rim, Central Gaulish, Hadrianic?

Demolition of Building 1 and construction of Building 3

Context 2007 (SG70)

- 79. Form 30, Central Gaulish, probably by Cinnamus, with D.394 and a cornucopia not in Rogers, but used by Cinnamus (cf. Stanfield and Simpson 1958, pl. 161, 51). *c.* A.D. 150–180.
- 80. Form 37, Central Gaulish, in the style of X-5, with warrior (O.216), and ‘cushion’ (Rogers U3). *c.* A.D. 125–145.
- 81. Form 30 or 37 rim, East Gaulish, mid- to late-Antonine.
- 82. Form 18/31, South Gaulish? Flavian-Trajanic.
- 83. Form 18/31R, Central Gaulish, Hadrianic.
- 84. Form 31 (2), Central Gaulish, Antonine.

Context 2352 (SG72)

- 85. Form 30 or 37, Les Martres-de-Veyre, Trajanic. With another example.
- 86. Form 37, Les Martres-de-Veyre, Trajanic.
- 87. Form 37, South Gaulish, Flavian-Trajanic.
- *88. [28] Form 37 (4 joining sherds), Central Gaulish, by one of the Quintilianus Group, probably the man who signed moulds ‘Secundini’. Ovolo Rogers B206, the 8-beaded rosette of the Group and the slave with pipes (D.311). The use of astragali across the vertical borders puts it in the style represented by Stanfield and Simpson 1958/1990, pl. 71, 27, 31 etc.). *c.* A.D. 125–140.

89. Form 37, Central Gaulish, by Paternus iv, with his commonest ovolo (Rogers B17) and part of a leaf. As often in his work, which seems to be well-represented at Caerleon, the bowl is ridged inside. *c.* A.D. 130–155.
90. Form 18, South Gaulish, Flavian.
91. Form 27, South Gaulish, Flavian.
92. Form 18/31, Les Martres-de-Veyre? Trajanic or Hadrianic.
93. Form 18/31, Central Gaulish, Hadrianic or early-Antonine. With another example.
94. Form 81, Central Gaulish, Hadrianic or early-Antonine.
95. Form 31, Central Gaulish, Antonine. With another two, burnt, sherds.
96. Footring of jar or beaker, Central Gaulish, probably mid- to late-Antonine.
97. Form 31R, Central Gaulish, mid- to late-Antonine.

Context 2389 (SG72)

98. Form 30, South Gaulish, in the style of Mommo, Flavian.
99. Form 30 or 37 rim (with rivet-hole), South Gaulish, Flavian or Flavian-Trajanic.
100. Form 37, South Gaulish, Flavian.
101. Form 37 (3), South Gaulish, one possibly with the ovolo of L. Ter— Secundus, Flavian-Trajanic.
102. Form 37 by X-2, Les Martres-de-Veyre, Trajanic. With another example by an unidentified potter.
103. Form 37, Central Gaulish, style of Acaunissa. A.D. 125–145.
104. Form 37, Central Gaulish, style of Quintilianus A.D. 125–150.
105. Form 37, Central Gaulish, style of Paternus iv A.D. 130–150.
106. Form 37, Central Gaulish, style of Rogers's P-15 A.D. 135–155.
107. Form 37, Central Gaulish, style of Cerialis-Cinnamus A.D. 135–165. With two other examples.
108. Form 37, Central Gaulish, Cinnamus standard style. Four examples (4 sherds of one not joining); one with ovolo Rogers B143 and one stamped, *c.* A.D. 150–180.
109. Form 37, Central Gaulish, in the style of Paternus v or one of his associates, *c.* A.D. 160–190. With three other examples.

Seven further examples were noted of form 37 (Central Gaulish, Hadrianic or Hadrianic-Antonine) together with ten bases (Central Gaulish, Antonine).

110. Form 67, no decoration, South Gaulish, Flavian.
111. (2494) Stamp of Cinnamus of Lezoux (5a) on form 37, A.D. 150–80.
112. (2307) Stamp of Marcellus iii of Lezoux (2h) on form 27, A.D. 130–55. See note *10 to the table of potters' stamps (TABLE 11).
113. (2324) Stamp of Cintusmus i of Lezoux (2b) on form 31R, A.D. 150–80.
114. (2547) Stamp of Chresimus of Montans (4g) on form 37. With another stamp of the same man (4d) which joins with sherds from three other contexts and is catalogued as no. 126. See notes *3–4 to the table of potters' stamps (TABLE 11).
115. Potter's stamp: JS.F, Central Gaulish, on form 18/31-31, probably early-Antonine.
116. Potter's stamp: VI], South Gaulish, *c.* A.D. 70–85, on form 29.

The plain samian in this group is not catalogued in detail, but comprised the following types (brackets refer to number of examples):

- Form 15/17 or 18, South Gaulish, Neronian-Flavian.
- Forms 18 (2), 27 (2), 33a, 35/36 (2), 36 and Curle 11, South Gaulish, Flavian.
- Forms 15/17 or 18, 27, South Gaulish, Flavian-Trajanic.
- Forms 18/31 (6), 27, 33a and 35, Les Martres-de-Veyre, Trajanic.
- Form 42 (2), Central Gaulish, Hadrianic.
- Form 18/31-31, Les Martres-de-Veyre, Hadrianic to early-Antonine.
- Forms 18/31 (13), 18/31R (8), 27 (3), 35, Central Gaulish, Hadrianic-Antonine.
- Form 18/31 or 31, Central Gaulish, Hadrianic or early-Antonine.
- Form 18/31R-31R, Central Gaulish, mid-Antonine.
- Form 31 (11), 33 (15 examples in 23 sherds), 81 (2 examples, one in 6 sherds), Central Gaulish, Antonine.
- Form 31 (2), Central Gaulish, mid- to late-Antonine.
- Dish with rivet-hole, Central Gaulish, Hadrianic-Antonine.

Context 2397 (SG72)

- 117. Form 37, Central Gaulish, scroll in Cerialis-Cinnamus style with the usual rosette and an astragalus as junction mask and leaf. *c.* A.D. 135–165.
- 118. Form 27, Les Martres-de-Veyre, Trajanic.

Context 2405 (SG72)

- 119. Rim and footring of form 30 or 37, South Gaulish, Flavian or Flavian-Trajanic.
- 120. Form 37, Les Martres-de-Veyre, in the style of Rogers's X-11, Trajanic.
- 121. Form 30 or 37 rim, Les Martres-de-Veyre, Trajanic.
- 122. Form 37 rim, Les Martres-de-Veyre, Trajanic.
- 123. Form 37, Central Gaulish, with an ovolo, largely cut away, used by Pugnus (Rogers B233), as was a boar (D.826). *c.* A.D. 130–150.
- 124. Form 37, Central Gaulish, with an ovolo (Rogers B244) used by several potters, including Paterclus. No decoration survives. Hadrianic or early-Antonine.
- 125. Form 37, Central Gaulish, probably Hadrianic-Antonine. With two other pieces.
- *126. [29] Form 37; 5 sherds, joining, and also joining a stamped base in context 2389/SG72 (2495) stamped by Chresimus (cf. no. 114): one piece joins a sherd in 2393 (SG44), another a further piece in 2490 (SG59). This bowl is in pale pink fabric with matt, brown glaze, typical of Montans. It has a double internal groove well above the level of the ovolo and an astonishingly deep (60mm) plain band below the rim. The ovolo has not been recorded, so far as I know, on a stamped mould or a bowl from one, and its relationship to a similar one from La Graufesenque needs future investigation. At Montans, however, it was confined to bowls with the internal stamps of Malcio or Chresimus, it seems. Malcio was an earlier potter than Chresimus, who picked up most of his figure types from the late La Graufesenque repertoire. Those included here are surmoulages or smaller variants of Hermet 1934, H.59, H.104 and pl. 104/105, 12 (lion). The evidence for date is discussed in B.R. Hartley 1972, 42–5. *c.* A.D. 120–145.
- 127. Stamp of Langius i of Lezoux (1a) on form 18/31 or 31, A.D. 130–55. Joins a sherd in 2448 (SG62).

The plain samian comprises (brackets refer to number of examples):

- Forms 15/17 or 18, 18/31, 27 (2), 35, 35/36 (2 examples, in four sherds), Curle 11 (2 joining fragments), South Gaulish, Flavian or Flavian-Trajanic.
- Forms 18/31 (2) and 27, Les Martres-de-Veyre, Trajanic.
- Form 33, Les Martres-de-Veyre, Hadrianic-Antonine.
- Forms 18/31 (5), 18/31R (3) and 81 (2), Central Gaulish, Hadrianic-Antonine.
- Form 18/31R or 31R, Central Gaulish, Hadrianic to mid-Antonine.
- Forms 33 (4 examples, one in three sherds) and 36, Central Gaulish, Antonine.

Building 3*Room 3.3*

Context 2161 (SG76)

- 128. Form 30, Central Gaulish, in the style of Doeccus of Lezoux, with ovolo Rogers B161 and the medallion Rogers E8. *c.* A.D. 170–200.
- 129. Form 37, Central Gaulish, with acanthus scroll (Rogers M50) used vertically and including the medallion Rogers E25, the small curved leaf H167 and large beads, all used by Casurius. *c.* A.D. 160–185.
- 130. (2177) Stamp of Ruffus ii (1a) on form 33, *c.* A.D. 130–55. The fabric suggests origin at Lezoux.
- 131. An illegible stamp on form 31 with a high kick, Central Gaulish, mid- to late-Antonine.
- 132. Form 33a, South Gaulish, Flavian.
- 133. Form 31, Central Gaulish, Antonine.
- 134. Form 33, Central Gaulish, Antonine. With two other examples.

Context 2394 (SG76)

- 135. Form 37, Central Gaulish, with part of a large scroll and the rosette (Rogers C53), commonly used by the Cerialis-Cinnamus group, at the bottom of the decoration. *c.* A.D. 140–165.

136. Form 31 (2 fragments), Central Gaulish, mid- to late-Antonine.
 137. Footring of gritted samian mortarium, Central Gaulish, *c.* A.D. 170–200.

Room 3.4

Context 2118 (SG77)

138. Form 37, Central Gaulish, possibly by Birrantus, *c.* A.D. 125–145.
 139. Form 33 (3 sherds, two joining), Central Gaulish, Antonine.

Building 5*Phase 1*

Context 2317 (SG88)

140. Form 37, Central Gaulish, a small bowl with the ovolo (Rogers B233?), partly sheared off, over a wavy-line border. Probably by Pugnus. *c.* A.D. 130–150.
 141. Stamp of Advocisus of Lezoux (1b) on form 79 or Ludowici Tg, *c.* A.D. 160–90.
 142. Form 35 (2 joining sherds), Central Gaulish, Hadrianic?
 143. Form Curle 11, Central Gaulish, Hadrianic-Antonine.
 144. Form 45, East Gaulish (Trier?), late 2nd or 3rd century.
 145. Form 31 (burnt in part, and with a rivet-hole), East Gaulish. Probably 3rd century.

Building 12*Phase 1*

Context 874 (SG104)

146. Form 37, South Gaulish, with scroll of Flavian-Trajanic type.
 *147. [13] Form 37, Central Gaulish, with an ovolo used by Servus iv (Rogers B187). The tripod (Rogers Q16), leaf (Rogers H133) and the striated spindle are all known for him. *c.* A.D. 160–190.
 148. Form 37, Central Gaulish, in the style of Paternus v with ovolo Rogers B105, and the dolphin in the festoon is a variant of O.2384, used by Paternus. The leaf (Rogers J199) at the top of the border is diagnostic for Paternus. *c.* A.D. 160–190.
 149. (1433) Stamp of Marcus v of Lezoux (8a) on form 33, A.D. 170–200.
 150. Form 33 (2 examples), Central Gaulish, Trajanic-Hadrianic and Antonine.

Context 1287 (SG104)

151. Scrap, East Gaulish, late 2nd or early 3rd century.

Context 890 (SG106)

152. Form 30 or 37, Central Gaulish, Antonine.

Context 894 (SG106)

153. Form 37, Central Gaulish, with Ovolo 2 of Cinnamus, *c.* A.D. 150–180.
 154. Form 18/31, Central Gaulish, Hadrianic-Antonine.
 155. Form 31, Antonine.
 156. Form 33, Antonine.

Context 1201 (SG106)

157. (1162) Stamp of Patricius i of La Graufesenque (5a) on form 33. *c.* A.D. 75–95
 158. Form 31, East Gaulish (Rheinzabern), mid- to late-Antonine.

Context 1293 (SG106)

159. Form 30, South Gaulish, Flavian.
 160. Form 30 or 37 rim, Central Gaulish, Antonine.
 161. Form 37, Central Gaulish, with the ovolo Rogers B245 and a plant used by Censorinus (Rogers H162), who also used the ovolo. *c.* A.D. 160–190.

162. Form 37, Central Gaulish, in the style of Doeccus, with cantharus (Rogers T14) and the Cupid with torches (D.265) and standard Doeccus medallions and borders. *c.* A.D. 170–200.
163. Form 18/31R, Central Gaulish, Hadrianic or early-Antonine. With another example
164. Form 27 (3 joining sherds), Central Gaulish, Hadrianic or early-Antonine.
165. Forms 31, Central Gaulish, Antonine. With three other examples.
166. Form 33 (4 examples, two joining sherds), Central Gaulish, Antonine.
167. Form 31R, Central Gaulish, looking typologically early in the range and so probably mid-Antonine rather than later.
168. (1672) The base of a pedestalled vessel (cf. Oswald and Pryce 1920, pls. LXXIX–LXXXI), Central Gaulish, Antonine. The fracture has been smoothed and the base pierced with a square hole; the piece was probably used as a spindle-whorl rather than a counter (see below pp.306–7).

Samian from other contexts

- *169. [1] 001 Form 37, with an ovolo used at Banassac (Hofmann 1988, pls 1–11, with several examples of the rosettes on the junctions dropped below the top border, as here. However, generally similar bowls with this ovolo also occur at La Graufesenque, as a recent check there has shown). This will be a little later than most of the South Gaulish ware, if from Banassac, as the main production there fell under Trajan, Hadrian and in the Hadrianic-Antonine period, and this ovolo was in use long enough to appear on bowls imitating the work of the Cerialis-Cinamus Group, as George Rogers has shown (e.g. *ibid.*, pl. 4, 31). Work at Banassac will have begun in the 90s, on the evidence of the link with the Germanus firm of La Graufesenque, and Natalis's use of form 29 there before migrating to Banassac. A.D. 90–110, if La Graufesenque, A.D. 95–130, if Banassac.
- *170. [2] 001 Form 37. X-6 by the man who signed moulds Catul—. The types are athlete D.385 over Rogers G175; captive D.634 over 'box' Rogers U13, over plant Rogers H113; athlete D.354 over Rogers G175. *c.* A.D. 125–150.
- *171. [3] 001 Form 37. Potter of the Small Medallions with gladiator D.582a, harpy O.863A and mask (cf. D.800). *c.* A.D. 140–165.
- *172. [4] 001 Form 37. Paternus iv with ovolo Rogers B17 and Victory D.484. *c.* A.D. 130–155.
- *173. [5] 001 Form 37. A stamped bowl of Albucius (Die 6h) with Venus D.204, *c.* A.D. 150–180.
- *174. [6] 001 Form 37, small bowl, Central Gaulish, by an unknown potter. The ovolo is Rogers B7/B24. The small trifold is probably Rogers G125, the larger one is not in Rogers, the extreme right edge has a possible Hercules D.451. Probably A.D. 180–200.
- *175. [7] 002 Form 37, Central Gaulish, with ovolo B85 and vertical bead-and-reel borders. The small cornucopia is Rogers U258, the rosette is Rogers C165 and the fishy tail in the festoon is probably sea-horse D.33, with the caryatid D.656. The style is related to Rogers's P-21 by the use of this ovolo and the bead-and-reel borders, but there is also a connection with another series of bowls using the ovolo and C165 which may not be by the same man. Certainly Antonine, probably *c.* A.D. 150–180.
- *176. [8] 002 Form 37, East Gaulish, probably assignable to Julius of Rheinzabern, who used this ovolo (Ricken-Fischer E46), with the ovolo-like motif in the medallion (Ricken 1948, Taf. 152, 9). Late 2nd or early 3rd century.
- *177. [9] 191 Form 30, a freestyle bowl by Cinnamus, with Ovolo 3 (Rogers B143), the small goat (D.889) and what looks remarkably like the top of the Sacer Group trifold (Rogers G76) used as a filler, though it might possibly be a poor impression of H109. *c.* A.D. 145–170.
- *178. [10] 191 Form 37 (2 large pieces), Central Gaulish, with unusual decoration, in effect a hybrid between X-5 and Docilis styles with wavy line borders. The ovolo is an X-5 one (B31). From the left the panels have: i) part of a Mars (D.93), known for X-5; ii) the ribbed ornament is M41, known for Docilis, over a cornucopia (close to Rogers U244); iii) the mask at the top right was used by X-5 (cf. Stanfield and Simpson 1958/1990, pl. 67, 8), the beaded lozenge (Rogers U28) by Docilis and the figure pl. 7, 91, was originally an X-2 type, but is on a signed Docilis bowl from Carlisle which also has the X-5 medallion with looped surround (Stanfield and Simpson 1958/1990, pl. 91, 9); iv) repeats ii; v) has a Docilis swag (Rogers F22), the plant G150, not attested for either potter, and the hare (D.950) used by X-5. The double rings were used by both men, but neither the chevron nor the poppy-heads below can be firmly identified. vi) is the same as ii; vii) may be the other end of panel i, with what seems to be the large trifold Rogers G7 (known for Docilis), set horizontally.
- What this bowl shows is that X-5 and Docilis were associated at some stage in their careers, perhaps with Docilis working initially for X-5, rather than for Paterclus, as Stanfield and Simpson 1958, 277–8 have suggested. The use of some X-2 motifs is of considerable interest and needs more consideration than is possible here. *c.* A.D. 125–145.

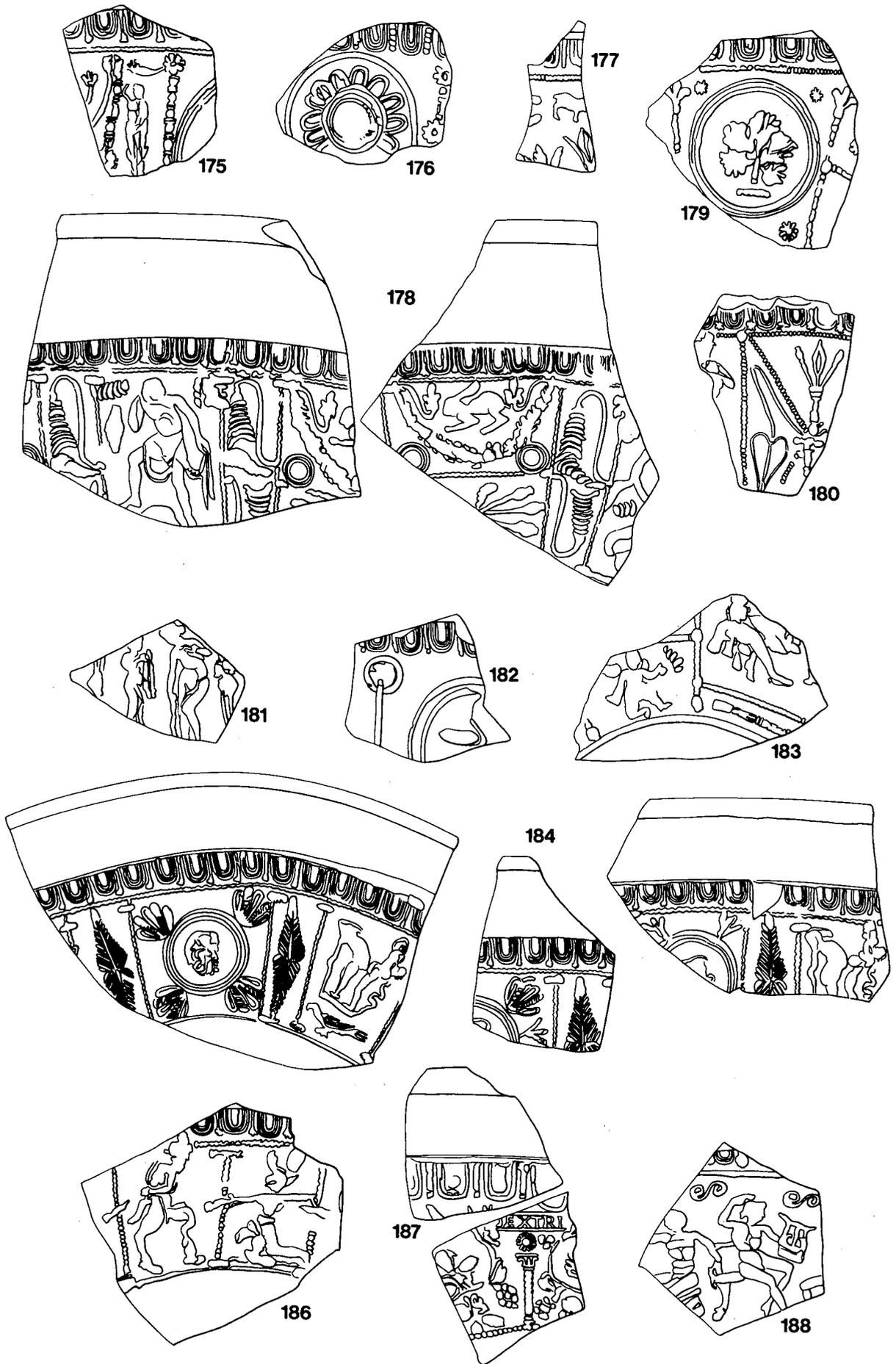


FIG. 42. Figured samian, nos 175-88. Scale 1:2.

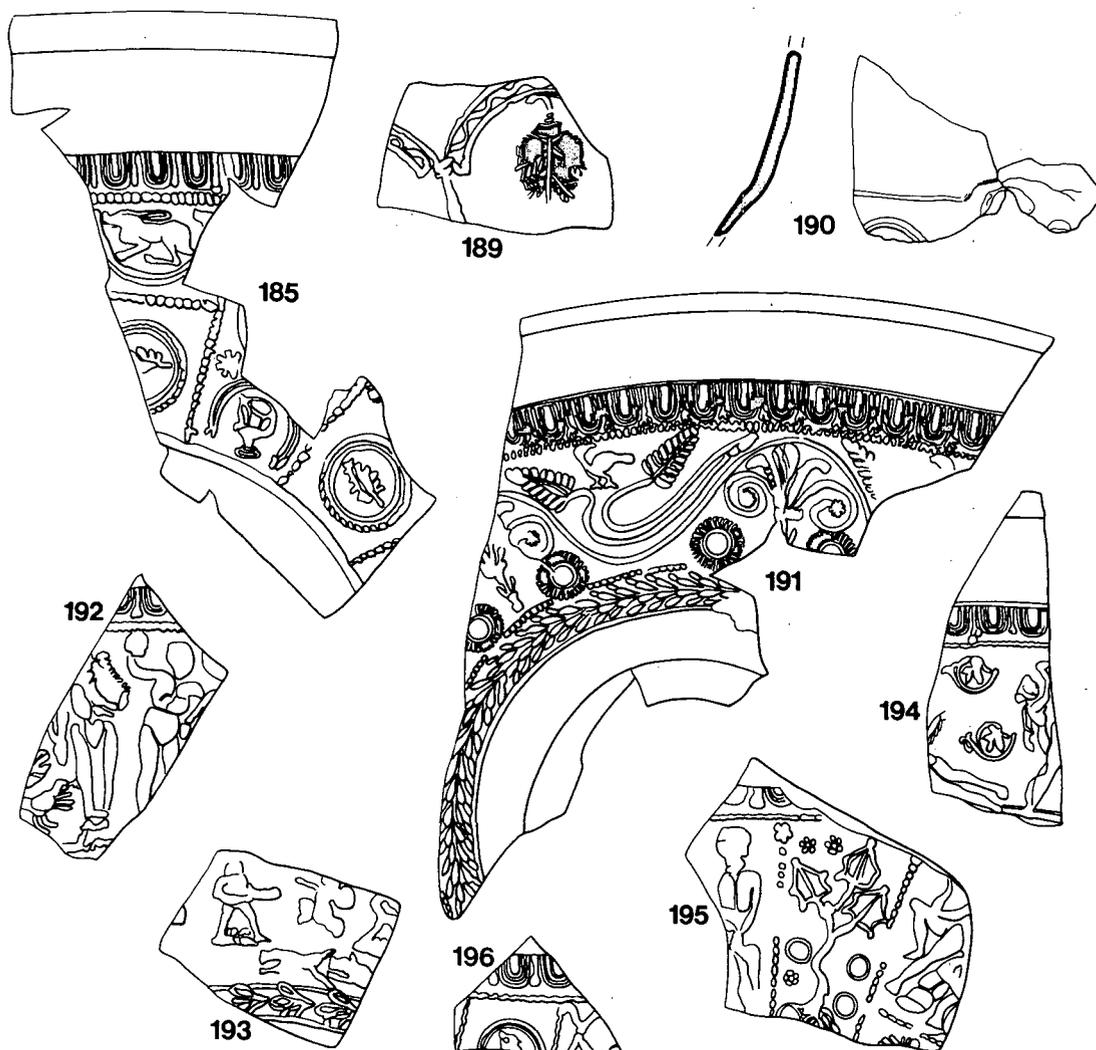


FIG. 43. Figured samian, nos 185–96. Scale 1:2.

- *179. [11] 191 Form 37, Central Gaulish, in the style of Mercator ii of Lezoux. The ovolo is Rogers B206, the leaf probably Rogers H86, the astragalus R60, the rosettes Rogers C194 and C227, and the trifold Rogers G159. This man's work, signalled by cursive signatures below the decoration, is never common and it is useful to have another example attributable to him. *c.* A.D. 140–170.
- *180. [12] 451 Form 37, Central Gaulish, with panelled decoration in the style of the Sacer Group. Ovolo Rogers B7, Pan (D.49) and saltire incorporating Rogers J56? and G53. *c.* A.D. 125–145.
- *181. [14] 928 Form 37, Central Gaulish, with freestyle figures (Venus, D.181 and the figure with drapery of Stanfield and Simpson 1958, pl. 63, 618) in the manner of Libertus rather than Butrio. *c.* A.D. 120–130.
- *182. [15] 952 Form 37, East Gaulish, with ovolo Ricken-Fischer 1963, E23, used by Iustinus, as was the large ring at the top of the vertical border and the double medallion here with a swan (Ricken-Fischer 1963, T255, used by Belsus and Comitialis). Late 2nd or early 3rd century.
- *183. [16] 1101 Form 37, Central Gaulish, in the style of Albucius of Lezoux. A thick, heavy bowl with Cupid (D.264), leaf (Rogers J146) partly impressed, seated Diana (D.68) and, in a small panel on its own, the column Rogers P3. *c.* A.D. 150–180.

- *184. [17] 1362 Form 37 (5 sherds, four joining), Central Gaulish, in the style of X-5, but with ovolo Rogers B233 as used by Silvio, who may well be X-5, as Mr G.B. Rogers and I agreed in a recent discussion. The plants Rogers G17 and 31, the leaf Rogers J33, and the mask (D.694) are all attested for him, but the bird (O.2267A) and the erotic group (O. B) are not. One panel with the mask is narrower than the others, using only Rogers J31 around the medallion in order to fit the remaining space in the mould. *c.* A.D. 125–145.
- *185. [18] 1403 Form 37, Central Gaulish (12 sherds, 10 joining in three pieces), in the style of Doeccus of Lezoux. The ovolo (B160) and all the details (hare D.950a, leaves J86 and 149 and cantharus T14) are all well-known in his work. *c.* A.D. 170–200.
- *186. [21] 1482 Form 37, Central Gaulish, in the style of Austrus of Lezoux. The ovolo (Rogers B18), the ‘crown’ on the bottoms of the bead-rows and the Pan (D.420) are all characteristic of his work (Stanfield and Simpson 1958/1990, pl. 95, 15–16). *c.* A.D. 125–145.
- *187. [22] 2002 (2444) Form 37 (2 joining sherds), stamped by Dexter ii of Trier (1b) in the decoration. (This is the only example of the stamp from Britain.) The ovolo is Gard 1937, no. 5. The column is her V13, only known for Dexter, as is the small vine-scroll P3, but neither of the rosettes seems to be recorded for him. *c.* A.D. 180–220?
- *188. [23] 2002 Form 37, Central Gaulish, in the style of X-6 (Catull— cf. D2 of 001). The ovolo is Rogers B35, the figures in the large panel or freestyle zone are: Bacchus (D.534 variant) and Apollo (D.52). But this bowl is notable for another feature. The roller for the bead-row below the ovolo was impressed so deeply that the result was virtually a straight line in high relief. *c.* A.D. 125–145.
- *189. [24] 2003 Form 37, Trier ware. The festoon, here employed to form an arcade, was used by Dexter and Atillus (Gard 1937, K45), but the leaf is a Dexter type (Gard P38). It thus seems that the Cambria House site¹ had at least two Dexter bowls in use, since the fabrics and schemes of decoration are quite certainly different. They perhaps arrived in the same consignment (with some of the Trier plain samian?). *c.* A.D. 180–220.
- *190. [25] 2034 Two fragments of a handled beaker in East Gaulish ware, probably from Rheinabern. There is a barbotine trail (scroll?) on the body. At first sight this looks like a samian bulbous beaker analogous to colour-coated ones, but the handles show that this cannot be so and the probability is that the sherds are from a Ludowici VMe (cf. Gose 1950, Taf. 11, 167), but here the way in which the neck and body were joined shows internally. Late 2nd or early 3rd century judging by the quality. Another fragment came from 2167.
- *191. [26] 2301 Form 37, South Gaulish, with large, winding scroll and basal wreath. The scheme of decoration is virtually complete, but the ovolo and most of the other components, do not seem to occur on a stamped or signed mould, though the plant in the lower part of the scroll (Knorr 1919, Textbild 12, 7) does appear on stamped bowls of many potters, as do similar birds (O.2299?). *c.* A.D. 70–90.
- *192. [27] 2308 Form 37, Central Gaulish, with freestyle decoration. The only almost complete impression of the ovolo is weathered, but seems to be Rogers B36 or 39 used by Drusus ii and at Les Martres-de-Veyre. The bird is not in D. or O., the cornucopia (Rogers U247?) between Osiris (D.413) and Perseus (D.146) is probably Rogers U247. This is a rather curious bowl, not assignable to a particular potter, though it looks as if it might almost be imitating the old kind of freestyle bowl with human figures in the manner of Libertus or Butrio, but the figure-types do not belong to that Group. Hadrianic-Antonine?
- *193. [31] (2516) Form 37, Argonne ware, with freestyle decoration over a wreath between lines attributed to Tribunus of Lavoye by Hofmann 1968, H390. The figures are very difficult to elucidate, but seem to include a gladiator and Cupid (neither in Hofmann), and small boar to left (Hofmann 1968, 196) also attributed to Tribunus. Antonine.
- *194. [32] (3045) Form 30, Central Gaulish, by Maccirra or Maccius, who were probably related in view of their names and the closeness of their styles of decoration. Ovolo (Rogers B114), horse (D.906?) and Bacchic group (D.306). The small scroll (Rogers M29) is diagnostic of the two potters, who seem to have been transmitters of the Libertus-Butrio tradition to members of the Paternus v Group. *c.* A.D. 130–155.
- *195. [33] (3045) Form 37, Central Gaulish, by Catul— (X-6). With ovolo Rogers B35, captive (D.643), tree with leaf J92 or 93 and an unidentified seated figure. *c.* A.D. 125–145.
- *196. [34] 3067 Form 37, Central Gaulish, in the style of Rogers’s P-14, now known to be Pugnus, on the evidence of a signed bowl from Sandy. The ovolo (Rogers B49), the small double medallion and the chevrons (G283) are all attested for Pugnus now. *c.* A.D. 130–145.

¹ Or the area of Caerleon from which this material was derived, if different.

TABLE 11: SAMIAN POTTERS' STAMPS

All the certainly identified, and some tentatively identified, potters' stamps on samian are listed. Fragmentary, unidentifiable stamps listed above in individual groups are not repeated.

The abbreviations used for potteries are self-evident, but the numerals in brackets after their names mean: (1) stamps from the same die are attested at the pottery; (2) stamps of the potter from other dies are known at the pottery and (3) the potter has been attributed to the pottery on grounds of fabric, style of lettering or distribution, or a combination of those factors.

The column headed 'C' records the quantity of stamps from the die previously recorded at Caerleon.

Potter	Die	Form	Stamp	Origin	C	Context (IF)	Date	Comments
Advocisus	1b	18/31R-31R	ADVOCISI.OF	Lez (1)	0	145 (1241)	160-190	
Advicisus	1b	79 or Tg	ADVOCISI.OF	Lez (1)	0	2317 (2264)	160-190	
Aelianus	5c	18/31R	AELIANVS[F]	Les Mar (3)	0	2250 (2466)	120-150	
Albillus i	2b	33	[ALBI]LLIM	Lez (2)	0	1273 (633)	150-180	
Albinus iv	6a	33	[.ALB]INLM	Lez (1)	0	2490 (2691)	125-145	
Albinus iv	6b	33	A.L.BI.N.I.M	Lez (2)	1	667 (1299)	130-150	
Albinus iv?	?	33	a[	Lez (3)		2001 (2783)	Letter like his	
Albucianus	8g	33	ALBVCIANI	Lez (1)	0	3001	170-200	
Albucius ii	5a	27	ALBVC[IVSF]	Lez (2)	0	001 (1114)	145-160	
Albucius ii	6b	31	[AL]BVCI	Lez (1)	1	3500 (3335)	150-170	
Albucius ii	6h	37	[A]BVCI	Lez (1)	1	001 (1537)	150-170	
Albusa	1a	31	AL.B.SA	Lez (1)	0	2086 (2900)	175-200	
Albusa	1a	33	AL.B.SA	Lez (1)	0	852 (913)	175-200	
Alpinus i	2b	31R	ALPINVM	Lez (3)	0	001 (160)	Antonine	
Annius ii	1b	18/31	[AN]NIOS[F]	Lez (1)	1	2393 (2604)	125-150	
G. At— Pas—	MS	37	[GATP]AS	La Grauf (1)	0	2314 (2483)	80-110	Note 1
Atilianus i	1a	Curle 23?	[ATILIAN]I.OF	Lez (1)	0	1454 (1707)	165-200	
Atilianus i	5a	31R	ATILIANIM.	Lez (1)	0	860 (1161)	165-200	
Aventinus ii	1a	31	AVENT[INLM]	Lez (1)	4	1457 (1711)	150-180	
Avitus iii	?	31	AV[	Lez (3)	?	2001 (2911)	125-150	Avitus on the style
Beliniccus ii	11a	18/31-31	BEL[INICIM] ret	Lez (1)	0	1464 (1295)	130-150	
Calvus i	5j	15/17 or 18	OFCA[LVII]	La Grauf (2)	0	611 (415)	75-95	
Cambus i	2d	38 or 44	CAMBVVS.F	Lez (2)	0	1450 (1409)	150-180	
Camulixus	2a	27	CAMVLIXVS	Lez (1)	2	1456 (1252)	125-145	
Carantinus	5a	33	CARANTIN ret	Lez (2)	0	1451 (1439)	150-180	
Censor	3b	15/17 or 18	OFC.EN	La Grauf (1)	1	1491 (1504)	70-90	
Cerialis	2a	33	CERI[ALLMA]	Lez (1)	0	001 (1174)	130-160	
Cetus	1a	18/31	CETVS.FE	Lez (3)	1	001 (1090)	130-150	Note 2
Chresimus	4d	37	C[HRES.SIMI]	Montans(1)	0	2389 (2495)	115-145	Note 3
Chresimus	4g	37	[CHRES.I]MI	Montans(2)	0	2389 (2547)	115-145	Note 4
Cinnamus ii	5a	37	CINNAM[I] ret	Lez (1)	0	2389 (2494)	150-180	
Cinnamus ii	5b	37	[C]INNAM[I] ret	Lez (1)	7	001 (1319)	150-180	
Cinnamus ii	5b	37	CINN[AMI] ret	Lez (1)	8	1101 (922)	150-180	
Cinnamus ii	7a	18/31	C.I[NNA]MV ret	Lez (1)	0	001 (1358)	130-155	
Cintusmus i	2b	31R	C[I]NTVSMIM	Lez (1)	0	2389 (2324)	150-180	
Cintusmus i	4e	38 or 44	[CINT]VSMF	Lez (2)	0	2344 (2299)	140-165	
Cintussa	1c	18/31 (R?)	CIN.T[VSSA]	Lez (2)	0	1316 (1324)	150-180	
Claudius Gemma	5a	18/31	OFGEM.MAE	La Grauf (2)	0	2086 (2637)	85-110	
L Cosius Virilis	12a	33a	OFLCVIRILI	La Grauf (1)	2	2344 (2302)	85-110	
Crucuro ii	5a	33	CRVC[VR]	Lez (2)	0	1450 (1283)	130-160	
Cucalus	2f	33	[C]VCALIM	Lez (1)	0	2086 (2438)	130-160	
Cuna—		31	CV[	Lez (1)?	0	2001 (2910)	early-Ant	Note 5
Dagomarus	4c	18/31	DAGOMARVS.F	Lez (1) Les Mar (2)	0	2247 (2633)	100-125	Note 6
Damonus	?	27g	DAM[	La Grauf (2)	0	667 (1559)	45-65	Note 7
Decmus ii	5a	33	DIICMI ret	Lez (2)	0	3001 (3001)	Ant	
Dexter ii	1a	37	DEXTRI	Trier (1)	0	2002 (2444)	190-240	Note 8
Donatus iii	1b'	32?	DONATVSF	Rheinz (2)	0	001 (292)	180-220	

Do(v)eccus	5a	30	DOIICCI	Lez (1)	0	2086 (2899)	170-200	
Do(v)eccus	5a	37	[DOI]CCI	Lez (1)	0	016 (1379)	170-200	
Do(v)eccus	11c	30	[DOVIICCV]S	Lez (1)	0	2038 (2621)	170-200	
Do(v)eccus	13a	30 or 37 rim	DOIICCVS	Lez (1)	0	001 (1110)	170-200	
Escusius	2a	33	ESCVSLM	Lez (1)	0	501 (186)	155-190	
Escusius	2a	33	ESCVSLM	Lez (1)	0	1474 (1436)	155-190	
Geminus?	MS	37	]VS ret	Lez (3)	0	658 (654)	125-145	
Habilis	5d	33	[HABIL]IS.F	Lez (2)	0	1450 (1459)	150-180	
Iucundus iii	5c	27g	OFIVCVN	La Grauf (1)	0	001 (1350)	65-80	
Iullinus ii	3b	38 or 44	IVLLINIM	Lez (2)	1	903 (839)	130-155	
Labio	7a	18	OF.LABE	La Grauf (1)	1	658 (1289)	65-80	Note 9
Langius i	1a	18/31 or 31	LANGIM	Lez (3)	0	2448 (2830) +2405 (2387)	130-155	
Maccalus	3a	33	MACCALIM	Lez (1)	0	1463 (1276)	160-200	
Macrianus	1a	31	MACRIANA	Lez (1)	1	963 (1429)	160-200	
Mainacnus?	?	31	[MAINA?]CNI	Lez (2)	0	1454 (1708)	160-200	
Malluro	3b	18/31 or 31	MALLV[RO.F]	Lez (2)	1	1463 (1717)	135-160	
Marcellinus i	1c/c'	18/31	MARC[ILLIN]	Les Mar (1)	0	2086 (2638)	100-125	
Marcellus iii	2g	27	MARCEL[LLIM]	Lez (2)	0	454 (1529)	140-165	
Marcellus iii	2h	27	MARCELLIM	Lez (1)	0	2389 (2307)	140-165	Note 10
Marcellus iii	6a	31	[M]ARCELLI	Lez (1)	1	403 (479)	140-165	
Marcellus iii	6a	80	MAR[CELLI]	Lez (1)	1	2010 (2489)	140-165	
Marcus v	8a	33	MA[RCII]	Lez (1)	0	874 (1433)	170-200	
Martius iv?	?	?	MA[RTIM]	Lez.	0	2001 (2784)	Ant	
Materenus	1a	18/31	MATIIRIINIF	Lez (3)	2	1462 (1300)	130-155	
Maximinus i	2a'	31R	MAXM	Lez (1)	0	903 (968)	170-200	Note 11
Mercator i	1a'	18/31	[OF]MERC	La Grauf (1)	1	2408 (2761)	85-110	
Mercussa i	4b	31	MERCVSSEM	Lez (1)	0	450 (1512)	150-180	
Miccio iii	2a	31	MI[CCIONIM]	Lez (1)	2	3048 (3182)	150-180	
Namilianus	?	?	N[	Lez (2/3)	-	917 (909)	160-200	
Paterclinus	1a	31	PATERCL[INIOF]	Lez (1)	1	191 (1224)	145-175	
Paterclinus	1a	31	PAT.....OF	Lez (1)	1	3044 (3147)	145-175	
Paterclos/us	10a	18/31	[PATERCLO]SFE	Lez (1)	0	2086 (2645)	100-125	
Paterclos/us	10a'	18/31	[P]ATERCLOSFE	Lez (1)	0	001 (1095)	100-125	Note 12
Paterclos/us	10a'	18/31	[PATERCLO]SFE	Lez (1)	0	2086 (2548)	100-125	
Paternus v	7a	37	PATRNF ret	Lez (1)	6	190 (775)	160-200	
Paternus v	7a	30	PATRNF ret	Lez (1)	7	1450 (1561)	160-200	
Paternus v	7a	37	PATRNF ret	Lez (1)	8	3015 (3330)	160-190	
Patricius i	5a	33	OFFPATRC	La Grauf (1)	0	1201 (1162)	75-190	
Peppo	2b	31(R?)	PEPPOFEC	Rheinz (1)	0	927 (905)	180-200	
Pistillus	4a	33	PISTIL[LI]	Lez (1)	2	2128 (2231)	165-180	Note 13
Pontianus ii	1a	33	[PONT]IM ret	La Grauf (1)	0	3500	70-85	
Potitianus ii	1a	33	POTI[TIANIM]	Lez (1)	0	3047 (3292)	165-200	
Priscus ii	4d	33	P[RISC.IM]	Lez (1)	1	2128 (2487)	160-200	
Priscus ii	9a	33	=PRISCVS=	Lez (2)	1	2086 (2208)	160-200	
Pugnus	2a'	33	[PVG]MIM	Lez (2)	0	3500 (3501)	135-160	Note 14
Quintus	5a	33	QVINTIM	Lez (1)	0	812 (1186)	170-200	Note 15
Reburrus ii	4m	31	REBVRRIOF	Lez (1)	0	308 (1078)	150-180	
Reburrus ii?	MS	37	RRI	Lez (1)	0	1404 (645)	140-170	
Reditus	3a	18/31R	RE[DITIM]	Lez (1)	1	468 (1550)	130-155	
Reginus ii	2a	18/31	REGINV[S.F]	Les Mar (1)	2	2247 (2632)	110-130	
Rufianus	2a	31	RV[FIANI]	Lez (1)	0	2001 (2912)	165-180	
Ruffus ii	1a	33	RVFFI.MA	Lez (3)	1	2161 (2177)	130-155	

Sacirotus	1a	18/31	SAC[IROTI.M.A.S]	Les Mar (1)	0	114 (660)	100–120	
Sacrillus	3a	31R	SACRILL.I.M	Lez (1)	0	1456 (1261)	160–200	
Samillus	2a	27	SAMILL[I.M]	Lez (1)	0	2086 (2311)	150–180	
Saturninus ii	8a	31	SA[TVRNINI]	Lez (1)	0	3001 (3334)	170–200	Note 16
Saturninus ii	8c	33	SATVRNINI	Lez (1)	0	700 (407)	170–200	
Secundianus	1a	33	SEC[VNDIANI]	Lez (1)	0	3001 (3035)	160–200	
Secundinus iv	MS	37	SECVN[ret	Lez (3)	0	815 (670)	125–150	Note 17
Sedatus iv	2c	18/31	SE[DATI.M]	Lez (1)	1	2086 (2901)	130–150	
Severianus ii	3d	31	SIIVIRIANVSF	Rheinz (1)	0	1229 (1135)	180–240	
Severus iii	7g	29	OFSEVERI	La Grauf (2)	0	1460 (1275)	65–85	
Severus v?	?	33a	IJS[	Lez?	0	1485 (1501)	Hadr–Ant	Note 18
Silvius ii	1i	18/31	SIL[VI]OF	Lez (2)	0	615 (986)	125–145	
Sulpicianus	1i	31	[S]VLPICIANI	Lez (1)	0	812 (648)	150–180	
Tasgillus ii	2a	18/31R	[TASGILL]VSF	Les Mar (1)	0	629 (1389)	100–120	
G Valerius Albanus	6a	27g	G.VAL.ALB	La Grauf (1)	0	2001 (2010)	80–105	
Venerandus	5a	80	.VENERAND.	Lez (1)	0	1242 (1147)	160–200	
Vitalis ii	1a	15/17R or 18R	OFVI[TALIS.P]	La Grauf (1)	1	2393 (2616)	65–85	Note 19
Vitalis ii	6d	18R	OFVITAL	La Grauf (1)	2	001 (1302)	75–95	
Vitalis ii	8h	33a	OFVITA	La Grauf (1)	0	002 (746)	75–95	
Vitalis viii	5c	31(R)	VITALISFC	Rheinz (1)	0	903 (113)	180–240	
Vitalis viii?	?	31	V[	Rheinz?	0	700	180–240?	

Note 1 This man's signature is known not only from La Graufesenque but also from several sites in the northwestern provinces. As GATPAS makes no sense, we assume that G(aius) At— Pas—, with the three names of a Roman citizen, was intended. He was among the latest exporters from La Graufesenque, and the initial date suggested may perhaps be too early.

Note 2 This stamp of Cetus is from the die before it was recut with ansate ends to disguise the chip out of its upper edge. We strongly suspect that he worked at Lezoux and that he is not connected with Cettus of Les Martres-de-Veyre.

Notes 3–4 Although both of the stamps are very fragmentary, there is no doubt of the identification, or that they are from different dies.

Chresimus was one of four or five late potters of Montans, exporting to Britain in the 2nd century. The distribution of their work implies some traffic up the west coast with landfalls at the Dee, Mersey, Ribble, Solway and Clyde. We may now add the Bristol Channel. For these dies 11 out of 12 and 5 out of 6 stamps respectively are from Britain.

Note 5 The best fit is with an incomplete stamp from Lezoux.

Note 6 Although Dagomarus worked at both potteries, the heavily overfired nature of this piece points to Les Martres as the source.

Note 7 It is very difficult for this stamp in DAM[to be taken as anything but one of Damonus's, especially as the style is right. Unfortunately it matches several stamps in size and lettering. Damonus's work is mainly Tiberian and Claudian, but it occurs occasionally in Neronian contexts. This must have been a survival at Caerleon.

Note 8 This is the only stamp of Dexter of Trier in Britain. It is unusual in having raised letters on a raised label. It is interesting that there is another decorated sherd of his. See nos 187 and 189.

Note 9 This is undoubtedly the latest stamp of Labio, assuming that it does indeed belong to him, as it also appears at Castleford and York.

Note 10 Either, as we have assumed, there was more than one Marcellus active at Lezoux, or there was one man who worked for an abnormally long time. Luckily the evidence for the individual dies is unusually good.

Note 11 This is the only known example of a stamp from this die after it had been broken. The original version MAXMII has been found at Cramond and in a burial at at Sompting, Sussex, with a little-worn coin of Geta as Caesar (*Britannia* 5, 1974, 205, 312). This stamp from the broken version must have been among the latest exports from Lezoux to this country; a date in the mid or late 190s is likely.

Note 12 The die for this stamp was in use for along time and became heavily worn and reduced.

Note 13 The stamp is on a domed base and the end is not impressed. It occurred in the Wroxeter Gutter Find.

Note 14 Originally stamps read PVGŪIM, but the reversed N was given another stroke and then appeared as M.

Note 15 A common stamp in the Pudding Pan Rock collections.

Note 16 Another stamp represented at Pudding Pan Rock.

Note 17 It is very difficult to sort out the various Secundini making moulds for decorated ware at Lezoux, but the one using this sort of signature was associated with Rentus, whose stamp was used on moulds signed by Secundinus.

Note 18 The tentative attribution rests on the style of lettering.

Note 19 This somewhat uncommon stamp occurs also on form 29, hence the date suggested.

THE COARSE POTTERY (FIGS 44–64) By Joyce Compton and Peter Webster

Method

The sample fully reported upon here was selected in a way which, it was hoped, would produce a body of material that was both of maximum use for site chronology and reasonably representative of the entire assemblage. All pottery recovered was washed, bagged, marked and stored by context. A preliminary assessment was then made by one of us (JC), looking at rough totals of pottery in the following categories: Black Burnished ware (BB1), oxidised wares (including Caerleon ware), greywares and finewares. Some unusual or exceptional pieces were also noted. Sample contexts were then selected from each site according to criteria determined by the site director and thus aimed primarily at elucidating site chronology. The contexts were grouped as a series of clear objectives in relation to the sites.

All pottery from the selected sample was examined by both of us and an archive report produced. After some revision in the light of discussion with the site director, this forms the basis of a pottery archive which is deposited with the general site archive. As a supplement to the sample, a range of material from contexts not already selected was examined with the object of adding to the archive only those pieces which increased our general ceramic picture of the site.

The archive list forms the basis of introductory comments in this report. Otherwise the text, which was completed in 1994, is the result of extensive editing and revision (by PW). Histograms and charts are based upon the archive lists for selected contexts only and exclude additional material from other contexts. We believe that the sample thus achieved is typical of the whole assemblage, but it must be realised that the sample is little more than a quarter of all pottery recovered and that the resultant picture can never be as revealing as that which could have been achieved by similar treatment for all contexts.

The published pottery has been deposited in the Newport Museum.

General overview*Chronology*

The site is characterised by contexts containing a high level of residual material. In this situation, the chronological picture provided by the assemblage as a whole can be very different from that provided by the published reports on individual contexts, which will inevitably concentrate on the latest pieces. To provide the necessary overview, histograms and charts have been prepared for each site and will be found in the relevant introductory sections below. Here we wish to summarise this information for the Mill Street sites as a whole.

All histograms have been prepared by the same method. Care has been taken in the archival lists to produce minimum vessel numbers for each context. Each vessel has then been ascribed a date (sometimes a broad one). Each vessel was treated as a unit and that unit divided between the decades of its date range (so that a vessel dated *c.* A.D. 80–120 counted as 0.25 in each decade). The result can be expressed in histogram form to give an approximate impression of the number of vessels from each decade present on the site. It should be emphasised that this does not tell us anything about the final date of deposition of the vessels, which on Mill Street was often some time after their initial currency. It should, however, tell us something about the intensity of occupation, although, as we shall see, the high residual content of the assemblage poses some problems here. The histogram for all vessels from the selected contexts on the Mill Street sites is given in FIG. 44.

What is immediately plain from FIG. 44 is that there is a good deal of Antonine material on the site. Comparison with the histograms for individual sites below, will show that this is due to high levels of such pottery on the Riding School Field and, more especially, the Cambria House sites. Study of the structural text and of the reports on individual contexts will show that the picture given by the histogram is not matched by a predominance of contexts which are 2nd century in deposition. In other words, much of the 2nd century pottery is residual and may, therefore, represent dumping of material from other parts of the settlement (either the fortress

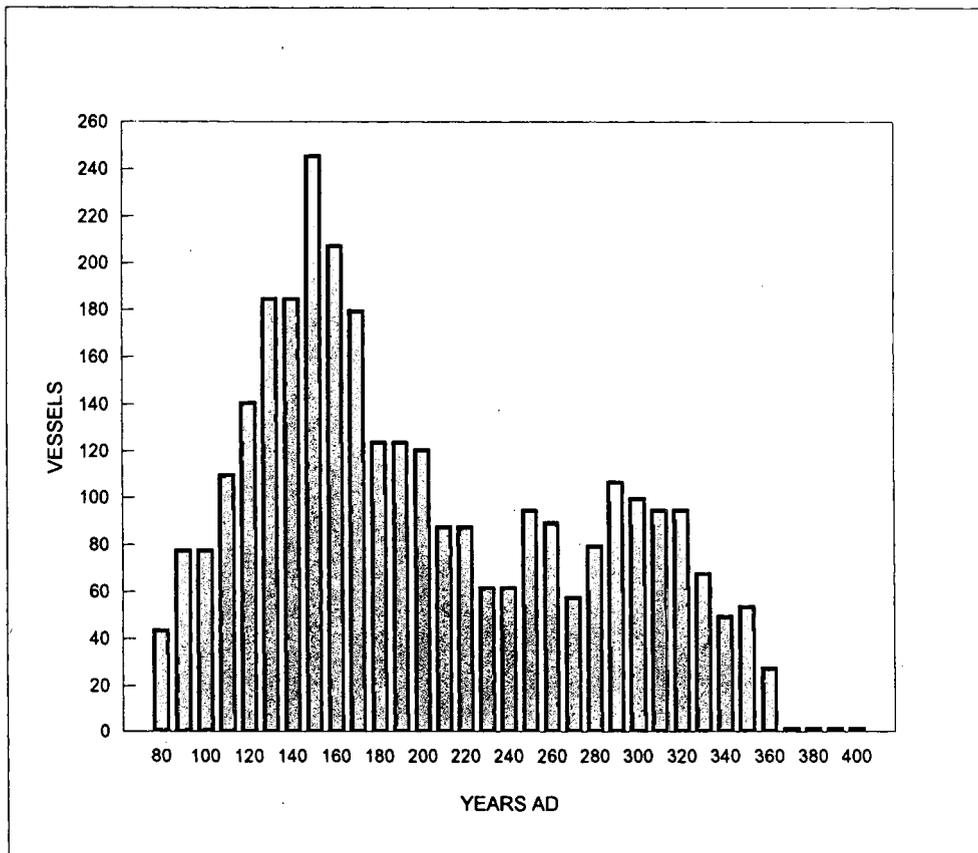


FIG. 44. Histogram of coarse pottery vessels by date: all Mill Street sites. Decades are indicated by their end dates.

proper or the civil settlement). Given the low-lying nature of the areas concerned, this should not be surprising, as extensive dumping would probably be required to make the area habitable. Such levelling material seems to have drawn extensively on parts of the fortress or its environs containing considerable 2nd century deposits. Until the source of this dumped material is apparent, it is unwise to read too much into the earlier half of the histogram. It is obviously indicative of a high level of 2nd century activity somewhere at Caerleon and we may suppose that the material has not been brought far. Whether such activity took place elsewhere in the eastern civil settlement or is a by-product of activity within the fortress or other parts of the settlement remains, at present, an open question.

The picture presented by the 'later' half of the histogram is more likely to be revealing of activity on the sites excavated. All sites seem to show variations within the 3rd century material, but this may be no more than the effect of building patterns which will vary considerably from plot to plot. What is clear is that pottery of both the 3rd and 4th century is present in some quantity and that there can be little doubt that this derives from activity on the sites concerned.

All sites show pottery dating from well into the 4th century, itself remarkable when there is so little evidence for later activity within the fortress itself. The date of abandonment of each site is discussed, where relevant, below. Here we may note a general decline in material which need be later than the early to mid 4th century. It would be surprising if any of the sites were occupied far into the third quarter of the 4th century.

Sources of pottery

The sources of pottery, other than samian, amphorae and mortaria, are examined in relation to each of the individual sites below. This information is summarised in TABLE 12.

TABLE 12: SOURCES OF COARSE POTTERY (ALL SITES)

	RdgSF	CamH	Smhdg	Allot	Total	%age
Caerleon (Cln)						
Cln ware	138	312	19	7	476	16
Cln Oxidised	52	101	11	3	167	5
Cln Tazze	12	24	3	—	39	1
Cln Glaze	2	2	1	—	5	—
Mica dust	2	—	—	—	2	—
Oxidised (prob. Cln)	99	91	26	3	219	7
Reduced (mainly local)	241	353	56	6	656	22
‘Native’	1	2	—	—	3	—
Severn Valley ware	4	5	1	—	10	—
<i>Terra Nigra</i>	5	2	1	—	8	—
‘Pompeian Red’	—	—	1	—	1	—
BB1	458	642	183	31	1314	43
<i>Verulamium</i>	3	—	1	—	4	—
Oxford CC	17	7	2	1	27	1
Köln & Nene Valley	28	18	2	1	49	2
New Forest	3	1	—	—	4	—
Central Gaul	15	5	8	2	30	1
Moselle	19	12	4	—	35	1
E. Midlands	—	1	—	—	1	—
Total	1099	1578	319	54	3050	99
Classes too small to calculate						1
TOTAL						100

A few general comments can be made concerning each of these sources:

Caerleon products and other oxidised wares. The considerable importance of Caerleon ware is immediately apparent from this table. Recent discussion of the ware (Manning 1993, 255–63; see also Webster and Webster 1998) both reviews the most common forms and advances reasons for a date *c.* A.D. 100–160/70. The relatively high percentage of the ware present on the Mill Street sites is, therefore, partly a product of the large amount of (mainly residual) 2nd century pottery. It does, however, also suggest that, within the 2nd century, Caerleon ware was an extremely important source of pottery at Caerleon. Adjustments to take account of both date range and the relative frequency of 2nd century as opposed to earlier or later pottery are difficult, but if we were to suggest that there was twice as much 2nd century pottery as earlier or later and weight the Caerleon ware accordingly but then make adjustments for the restricted date range, we could reasonably suggest that the 16% of Caerleon ware for the whole period of occupation is approximately equivalent to a third of all pottery during the 70 years of its currency. That its importance may be even higher than this is argued in the Riding School Field report below. The range of Caerleon ware forms represented are generally unexceptional. It may, however, be noted that they include imitations of the samian form 31 (no. 278 below), a form not previously noted in the Caerleon ware repertoire.

It was recognised by Wheeler that the fabric which he called ‘Legionary ware’ and which is now more generally called ‘Caerleon ware’ differed often only in its surface finish from other oxidised wares which were certainly products of the same kilns. One can, indeed, go a little further than this and suggest that very many of the oxidised wares on Caerleon sites are allied either in fabric or form to Caerleon ware and there seems little reason to doubt that Caerleon ware represents only the top end of the product range of local kilns during the Hadrianic to mid

Antonine period. Either side of this period, other local products can be recognised. Some have been isolated in TABLE 12 (glazed ware of the later 1st or early 2nd century and mica-dusted fabric which seems likely to be local). In addition we have distinguished tazze which consistently have an oxidised fabric and white slip and seem highly likely to be a product of the local industry on grounds of distribution alone. Also there are a range of distinctive jar forms (nos 360–4 below), thought by Vivien Swan to be African in derivation (Swan 1992) but which are undoubtedly local in manufacture. In view of these and other indications of a flourishing local pottery industry producing mainly oxidised wares over a period which probably extends from the later 1st to at least the early 3rd century, our quantification of oxidised ware has been built around our degree of certainty (or otherwise) as to local origin. Vessels which are allied by fabric or form to probable Caerleon products appear in the 'Caerleon oxidised' category. Those with a less certain local link appear as 'other oxidised', but this is not to say that many are not likely to be local in origin.

Reduced ware. All reduced ware not otherwise ascribed appears in this category. Some will be reduced wares produced by the Caerleon kilns. However, far more fall within the general category of 'South Wales greyware' as defined in the report on the pottery from nearby Usk (Manning 1993, 232–55). This class of pottery was probably made at a variety of potteries throughout South East Wales and is essentially the product of a local tradition separate from that of the potters whose main market was the Caerleon fortress. It seems likely that such local but non-Caerleon sources became more important for our site in the 3rd and 4th centuries after the cessation of Caerleon ware and 'Caerleon oxidised' production.

'Native' ware. The title is used in the same sense as in the report on the Usk pottery (Manning 1993, 230–2) to signify pottery in a non-Roman, Iron Age tradition. This was the native pottery of South East Wales before the Roman conquest, but it survives in use at least into the Flavian period as its appearance at such sites as the Caerleon *fabrica* (Nash-Williams 1929) demonstrates. The Mill Street sites are remarkable, not for its appearance there, but for the extremely small quantity found. This is presumably indicative of the fact that the sites have little such pottery from the earliest Caerleon phases, whether indigenous to the sites themselves or brought there later.

Severn Valley ware need not detain us long. It is represented by a few vessels only. The proportion seems low in comparison to nearby Usk and is certainly lower than at Monmouth. The reason lies probably in the nature of local pottery production. Caerleon is the only site in South East Wales where oxidised pottery was produced in any quantity. There would thus be a direct local competitor with the oxidised Severn Valley ware and it is hardly surprising that, in this situation, the Severn Valley product made little headway at Caerleon.

'Terra Nigra' and 'Pompeian Red'. Usage is as defined by Greene (1979). Vessels in the *terra nigra* tradition are commonly found in small quantities in the earlier levels at Caerleon. 'Pompeian Red' is less common but, again, likely to be fairly early. Both fabrics are likely to have been 1st century in original usage, whatever the date of their deposition on the Mill Street sites.

Black Burnished ware, Category 1 (BB1) is by far the most common pottery on all sites excavated. It can be demonstrated to have been reaching Caerleon from the 1st century onwards (Zienkiewicz 1986b, 56–7) but is likely to have been imported in quantity only from the 2nd century onwards. The high proportions present on the Mill Street sites emphasises that the assemblages are predominantly 2nd to 4th century. From the Antonine period onwards, BB1 provided cooking ware for much of Wales and western Britain and it is this pre-eminence which is reflected in the totals here. That it is quite so dominant on Mill Street may also, of course, be due to social factors; an assemblage which seems to reflect a kitchen-oriented existence with little refinement in the form of fine tableware, but this is a point which will be discussed again below.

In general, BB1 forms are exactly as one would expect, mainly jars, bowls and dishes. It is worth pointing out, however, that flagons are represented more frequently than one would generally expect from existing literature. This is most likely to be due to the fact that the form has only recently been recognised as generally available in BB1 (Wallace and Webster 1989) but the presence of some nearby flagon-using establishment (e.g. an inn) must at least be borne in mind as a possibility.

Colour-coated wares. Most of the major sources of colour-coated wares are represented but in small quantities. Colour-coated white wares from Köln and/or the Nene Valley are the most numerous, closely followed by the colour-coated products of the Central Gaulish samian ware industry and of the Moselle area ('Rhenish' wares, cf. Symonds 1992). The late industry of the New Forest is represented by only a few vessels, but this is hardly surprising as South Wales lies on the very edge of its market. Far more surprising is the low number of Oxford colour-coated products. These are well represented at Caerwent and Monmouth and are comparatively numerous even in the slight later occupation of Usk (cf. Manning 1993, 314). The only reasonable explanation would seem to lie in the nature of the later occupation of the Mill Street sites and again we are drawn to the conclusion that the social status of the inhabitants was fairly low.

Other sources. Only two other sources are detailed in TABLE 12. *Verulamium* is represented by only four vessels, all of which probably reached Caerleon as 'make-weights' in consignments of *Verulamium* mortaria. The East Midlands calcite gritted ware is of more interest than its single representative would suggest. The ware is a type-fossil for later 4th century occupation in South Wales. It tends not to be found on rural sites like Whitton, thought to have been abandoned by c. A.D. 350, but it does occur on sites occupied later. Were the Mill Street sites to have been occupied long into the second half of the 4th century, one would expect the ware to be present in small quantities. That it is there only as a single sherd (and with only one other sherd located among unpublished contexts, see no. 496 below) tends to confirm the contention made above: that the sites were demolished and abandoned in or soon after the middle of the 4th century.

Before we leave the subject of sources, it may be worth drawing attention to two which are not represented. Early finewares such as Lyon ware, despite being present in small quantities in the fortress, are missing. The rough-cast wares of North Gaul are also completely absent. This is probably due to two factors. Firstly, there is comparatively little 1st century material so that Lyon ware and early examples of the North Gaulish ware may be absent because of the small size of the available sample. Second century examples of the latter are probably absent for an entirely different reason, however. Rough-cast wares obviously modelled on the North Gaulish vessels were produced in some quantity in Caerleon ware and are present in numbers here. We may assume, therefore, that the local competition drove the technically finer, but presumably more expensive, Gaulish product out of the local market.

Social and economic implications

A number of social implications have already been touched upon above. The sources of pottery represented and their proportions present a picture of a site deficient in fineware, and tableware generally, in the 3rd and 4th century. The fact that we have large quantities of locally produced fineware (Caerleon ware) in our 2nd century deposits, merely emphasises the different nature of this, probably dumped, material. In the 3rd and 4th century, the site is unusually poor, particularly in the colour-coated redware of Oxfordshire and it is hard to escape the view that the inhabitants of the site experienced a relatively poor level of existence in the later Roman period.

The classes of vessel present on each site are summarised by site. This information is presented in TABLE 13.

TABLE 13: TYPES OF COARSE POTTERY VESSEL (ALL SITES)

	RdgSF	CamH	Smhdg	Allot	Total	%age
Flagons	48	77	14	2	141	5
Jars	480	604	149	17	1250	41
Bowls	220	353	74	19	666	22
Beakers/cups	159	205	31	5	400	13
Tazze	13	26	4	—	43	1
Dishes	137	280	44	9	470	15
Lids	32	25	2	2	61	2
Misc	10	8	1	—	19	1
Total	1099	1578	319	54	3050	100

As yet, there are relatively few sites for which comparative data are available. The information in TABLE 13 may, however, be compared with that from a later pit at Usk (Manning 1993, 360) where the proportion of tableware to kitchenware is in the region of 23% to 77%. The proportions of tableware in the Mill Street assemblage look slightly lower (about 18%) but perhaps not significantly so. The real difference is that about 10% of the Usk group was fineware. If we exclude Caerleon ware, less than 5% of the Mill Street assemblage falls into this category and this must surely reflect on the social level of the later occupation.

In terms of wider trade, the assemblage tells us little that would not be deducible from other sites in the area. The wide-ranging nature of Roman trade is very apparent from the list of sources and we can suppose that, in this, pottery merely reflects the durable remains of a much more extensive trade in commodities and consumer goods. In the 3rd and 4th centuries, the economy of Caerleon, as reflected by its ceramics, looks very similar to that of other South Wales sites. Our tables do, however, suggest that during the 2nd century this may not be so. The high numbers of locally produced pots which are 2nd century in manufacture suggest that, in this century at least, it was worthwhile producing locally primarily for the local market. It would be remarkable if it was only the potters who found such local production worthwhile and we must surely look for other evidence for this purely local economy during the legionary period at Caerleon. The pottery, at least, suggests that from the middle years of the 3rd century (at the latest) such purely local production will have all but ceased and the Caerleon civil settlement will have become just another minor part of the more general South Wales economy. In the area excavated one feels that, even in this role, it failed to attract the best goods available.

Riding School Field

Introduction

The pottery from the selected contexts from the Riding School Field consisted of fragments from a minimum of 1099 vessels. There is no reason to suppose that these are other than typical of the material from the site as a whole.

As in other parts of the excavation, phasing is on a building-by-building basis, producing units which are too small for generalisation. The material has, therefore, to be treated as a whole. Comments below are based on the archival list and encompass all vessels archivally catalogued, with the exception of a few contexts used only for checking purposes.

Chronology

All vessels from the sample listed in the archive have been ascribed a date (sometimes a very generalised one), allowing the entire assemblage to be presented as a histogram showing vessel loss per decade (FIG. 45).

Overall the chronological spread will occasion little surprise. There are a number of certainly 1st century pieces present, and there seems no reason to suppose that the site does not have material from the earliest years of the fortress. At the other end of the spectrum, there are a few pieces which probably date to the last half of the 4th century but these are rarities. Calcite-gritted ware from eastern England, usually taken as a type fossil for later 4th century activity, is notable by its absence and there seems little reason to suppose that occupation lasted beyond the middle years of the 4th century.

However, the spread of material within the overall occupation period does present some surprises. As will be seen from the structural report, most features are likely to be 3rd or 4th century in date, but this would not be apparent from the histogram with its marked mid 2nd century peak. We may suppose considerable 2nd century activity nearby, either in the fortress or on a nearby civil site, with dumping on the excavated area followed by later construction activity which disturbed and redeposited the dumped material. In one or two cases, it can be suggested that the material had actually been brought to the site to be dumped.

The considerable amount of 3rd and 4th century material is also, of course, notable, particularly in view of the decline in activity within the fortress from the late 3rd century onwards. There seems little doubt that there was considerable civilian activity on the site up to the mid 4th century.

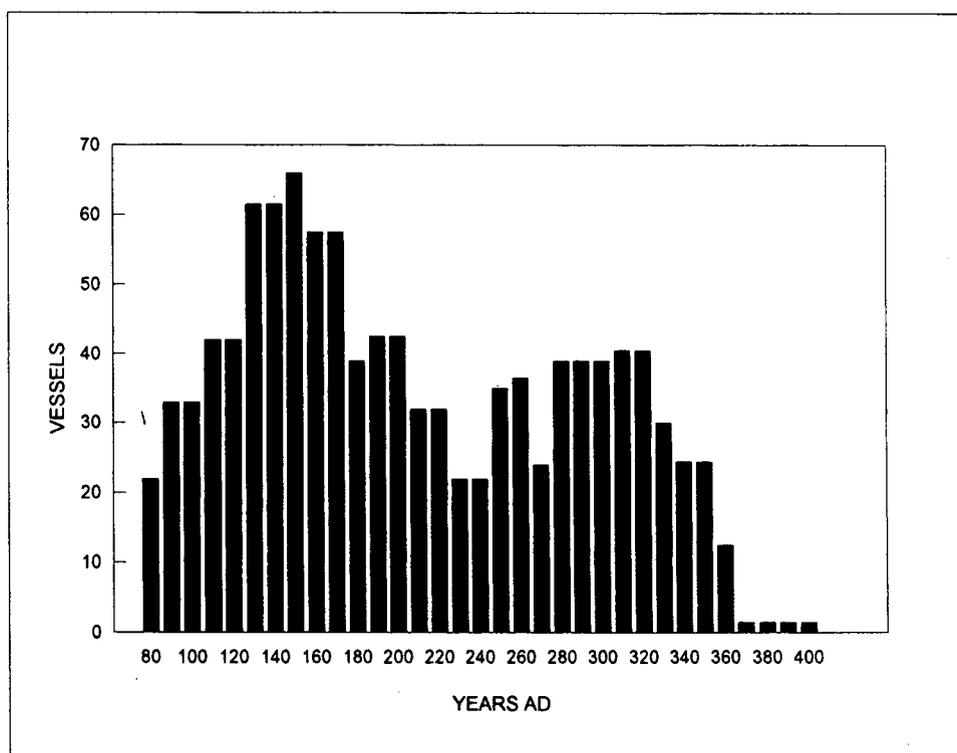


FIG. 45. Histogram of coarse pottery vessels by date: Riding School Field.

Sources of pottery

The 1099 vessels in the sample catalogued for archive purposes may be divided up as shown in TABLE 14 (sources are listed in approximate order of distance from the site).

TABLE 14 is instructive, particularly if looked at in conjunction with the histogram, FIG. 45. It is notable, for instance, that finewares, which might be expected from a Caerleon site occupied from the Flavian period to the mid 2nd century, are scarce or absent altogether. Lyon ware, never plentiful at Caerleon but typical of foundation-period sites, is absent. *Terra nigra*, another fabric found in early Caerleon contexts, is represented by only a few sherds. More surprising is the total absence of North Gaulish rough-cast ware which might be expected from the Flavian period onwards, even if from the early 2nd century it will have been eclipsed by the local Caerleon ware rough-cast beakers which are certainly present in some numbers.

Local sources clearly supplied sizeable portions of the market. The amount of Caerleon ware present is notable (13% of all vessels), particularly when it is borne in mind that this represents ware used only in the period A.D. 110–170 at the most. With adjustments for the length of period and also for the greater amount of 2nd century material compared with that from other periods, a rough calculation suggests that Caerleon ware must have made up more than 50% of all pottery in use on or near the site in the Hadrianic-Antonine period.

If we suppose that most of the undifferentiated oxidised and reduced wares are from local sources, either near Caerleon itself or among the potteries of southeast Wales, then we can see that Caerleon, other local sources and the Black Burnished ware industry account for by far the greater part of the pottery found. The fineware sources (other than Caerleon itself), although notable in their number, are comparatively insignificant in percentage terms.

Among the later 2nd century and later finewares, most sources are represented but it is noticeable that Oxfordshire colour-coated ware, a common feature of most 3rd and 4th century sites in South Wales, is poorly represented. Overall, the impression is of a site with access to the full range of wares but with a bias towards kitchen ware.

TABLE 14: RIDING SCHOOL FIELD, SOURCES OF COARSE POTTERY

Ware/source	Number	%age of all vessels
Caerleon (Cln)		
Cln ware	138	13
Cln tazze	12	1
Cln oxidised	52	5
Cln glazed	2	—
Mica dusted	2	—
Other oxidised (mainly local)	99	9
Reduced (mainly Cln or S. Wales) 'Native'	241	22
	1	—
Severn Valley	4	—
<i>Terra Nigra</i>	5	—
BB1	458	42
<i>Verulamium</i>	3	—
Oxford	17	2
Köln/Nene Valley	28	3
New Forest	3	—
C. Gaul	15	1
Moselle	19	2
Total	1099	100

Function

On a site where there has been considerable disturbance of deposits within the Roman period, and where it seems unwise to attempt division by overall phase, comments on function and its corollary, social aspects of the site, must be limited. The classes of vessel present on the site as a whole (based on the sample catalogued) is as shown in TABLE 15.

TABLE 15: RIDING SCHOOL FIELD: TYPES OF COARSE POTTERY VESSEL

Vessel Class	Number	%age of all vessels
Flagons	48	4
Handled jars/jugs	15	1
Jars	465	42
Bowls	220	20
Beakers/cups	159	14
Tazze	13	1
Dishes	137	13
Lids	32	3
Miscellaneous	10	1
Total	1099	99

Overall, this list bears out the bias towards kitchen wares already noted. The totals for flagons and beakers is comparatively low and a relatively mundane assemblage, at least for Caerleon, may be supposed. In passing it may be noted that the 'Miscellaneous' category encompassed a 'Castor box', four triple vases, a strainer, two 'unguent jars', a possible ceramic pipe and a possible curfew, sufficient to emphasise that, whatever its bias, the assemblage also indicates a wide range of uses for ceramics at Caerleon.

Catalogue**Main sedimentary sequences** (see pp.23–34)*Phase 2*

Context 1485 (SG4)

1. [304] (1437) Small 'unguent jar' in light pink-buff fabric with a light red core, probably local in manufacture.

Context 1489 (SG4)

2. [305] Flanged bowl in Black Burnished ware.
3. [306] Flagon in Caerleon ware.
4. [307] Indented rough-cast beaker in orange fabric with a red-brown slip; Caerleon ware, probably burnt.
5. [308] Beaker in off-white to light red fabric with a dark grey-brown colour-coat; probably burnt. Köln fabric, and from a beaker as Anderson 1981, fig. 19.2, no. 10 (2nd century).

Context 1488 (SG4)

6. Highly fired light grey jar, probably 1st century. (Not illustrated.)

Context 1494 (SG4)

7. Black Burnished ware: flanged bowl, 2nd century. (Not illustrated.)

Context 1105 (SG4)

8. [303] Jar in Black Burnished ware, probably Gillam 1976, no. 4 (late 2nd century).

Comments on dating follow phase 3 below.

Phase 3

Context 1450 (SG8)

9. [309] Jar in Black Burnished ware, sooted on the rim, Gillam 1976, no. 3 (late 2nd century).
10. [310] Jar in Black Burnished ware, Gillam 1976, no. 4 (late 2nd century).
11. [311] Jar in Black Burnished ware, Gillam 1976, no. 5 (late 2nd to early 3rd century).
12. [312] Jar in Black Burnished ware, burnt light brown, Gillam 1970, no. 132, mid 2nd to early 3rd century.
13. [313] Jar in Black Burnished ware, Gillam 1976, no. 12 (early 4th century). With at least one other vessel of the same general type.
14. [314] Jar in Black Burnished ware. There appears to be a wavy line on the rim, suggesting that this is a slightly unusual version of Gillam 1976, no. 3 (late 2nd century).
15. [315] Jar in Black Burnished ware, probably from a vessel as Gillam 1976, no. 11 (late 3rd to early 4th century).
16. [316] Flanged bowl in Black Burnished ware, Gillam 1976, nos 39 and 41 (mid to late 2nd century).
17. [317] Flanged dish in Black Burnished ware, Gillam 1976, no. 62 (mid 2nd century).
18. [318] Flanged and grooved dish in Black Burnished ware. Grooved dishes are unusual, but the phenomenon appears on flanged bowls of the late 2nd century, and such a date would be suitable for our piece.
19. [319] Dish in Black Burnished ware, with a slight bead.
20. [320] Dish in Black Burnished ware.
21. [321] Dish in Black Burnished ware, with intersecting arc decoration, as Gillam 1976 no. 77 (late 2nd to early 3rd century). One of two examples.
22. [322] Jar in light grey fabric, cf. Usk greyware series Manning 1993, fig. 107, type 6 (probably 2nd to 3rd century). With one similar vessel.
23. [323] Jar in light grey fabric, cf. Usk greyware series Manning 1993, figs 107–8, types 7.3 and 8.2 (probably 2nd century).
24. [324] Jar in light grey fabric.

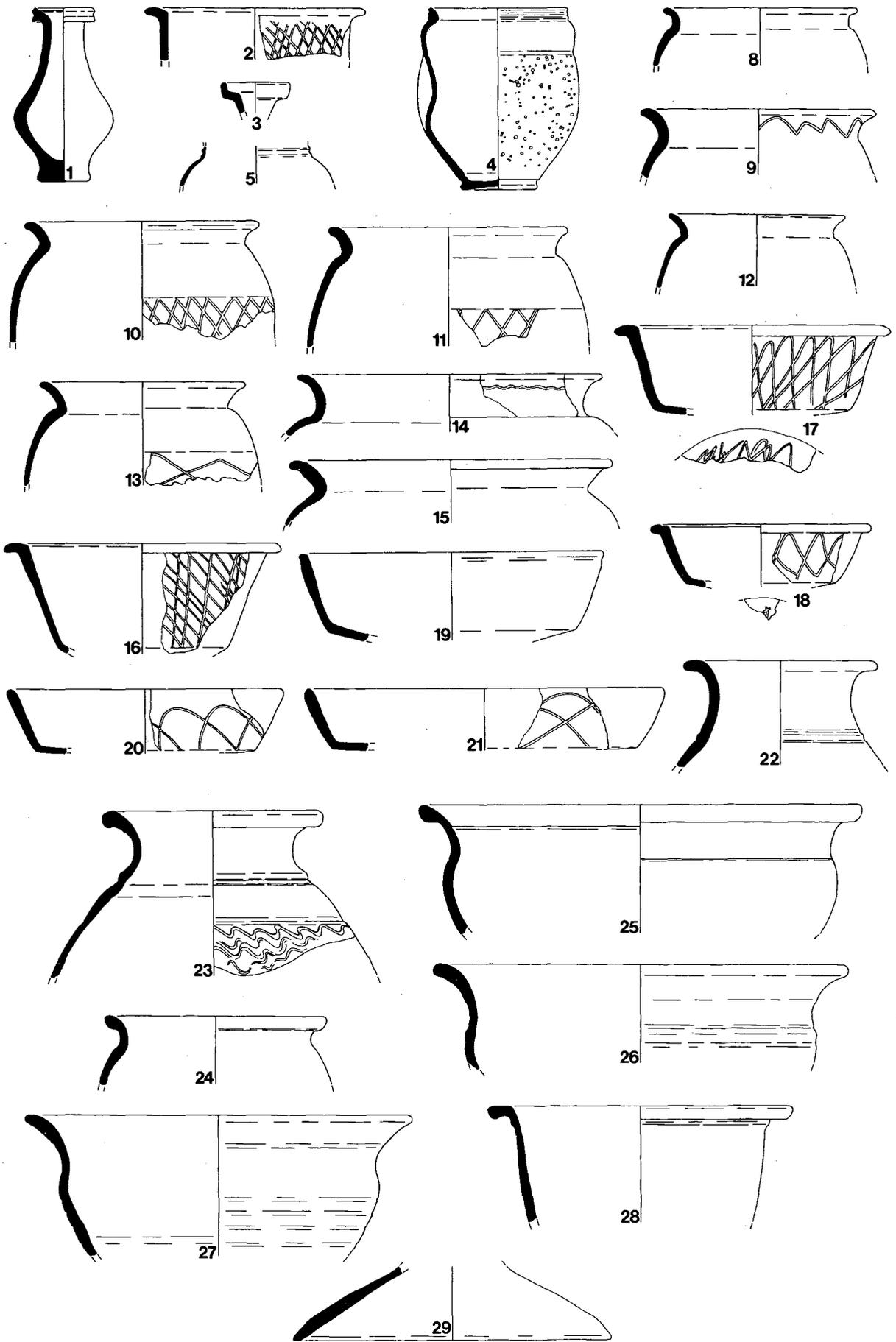


FIG. 46. Coarse pottery, Riding School Field nos 1-29. Scale 1:4.

25. [325] Wide-mouthed jar in light grey fabric with darker surface, cf. Usk greyware series Manning 1993, fig. 112, 40.5 (2nd to 3rd century).
26. [326] Wide-mouthed jar in light grey fabric with traces of a darker surface, cf. Usk greyware series Manning 1993, fig. 112, 43.1 (probably 3rd to 4th century).
27. [327] Wide-mouthed jar in light grey fabric with a darker surface. The vestigial shoulder and flaring rim may indicate a later piece.
28. [328] Flanged bowl in light grey fabric with a darker surface, probably one of the Flavian/Trajanic flanged and carinated series.
29. [329] Lid in light grey fabric. There is a resemblance to Black Burnished ware lids and this vessel too shows evidence of burnishing.

Context 1450 contained a range of flagons, which it seems worthwhile to illustrate as typical of the site.

30. [330] Ring-necked flagon in sandy grey fabric with a light orange external surface. Perhaps a local version of early to mid 2nd century ring-necked flagons.
31. [331] Flagon in light orange-buff fabric. This combines the standard ring-necked flagon with a type often found in Caerleon ware; and a 2nd century date seems likely.
32. [332] Flagon in light red-buff fabric, darkened by fire externally. Probably allied to the Caerleon ware series nos 36–7 below.

Nos 33 to 37 are all probably Caerleon ware vessels, although 33 and 36 are so worn as to have lost their slip.

33. [333] Flagon, probably Caerleon ware.
34. [334] Flagon in Caerleon ware, cf. Usk Caerleon series Manning 1993, fig. 118, 1.4. With a fragment from a similar vessel.
35. [335] Flagon in Caerleon ware.
36. [336] Flagon, probably in Caerleon ware, cf. Fortress Baths (Zienkiewicz 1986b) group 17 nos 107 and 110.
37. [337] Flagon in Caerleon ware, cf. Nash-Williams 1932b, no. 110.
38. [338] Jar in Caerleon ware. A vessel from the Principia (Boon 1970, no. 8) appears to be related (Antonine).
39. [339] Upper portion and base, probably from two separate tazze, in light orange fabric with a white slip. The base shows evidence of burning in the bowl interior. Note the similarity of the base pedestal to an inverted flagon neck. With fragments of at least two other tazze.
40. [340] Flanged bowl in Caerleon ware, perhaps a descendant of the Usk Fortress series Manning 1993, fig. 6, form 22.
41. [341] Flagon or jar in light orange fabric, possibly Caerleon ware.
42. [342] Shallow bowl in light orange fabric, abraded but possibly originally Caerleon ware. The flange at the junction of wall and floor is badly damaged, but a vessel similar to an East Gaulish samian form; Oswald and Pryce 1920, pl. lxxv, no. 3, seems possible (Antonine).
43. [343] Dish in sandy pink-buff fabric.
44. [344] Lid in orange fabric, possibly abraded Caerleon ware.
45. [345] (1704) Triple vase fragment in Caerleon ware.

Context 1491 (SG8)

46. [346] *Terra nigra* bowl as Greene 1979, fig. 46.

Context 1498 (SG8)

47. [347] Jar in grey-fawn fabric with a light grey core.

Nos 48 and 49 are both in a cream fabric with inclusions of quartz, stone and perhaps ground clay. The fabric has not been noted elsewhere on the site.

48. [348] Flanged bowl with a wavy line decoration on the rim. One of the Flavian/Trajanic flanged and carinated bowl series.
49. [349] Flanged bowl in cream fabric with an orange and cream-grey core. One of the Flavian/Trajanic flanged bowl series.

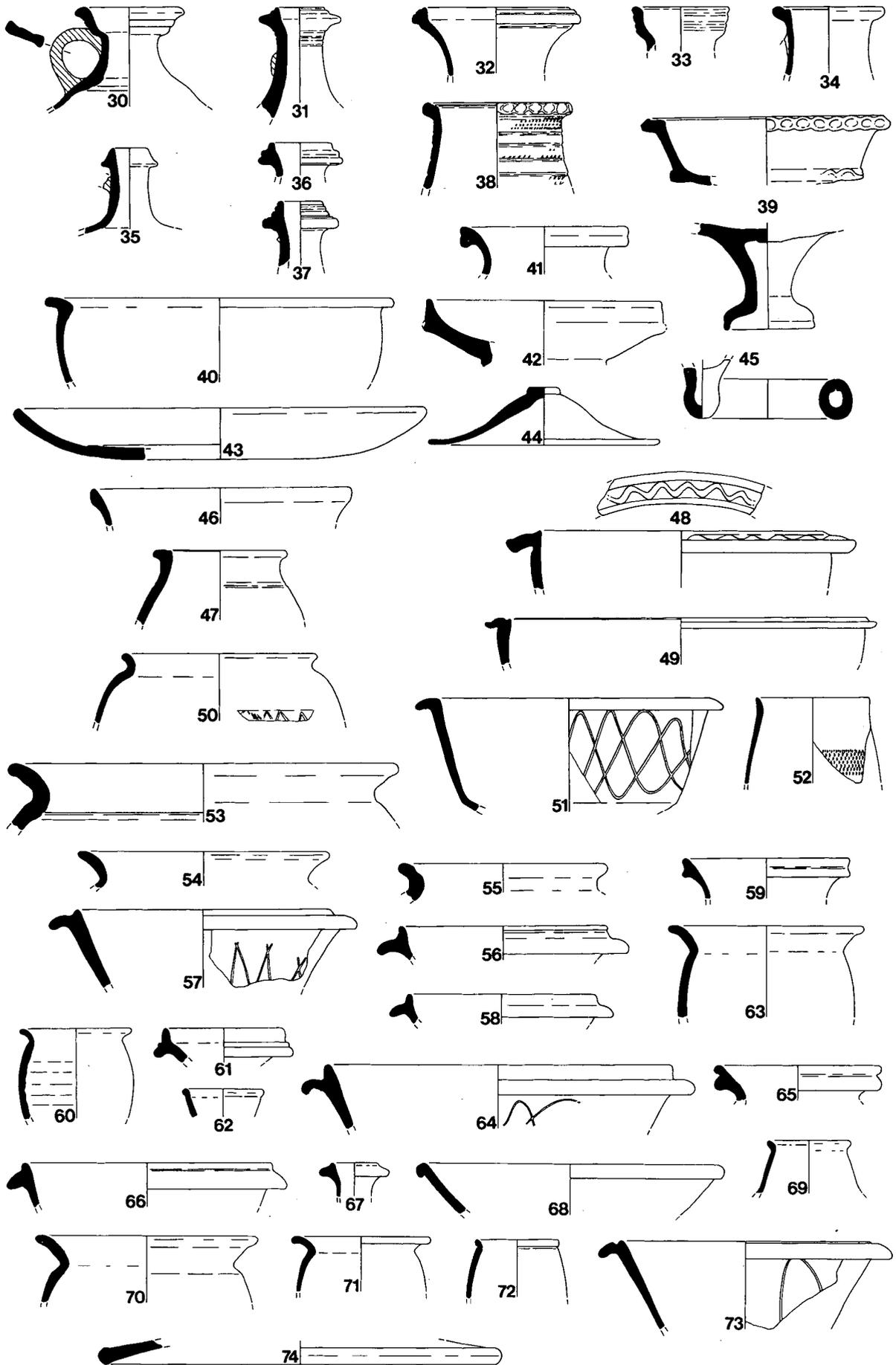


FIG. 47. Coarse pottery, Riding School Field nos 30-74. Scale 1:4.

Context 1498 seems anomalous and could represent later 1st century activity.

Context 112 (SG10)

50. [301] Jar in Black Burnished ware, Gillam 1976, no. 30 (early to mid 2nd century).
 51. [302] Bowl in Black Burnished ware, Gillam 1976, no. 39 (mid to late 2nd century).

Discussion

The lower deposits (phase 2 above) contain relatively little material, but such as there is appears to be 2nd century in date. The upper deposits (phase 3 above) are dominated ceramically by the large deposit, 1450, with its plentiful late 2nd and early 3rd century material, but with some late 3rd/early 4th century pieces.

Main north–south road deposits (see pp.38–47)

Deposits pre-dating the construction of the road

Context 174 (SG7)

A fragmentary BB1 bowl which appears originally to have been flanged and grooved was found with:

52. [382] Beaker in a light orange-buff fabric with rouletted decoration, probably local in manufacture

Phase 1

Context 472 (SG20) included a sherd of greyware jar with acute-angled lattice decoration. If following fashions in Black Burnished ware, it should be 2nd century.

Phase 2

Context 468 (SG22)

53. [383] A large jar in Black Burnished ware, Gillam 1976, nos 11–12 (late 3rd to early 4th century).

Phase 3

Context 452 (SG27) contained 2nd to mid 3rd century Black Burnished ware and:

54. [384] Jar in light grey fabric, probably from a vessel imitating 3rd to 4th century Black Burnished ware forms, cf. Caldicot (Barnett *et al.* 1990) nos 16–23 and 27 (mid 3rd to mid 4th century).

Phase 4

Context 450 (SG29) included a range of Black Burnished ware of 2nd to early 4th century date: Gillam 1976, no. 18; a small version of *ibid.*, no. 9; *ibid.*, nos 12 and 42/43, along with two 2nd century flanged dishes and a plain dish. Also:

55. [385] Jar in mid grey fabric with a dark surface. There is a groove for a lid.
 56. [386] Flanged bowl in a light orange fabric, probably originally with a red colour-coat and Caerleon ware. A derivative of the samian form Curle 11 is possible, but the samian original had no bead on the rim, so a connection with form Dr 38 (a predominantly Antonine form) is possible.

Fineware included a fragment of Nene Valley ware, probably from a large beaker, and part of a rouletted beaker, probably Oxford ware, *c.* A.D. 240–400.

Context 913 (SG29)

57. [387] Flanged and ridged bowl in Black Burnished ware, cf. Gillam 1976, no. 45 (late 3rd century).
 58. [388] Flanged and ridged bowl in reddish-grey fabric with a grey surface, clearly derived from late 3rd to 4th century Black Burnished ware bowls and presumably of a similar date.

Phase 5

Context 846 (SG35) contained Black Burnished ware including: fragments of probably seven jars with

very flared rims, probably of 4th century date; Gillam 1976, no. 12 (early 4th century); a small example of *ibid.* no. 11 (late 3rd to early 4th century); *ibid.* no. 46 (late 3rd to early 4th century). Also:

59. [389] Jar in light grey fabric, cf. Usk greyware series Manning 1993, fig. 108, type 10.2 (3rd to 4th century).
60. [390] Jar in light grey fabric, burnt externally. Possibly a smaller version of a type found at the Llanedeyrn kilns, Vyner and Evans 1978, nos 4 and 5 (?late 3rd century).
61. [391] Flagon in reddish-grey fabric with a grey core and traces of a white slip. The rim form is allied to the Caerleon ware form, Nash-Williams 1932b, no. 110, but the fabric could be earlier, see Zienkiewicz 1992a, 94, for white-slipped Caerleon ware, most of 1st century date.
62. [392] Rim, probably of a flagon, in off-white fabric containing a fine sandy filler, burnt on the rim. Probably a small flagon from the *Verulamium* region, perhaps a small version of Frere 1972, 275 no. 115 (Flavian).

Context 951 (SG35)

63. [393] Jar in Black Burnished ware, Gillam 1976, no. 14 (mid 4th century).
64. [394] Flanged and ridged bowl in Black Burnished ware, burnt light brown, Gillam 1976, no. 48 (early to mid 4th century).

Fineware included six fragments of beaker in Nene Valley ware with rouletting, probably from a beaker of the series Howe *et al.* 1980, nos 55–7 (4th century).

65. [395] Jar in light to mid grey fabric, perhaps a more developed version of no. 59.
66. [396] Flanged and ridged bowl in light grey fabric with a stained grey-brown surface, presumably derived from the late 3rd to 4th century Black Burnished ware series.
67. [397] Flagon neck in grey fabric with a grey-brown colour-coat, probably a New Forest product as Fulford 1975, type 2.2.
68. [398] Bowl in a light brown fabric with a greyish core and evidence of an orange slip. An Oxfordshire product, Young 1977, C44 (c. A.D. 270–350).

Context 914 (SG35)

Black Burnished ware included Gillam 1976, nos 12–14 (early to mid 4th century); a flanged and ridged bowl; there was also:

69. [400] Beaker in light orange fabric with dark red-brown colour-coat and slight evidence of rouletting. Probably from a beaker such as Young 1977 C23 (late 3rd to 4th century).

Context 1257 (SG36)

70. [401] Jar in Black Burnished ware, Gillam 1976, nos 12–13 (early to mid 4th century).

Context 1454 (no SG: not well stratified)

71. [399] Jar in Black Burnished ware. The rim resembles typologically late vessels such as Lydney (Wheeler and Wheeler 1932), no. 56, and could be mid to late 4th century.

Discussion

The upper levels of the main north–south road (phase 5) are almost certainly 4th century and include some of the latest types from the site.

Phase 5 would seem to be early to mid 4th century at the earliest, and could easily be mid 4th century. The presence of Oxford colour-coated ware, so sparsely represented elsewhere, may be noted. Phases 2–4 all contain material which should be late 3rd century or later, and a late 3rd to early 4th century date can be suggested for them as a whole. Phase 1 and the pre-road deposits contain little material. If the Black Burnished ware vessel from the latter (SG7; noted but not illustrated) is indeed a flanged and grooved bowl, as it appears, then the construction of the road probably fits within the 3rd century. But the vessel rim is incomplete and the identification far from certain. Such a dating would however produce a sequence not unlike that elsewhere on the Riding School Field, where activity in the 3rd and 4th centuries involves disturbance or redeposition of 1st and 2nd century material.

Building 12 and associated deposits (see pp.103–22)*Phase 1*

The key pieces for dating Phase 1 are scattered through several contexts. Material described under Phase 1 of Building 12 needs to be considered along with material from the yard, see below.

Phase 1: construction

All the contexts include plentiful fragments of 2nd century pottery broadly similar to that from the sedimentary sequences above. Details will be found in the archive catalogue; here, only later and intrinsically interesting pieces are noted.

Context 874 (SG104) included a Black Burnished ware jar of Gillam 1976 type 7 (early to mid 3rd century). Context 1472 (SG104) included a BB1 jar sherd with what appears to be obtuse-angled lattice (a later feature of the class).

Phase 1: internal deposits

Context 881 (SG106)

72. [420] Beaker in light orange-buff fabric with a grey core; probably originally with a red colour-coat and thus Caerleon ware.

Context 894 (SG106) included the following Black Burnished ware vessels: a jar, Gillam 1976, no. 6 (early 3rd century); a small jar which is apparently a small version of *ibid.* no. 11 (early 4th century); and a bowl with a broken flange which appears to be one of the series *ibid.* nos 42–4, and thus late 2nd to late 3rd century.

Context 1402 (SG107)

73. [419] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 43 (early to mid 3rd century).

Discussion

Building 12 Phase 1 is stratigraphically later than the main sedimentary sequence, although much of the material from phase 1 is broadly similar to that from the latter. It seems likely, however, that the later pieces illustrated above, taken with those from the yard (below qv) should date the phase.

Phase 2: Room 12.1

Context 851 (SG 114) included the following Black Burnished ware: a jar, Gillam 1976, no. 8/9 (mid to late 3rd century); and a very large example of *ibid.* no. 10/12 (late 3rd to early 4th century). Also:

74. [478] Lid in sandy orange-red fabric. The fabric is similar to that used for the distinctive jars nos 360–4 at Cambria House below and this may be part of the same set.
75. [479] Rough-cast beaker in white fabric with a dark grey-brown colour-coat, probably a Köln product, cf. Anderson 1981, fig. 19.1, no. 5. Anderson dates these vessels to the late 1st to early 2nd century.
76. [480] Jar or large beaker in orange fabric with a grey core and a dark grey-brown colour-coat decorated with a rouletted line and barbotine scroll; source unknown.

Phase 2: Room 12.5

Context 812 (SG112)

77. [458] Jar in Black Burnished ware, burnt light grey, Gillam 1976, no. 11 (late 3rd to early 4th century). With seven vessels of the same type.
78. [459] Jar in Black Burnished ware, Gillam 1976, no. 12 (early 4th century), with three similar vessels. Two other vessels with very flared rims could be later.

Fragments of approximately ten plain dishes included 79–80:

79. [460] Dish in Black Burnished ware, burnt light grey in places and with a decoration of intersecting chevrons.

80. [461] Dish in Black Burnished ware with intersecting arc decoration.
81. [462] Flanged bowl in Black Burnished ware, late 3rd century or later.
82. [463] Flanged and ridged bowl in Black Burnished ware. Typologically this should be later in the series, and a mid to late 4th century date is suggested.
83. [464] Flanged and ridged bowl in grey fabric, burnt. A local version of no. 82 and presumably of similar date.
84. [464a] Jar in light grey fabric imitating late 3rd to 4th century Black Burnished ware forms.
85. [465] Jar in light grey fabric. Caldicot, Barnett *et al.* 1990, no. 14, has similarities.
86. [466] Wide-mouthed jar in light grey fabric with traces of a darker surface, cf. Caldicot, Barnett *et al.* 1990, no. 25 (probably 3rd century).
87. [467] Bowl in a fabric which is probably burnt Black Burnished ware. A vessel derived from the Late Iron Age 'war cemetery' bowl seems most likely. First century.
88. [467a] Non-joining base, apparently from no. 87. Similar 'early Black Burnished ware' sherds come from contexts 001, 002 (topsoil), 016=806 (SG122), 700 (SG183), 805=831 (SG124), 845 (SG123), 927 (SG53) and 1031 (SG144)
89. [468] Flagon in grey fabric with an orange surface and traces of a red slip, derived from the more common 3rd to 4th century Oxford ware flagons, but more probably a product of the local greyware industry.
90. [469] Jar in light orange, slightly sandy fabric.
91. [470] Jar in light orange-buff sandy fabric. One of the series represented by nos 360–4 at Cambria House (see below).
92. [471] A similar jar to no. 91.
93. [472] Beaker in fawn-grey fabric with a dark grey-brown colour-coat. Probably a Moselle product, as Gose 1984, type 209 (first half of the 3rd century); Symonds 1992, Group 35.
94. [473] Beaker in grey fabric with a dark grey colour-coat. Probably a New Forest product, cf. Fulford 1975 type 27 (*c.* A.D. 270–400).
95. [474] Large beaker in Nene Valley fabric with a grey-brown colour-coat, probably from a vessel as Howe *et al.* 1980, nos 49–52 (3rd to 4th century).

Phase 2: Room 12.7

Context 885 (SG113): wall between Rooms 12.1 and 12.7

96. [435] Jar in Black Burnished ware, probably from a vessel as Gillam 1976, no. 8 (mid 3rd century), although a later date is possible.
97. [436] Small flagon neck in sandy orange fabric with a buff surface and traces of a white colour-coat.

Context 815 (SG116)

98. [475] Lid in a sandy fabric, varying in colour from light grey to pink.
99. [476] Flagon in buff fabric with a grey core. Probably two-handled. One of the series represented by Nash-Williams 1929, 129, nos 42–6 (1st or 2nd century).

Context 841 (SG116)

100. [477] Jar in Black Burnished ware, similar to Gillam 1976, no. 10, but the rim seems more flared. Perhaps early 4th century.

Phase 2: Room 12.8

Context 835 (SG117)

101. [437] Jar in Black Burnished ware, burnt orange externally, cf. Gillam 1976, nos 10–11, late 3rd to early 4th century.
102. [438] Jar in mid grey sandy fabric. A vessel intended to be reminiscent of late 3rd to 4th century Black Burnished ware types is possible.
103. [439] Lid in mid grey fabric.
104. [440] Bead-rimmed jar in buff sandy fabric. A large storage jar seems possible.
105. [441] Handled jar in smooth light buff fabric. The beaded rim may imply the fastened lid of a container.

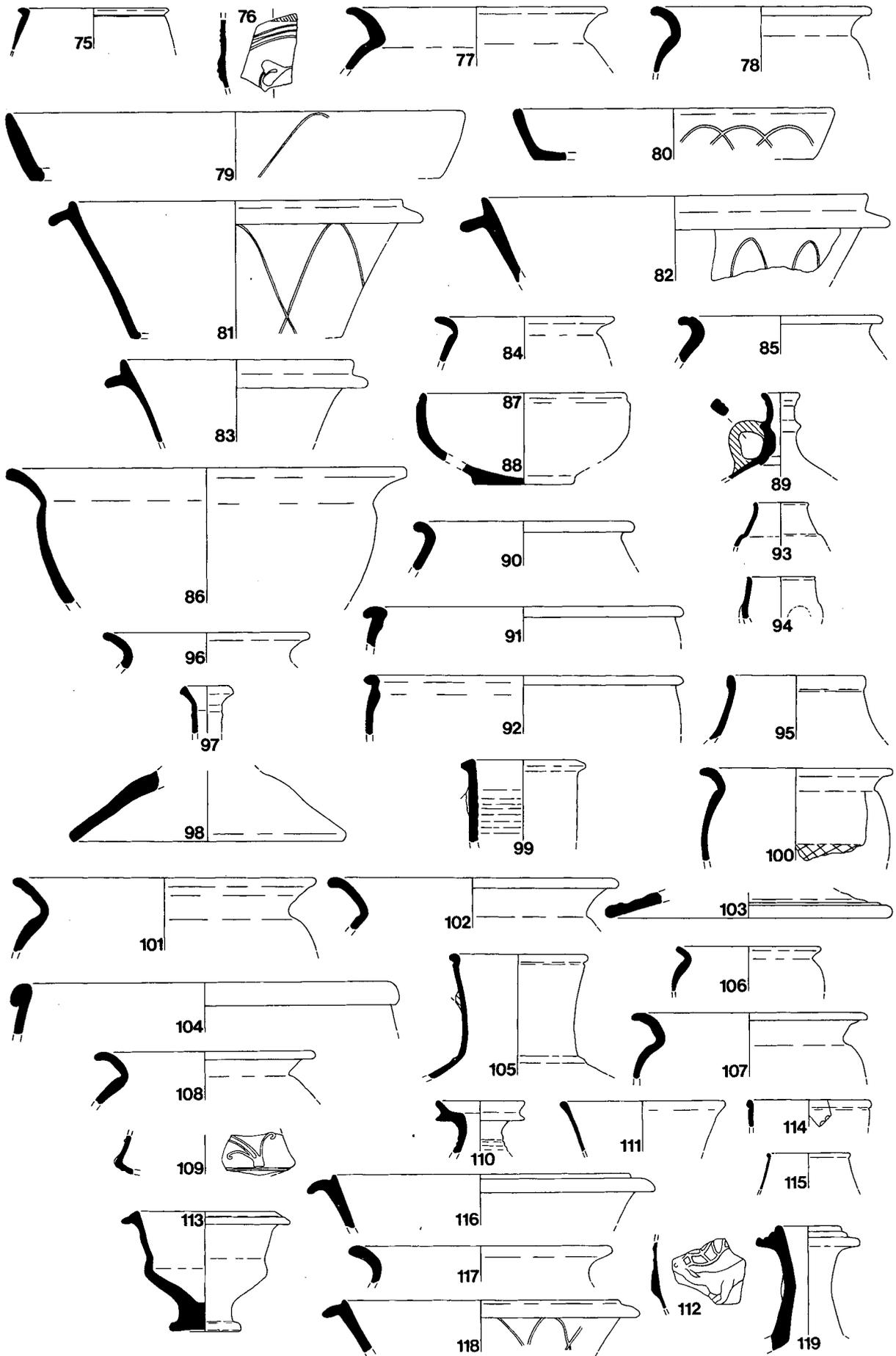


FIG. 48. Coarse pottery, Riding School Field nos 75-119. Scale 1:4.

106. [442] Everted-rimmed jar in sandy pink-buff fabric. The form seems more likely to be imitating 3rd century Black Burnished forms, such as Gillam 1976, no. 9, than to be one of the more common 1st to 2nd century series.

Discussion

Viewed as a whole, the material from phase 2 is predominantly mid 3rd to mid 4th century in date.

Phase 3: Room 12.7

Context 827 (SG118) included Black Burnished ware of Gillam 1976, type 10/12 (early to mid 4th century) and:

107. [481] Jar in Black Burnished ware; a developed form of Gillam 1976, no. 9, and perhaps late 3rd to early 4th century in date.
 108. [482] Jar in Black Burnished ware; cf. Lydney (Wheeler and Wheeler 1932) no. 55. Perhaps mid 4th century.
 109. [483] Cup in light pink-buff fabric with a dark grey-black colour-coat. A Lezoux product, cf. Greene 1978, fig. 2.3, no. 8 (mid to late 2nd century); Symonds 1992, Group 7.

Context 829 (SG118) included a Black Burnished ware flanged and grooved bowl (3rd century) and a jar of Gillam 1976 type 10/11 (late 3rd to early 4th century).

Phase 3: Room 12.9

Context 824 (SG119) included a Black Burnished ware jar of late 3rd to 4th century date and an example of the jar class illustrated by nos 360–4 below.

Discussion

The material from Phase 3 is broadly similar to that from Phase 2. It would be surprising if the phase was later than the mid 4th century and, in view of the dating for Phase 4, an early to mid 4th century date is preferred.

Phase 3/4

Contexts 809 and 806 apparently started to accumulate in phase 3 and continued to do so in phase 4.

Context 809 (SG120) included Black Burnished ware, the latest piece of which was of Gillam 1976, no. 11 (late 3rd to early 4th century). Also:

110. [484] Flagon in sandy orange fabric with a grey core. There are traces of a white slip.
 111. [485] ?Cup in light orange fabric.
 112. [486] Fragment of Hunt cup in cream fabric with a brown colour-coat. A Nene Valley product.

Context 806 (SG122) included Black Burnished ware as follows: two jars, Gillam 1976, nos 10/11 (late 3rd to early 4th century); a jar *ibid.* no. 12 (early 4th century); two bowls of *ibid.* nos 47–9 (early to mid 4th century). Also present was a jar of Caldicot (Barnett *et al.* 1990) types 16–23.

Phase 4

Context 814 (SG125) included fragments of Black Burnished ware jar (?or jars) cf. Gillam 1976, type 10–12 (late 3rd to early 4th century). Also:

113. [487] Bowl in orange-buff fabric with quartz, stone and ?clay filler and with traces of white slip. The fabric and slip ally this piece with the Caerleon tazze. A cantharus is possible.
 114. [483a] Rim of a Lezoux cup, similar to no. 109, but from a later phase.

Discussion

Phases 3/4 and 4 produced relatively little material when compared with phase 3, but what there was certainly carried the date of the site no later. It remains possible that we lack the truly diagnostic pieces

from these phases, but it seems more likely that they too should be placed in the early/mid or early/mid to mid 4th century.

Associated yard and ditch

Pre-dating construction of Room 12.5

Context 1267 (SG108)

115. [446] Beaker in light red fabric with a dark grey-brown colour-coat. A Lezoux product, possibly as Gillam 1970, no. 45.

Context 1400 (SG108)

116. [447] Flanged and ridged bowl in Black Burnished ware. The type emerged in the late 3rd century, and a late 3rd to early 4th century date would seem appropriate.
117. [448] Jar in a dark grey fabric. The flaring rim is characteristic of late vessels.

Context 1403 (SG108)

118. [449] Flanged and ridged bowl in Black Burnished ware. The type is intermediate between Gillam 1976, nos 44 and 45, and is probably late 3rd century.
119. [450] Flagon in orange-buff fabric showing some evidence of damage before or during firing. The type should perhaps be placed at the end of the series represented by nos 260–5 below.

Context 848 (SG109)

120. [443] Jar in light grey fabric with a burnt rim. The rim is damaged but probably not enough to be a 'second'. Probably an imitation in local greyware of a 3rd to 4th century Black Burnished ware form.
121. [444] Bowl in orange-buff fabric with traces of an orange-red colour-coat. Oxford ware, Young 1977, C44 (c. A.D. 270–350).

Context 858 (SG109) included 2nd century items. Context 1216 (SG110) included the rim of a Black Burnished ware jar of Gillam 1976, type 10/12 (late 3rd to early 4th century) and:

122. [422] Jar in Black Burnished ware, Gillam 1976, no. 8 (mid 3rd century).
123. [423] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 44 (mid to late 3rd century).
124. [424] Jar in light grey sandy fabric. The general type is discussed under Usk South Wales greyware Manning 1993, 237, type 10. Most examples are 3rd or 4th century, but a few may be earlier.
125. [425] Jar in sandy fabric, now grey to pink but perhaps originally grey, cf. Usk greyware series Manning 1993, figs 109–10, type 22 (3rd century).
126. [426] Flagon in light grey fabric with a red surface and traces of a white slip. The general type appears most commonly in colour-coated fabrics in the 4th century, cf. Howe *et al.* 1980, no. 67, and Fulford 1975, type 11. However the dating of Oxford ware colour-coated vessels of this type would suggest that the form emerged by the mid 3rd century, cf. Young 1977, type C8. Despite the general absence of Oxford wares on the Mill Street sites, it is the most common colour-coat in South Wales and therefore the most likely to be imitated.

Context 1277 (SG110)

127. [427] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 42 (late 2nd to 3rd century).
128. [428] Flanged bowl in orange fabric with an orange-buff surface and a pink core. A variant of imitations of samian form Curle 11 is possible but influence from flanged and grooved Black Burnished ware bowls seems equally feasible.

Context 1404 (SG110)

129. [429] Plain dish in Black Burnished ware with intersecting arc decoration as Gillam 1976 no. 77 (late 2nd to early 3rd century).

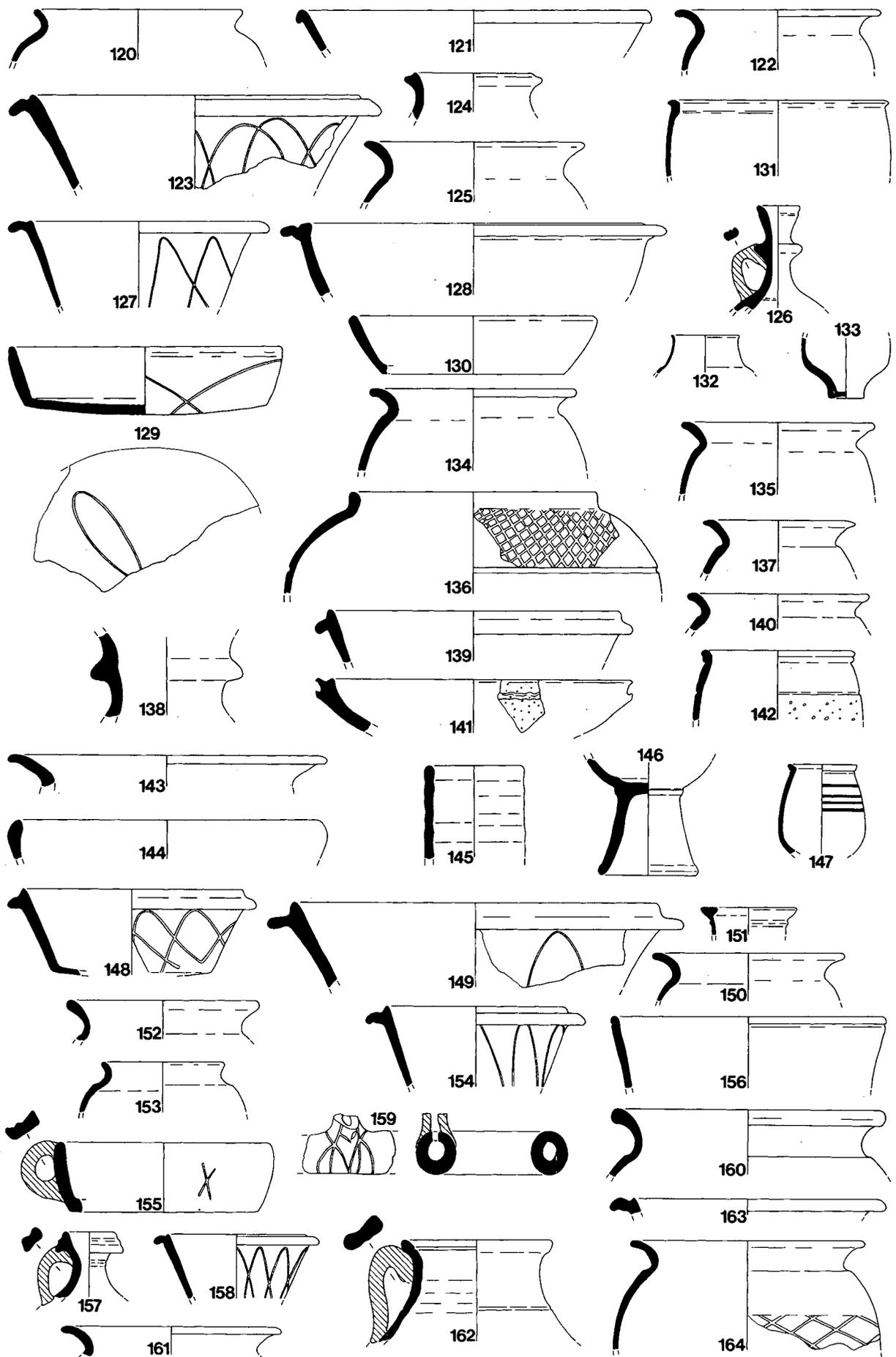


FIG. 49. Coarse pottery, Riding School Field nos 120-64. Scale 1:4.

130. [430] Dish in reddish-grey fabric with a dark grey burnished surface.
 131. [431] Jar in orange sandy fabric, a small version of nos 360–4 illustrated below
 132. [432] Rim of a Moselle beaker as Greene 1978, fig. 2.3, no. 5 (mid 2nd to mid 3rd century); Symonds 1992, Groups 33–4.
 133. [433] Base of a Nene Valley colour-coated beaker with a light brown colour-coat, turning dark grey towards the upper wall. Probably from a beaker such as Gillam 1970, no. 86, or possibly Gillam 1970, no. 78 (late 2nd to mid 3rd century).

Context 1457 (SG110) included the following Black Burnished ware types: Gillam 1976, no. 6 (early 3rd century); *ibid.* 6/7 (early to mid 3rd century); and:

134. [416] Jar in Black Burnished ware, Gillam 1976, no. 10 (late 3rd century).
 135. [417] Jar in Black Burnished ware; Gillam 1976, no. 11 (late 3rd to early 4th century).
 136. [418] Jar in light grey fabric with partially darkened external surface. The upright rim suggests derivation from 1st century Black Burnished ware types and the piece is clearly residual in the present context.

Context 842 (SG111)

137. [451] Jar in Black Burnished ware, Gillam 1976, no. 10 (late 3rd century).

Context 843 (SG111)

138. [434] Wall sherd of a vessel with pronounced cordons, poorly finished internally. A large ornamental item is possible, and there is some resemblance to roof ventilators, cf. Lowther 1976; however the piece does not seem robust enough for external use. A vessel as Caldicot (Barnett *et al.* 1990, no. 47) is more probable.

Context 1273 (SG111)

139. [452] Flanged and ridged bowl in Black Burnished ware, burnt white and orange in places, cf. Gillam 1976, nos 46–7 (late 3rd to early 4th century).
 140. [453] Jar in light red fabric with a sandy filler, burnt on the rim. An attempt to imitate 3rd to early 4th century Black Burnished ware vessels seems likely.
 141. [454] Bowl in light orange fabric with a gritty filler which appears to include crushed quartz. The dished rim suggests use with, or possibly as, a lid.

Context 845 (SG123)

142. [445] Rough-cast beaker, originally indented, in light red fabric with a red slip — Caerleon ware.

Discussion

Viewed as a whole, this material contains items which should be later than, or at the very least, contemporary with, the later items from Phase 1. A late 3rd century date is suggested.

Post-dating the construction of Room 12.5

Context 811 (SG124)

143. [455] Jar in Black Burnished ware. The angle of the rim shows this to be a vessel in the range Gillam 1976 nos 12–14, and a 4th century date seems assured.
 144. [456] Vessel in light grey fabric with a dark grey surface, possibly a dish with an incurved rim, although a lid is also possible.
 145. [457] Tubular vessel in coarse orange fabric. Service as a small ceramic pipe cannot be ruled out.

Context 831 (SG124) included a flanged and ridged bowl of Gillam 1976, type 47/9 (early to mid 4th century) and jars with flaring rims, probably of 4th century date.

Discussion

The material from the levels post-dating the construction of Room 12.5 seem broadly similar to that observed in the phase 2–4 sequence above. The collection would suit the late 3rd/early 4th century to early/mid 4th century suggested for those phases.

Other associated features

Ditch 399 between Buildings 12 and 13 (see pp.48–51)

Context 929 (SG53) included Black Burnished ware jars of Gillam 1976, types 10 (late 3rd century) and 12 (early 4th century).

Context 860 (SG53) included Black Burnished ware, the latest pieces of which were jars of Gillam 1976, types 10–12 (late 3rd to early 4th century), a flanged and ridged bowl of *ibid.* type 47/9 (early to mid 4th century), and:

146. [488] Pedestal foot in grey fabric with a red core, probably local in manufacture.

147. [489] Small jar in light grey fabric with burnished lines and a slightly oxidised surface. Apparently a particularly fine product of the local greyware industry.

Context 015 (SG53) contained:

148. [490] Flanged and ridged bowl in Black Burnished ware, Gillam 1976, nos 46–7 (late 3rd to early 4th century). With other late 3rd and early to mid 4th century pieces.

Building 13 (see pp.122–34)*Phase 1*

Context 916 (SG127)

149. [402] Flanged and ridged bowl in Black Burnished ware, Gillam 1976, no. 49 (early to mid 4th century).

Context 961 (SG128)

150. [403] Jar in Black Burnished ware; the flaring rim should be 4th century.

Context 1350 (SG128)

Black Burnished ware included Gillam 1976, no. 2 (mid 2nd century). Also from this context was:

151. [404] Rim, probably of a necked flagon in light orange-buff fabric, probably locally made.

Context 963 (SG129)

152. [405] Jar in a fabric varying from grey externally to orange internally; probably from a jar as Caldicot, Barnett *et al.* 1990, nos 16–21 (late 3rd to early 4th century).

Context 949 (SG130)

With Black Burnished ware of 2nd to 3rd century date:

153. [408] Jar in grey ware with a dark grey surface; the type is probably derived from vessels such as Usk Fortress Series 13 (Manning 1993, fig. 113) and is perhaps 1st century.

Context 950 (SG131)

154. [409] Flanged and ridged bowl in Black Burnished ware. Late 3rd or 4th century.

155. [410] Plain dish in Black Burnished ware with handles. The decoration appears to be of intersecting inverted chevrons and is probably 2nd to early 3rd century in date.

156. [411] Tankard in light grey fabric; cf. Usk South Wales greyware type 47.5 (Manning 1993), 2nd to 3rd century.

157. [412] Flagon in light orange fabric with a grey core and a cream slip.

Fineware from context 950 included a wall sherd from a Moselle colour-coated and folded beaker as Gose 1984, no. 206, but with more bands of rouletting than the type-vessel.

Context 948 (SG133)

158. [406] Flanged and grooved bowl in Black Burnished ware; a very small example, but otherwise resembling Gillam 1976, no. 44 (mid to late 3rd century).
159. [407] (838) Base ring of a triple vase in light grey fabric with a darker surface. A joining fragment comes from 975 (1619) and has incised decoration. There is another fragment, probably from the same vessel from 903 (310). Triple vases appear to have a widespread distribution in Britain, but are rarely common finds. The only general study remains Kaye 1914 (our vessel is his type 2). Northern examples are cited in Jones 1971, no. 45; and Hartley and Webster 1973, 87; see also Wheeler 1930, pl. 58. On the Mill Street sites fragments of triple vases were noted from the following contexts: in oxidised ware from 001, 403, 454, 700(?), 1450, 2086, 2118, 2389 and 3010; in reduced fabric from 002, 903, 948, 949, 975 and 2037, the sherds from 903 and 975 being from the vessel published here. Most will be products of the pottery industry within South Wales. Fragments from contexts 1450, 2086 and 2118, and possibly context 2389 are in Caerleon ware. See also nos 274 and 307.

Context 954 (SG133)

160. [413] Jar in light orange sandy fabric.

Fineware from context 954 included a barbotine-decorated beaker in Nene Valley colour-coated fabric.

Phase 3

Context 945 (SG139)

161. [414] Jar in Black Burnished ware. One of two jars with very flared rims which are among the latest from stratified levels on the site. Perhaps mid 4th century in this context.
162. [415] Handled jar in light buff sandy fabric. The internal groove suggests that the vessel has been used with a lid which could have been secured with the aid of string through the handles. A vessel imported to the site, perhaps as a container, seems likely.

Phases 1–3: Discussion

Phases 1 and 2 seem to belong to the late 3rd to mid 4th century. Phase 3 contains little material but might be mid 4th century. Throughout all phases there is a considerable mixture of earlier material. No material certainly later than the mid 4th century was noted, but the amount of material from the latest phase was slight.

The stone-lined culvert and associated deposits in Cutting DB (see pp.159–61)*Sedimentary and make-up sequences*

Context 629 (SG174)

163. [350] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 44 (mid to late 3rd century).

Context 658 (SG176)

164. [376] Jar in Black Burnished ware, heavily sooted externally, Gillam 1976, no. 12 (early 4th century).
165. [377] Jar in Black Burnished ware, Gillam 1976, nos 11–12 (late 3rd to early 4th century).
166. [378] Flanged and ridged bowl in Black Burnished ware, cf. Gillam 1976, no. 47 (early 4th century).
167. [379] Bowl in dark grey fabric with a grey-brown surface. The plentiful filler appears to contain crushed rock and quartz. A bowl in the pre-Roman tradition, but not necessarily of pre-Roman date, is likely. (Not illustrated.)
168. [380] Jar in sandy grey fabric with a smooth external surface. The type may derive from Usk Fortress type 13 (Manning 1993, fig. 5), but is closer to early Caerleon vessels such as Nash-Williams 1929, no. 16 (probably 1st century).
169. [381] Ring-necked flagon in light red fabric, burnt fawn externally and sooted on the rim. There is a large calcite inclusion, 8mm in length. Even rings such as this are generally regarded as 1st century, but the vessel is unusually large and might have lasted in use for some time.

Context 644 (SG177)

170. [351] Flagon in buff fabric.

Context 627 (SG179)

171. [352] Jar in Black Burnished ware, Gillam 1976, nos 12–14 (4th century). With two other 4th century jars.
 172. [353] Flanged and ridged bowl in Black Burnished ware, Gillam 1976, nos 46–9 (late 3rd to early 4th century).
 173. [354] Flanged bowl or dish in light grey fabric. With one similar example.
 174. [355] Ring-necked flagon in pink-buff fabric. The even rings suggest a 1st century date, cf. Usk Fortress series Manning 1993, type 4; Nash-Williams 1929, no. 52; and a better example Nash-Williams 1932b, nos 84–6. With one other example.
 175. [356] Flagon in sandy grey fabric with an orange surface and traces of a white slip.
 176. [357] 1st or 2nd century jar in a rather porous light buff fabric with sandy filler.
 177. [358] Jar in Severn Valley ware, cf. Webster 1976, no. 4 (2nd to 4th century).

Context 622 (SG181)

178. [359] Everted-rimmed jar in light grey fabric with a darker surface. The wavy line decoration could have been applied with either a brush or a comb, cf. Nash-Williams 1929, no. 4 (probably 1st century). With three other everted-rimmed jars.
 179. [360] Thin-walled jar or flagon in light orange-buff fabric, probably local in manufacture.

Context 626 (SG181)

180. [361] Jar in Black Burnished ware with two countersunk handles. The type is discussed by Gillam (1976, 64). His Hadrianic to Antonine date for examples found away from the area of manufacture would suit the acute-angled lattice for our piece.
 181. [362] Lid in Black Burnished ware, cf. Wallace and Webster 1989.
 182. [363] Lid in mid grey fabric, cf. Whitton (Jarrett and Wrathmell 1981, no. 453, from a late context but with 2nd century material).
 183. [364] Flanged and frilled bowl in a granular grey-buff fabric, showing signs of burning particularly on the inside. Probably a very large tazza.
 184. [365] Small beaker in light red fabric.

Context 635 (SG181)

185. [366] Bowl rim in *terra nigra*. Smooth light grey fabric with a burnished mid grey surface, cf. Greene 1979, fig. 46, no. 28 (1st century).

Context 667 (SG181)

186. [367] Dish in Black Burnished ware with intersecting arc decoration, Gillam 1976, no. 77 (late 2nd to 3rd century).
 187. [368] Vessel with a narrow neck, possibly a small flask, although the vessel looks as though it was made with the opening at the bottom, so a funnel is possible.
 188. [369] Tazza base in light orange-buff fabric, like no. 39 above. The base is remarkably similar to the neck and rim of a flagon and it may be that the potters who made the one also made the other.
 189. [370] Lid in light orange fabric. The deep groove on the rim is unusual. Burning on the lower rim suggests use with a cooking pot.

Discussion

The sedimentary sequence of Cutting DB presents problems of interpretation. The greater part of the material is 1st or 2nd century, but there are sufficient later pieces, especially from lower down in the sequence, to suggest disturbance or deposition at a later date. The large fragments of 4th century vessels from 627 should carry with them the date of that context and those above, whilst 3rd century pieces from lower levels suggest that the lower sediments are only slightly earlier. The pottery would suggest 1st and 2nd century material mixed and redeposited in the later Roman period.

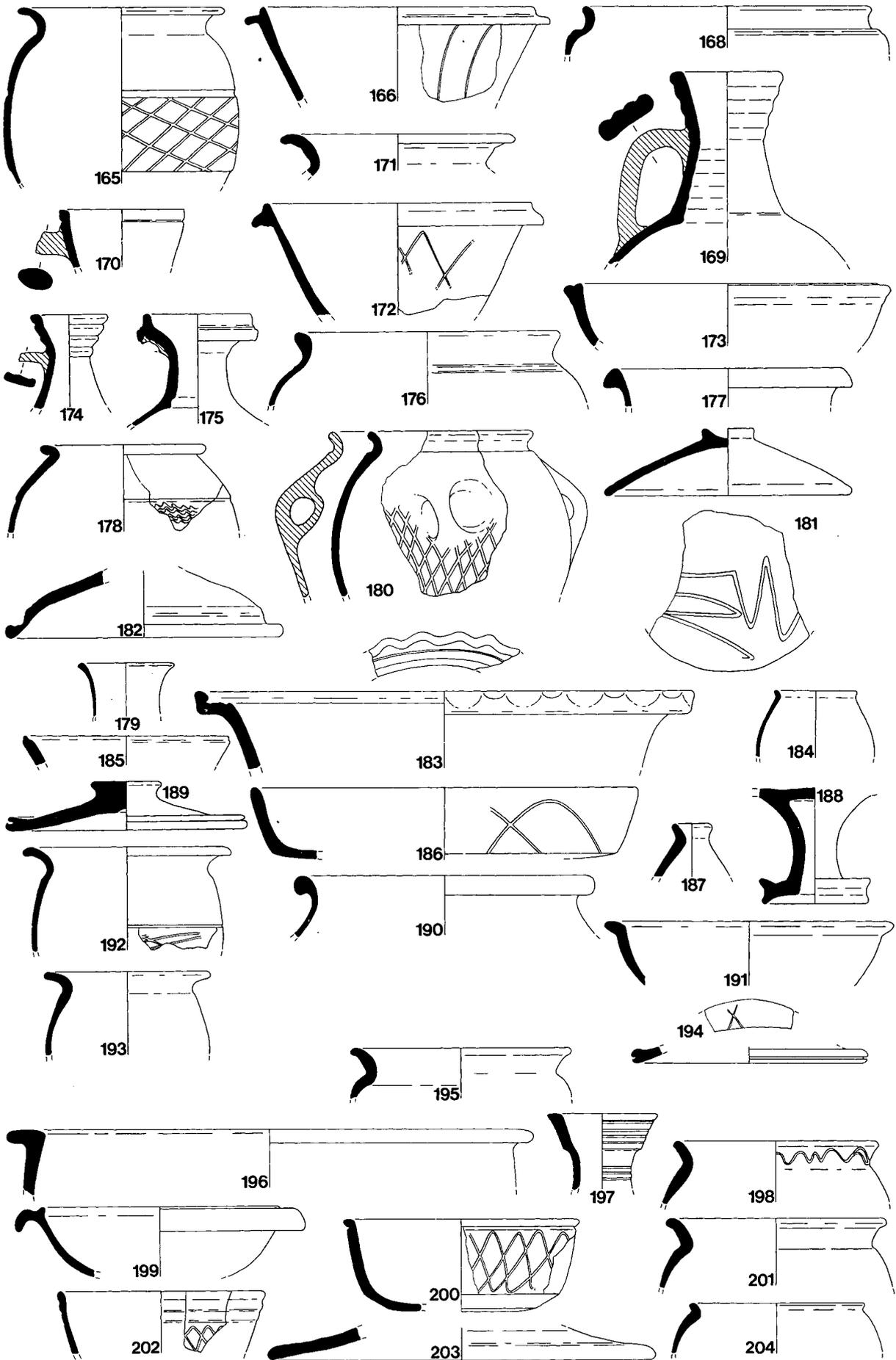


FIG. 50. Coarse pottery, Riding School Field nos 165-94; Cambria House nos 195-204. Scale 1:4.

The culvert

Context 639 (SG175)

190. [371] Jar in soft grey fabric containing ?ground fired clay and mica. A late Roman date is possible, but the fabric is unusual.
191. [372] Flanged dish in Black Burnished ware, Gillam 1976, nos 63–6 (2nd century).

Context 643 (SG175) contains a piece of burnt possibly *terra nigra* jar, a piece of *terra nigra* bowl and a lid which could be 1st century.

Context 638 (SG177)

192. [373] Jar in Black Burnished ware, Gillam 1976, no. 12 (early 4th century).
193. [374] Jar in Black Burnished ware. A slightly more compressed version of no. 192 and of a similar date.
194. [375] (515) Lid in light red fabric. The deep incision on the edge means that this could well be a fragment of no. 189.

Discussion

Like the sedimentary sequence above, the culvert contains 1st and 2nd century pieces. However, there seems no reason to regard the Black Burnished ware jars nos 192 and 193 as other than providing evidence that the culvert was still open in the 4th century. Examination of unstratified contexts from the area confirm the mixed 2nd to 4th century nature of deposits here.

Cambria House*Introduction*

The pottery from the selected contexts on the Cambria House site consisted of an approximate minimum 1578 vessels. There seems no reason to suppose that these were other than typical of the site as a whole.

As before, comments below are based on the archival list with only the more significant pieces chosen for illustration and separate comment. Some comments on individual phases are made in the catalogue, but the prevalence of mixed deposits or those with high residual elements makes some general comment advisable.

Chronology

As described above (p.198), all vessels in the archival list have been ascribed a date allowing the entire assemblage to be presented as a histogram (FIG. 51).

Comparison of FIG. 51 with the histogram for the Riding School Field site (FIG. 45 above) is instructive. There is again a mid-2nd century peak, but in this case much more marked. By contrast, the 3rd and 4th centuries look much less intensely occupied, but it must be noted that this is in comparison to the massive 2nd century collection. If we compare the numbers of vessels present on each site, we see that they are remarkably similar for the period *c.* A.D. 200–360. It is the 2nd century which is different, not the 3rd and 4th.

It should perhaps be noted that a good deal of the 2nd century material is residual in later levels. However, in contrast to Riding School Field, more features examined did seem to be of 2nd century date and it may be this actual occupation which makes the difference in the two histograms.

The date of abandonment is argued more closely in discussion of the destruction deposits below. Once again, however, it would appear that the site, like the Riding School Field goes up to, but not beyond, the mid 4th century.

Sources of pottery

The 1578 vessels in the sample may be divided into the sources listed in TABLE 16 (arranged in the same order as the comparable charts for other sites).

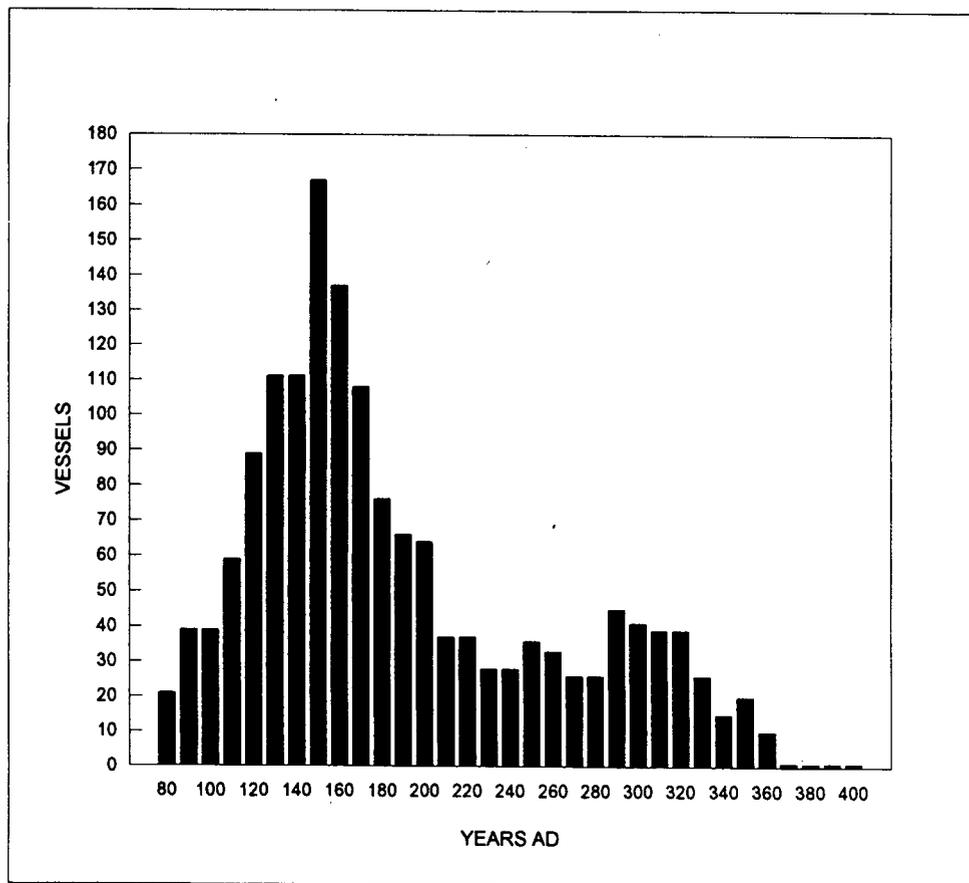


FIG. 51. Histogram of coarse pottery vessels by date: Cambria House.

TABLE 16: CAMBRIA HOUSE, SOURCES OF COARSE POTTERY

Ware/source	Number	%age of all vessels
Caerleon (Cln)		
Cln ware	312	20
Cln Tazze	24	2
Cln Oxidised	101	6
Cln glazed	2	—
Other oxidised (mainly local)	91	6
Reduced (mainly Cln or S. Wales)	353	22
'Native'	2	—
Severn Valley	5	—
<i>Terra Nigra</i>	2	—
Black Burnished 1	642	41
Oxford	7	—
Köln/Nene Valley	6	—
Nene Valley	12	1
New Forest	1	—
Central Gaul	5	—
Moselle	12	1
East Midlands	1	—
Total	1578	99
Classes too small to calculate		1
Total		100

TABLE 16 may be compared with that from the Riding School Field and with the histograms. First century finewares are again conspicuous by their absence. Caerleon ware again dominates the 2nd century fineware market. Oxford colour-coats are again remarkably scarce. Indeed the overall numbers of finewares likely to date from the 3rd and 4th century is low and the picture of an area of the fortress civil settlement of relatively low social status seems to be confirmed.

Function

TABLE 17 may be compared with those from other areas excavated.

TABLE 17: CAMBRIA HOUSE, TYPES OF COARSE POTTERY VESSEL

Vessel Class	Number	%age of all vessels
Flagons	77	5
Handled Jars	18	1
Jars	586	37
Face pots	3	—
Bowls	353	22
Beakers/cups	205	13
Tazze	26	2
Dishes	280	18
Lids	25	2
Misc	5	—
Total	1578	100

Overall, the pattern is very similar to that for the Riding School Field and again seems to show a kitchen-oriented bias. Dishes seem more plentiful and jars less plentiful than on the other site, but there seems little on which to base any marked social or economic differences between the two. 'Miscellaneous' in this case included two 'Castor boxes' and three triple vases.

Catalogue

Buildings 1–5 (see pp.52–95)

Building 1 Phase 1

Context 2491 (SG56)

195. [199] Jar in Black Burnished ware. The rim appears to have been reworked and it seems safe to offer a general 2nd century date for the piece.
196. [200] Flanged bowl or basin in Black Burnished ware. The vessel appears to be unusually crude and heavy and a larger than usual vessel seems likely. The potter has either added something (perhaps a handle), or patched the rim during manufacture as clay has clearly been added at the edge of one sherd. 2nd century.
197. [201] Flagon in Caerleon ware. The resemblance to late 1st to early 2nd century ring-necked flagons may be significant and an early to mid 2nd century date is suggested.

Building 1 Phase 2

Context 2456 (SG44, pre-dating SG59)

198. [202] Jar in Black Burnished ware as Gillam 1976, no. 2, mid 2nd century.
199. [203] Mortar-like bowl in Caerleon ware, almost certainly intended to imitate the samian form, Curle 11. If closely following samian prototypes, then our piece should be early in the Caerleon ware series of such imitations and a date *c.* A.D. 110–130 would be appropriate.

Building 1 Phase 3

Context 2465 (SG59)

200. [204] Bead-rimmed bowl in Black Burnished ware; cf. Gillam 1976, no. 52. Although dated by Gillam to the mid to late 2nd century, earlier examples have been noted at Caerleon, cf. Zienkiewicz 1992a, no. 16 from a mainly Hadrianic context.

Context 2490 (SG59)

201. [205] Jar in Black Burnished ware, Gillam 1976, nos 4–5, late 2nd to early 3rd century.
 202. [206] Bowl in light grey fabric, probably originally hemispherical.
 203. [207] Lid in light orange to rose-pink fabric with a grey core. There are some large white inclusions.

Building 1 Phase 4

Context 2451 (SG61)

204. [208] Bead-rimmed jar in Black Burnished ware, cf. Birdoswald 1929 (Richmond and Birley 1930, no. 40a), early to mid 2nd century.

The context also includes two Caerleon ware versions of samian form Dr 18/31.

Building 1 Phase 5

Context 2400 (SG63)

205. [209] Jar in Black Burnished ware. The rim is badly finished but the vessel was probably intended to be similar to Gillam 1976, no. 2 (mid 2nd century).
 206. [210] Flanged dish in Black Burnished ware; perhaps Gillam 1976, no. 56 (early to mid 2nd century).

The context also included a Black Burnished ware rim which may be from a flagon.

207. [211] Jar in light grey fabric.

Context 2437 (SG64) contained Black Burnished ware of 2nd century date, but also a flanged and grooved bowl, possibly Gillam 1976, no. 43 (early to mid 3rd century) and a jar, Gillam 1976, no. 11 (late 3rd to early 4th century). Both are probably intrusive. Also:

208. [212] (743) Flagon neck fragment in light buff fabric; an incised 'X' is presumably an ownership mark. (Not illustrated.)
 209. [213] Flagon in Caerleon ware.

Context 2448 (SG62) appears also to have an intrusive Black Burnished ware jar (Gillam 1976, type 12, early 4th century), and:

210. [214] Flanged dish in light grey fabric. There is some resemblance to 2nd century Black Burnished ware types and this piece is presumably of a similar date.
 211. [215] Jar in Caerleon ware.

Discussion of Phases 1–5

Material from make-up levels within Building 1 includes some 3rd to 4th century pieces considered intrusive. Leaving these aside, the remaining material appears to be mainly early to mid 2nd century. Generally, the Caerleon ware pieces present seem to be fewer than those in Phase 6, but they are present from Phase 1 onwards, suggesting that all phases are late Trajanic or later. Phase 5 includes a Caerleon imitation of the samian form 44 or 81 (context 2437) which probably implies an Antonine date. Bearing in mind the likely dating of Phase 6 (demolition), an early to mid 2nd century date can be suggested, but it is the weight of evidence from the succeeding Phase 6 which is more telling than the rather poor collection from Phases 1–5.

Construction of Building 3 and demolition of Building 1*Building 3 Phase 1/Building 1 Phase 6: Dump deposits*

Context 2389 (SG72)

The dump, context 2389, is the largest assemblage from a single context to be published and is probably the largest single assemblage from the excavations. Although there is some residual material, it appears to be remarkably homogeneous. The Black Burnished ware gives the best indication of the likely date; all

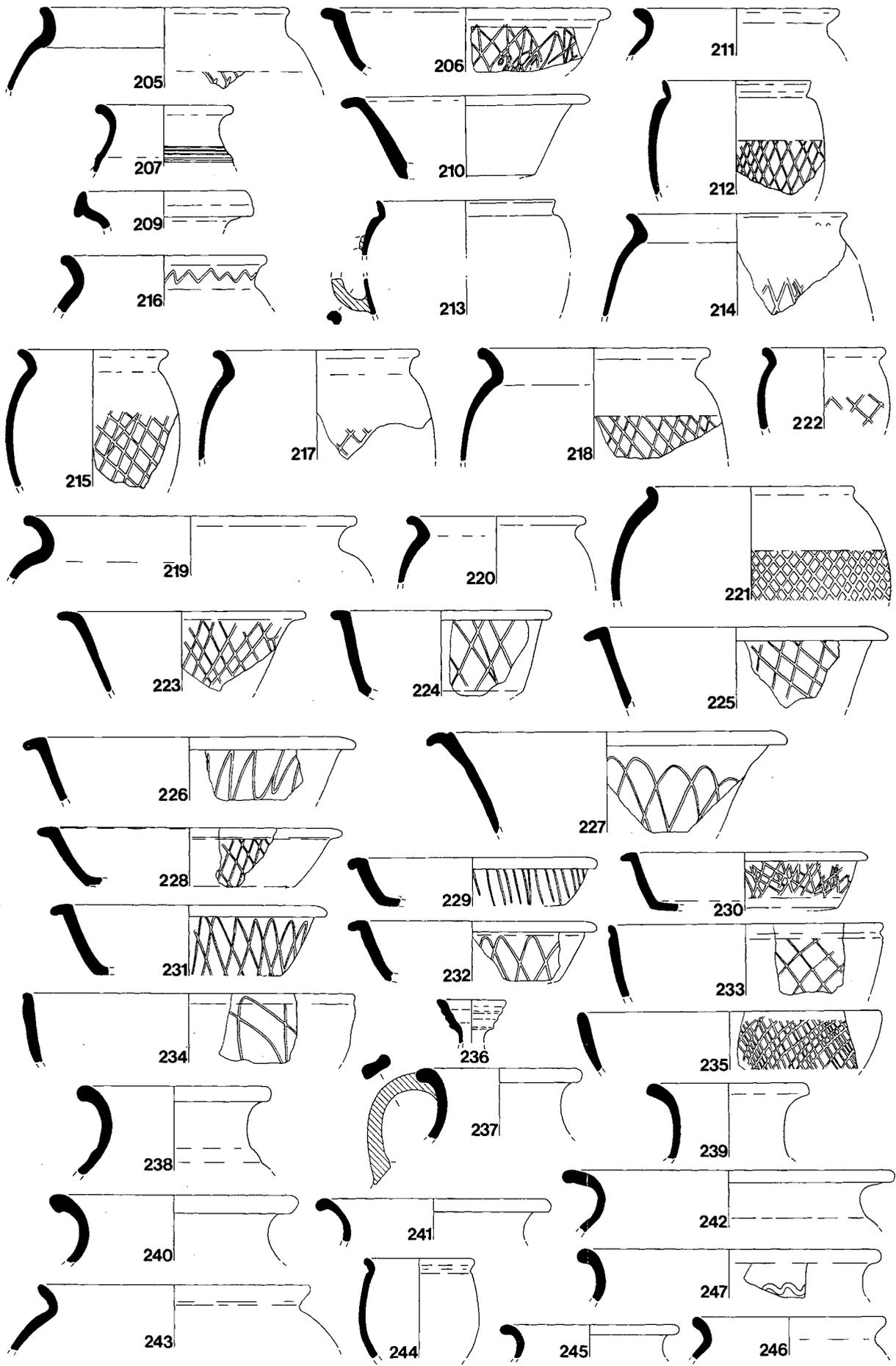


FIG. 52. Coarse pottery, Cambria House nos 205-47. Scale 1:4.

types are, or could be, 2nd century with a predominance of mid 2nd century or later types. Crucial are the flanged bowls and dishes; all but one lack the groove to be found on late 2nd to 3rd century types. The one exception, no.227, is typologically among the latest pieces in the group, but must presumably have been deposited near the beginning of its currency. The dominance of just two fabric types, Black Burnished ware (nos 212–35) and Caerleon ware with related local ware (nos 262–83) may be noted. A mid to late 2nd century date can be suggested, with a *terminus* later in the century, perhaps *c.* A.D. 180.

The context included a flagon rim in Black Burnished ware. This piece is not illustrated, but see the unstratified piece below, no. 499.

- 212. [77] Jar in Black Burnished ware, similar to Gillam 1976, no. 31. With one similar vessel.
- 213. [78] Beaker in Black Burnished ware, Gillam 1976, nos 25–7 (mid 2nd century). With fragments of at least two other 2nd century beakers.
- 214. [79] Jar in Black Burnished ware, Gillam 1976, no. 1 (early to mid 2nd century). With one other example.
- 215. [80] Jar in Black Burnished ware, Gillam 1976, no. 4 (late 2nd century). With about six examples of the same type.
- 216. [81] Jar in Black Burnished ware, Gillam 1976, no. 3 (mid to late 2nd century).
- 217. [82] Jar in Black Burnished ware, Gillam 1976, no. 4 (late 2nd century). With four other examples.
- 218. [83] Jar in Black Burnished ware, Gillam 1976, no. 5 (late 2nd to early 3rd century).
- 219. [84] Jar in Black Burnished ware; cf. Gillam 1976, a variant of no. 4. With two other examples.
- 220. [85] Jar in Black Burnished ware; probably a 3rd century vessel, cf. Gillam 1976, nos 7–9.

Two fragments of jar, Gillam 1976, no. 11 (late 3rd to early 4th century), are probably intrusive.

- 221. [86] Bead-rimmed jar in Black Burnished ware.
- 222. [87] Jar in Black Burnished ware, Gillam 1976, no. 30 (early to mid 2nd century). With one other bead-rimmed jar.
- 223. [88] Flanged bowl in Black Burnished ware, Gillam 1976, no. 35 (mid 2nd century).
- 224. [89] Flanged bowl in Black Burnished ware, Gillam 1976, no. 34 (early to mid 2nd century). With fragments of about three other similar bowls.
- 225. [90] Flanged bowl in Black Burnished ware, Gillam 1976, no. 36 (mid 2nd century). With fragments of three other similar bowls.
- 226. [91] Flanged bowl or dish in Black Burnished ware. The zigzag decoration seems more likely to belong to the later 2nd century, rather than earlier.

There are also fragments of at least eight other 2nd century bowls of the same general type as nos 223–6.

- 227. [92] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 42 (late 2nd to early 3rd century). This is perhaps the latest piece in the collection.
- 228. [93] Dish in Black Burnished ware, possibly Gillam 1976, no. 61 (mid 2nd century).
- 229. [94] Dish in Black Burnished ware, Gillam 1976, no. 56 (early to mid 2nd century). With fragments of at least four broadly similar dishes, one of which has a rivet hole.
- 230. [95] Dish in Black Burnished ware, Gillam 1976, nos 61–2 (mid 2nd century).
- 231. [96] Dish in Black Burnished ware, Gillam 1976, no. 62 (mid 2nd century). With fragments of about three similar dishes.
- 232. [97] Dish in Black Burnished ware. The looped decoration suggests a late 2nd century date. With fragments of at least one similar dish.

There are fragments of at least three other 2nd century dishes of the same general type as nos 228–32.

- 233. [98] Bead-rimmed bowl in Black Burnished ware; cf. Gillam 1976, no. 52 (dated by Gillam to the mid to late 2nd century, but see no. 200 above). This seems to be the standard bead-rimmed type from this deposit and there are at least nine other vessels broadly similar to no. 233.
- 234. [99] Dish in Black Burnished ware; cf. Gillam 1976, no. 76 for the general type. Mid to late 2nd century. There are at least two other dishes with a faint bead rim.
- 235. [100] Dish in Black Burnished ware. The close acute-angled lattice suggests a 2nd century date.
- 236. [101] Ring-necked flagon in grey fabric. The rim is distorted. The shape also appears in Caerleon ware, cf. Nash-Williams 1932b, no. 113; a Hadrianic-Antonine date seems likely.

Nos 237–59 are all in the local tradition termed South Wales greyware (see, for instance, Manning 1993, 232–55). The forms present are nearly all suitable for 2nd century contexts but in many cases close dating is not possible. In these instances, it is hoped that the context will ultimately date the types and not *vice versa*.

- 237. [102] Handled jar in dark grey fabric. There are at least four other handled jars in the deposit.
- 238. [103] Cordoned jar in light grey fabric. With three other similar jars.
- 239. [104] Jar in light grey fabric. With two similar jars.
- 240. [105] Jar in grey-brown fabric with a light grey core.
- 241. [106] Jar in light grey fabric. One of two similar vessels.
- 242. [107] Jar in light grey fabric.
- 243. [108] Everted-rimmed jar in light grey fabric, sooted on the rim. The form is predominantly Flavian-Trajanic in date, so is probably residual in this context. However, there are fragments of at least six vessels of this general type.
- 244. [109] Small jar or beaker in grey fabric. The double rim is reminiscent of beakers in Caerleon ware and an early to mid 2nd century date would be appropriate.
- 245. [110] Jar in light grey fabric. This rim has the most pronounced curve of at least seven similar vessels and may be the latest in a late 1st to 2nd century series.
- 246. [111] Jar in light grey fabric, sooted on the rim, reminiscent of 2nd century Black Burnished ware types.
- 247. [112] Jar in light grey fabric with mid grey surface, cf. Whitton (Jarrett and Wrathmell 1981) no. 64 (2nd to 3rd century).
- 248. [113] Flanged bowl in light grey fabric with a dark grey surface; probably one of the flanged and carinated bowls of late 1st to early 2nd century type, cf. Usk (Manning 1993) South Wales greyware types 49–50.
- 249. [114] Flanged bowl in mid to dark grey fabric. The same general type as 248 above, cf. Whitton (Jarrett and Wrathmell 1981) no. 329. There are at least two other Flavian/Trajanic flanged bowls.
- 250. [115] Flanged bowl in light grey fabric with a dark grey surface, probably intended to be reminiscent of the 2nd century Black Burnished ware series. With two other vessels of similar type.
- 251. [116] Jar in light grey fabric closely similar to mid to late 2nd century Black Burnished ware types and presumably of the same date.
- 252. [117] Flanged bowl in mid grey fabric, cf. Usk (Manning 1993) South Wales greyware series type 62. With at least two other vessels of the same general type.

Nos 253–6 represent part of the South Wales greyware wide-mouthed jar series, cf. Usk (Manning 1993) South Wales greyware series types 38–42. The examples from this particular deposit all belong to types 40–41 and would suit a predominantly or wholly 2nd century date.

- 253. [118] Light grey fabric, probably originally with a mid grey external surface.
- 254. [119] Light to dark grey fabric. With at least five other similar vessels.
- 255. [120] Light grey fabric with dark grey surface.
- 256. [121] Light grey fabric with mid grey surface externally and over the rim. There are at least six vessels of the same general type as nos 255–6.
- 257. [122] Dish in light grey fabric with a dark grey external surface.
- 258. [123] Lid in mid to dark grey fabric.
- 259. [124] Lid in light grey fabric with mid grey surface. With one similar lid, now burnt pink to orange on the surface.
- 260. [125] Flagon in pink-buff fabric derived from the so-called Hofheim type, cf. Nash-Williams 1932b, no. 91 (presumably 1st century).
- 261. [126] Ring-necked flagon in orange-buff fabric. A prominent upper ring would suggest a late 1st to early 2nd century date. With one other ring-necked flagon with a trimmed rim.
- 262. [127] Flagon in orange-buff fabric with traces of a darker surface. The vessel seems to combine the neck rings of no. 261 with the rim grooves of no. 263. Probably 2nd century.
- 263. [128] Flagon in Caerleon ware; Nash-Williams 1932b, nos 104–10 are similar but without the vestigial neck grooves of our vessel. Early to mid 2nd century. With examples of at least three other vessels of the same general type.
- 264. [129] Flagon in Caerleon ware, cf. Fortress Baths (Zienkiewicz 1986b) group 7 no. 45 (probably early 2nd century).
- 265. [130] Flagon in light orange fabric, cf. Nash-Williams 1932b, nos 94–103 (probably 2nd century).

Nos 266–72 represent nineteen beakers in Caerleon ware, all probably rough-cast and at least five of which are dimpled. There is also a handle which may be from one of these vessels. Rough-cast beakers appear to have been made throughout the Caerleon ware production period (*c.* A.D. 110–160/70; cf. Webster 1993, 255–7).

- 266. [131] Beaker in light orange fabric with a darker surface.
- 267. [132] Beaker in light orange fabric with rough-casting of finely ground clay. Maroon surface. With one similar example.
- 268. [133] Beaker in orange-buff fabric with grey to light red surface. With four similar examples.
- 269. [134] Beaker in orange-buff fabric with orange-grey surface.
- 270. [135] Beaker in light red fabric with maroon-grey surface. The rim appears to be recessed for a lid.
- 271. [136] Beaker in orange-buff fabric with light red surface. Circular patches may be finger marks. With seven similar vessels.
- 272. [137] Beaker in light orange fabric with an orange-brown surface.

There is also a fragment of a beaker in Caerleon ware which lacks any sign of rough-cast decoration.

- 273. [138] Beaker or small jar sherd in Caerleon ware; light orange fabric with a red surface and signs of burning. The combination of grooves and the triangular-toothed roulette has produced a scalloped effect which is very unusual.
- 274. [139] (2535) Triple vase fragment in light red fabric with grey external surface. The surviving vase portion sat on a circular tube. (Not illustrated.)
- 275. [140] Caerleon ware imitation of the samian form Dr 27. The samian original went out of fashion *c.* A.D. 150, so a date *c.* A.D. 110–150 would be appropriate. One of two examples.
- 276. [141] Shallow bowl in light orange fabric. One of four examples, one of which is certainly in Caerleon ware and all of which may have been originally colour-coated. Both Nash-Williams and Boon suggest that the form is derived from the samian form Ritterling 8. However, Ritterling 8 is pre-Flavian and it seems possible that the Caerleon ware bowl is derived from the East Gaulish form Ludowici Sh and, therefore, Antonine. See, however, Webster and Webster 1998, 253.
- 277. [142] Caerleon ware. An imitation of samian form Dr 18/31, early to mid 2nd century. With approximately thirteen other examples.
- 278. [143] Bowl in Caerleon ware. The omphaloid base is more likely to derive from the samian form Dr 31 than from the more commonly imitated form Dr 18/31 and a mid to late 2nd century date is probable.
- 279. [144] Caerleon ware. Probably imitating samian form Dr 44 or Walters 81, and probably Antonine. With fragments of four other similar vessels.
- 280. [145] Caerleon ware. An imitation of samian form Dr 36.
- 281. [146] Caerleon ware. An imitation of samian form Dr 37. With at least two other Caerleon ware form Dr 37 imitations, one of which had applied barbotine decoration.
- 282. [147] Mortar-like bowl in Caerleon ware, probably intended to be reminiscent of samian form Curle 11.
- 283. [148] Caerleon ware. An imitation of samian form Curle 11.

There are ten bowls of the same general type as nos 282–3.

- 284. [163] Imitation of samian form Dr 33 in light orange-red fabric. There is no evidence for a slip but the vessel closely resembles Caerleon ware imitations of this form. This is presumably a product of the Caerleon ware industry and helps to confirm that true Caerleon ware as defined by Boon (1966c) is but one product of the local kilns. With one other example.
- 285. [164] Tankard or Dr 33 imitation in light orange fabric, closely resembling Severn Valley ware types, such as Webster 1976, no. 42 (2nd to 3rd century), but there is no reason to suppose that the fabric is other than local. There are fragments of three other similar tankards in oxidised fabric.

The context also included fragments of at least five tazze of a presumably local type in oxidised fabric with a white colour-coat and illustrated elsewhere (no. 454). There is also a bowl fragment with twisted 'barley sugar' handles. Here a more complete example from another context is illustrated:

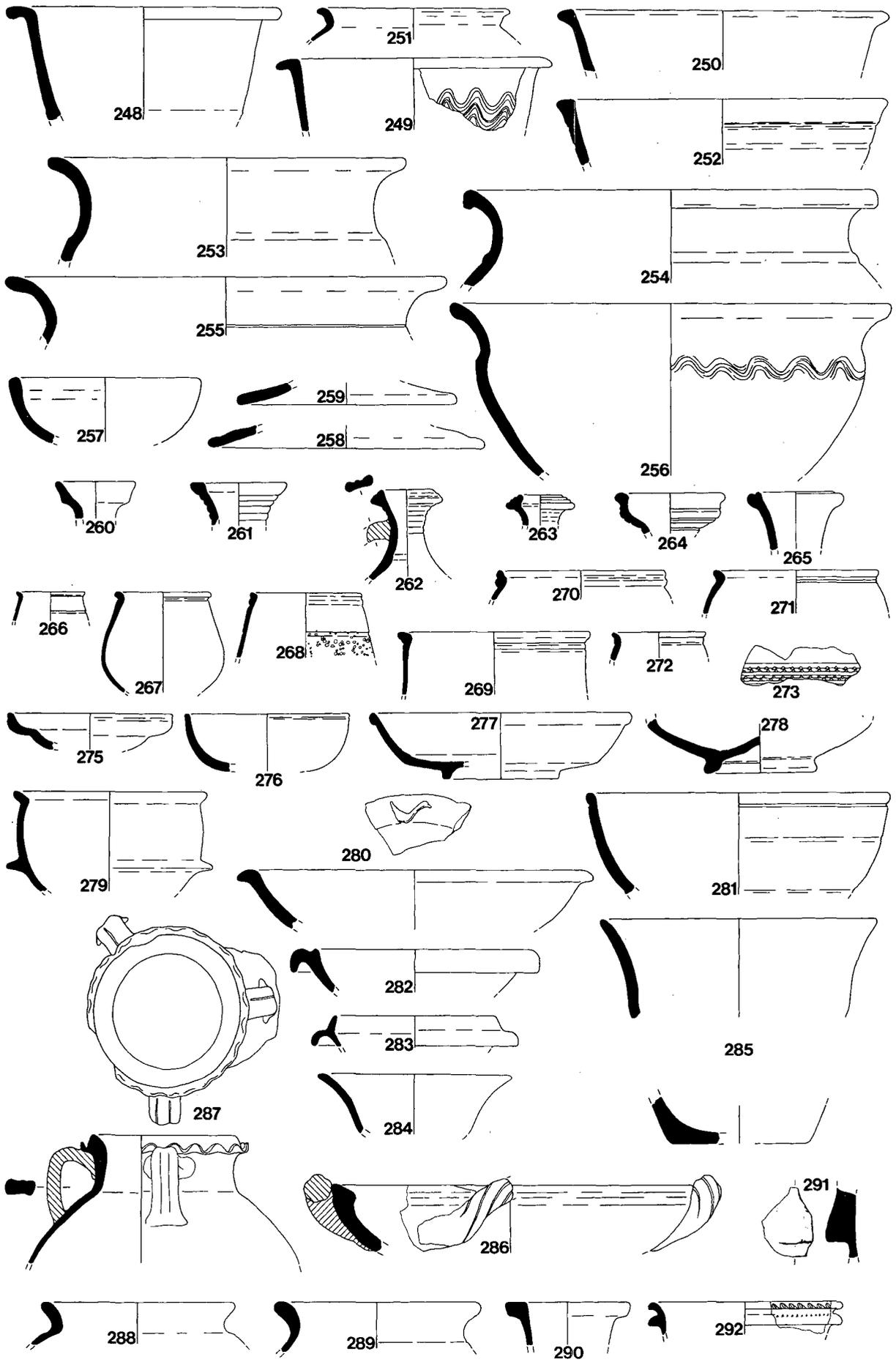


FIG. 53. Coarse pottery, Cambria House nos 248-92. Scale 1:4.

286. [246] This piece from an otherwise unpublished context (3035/SG164) shows a more complete example of the 'barley-sugar' handle type on a large bowl in orange-buff fabric. The general type may be derived from a military bowl pattern such as Usk Fortress series, type 22 (Manning 1993, 15 and 38–9) but a 2nd century date is probably implied by the handle fragment from context 2389. There is a further fragment from a similar handle from context 2367. See also no. 294.
287. [149] Jar in orange fabric with frilled rim and three handles, probably a local product.
288. [150] Jar in Caerleon ware.
289. [151] Jar in light orange fabric with traces of a red surface; probably Caerleon ware.
290. [152] Necked jar, possibly originally handled, in light orange fabric. With one similar fragment.
291. [153] (2545) Nose and small portion of the eye from a face pot in light orange fabric with a grey internal surface and traces of a darker red external surface. Despite the occurrence of face-pots in the Usk fortress (fortress type 18, Greene 1993, 14 and 35) there seems no reason to doubt that this is a product of Caerleon kilns in the 2nd century.
292. [154] Jar in orange fabric having an upper rim with slashed decoration and a lower one with a single band of rouletting.
293. [155] Bowl in light orange fabric with traces of a white slip. With one possibly similar vessel.
294. [156] Unusual bowl in light orange fabric with an internal antispill device. Probably local in manufacture. (There is also a fragment from context 2405.)
295. [157] Flanged bowl with grooved rim in light orange fabric, burnt on the upper flange. One of the late 1st to early 2nd century series and presumably residual in this context.
296. [158] Bowl in sandy orange fabric. The form is military in origin, cf. Usk Fortress series type 22 (Manning 1993, 15 and 38–9, also no. 286 above). The type was also made at Caerleon, probably into the 2nd century, cf. Nash-Williams 1932b, no. 354. There are three other examples of the general type.
297. [159] Dish in Caerleon ware with a joining fragment from context 2410. Also one similar, but thinner, example.
298. [160] Dish in slightly sandy, light orange-buff fabric.
299. [161] Dish in light orange fabric. Perhaps originally a similar shape to no. 297 but apparently cut down to form a very shallow plate.
300. [162] Lid in light orange fabric. There are also fragments of at least three other lids.

The context also included a very small fragment of glazed ware, possibly from an imitation of samian form Dr 37.

Other contexts relating to this stratigraphic group are summarised in the site archive. All are closely similar to 2389 in composition and date. A few vessels of types not represented in nos 212–300 above are illustrated below. About four vessels of late date are omitted as intrusive.

Context 2405 (SG72)

301. [165] Lid in Black Burnished ware, cf. Wallace and Webster 1989.
302. [166] Medium-mouthed jar in light grey fabric. There is some resemblance to mid to late 2nd century Black Burnished ware jars and a similar date seems possible.
303. [167] Wide-mouthed jar in light grey fabric.
304. [168] Handled jar in Caerleon ware. The general type is represented by two vessels from the Amphitheatre (Wheeler and Wheeler 1928, nos 54–5) and, like them, this vessel was probably intended to be reminiscent of a metal original.
305. [169] Rough-cast beaker in Caerleon ware.
306. [170] (2608) Base, probably of a small bowl in light orange fabric. Scratched around the footring is a graffito, reading CLODI (Tomlin 1997, 470 no. 53).
307. [171] (2611) Tube in light grey fabric with a darker grey surface. There are signs that something was fixed to either end of the surviving piece. This could be from a triple vase but there is no sign of the curvature such as would be expected for the ring base of such a vessel.

Context 2386 (SG72)

308. [172] Flagon in grey fabric with a white slip externally and over the rim.

Context 2410 (SG72)

309. [173] Jar in orange fabric with some sandy inclusions. The neck is corrugated and the vessel may be derived from a form such as Usk Fortress series no. 12 (Manning 1993, 14 and 28–33). Probably 1st century.

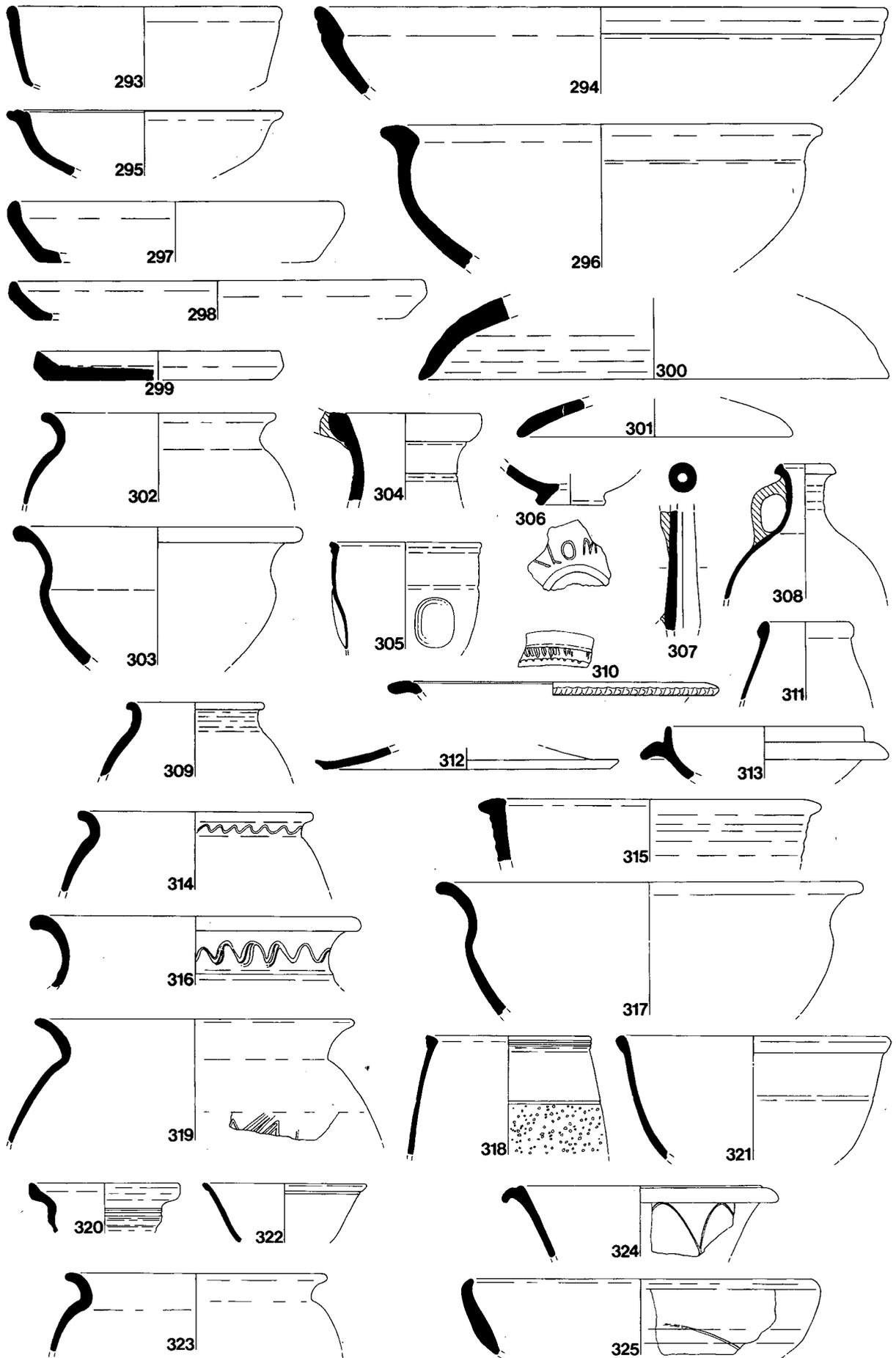


FIG. 54. Coarse pottery, Cambria House nos 293-325. Scale 1:4.

310. [174] Flanged bowl in orange-pink fabric with indented decoration. Other fragments of this unusual piece come from contexts 2405 and 2001.

Context 2352 (SG72)

311. [175] Jar in sandy, light pink-buff fabric. Possibly from a *Verulamium* region jar as Frere 1972, 478
312. [176] Lid in light red-buff sandy fabric.

Building 1 Phase 6: Other demolition deposits

The demolition deposits, other than the dumps, were small and very similar to those from the other Building 1 demolition/Building 3 construction phase. Details are to be found in the archive. Here only one vessel is illustrated.

Context 2397 (SG72)

313. [179] Flanged bowl in Caerleon ware, probably intended to be reminiscent of samian form Curle 11 and thus early to mid 2nd century.

Building 3 Phase 1: Construction deposits

There seems little to distinguish the construction phases (Contexts 2007 and 2398), from the much larger dump deposits (2389, 2405, 2410, 2386 and 2352). Only two vessels have been illustrated from the small construction assemblage.

Context 2007 (SG70)

314. [177] Jar in Black Burnished ware, Gillam 1976, no. 3 (mid to late 2nd century). There is a faint wavy line on the neck.
315. [178] Flanged bowl in light grey fabric with darker grey surface, cf. Whitton (Jarrett and Wrathmell 1981), no. 269 (2nd to 3rd century).

Building 4 and areas to the east and west

Of the material from contexts showing signs of subsequent activity in the area which had been occupied by Building 2, before the construction of Building 5, only one vessel (no. 319 below) is of a significantly later date than items illustrated above. The greater part of the pottery is certainly mid to late 2nd century in date. If we are correct in placing the construction of Building 5 in the mid 3rd century, then the metalling from which no. 319 comes would seem to be contemporary with this building rather than Building 4. To avoid repetition of types already illustrated, only a few pieces from this sub-phase are noted here.

Context 2344 (SG87)

316. [192] Jar in light grey fabric, cf. Whitton (Jarrett and Wrathmell 1981) no. 614 (2nd to 3rd century).
317. [193] Wide-mouthed jar in light grey fabric with darker surface, cf. Usk (Manning 1993, fig. 112) South Wales greyware type 40.5 (2nd to 3rd century).
318. [194] Rough-cast beaker in Caerleon ware. Its size makes this a vessel of jar dimensions.

Context 2367 (SG86)

Along with a flanged and grooved bowl in Black Burnished ware Gillam 1976, no. 42, late 2nd to early 3rd century) was:

319. [195] Jar in Black Burnished ware, Gillam 1976 no. 8 (mid 3rd century). Two large joining fragments with two rim fragments, possibly from the same vessel. The non-joining pieces suggest that the lattice decoration consists of sets of lines arranged somewhat as Gillam 1970, no. 144.
320. [196] Vessel in light pink fabric with a rose core and a dark red-brown colour-coat, probably Caerleon ware and a large handled jar/flagon.
321. [197] Bowl in orange-buff fabric intended to be reminiscent of samian form Dr 37, and almost certainly a local product.
322. [198] Cup in light orange fabric. An imitation of the samian form Dr 64 is possible. Although there is no sign of a colour-coat, the vessel is almost certainly allied to Caerleon ware.

Discussion

This group of contexts immediately overlay the dump deposits which we have dated above to *c.* A.D. 180. There was little from them which need be later than this, and we may suspect that activity which might lead to pottery deposition was light for much of this phase.

Building 5*Phase 1*

Context 2317 (SG88)

323. [216] Jar in Black Burnished ware; a thicker example of Gillam 1976, no. 8 (mid 3rd century).

Context 2318 (SG88)

324. [217] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 44 (mid to late 3rd century).

Context 2317 (SG88)

325. [218] Dish in light brown fabric; a coarser version of a vessel which also occurs in Caerleon ware, cf. Amphitheatre (Wheeler and Wheeler 1928) nos 26–8 and 31.

Context 2337 (SG88)

326. [219] Scale beaker in Nene Valley or Köln colour-coated white ware. A mid 2nd century Köln date is possible, but the decoration occurs most frequently on indented beakers, cf. Howe *et al.* 1980, nos 37–9 (late 2nd to 3rd century). There is no indication that our beaker was actually indented (although no. 378 below may be noted), but a similar date may be implied. (Not illustrated.)

Context 2315 (SG88)

327. [220] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, nos 43–4 (3rd century).

Context 2312 (SG89)

328. [221] A jar in grey fabric.

The context also includes a small fragment of rough-cast beaker from the Nene Valley or Köln (more probably the latter); cf. Anderson 1981, fig. 19.1 nos 5–6. Probably mid 2nd century.

Discussion

The construction phase of Building 5 contains little that is not residual. There are, however, a few pieces which seem to be significantly later than the material relating to the destruction of Building 1 and the construction of Building 3, and a mid 3rd century date may be tentatively suggested.

Phase 2

There was clearly a strong residual element in the Phase 2 deposits. These have not been illustrated.

Context 2314 (SG91)

329. [222] Jar in light grey fabric with wavy-line decoration on the neck. The flared rim suggests a more developed form of Usk South Wales greyware type 22.2 or 35.1 (Manning 1993, figs 110–11)

330. [223] Wide-mouthed jar in grey fabric; cf. Usk South Wales greyware type 43.1 (Manning 1993) 246, with references. Probably 3rd to 4th century

331. [224] Bowl in grey fabric. The series is represented by Usk South Wales greyware types 60–2 (Manning 1993, fig. 115). Most are 2nd to 3rd century.

Context 2176 (SG92)

332. [225] Jar in Black Burnished ware, Gillam 1976, nos 10–12 (late 3rd to early 4th century).

333. [226] Jar in Black Burnished ware, Gillam 1976 nos 12–14 (early to mid 4th century).

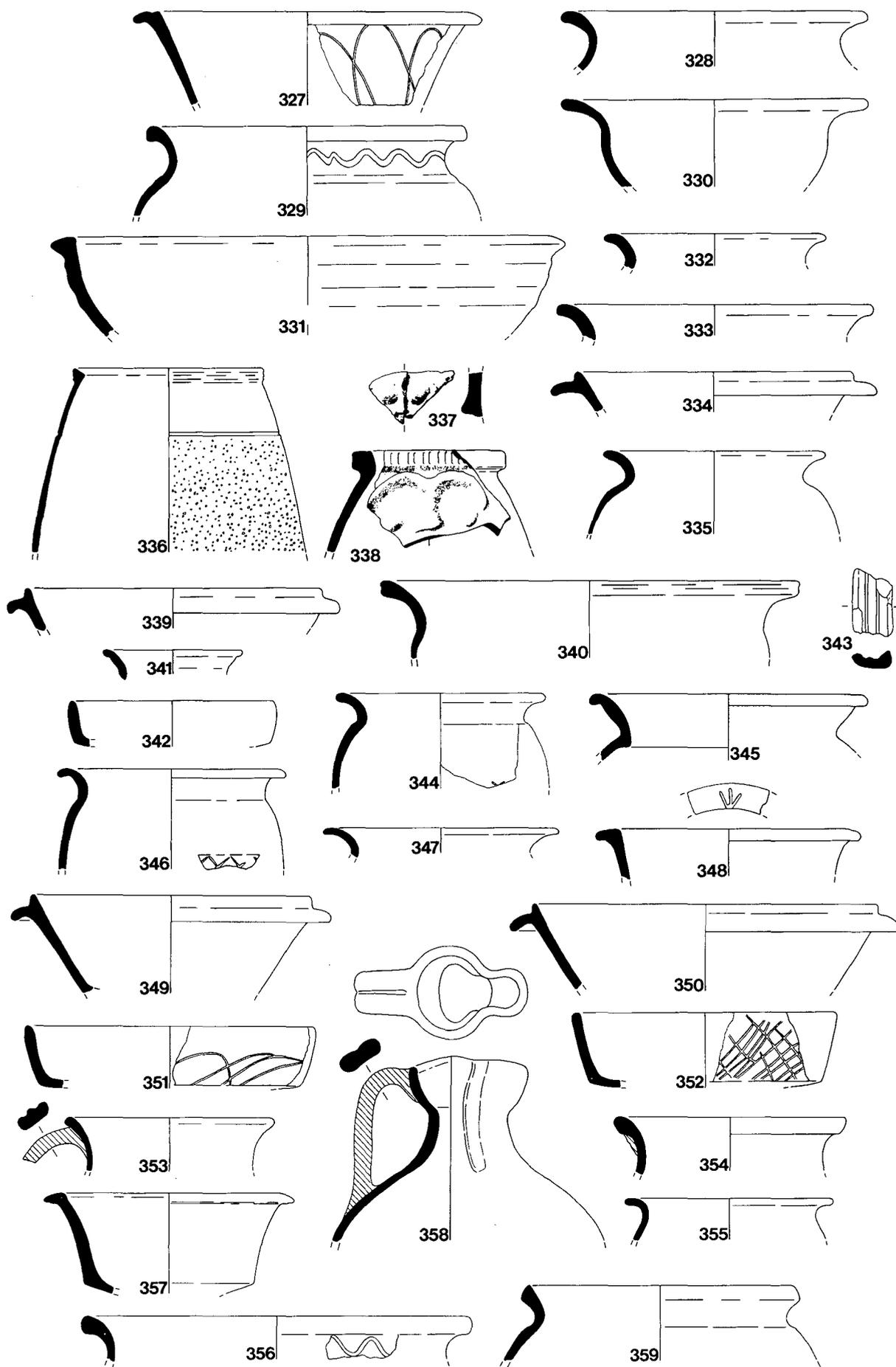


FIG. 55. Coarse pottery, Cambria House nos 327-59. Scale 1:4.

334. [228] Flanged and ridged bowl in Black Burnished ware, Gillam 1976, no. 48 (early to mid 4th century).

Context 2310 (SG92)

335. [229] Jar in Black Burnished ware, probably Gillam 1970, no. 145 (mid to late 3rd century).

Discussion

Phase 2 contains a number of pieces which should date between the late 3rd century and the mid 4th century. Occupation at least into the 4th century seems likely.

Deposits to either side of the original Building 5

West of the original Building 5

The material is listed in the archive. Here it need only be noted that virtually all contexts contain Caerleon ware but that later, or possibly later, pieces are also present as follows:

Context 2311 (SG87): a Black Burnished ware jar, Gillam 1976, no. 7 (early to mid 3rd century).

Context 2325 (SG87): a fragment of no. 379; a fragment of scale beaker, almost certainly as no. 378 below; Black Burnished ware jars, Gillam 1976, nos 11 and 12 (late 3rd to early 4th century).

Only the following adds to the total site picture:

336. [299] Large rough-cast beaker in Caerleon ware.

Deposits to the east of Building 5

These deposits are remarkably similar to the above. There is again much pottery which may be 2nd century. The following later and intrinsically interesting pieces may be noted:

Context 2360 (SG86): a Black Burnished ware jar, Gillam 1976, no. 12 (early 4th century).

Context 2403 (SG86): a Black Burnished ware jar sherd which appears to have an obtuse-angled lattice and should, thus, be later 3rd century or later. Also:

337. [300] (2700) Part of a face pot in light orange fabric, presumably a local product. The associated pottery is mainly residual, and of 2nd century date. There seems no reason why this piece should not also be 2nd century (as no. 291 above).

It is appropriate to publish here a comparable, unstratified vessel recovered during a watching brief on the site in 1988.

338. [300a] Face pot in hard, mid grey fabric, with traces of a darker surface. It has a milled edge to the rim, possibly to represent the hair. (See also no. 394 below.)

Context 2409 (SG86): a Black Burnished ware jar rim sherd, probably of Gillam 1976, no. 11 (late 3rd to early 4th century).

Discussion

The relatively small amounts of material both from east of Building 5, and west of the building in its original form, pose problems of interpretation. The material appears to be predominantly either 2nd century, or late 3rd to early 4th century. In view of the large amount of 2nd century material which occurs in destruction deposits elsewhere, it seems safest to regard all these contexts as late in the sequence, and, therefore, either late 3rd/early 4th century, or indeed, early 4th century. They do, however, appear to be slightly earlier than the destruction deposits discussed below (pp.238–42).

Building 3 Phase 2

The pottery from Building 3 includes much 2nd century pottery with Caerleon ware (including a form imitating the samian form 44/81 and a rough-cast beaker) and Black Burnished ware of mid 2nd to mid 3rd century date (Gillam 1976, types 3, 44, 54, 65) but there are sufficient later pieces (and from a sufficient number of contexts) to carry a later date for the laying of almost all the floors within the building.

Context 2074 (SG74)

With Black Burnished ware including Gillam 1976, no. 74 (late 3rd century) was:

339. [271] Flanged and ridged bowl in burnt Black Burnished ware; cf. Gillam 1976, nos 46–7 (late 3rd to early 4th century). With one other flanged and ridged bowl.
340. [272] Wide-mouthed jar in light grey fabric with a dark grey surface. The overall form resembles Usk South Wales greyware forms 40.4–40.5 (Manning 1993, fig. 112), while the rim is similar to *ibid.* 40.6. 2nd to 3rd century.

Context 2099 (SG80)

341. [270] Jar in Black Burnished ware, Gillam 1976, no. 11 (late 3rd to early 4th century). Numerous non-joining fragments are apparently from the same jar and show the obtuse-angled lattice characteristic of the period.

Discussion

It seems most likely that the Building 3 deposits extend into the late 3rd to early 4th century. However, the amount of earlier material must be noted and, indeed, such a chronological mix is notable elsewhere on the site (see destruction deposits below).

The destruction of Buildings 3 and 5

The destruction deposits from Building 5 were stratigraphically more unified than those from Building 3, because of the lack of dividing walls in the former building. The pottery from Building 5 is discussed first, followed by that from Building 3. A short note on the pottery overlying Building 6 is added.

Building 5

The destruction deposits contained large amounts of residual material. These are listed in the archive, but are only included below where they add something to the overall picture of the ceramic assemblage.

Deposits under rubble

Context 2100 (SG94)

With a Black Burnished ware jar, Gillam 1976 nos 10–12 (late 3rd to early 4th century):

342. [230] Dish in Black Burnished ware. The marked lack of height is unusual.

Rubble deposits

Context 2082 (SG94) included a Black Burnished ware jar with a rim almost approaching the horizontal and, thus, almost certainly 4th century.

Context 2086 (SG94) included five examples of the Black Burnished ware jar, Gillam 1976, no. 11 (late 3rd to early 4th century) along with 22 flanged and ridged bowls in Black Burnished ware (7 examples of Gillam 1976, no. 46, late 3rd to early 4th century; 8 of *ibid.* no. 47, early 4th century; 4 of *ibid.* no. 48, early to mid 4th century; and 3 of *ibid.* no. 49, early to mid 4th century). Also:

343. [231] Flagon handle in Black Burnished ware.
344. [232] Jar in Black Burnished ware, Gillam 1976, nos 10–12 (late 3rd to early 4th century)
345. [233] Jar in Black Burnished ware, Gillam 1970, no. 146 (late 3rd to mid 4th century).
346. [234] Jar in Black Burnished ware; a more hooked version of Gillam 1976, no. 8 and probably late 3rd or early 4th century.
347. [235] Jar in Black Burnished ware, Gillam 1970, no. 147 (late 3rd to 4th century).
348. [236] (2613) Flanged bowl in Black Burnished ware; a 2nd century type. Three grooves in arrow-like formation, have been impressed upon the upper rim before firing.
349. [237] Flanged and ridged bowl in Black Burnished ware; cf. Gillam 1976, nos 47–8 (early to mid 4th century).
350. [238] Flanged and ridged bowl in Black Burnished ware; cf. Gillam 1976, nos 48–9 (early to mid 4th century).
351. [239] Dish in Black Burnished ware, Gillam 1976, no. 77.

352. [240] Dish in Black Burnished ware with a decoration of narrowly spaced lattice. For the form, see Gillam 1976, no. 75.
353. [241] Handled jar in grey fabric. A simple rim like this could occur at any period.
354. [242] Handled jar in grey fabric; cf. Usk South Wales greyware type 1.4 (Manning 1993, fig. 107); probably 3rd to 4th century.
355. [243] Jar in grey fabric; cf. Caldicot (Barnett *et al.* 1990) nos 61–3.
356. [244] Jar in grey fabric with wavy-line decoration on the neck; cf. no. 329 above.
357. [245] Flanged bowl in grey fabric; cf. Usk South Wales greyware 52.2 (Manning 1993, fig. 114); possibly 2nd century.
358. [247] Jug in Caerleon ware, cf. Prys Field (Nash-Williams 1932b) nos 114–16.
359. [248] Jar in light red fabric with a burnished red surface. The fabric is clearly allied to Caerleon ware and is presumably a product of the same industry.

Nos 360–4 represent a range of ‘casseroles’ which seem to be confined to later levels. Swan (1992) has suggested an African connection for similar vessels from York and elsewhere. In their Caerleon context, they can tentatively be suggested as 3rd century types. The fabric is generally sandy but seems close to an oxidised version of the grey ware common in South East Wales.

360. [249] Casserole in light orange fabric with sandy filler.
361. [250] Casserole, probably in the same fabric as no. 360, but burnt.
362. [251] Casserole in light orange fabric with a grey core and noticeably smoother fabric than nos 360–1, above.
363. [252] Casserole in pink to light orange fabric with sparse sandy filler.
364. [253] Casserole in light orange-buff fabric with fine sandy filler.
365. [254] Jar in light orange fabric with a pink-grey core, possibly Severn Valley ware; cf. Webster 1976, no. 8 (3rd century).
366. [255] Wide-mouthed jar in light red-brown fabric with a grey core, very abraded. Severn Valley ware is possible, but an oxidised version of a local jar seems more likely.
367. [256] Lower portion of a near-globular vessel in light red-buff fabric. There is some resemblance to vessels thought to have acted perhaps as amphora stoppers, cf. O’Leary *et al.* 1989, no. 328, and Zienkiewicz 1992a, fig. 2, 31. However, our piece does not appear to be in an amphora fabric, and some other use is possible. (Not illustrated.)
368. [257] Tankard in fawn-buff fabric with a light red-grey core, probably Severn Valley ware; cf. Webster 1976, no. 9 (2nd century). There is one other possible Severn Valley ware tankard fragment from a vessel as Webster 1976, no. 42 (2nd to 3rd century).
369. [258] Jar in buff fabric. For the form, see Usk Fortress series type 17 (Manning 1993, 34–5). The type appears on the German frontier in the 1st century; cf. Gose 1984, nos 356–8.
370. [259] (2224) Flanged bowl in orange-buff fabric. The flange has the word ‘MARTIA[.]’ cut apparently before firing and presumably, therefore, indicative of manufacture for a particular person or unit (Tomlin 1997, 470 no. 52). This practice has been noted at Usk (Boon and Hassall 1982, 57–8, no. 44, *RIB* 2496.3) and also in the Caerleon fortress (Boon 1966a, 45 and pl. III, 1, *RIB* 2496.6). In the latter case, the inscription might possibly be expanded to refer to one Valerius Martialis and is on a fabric which seems likely to have been both local and in use in the Flavian and Flavian-Trajanic period at Caerleon (cf. Zienkiewicz 1992a, 92–5). While it cannot, of course be demonstrated that the ‘Martia..’ of our piece is the Valerius Martialis of the mortarium, it is, at least, worth noting that our vessel appears to have been manufactured locally and that it is a flanged bowl of a standard late 1st to early 2nd century type, thus making the correspondence possible.
371. [260] Flanged vessel in light orange fabric; either a tazza or a flanged bowl.
372. [261] Bowl in light orange fabric, of the same general type as no. 294.
373. [262] Dish with incurved rim in sandy light orange fabric; a coarser version of a vessel which also appears in Caerleon ware, cf. Amphitheatre (Wheeler and Wheeler 1928, nos 26–31).
374. [263] Lid in sandy light orange fabric, burnt grey on the edges. The fabric is similar to that used for the lid-seated jars, nos 360–4, and it is tempting to see this as being part of the same ‘set’.
375. [264] Beaker rim in Moselle colour-coated fabric, cf. Greene 1978, fig. 2.3, no. 6 (see also Symonds 1992). Probably late 2nd to mid 3rd century.
376. [265] Beaker in Moselle colour-coated fabric, cf. Greene 1978, fig. 2.3, no. 5 (also Symonds 1992). Probably late 2nd to mid 3rd century.

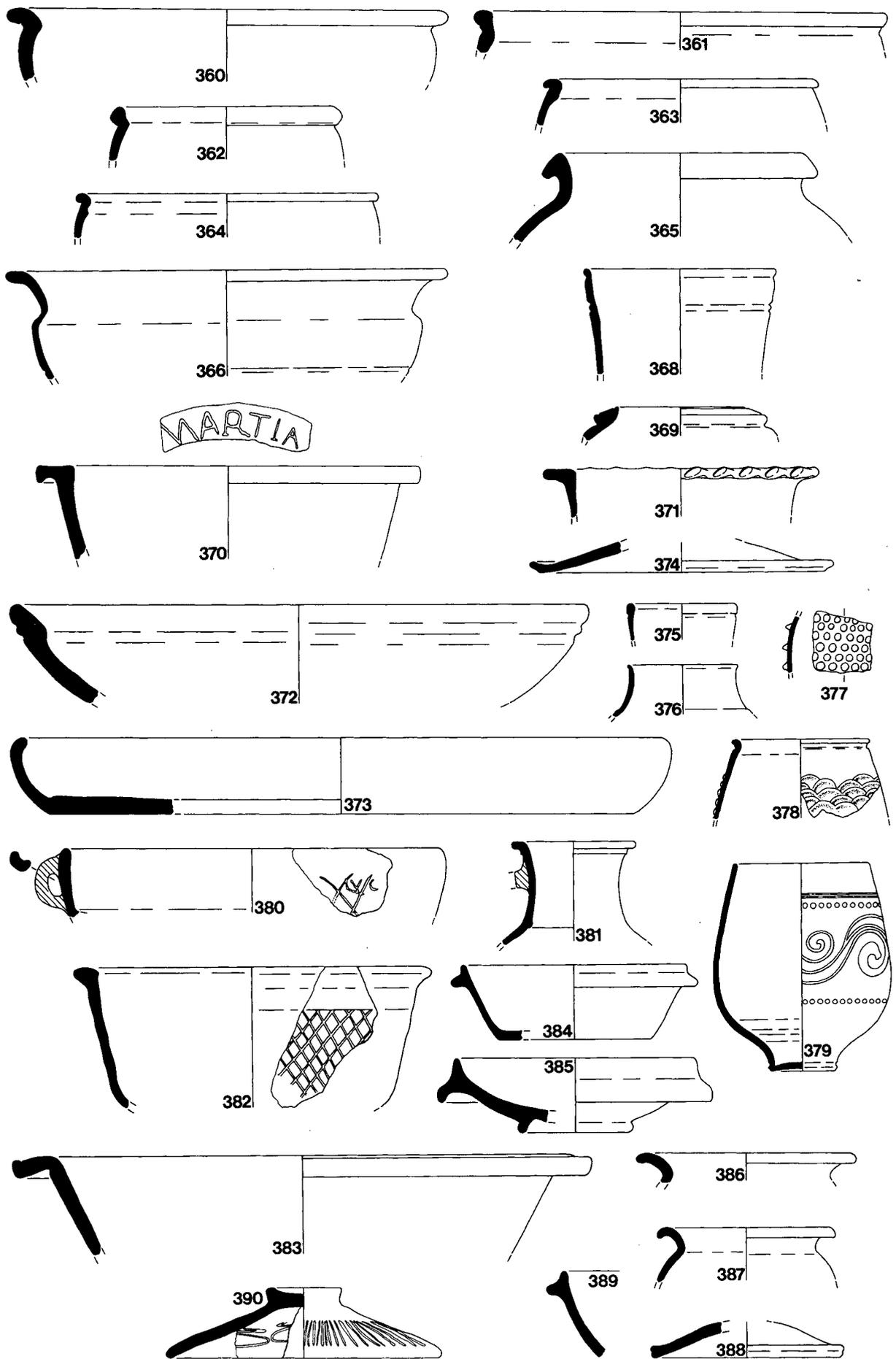


FIG. 56. Coarse pottery, Cambria House nos 360-90. Scale 1:4.

The context also includes five fragments from one or more Lezoux beakers as Greene 1978, fig. 2.3 no. 9 and:

377. [266] Beaker, probably in Lezoux fabric (light pink-buff fabric with a dark black-brown colour-coat). The decoration is in the form of barbotine dots in regularly spaced rows, with the dots in one row falling beneath the spaces in the row above.
378. [267] Scale beaker in Nene Valley or Köln fabric. The rim form suggests a late 2nd to early 3rd century date; cf. Howe *et al.* 1980, nos 26–30.
379. [268] Beaker in colour-coated white-ware, probably from the Nene Valley. The form appears in the Water Newton Kiln A group, excavated in 1958 (Gillam n.d.(a) no. 5); see also Gillam 1970, no. 80 (early to mid 3rd century).

The context also includes a further beaker with a rim as no. 378 and a small beaker base, both in Nene Valley fabric and a fragment of rough-cast beaker in creamy white fabric which may be from the same source. Also of note is a sherd from a glazed bowl of local manufacture.

Discussion: Building 5 destruction deposits

The destruction deposit over Building 5 contains considerable quantities of residual material, mainly from the 2nd century and later. The latest pieces must date from the late 3rd or 4th century and are most probably 4th century in date. It may be noted that there is none of the calcite-gritted ware characteristic of the second half of the 4th century on other South Wales sites, nor are there any of the Black Burnished ware jars of what appears to be the latest type to reach the area (Manning 1993, fig. 126, type 22.6). On balance, the material certainly favours demolition or abandonment in the first half of the 4th century, and possibly within its first quarter.

Building 3

Deposits under the rubble, Rooms 3.4 and 3.6

Context 2076 (SG81) included a Black Burnished ware jar with a very flared rim as Gillam 1976, no. 14 (mid 4th century).

Context 2128 (SG 81)

With Black Burnished ware of Gillam 1976, nos 12 and 46:

380. [275] (2488) Handled dish in Black Burnished ware. The decoration of intersecting loops suggests a 3rd century date. One sherd includes a graffito — LVCI (Tomlin 1997, 470, 54).
381. [276] Handled jar or flagon in buff fabric with a grey core. Probably local.
382. [277] Flanged bowl in light grey fabric, originally with a darker surface, and burnished lattice decoration. Probably intended to be reminiscent of 2nd century Black Burnished ware bowls.

Rubble, Rooms 3.4 and 3.6

Context 2041 (SG81)

With a Black Burnished ware flanged and ridged bowl was:

383. [278] Very large flanged bowl in red fabric, presumably one of the late 1st to early 2nd century series.

Context 2043 (SG81)

With Black Burnished ware of Gillam 1976, nos 12 and 48 (early to mid 4th century):

384. [279] Flanged and ridged bowl; cf. Gillam 1976, nos 47–8 (4th century).
385. [280] Caerleon ware imitation of the samian form Curle 11. The red slip has almost disappeared; cf. Prysg Field (Nash-Williams 1932b) nos 144–6.

Deposits under rubble, Room 3.5

Context 2036 (SG82)

With late 3rd or early 4th century Black Burnished ware such as Gillam 1976, nos 12 and 46–7 was:

386. [273] Jar in Black Burnished ware Gillam 1976, no. 14 (mid 4th century); one of two similar vessels.

Context 2037 (SG82)

387. [274] Jar in Black Burnished ware. The marked curl to the rim places it late in the series. Perhaps early to mid 4th century.

Rubble, Room 3.5

Context 2035 (SG82) included a Black Burnished ware flanged and ridged bowl, probably Gillam 1976, nos 47–8 (early to mid 4th century).

Room 3.7

Deposits both in and under the rubble produced an assemblage very similar to other such levels noted above. One unusual (and residual) vessel is illustrated:

Context 2014 (SG83)

388. [281] Lid in Caerleon ware.

Deposits under the rubble, Rooms 3.1, 3.2, 3.3

Among an assemblage closely similar to those noted above was:

Context 2065 (SG84)

389. [282] Flanged and ridged bowl in Black Burnished ware; probably 4th century.

390. [283] Lid in Black Burnished ware; with a handle which may belong to it; cf. Wallace and Webster 1989. A number of BB1 lids occur in secure 3rd and 4th century contexts but, as yet, it is not certain how long the type survived. A residual vessel cannot be ruled out in the present case.

391. [284] Flanged and ridged bowl in light grey fabric with traces of a darker surface, probably imitating late 3rd to 4th century Black Burnished ware forms.

392. [285] Flanged bowl in dark grey fabric, with traces of soot. A connection with 4th century Black Burnished ware forms is probable.

Rubble, Rooms 3.1, 3.2, 3.3

The assemblage closely resembles that from destruction deposits already noted. Only three vessels are illustrated.

Context 2046 (SG84)

393. [286] (2798) Jar shoulder in Black Burnished ware, with an incised 'B'.

Context 2095 (SG84)

394. [287] Jar in light brown fabric with traces of a white slip. The rim is scored to give a milled appearance. The same technique is used on the face pot, no. 338 above, and this is probably another face pot.

395. [288] Jar or casserole in light orange sandy fabric in the same series as nos 360–4 above.

The context also contained an Oxford colour-coated ware sherd, probably from a flagon.

Discussion, Building 3 destruction deposits

The assemblage from the Building 3 destruction was broadly similar to that observed in destruction levels elsewhere on the Cambria House site. Like them, dating extends into the 4th century, with some vessels which are, or may be, early to mid 4th century as the latest items. As with the Building 5 deposits, destruction in the first half of the 4th century and possibly within the first quarter may be postulated.

Rubble over Building 6

Material from the rubble over Building 6 (context 2183, SG96) seems very similar to that over Building 5 and a similar date seems assured. Only one unusual vessel is illustrated.

396. [269] Miniature tazza in orange granular fabric, burnt on, and over, the rim.

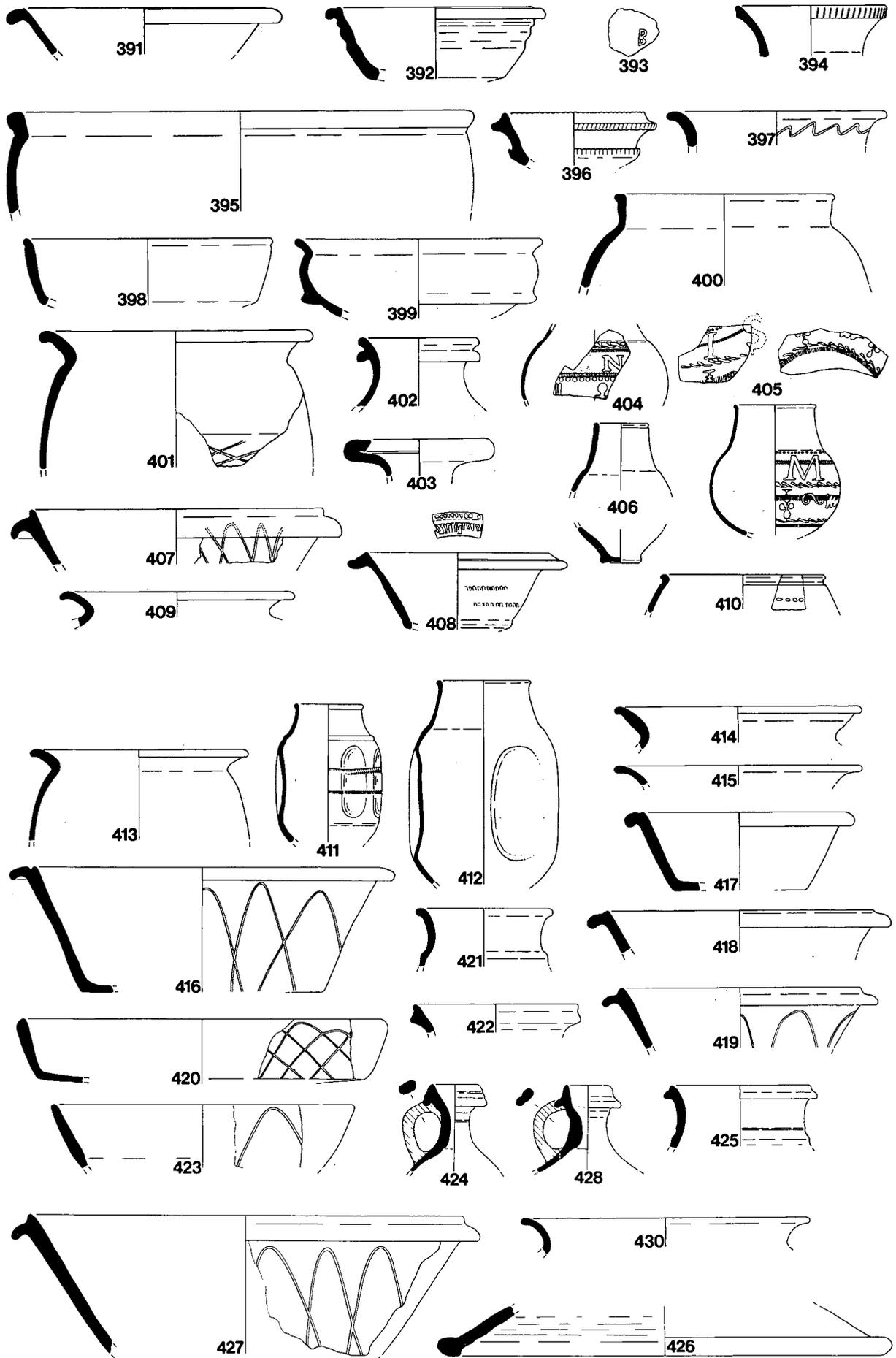


FIG. 57. Coarse pottery, Cambria House nos 391-410; the Smallholding nos 411-30. Scale 1:4.

The metalworking area associated with Buildings 21 and 22 (see pp.154–8)*Contexts associated with metalworking*

Context 2430 (SG170) included a sherd from a Black Burnished ware jar with an acute-angled lattice, which is unlikely to be other than 2nd century in date.

Context 2511 (SG172)

397. [181] Jar in Black Burnished ware with faint zigzag line on the neck; cf. Gillam 1976, no. 3, mid to late 2nd century.
 398. [182] Dish in Black Burnished ware; cf. Gillam 1976, nos 69–70, mid to late 2nd century.
 399. [183] Bowl in light orange-buff fabric, burnt externally. The form closely resembles one produced in Caerleon ware and this could be an abraded example of the ware; cf. Usk Caerleon ware type 12 (Manning 1993, 259), where an early to mid Antonine date is argued.

Discussion

The metalworking area produced a small amount of material which would fit happily with the demolition of Building 1/construction of Building 3, i.e. in the mid to late 2nd century.

Destruction deposits over the metalworking area and over Buildings 21 and 22

Material from these destruction deposits adds little to the picture already gained from Buildings 3 and 5. A general summary of the assemblage is given in the discussion below. Here, only a few pieces may be noted.

Context 2429 (SG168)

The context included three sherds which are gritted in the tradition of the late Iron Age or early Roman period, i.e. the so-called 'native' wares as defined in the Usk report (Manning 1993, 290–2). A fourth piece might belong with late calcite-grits from the east Midlands, but the sherd is too fragmentary for certainty.

400. [289] Jar in Black Burnished ware. The upright rim suggests a 1st century date; cf. Usk Black Burnished ware type 7 (Manning 1993, fig. 123).
 401. [290] Jar in Black Burnished ware, Gillam 1976, nos 10–11 (late 3rd to early 4th century).

The context also includes a sherd from a 'Castor box' lid in Nene Valley fabric and:

402. [291] Jar with a double rim in mid grey fabric. A more developed form of a type found at Caldicot and Llanedeyrn, cf. Barnett *et al.* 1990, nos 1–5. Probably 4th century.
 403. [292] Folded rim in buff fabric, perhaps from a flagon. The fabric resembles that of the Gallic amphora, Pélichet 47 (Gauloise 4) and this may have been a casual import with an amphorae consignment.

Context 2459 (SG168)

The context includes the base of a ?jar in a fabric which appears similar to the mortarium Gillam (1970) type 238 and is probably from the same source (Gallia Belgica) and date (later 1st century). We are grateful to Mrs K.F. Hartley for discussion of this piece. There is a similar base from context 016.

404. [293] (2690) Beaker in Moselle fabric with a black colour-coat and white-painted decoration, which includes a letter from a 'motto' reading: 'N' (Tomlin 1997, 470, no. 49). For the form, see Gose 1984 type 203–4. The most likely expansion would be 'VINUM', either on its own, or in a phrase such as: 'VINUM VERES', as found on a vessel from Köln, cf. Wellershof 1974, 110; see also Symonds 1992, Group 36 and p.119. The probable meaning was: 'Wine gives Vigour'.

A comparable vessel to 404 above is illustrated here. It comes from the unstratified and otherwise unpublished context 2002 (2261):

405. [293a] 'Motto' beaker in light orange fabric with black slip, rouletted bands and white-painted decoration. Letters from two different parts of the vessel read: 'M', and 'IS' (Tomlin 1997, 48). Despite the lack of a normal 'sandwich' of oxidised and reduced layers, this is likely to be a Moselle product. A possible expansion of the available letters would be 'REMISCE', which can appear on its

own or as 'REMISCE MI', cf. Schindler 1980, 70 and pl. 217; see also Symonds 1992 116–18 for an alternative reading. The phrase presumably translates as: 'Mix (It) For Me Again' and so would have its modern equivalent in: 'Same Again'.

Context 2470 (SG168)

406. [294] (2227) Beaker in hard grey fabric with traces of a reddish colour-coat. The vessel looks overfired, but the most likely source is the New Forest kilns, examples of whose products occur very rarely in south-east Wales. Cf. Fulford 1975, type 30; the rim resembles his type 30.6, but the body is plain. The type is 4th century in date, becoming more common from the mid century onwards. The basal sherd has been drilled to receive a rivet, although whether this resulted in further breakage and abandonment of the vessel is not clear.

Context 2471 (SG168)

407. [295] Flanged and ridged bowl in Black Burnished ware. The type is represented by Gillam 1976, nos 46–9, but the rim of our example is more hooked than any of these. Probably 4th century.
408. [296] Carinated bowl with decorated flange in pink-buff fabric with traces of a thin white slip, burnt internally. The burning suggests use as a tazza. The fabric is allied to late 1st/early 2nd century Caerleon ware mortaria, cf. Zienkiewicz 1992a, 92–4.

Context 2482 (SG168)

409. [297] Jar in Black Burnished ware. The closest parallels are with late vessels from Lydney, cf. Wheeler and Wheeler 1932, nos 55–6. Probably mid to late 4th century.
410. [298] Beaker in cream fabric with a dark grey-brown slip; either from the Nene Valley, or Köln, cf. Anderson 1981, no. 8. Probably late 2nd century.

Discussion

The destruction deposits in this area contain a range of material from the 1st to the 4th centuries. First century material is, however, slight. Second century material is more numerous and there is a suggestion of a predominance of types current in the later part of the century. However, as one would expect, 3rd and 4th century material predominates, but not to such an extent as to suggest a homogeneous, or undisturbed deposit. Chronologically the material extends into the mid 4th century and it may be noted that there are a few pieces likely to be mid 4th century or later. However, it would not be impossible for this to be an early 4th century destruction level, with a few later additions. Late calcite-gritted ware is absent, with one possible exception.

The Smallholding

Introduction

Pottery selected as a significant sample from the Smallholding includes a much smaller number of vessels (approximately 319) than is contained in the samples above. Care needs, therefore, to be taken in comparing this collection with the others. Nevertheless, there do seem to be significant differences between the pottery from this area and that from others.

Chronology

As in the case of other sites, a histogram has been constructed (FIG. 58). It must, of course, be noted that the overall number of vessels involved is much less than in the Riding School Field or Cambria House samples. Even allowing for this, the chronological pattern seems to be different. There is, for instance, no 2nd century peak. Instead we see a steady build-up of material across the later 1st and 2nd centuries, reaching a peak in the mid to late 3rd century. The slightly staccato series of peaks and troughs across the 3rd century as a whole is of interest, but could be no more than a result of a rather small sample. The overall pattern, however, suggests that this site has a rather different history from that observed elsewhere. It may also be noted that late 4th century pottery is totally absent, perhaps suggesting a slightly earlier date of total abandonment than elsewhere.

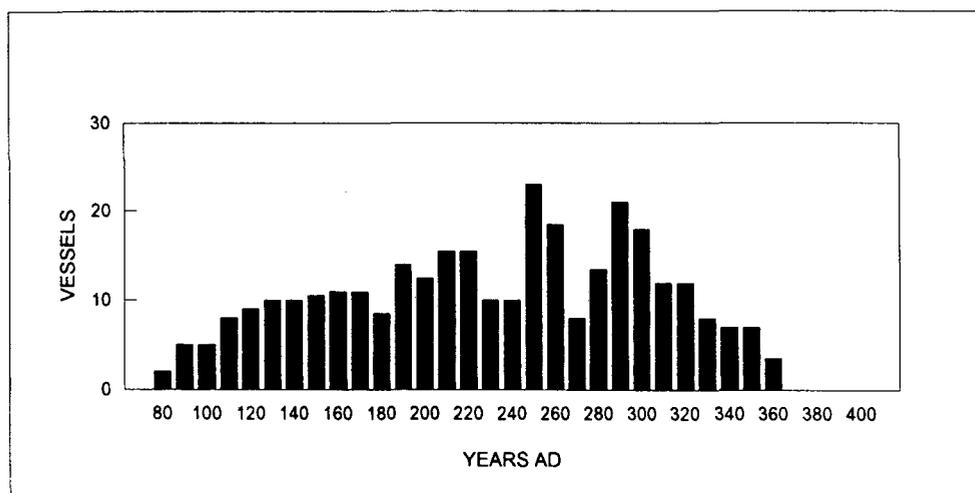


FIG. 58. Histogram of coarse pottery vessels by date: The Smallholding.

Sources of pottery

The 319 vessels in the sample may be divided by source as shown in TABLE 18:

TABLE 18: SMALLHOLDING, SOURCES OF COARSE POTTERY

Ware/source	Number	%age of all vessels
Caerleon (Cln)		
Cln ware	19	6
Cln Tazze	3	1
Cln Oxidised	11	3
Cln Glazed	1	—
Other oxidised (mainly local)	26	8
Reduced (mainly Cln & S.Wales)	56	16
Severn Valley	1	—
<i>Terra Nigra</i>	1	—
'Pompeian red'	1	—
BB 1	183	57
<i>Verulamium</i>	1	—
Oxford	2	1
Köln/Nene Valley	2	1
C. Gaul	8	3
Moselle	4	1
Total	319	97
Classes too small to calculate.		3
Total		100

The total dominance of Black Burnished ware in this assemblage is at once evident. The low percentage of Caerleon ware, compared with that seen elsewhere is also notable and is presumably accounted for by the smaller amount of 2nd century material. The range of finewares in such a small assemblage is also of interest. In part, this is again a product of a site more intensely occupied in the 3rd century, but it also seems possible to suggest a site which is less kitchen-oriented than those previously examined.

Function

The 319 vessels in the sample divide into the functional categories shown in TABLE 19:

TABLE 19: SMALLHOLDING, TYPES OF COARSE POTTERY VESSEL

Vessel Class	Number	%age of all vessels
Flagons	14	4
Jars	149	47
Bowls	74	23
Beakers/cups	31	10
Tazze	4	1
Dishes	44	14
Lids	2	1
Misc	1	—
Total	319	100

The table-orientation hinted at in the summary of sources seems not to be borne out by TABLE 19. Apart from an unusually high number of flagons, the over-riding impression is of a very high proportion of jars. We may also note an almost total absence of specialised items such as appear generally in the miscellaneous category.

Catalogue

The fill of the latest drain associated with the road from the east gate

Context 3024 (SG18)

411. [58] Indented beaker in Central Gaulish (Lezoux) colour-coated fabric; cf. Greene 1978, fig. 2.3 no. 5, Symonds 1992, no. 251. Probably late 2nd to mid 3rd century.

The context also included a fragment of Central Gaulish colour-coated beaker with barbotine-decoration, as Greene 1978, fig. 2.3 no. 9.

412. [59] Indented beaker in Moselle fabric as Gose 1984, nos 206–7. 3rd century. With fragments which may be from another similar vessel. Also fragments of a beaker in thin grey fabric with incised decoration.

Black Burnished ware from this context included a range of 2nd to 4th century vessels with the main emphasis on late 3rd and 4th century pieces. Among the later pieces are:

413. [60] Jar in Black Burnished ware, Gillam 1976, nos 12–13 (early to mid 4th century).

414. [61] Jar in Black Burnished ware, probably 4th century.

415. [62] Jar in Black Burnished ware with a very flared rim. It is unlikely to be earlier than the early 4th century and might be later than that.

416. [63] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 42 (late 2nd to early 3rd century).

417. [64] Flanged and grooved bowl in Black Burnished ware. 3rd century.

418. [65] Flanged and ridged bowl in Black Burnished ware; the form is intermediate between Gillam 1976 nos 44 and 45. ?Late 3rd century.

419. [66] Flanged and ridged bowl in Black Burnished ware. Late 3rd to 4th century.

420. [67] Dish in Black Burnished ware, Gillam 1976, no. 79; dated by Gillam to the early 3rd century.

421. [68] Jar in local grey fabric.

422. [69] Jar in local grey fabric. Both Llanedeyrn and Caldicot produced jars with a double rim of this sort and a later 3rd or 4th century date can be suggested.

423. [70] Context 3024 contains the base sherd of a dish in grey fabric with a dark grey surface. The fabric is most distinctive due to its extremely micaceous appearance. The sherd illustrated is from context 3026 and is in the same fabric and may, indeed, be part of the same vessel. The source of the fabric is not known but is unlikely to be very local, and this may be Gloucester TF5.

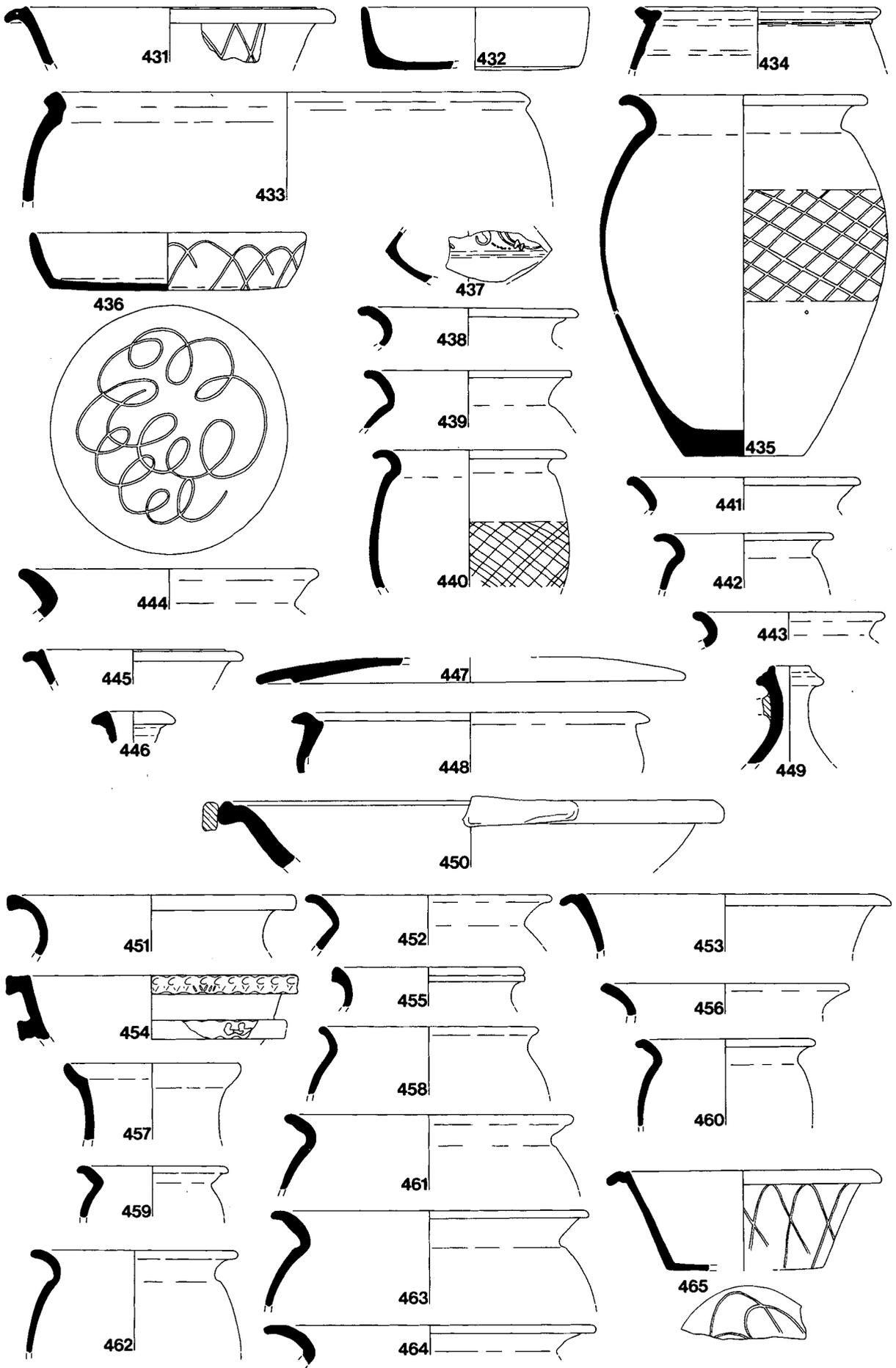


FIG. 59. Coarse pottery, the Smallholding nos 431-65. Scale 1:4.

424. [71] Flagon in grey fabric with a light red surface and a cream slip. There seems no reason why this should not be local in manufacture. The fabric may be related to a local late 1st to early 2nd century mortarium fabric (cf. Zienkiewicz 1992a, 94).
425. [72] Jar in fawn fabric.
426. [73] Lid in orange-buff fabric.

Context 3079 (SG18)

The context included a Central Gaulish colour-coated, barbotine-decorated beaker, Greene 1978, no. 9, a Moselle indented beaker; a globular beaker (probably as Greene 1978, no. 6 but without the indentations); and a range of 3rd and 4th century Black Burnished ware, including no. 427 below.

427. [74] Flanged and ridged bowl in Black Burnished ware, Gillam 1976, no. 48 (early to mid 4th century).
428. [75] Flagon in grey fabric with a light red surface and a cream slip.

Context 3051 (SG18)

429. [184] (3240) Dish in 'Pompeian red' fabric with a slight footring. Residual in this context; cf. Greene 1979, 129–33. First century. (Not illustrated.)
430. [185] Jar in Black Burnished ware, probably Gillam 1976, no. 12 (early 4th century). With three similar jars.
431. [186] Flanged bowl in Black Burnished ware, cf. Gillam 1976, no. 44 (mid to late 3rd century). With one other example.
432. [187] Dish in Black Burnished ware.
433. [188] Jar or casserole in light orange fabric, cf. nos 360–4 above.
434. [189] Jar in light orange fabric.

Nos 435–6 were found together.

435. [190] (3091) Near complete jar in Black Burnished ware. The angle of the rim resembles Gillam 1976, no. 12, but the overall form is closer to *ibid.* no. 10. A late 3rd to early 4th century date would seem reasonable.
436. [191] Near complete dish in Black Burnished ware, cf. Gillam 1976, nos 77–80 (3rd century).

No. 436 was found in pieces inside no. 435, and it is difficult to see quite how it got there, unless it was already broken on deposition. It is of sufficient diameter to have acted as a lid for no. 435 but, if deposited while serving this function, the rim fragments would have been found outside the larger vessel, whereas they were found inside. The only other contents were an iron object/nail and a bronze nail. A small hole drilled through the wall of no. 435 from the outside, may be noted. The circumstances of deposition suggest that nos 435–6 must be contemporary, making a late 3rd century date of deposition the most likely.

Discussion

The drain fill includes material which runs up to the late 3rd or early 4th century. There are some pieces which are more likely to be early 4th century than any earlier, but the collection as a whole need not extend much beyond this.

Building 18/19*Deposits pre-dating Building 18/19*

Context 3065 (SG151)

437. [1] Central Gaulish (Lezoux) colour-coated cup; cf. Greene 1978, 25, no. 8 (late 2nd century); Symonds 1992, Group 7.
438. [2] Jar in Black Burnished ware, Gillam 1976, no. 8 (mid 3rd century).

Context 3071 (SG151)

439. [3] Jar in Black Burnished ware, Gillam 1976, no. 8 (mid 3rd century).

440. [4] Jar in Black Burnished ware. The decoration of obtuse lattice, below a horizontal line is most likely to be late 3rd century, or later.
441. [5] Jar in Black Burnished ware; probably from a vessel such as Gillam 1976, no. 10 (late 3rd century).
442. [6] Jar in Black Burnished ware, Gillam 1976, nos 10–12 (late 3rd to early 4th century).
443. [7] Jar in Black Burnished ware, Gillam 1976, no. 7 (early to mid 3rd century).
444. [8] Large jar in Black Burnished ware burnt white in places.
445. [9] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 42 (late 2nd to early 3rd century).
446. [11] Flagon in light orange fabric, probably Caerleon ware.
447. [12] Lid in light orange fabric, probably Caerleon ware.
448. [15] Jar in orange sandy fabric, burnt on the rim and apparently designed to receive a lid. Probably related to the 'African' round bottomed casseroles illustrated as nos 360–4 above.

Context 3073 (SG151)

The context included a dish in Caerleon ware, reminiscent of the samian form 18/31. Nos 449 and 450 below are also in Caerleon ware:

449. [10] Flagon in light orange fabric; cf. Nash-Williams 1932b, no. 110; Zienkiewicz 1986b, group 17, no. 110. 2nd century.
450. [13] Large handled dish in light orange-buff fabric with traces of red colour-coat.
451. [16] A necked jar in light grey fabric.

Discussion

There is a range of material from pre-building contexts which is of 1st and 2nd century date, but there are a significant number of 3rd century, or 3rd to 4th century pieces. It seems unlikely that the deposits were closed before the second half of the 3rd century.

Phase 1 (construction deposits)

Foundations in the south range, west of the entrance

Context 3004 (SG152)

452. [17] Jar in Black Burnished ware, probably Gillam 1976, no. 10 (late 3rd century).
453. [18] Flanged and grooved bowl in Black Burnished ware, Gillam 1976, no. 44 (mid to late 3rd century).

Foundations in the south range, east of the entrance

Context 3009 (SG153)

454. [19] Tazza in light orange-buff fabric with white slip. A local product.
455. [20] Jar in light grey fabric. The grooved rim is a 3rd to 4th century characteristic in Severn Valley ware and this may well be of similar date.
456. [21] Jar in light grey sandy fabric, cf. Llanedeyrn (Vyner and Evans 1978) no. 1. Late 3rd century or later.

Contexts pre-dating the construction of the east range and post-dating the construction of the south range

Context 3045 (SG155) included a Black Burnished ware jar of Gillam 1976, nos 8–10 (mid to late 3rd century) and a bowl, *ibid.* no. 46 (late 3rd to early 4th century). There was also a sherd of what appeared to be burnt Oxford Parchment ware.

Phase 1/2

Context 3047 (SG155)

Nos 457–72 are all in Black Burnished ware

457. [24] Jug; cf. Wallace and Webster 1989 and forthcoming.
458. [25] Jar, Gillam 1976, no. 4 (late 2nd century).
459. [26] Jar, Gillam 1976, no. 5 (late 2nd to early 3rd century).

460. [27] Jar, Gillam 1976, no. 7 (early to mid 3rd century). One of seven similar vessels.
 461. [28] Jar, Gillam 1976, no. 7 (early to mid 3rd century).
 462. [29] Jar, Gillam 1976, no. 8 (mid 3rd century). One of eight similar vessels.
 463. [30] Jar, Gillam 1976, no. 11 (late 3rd to early 4th century). One of six similar vessels.
 464. [31] Jar. The surviving portion would restore either as Gillam 1976, no. 12 (early 4th century) or as no. 14 (mid 4th century).
 465. [32] Flanged and grooved bowl, Gillam 1976, no. 42 (late 2nd to early 3rd century). With two other similar vessels.
 466. [33] Flanged and grooved bowl, Gillam 1976, no. 42 (late 2nd to early 3rd century). With two other similar vessels.
 467. [34] Flanged and grooved bowl, Gillam 1976, no. 43 (early to mid 3rd century). One of three similar vessels.
 468. [35] Flanged and grooved bowl, Gillam 1976, no. 44 (mid to late 3rd century).
 469. [36] Flanged and grooved bowl; with four other vessels of broadly 3rd century type.
 470. [37] Flanged and ridged bowl, Gillam 1976, no. 48 (early to mid 4th century).
 471. [38] Flanged and ridged bowl, Gillam 1976, nos 48–9 (early to mid 4th century). There are three other flanged and ridged bowls of a broadly late 3rd to mid 4th century type.
 472. [39] Dish, Gillam 1976, nos 77 and 79; dated by Gillam to the late 2nd to early 3rd century, although the date range appears to be unduly restricted. With four other similar vessels.
 473. [40] Tazza in granular orange fabric with grey core and thin cream slip.

Nos 474–5 have distinctive rims and are probably local in origin; cf. nos 362–4 above.

474. [41] Jar in light orange-red fabric.
 475. [43] Jar in orange-buff fabric.
 476. [44] Wide-mouthed jar in Severn Valley ware; cf. Webster 1976.
 477. [45] Jar in sandy orange fabric. Broadly similar vessels were being produced at Caldicot in greyware, cf. Barnett *et al.* 1990, nos 1–5, and this is probably an oxidised version from the local industry.
 478. [46] Dish in pink-buff sandy fabric.
 479. [47] Jar in grey fabric, Caldicot (Barnett *et al.* 1990) no. 10 appears to be similar. A later 3rd century date would be appropriate.
 480. [48] Jar in grey fabric with zigzag decoration on the neck, cf. Usk South Wales greyware series (Manning 1993, fig. 107) nos 1–2 (2nd century). With one other similar rim, but without the decoration.
 481. [49] Jar, or handled jar in grey fabric.
 482. [50] Wide-mouthed jar in grey fabric; cf. Whitton (Jarrett and Wrathmell 1981, no. 614) (2nd to 3rd century).
 483. [51] Jar in grey fabric; cf. Caldicot (Barnett *et al.* 1990, nos 16–21) (late 3rd century). With three broadly similar vessels.
 484. [52] Jar in grey fabric.
 485. [53] Bowl in grey fabric with a dark grey surface.
 486. [54] Bowl in grey fabric; with an unusual frilled rim.
 487. [55] Flanged bowl in grey fabric, apparently imitating late 3rd to 4th century Black Burnished ware forms.

The context also included a sherd of green-glazed beaker and examples of colour-coated beakers from Central Gaul (2), the Moselle (a folded beaker as Greene 1978, fig. 2.3 no. 5), the Nene Valley or Cologne and Oxford.

Context 3048 (SG155)

With Black Burnished ware broadly similar to that illustrated from context 3047:

488. [56] Large flanged bowl in light orange fabric with white inclusions (broken stone). A large, possibly commercial, mixing bowl.

Context 3066 (SG155)

With Black Burnished ware, again similar to that from context 3047:

489. [57] Flagon in grey fabric with a light red surface covered in a cream slip. The form appears in Caerleon ware, so a 2nd century date is possible.

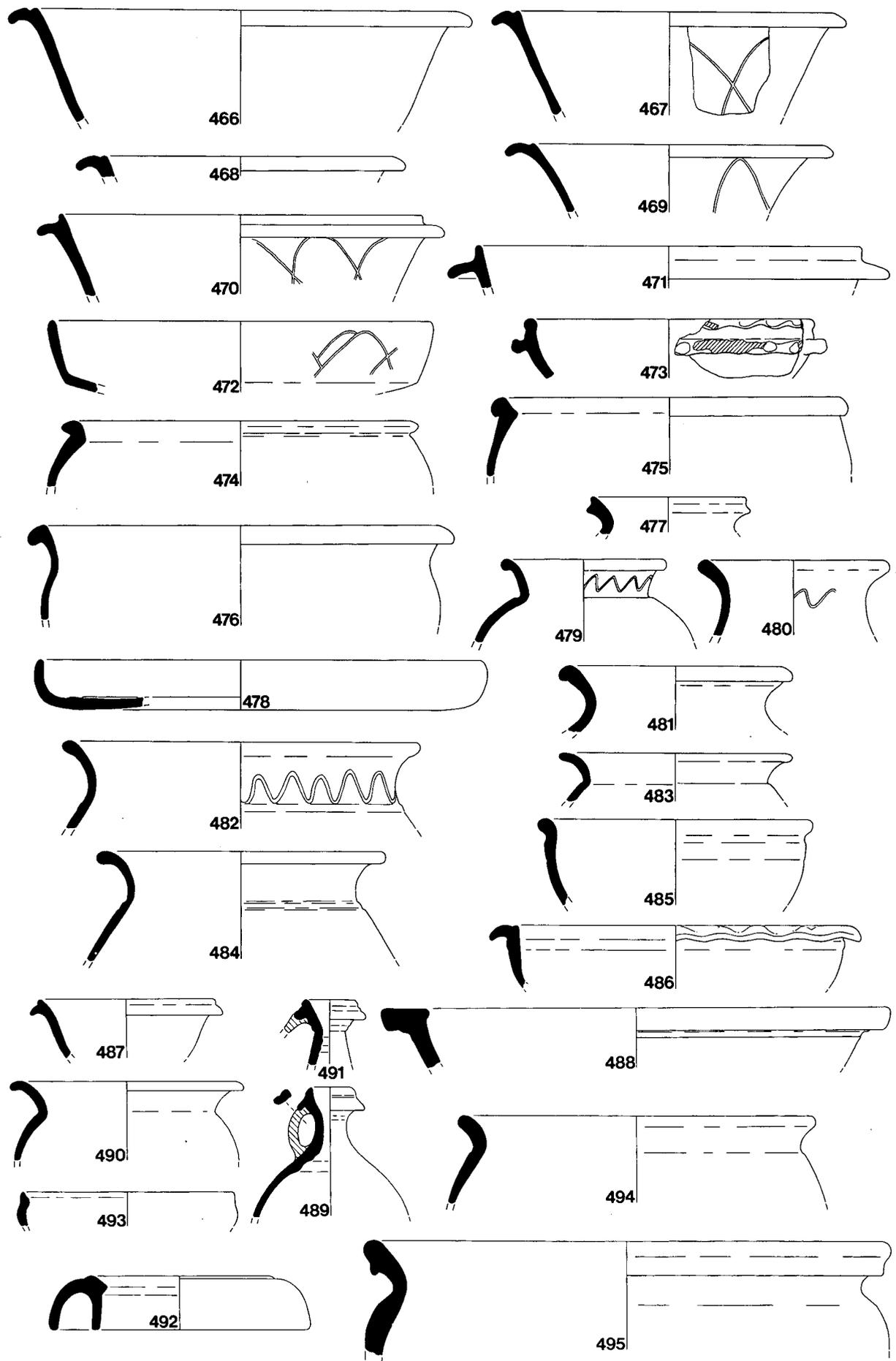


FIG. 60. Coarse pottery, the Smallholding nos 466–92; unstratified/poorly stratified nos 493–5. Scale 1:4.

Phase 2

East range foundation

Context 3010 (SG156)

With Black Burnished ware of the 2nd and 3rd century was:

490. [22] Jar in Black Burnished ware, Gillam 1976, nos 11–12 (late 3rd to early 4th century).

491. [23] Flagon in light red fabric with a grey core and a white slip.

Discussion

This material is broadly similar to that from pre-building contexts. No. 490 represents the latest datable vessel. Taken with the larger amount of 3rd century material, a later 3rd century date would seem appropriate. In the ceramic record, there is nothing which would support a gap between the construction of the south and the east ranges.

Discussion, Building 18

The deposits related to the construction of Building 18 (both phases) include a great deal of 3rd century material, but some which seems more likely to be 4th century. Activity into the early 4th century would suit the evidence.

Miscellaneous

Context 3044 (SG163)

492. [76] (3166) Vessel in orange-buff fabric with a lighter core. It appears to have stood on a flat surface, as illustrated. The bevel at the junction of inner and outer walls might have been designed as a support for some other vessel.

The Allotments*Introduction*

This small trial excavation produced such a small quantity of pottery relative to the other major sites (54 vessels in the selected sample) that it is doubtful whether any meaningful comparisons can be made. For the sake of completeness, brief notes upon chronology, sources and function are given below.

Chronology

No histogram is offered on such a small sample. It may be noted, however, that no 1st century pottery was present and that the remainder was spread across the 2nd to mid 4th centuries, apparently with most material from the 2nd and the late 3rd to mid 4th centuries. It seems likely, therefore, that the chronological pattern was much as on the two major sites.

Sources of pottery

As one would expect, the breakdown of sources (TABLE 20) is similar to that for the other sites, but with fewer of the minor sources represented.

TABLE 20: ALLOTMENTS, SOURCES OF COARSE POTTERY

Ware/source	Number	%age of all vessels
Caerleon (Cln)		
Cln ware	7	13
Cln oxidised	3	5.5
Other oxidised (mainly local)	3	5.5

Ware/source	Number	%age of all vessels
Reduced (mainly Cln or S. Wales)	6	11
Black Burnished 1	31	57
Oxford	1	2
C. Gaul	2	4
Köln/Nene Valley	1	2
Total	54	100

Function

TABLE 21 may be compared with those from other sites.

TABLE 21: ALLOTMENTS, TYPES OF COARSE POTTERY VESSEL

Vessel Class	Number	%age of all vessels
Flagons	2	4
Jars	17	31
Bowls	19	35
Beakers	5	9
Dishes	9	17
Lids	2	4
Total	54	100

The excess of bowls over jars may be noted as unusual, but is probably not significant in such a small sample.

Catalogue

Only two (unstratified) contexts were selected for study. They appear in summary only here. A fuller list has been placed in the archive.

Context 4001

This was a predominantly 2nd century collection but with some later pieces, including an Oxford colour-coated bowl of Young 1977, type C45 (*c.* A.D. 270–400).

Context 4002

The context contained a mixture of 2nd to 4th century material. The latest pieces were Black Burnished ware jars of Gillam 1976, nos 12–14 (4th century) and flanged and ridged bowls including Gillam 1976, no. 47 (early 4th century). It seems reasonable to assume that activity on the site lasted as long as on the other sites examined.

Pottery from Unstratified or Poorly Stratified Contexts

In view of the fact that the pottery from these excavations has only been sampled, it is inevitable that some classes of material are unrepresented or under-represented in this report. To balance this and to give as clear a picture as possible of the ceramic assemblage, a larger than usual number of vessels have been selected for illustration from contexts which are unstratified or poorly stratified. They have been illustrated by class with the context number given at the beginning of each entry.

Vessels in a native tradition

493. [491] 2001 Jar in light grey, calcite-gritted fabric with a light brown internal surface, burnt dark grey externally. Vessels in this tradition span the Conquest and were still being produced at the time of the foundation of the Caerleon fortress (*cf.* Webster 1993, 230–2). Mid 1st century to mid Flavian.

494. [492] 3001 Jar in light brown fabric. The filler includes quartz and crushed stone; cf. Spencer 1983, fig. 2. Probably of a similar date to no. 493.
495. [493] 3044 Large jar in light grey fabric. The form is not native to this area and is probably an import from further east. Cf. for example, Cirencester (Wacher and McWhirr 1982, fig. 51, 66), probably 1st century.
496. [494] 2002 Rim in grey calcite-gritted fabric with a light brown surface, probably from a jar of East Midlands origin and mid to late 4th century in a South Wales context (cf. Webster 1993, 294).

Black Burnished ware (BB1)

Nos 497–500 are Black Burnished ware jugs, cf. Wallace and Webster 1989 and forthcoming. Although many of the jugs recorded by Wallace and Webster are likely to be 1st or 2nd century, the type is not restricted to this period. The jugs are related to Black Burnished ware jars, with which they share a common body shape (below the neck). The size of no. 500, for instance, would fit best with the large 3rd to 4th century jars and seems likely to be a later example of the type.

497. [180] 2001(2316) Neck of a Black Burnished ware jug. The rim originally will have been pinched in to form an approximate 'figure of eight', cf. Wallace and Webster 1989, fig. 1 (also Wallace and Webster forthcoming). Jugs such as this were formed by making a lower portion, very like a jar but without a rim, and then making the neck separately. Our piece has broken where the neck and body were joined and the break is so complete that the join can never have been a good one in this case. The upper part of the rim and the handle are missing and it could be that the piece had some secondary function, e.g., as a funnel. Many of these jugs are 2nd century but the type may not be confined to such a narrow date range.
498. [495] 957 Jug with an unusually narrow neck.
499. [496] 001 Jug. The lower handle shows the 'mortice and tenon' joint which is a frequent feature of BB1 jugs. The small amount of surviving lattice suggests that this was acute-angled and that the vessel was 2nd century in date.
500. [497] 3044 Jug. A large example. The lower handle was once again joined with a 'mortice and tenon' but, in this case, the neck was wide enough for the potter to smooth over the joint.
501. [498] 2161 Handle. If this is from a jug, then the vessel was truly massive. Other handled forms were made in Black Burnished ware (cf. Woodward *et al.* 1993, type 30, thought to be from a saucepan) but rarely travel far from the source area. Nevertheless, this may be such a piece.

Nos 502–6 and 509–11 illustrate a range of near complete vessels or profiles.

502. [500] 2002 (2443) Jar. A small version of Gillam 1976, no. 5 (late 2nd to early 3rd century).
503. [501] 308 (1368) Jar, Gillam 1976, no. 3 (mid to late 2nd century). A hole has been drilled in the side.
504. [502] 915 Jar; cf. Gillam 1976, nos 8–10 (mid to late 3rd century).
505. [503] 3070 Jar, Gillam 1976, no. 10 (late 3rd century).
506. [504] 003 (727) Jar. The fabric is burnt light grey. Gillam 1976, no. 11 (late 3rd to early 4th century).
507. [505] 033 Jar, probably as Gillam 1976, no. 12. The angle of the rim might suggest a slightly later currency than the early 4th century date accorded to the example illustrated by Gillam.
508. [506] 855 Small jar or mug as Gillam 1976, no. 24 (early to mid 2nd century).
509. [614] 308 Flanged bowl. A complete profile with a substantial basal chamfer; cf. Gillam 1976, no. 34 (early to mid 2nd century).
510. [507] 3015 Flanged and grooved bowl, Gillam 1976, no. 42 (late 2nd to early 3rd century).
511. [508] 927 Flanged and ridged bowl, Gillam 1976, no. 47 (early 4th century).
512. [509] 552 Bowl. The flange is large and well down the body. The piece could be late in the series, perhaps mid to late 4th century.
513. [606] 3043 (3178) Flanged and ridged bowl; cf. Gillam 1976, nos 47–8 (4th century). With a lead rivet in place suggesting continued use despite breakage.
514. [510] 001 An unusual dish with flange and handle, presumably a combination of 4th century forms.
515. [511] 903 Plain dish. The curvature suggests a dish which, even if oval, was of considerable size. There is slight evidence for a design on the upper side of the base.

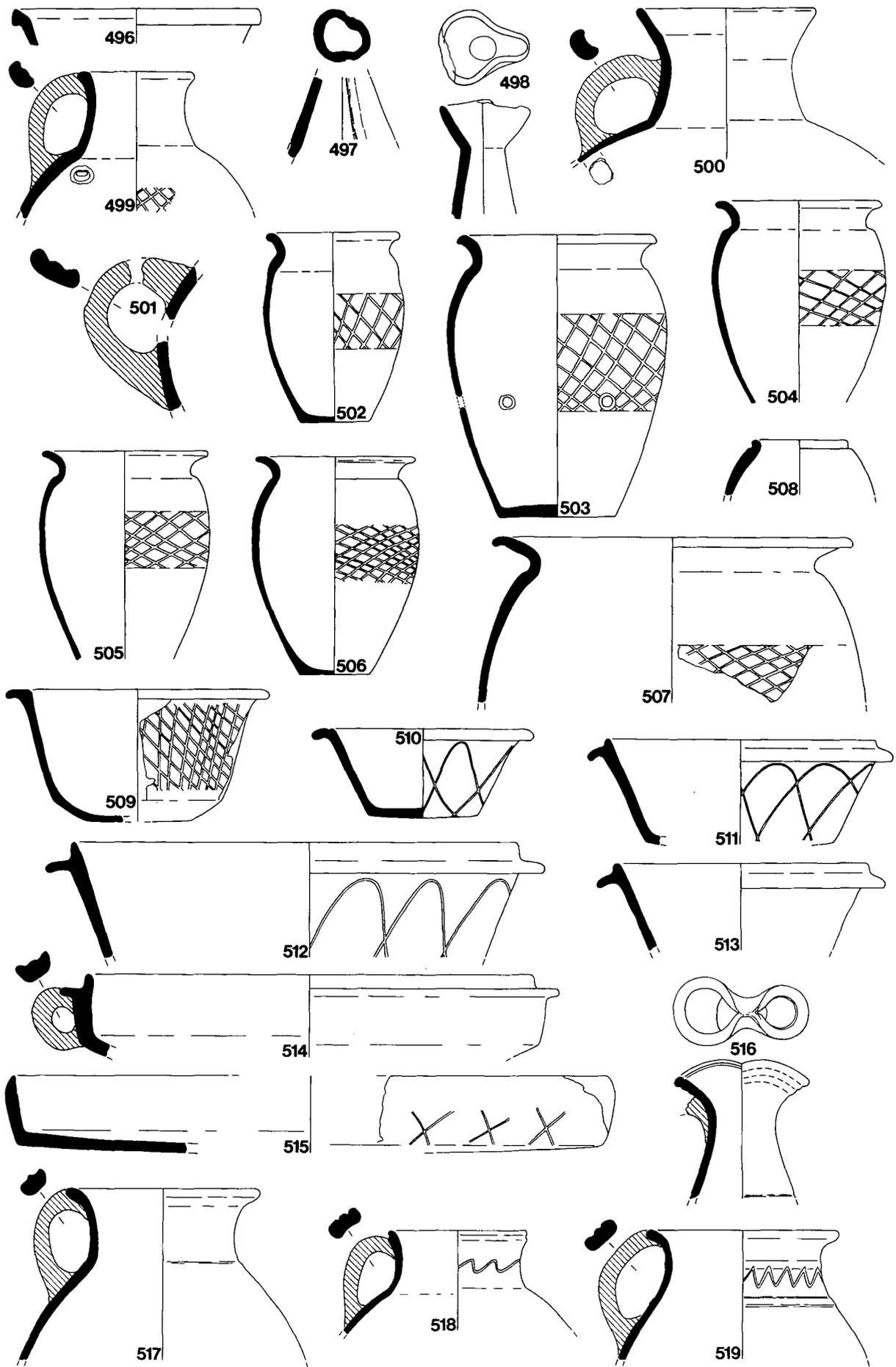


FIG. 61. Coarse pottery, unstratified/poorly stratified nos 496-519. Scale 1:4.

Local greyware

Most of the vessels illustrated here are in the light grey somewhat granular fabric termed elsewhere South Wales greyware, see Manning 1993, 232–55, for a discussion and type series.

516. [512] 001 Jug with pinched rim; an unusual form in this fabric.
 517. [513] 001 Large jug; cf. Usk South Wales greyware type 1.3 (Manning 1993, fig. 107). 2nd to 3rd century.
 518. [514] 3001 Jug. The double rim is found at Llanedeyrn and Caldicot and this may be a 3rd to 4th century piece. Caldicot (Barnett *et al.* 1990, no. 5) also has the zigzag decoration on the neck.
 519. [515] 2250 Jug, similar in general form to no. 517. The handle has been joined on very crudely indeed and a fairly local source may be suspected.
 520. [601] 3500 Jar in smooth light grey fabric.
 521. [516] 001 Large jar in grey fabric. The filler includes crushed stone and the vessel is presumably related to no. 494 above. A fragment of the same, or similar, vessel comes from context 1463. ?1st century.
 522. [517] 001 Jar in light grey fabric; cf. Usk South Wales greyware type 8 (Manning 1993, fig. 108). The rim is warped and the surface crazed suggesting that this may be a 'second'.
 523. [518] 2001 Shoulder fragment from a large jar in grey fabric with unusually extensive decoration.
 524. [519] 403 Jar in light grey fabric with wavy-line decoration on the neck. See nos 316, 329 and 356 above for less complete profiles.
 525. [617] 403 Rim of a jar in light grey local fabric. The Caldicot kilns produced a handled jar with a similar multiple-grooved rim; cf. Barnett *et al.* 1990, nos 1–2.
 526. [520] 2002 Small jar or beaker in brown fabric with a dark grey surface, presumably related to the 2nd century Black Burnished ware beaker series.
 527. [521] 001 Handled beaker in red-brown fabric with a grey surface. A local version of a Black Burnished ware mug seems probable. 2nd century.
 528. [522] 001 Jar in smooth light brown fabric with a thin grey core and shading to grey at the surface, externally burnished. Of *Terra Nigra* type, cf. Greene 1979, fig. 49, nos 1–3, although our rim is less everted. Mid to mid/late 1st century. Other *Terra Nigra* fragments from the excavations include: a small bowl as Greene 1979, fig. 51, no. 6 (from context 2113); a jar base from the same context; a rouletted bowl as Greene 1979, fig. 47, nos 34–8 (from context 3044); a sherd of bowl as Greene 1979, fig. 46 (from context 3086); and a rouletted jar (from context 2002). See also no. 534 below.

Nos 529–31 represent a number of Flavian or Flavian/Trajanic vessels present on the Mill Street sites, although rarely, if ever, in contemporary contexts.

529. [523] 3500 Everted-rimmed jar in grey fabric with vertical rusticated decoration.
 530. [524] 2001 Jar in light grey fabric with a darker surface decorated with applied vertical rustication.
 531. [525] 2001 Jar in hard granular mid to dark grey fabric. The rim is slightly corrugated, although probably not enough to indicate a 'second'.
 532. [526] 001 Wide-mouthed jar in light grey fabric. A vessel typical of South Wales greyware, cf. Usk South Wales greyware types 40–1 (Manning 1993, fig. 112). 2nd to 3rd century.
 533. [527] 2038 Wide-mouthed jar in mid grey fabric, cf. Caldicot (Barnett *et al.* 1990, no. 39). Perhaps mid to late 3rd century.
 534. [528] 001 Jar in smooth light grey fabric with a darker core and dark grey surface. Of *Terra Nigra* type, cf. Greene 1979, nos 8–11. Mid to mid/late 1st century.

Nos 535–7 are all in forms which one could expect to appear in glazed fabrics and all may be related to the Flavian or Flavian/Trajanic Caerleon glazed ware production.

535. [529] 3086 Bowl in burnished grey fabric, cf. Marsh 1978, fig. 8.11, no. 14.
 536. [530] 3002 Bowl in grey fabric.
 537. [531] 3504 Bowl in smooth light grey fabric with traces of a dark grey surface. A vessel reminiscent of the samian form Dr 30 was probably intended, cf. Arthur 1978, fig. 8.4, no. 2.1 for a similar vessel, although ours is unlikely to be from the same source as the Arthur example.
 538. [532] 3044 Bowl in smooth light grey fabric with a darker surface and rouletted decoration. A bowl reminiscent of the samian form Dr 37 was presumably intended.

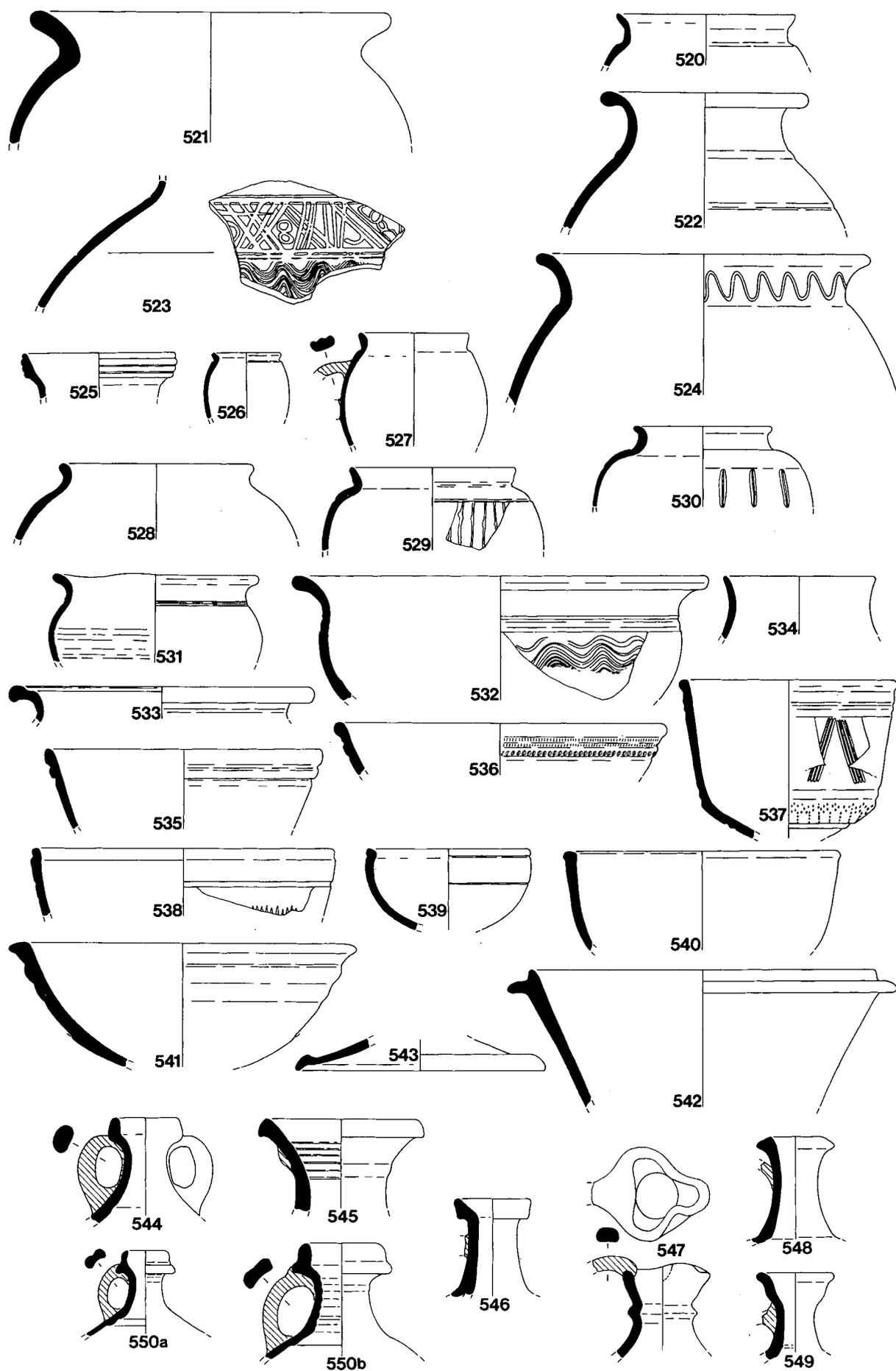


FIG. 62. Coarse pottery, unstratified/poorly stratified nos 520–50. Scale 1:4.

Nos 539–41 are bowl forms in South Wales greyware not otherwise illustrated above.

539. [533] 3086 Bowl in light grey fabric with a darker surface.
 540. [534] 2111 Bowl in light grey fabric. There is some evidence that the present sandy surface was originally smoother and darker.
 541. [615] 128 Bowl in light grey local fabric; cf. Usk South Wales greyware no. 62.1 (Manning 1993, fig. 116). Perhaps 2nd–3rd century. The vessel appears to have had a handle.
 542. [535] 016 Flanged and ridged bowl in a fabric which is now light brown with a light grey core, although the colour could be derived from secondary firing. A local imitation of a common late 3rd to 4th century Black Burnished ware form.
 543. [536] 2001 Lid in brown fabric with a grey core and partially darkened surface.

Oxidised fabrics

544. [537] 1036 Flagon in off-white fabric, possibly from the *Verulamium* area, cf. Frere 1972, no. 398 (early to early/mid 1st century).
 545. [538] 3001 Flagon in light grey fabric with orange surface and cream slip. The source may be local.
 546. [539] 2002 Flagon in light grey fabric with orange external surfaces, cf. Usk Fortress series no. 1 (Manning 1993, 11–18).

Flagons 547–53 are all likely to have been made in the vicinity of Caerleon and are presented as a continuation of the series illustrated as nos 30–7 above.

547. [540] 957 (1072) Flagon/jug in orange fabric. The exterior has been given a generous coating of mica, presumably to produce an effect reminiscent of bronze work.
 548. [541] 192 Flagon in orange-buff fabric.
 549. [542] 3500 Flagon in orange-buff fabric.
 550. a [543] 033 and b [544] 001 Two examples of flagon in light grey fabric with a reddish external surface and white slip. The difference is essentially one of size.
 551. [545] 3057 Flagon in orange-red fabric with cream slip. The rim is perhaps a development of no. 550 above.
 552. [546] 2001 Flagon in orange-buff fabric. The rim is buckled, possibly by contact with some other vessel in firing.
 553. [547] 1027 Flagon in light orange fabric.
 554. [548] 2393 (2374) Small flask in light orange-red fabric. These vessels are often called 'unguent flasks', although their exact use is unknown and some have even been suggested as stoppers for larger vessels.
 555. [549] 600 (518) Corrugated vessel fragment broken at both ends. The roughness of the interior suggests a closed vessel and a barrel-like piece seems possible.
 556. [550] 001 Small jar in pink-buff fabric. The exterior is smooth and has traces of mica-dusting.
 557. [551] 1460 Handled jar in orange-buff fabric with a milled rim. The use of similar rims on face pots may be noted.
 558. [552] 033 Beaker in light grey fabric with an orange surface and traces of a white slip. A similar fabric and finish is used for flagons and this is probably a local product.
 559. [553] 2001 Wall sherd of a jar in light orange-buff with barbotine decoration, possibly representing the caduceus of a Mercury figure, cf. Webster 1989, 10.

Nos 560–2 are in Severn Valley ware, a fabric not well represented at Caerleon, perhaps because of the difficulties of competition with similarly oxidised Caerleon ware products.

560. [554] 1021 Large jar in light orange-buff fabric with a grey core, cf. Webster 1976, no. 7 (2nd to 3rd century).
 561. [555] 3037 Wide-mouthed jar in orange fabric with a grey core, cf. Webster 1976, no. 24 (late 2nd to late 3rd century).
 562. [556] 3500 Wide-mouthed jar in pink-buff fabric with a grey core, probably from a vessel broadly similar to no. 561 above.

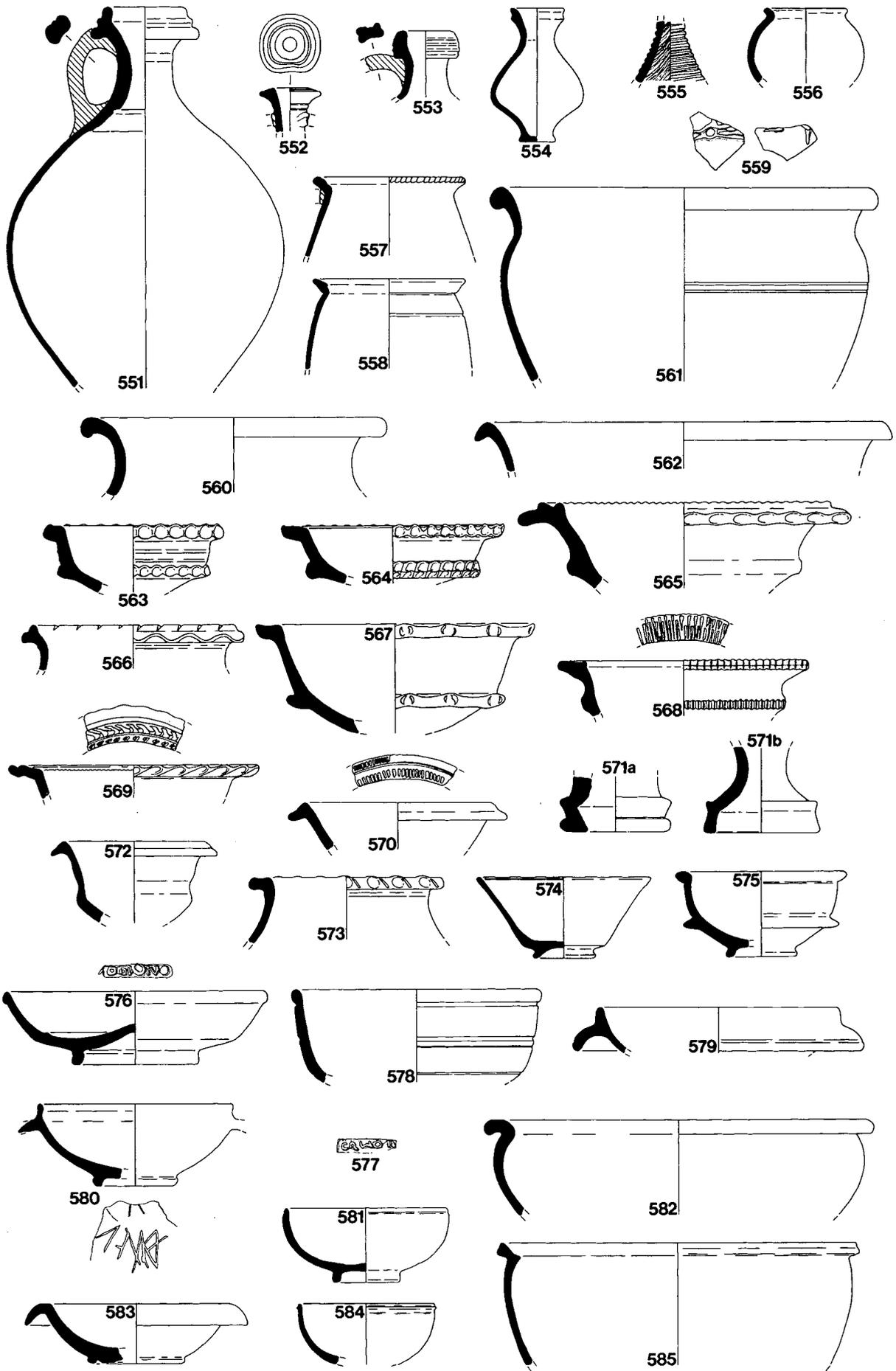


FIG. 63. Coarse pottery, unstratified/poorly stratified nos 551-85. Scale 1:4.

Nos 563–7 are included in order to amplify our illustrations of tazze, a form well represented on the Mill Street sites. All are probably local products but nos 563 and 564 are, more certainly, Caerleon products.

563. [557] 149 Fawn fabric with traces of a white slip, heavily burnt internally.
 564. [558] 001 Light orange fabric with traces of a white slip.
 565. [559] 045 An unusually coarse and large example in light brown fabric. Possibly a product of the local greyware industry.
 566. [560] 1463 Light grey fabric with a slashed rim. A similar vessel from context 1474 shows this to be a tazza.
 567. [613] 122 Tazza in pink fabric with a grey core and an orange-buff surface.
 568. [561] 2002 Bowl in buff fabric with milled decoration. A tazza or tazza-like bowl seems probable.
 569. [562] 001 Flanged bowl in buff fabric with traces of mica dusting on the flange. A roulette may have been used on the rim to produce a foliate wreath. A tazza-like bowl seems possible, but cf. Marsh 1978, type 15.
 570. [563] 001 Bowl in pink fabric, burnt grey in places and with rouletted decoration. A tazza-like bowl seems possible.
 571. a [564] 2011 and b [565] 131 Tazza pedestal bases in light red fabric. There is a marked similarity to flagon necks but the piece from context 2011, at least, is distinguishable by the crudeness of its finish.
 572. [607] 022 Bowl in light brown fabric with traces of a white slip and of burning. A vessel with a pedestal allied to the tazze seems likely; possibly same vessel as no. 113 above.
 573. [566] 001 Jar in smooth light buff fabric.

Nos 574–81 are more complete versions of forms commonly found in Caerleon ware than those illustrated elsewhere above. For a discussion of the ware and its dating (c. A.D. 110–170) cf. Webster 1993, 255–64; Webster and Webster 1998.

574. [618] 308 Complete profile of a cup in Caerleon ware, imitating samian form Dr 33.
 575. [567] 001 A vessel reminiscent of the samian forms Dr 44 and 81, and found commonly in Caerleon ware. This example, in light orange-buff fabric with ?ground clay filler, retains no sign of slip but is undoubtedly a Caerleon product.
 576. [568] 001 (1215) Dish in orange-buff fabric. An imitation of the samian form Dr 18/31 along with an imitation potter's stamp. No slip remains, but a slipped finish remains highly probable. In view of the samian form imitated, a date up to the mid 2nd century may be suggested.
 577. [568a] 1450 (1297) A second stamp on a similar vessel.
 578. [569] 2247 Bowl in orange-buff fabric reminiscent of the samian form Dr 37. Possibly originally slipped.
 579. [570] 001 Flanged bowl in orange fabric with some quartz in the filler. Probably imitating the samian form Curle 11. There is no sign of slip.
 580. [571] 191 (1226) Flanged bowl in orange fabric with traces of a red slip, burnt on the rim. Probably intended to imitate the samian form Curle 11. A graffito on the wall reads IANV (Tomlin 1997, 470 no. 44).
 581. [619] 2001 Bowl in Caerleon ware with a red slip. A smaller version of Usk (Manning 1993, fig. 120, 13.1). Probably mid-Antonine.
 582. [572] 001 Wide-mouthed jar in pink-red fabric with plentiful quartz filler.
 583. [573] 2002 Mortar-like bowl in pink fabric with a buff surface and traces of mica-dusting.
 584. [574] 2002 Cup or small bowl in buff fabric.
 585. [575] 001 Wide-mouthed jar in orange-buff fabric; perhaps related to the 3rd century jar series nos 360–4.
 586. [576] 2380 Bowl in fawn fabric; cf. Nash-Williams 1932b, no. 354. Illustrated here to show the handle form.
 587. [577] 2355 Dish in orange fabric. The piece combines the twisted handle of no. 286 above, with the rim of no. 294.
 588. [616] 843 Large dish in fawn fabric with a grey core, granular, probably local in manufacture.
 589. a [578] 2002, b [579] 2001 and c [580] 001 Lids in orange local fabric.
 590. [581] 2001 Ring-necked flagon in white fabric, possibly from the *Verulamium* area and late 1st to mid 2nd century.
 591. [582] 2001 Flagon in off-white fabric from the *Verulamium* region. Frere 1972, no. 820 appears to be a similar vessel adapted as a jug. 2nd century.

Another possible *Verulamium* product comes from context 402 (296): a base in white fabric, pierced with at least one hole. After the original vessel was thrown more clay was added to the exterior of the lower wall, perhaps to affix a pedestal foot but the form with a hole is very uncertain.

Central Gaulish Colour-coated ware

592. [583] 928 Beaker in light red fabric with a dark grey colour-coat; cf. Greene 1978, fig. 2.3, no. 9; Symonds 1992, Group 11. Mid to late 2nd century.
593. a [584] 2355 and b [585] b 605 Two beaker fragments in orange fabric with a dark grey colour-coat. Sherd (a) may be from a vessel similar to no. 592 above, but it is allied to sherd (b) by the use of barbotine dots as an upper border. Sherd (b) probably resembled the samian form Dr 72 and both pieces may be from such a vessel. The leaves on (a) seem likely to be moulded rather than free-formed. Mid to late 2nd century.
594. [586] 2001 Small beaker in light pink-buff fabric with a dark grey colour-coat, originally indented. Probably a Lezoux product and of a similar date to nos 592–3 above.

Moselle Colour-coated ware

Nos 595 and 596 are probably products of the Moselle area; cf. Greene 1978, fig. 2.3, nos 5–6; Symonds 1992, Groups 32–3. The likely date range is late 2nd to mid 3rd century.

595. [587] 2001 Beaker in light red fabric shading to light grey with a dark grey colour-coat.
596. [587a] 252 Beaker in red fabric shading to grey and with a black colour-coat. Painted decoration is possible.

Nene Valley Colour-coated ware

597. [588] 1027 (928) In off-white fabric with a brown colour-coat; a small fragment of Hunt cup. Probably 2nd century.
598. [589] 2001 Beaker in very light orange-buff fabric with a grey colour-coat. The rim form suggests a 2nd century date.
599. [590] 1011 Beaker in white fabric with a dark grey colour-coat and white-painted decoration. For the form see Howe *et al.* 1980, no. 50; for the decoration *ibid.* nos 47–8. Probably 3rd century.
600. [591] 1452 Beaker in off-white fabric with a dark grey colour-coat; cf. Howe *et al.* 1980, nos 55–6. 4th century.
601. [592] 3001 Flagon neck in white fabric with a dark grey colour-coat; cf. Howe *et al.* 1980, no. 67. 4th century.
602. a [593] 037 and b [594] 600 These represent the lower portion and lid, respectively, of the so-called 'Castor Box'; cf. Howe *et al.* 1980, no. 89. There is no reason why the two fragments should be from the same assemblage. Castor boxes were made from the late 2nd to the 4th centuries.
603. [595] 600 Flanged bowl in white fabric with a grey-brown colour-coat; cf. Howe *et al.* 1980, no. 83. Late 3rd to 4th century.

Colour-coated wares from unidentified sources

604. [596] 2001 Wall sherd in off-white fabric with a dark grey colour-coat externally, and red internally. Decoration is in trailed white slip. Possibly, but not certainly, a Nene Valley product.
605. [597] 016 (028) Beaker in light red fabric with a light brown external slip and trailed white decoration. The form would suggest a late 2nd or 3rd century date.
606. [598] 002 and 003 Handled jar in buff fabric with a red-brown slip.
607. [599] 957 (1073) Beaker in buff fabric with a metallic red-brown slip.
608. [600] 927 Bowl in buff fabric with a red slip. Some connection with the Oxford ware mortarium form, Young 1977, C100, seems likely and a 4th century date, therefore, probable.

Glazed ware

Glazed ware was certainly being made at Caerleon, probably in the later 1st or early 2nd century (cf. Boon 1966c). The ware is discussed by Arthur (1978, 324–34); Greene (1979, 103–5); Zienkiewicz (1986b, 92–6) and Webster (1993, 264).

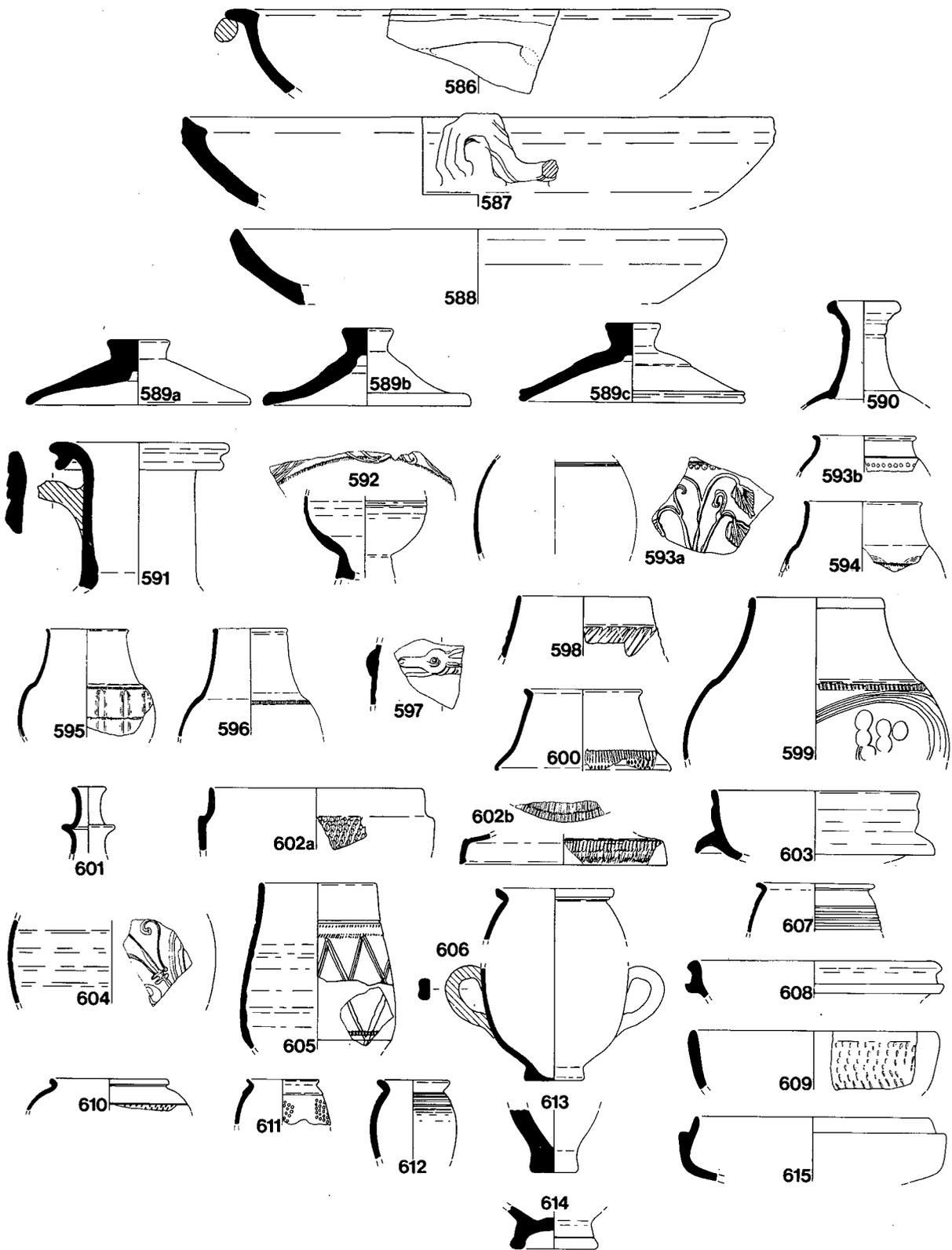


FIG. 64. Coarse pottery, unstratified/poorly stratified nos 586–615. Scale 1:4.

609. [605] 3500 Bowl in light grey fabric with traces of a green glaze. Arthur (1978, 331) illustrates a rouletted bowl from Caerleon but not as simple a form as this. A late 1st to early 2nd century date seems likely.

Glazed sherds are known from 11 other contexts on these excavations. A full list is to be found in the archive.

Miscellaneous

Nos 611–12 are examples of small vessels which might claim to be miniatures.

610. [602] 001 Everted-rimmed jar in light grey fabric with rouletted decoration. Presumably late 1st to early 2nd century.
611. [603] 001 Shouldered jar in light grey fabric with traces of decoration in the form of blocks of dots. A late 1st to early 2nd century date seems likely.
612. [604] 3001 Jar in light grey fabric with a dark grey surface, burnished externally. The similarity to 2nd century Black Burnished ware jars probably indicates the date.
613. [608] 002 (165) Base in light red sandy fabric. The coarse nature of the item would make use as a stopper or a bung possible.
614. [609] 001 Base in grey fabric with a darker surface. An early date seems possible.
615. [612] 600 Vessel in light red fabric with traces of mica-dusting on both internal and external surfaces. This appears to be an imitation of the so-called Castor box as Howe *et al.* 1980, no. 89. The Nene Valley version was made from the late 2nd century onwards but examples from South Wales are more likely to be 3rd or 4th century and our imitation, therefore, is of a similar date.

THE MORTARIA (FIGS 65–8) By Rachael H. Seager Smith

Introduction

A total of 2023 sherds (118,182g) of mortaria were recovered from the Mill Street sites. The assemblage is dominated by the products of two centres, the local 'Caerleon ware' industry (Boon 1966c) and the Oxfordshire white wares (Young 1977), but also includes a range of other fabrics from South Wales and southwestern England as well as vessels from eastern England and Continental Europe. The date of the assemblage spans the period from the mid 1st to the 4th centuries A.D.

Methodology

The assemblage has been analysed in accordance with the standard Wessex Archaeology recording system for pottery (Morris 1992). The fabric type sequence is based on one drawn up by Kay Hartley for mortaria from the fort at Loughor (Evans and Hartley 1997, 315–18) and revised for this assemblage by D.R. Evans, with subsequent additions and alterations by the present author. The report was submitted in 1994. Twenty-three fabrics were identified. Fabrics have been examined both macroscopically and with the aid of a binocular microscope ($\times 20$ power). The following terms are used to describe the quantity of inclusions present: rare = less than 2%; sparse = 3–7%; moderate = 10–15%; common = 20–25%; abundant = 30%+.

The pottery has been quantified using both the number and weight of sherds of each fabric type by context and details of sherd type (profile, rim, base, body, flange or spout fragment); vessel form, trituration grits and stamps have been recorded. Unusual surface treatments or abrasion patterns and evidence for the reuse and repair of mortaria have also been noted. The assemblages from each site were also examined for joining sherds, both within and between contexts. Information from the catalogues of the material from the Riding School Field (Site 79) and the Smallholding (Site 94), compiled by D.R. Evans, are included on the recording sheets contained in the archive.

Forty stamps were identified. These are individually catalogued below and the more complete examples illustrated in FIG. 68. Thirty-six stamps occur on Caerleon ware (Fabrics 5, 6 and 17) vessels. Three of the remaining stamps are from the *Verulamium* area (stamp nos 3, 11 and 28) and the fourth is on a vessel from the Gloucestershire or north Wiltshire area (stamp no. 2).

Pottery fabric totals for each of the Mill Street sites are shown in TABLE 22; similar information on a context-by-context basis can be found in the archive. The Oxfordshire ware vessel forms have been classified according to Young's (1977) type series and are not redescribed or illustrated here. The types present are, however, listed in TABLE 23. For all the remaining fabrics, a site-specific vessel type series has been constructed (FIGS 65–7, 1–47) and is described

below. TABLE 23 summarises the vessel forms present in each fabric for the assemblage as a whole; this information, on a site-by-site basis, is included in the archive. The number of examples of each vessel type shown in TABLE 23 is based on the number of 'occurrences' of that particular form in that fabric. Single sherds or groups of joining sherds, whether from the same or different contexts, are counted as one 'occurrence'; but, for example, three sherds of the same form in the same fabric without direct evidence for joining are considered as three 'occurrences' of that form. Calculated on this basis, a maximum of 538 vessels are represented by the rim sherds.

The acidic soil conditions of the area have severely affected the preservation of many of the mortaria fabrics, especially the soft Caerleon and other South Wales fabrics, hampering any assessment of the degree of use prior to breakage. The harder-fired fabrics, such as the Oxfordshire white ware, appear less affected by the soil conditions and exhibit the full range, from comparatively unused to very well-worn vessels. It is likely that a similar range exists throughout the entire assemblage. The survival of fine quartz grits on the underside of at least two Caerleon ware base sherds, and the stamps on bases (FIG. 65, and stamp nos 35 and 36), imply that these vessels were little used when broken.

The fabrics

Fabric 1

Oxfordshire (Young 1977, 56); A.D. 100–400+

Slightly sandy, off-white fabric occasionally with a pink core, and cream to buff slip; sparse to moderate fine quartz (<0.25mm) and rare red-brown iron oxide inclusions. The very distinctive trituration grit consists entirely of mixed pink, brownish and transparent quartz. Although production of these factories begins *c.* A.D. 100, wider distribution cannot be shown to take place before *c.* A.D. 240 and probably not before *c.* A.D. 270.

Fabric 2

Oxfordshire (Young 1977, 123); A.D. 240–400+

Fine-textured, orange-brown fabric, sometimes with a grey core. Inclusions comprise abundant, very fine quartz (<0.125mm), sparse mica and rare iron oxides of a similar size. Generally has a red-brown samian-like exterior but in the poor soil conditions of Caerleon, this rarely survives except as small isolated patches. Trituration grit is identical with that for Fabric 1.

Fabric 3

Mancetter-Hartshill, Warwickshire; *c.* A.D. 100–370+

Fine-textured, creamy white fabric, with rare fine quartz, sparse to moderate white mica flecks and rare red iron oxides (all <0.5mm). Very rare fragments of red-brown grog (<3mm) occur on the surface of the single fragment recovered, probably remnants of the red-brown or greyish-black crushed pottery waste, with occasional quartz or quartzite grits, typically used as trituration grits by the potters of this industry.

No vessel forms occur in this fabric.

Fabric 4

Origin unknown

Hard, fine-grained fabric containing moderate, sub-rounded quartz (<0.25mm), sparse iron oxides and very rare crushed flint (<0.25mm). Off-white or cream in colour, occasionally with pink streaks. Fracture has a distinctive laminated appearance.

No vessel forms occur in this fabric.

Fabric 5

'Caerleon' ware (Boon 1966c); *c.* A.D. 110–80.

Soft, very fine-textured, slightly micaceous, orange to orange-brown fabric with no visible tempering; angular white quartz trituration grit (<9mm). These mortaria always had a red-brown, samian-like slip but this does not often survive in acid soil conditions. It has been pointed out (by Greep 1986a, 55–6) that there is a lack of intermediate mortaria forms between 'Caerleon' and Oxfordshire products so the industry may continue somewhat later.

Fabric 6

Probably Caerleon; mainly 2nd century with some production in the 3rd century A.D.

Hard, fine-textured but slightly abrasive, orange-brown fabric, occasionally with thin drab core; sparse to moderate white quartz (<0.5mm) and rare to sparse red-brown and black iron oxide inclusions; angular white quartz trituration grits (<9mm). Vessels may be self-coloured or have a thin, matt, orange- to red-brown slip. The fabric varies in coarseness but it is always harder and more abrasive than the usual Caerleon ware (Fabric 5), the chief characteristics of which are softness and lack of inclusions. However, the trituration grit and rim forms used are so similar to those made in Fabric 5 that they are probably either from the same workshop or another workshop in the same area.

Fabric 7

Gloucestershire or possibly north Wiltshire; mid 2nd century to some time in the 4th century A.D.

Granular, sandy fabric, fired to orange-brown at the surface with thick, grey core and a cream or white slip; common sub-rounded quartz (<0.5mm) with rare red-brown and black iron oxides of similar size. Trituration grits of rounded quartz similar to those used in the Oxfordshire region, with the addition of occasional white, angular quartz grits typical of the South Wales fabrics. This fabric is commonly found in Gloucestershire, Somerset and Avon with similar examples occurring in the surrounding area including South Wales.

Fabric 8

Verulamium region; *c.* A.D. 70–160 as imports to South Wales

Usually a granular, greyish-cream fabric, sometimes with a pink or black core and a cream to buff slip; the fabric colour and/or the slip can be reddish-brown. The texture is obtained by the addition of abundant well-sorted quartz (<0.5mm) together with rare flint (<2mm) and red-brown iron oxides (<0.5mm). The trituration grits consists of sparse flint, red-brown material and a little quartz.

Fabric 9

Northeastern France, possibly with some workshops in Kent; *c.* A.D. 65–150

Hard, dense, iron-rich, sandy fabric; there are a number of variations in the fabric but in general it is cream or yellowish-cream; moderate quartz (<0.25mm), sparse iron oxides and limestone fragments (<1.5mm). Angular, crushed flint trituration grits on interior surface and flange.

Fabric 10

Probably Mancetter-Hartshill, Warwickshire; *c.* A.D. 100–370+

Off-white, slightly soapy fabric with beige surfaces; inclusions consisting of common quartz (<0.25mm) and rare to sparse red iron oxides (<1mm) well spread in the matrix. Trituration grits are angular, opaque, dark grey, black or, occasionally, reddish-brown weakly magnetic grains, probably ironstone.

Fabric 11

Origin unknown

Hard, off-white fabric often with yellowish or pink slightly tonal firing; inclusions consist of sparse mica (<0.25mm), rare to sparse quartz (<2mm), red and/or black iron oxides and rare clay pellets (<2mm), probably indicative of poor clay preparation. Trituration grits of fine transparent or opaque quartz (<4mm).

Fabric 12

Northeastern France, possibly with some workshops in Kent; *c.* A.D. 65–150

Hard, pale yellowish brown fabric, occasionally with a greenish tinge; inclusions consist of moderate red and black ferrous particles (<1mm), limestone (<2mm) and quartz (<0.5mm). The trituration grit consists of angular flint on interior surface and extending onto flange. A distinctive characteristic of this fabric is a tendency to shatter into angular fragments.

Fabric 13

? South Wales

Hard, dull red fabric with trituration grit consisting of angular white quartz (<5mm). Few visible inclusions other than moderate to common white mica (<0.25mm); black staining within the fabric, probably derived from iron oxide inclusions, is also visible around the edges of fresh breaks. This fabric is distinguished from Fabrics 5 and 6 only by its thinness and hardness.

Fabric 14

? South Wales, or possibly southwestern England

Very smooth, fine-grained fabric, reddish-brown, sometimes with a grey core. Contains sparse, microscopic quartz/mica (<0.125mm), common voids surrounded by off-white or yellow reaction rims (<0.25mm) very reminiscent of limestone (but this fabric is not calcareous) and sparse red and black iron oxides (<1mm). Trituration grits consist of very angular, white quartz and some flint (<4mm). Traces of a white slip survive.

Fabric 15

South Wales, probably Usk

Rough, dull red-brown fabric often with a thin dull grey core. Inclusions comprise sparse white mica (<0.125mm) and red and black iron oxides (<0.5mm); voids similar to those of Fabric 14 are also visible in some sherds. Trituration grit consists of angular white quartz (<4mm); vessels may originally have had a white slip.

Fabric 16

South Wales, probably Usk

Fairly smooth, dull grey fabric with red surfaces and a white slip. Slightly micaceous but otherwise visible inclusions are confined to rare red iron oxides (<0.5mm). Trituration grits consist of small, rounded white quartz grains (<2mm).

Fabric 17

Caerleon, and/or possibly Usk; *c.* A.D. 50 to at least the end of the 1st century A.D.

Very smooth, extremely fine fabric; inclusions consist of moderate white mica (< 0.125mm) and rare to sparse iron oxides (<0.5mm). White, angular quartz trituration grits (>10mm). Similar to but rather more buff than Fabric 5, often with a drab pale grey-brown core. Traces of a cream

slip occasionally survive and it is probable that all vessels in this fabric originally had such a slip. Sometimes the colour and texture of these vessels approaches that on vessels in the Severn Valley tradition.

Fabric 18

Rhineland; *c.* A.D. 150–250

Fine-grained, hard, brownish-cream fabric. Sparse to moderate, poorly-sorted quartz (<0.5mm), sparse white mica flecks (<0.25mm), sparse, well-rounded pale brown grog or clay pellet inclusions (<2mm) and rare iron oxides (<0.5mm). Trituration grits consist of fine (<1mm) subangular transparent quartz.

Fabric 19

Origin unknown

Hard, moderately fine-grained, pale yellowish cream fabric containing sparse subangular quartz and red and/or black iron oxides (both <1mm) and rare microscopic quartz/mica (<0.25mm). Black iron particles, especially, often appear 'disintegrated' resulting in patches and bands of iron staining. Subangular flint trituration grits (<4mm).

Fabric 20

Origin unknown

Very hard (? probably overfired), rough, slightly vesicular fabric; the colour shades from dull slate grey to dull brick red on the margin with a white slip. Few visible inclusions with the exception of rare black iron oxides (<0.5mm). Trituration grits of angular quartz (<2mm) with additional roughness provided by heavy rilling; both grits and rilling continue across the interior surface and onto the flange. No vessel forms occur in this fabric.

Fabric 21

Possibly Massif Central region of France; *c.* A.D. 50–80/85

Very hard, creamy-white fabric; moderate to common igneous rock (<1.5mm), rare golden mica and feldspar (0.5–1mm), very occasional ?manganese (<3mm); trituration grits consist of igneous rock fragments (<1.5mm). No vessel forms occur in this fabric but vessels from Usk (Hartley 1993, 391) do indicate that the supply of vessels from this region did reach South Wales.

Fabric 22

Rhineland; early 2nd to mid 3rd century A.D.

White, off-white to cream fabrics often with a laminar structure; there are variable quantities of rounded, white quartz (<2mm), black and red iron oxides (<1mm); sparse white mica (<0.25mm) and very rare biotite mica flecks may also occur, but the most distinctive features of these vessels are their curved flanges, internal beads and corrugated sides. Very fine quartz/quartzite trituration grits. This fabric group is very wide and represents the finer versions of the Eifelkeramik groups; no attempt has been made to differentiate the various manufactories.

Fabric 23

Soller, Lower Germany; *c.* A.D. 150–250

Very hard, orange-buff to bright reddish-brown fabric; moderate rounded quartz (<1mm), rare to sparse red-brown iron oxides (<0.5mm) and occasional elongated voids within matrix. Deliberate addition of trituration grits not apparent on the examples from these sites although white quartz grits (<5mm) are the norm for this centre (Hartley *et al.* 1984).

The forms

The Oxfordshire vessels (Fabrics 1 and 2) have been classified according to Young's (1977) type series. The forms are not redescribed here but those present are listed in TABLE 23. The following type series has been used for all the remaining fabric types. The number of examples of each form by fabric type is shown in TABLE 23.

Type 1

A fairly variable form; a low rim slopes straight out of the internal vessel wall, flange is high and fairly tightly curled. The flange is higher than the rim. Some examples have a groove around the outer edge of the flange. Traces of red-brown slip occasionally survive. Angular, white quartz trituration grits. Common Caerleon ware form (Zienkiewicz 1992a, fig. 4, 16, 17; Hartley 1993, fig. 194, caer 1–3, 6 and 14; Evans and Hartley 1997, 323, 50). *c.* A.D. 50–180. Fabrics 5, 6, 15, 16 and 17. (FIG. 65, 1–3)

Type 2

Vessel with a tall, squarish rim and a curled flange, and a characteristic groove around the edge of the flange. Distinctive Caerleon ware form (Zienkiewicz 1992a, fig. 4, 25–7; Hartley 1993, fig. 194, caer 16–19); most common in the second half of the Caerleon ware production period but not exclusively so. Similar to Gillam (1970) type 262, dated *c.* A.D. 170–200; also reminiscent of Oxfordshire type M21.3 (Young 1977, 76, *c.* A.D. 240–300). Fabrics 5, 6, 15 and 17. (FIG. 65, 4 and 5)

Type 3

A variable form with a moderately high rim (higher than Type 1, lower and less well-defined than Type 2) and a fairly highly curved flange. Rim is higher than flange which does not have a distal groove. Another typical Caerleon ware form (Zienkiewicz 1992a, fig. 3, 19–20, 22 and 24; Hartley 1993, fig. 194, caer 1–7). *c.* A.D. 50–180+. Fabrics 5, 6, 13, 16 and 17. (FIG. 65, 6–8)

Type 4

Wall-sided vessel; probably copying samian form Drag 45 which first occurs in Britain in the mid 2nd century A.D. No parallels found but this vessel must represent a late experiment by the Caerleon ware potters. *c.* mid to late 2nd century A.D. Fabric 5. (FIG. 65, 9)

Type 5

Large vessel with a wide, flat flange and an upright rim. The spout is applied to the upper surface of the flange; one example from the Smallholding has scars and a thickened outer edge where the applied flange has broken. The upper surface of the rim, and the outer edge of the flange may be grooved. Form may have been copied from the Gillam 238 form (1970, 25, fig. 24, 238); similar vessels dated to *c.* A.D. 120–160, occur in the Caerleon ware fabrics at Usk (Hartley 1993, fig. 194, caer 8).

Fabrics 5 and 6. (FIG. 65, 10 and 11.)

Type 6

Vessel with a rounded, upright rim and a short, stubby, wedge-shaped flange. One variant has a cordon in the angle between the rim and flange. The spout is formed by turning the rim terminals out over the edge of the rim. Most examples have an off-white/cream slip on the exterior and upper part of the interior to about the upper level of the grits; this may originally have extended over the whole interior but has been worn away during use. Trituration grits are

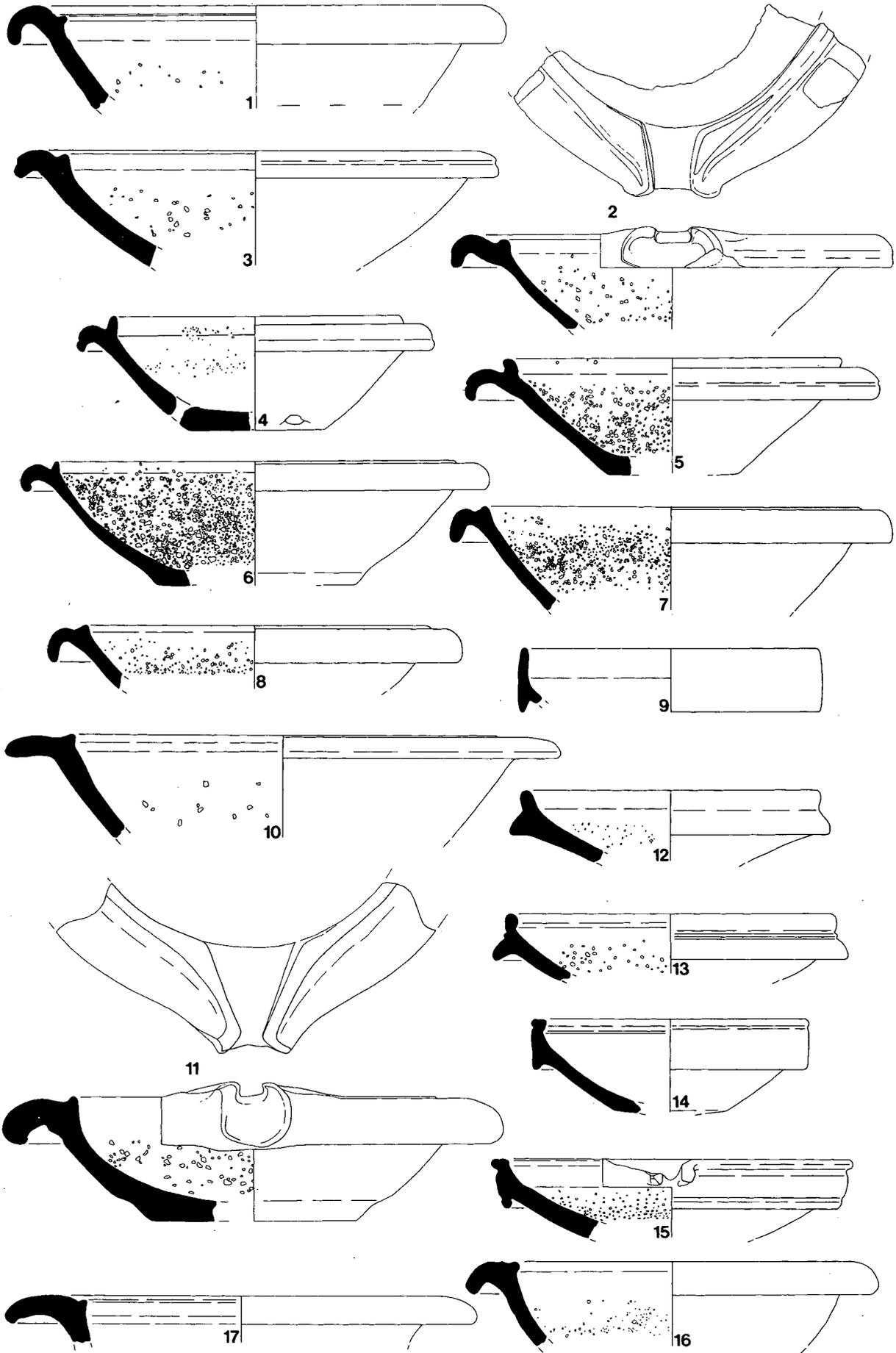


FIG. 65. Mortaria nos 1-17. Scale 1:4.

mostly very similar to those used in the Oxfordshire region, with the addition of occasional white, angular quartz grits typical of the South Wales fabrics. The form is also broadly comparable with Oxfordshire type M22 (Young 1977, 76), produced *c.* A.D. 240–400+. Similar vessels from Wanborough in north Wiltshire, are dated to *c.* A.D. 250–400 (Hartley forthcoming, fig. 80, type 14), the cordoned variant being slightly earlier, dated to *c.* A.D. 150–300 (*ibid.*, fig. 80, type 15).

Fabrics 6 and 7. (FIG. 65, 12 and 13)

Type 7

Wall-sided vessel with grooves in the upper surface of the rim, and the exterior of the collar. The rim is applied to the upper surface of the collar, and the spout is formed by breaking the rim strip and turning the ends out over the collar. White slip. The rounded trituration grits are similar to those used in the Oxfordshire region, and the form is broadly comparable to the Oxfordshire type M14 (Young 1977, 72), dated *c.* A.D. 180–240; also to Gillam (1970) type 259, dated late 2nd–early 3rd century A.D. Similar vessels occur at Usk, dated to the 3rd century A.D. (Hartley 1993, 415, fig. 196, 5).

Fabric 7. (FIG. 65, 14 and 15.)

Type 8

Vessel with a slightly inturned bead rim, the upper surface of which is level with or lower than the flange. The flange is large, out-curving and generally has a rounded terminal; the angle varies — the flange can be horizontal or slightly down-turned. Trituration grits on the interior and upper surface of the flange. This form is paralleled by Gillam type 238 vessels (1970, 25, fig. 24, 238), the most common form produced by Hartley's Group II potters (1977, 9, fig. 2.1, 3). The curved flange examples are dated *c.* A.D. 65–100, while the flat-flanged examples may be slightly later, *c.* A.D. 70–100 (*ibid.*, 9). Examples already known from Caerleon (Zienkiewicz 1992a, fig. 3, 1–5).

Fabric 9. (FIG. 65, 16 and 17)

Type 9

Small, wall-sided vessel with a slightly inturned bead rim and an incised groove on the interior surface immediately beneath the rim. Also a groove on the upper surface of the rim. Trituration grits of small, angular quartz on the interior surface. This is a popular form imported from the Rhineland *c.* A.D. 150–250; paralleled by Gillam type 259 (1970, 27, fig. 26), dated *c.* A.D. 160–200.

Fabric 18. (FIG. 66, 18)

Type 10

Wall-sided mortarium with an inturned bead and a deep collar. Traces of a white slip survive. Trituration grits of rounded quartz. No parallels known for this form but, based on fabric, it is probably of 2nd to 3rd century A.D.+ date.

Fabric 7. (FIG. 66, 19)

Type 11

Vessel with a slightly inturned rim and a dropped, bulbous, wedge-shaped flange; rim and flange are separated by an incised groove. This is a variant of Gillam type 255 (1970, 27, fig. 26, 255), dated *c.* A.D. 160–230.

Fabric 12. (FIG. 66, 20 and 21)

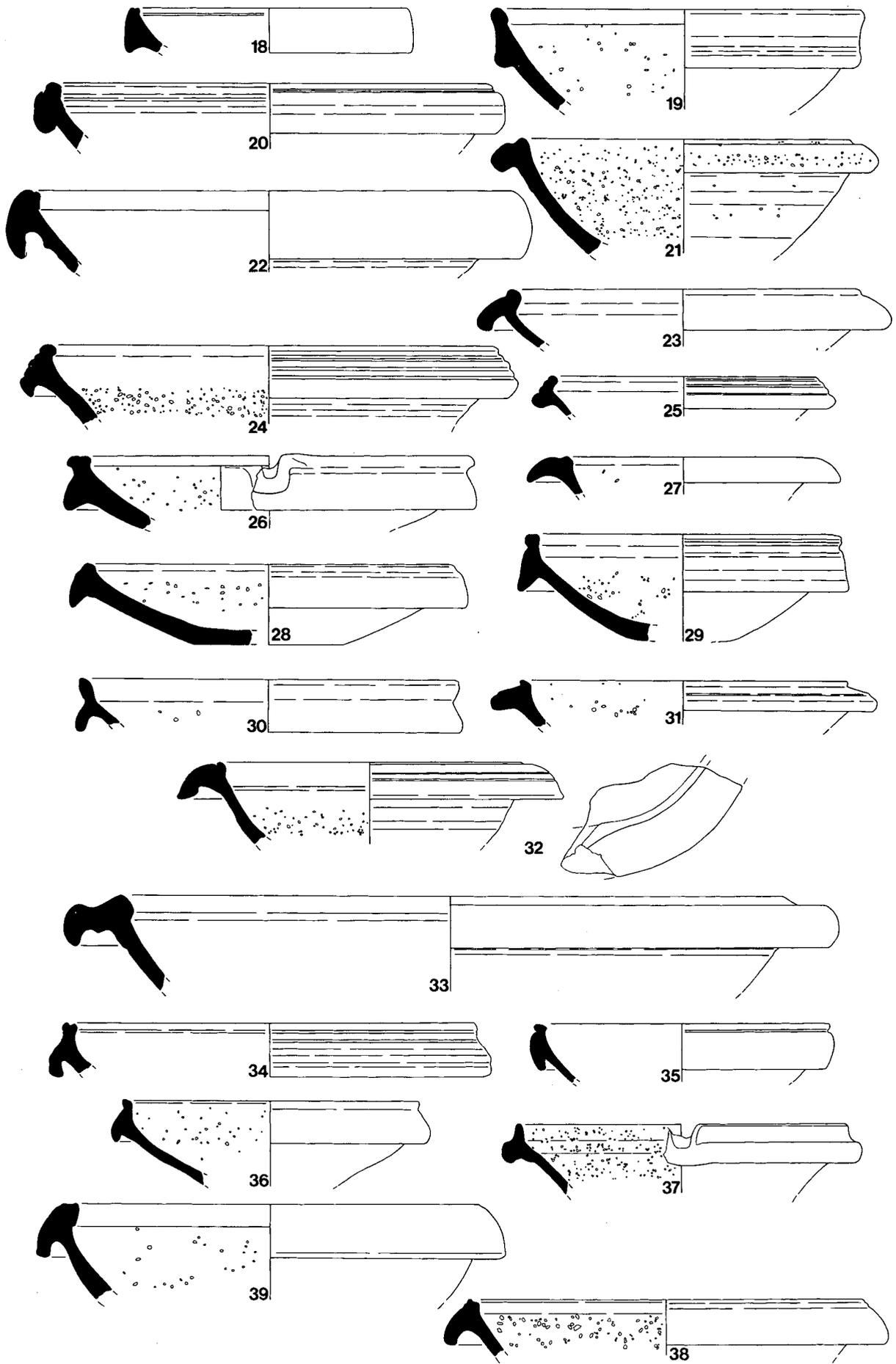


FIG. 66. Mortaria nos 18-39. Scale 1:4.

Type 12

Almost wall-sided vessels with a low rim and a deep, convex collar. In some examples, the rim is turned down over the interior surface of the vessel, giving the appearance of an incised groove on the upper surface of the rim. Interior is generally densely covered in fine quartz grits but perhaps the most characteristic feature of this form are the deep, horizontal corrugations on the exterior wall of the vessel. Typical form from the Rhineland; at Exeter, these vessels are dated *c.* A.D. 150–250 (Hartley 1991, fig. 84, TC56).

Fabric 22. (FIG. 66, 22)

Type 13

Vessel with a slightly inturned rim above a long, down-turned flange, divided by a slight groove. A thin-walled vessel; the exterior is slightly rilled. The trituration grits of angular, dark grey material are sparse near the rim. Similar vessels, assigned to the Mancetter-Hartshill kilns of Warwickshire, are dated *c.* A.D. 160/170–240 at Usk (Hartley 1993, fig. 195, mh 2 and 3).

Fabric 10. (FIG. 66, 23)

Type 14

Small, light, thin-walled vessel with an inturned rim and a stubby, slightly convex, reeded flange (usually 4 reeds); possibly an early example of hammer-headed types. Sherds show a hint of a possible spout, formed by smearing the rim down over the flange. Trituration grits of angular, dark grey material. Variations of this form, derived from the Mancetter-Hartshill kilns, are found widely in southwestern England and South Wales, with a maximum date range of between *c.* A.D. 170–300 (Rigby 1982, fig. 43, 54; Hartley 1991, fig. 87, TB33; Hartley 1993, fig. 195, mh 4).

Fabric 10. (FIG. 66, 24 and 25)

Type 15

A near wall-sided mortaria, similar to Type 6 vessels. The rim is, however, heavier and more square than those of the Type 6 vessels, expanded externally and with a flat upper surface. The flange is still wedge-shaped but further away from the body. Vessels have an off-white slip, and trituration grits similar to those used in the Oxfordshire region. The spout is formed by turning the ends of the rim out across the flange, smeared with a finger-tip. The form can be paralleled at Wanborough in north Wiltshire, where similar vessels are dated *c.* A.D. 160–250 (Hartley forthcoming, fig. 80, types 17 and 19).

Fabric 7. (FIG. 66, 26.)

Type 16

Vessels with a low, semicircular rim rising marginally above a roughly horizontal flange, slightly down-turned towards the distal end. Parallel forms, assigned to the Mancetter-Hartshill area, occur at Usk dated *c.* A.D. 130–160 (Hartley 1993, fig. 195, mh 1).

Fabric 10. (FIG. 66, 27)

Type 17

Vessel with a clearly-defined upright rim and a down-turned, slightly convex triangular collar. The outer edge of the rim is sometimes grooved. A similar vessel from Usk (Hartley 1993, 416, fig. 196, 6) has been assigned a 3rd century A.D. date.

Fabric 7. (FIG. 66, 28 and 29)

Type 18

Vessel with a very high, upright rim, sometimes grooved around the external edge, and a short, roughly triangular, down-curved flange. The spout is formed by breaking the rim strip and turning the terminals out over the flange, securing by smears of extra clay. No parallels have been found for this form. On the basis of its fabric, the form is likely to date from the mid 2nd century A.D. onwards.

Fabric 7. (FIG. 66, 30)

Type 19

Vessel with a low, rounded rim and a flat, horizontal flange, grooved on the upper surface near the edge. Traces of white slip survive. The spout is formed by turning the terminals of the rim out across the flange. Hartley describes a vessel very similar to this (forthcoming, fig. 80, type 12) as an unusual form in this fabric and suggests a date sometime after the 2nd century A.D. Fabric 7. (FIG. 66, 31)

Type 20

Vessel with a low, rounded, inturned rim and a high, down-turned wedge-shaped flange, rim and flange separated by a sharply incised groove. The spout is formed by smoothing the rim terminals out over the surface of the flange. Traces of a white slip. A very similar rim form occurs in one of the more sandy local fabrics at Usk (Hartley 1993, fig. 188, uk11), dated to c. A.D. 55–65+, contemporary with the occupation of the fortress here. A date from the 2nd century A.D. onwards is more likely for the Caerleon vessel, based on the date range of activity here and the fabric used. Fabric 7. (FIG. 66, 32)

Type 21

Large vessels with a deep, overhanging flange; the rim is low and almost non-existent. Many slight variations of this form occur at *Verulamium* where it was produced in large numbers from the pre- or early Flavian period to at least c. A.D. 150–155/160 (Frere 1972, figs 110, 115, 120, 121, 129 and 130). Examples dated to c. A.D. 50–90 occur at Usk (Hartley 1993, fig. 187, ver 1–3) but the westward distribution of these vessels, at least as far as Wiltshire, continued throughout the production period, examples dated to c. A.D. 160 occurring at Wanborough in the north of the county (Hartley forthcoming, fig. 81 type 74). With the exception of the stamped flange fragment, probably from this vessel type, from Cambria House (stamp no. 28), the Caerleon examples cannot therefore be dated more closely than mid 1st to mid/late 2nd century A.D. Fabric 8. (Not illustrated)

Type 22

Large, heavy vessel with a rounded, inward facing rim separated from a rounded, stubby flange by a wide, shallow groove, giving the effect of a wide horizontal flange with a rounded terminal. The underside of the flange may be moulded or plain. Possibly a much exaggerated version of the Bushe-Fox 26–30 type (1913, 77, fig. 19, 26–30); no parallels have been found but the form is likely to belong within the period c. A.D. 70–160 when the distribution of wares from the *Verulamium* region was at its peak. Fabric 8. (FIG. 66, 33).

Type 23

Similar to Type 17; vessels have a small, rounded rim and a slightly curved, downward-pointing flange. The flange and rim are separated by a slight groove. Similar vessels from Wanborough, north Wiltshire are dated to c. A.D. 140–250 (Hartley forthcoming, fig. 80, type 8). Fabric 22. (Not illustrated)

Type 24

Vessel with a square, upright rim, the upper surface of which is deeply grooved, and a down-turned flange. There is slight grooving on the outer edge of the flange. Produced in *Verulamium* region from c. A.D. 140–200 (Frere, 1972, fig. 130, 1036, fig. 131, 1054 and 1055). The Mill Street examples are likely to belong to the earlier part of this period as the quantity of vessels from the *Verulamium* region reaching South Wales decreased markedly from c. A.D. 160 onwards. Fabric 8. (FIG. 66, 34)

Type 25

A more extreme version of Type 13. The high, beaded rim is sharply divided from the down-turned flange by a deeply-incised groove. Almost wall-sided. Thin-walled vessel; no trituration grits near the rim. On the basis of fabric alone, the source of this vessel is most likely to be the Mancetter-Hartshill region of Warwickshire although alternative areas such as the Nene Valley or Crambeck cannot be ruled out. A 2nd to 3rd century A.D. date would be appropriate.

Fabric 10. (FIG. 66, 35)

Type 26

Similar to Type 17. A thin-walled, fairly small vessel with a squared, upright rim and a sharply down-turned, triangular flange. Traces of a white slip. Grits of fine white quartz and flint. Date range unknown.

Fabric 14. (FIG. 66, 36.)

Type 27

A small, fairly thin-walled vessel with an upright rim and a short, stubby, wedge-shaped flange folded close to the body. The spout is formed by turning the terminals of the rim across the flange. Trituration grits are of very fine (<1.5mm) crushed white quartz, very different from the examples from South Wales. Distinctive features of this vessel type are the change in angle of the vessel wall just below the rim, and the 'shelf' between rim and flange. Source and date range unknown.

Fabric 11. (FIG. 66, 37)

Type 28

Vessel with a small, slightly inturned rim, grooved on the upper surface and around the exterior with a down-turned flange. A range of broadly similar forms occur in the fabrics from Gallia Belgica at Exeter (Hartley 1991, fig. 84, TC 51–53), dated within the period *c.* A.D. 150–230.

Fabric 12. (FIG. 66, 38 and 39)

Type 29

Wall-sided vessel with a slight change of angle on the interior vessel wall just beneath the rim; the rim has a flat top and the flange is sharply down-turned close to the vessel wall, with a double incised groove around top and bottom. Grits, of angular transparent quartz, are fairly sparse near the rim. Probably a local, larger imitation of vessels made at Colchester in the late Antonine period (Hull 1963, fig. 194, 50; Frere 1972, fig. 131, 1067–69). A similar vessel occurs in the north Wiltshire/southeast Gloucestershire fabric (Fabric 7) at Usk (Hartley 1993, fig. 196, 7), dated to *c.* A.D. 190–250 indicating that other centres in the southwest were also producing their own versions of this form.

Fabric 6. (FIG. 67, 40)

Type 30

Small, fairly thin-walled vessel with very slightly inturned rim, grooved on its upper surface and outer edge, and a short, rounded, down-turned flange. Source and date range unknown.

Fabric 19. (FIG. 67, 41)

Type 31

A small, fairly thin-walled vessel with a square, slightly inturned rim and a short, stubby, down-turned flange, separated from the rim by a wide, shallow groove. No parallels for this vessel have been found but a date somewhere between the mid 1st and mid/late 2nd centuries A.D. is appropriate for the fabric.

Fabric 17. (FIG. 67, 42)

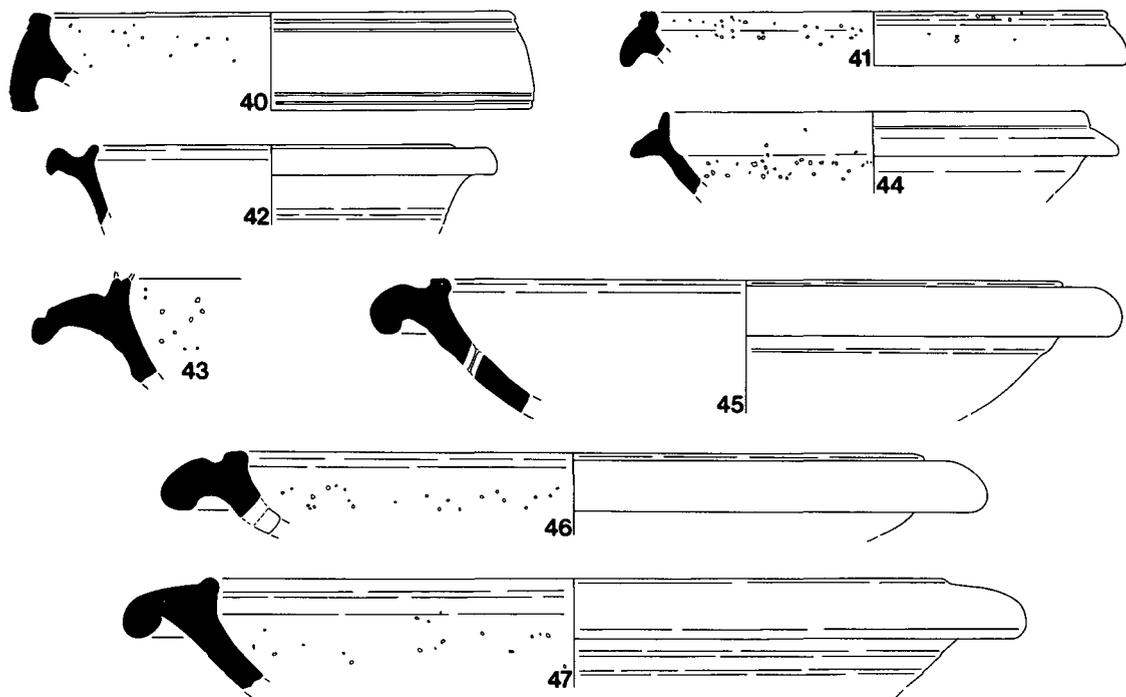


FIG. 67. Mortaria nos 40-7. Scale 1:4.

Type 32

A large vessel with a moulded, upright rim with a grooved upper surface and a wide, flat flange with a rounded, slightly down-turned terminal. There are grooves behind the rim and on the edge of the flange. No parallels have been found for this vessel form which, on the basis of fabric, is likely to date from the 2nd, possibly continuing into the 3rd century A.D.

Fabric 6. (FIG. 67, 43)

Type 33

A fairly thin-walled vessel with a tall, upright rim and a short, triangular flange. The spout is formed by turning the rim out over the flange. The trituration grits are confined below the change of angle of the internal vessel wall which is roughly equal to the lowest edge of the flange. Date range unknown.

Fabric 14. (FIG. 67, 44)

Type 34

Vessel with gently sloping sides and an upright or inturned bead rim, separated from a highly arched, slightly down-turned flange by a wide, deep groove. Trituration grits occur on the interior surface and on the upper surface of the flange. This is a variant of Bushe-Fox type 26-30 (1913, 77, fig. 19, 26-30), dated *c.* A.D. 80-150. Examples were also found on the Roman Legionary Museum site (Zienkiewicz 1992a, fig. 3, 9-11).

Fabric 9. (FIG. 67, 45 and 46)

Type 35

A large vessel with an upright, rounded rim and a wide, slightly down-turned flange, the end of which is tightly curled under. Grits are white quartz, with very occasional flint. From the workshops of Verecundus, Soller, Lower Germany, dated *c.* A.D. 170-230.

Fabric 23. (FIG. 67, 47)

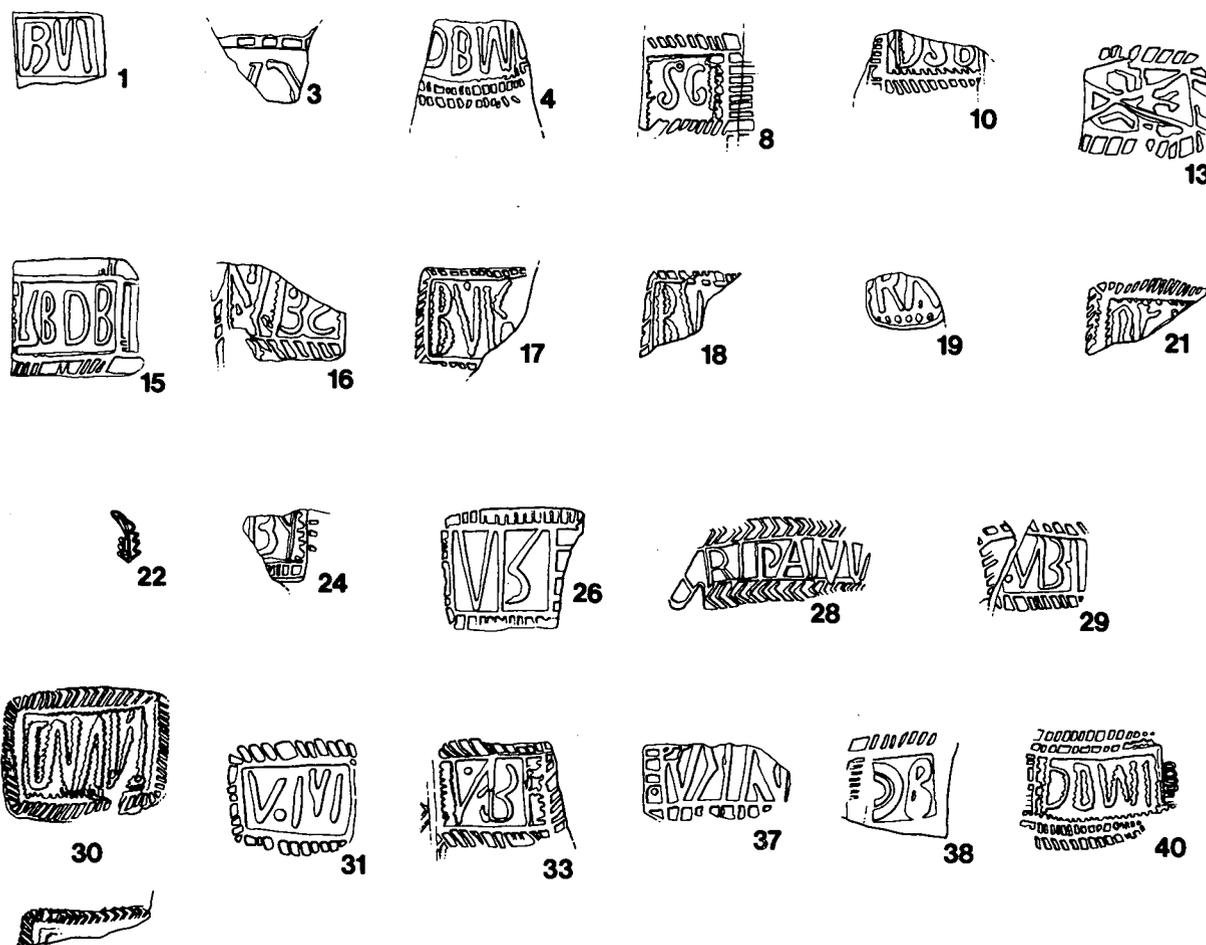


FIG. 68. Mortaria, all stamps. Scale 1:2.

The stamps (FIG. 68)

1. 001/unstratified (1743) Fabric 5; flange fragment with distal groove. Complete but very faint, abraded stamp reading BVI, located across flange.
2. 001/unstratified (1399) Fabric 7; Type 20. Incomplete stamp; very faint and unreadable. (Not illustrated.)
3. 001/unstratified (521) Fabric 8; flange fragment with part of spout. Incomplete stamp, unreadable but might be that of DONIUS, *c.* A.D. 70–110 (Evans, in archive catalogue).
4. 003/unstratified (1745) Fabric 5; flange fragment with distal groove. Incomplete, fairly abraded stamp placed across the flange. Just readable as DBVN (see also no. 40).
5. 007/SG35 (1742) Fabric 5; Type 1 or 2. Very abraded sherd. A complete, rectangular imprint of the stamp is visible, located across the flange, but no detail survives. (Not illustrated.)
6. 016/unstratified (1744) Fabric 5; Type 1. Very faint traces of the stamp survive on this very abraded sherd. Unreadable. (Not illustrated.)
7. 191/unstratified (1741) Fabric 5; Type 1. Only one corner of the stamp survives; unreadable. The stamp is located across the flange near the spout. (Not illustrated.)
8. 192/unstratified (1740) Fabric 6; Type 2. The stamp is apparently complete but only very faint traces survive; no details are discernible. This seems to be a squarer die than is used on other 'Caerleon ware' sherds in this assemblage, although the diagonal line borders remain the same. The stamp is located to one side of the spout.
9. 308=307/SG189 (1522) Fabric 5; Type 2. Incomplete stamp with details, if preserved, obscured by concretions; would appear to read D[. The stamp is located across the flange to one side of the spout. (Not illustrated.)
10. 600/SG183 (302) Fabric 5; Type 2. Incomplete stamp, reading uncertain, possibly DS[or BS[. The lower part only of the letters survives.

11. 605/SG183 (170) Fabric 8; flange fragment. Very faint traces of a possible stamp; unreadable. (Not illustrated.)
12. 700/SG183 (1463) Fabric 5; incomplete rim fragment. Incomplete stamp; only a corner of border survives; unreadable. The stamp is located across the flange. (Not illustrated.)
13. 851/SG114 (1329) Fabric 17; Type 1. Complete but fairly faint stamp located across the flange just to one side of the spout. The reading is uncertain, and is possibly illiterate.
14. 871/SG29 Fabric 5; flange fragment with distal groove. Very faint traces of an incomplete stamp; unreadable. (Not illustrated.)
15. 1044/SG145 (1116) Fabric 5; Type 2. Complete stamp but poorly impressed near edge of flange; reading uncertain: ...]DB, or could be R(inverted) DDB, or R(inverted) [...] DB.
16. 1450/SG8 (1447) Fabric 5; Type 2. Incomplete stamp, located across the flange. Probable reading is VBS(retrograde).
17. 1450/SG8 (1296) Fabric 5; Type 2. Incomplete and fairly faint stamp located across the flange and becoming less legible towards the edge of the flange. Probable reading is BVIS[...
18. 1450/SG8 (1428) Fabric 5; Type 3. Incomplete stamp, fairly abraded, reading BV[...; located across the flange.
19. 1450/SG (1466) Fabric 5; Type 3. Incomplete stamp located across the flange on one side of the spout. Reading uncertain, possibly R ?N [...
20. 1462/unstratified (1305) Fabric 5; incomplete rim fragment. Incomplete stamp located across flange. Part of border only survives; unreadable. (Not illustrated.)
21. 1495/SG4 (1482) Fabric 5; spout fragment. Incomplete stamp located across the flange to one side of the spout. The reading is uncertain, possibly B[... or R[...
22. 1450/SG8 (1538) Fabric 5; base fragment. Imprint of a stylised leaf on the base (see also nos 35 and 36).
23. 2001/unstratified (2715) Fabric 5; flange fragment. Very faint, incomplete stamp placed across flange; unreadable. (Not illustrated.)
24. 2001/unstratified (2756) Fabric 5; incomplete rim fragment. Incomplete stamp; reading uncertain, possibly]BI. This may be an example of the VBI stamp (see nos 29 and 33) placed with the V on the edge of the flange rather than next to the rim.
25. 2002/unstratified Fabric 17; incomplete rim fragment. Incomplete, unreadable stamp. Only one corner of the border survives. (Not illustrated.)
26. 2086/SG 94 (2292) Fabric 5; flange fragment with distal groove. Complete, slightly abraded stamp, reading VBI, or possibly V R(inverted) I or V R(inverted). Other VBI stamps are known amongst this assemblage (see nos 29 and 33), while another]RV(retrograde) stamp, but of a different die, is known from Usk (Hartley 1993, 422, fig. 199, 12) on a form also dated to the first half of the 2nd century A.D.
27. 2086/SG94 Fabric 5; incomplete rim fragment. Faint traces of very worn, incomplete stamp; only the border closest to the rim is visible and the end of the flange is broken. Unreadable. (Not illustrated.)
28. 2086/SG94 (2375) Fabric 8; flange fragment, probably from a Type 21 rim. Complete stamp located diagonally across the flange; reading RIPANV[. Paralleled at *Verulamium* and can be identified with the potter Q Rutilius Ripanus who worked there during the later part of his career (Hartley 1972, fig. 146, 33); dated to c. A.D. 65–95.
29. 2389/SG72 (2541) Fabric 17; Type 2. Almost complete stamp located horizontally across the flange, reading .VBI.
30. 2389/SG72 (2342) Fabric 5; Type 1. Two stamps, located across the flange, one on either side of the spout. One is fragmentary and unreadable, part of the border only surviving; the other complete although slightly abraded, reading possibly CNAVI or CNNA.
31. 2405/SG72 (2445) Fabric 5; Type 3. Complete stamp located across the flange, abraded towards the outer edge of the flange. Reading is probably VIN or VNI.
32. 2429/SG168 (2730) Fabric 5; flange fragment. Very faint traces of an incomplete, rectangular stamp. Unreadable. (Not illustrated.)
33. 2429/SG168 (2731) Fabric 5; Type 2. Complete stamp located across the flange. Reads VBI.
34. 2429/SG (2674) Fabric 5; flange fragment with distal groove. Incomplete stamp; only one corner of border visible. Unreadable. (Not illustrated.)
35. 2465/SG59 Fabric 5; two joining base sherds. Stylised leaf impression on underside of base (see also nos 22 and 36). (Not illustrated.)

36. 2491/SG56 Fabric 5; base sherd. Faint traces of stylised leaf on underside of base (see also nos 22 and 35). (Not illustrated.)
37. 3001/unstratified Fabric 5; Type 3. Incomplete stamp placed across the flange, probably reading V B(retrograde) I [... Possibly the same as no. 26.
38. 3001/unstratified (3022) Fabric 5; Type 2. Incomplete, abraded stamp located across the flange to one side of the spout. Unreadable.
39. 3071/SG151 (3530, 3030) Fabric 5, Type 2. Incomplete and very abraded stamp; only part of the rectangular corner is visible. Unreadable. (Not illustrated.)
40. 3073/SG151 (3039) Fabric 5, Type 2. Complete but slightly abraded stamp, placed horizontally across the flange. Probably reads DBVN. Some expansion of this stamp might be possible (i.e. DOBUN), or it may be illiterate. Same as die for no. 4.

Discussion

The mortaria from the Mill Street sites are dominated by vessels of very local production. The red-slipped Caerleon wares (Fabrics 5 and 6) together account for 50% of all the sherds recovered (TABLE 22); this figure rises to 54% if the Fabric 17 sherds are included amongst this group. This proportion of immediately local wares, in an assemblage recovered from the civilian settlement outside the fortress, is consistent with that for the Roman Legionary Museum site, located in the central zone of the fortress itself (Zienkiewicz 1992a, 92). The precise source of the Fabric 17 sherds is unclear although it is certainly from South Wales. Evans (in archive catalogue) suggested Usk but the description of this fabric is difficult to marry with those from Usk (Hartley 1993, 393-5), and it perhaps fits better with the white-slipped Flavian and Flavian-Trajanic mortaria from the Roman Legionary Museum site (Zienkiewicz 1992a, 92). The rim forms (TABLE 23) and trituration grits, even stamps (stamp no. 17 cf. nos 18, 24, 26, 29, 33 and 37), are comparable with those of the red-slipped Caerleon ware vessels. In addition, the Fabric 17 sherds are far more numerous than any of the other South Wales wares (TABLE 22, fabrics 13-16), supporting the idea of a more local origin.

The fabrics, rim profiles and stamps of the Fabric 5, 6 and 17 vessels recovered are typical of the highly distinctive products of the 'Caerleon ware' industry (Boon 1966c). At present, however, there is insufficient dating evidence to appreciate fully the chronological significance of the various rim forms. The origins of the industry in the Flavian or Flavian-Trajanic period (Zienkiewicz 1992a, fig. 3, 16-20) are likely to be represented among the Fabric 17 sherds. The bulk of the Caerleon ware assemblage fits within the traditional Trajanic-Hadrianic to Antonine (c. A.D. 110-170/180) date bracket for the industry with production perhaps continuing into the early 3rd century A.D., represented here by at least some of the Fabric 6 sherds. It is generally assumed that vessels with the simple curved flanges and non-prominent rims (Type 3; FIG. 65, 6-8) or with rims lower than the flange (Type 1; FIG. 65, 1 and 2) belong to the earlier part of the sequence whilst those vessels with prominent rims and a grooved flange (Type 2; FIG. 65, 4 and 5) belong to the second half of the production period (Hartley 1993, 412). There is, however, considerable overlap between both the fabrics and the rim types (TABLE 23), hampering the precise dating of individual sherds.

Of the 36 stamps on Caerleon ware vessels, 19 occurred on sherds of recognisable rim form: 16 on Fabric 5 vessels (3, 9 and 4 on Type 1, 2 and 3 rims respectively), one on a Fabric 6 Type 2 rim, two on Fabric 17 Type 2 rims and one on a Type 1 vessel.

The other South Wales wares (Fabrics 13-16) form only a very minor component of the assemblage. Only 19 sherds were identified (TABLE 22), representing less than 1% of all the sherds recovered. Given the similarities between all the South Wales products, it is possible that these wares are slightly under-represented in the assemblage although it is clear that they could never have formed anything more than a very minor component in the supply. The lack of detailed quantification presented in published reports for the nearby sites hampers direct inter-site comparisons, but a similar reliance on mortaria produced in the immediate vicinity of the fort or fortress, with only a very small number of vessels from other areas of South Wales, is also apparent at Usk (Hartley 1993, 392-7) and Loughor (Evans and Hartley 1997) although possibly not quite to such an extreme extent as evidenced at the Mill Street sites.

Fabrics from centres on the English side of the Bristol Channel account for a total of 40% of the assemblage (TABLE 22). These are dominated by the products of the Oxfordshire industry, especially the white-wares (Fabric 1), which alone comprise 33% of the total number of mortaria sherds. These wares mainly date from *c.* A.D. 240 onwards (Young 1977, forms M17–M22; TABLE 23) with only a small number of earlier forms (*ibid.*, forms M3, M10–14), dated from *c.* A.D. 140–240. The preponderance of types dated to between *c.* A.D. 240–300 (forms M17–M21) may indicate that the majority of the Oxfordshire white-wares reached Caerleon during this period, a time of rapid expansion in the quantity, range and distribution of Oxfordshire products (*ibid.*, 237–9), coinciding with the decline of the local Caerleon ware industry. Small quantities of Oxfordshire red colour-coated ware were identified (TABLE 22; Fabric 2), including one example, from the Riding School Field, of a form more commonly found in the white-ware fabric (*ibid.*, 72, form M18) and probably of a similar date to it (*c.* A.D. 240–300). One of the mortaria copying samian form 45 (*ibid.*, 173, C97) found at Cambria House, has part of a perforated lion mask spout surviving. Although this vessel type is common in the repertoire of the Oxfordshire potters, made at most of the colour-coat producing kiln sites, the spout is rarely perforated (*ibid.*, 173). However, the distinctive trituration grits present serve to confirm a source in the Oxfordshire region. The colour-coated wares also date from *c.* A.D. 240 onwards but never achieved the popularity of the Oxfordshire white-wares in Caerleon, possibly because by this time the fashion for mortaria had changed to favour the more durable white-wares.

Two fabrics (Fabrics 3 and 10) probably from the Mancetter-Hartshill area of Warwickshire together form 1.6% of all the sherds recovered. A single flange fragment with the red-brown pottery waste grits typical of this region (Fabric 3) was recognised among the material from the Riding School Field site. The Fabric 10 vessel forms (FIG. 66, 23–5, 27 and 35) also correspond well with types produced in this region, but the trituration grits typical of this fabric are opaque, dark grey, weakly magnetic particles, possibly ironstone. Consequently, although the Mancetter-Hartshill area is the most likely source for these sherds, given the proximity of the various centres and the similar quantities of Mancetter-Hartshill ware known from other sites in South Wales (Zienkiewicz 1992a, fig. 3, 12; Hartley 1993, 392; Evans and Hartley 1997, fabric B3), the possibility that Fabric 10 includes sherds from more distant sources such as the Nene Valley, Crambeck and even Köln, cannot be entirely excluded.

The remaining fabric from western England (Fabric 7) is probably derived from the southeast Gloucestershire or north Wiltshire area and can be dated from the 2nd, possibly continuing into the 4th, century A.D. This fabric occurs on all three of the main Mill Street sites (TABLE 22) and accounts for 2% of the sherds recovered. A wide range of vessel forms occur (FIG. 65, 12–15; FIG. 66, 19, 26, 28–32), commonly coated in a white slip, a comparatively unusual feature amongst the assemblage. This fabric occurs widely across Gloucestershire, north Wiltshire, Somerset, Avon and South Wales (Hartley 1993, 392; Evans and Hartley 1997, fabric B4; Hartley forthcoming, fabric 8).

Products from more distant British sources are represented by vessels from the *Verulamium* region (FIG. 66, 33, 34 and 36). These wares are present at Usk during the latter part of the military occupation here, around *c.* A.D. 70 (Hartley 1993, 392), and continued to reach South Wales until *c.* A.D. 160, although never in sufficient quantities to represent a significant component of military supply.

Continental imports account for only 4% of the mortaria sherds (TABLE 22). This contrasts with the situation in western England where, up until the 4th century A.D. at sites such as Exeter and Dorchester (Hartley 1991; Seager Smith 1993a), Continental imports greatly outnumber the British products. The major sources, however, remain the same; in the later 1st and 2nd centuries A.D. vessels from Gallia Belgica predominate, switching to the Rhineland from around the middle of the 2nd century A.D. onwards. The Gallia Belgica vessels are represented in the Mill Street assemblage by Fabrics 9 and 12, which are petrologically related and probably derived from a source in northwestern France (recent research favours the Pas de Calais area) or southeastern England. Considerable variation in both fabrics and forms (i.e. FIGS 65–7, 16, 17, 20, 21, 38, 39, 45 and 46) exists within this tradition, which dates from *c.* A.D. 55–230, encompassing the groups of vessels more commonly known as Hartley (1977) Groups I and II,

Bushe-Fox (1913, fig. 19) 26–30 and Gillam (1970) types 255 and 272. These vessels are perhaps the most common Continental mortaria to have reached Roman Britain, and are widely distributed especially across the south and southwest of Britain. A single sherd (Fabric 21) from Cambria House, is also likely to be from northern France, probably the Massif Central region. A distinctive feature of vessels from this area, which were produced from *c.* A.D. 50–80/85, is a heavily scored interior surface. This fabric also occurs at Usk (Hartley 1993, 391).

The majority of sherds from the Rhineland belong to a distinctive group of large vessels with curved flanges, inturned beads and corrugated sides in hard, white sandy fabrics (Fabric 22; FIG. 66, 22). Products from more than one kiln may be included in this group. Similar vessels occur at Exeter (Hartley 1991, 207, type TC56), dated to *c.* A.D. 150–250. The remaining imported fabric (Fabric 23; FIG. 67, 47) is derived from the workshops of Verecundus, excavated at Soller, Kreis Duren, Lower Germany (Hartley *et al.* 1984, 391–476). Vessels from this workshop were often very large and a specialist function, perhaps in bakeries, has been suggested (Hartley 1973, 41). It is probable that the workshop was operational during the second half of the 2nd century A.D. and despite their large size (up to 0.75m in diameter), these vessels appear to have reached Britain in considerable numbers (*ibid.*, 41).

Four fabrics (Fabrics 4, 11 (FIG. 66, 37), 19 (FIG. 67, 41) and 20) remain unprovenanced. Sherds of these fabrics represent only 0.5% of the total number of sherds recovered (TABLE 22).

Comparatively few of the Mill Street mortaria provide evidence for the reuse and repair of these vessels although some curation of both local and imported fabrics clearly was undertaken. Small, circular, post-firing perforations, probably rivet holes, were noted on five vessels (FIG. 67, 45 and 46; an Oxfordshire white ware vessel from context 004/SG29; a type 2 Caerleon ware rim from context 451/SG29 and another type 34 from context 2354/SG87). Another Caerleon ware vessel (FIG. 65, 4) has a larger, roughly drilled perforation in the lower part of the vessel

TABLE 22: OVERALL QUANTIFICATION BY FABRIC TYPE

Fabric	Riding School Fld		Cambria House		Smallholding		Total	
	No.	Weight	No.	Weight	No.	Weight	No.	Weight
<i>Caerleon</i>								
5	340	21067g	448	24525g	81	4614g	869	50206g
6	81	9364g	41	2829g	25	1527g	147	13720g
17	35	2524g	38	1984g	5	530g	78	5038g
<i>South Wales</i>								
13	7	253g	—	—	—	—	7	253g
14	2	73g	1	51g	—	—	3	124g
15	4	200g	2	62g	—	—	6	262g
16	1	52g	2	113g	—	—	3	165g
<i>Other British sources</i>								
1	471	20618g	118	6204g	85	3977g	674	30799g
2	26	530g	4	157g	6	150g	36	837g
3	1	96g	—	—	—	—	1	96g
7	21	2274g	9	541g	13	1313g	43	4128g
8	15	1441g	10	867g	2	61g	27	2369g
10	12	636g	9	640g	10	405g	31	1681g
<i>Continental imports</i>								
9	9	1270g	8	645g	4	157g	21	2072g
12	16	982g	7	439g	6	328g	29	1749g
18	—	—	—	—	1	59g	1	59g
21	—	—	1	194g	—	—	1	194g
22	20	2350g	8	918g	4	236g	32	3504g
23	—	—	3	648g	—	—	3	648g
<i>Unknown sources</i>								
4	1	8g	—	—	2	40g	3	48g
11	2	88g	—	—	—	—	2	88g
19	1	32g	—	—	—	—	1	32g
20	4	71g	—	—	1	39g	5	110g
Total	1069	63929g	709	40817g	245	13436g	2023	118182g
Mean sherd wt	59.8g		57.6g		54.8g		58.4g	

TABLE 23: VESSEL FORMS BY FABRIC (ALL SITES)

Forms M3–M22 and C97–C100 refer to Oxfordshire types (Young 1977).

Forms	1	2	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	22	23	Total	Date range	
M3	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	c. A.D.140–200
M10	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	c. A.D.180–240
M11	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	c. A.D.180–240
M12	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5	c. A.D.180–240
M13	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	c. A.D.180–240
M14	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	c. A.D.180–240
M17	81	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	81	c. A.D.240–300
M18	52	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	53	c. A.D.240–300
M19	23	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	23	c. A.D.240–300
M17/18	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	c. A.D.240–300
M17–19	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6	c. A.D.240–300
M20	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	c. A.D.240–300
M21	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	7	c. A.D.240–300
M22	24	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	24	c. A.D.240–400+
C97–99	–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	c. A.D.240–400+
C97	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	c. A.D.240–400+
C100	–	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	7	c. A.D.300–400+
1	–	–	59	5	–	–	–	–	–	–	–	–	1	1	5	–	–	–	–	–	71	c. A.D.50–C3rd A.D.
2	–	–	45	11	–	–	–	–	–	–	–	–	–	–	5	–	–	–	–	–	61	c. A.D.50–C3rd A.D.
1/2	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	c. A.D.50–C3rd A.D.
3	–	–	60	6	–	–	–	–	–	–	–	1	–	–	1	9	–	–	–	–	77	c. A.D.50–C3rd A.D.
2/3	–	–	1	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	4	c. A.D.50–C3rd A.D.
4	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	mid/late C2nd A.D.
5	–	–	2	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	14	C2nd A.D.
6	–	–	–	1	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6	c. A.D.150–400
7	–	–	–	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6	late C2nd–early C3rd A.D.
8	–	–	–	–	–	–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	4	c. A.D.65–100
9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	c. A.D.150–250
10	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	C2nd–C3rd A.D.
11	–	–	–	–	–	–	–	–	–	5	–	–	–	–	–	–	–	–	–	–	5	c. A.D.160–230
12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8	–	8	c. A.D.150–250
13	–	–	–	–	–	–	–	6	–	–	–	–	–	–	–	–	–	–	–	–	6	c. A.D.160/170–240
14	–	–	–	–	–	–	–	5	–	–	–	–	–	–	–	–	–	–	–	–	5	c. A.D.170–300
15	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	c. A.D.160–250
16	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	c. A.D.130–160
17	–	–	–	–	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10	C3rd A.D.
18	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	mid C2nd A.D.+
19	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	late C2nd A.D.+
20	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	C2nd A.D.+
21	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	mid–late C2nd A.D.
22	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	c. A.D.70–160
23	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	c. A.D.140–250
24	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	c. A.D.140–200
25	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	C2nd–C3rd A.D.
26	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1	
27	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	
28	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	2	c. A.D.150–230
29	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	mid C2nd–C3rd A.D.
30	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1	C2nd–C3rd A.D.
31	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	mid C1st–mid/late C2nd A.D.
32	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	C2nd–C3rd A.D.
33	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1	
34	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	2	c. A.D.80–150
35	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	c. A.D.170–230
TOTAL	212	15	170	39	27	8	6	13	1	7	1	2	2	2	21	1	1	9	1	538		

wall. This perforation may represent the use of a bung, of lead or other material, to repair a hole in the vessel wall (cf. Seager Smith 1993b, fig. 23, 14). Alternatively, it may have been created to convert the vessel to another use (cf. the perforated coarseware vessels common in the Late Iron Age and early Roman period across much of southern Britain). The only other evidence for the reuse of mortaria comes from a Caerleon ware base sherd (Fabric 5 from context 2038/SG206) which would appear to have been deliberately trimmed, possibly to produce a lid.

THE AMPHORAE (FIGS 69–71) By David R. Evans

Introduction

The collection of amphorae from Mill Street is large and interesting and, unlike many other published groups, it covers a very wide period of time. The overwhelming majority of sherds came from Baetican oil amphorae, and this collection may form the starting point for a revised typology of these amphorae. Other amphorae came from Gaul, and there are more limited numbers of pieces from other centres of production. As will be noted in the catalogue, a number of vessels cannot be assigned either a class or a possible place of origin; indeed some of them may represent vessels other than amphorae. The division is indistinct between amphorae and, for example, large flagons perhaps imported with their contents, possibly with some form of snob value. In the same way that certain colour-coated vessels were imported alongside samian, such vessels should be seen as by-stock. It is even possible, although this is speculative, that in some areas (the Pas de Calais area springs to mind), a complete cooking set, including mortaria, could be bought off the shelf. We may note here the portable oven (ceramic objects no. 1), whose fabric closely resembles that the Baetican amphora Dressel 20.

Two particular items stand out from the rest. One is the Class 45 (British Biv) amphora (no. 39), recorded for the first time from Caerleon; the second is the Cretan amphora with important dipinti. Mention of these two items should not detract from the fact that we have here a very large collection of items traded not for themselves but for their contents; in other words, they have a culinary as well as an economic implication.

Classification

Although the work of Peacock and Williams (1986) has been invaluable in refining the typology of amphorae, it is still occasionally necessary to retain older descriptions or to adapt different nomenclatures; this is particularly the case when dealing with amphorae of Gaulish origin. A tortuous attempt can be seen in the study of the Colchester Sheepen Amphoras (*sic*) where, by a feat of semantic gymnastics, early examples of Gaulish amphorae almost certainly of Class 27 (in this particular case, the term Pélichet 47 is not incorrect) are treated as being within the quite distinct category of Dressel 28 Class 31. The retention of the Dressel series without qualification has distinct disadvantages where no profiles are published; for example, it is difficult to tell if the amphorae from the New Fresh wharf site (Green 1986, 101) are examples of Dressel 30 Class 38 (probably but not certainly Tunisian) or, as is more probable, late examples of Class 27 (see for example Dangréaux and Desbat 1988, fig. 8c, d). On analogy with Green's earlier report (1980, fig. 20)² the latter would appear to be the case. For these reasons, and in an attempt to avoid confusion within the catalogue, many vessels are called Gauloise amphorae without further qualification.

Gaulish amphorae

The fabric of the Gaulish amphorae from these sites shows slight variations both in colour, through off-white to beige with a pink core, and in hardness, although they are almost exclusively powdery. There are, however, no examples of the bright red non-friable fabric known, for example, at Loughor (Evans 1997a, 332, no. 55). The friable nature of Gaulish

² In this case an example of Gauloise 3 Class 29 is reconstructed whilst the amphorae rims illustrated are of Gauloise 4 Class 27.

amphorae is an important factor when considering the proportion of vessels and their survival; such vessels are easily crushed and make less effective hardcore than the more robust Spanish olive oil amphorae. It is also apparent (though not specifically mentioned in the catalogue) that a proportion of the vessels within this group have their origin in the Pas de Calais region of northern France, which also produced mortaria (cf. fabrics 9 and 12 in the mortaria report).

Spanish olive oil amphorae

Given the very high proportion of Baetican olive oil amphorae sherds in this collection, it was considered neither useful nor economical of time and money to quantify the number of vessels by weight, or to attempt any statistical analysis of the quantities involved. There may be an in-built bias in the number of sherds of Baetican vessels which are disposed of; it might also be mentioned that the use of sherds of this class as hardcore might also affect the relative quantities (see above).

Whilst it is usual to find that the majority of Spanish olive oil amphorae on a site are of the earlier Class 25, here that does not appear to be the case and possibly as much as 40% of the collection appears to be from the later class. It should be noted that there is no sudden division between these two classes and that the differences between the periods of transition can be subtle; however, the later Class 26, although of the same origin as Class 25, tend to be somewhat lighter in construction and their body sherds are noticeably thinner. Confusion with the Haltern 70 London 555 is less likely, as these are not found in the same fabric varieties as later Class 25 or Class 26.

Dressel 2–4 amphorae

Only a small number of such vessels are present, including a number of the distinctive black sand varieties from the region around Vesuvius. It should be noted that, whilst the main production here ceased after A.D. 79, there appears to have been a minor resurgence of the industry from the middle of the 2nd century and a number of vessels produced at this time, or perhaps slightly later, are present in this collection.

Salazon amphorae

Fish sauce containers from Spain and, more often than is usually realised, from what is now Portugal, always form a small but significant part of any collection. The present collection calls for little comment except to note the presence of Class 17–21 amphorae. Small bodysherds of Salazon amphorae Classes 17–21 inclusive are often difficult to distinguish from those of Class 10 (Dressel 2–4), but the thickness of the body, and the tendency towards a multi-layered effect in section and a slight ridge at the point at which the body and neck join, are important distinguishing characteristics. At least three, and probably four, vessels of this type are present on the Riding School Field, and others are no doubt present on the other sites.

Stoppers and lids

Only a small number of stoppers and lids were noted on these sites. For a discussion of the typology of stoppers, see Evans 1997a, 333). Whilst stoppers are relatively uncommon (or under-reported), the apparent dearth of lids could either be the result of their fragile nature or an indicator that many of the vessels present were not broached on site but found their way there either as a result of clearance within the fortress or as part of a major land-reclamation process.

Date range

Although amphorae cannot be considered as a precise dating tool, the presence of certain types and their relative numbers can give useful supporting evidence to dating provided by other classes of object. Whilst there is no doubt that a number of vessels can be dated to the early years of the occupation of Caerleon there is little doubt that the majority of these vessels date between the later 2nd and the middle to latter part of the 4th century.

Catalogue

This catalogue is as complete as possible, and whilst it was impossible to illustrate fully all the vessels in the collection, it is hoped that as wide a range as possible has been drawn. Although this approach, whereby a complete collection of amphorae is published but the catalogue only partly illustrated, may appear to be retrogressive, it should be noted that the culling of the illustrated material was carefully considered and nothing was left out for the sake of saving time or space. The bias towards Classes 25 and 26 is a result of the fact that not only did these vessels form by far the largest part of the collection, but they also presented the greatest variety of rim forms. Since illustration time was severely limited, the stamps were omitted in the hope that these could be published elsewhere.

The catalogue is divided into six sections:

- 1) Vessels catalogued as far as possible by the scheme of Peacock and Williams (1986);
- 2) Other vessels;
- 3) Baetican olive oil amphorae of Class 25;
- 4) Vessels of Gaulish origin;
- 5) Repaired and utilised vessels;
- 6) Seals and stoppers.

This catalogue was prepared in 1990 and submitted in 1993, and consequently references to more recent publications are lacking, apart from no. 2, different aspects of which have been published elsewhere.

Vessels catalogued according to Peacock and Williams

1. [79.048] 1459/unstratified Handle of amphora, in a rough light red fabric with a deeper red surface (the surface colour is reminiscent of that on Oxfordshire wares). A distinctive feature of the fabric is the numerous plates, up to *c.* 2mm across, of white shell-like material, possibly feldspar; occasional plates of white and gold mica are present. The form of the original vessel must remain uncertain but the handle is not unlike that of Dressel 6–Pascual 1 (vessels related to Class 8). Although vessels of this type were produced in small numbers up to the early Flavian period, they are more common in pre-invasion contexts in Britain (see Williams 1981, 128). This form of vessel was produced in Tarraconnensis and contained wine. (Not illustrated.)
2. [79.001] 658/SG175 (1282) The upper part of the body, rim, neck and handles of an amphora, initially published as a Rhodian Class 9 (Boon 1987, 31; Webster 1990, 114, pl. 1), but now known to have come from Crete. The inside was coated with resin (Heron and Pollard 1988, 429–47). This amphora bore two dipinti, one running vertically down the neck and reading LEG II AVG, and the other three lines of cursive running horizontal on the shoulder and reading III/AACII/PERPRIMUM (Hassall and Tomlin 1994, 310–12).
3. [79.053] 001/unstratified Rim of an amphora, probably of Class 9 Rhodian type, in a hard fairly fine light reddish fabric with the occasional angular white limestone fragment up to 3mm across. (Not illustrated.)
4. [82.015] 2429/SG168 Rim and neck of an amphora of Class 9 Rhodian type, in a hard, rough, laminar fabric with a lightish buff surface and a light red core; scattered quartz is particularly prevalent. The fabric is the same as that of an unclassified vessel from the excavations of the fort at Loughor (Evans 1997a, 332, no. 59). The Loughor vessel was found to be of uncertain source and the same may be true of the present vessel. This said, production of this type is unknown outside the eastern Mediterranean (Williams 1985, 160–2). Rhodian-type amphorae are abundant in Britain in the early Claudian period, perhaps as a result of a punitive levy in the period A.D. 44–53, but importation continued at least until the early part of the 2nd century. There was also a body sherd in context 2393 with a cream outer surface.
5. [79.046] 1021/SG124 Rim of an amphora of Class 10 Dressel 2–4 (wine amphora) in Gaulish fabric. The date range of Gaulish amphorae of this form is similar to that of Italian and Catalonian vessels; that is, up to the end of the 1st century A.D. A date up to the middle of the 2nd century is possible for Italian vessels, but by the end of the 1st century the Gaulish provinces had developed their own distinctive range of vessels.
6. [94.023] 3500/unstratified Broken spike of an amphora of uncertain type but of Gaulish fabric; a vessel of Class 10 (Dressel 2–4) would seem most probable. Vessels of this class are known to have been produced in central and southern France (Tchernia and Villa 1977). Late 1st or 2nd century.
7. [94.034] 3073/SG151 Fragment from the upper part of the handle of an amphora of Class 10 (Dressel 2–4), in Campanian 'black sand' fabric (Peacock 1971, Fabric 1). The eruption of Vesuvius

- in A.D. 79 severely curtailed the production of both wine and amphorae in central Italy; later vessels from this region are known although they are typologically different (D.F. Williams, pers. comm.). The present vessel was produced in the earlier Flavian period or before, but the use of such vessels for the storage of vintage wines may indicate a sell by date of later 1st century. A second handle fragment (from context 3500; not illustrated) probably comes from a different vessel. (Not illustrated.)
8. [82.007] 2156/SG206 Handle/body join of an amphora of Class 10, in Campanian 'black sand' fabric. It is unfortunately too badly laminated for the exact shape of the double handle to be restored. It is however clear that the handle was not formed from two separate rods of clay as in the case of pre-Flavian examples, cf. for example the Neronian vessel from Usk (Evans 1989, 47, fig. 7, no. 3). Dimensions 65 × 25mm. (Not illustrated.)
 9. [82.008] 2001/unstratified Handle/neck join of an amphora of Class 10, in Campanian 'black sand' fabric. As with other examples of this class from these excavations, the handle was not formed from two separate rods. (Not illustrated.)
 10. [82.009] 2516/modern intrusion Handle/neck join of an amphora of Class 10, in Campanian 'black sand' fabric.
 11. [79.049] 850/SG109 Rim of an amphora of Class 10 Dressel 2–4 in an off-white fabric with abundant inclusions of volcanic black sand. Although the fabric is much lighter than is usual with amphorae of this class from Campania, petrological analysis from other sites (e.g. Colchester Sheepen, Sealey 1985, 36) indicate that fabrics which include volcanic sand are almost exclusively the products of this area.
 12. [97/050] 112/SG10 (rim) and 031=815/SG113 (shoulder) Rim and shoulder fragment of an amphora, in a hard light red fabric with abundant volcanic sand inclusions. The form of the rim is clearly related to that of Class 10 Dressel 2–4 and the fabric is undoubtedly Campanian in origin. Campanian amphora suffered a well-documented decline in the Flavian period, but there is increasing evidence for later production (although perhaps limited in both quantity and distribution) from the 2nd century onwards (cf. *Ceram. Petro. Newslett.* 1990, 4 2). Alternatively this vessel may be an example of the rather less well documented class 11. It should perhaps be noted that the shoulder and rim need not be parts of the same vessel.
 13. [82.010] 2095/SG84 Fragment presumably from a double rod handle of an amphora of Class 10, in a hard creamish fabric with a pink tinge below the surface; the inclusions consist of ill-sorted red and brown grits and the occasional speck of mica. It is possible that this fragment comes from a miniature (or scaled down) amphora, such as the complete example of a Class 9 Rhodian amphora quoted by Riley (1979, 149 no. D115) from the *atrium* of the Casa dei Cervi at Herculaneum. (Not illustrated.)
 14. [82.011] 2393/SG44 Double rod handle of an amphora of Class 10, in granular creamish fabric containing numerous quantities of rounded opaque white quartz. Sparse flecks of mica and abundant black grains are visible under a hand lens. The fabric is reminiscent of that found in mortaria from the *Verulamium* region. A dump of amphorae of local manufacture has been recorded from Brockley Hill in the *Verulamium* region (Castle 1978) and the present vessel may be assumed to be a product of this area. If so, it is almost certainly of Flavian date. (Not illustrated.)
 15. [82.012] 2002/unstratified Fragment from a double rod handle of an amphora of Class 10, in Baetican fabric. (Not illustrated.)
 16. [94.035] 3047/SG155 Fragment of a double rod handle, in Baetican fabric. Although of relatively small size this fragment probably comes from a vessel of Class 10 (Dressel 2–4), but a 'two handled container' rather than a true amphora is possible: alternately the handle may have come from a vessel of Class 39 (Benghazi ER 1). If this vessel is from Class 10, a date before the middle of the 2nd century is probable. See also no. 14. (Not illustrated.)
 17. [79.051] 600/SG183 Bifurcated handle of an amphora of Class 10 Dressel 2–4 in a hard fawn to grey sandy fabric. Area of production uncertain. (Not illustrated.)
 18. [79.052] 812/SG112 Fragment of the rim, close to the point of junction with the handle, of an amphora of uncertain type but almost certainly related to Class 10 Dressel 2–4, in a hard light buff sandy fabric with few inclusion. It is possible that this is the rim of no. 17 and the differences in the appearance of these vessels is simply the result of the handle burning after breakage.
 19. [82.013] 2086/SG94 Rim from an amphora of Class 10, in a dull orange fabric with traces of a white surface. Inclusions are numerous and varied, but include angular white and clear opaque quartz grains up to 1mm, and white and red (?ironstone).
 20. [82.081] 2389/SG72 Rim of an amphora of Class 10 Dressel 2–4, in a fabric from an area other than that of Campania.

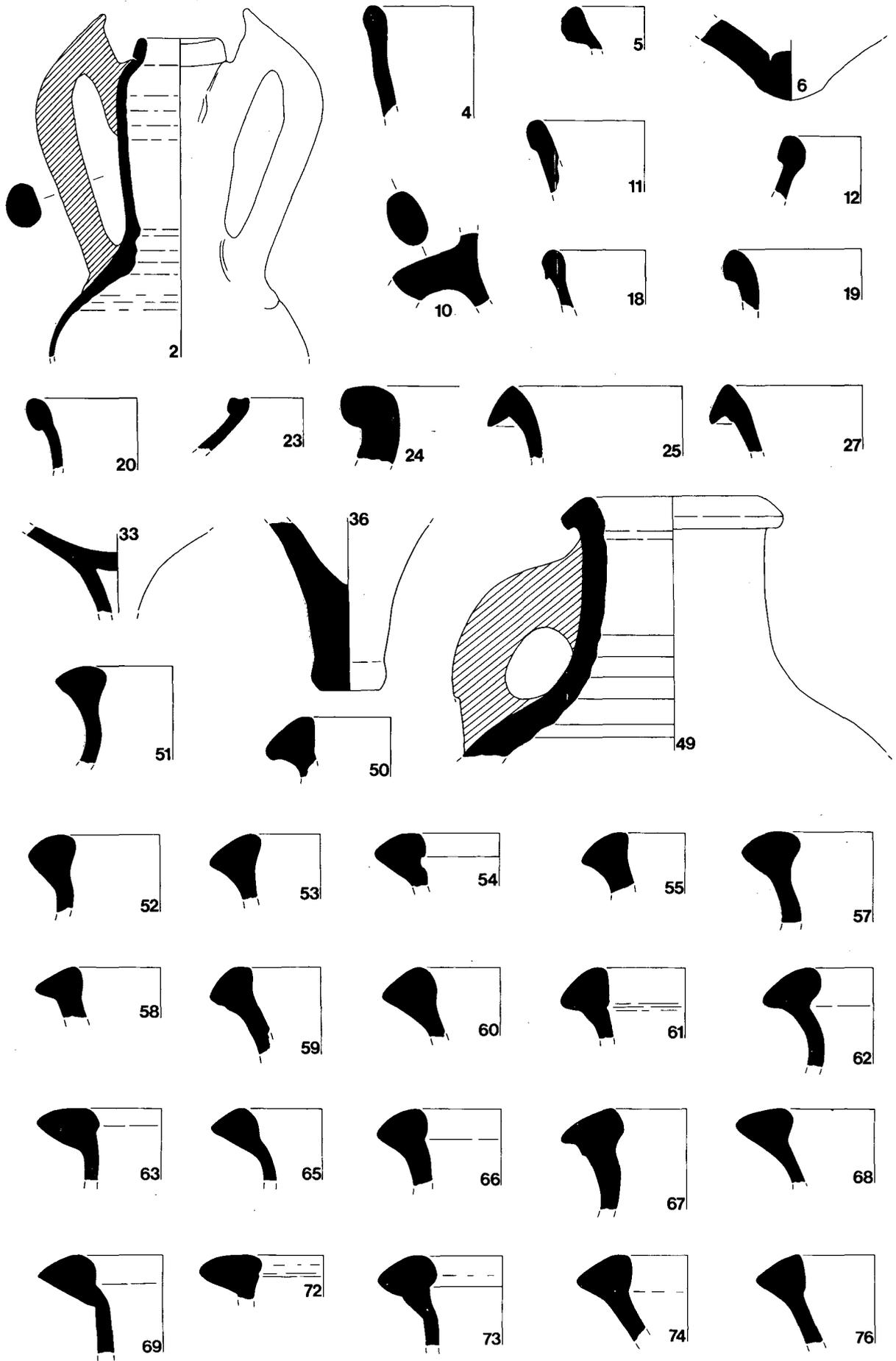


FIG. 69. Amphorae, nos 2-76. Scale 1:4.

21. [82.014] 2355/SG96 Part of the neck of a large flagon or amphora of uncertain type, but possibly related to Class 10. The fabric is dull red-brown, very rough to the touch and highly micaceous. (Not illustrated.)
22. [79.138] 128/modern intrusion Body sherd from an amphora of Class 12 carrot amphora. This type is absent from sites in eastern Britain (but note an example from *Verulamium*; M.G. Wilson 1972, fig. 111, no. 391, not recognised as such). In the post-Neronian period it does occur, albeit in small numbers, on early Flavian sites in the west e.g. Fishbourne (Cunliffe 1971, 208). At least two examples come from the area of the fortress at Caerleon (Greep 1986a, fig. 19, 119; Murray Threipland 1969, fig. 10, 17); other unpublished examples can be quoted from Neath (now held in the National Museum of Wales) and Loughor. Their origin has not been determined but the form of their quartz inclusions indicates a desert environment and, in view of their known distribution, an origin in Morocco or Algeria would seem most appropriate. (Not illustrated.)
23. [82.079] 2002/unstratified Rim of an amphora of Class 12 carrot type, in a light grey fabric.
24. [79.143] 600/SG183 (208) Rim of an amphora of Class 13 Richborough 527. Such vessels, whilst found on a variety of sites, are rarely represented by more than one example. The dating of these vessels is generally given as 1st century; however the presence of three such vessels in early 3rd century deposits at New Fresh Wharf in the City of London (Green 1986, 101 nos 1.4–1.6) strongly suggests that the date range should be extended.
25. [79.139] 629/SG174 Rim from a Salazon amphora, in a slightly sandy creamish fabric with a green tinge. Class 18 Beltran IIa, of late 1st to late 2nd century date.
26. [79.056] 003/unstratified (handle) and 957/SG35 (rim) Fragmentary rim and handle of the ?same Salazon amphora, in a hard rough buff fabric with a light red core; large voids, the result of the leaching out of vegetable matter, are very noticeable. Although the vessel is fragmentary, the relatively small thickness of the handle and the flat top to the rim probably indicates that it can be included within Class 21, a common 2nd century type (Parker 1977). (Not illustrated.)
27. [79.057] 468/SG22 (handle) and 1475/SG19 (rim) Fragmentary rim and handle of the ?same Salazon amphora, in a rough powdery fawn to buff fabric with a light red core. There are occasional voids in the fabric, and the occasional deep red ?ironstone inclusion would, even without the morphological characteristics of this vessel, indicate a Baetican origin (Peacock 1974). Almost certainly of Class 18, although the ridge on the handle is more a characteristic of Class 19; this may mean that two different vessels are present. The significance of the differences between vessels of these two classes, which were produced in approximately the same area, is not yet fully understood, although it may be that different sauces were carried in different vessels.
28. [79.058] 658/SG175 Part of the neck and body handle join of a Salazon amphora, in a light buffish grey fabric which tends towards light red in the interior. The inside of the vessel appears to have a powdery yellow coating. As this covers areas of smoke damage, it may not be an original feature, but both this smoking and the generally over-fired appearance of this vessel may indicate that it was. Dating by site rather than by morphological features probably indicates that this vessel is of Class 18. (Not illustrated.)
29. [79.059] 643/SG175 Two large joining sherds from the body/neck transition of a Salazon amphora, in a cream fabric with a greenish tinge. The fabric is superficially similar to that of Gaulish products, and such an origin cannot be ruled out. There are traces of a powdery, ochery deposit on the inside of this vessel. The thickness of the sherd, the diameter of the neck and the body are close to those of vessel no. 49. (Not illustrated.)
30. [82.035] 2367/SG86 Handle/body join of a Salazon amphora (related to Class 17–18) from the Cadiz region (Peacock 1974). (Not illustrated.)
31. [94.039] 3500/unstratified Rim of a Salazon amphora, in a creamish fabric with few if any inclusions. Class 18 Beltran IIA. This vessel can be considered as a Gaulish version of what is probably a Spanish type. Dating is usually from the Flavian period or shortly before, to the early 2nd century. (Not illustrated.)
32. [94.044] 3071/SG151 Rim of an amphora, in a creamish-pink fabric with the slight greenish tinge of a Salazon amphora of Class 18. Inclusions are frequent, and resemble those of amphorae from the Cadiz region. (Not illustrated.)
33. [94.021] 3047/SG155 Base of an amphora of a form probably transitional between Haltern 70 (Class 15) and London 555. See Sealey (1985, 167) and Sealey and Tyers (1989), where the essential information on the definition of this type can be found, using the results of a study of an example from the Pan Sands in the Thames estuary, together with a discussion of the development of the pre-Flavian Haltern 70 (Class 15) into the later form London 555. Without the grooved rim which is a major identifying characteristic of the latter form (Sealey and Tyers 1989, 60), the exact class

- of the present vessel must remain uncertain. The present writer is not completely convinced that Haltern 70 was phased out in the mid 50s A.D. because vessels without the grooved rim and more akin to Haltern 70s are known from early Flavian contexts at Loughor (Evans 1997a, 329, no. 4, see p.326 for discussion). The Pan Sands example contained preserved olives, and it would appear that olives formed a much larger proportion of imports than the number of preserved stones might suggest (Zienkiewicz 1986b, 224). Probably late 1st to early 2nd century.
34. [79.060] 1450/SG8 Fragment from the handle of an amphora of uncertain type, in a highly granular buff to pink fabric. The present vesicular appearance of this vessel is due to the erosion of small grains from the surface rather than to decalcification. The main reason for the granular appearance of this handle is the incorporation of massive quantities of rounded white and opaque quartz grains up to 2mm across; blood-red and dull white grains are plentiful but far less common; the surface sparkles with points of mica. There are some superficial similarities with the fabric of Baetican olive oil amphorae. The groove along the rim suggests a vessel of Class 20, but this ascription cannot be considered as any more than tentative. (Not illustrated.)
 35. [94.024] 3044/SG164 Base of an amphora, in a hard rough sandy fabric, light reddish-brown in colour. This is probably an example of Class 23, which is now known to have been produced in Portugal (Lusitanian Garum IV amphorae, Edmondson 1987, 172). Apart from common finds in Lusitania this type is rarely found away from the Rome-Ostia axis, but an example is known from Augusta Treverorum in Gallia Belgica (Edmondson 1987, 178). The date-range of this type is roughly 3rd to 4th century. (Not illustrated.)
 36. [94.020] 3525/unstratified Base of an amphora, in a brick-red fabric with a black outer surface which shows signs of having been brushed; the break shows a hacky fracture. A product of the Sahel region of Tunisia of Class 34, Africana II B-C (Panella 1973). A date before the middle of the 3rd century is possible but a later date is more probable.
 37. [79.042] 001/unstratified Handle from an amphora of North African origin. The fabric is brick red with a rough surface, dark grey to black surface and the remains of a white slip. It has the characteristics of both the central Tunisian and coarser Tripolitanian fabrics. Classification on fabric alone would be hazardous but the square handle makes a Tunisian origin unlikely. The vessel is probably of Class 34 Africana II (Panella 1973) rather than Class 35, although the choice is to a certain extent dependent on the distribution of this class rather than morphological factors. Although North African amphorae were produced throughout the Roman period, the *floruit* of their wider distribution is from the middle of the 2nd century until at least the middle to later part of the 3rd century. Similar to no. 36. (Not illustrated.)
 38. [82.001] 2251/unstratified (2085) and 2161/SG76 (2247) Body sherds, probably from the upper body, of an amphora of Class 45 (British Biv). Assignment of this sherd to Class 45 has been confirmed by petrology. Amphora of this class are rare in British contexts before the 4th century, although they were produced from the 1st century A.D. The main chronological indicator is that the earlier vessels (later Roman-early post-Roman) have only a single handle. Although no evidence for the handles remains it is probable that this vessel is of the single-handled type (Tomber and Williams 1986). What appear to be vessels of related types have been previously reported from Caerleon (Boon 1978a, 18, no. 8, fig. 12, no. 3). However, the vessel from the School Field excavations has a base reminiscent of Egyptian amphorae (for example Class 53: Egloff 1977, 172); this vessel, if not perhaps the sherds from the Quay, may be from a precursor of Class 53 vessels. (Not illustrated.) Other unstratified Biv sherds were also recovered from context 2002. (Not illustrated.)

Vessels of uncertain origin and class

39. [94.040] 3044/SG164 Fragment from a handle of uncertain type in a very rough off-white fabric with an unusually large amount of crushed quartz inclusions. (Not illustrated.)

The following vessels (nos 40-8) are represented by body sherds only. None are illustrated.

40. [79.I] 001/unstratified Single sherd from the lower part of a cylindrical amphora, in a highly micaceous fabric which has a tendency to laminate. It is light buff in colour with a light red interior. Apart from the isotropic nature of the matrix the fabric is macroscopically similar to vessels from Gallia Narbonensis although it is more micaceous. The thickness of the sherd (c. 10mm) and the trend of the vessel probably, but not certainly, indicates that it can be placed within Class 10 Dressel 2-4.
41. [82.C] 2314/SG91, 2344/SG87, 2352/SG72 and 2382.SG72 Sherds of an amphora of uncertain type, in a warm buff, highly micaceous fabric with occasional red flecks. Possibly a Salazon amphora.

42. [82.D] 2065/SG84, 2111/SG93, 2128/SG81, 2345/SG73, 2380/SG45 and 2389/SG72 Sherds of an amphora, probably of Class 10, in an off-white to pink fabric. It has a rough feel owing to the presence of ill-sorted tiny quartz grains; there are occasional flecks of mica.
43. [82.E] 2482.SG168 Sherds from the body and shoulder of an amphora, in the same fabric as D, but as the sherds have a more distinct division into pink and cream, a second vessel is probably indicated.
44. [82.F] 2039/SG306 Single sherd of a cylindrical amphora, in a hard dull reddish-brown fabric. The fabric is richer but otherwise identical to a vessel of Class 10 from excavations at the nearby settlement at Bulmore (Macdonald forthcoming).
45. [79.J] 951/SG35 (1323) and 914/SG142 (1353) Two ridged body-sherds in a light buff-orange highly micaceous fabric with occasional tiny quartz inclusions. The fabric is superficially similar to that of vessels of Class 45: the light colour and presence of large fragments of igneous rock distinguishes this vessel from post-Roman Biv types (E. Campbell *in litt.*), but the characteristic ridging nevertheless indicates an amphora with a possible origin in the eastern Mediterranean.
46. [79.K] 957/SG35 Body sherd of an amphora, in a hard, light buff, anisotropic and very slightly micaceous fabric. The sherd is thin walled (*c.* 4mm) and appears to come from the lower part of a globular amphora; the shape is somewhat reminiscent of Class 41 (Benghazi MR amphora 2). This form has not been noted outside the eastern Mediterranean, but the occurrence within the present collection of vessels of undoubted eastern Mediterranean origin may simply mean that the distribution map covers areas of investigation rather than the full distribution of this and related classes. If this vessel is indeed an example of Class 41, then a largely 3rd to 4th century date range would be appropriate.
47. [79.L] 927/SG53 Body sherd from an amphora or amphora/flagon, in a hard brick-red fabric with a thick grey core. The corrugated outer surface has traces of a cream slip. The only visible inclusions are rare angular white quartz and very sparse mica.
48. [82.O] 2250/SG45 Body sherd of an amphora, probably Gaulish but perhaps eastern European, in a cream to creamy grey fabric. The present appearance of this sherd may be due to smoke damage; thickness *c.* 4mm. The outer surface shows signs of slight ridging. Petrology is ambiguous.

Class 25 Baetican olive oil amphorae

49. [79.084] 003/unstratified Rim, neck and handle of an amphora of Class 25. The fabric varies from light red on the interior to light buff on the exterior. cf. Martin-Kilcher 1983, nos 41–2. 3rd century.
50. [79.085] 927/SG53 Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, nos 30–4. 2nd century.
51. [79.086] 950/SG131 Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, nos 28–9. 2nd century. There is a light red band just below the surface of this vessel.
52. [79.087] 154/modern intrusion Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, nos 18–19. Flavian/Trajanic.
53. [79.088] 001/unstratified Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, nos 24–5. Early 2nd century.
54. [79.089] 002/unstratified Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, no. 20. Late 1st to early 2nd century.
55. [79.090] 002/unstratified Rim of an amphora of Class 25. The fabric is a buff to light red sandwich. Of broadly 3rd century date.
56. [79.091] 1458/unstratified Incomplete rim of an amphora of Class 25, within the range of Martin-Kilcher 1983, nos 13–18. Late 1st century. (Not illustrated.)
57. [79.092] 1293/SG106 Rim of an amphora of Class 25, of finer than usual fabric; within the range of Martin-Kilcher 1983, nos 26–30. Early to mid 2nd century.
58. [79.093] 403=103/SG185 Rim of an amphora of Class 25, in a buff to mainly light red to buff sandwich fabric; similar to Martin-Kilcher 1983, nos 35–7. Later 2nd century.
59. [79.094] 811/SG125 Fragmentary rim of an amphora probably of Class 26. 4th century.
60. [79.095] 700/SG183 Fragmentary rim of an amphora of Class 25. Of a generally 1st century date.
61. [79.096] 002/unstratified Rim of an amphora of Class 25.
62. [79.097] 003/unstratified Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, no. 29, Hadrianic-Antonine. One end of the rim appears to have been filed to shape.
63. [79.099] 008/unstratified Rim of an amphora of Class 25. The flaring rim indicates a vessel of broadly late 1st to early 2nd century date.
64. [79.100] 015/unstratified Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, no. 41. Early to mid 3rd century. (Not illustrated.)

65. [79.101] 1026/SG146 Rim of an amphora of Class 25 or 26, in an orange-buff fabric with a thick grey core and traces of a white outer skin. Probably 3rd century.
66. [79.102] 812/SG112 Approximately one half of the rim of an amphora of Class 25.
67. [79.103] 812/SG112 Rim of an amphora of Class 25. The rim is poorly finished and is difficult to parallel, but a largely 2nd century date would not be inappropriate.
68. [79.104] 468/SG22 Rim of an amphora of Class 25, within the range of Martin-Kilcher 1983, nos 30–3. 2nd century.
69. [79.105] 812/SG112 Rim of an amphora of Class 25, within the range of Martin-Kilcher 1983, nos 30–3. 2nd century. Probably not the same vessel as no. 68.
70. [79.106] 667/SG181 Rim of an amphora of Class 25. (Not illustrated.)
71. [79.107] 607/modern intrusion Rim of an amphora of Class 25, in a 'normal' fabric but with a thick grey core and an off-white crazed outer surface; very similar to Martin-Kilcher 1983, nos 33–4. Late 2nd century. The vessel shows clear signs of pecking to facilitate removal. (Not illustrated.)
72. [79.108] 913/SG29 Rim of an amphora of Class 25, of broadly 2nd century date. The vessel shows clear signs of pecking to facilitate removal.
73. [79.109] 308/SG189 Rim of an amphora of Class 25, in a light grey to light red fabric with a buff exterior; similar to Martin-Kilcher 1983, no. 39. Early 3rd century.
74. [79.110] 001/unstratified Rim of an amphora of Class 25, in a light grey to light red fabric with a buff exterior. Of broadly 2nd century date.
75. [79.111] 831/SG124 Incomplete rim and part of the handle of an amphora of Class 25 with a thick grey core. (Not illustrated.)
76. [79.112] 1026/SG146 Rim of an amphora of Class 25 with a thick light red core. Probably of late 2nd to mid 3rd century date.
77. [79.113] 1450/SG8 Rim of an amphora of Class 25. (Not illustrated.)
78. [79.114] 627/SG178 Rim of an amphora of Class 25 with a thick, light grey core; similar to Martin-Kilcher 1983, nos 29–32. Of mid 2nd century date. The vessel shows clear signs of pecking to facilitate removal.
79. [79.115] 928/SG53 Rim and neck of an amphora of Class 25, in a red fabric with a buff exterior and a thick light grey surface in places; similar to Martin-Kilcher 1983, nos 38–41. First half of the 3rd century.
80. [79.116] 001/unstratified Rim of an amphora of Class 25.
81. [79.117] 902/unstratified Rim, neck and part of the handle of an amphora of Class 25, in a buff/light red light fawn sandwich fabric. Of largely late 2nd to early 3rd century date.
82. [79.119] 852/SG123 Rim of an amphora, in Baetican fabric; probably of Class 25 but the rim is somewhat narrower than is usual in this class of vessel.
83. [82.046] 2393/SG44 Rim of an amphora of Class 25, within the range of Martin-Kilcher 1983, nos 10–16. Late 1st century.
84. [82.047] 2367/SG86 Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, no. 20. Later 1st to early/mid 2nd century.
85. [82.048] 2176/SG92 Rim of an amphora of Class 25, with traces of a white skin. Similar to no. 105.
86. [82.049] 2389/SG72 (2325) Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, no. 21. Late 1st to mid 2nd century. A cross has been cut into the top of the rim before firing, possibly the numeral ten, but it could also be a mark of identification (*ex inf.* R.S.O. Tomlin).
87. [82.050] 2003/unstratified Rim of an amphora of Class 25. Similar to no. 86.
88. [82.051] 2410/SG72 Rim and handle of an amphora of Class 25. The fabric has a light red tinge just below the surface and traces of a white skin. The handle seems to show signs of sawcuts. Similar to Martin-Kilcher 1983, nos 22–5. Late 1st to middle 2nd century.
89. [82.052] 2389/SG72 Rim of an amphora of Class 25.
90. [82.053] 2389/SG72 Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, no. 29. Mid 2nd century.
91. [82.054] 2405/SG72 Approximately half the rim of an amphora of Class 25. The vessel has traces of a white skin. Within the range of Martin-Kilcher 1983, nos 30–4. Mid to late 2nd century.
92. [82.055] 2314/SG91 Rim of an amphora of Class 25. There is a considerable variation in the profile of the lower part of the rim of this vessel. The fabric is buff to light red with a cream outer surface in places.
93. [82.056] 2178/unstratified Complete neck, part of the rim and parts of the handles of an amphora of Class 25, in a buff to light red fabric with a cream outer surface in places. Unfortunately only that part of the rim above one of the handles is extant, and the exact profile of the rim is therefore uncertain; however the angular profile indicates a vessel of broadly 2nd century date.

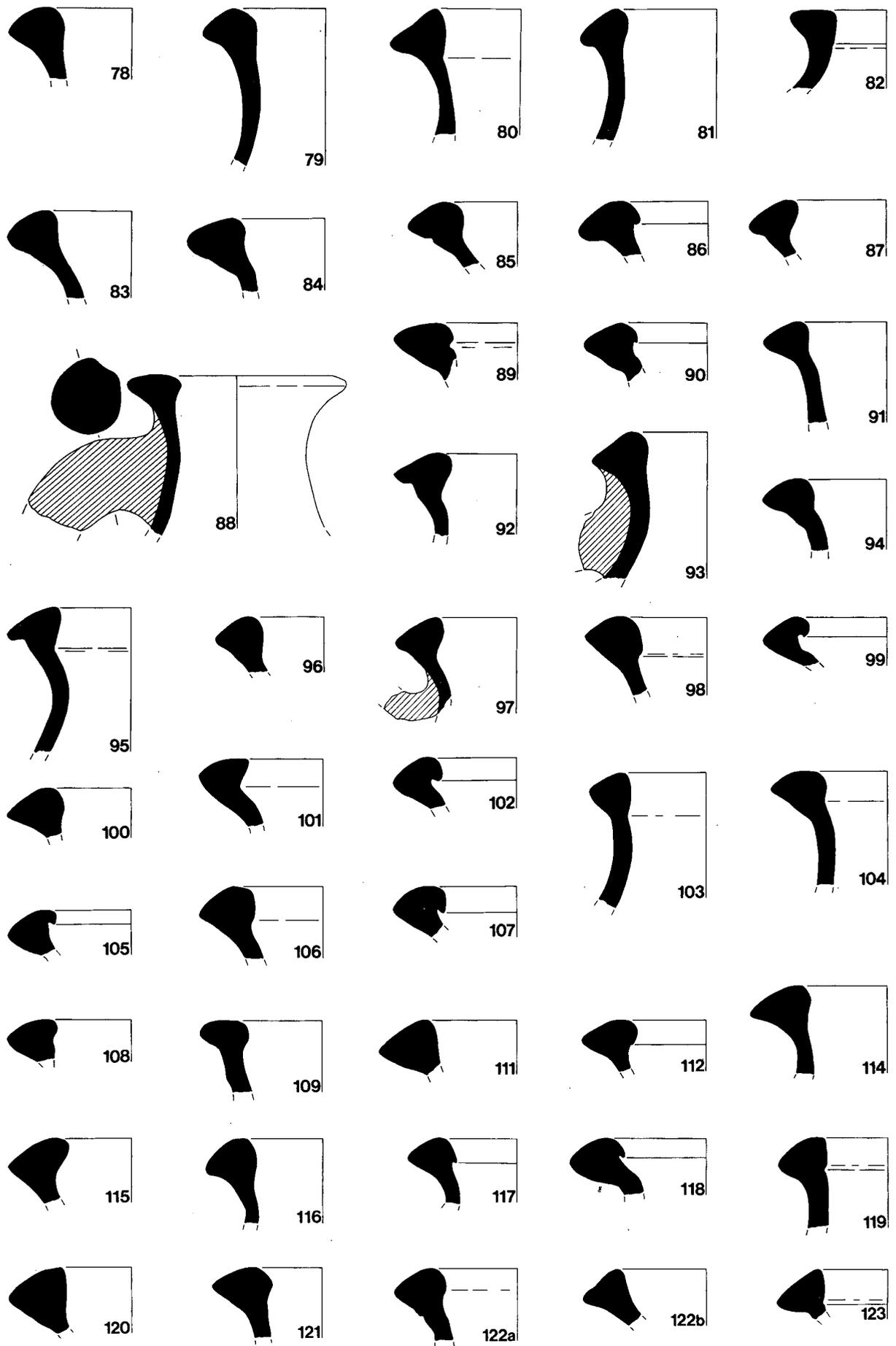


FIG. 70. Amphorae, nos 78-123. Scale 1:4.

94. [82.057] 2187/unstratified Rim of an amphora of Class 25, in a buff to light red fabric with a cream outer surface in places. Similar to Martin-Kilcher 1983, nos 28–30. 2nd century.
95. [82.060] 2459/SG168 Rim of an amphora of Class 25. The fabric has a light red layer just below the surface. Similar to Martin-Kilcher 1983, no. 29. Mid 2nd century.
96. [82.059] 2002/unstratified Rim of an amphora of Class 25, similar to Martin-Kilcher 1983, nos 39–40. First half of the 3rd century.
97. [82.058] 2429/SG168 Rim and part of one handle of an amphora of Class 25, in a buff to light red fabric with a cream outer surface in places. The vessel has some similarities to Martin-Kilcher 1983, no. 39. First half of the 3rd century.
98. [82.061] 2459/SG168 Rim of an amphora, possibly of Class 26, in a light red fabric with a thick grey core and a creamish outer surface.
99. [82.062] 2393/SG44 Rim of an amphora of Class 25. The deep inturn to the inside of the rim is an uncommon feature on vessels of this class.
100. [82.063] 2086/SG94 Fragmentary rim of an amphora of Class 25, in a light red fabric with a thick buff core and creamish outer surface.
101. [82.064] 2405/SG72 Rim of an amphora of Class 25. The rounded profile and thick dark grey core indicate a 1st century date for this vessel.
102. [82.065] 2405/SG72 Rim of an amphora of Class 25.
103. [82.066] 2038/SG206 Rim and fragment of a handle of an amphora of Class 25. Largely similar to Martin-Kilcher 1983, no. 40. Early 3rd century.
104. [82.067] 2405/SG72 Approximately half the circumference of the rim of an amphora of Class 25. The rim profile indicates a 2nd century vessel.
105. [82.068] 2405/SG72 Rim of an amphora of Class 25.
106. [82.069] 2002/unstratified Rim of an amphora of Class 25. The rim profile indicates a 2nd century vessel.
107. [82.070] 2491/SG56 Rim of an amphora of Class 25.
108. [82.071] 2002/unstratified Almost half the circumference of a rim of an amphora of Class 25.
109. [82.072] 2491/SG56 Rim of an amphora of Class 25, within the range of Martin-Kilcher 1983, nos 35–7. Later 2nd century.
110. [82.73] 2367/SG86 Fragment of the rim of an amphora of Class 25. (Not illustrated.)
111. [82.074] 2429/SG168 Fragment of the rim of an amphora of Class 25.
112. [82.075] 2437/SG64 Fragment of the rim of an amphora, probably of Class 25, in a red fabric with a light buff core. The thickness of the fragment of surviving neck (*c.* 10mm) may indicate that this vessel is in fact of Class 26. (Not illustrated.)
113. [82.045] 2010/unstratified Handle of an amphora of Class 25. The fabric of this vessel is noticeably more friable and less gritty than that of the majority of vessels of this class, but there is often a noticeable difference between the fabric of the body and handles of these vessels. There is no reason to suppose an origin other than Baetica for this vessel. (Not illustrated)
114. [94.003] 3047/SG155 About half the diameter of the rim of an amphora of Class 25 in a buff red grey sandwich fabric. *cf.* Martin-Kilcher 1983, 26–30. 2nd century
115. [94.005] 3500/unstratified Rim of an amphora of Class 25, badly fragmented but similar to Martin-Kilcher 1983, no. 23. Late 1st to early 2nd century.
116. [94.006] 3044/SG164 Rim of an amphora of Class 25, in a red/buff fabric with a thick grey core.
117. [94.007] 3086/SG159 About one-third of the circumference of the rim of an amphora of Class 25, similar to Martin-Kilcher 1983, no. 29. Mid to late 2nd century.
118. [94.008] 3003/SG153 Rim of an amphora of Class 25. *cf.* Martin-Kilcher 1983, no. 26. Early 2nd century.
119. [94.009] 3024/SG18 About one-third of the circumference of the rim of an amphora of Class 25. *cf.* Martin-Kilcher 1983, 15–20. Late 1st to early 2nd century.
120. [94.010] 3039=3082/SG158 Rim of an amphora of Class 25. *cf.* Martin-Kilcher 1983, 22–5. Late 1st to mid 2nd century.
121. [94.017] 3500/unstratified Fragment of the rim of an amphora of Class 25, in a buff/red/grey sandwich fabric. Some similarities to Martin-Kilcher 1983, 32. Early to mid 2nd century.
122. a and b[94.011] 3001/unstratified Two badly mud-stained fragments of the rims of vessels possibly transitional between Class 25 and 26, and of late 2nd to early 3rd century date.
123. [94.012] 3071/SG151 Rim fragment of an amphora of Class 25/6 later 2nd century.
124. [94.013] 3021/unstratified Rim fragment of an amphora of Class 26 with a thick grey core.
125. [94.014] 3047/SG155 About one-half of the rim of an amphora of Class 26, in a buff fabric with a thick grey core. 3rd century.

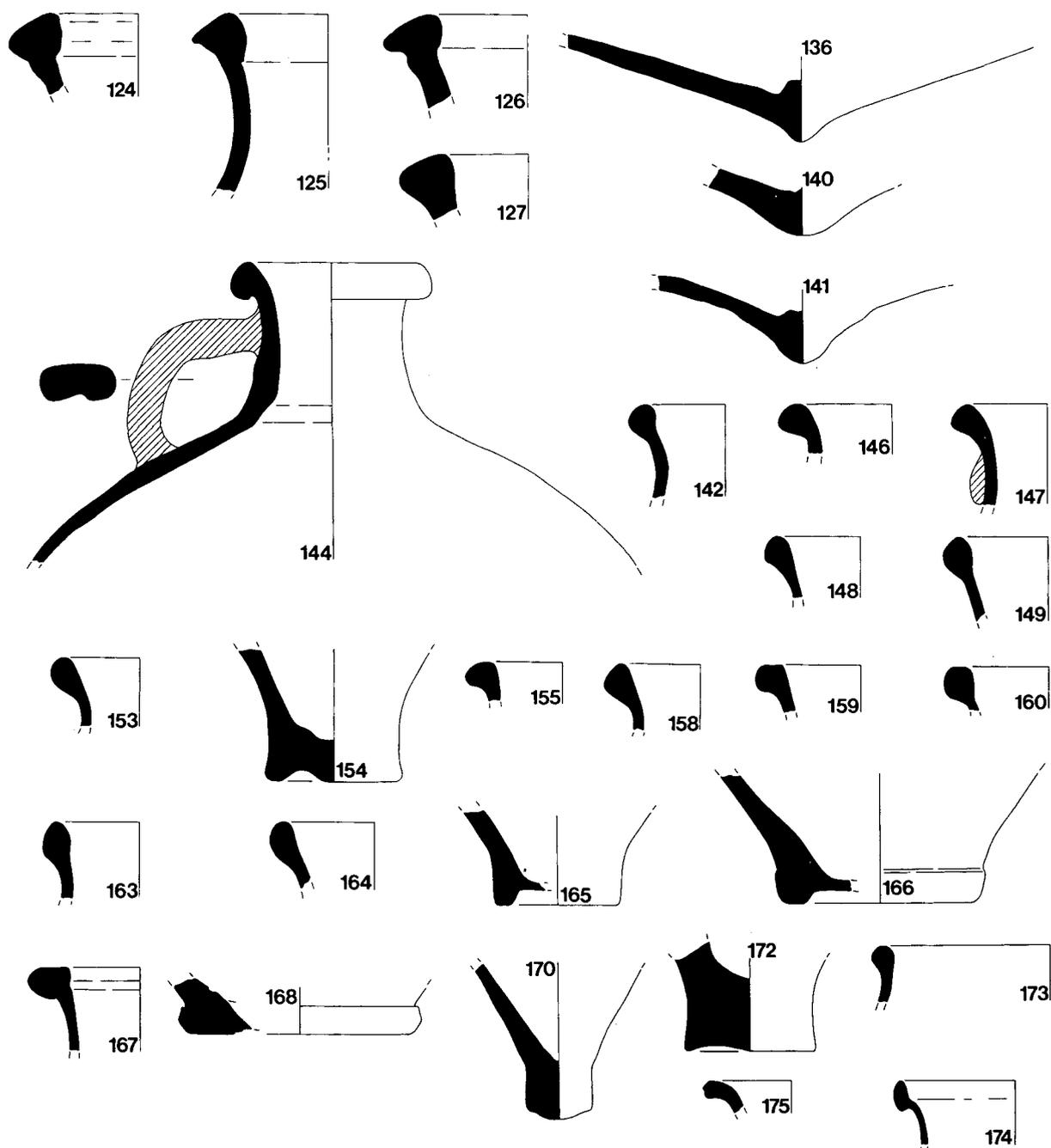


FIG. 71. Amphorae, nos 124–75. Scale 1:4.

126. [94.015] 3535/SG13 Rim of an amphora of Class 26(?), in a buff/red/grey sandwich fabric. The rim form is somewhat unusual but the thinness of the body favours Class 26. 2nd to 3rd century.
127. [94.016] 3044/SG164 Rim of an amphora of Class 26, in a creamy pink fabric. Apart from the occasional fleck of mica the fabric closely resembles vessels produced in Gallia Narbonensis.
128. [82.037] 2086/SG94 Base of an amphora of Class 25. Broad flat bases such as this are characteristic of vessels of the 2nd century and later. (Not illustrated.)
129. [82.038] 2086/SG94 Base of an amphora of Class 25. Broad flat bases such as this are characteristic of vessels of the 2nd century and later. (Not illustrated.)
130. [79.027] 001/unstratified Base of an amphora of Class 25/6. (Not illustrated.)
131. [79.028] 001/unstratified Base of an amphora of Class 25/6. (Not illustrated.)
132. [79.029] 001/unstratified Base of an amphora of Class 25/6. (Not illustrated.)
133. [79.030] 002/unstratified Base of an amphora of Class 25/6. (Not illustrated.)

134. [79.031] 871/SG29 Base of an amphora of Class 25/6. (Not illustrated.)
135. [79.032] 934/SG142 Base of an amphora of Class 25/6. (Not illustrated.)
136. [79.033] 957/SG35 Base of an amphora of Class 25/6.
137. [79.034] 1450/SG8 Base of an amphora of Class 25/6. (Not illustrated.)
138. [79.035] 1463/unstratified Base of an amphora of Class 25/6. (Not illustrated.)
139. [94.025] 3073/SG151 Class 26 base. A flat base such as this is more reminiscent of the slightly earlier Class 25 but the fabric and the thinness of the body of this vessel point to Class 26. Probably late 2nd century. (Not illustrated.)
140. [94.026] 3044/SG164 Class 26 base in a buff to red fabric. The rather offset plug is typical of vessels of this type.
141. [82.039] 2394.SG76 Base of an amphora of Class 26.

Amphorae of Gaulish origin

142. [94.018] 3500/unstratified Rim fragment from an amphora of Class 27 from Gallia Narbonensis.
143. [94.027] 3047/SG155 Handle of an amphora of Class 27 (Gauloise 4). Deep splayed handles such as this are most characteristic of 1st century examples of this type, as in the large Flavian group from Lyon (Dangréaux and Desbat 1988, fig. 7). (Not illustrated.)
144. [79.141] 001/unstratified Rim, neck and handles of an amphora of Class 27 (Gauloise 4). (Not illustrated.)
145. [79.061] 016/unstratified Rim of an amphora of Class 27 (Gauloise 4). (Not illustrated.)
146. [79.062] 551/unstratified Rim of an amphora of Class 27 (Gauloise 4).
147. [79.063] 022=814/SG125 Rim of an amphora of Class 27 (Gauloise 4).
148. [79.064] 814/SG125 Rim of an amphora of Class 27 (Gauloise 4).
149. [79.065] 1273/SG111 Rim of an amphora of Class 27 (Gauloise 4).
150. [79.066] 812/SG112 Rim of an amphora of Gauloise amphora; probably but not certainly Class 27 (Gauloise 4). (Not illustrated.)
151. [79.067] 302/unstratified Rim of an amphora of Class 27 (Gauloise 4). (Not illustrated.)
152. [79.068] 910/SG135 Rim of an amphora of Class 27 (Gauloise 4). (Not illustrated.)
153. [79.069] 001/unstratified Approximately half the circumference of the rim of an amphora of Class 27 (Gauloise 4).
154. [79.071] 927/ SG53 Base of an amphora of Class 27 (Gauloise 4). The narrow foot and waisted profile of this example indicate a vessel of 3rd to 4th century date.
155. [82.021] 2471/SG168 Rim of an amphora of Class 27 (Gauloise 4).
156. [82.022] 2065/SG84 Fragmentary rim of an amphora of Class 27 (Gauloise 4). (Not illustrated.)
157. [82.023] 2459/SG168 Rim of an amphora of Class 27 (Gauloise 4). (Not illustrated.)
158. [82.024] 2002/unstratified Rim of an amphora of Class 27 (Gauloise 4).
159. [82.025] 2429/SG168 Rim of an amphora of Class 27 (Gauloise 4).
160. [82.026] 2393/SG44 Rim of an amphora of Class 27 (Gauloise 4).
161. [82.027] 2002/unstratified Rim of an amphora of Class 27 (Gauloise 4). (Not illustrated.)
162. [82.028] 2086/SG94 Rim of an amphora of Class 27 (Gauloise 4). (Not illustrated.)
163. [82.029] 2002/unstratified Rim of an amphora of Class 27 (Gauloise 4).
164. [82.078] 2086/SG94 Rim of an amphora of Class 27 (Gauloise 4).
165. [82.080] 2010/unstratified Base of an amphora of Class 27 (Gauloise 4).
166. [79.072] 191/unstratified Base of an amphora of Class 30 (Gauloise 5). The profile of the base is similar to that of Flavian examples from Lyon (Dangréaux and Desbat 1988, fig. 12, 7–9).
167. [82.020] 2002/unstratified Rim of an amphora of Class 30 (Gauloise 5). Late 1st to early 2nd century.
168. [82.030] 2099/SG80 Base of a Gaulish amphora probably, but not certainly, of Class 30 (Gauloise 5).
169. [82.016] 2001/unstratified Fragment from the base of an amphora, in a creamish fabric very badly damaged by frost. Although the provenance of this vessel is not in doubt (it comes from one of the many kiln sites in Gallia Narbonensis) the form of the vessel is not clear, mainly because of post-depositional damage. It is superficially similar to the base plugs found on Baetican oil amphorae (Class 25) but vessels of this type are not known to have been produced in Gaulish kilns. It would seem far more likely that this fragment comes from the top of a spike of a Class 10 amphora. Such vessels are well known from deposits in France, as for example the large early Flavian group from Lyon where they form a third of those of this class in the collection (see Dangréaux and Desbat 1988, 119 and references there). (Not illustrated.)

170. [82.017] 2065/SG84 Base spike of an amphora of uncertain type in Gaulish (or ?Taroconnensian) fabric. There is a similar base included in the early Flavian destruction deposit at Lyon (Dangréaux and Desbat 1988, fig. 20, no. 12), unfortunately also of an unknown type. A generally similar vessel has also been reported from Canterbury (Arthur 1986, no. 60), also from an unknown source.
171. [79.045] 002/unstratified Base of an amphora, in Gaulish fabric. Such thick heavy bases, formed apparently from a separate piece of clay rather than during throwing, are unusual on Gaulish vessels. Examples of vessels in a similar form (but of Algerian origin) are found at Benghazi (cf. Riley 1979, 196–7, Type MR 12 especially no. D253): these are closely related in form to Class 28 (Gauloise I). This vessel is no earlier than the end of the 2nd century and is almost certainly of far later date. Compare no. 172. (Not illustrated.)
172. [82.033] 2002/unstratified Base of an amphora of uncertain type in Gaulish fabric presumably related to 3rd century Gaulish types. See discussion of no. 171.
173. [94.041] 3001/unstratified Eroded rim of an amphora, in a fairly hard, slightly granular, orange to orange-buff fabric with a buff surface. Whilst this vessel is clearly related to vessels of Class 27, the fabric is certainly not Gaulish. A related Class 28 was produced in Catalonia, as were other amphorae.
174. [94.043] 3044/SG168 Rim of an amphora of Gauloise Class 7.
175. [79.144] 903/SG137 Rim of a large flagon/amphora, in a fine hard off-white to cream fabric with the occasional angular quartz inclusions. The fabric is identical to that of mortaria produced in the Massif Central in France. A number of similar vessels came from the St Magnus House site (Richardson 1986, 1.25–1.29), possibly in the same fabric. Although perhaps not true amphorae, these vessels were undoubtedly imported for their contents. A mid 3rd century date (or earlier) for these vessels seems likely.
176. [79.147] 001/unstratified Base of a vessel in the same fabric as no. 175. (Not illustrated.)
177. [82.034] 2002/unstratified Rim of an amphora or large flagon in a hard, light buff, laminar fabric. (Not illustrated.)
178. [82.036] 2034/SG78 Fragment of an amphora or large flagon of uncertain type but possibly related to Class 29 (Gauloise 3). (Not illustrated.)

Repaired and reused vessels (None of these are illustrated)

179. [79.011] 403=103/SG185 (140) and 003/unstratified (320) Two body sherds from two different vessels of Class 25. On the inside of one sherd were cut grooves, along which were laid pre-cast strips. More lead was then poured through drilled holes and allowed to spread over the outer surface (presumably contained in some form of sprue cup); this lead fused with the strips underneath, although in some cases this fusion was incomplete.
180. [79.012] 308/SG189 (1523) About one-third of the circumference of a vessel of Class 25. Grey sandwich fabric but possibly not thin enough to be Class 26. It has been cut off just below the rim and reworked for reuse. There are a number of examples of such reworking including the rivetted vessel no. 179. A rivetted example is also known at Pound Lane, Caerwent, unpublished Newport Museum. It is also becoming quite clear that many of the so-called tapping holes from other sites are also rivet holes.
- The reuse of complete amphorae to contain a reserve supply of flour, and resealed with circular stamps resembling breadstamps, has recently been suggested by Boon (1987, 370–1), quoting example of stamps from Holt (*loc. cit.* fn. 68).
181. [82.006] 2470/SG168 (2933) Body sherd of an amphora of Gaulish origin, class not now determinable. There are the remains of a now broken rivet and joining strip. The inside of the sherd shows considerable lamination, which is unusual in vessels from this source, and it is possible that the sherd was deliberately thinned down during or before the process of riveting. Riveting of amphorae is not uncommon but the types involved tend to be Class 25 Baetican amphorae. The fabric of Gaulish amphorae is such that one would expect them to shatter into rather small fragments: this would make repair a rather tedious and time-consuming process which was perhaps only practicable if no other substitute was available. It should not, however, be imagined that such repair meant that the resultant vessel would not hold water: the vessel quoted by Marsh (1981, 227), which had been broken into 289 pieces and was joined by 613 rivets, still held water.
182. [79.013] 600/SG183 (202) Tapping hole, Class 25/26; fragment only. Diameter of the hole c. 10mm.
183. [79.014] 615/SG182 (201) Segment of Class 25 including neck/handle join; trimmed then smoothed.
184. [79.015] 951/SG35 Body sherd, including body/handle join of Class 25; red surfaces, white reaction surface; very roughly trimmed for reuse.

185. [79.016] 951/SG35 Tapping hole, Class 26. Diameter of hole *c.* 8mm, tapering slightly towards the inside.
186. [79.017] 002/unstratified Tapping hole, Class 27–30. External diameter 14mm, ‘internal’ (the full thickness of the vessel is not present) *c.* 6mm.
187. [79.018] 1458/unstratified Tapping hole, Class 26. Hole fairly badly eroded but *c.* 6mm in diameter.
188. [79.019] 951/SG35 Tapping hole, Class 26. Badly eroded hole *c.* 7mm in diameter.
189. [79.020] 871/SG29 Class 27–30 roughly trimmed at a point just above the junction of neck and shoulder.
190. [79.021] 917/SG142 Roughly trimmed body sherd of Class 25, just below the junction of neck and shoulder. An unstratified trimmed example may be from the same vessel.
191. [79.022] 001/unstratified Trimmed body sherd of Class 25 with red surface; perhaps part of the same vessel as no. 190.
192. [79.023] 1450/SG8 Roughly trimmed body sherd of Class 25, just below the junction of neck and shoulder.
193. [79.024] 1452/SG54 Roughly trimmed body sherd, red surfaces. Perhaps the same vessel as no. 191.
194. [79.025] 1063/unstratified About two-thirds of the circumference of a roughly trimmed vessel of Class 25, just below the junction of neck and shoulder. One body/handle join survives. An example from context 1450 may be from the same vessel.
195. [79.026] 1452/SG54 Class 25 neck handle join.

Seals and stoppers (None of these are illustrated)

Stoppers

196. [79.038] 1451/SG4 The ‘lower’ part of an amphora stopper, in a smooth light buff fabric with the occasional piece of red sandstone (up to 1mm across). Such stoppers are less common than disc seals, but the reason for this is not entirely clear. They come in two basic types, closed (Type A) and open (Type B), but the present stopper is broken in such a way as to render the type impossible to define. See Evans (1997a, 333) for a discussion of the types and references.
197. [79.041] 973/SG129 Fragment from the shoulder of an amphora stopper. Type A/B.
198. [79.142] 453/SG189 Eroded fragment of a stopper of Evans Type A, in a dull red fabric with occasional quartz-like inclusions. Part of a vent hole survives.
199. [82.005] 2065/SG84 (2430) Fragment of an amphora stopper, in a dull reddish-brown fabric with a grey core; inclusions are sparse but include tiny flecks of mica and white specks.

Disc Seals

200. [79.039] 903/SG137 Simple disc with a pinched grip. Although these seals are made from finer fabrics than the amphorae themselves, their diameters accord best with those of Class 25 Baetican olive oil containers rather than other types, and they are occasionally found in position in such vessels. Examples have been found at Wroxeter (Atkinson 1942, fig. 43, A14) and at the Flavian depot at Lyon (Dangréaux and Desbat 1988, fig. 13, no. 9), the latter apparently fixed upside down. Differences in fabrics and minor variations in finish may perhaps reflect production of these items at the packing end of the process rather than at the atelier which produced the containers. A large collection came from the fort at Loughor (Evans 1997a, 327, 333).

CERAMIC FIGURINES (FIG. 72) By David R. Evans

Four different classes of figurine are represented in the collection from the Mill Street sites; a column or pedestal (three fragments, probably from the same object), the bust of a smiling boy (the so-called ‘*Risus*’ type, one fragment); and examples of figurines representing the so-called ‘*Dea Nutrix*’ (two fragments, not from the same figure) and ‘pseudo-Venus’ (thirteen fragments, representing at least nine separate figurines). The report on these was completed in 1990. Unless otherwise stated, all the items noted below, with the exception of the column fragments (nos 1–3), were produced in the Allier region of central Gaul. In some cases at least they were almost certainly produced as a sideline to samian and other fine wares in the same region and by the same potters. For methods of manufacture and a general introduction to the subject of pipeclay figures see van Boekel (1983) especially 216–31.

Column or pedestal

1. 2086/SG94 (2248) Base of a column in an off-white fabric. The fabric is fairly free of inclusions but it has an occasional red fleck. Although the object is incomplete the method of manufacture is fairly clear; the shaft of the column was first thrown and attached to a separately formed base and then the whole object was finished, perhaps using a template. It was not moulded. The bottom of the object shows clear signs of where it had been removed from the wheel. The base is slightly concave, indicating that the object was held upside down at some stage during its manufacture, possibly while the central hole was being formed, and that the actual original edge was somewhat outside the surviving base diameter of the object as now preserved. The pedestal on which the column sits has been badly chipped so that its original finish is uncertain; but what remains, taken with the presumed method of manufacture, appears to indicate that it ended in a gently sloping circular platform. The plinth is indicated by a band of pecking. The column is broken off just above the base, and this has a finger mark caused when the object was removed from the wheel. A fracture at this point is somewhat unfortunate as the form of the shaft might have given some indication of the order of column represented; however, the generally rough nature of the object (the lines of the torus and scotia are not readily distinguished) may mean that the shaft was crudely formed. The order was probably Roman provincial Doric. The base is pierced by a large hole.
2. 2111/SG93 (2703) Large segment, presumably from the same object as no. 1 above, or a similar one. It was manufactured in the same way. The segment is perhaps best described as having a waisted appearance with a cordoned belt, marked with a band of pecking similar to that seen on the object described above. The 'chest' of the object has a small raised area visible. Although the circumference is incomplete and both the upper and lower parts are broken off, it is possible to be quite certain where on the complete object this segment would fit. This is partly because the upper part has been added to the lower part in the same way as the necks of flagons, that is by luting inside and under; partly because the upper part has had its throwing marks smoothed away; and partly because the maximum surviving diameter exceeds that of the column. This segment would have been found on top of the capital, either rising directly from its rim (again assuming a Tuscan or Provincial Doric capital) or, more probably, slightly inset. The finish of the object is rather more difficult to determine and consideration of this is deferred to the discussion section.
3. 2002/unstratified (2699) Fragment, probably from the same object as nos 1 and 2 above. (Not illustrated).

Discussion

This object is not easy to parallel. The only broadly similar object which I know of is a rather crude column from Colchester (Hull 1963, 108, pl. 17b) which is believed to be part of a shrine. Among the large collection of Central Gaulish figurines in the Musée des Antiquités Nationales in Paris there is a single example of a mould for a column (Rouvier-Jeanlin 1972, no. 1285) which is of similar dimensions (base diameter *c.* 78mm) to the object under discussion, although it must again be emphasised that the present example was not moulded. A small fragment of the base of what is probably a fluted column came from the palace at Fishbourne (Cunliffe 1971, 152, fig. 70, no. 6) but this object cannot be considered as a close parallel to ours.

One possible explanation for the function of this object is as a detached column at the entrance to an aedicula or lararium such as can be seen in the House of the Vettii or the House of the Menander at Pompeii. A fine example of the type can be seen on an example from the House of the Wooden Shrine at Herculaneum, where a small shrine containing a pair of figures can be seen on top of a cupboard (see Boon 1983, pl. 2: this paper also contains a more general discussion of shrines than can be entered into here). Of one thing we can be certain; our column did not form part of the small shrines which housed Venus figures, because these were in the form of a domed niche without detached columns (see for example Wroxeter, Bushe-Fox 1914, fig. 10; Tudot 1860, pl. 1, 15–17 and *Bonner Jb* 89, Taf. ii).

Without more of the object it is hazardous to postulate other functions for it, but there are alternatives. Note should be taken of certain Cndian lamp-stands which include columns topped either with a *kernos*, a bowl for libations (cf. Bailey 1988, Q2727), or with a lamp (Bailey 1988, Q2728–9). It has been suggested (Georgette van Boekel *in litt.*) that the object might be related to that group of vessels known as tazzas, and that it has some similarities to certain candlesticks (for example Swan 1978, 51, no. 65). The latter is certainly a possibility and cannot be rejected out of hand. Whilst the object in question is unlikely to have formed the base of a free-standing tazza (cf. Swan 1978, 54, no. 86), there would appear to be a strong possibility that it is related to a series of pillars or pedestals, up to 450mm high (as noted by Wheeler 1926,

227), associated with the so-called tazzas. A large group of these pillars is known from Strasbourg (Forrer 1927, pl. 132, nos 1–8), some of which are topped with frilled cups of tazza type and which are interpreted as ‘comme des “brûle-parfumes”’. The majority of the Strasbourg tazzas had the usual hollowed base so that, if necessary, they could stand alone but one example has a pointed base (Forrer 1905, 34–5, Taf. 11 no. 12; 1927, pl. 132, no. 6) which could fit into the top of a column. Whilst the present object could have functioned in a similar way to some of the items described above it cannot be closely paralleled by any of them.

A third alternative is that the object may have had funerary associations. In his discussion of the pipe burial from Caerleon, Wheeler (1929) describes a number of cases from many parts of the classical world where there was communication via some form of tube from the grave to the outside world. Such tubes were certainly functional, and Wheeler quotes an example of the practice of pouring offerings down the tubes (Pausanias V 227), a practice which can be paralleled from anthropological studies (e.g. the Lunda tribe, quoted by Down and Rule 1971, 72). Almost all of the examples noted by Wheeler were finished flush with the surface of the ground and were simply fitted with a plug, although some were marked by cones. This does not however prove that more elaborate examples did not exist, especially if they were made of fragile materials. For these reasons, combined with what we know about the structure of this object, I suggest that it was designed to function both as a grave marker and as a route of communication with the grave.

Dating

The exact form of the order of the column cannot now be established, and if it could it would only indicate the date of the original from which it was taken. There is therefore no internal evidence for the date of the object. The context of the find is also of little use as it came from destruction deposits and overburden, but there can be little doubt that much of the damage to the object was caused in antiquity. If the conjecture that it was a grave-marker is correct, this presumably took place when the cemetery of which it formed a part was redeveloped. The suggested funerary context and the rather weathered appearance of the object might also indicate that the object had been produced at a considerably earlier period than that of its final deposition.

Risus

4. 3001/unstratified (3155) Fragment from the top of the head, including part of the left eye and ear, of a figurine of the so-called ‘*Risus*’ type (Tudot 1860, pl. 50). Complete examples (van Boekel 1985, no. 182) show the bust of a youthful smiling boy, with a shaven head, on a small pedestal. In the present case it is impossible to be certain whether the bust was clothed or not; nevertheless an unclothed example is preferred.

Although the present example is fragmentary, there can be little doubt that it was a product of central Gaul (see Rouvier-Jeanlin 1972, nos 669–86) and dates to the 2nd century. The exact function of these figures is controversial; it would seem unlikely that they represent a particular spirit or deity as do many figurine classes. Jenkins (1978) accepts perhaps a little too uncritically a funerary function, warding off evil influences both in life and on the journey to the nether world. Van Boekel (1985, 112) does not accept a funerary function and would prefer to see the figures associated with rites of passage, depicting boys at a particular stage in life, although occasional items may be related to the Isis cult. If van Boekel is correct in her view that the presentation of the figure marked an important stage in a young boy’s life, their appearance in a funerary context need cause little surprise. This type is rare in Britain; only three others have been noted by the author, two from York and one from London, perhaps because other examples have gone unrecognised.

Dea Nutrix

5. 2095/SG84 (2084) The head of a figurine of the type known as the ‘*Dea Nutrix*’.
6. 2459/SG168 (2741) Fragment from the left hand side of the chair and part of the body of a ‘*Dea Nutrix*’ figure. Slightly grey clay may indicate an origin in the Gironde region (Jenkins 1985, 206, no. 5.3).

Discussion

A large number of seated pipeclay figurines are known from Gaul (Rouvier-Jeanlin 1972). They include a figure of the Egyptian god Thoth seated on a basketwork chair (Rouvier-Jeanlin 1972, no. 1079) and the chair alone (*ibid.*, no. 1277), but the most common design which includes the chair is that of a goddess suckling either one or two children (*ibid.*, nos 306–400 etc.). These are commonly known as ‘*Dea Nutrix*’ figures (Jenkins 1957). Without more of the figure it is not possible to classify the second item further.

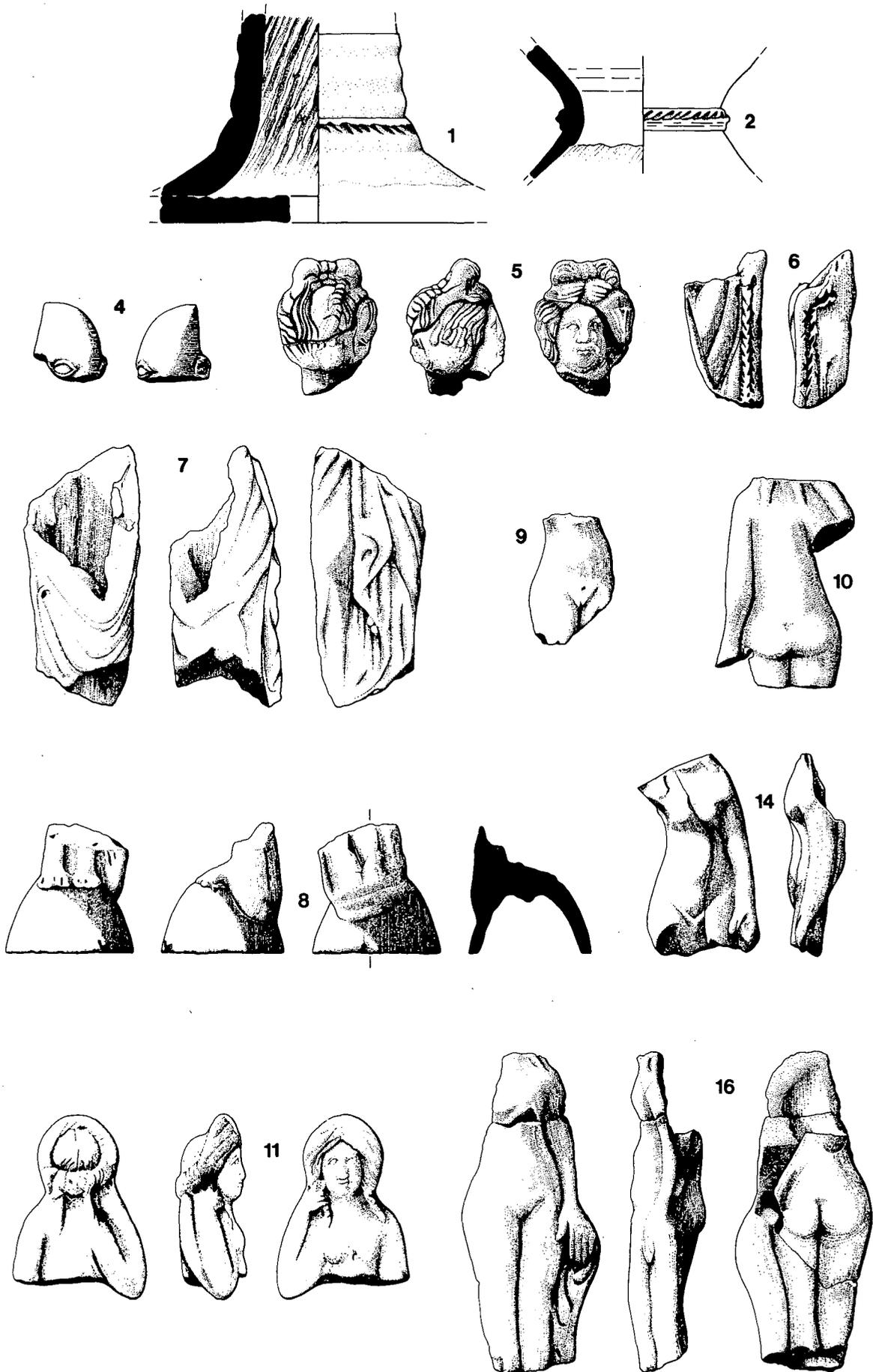


FIG. 72. Ceramic figurines. Scale 1:2.

Unlike examples of the 'pseudo-Venus' type (see below), figurines such as this one are not numerous in South Wales, although there is an example from Cowbridge, S. Glam. (Evans 1996a), and a figure of Mercury is reported from Carmarthen, Dyfed (Evans forthcoming). Unpublished examples of this type are known from earlier excavations at extra-mural sites at Caerleon where two or three examples are extant.

'Pseudo-Venus'

7. 932/SG143 (952) Section from the lower part of a figurine produced in a two-part mould. Although this fragment is badly damaged it is quite clearly that of a female figure with her right leg slightly flexed and pushed forward, and with the drapes of her dress falling away to either side to cover her left leg. This is a rare British example of the version of Venus produced in the Rheinland (van Boekel 1985, nos 95–7). Although the fragments from the Netherlands are rather abraded, there seems little reason not to ascribe the present example to the same mould; it is therefore a product of the Cologne modeller Servandus.
8. 403=103/SG185 (079) Plinth from a 'pseudo-Venus' figurine.
9. 600/SG183 (237) Lower body, broken just below the breasts and across the upper thighs, from the front valve of a 'pseudo-Venus' figurine. This piece may come from the same object as no. 10, but the multiple use of the same moulds makes it impossible to tell if separated halves come from the same figurine.
10. 003/unstratified (617) Part of the torso from the back valve of a 'pseudo-Venus' figurine. It is broken at the neck and just below the buttocks.
11. 812/SG112 (860) The head, neck, shoulders and chest from the front and back of a 'pseudo-Venus' figure, broken just below the breasts.
12. 1027/SG145 (930) Fragment from the shoulders and upper body of a 'pseudo-Venus' figurine. From the same mould as the two items noted above, but from a different figure. (Not illustrated).
13. 2065/SG84 (2125) Plinth from a 'pseudo-Venus' figurine. (Not illustrated.)
14. 2086/SG94 (2577) Parts of the front and back half of a 'pseudo-Venus' figurine. The torso is broken at the neck and just below the hips, and much of the back is missing. May be from the same figurine as no. 13.
15. 3001/unstratified (3031) Plinth from a 'pseudo-Venus' figurine. (Not illustrated.)
16. 3001/unstratified (3034) and 3008 (3169) Joining fragments from a 'pseudo-Venus' figurine. The torso is broken at the neck and the plinth is fragmentary. The small hole for the venting of gases during firing is clearly visible on this example, which was produced from a slightly larger mould than the other items reported above. The slightly greyish clay may indicate that this item was produced in the Gironde region (cf. Jenkins 1986, 206, no. 5.2).
17. 3087/SG158 (3317) Plinth from a 'pseudo-Venus' figurine. (Not illustrated.)
18. 3047/SG155 (3321) Plinth from a 'pseudo-Venus' figurine. (Not illustrated.)

Two further fragments, possibly from 'pseudo-Venus' figurines, came from the Smallholding.

Discussion

It is now possible to define three types of 'pseudo-Venus' figurine found in Britain. In many cases even small fragments can be separated into type:

Type A: In this type the figure has her robe lowered just below her hips, covering her legs. This type was produced in the Cologne region (van Boekel 1985, nos 95–7).

Type B: In this type the figure is nude with the robe held in the left hand.

Type C: In this type the robe is replaced by one or more small children (see Toynbee 1964, pl. 174).

Type C is rare, although some examples classified as being of Type B may in fact be from Type C especially if the item held in the left hand is not present. Types B and C, together with other varieties which have not yet been reported from Britain, were mainly produced in the Allier region of Central Gaul (Rouvier-Jeanlin 1972).

A minimum of six figurines of Type B came from these excavations, all but one (no. 16) from the Allier region. Examples of the 'pseudo-Venus' figurines are known from other sites in South Wales: from Caerleon two of Type B and one of Type C from the western extra-mural settlement, and one probably of Type B from the fortress; from Caerwent one of Type A, and a plinth and non-joining torso of Type B; from Carmarthen (Type B); and Merthyr Tydfil (Type ?B). All these are mentioned in Zienkiewicz 1986b, 217–18. A further fragment (of Type B) comes from the fort at Neath (Evans 1992c, 256). The fortress example came from the frigidarium drain, a context which contained much 'civilian' material,

and the one from Neath was not certainly from a military context. Only a very small number of these objects that have been reported from the military zone of Roman Britain (Green 1978, 88) can certainly be directly associated with the Roman army, in that they certainly come from stratified contexts within the forts themselves rather than as casual finds or from extra-mural contexts. It would appear that we are on fairly strong grounds in seeing such objects as civilian in the broadest sense of the word, but it would be hazardous to claim that there was a strong female element in their ownership.

Dating

A broad indication of the dating for the production and importation of these figures is given by their production side-by-side with Central Gaulish samian, and by the similarity of the hairstyles to those shown on coins of the Hadrianic/Antonine period, for example Faustina Junior A.D. 145–75, *RIC* (Antoninus Pius) 1663 (AE sest) or Didia Clara A.D. 193 *RIC* 20 (AE sest) (cf. Jenkins 1985, 205, no. 5.2). Hairstyles similar to those of the Trajanic/Hadrianic period (e.g. Marciana obit A.D. 114, *RIC* (Trajan) 750 (AE sest)) do not appear to be represented although the figure type was in production by c. A.D. 130 (example from Caerleon NMW accn no. 62.265B.F64).

Function

A discussion of the possible function of these objects is given in the introduction to the catalogue of masks and figurines from the Netherlands by van Boekel (1983). Further consideration of a possible medicinal function is given in the article by Butler (1985), especially the appendix concerning the medical interpretation of the figures at the Ponti di Nona shrine (Butler 1985, 41–4). This discusses a number of possible interpretations, and concludes that skin complaints are a likely reason for the deposition of such objects in shrines. Who is to say that the clear skin and beauty of Venus did not influence the purchasers of such objects?

CERAMIC LAMPS (FIG. 73) By Donald Bailey

All seven fragmentary lamps from the Mill Street sites are *Firmalampen*, the most common lamp form of the northwest provinces during the 2nd and 3rd centuries A.D. Devised during Flavian times in the Po Valley in northern Italy, and exported therefrom, the shape was copied by innumerable ateliers, some of which may have been branch workshops of the Italian lampmaking firms, most of which signed their products with their names in relief. These names were often pirated by makers in the provinces, although the majority of provincial lamps were unsigned, particularly in the case of the later lamps. None of these Caerleon lamps is later than the 2nd century. Only one certain name is found amongst the Mill Street material, that of Jegidius on no. 4; Fortis, probably the most common Italian maker's name to be found on provincial *Firmalampen*, may or may not be hidden in the illegibility of the relief inscription on no. 5. Although there are examples from Britain (for example Bailey 1980, Q1163–5, all from London), no Italian lamps are amongst these lamps from Caerleon. Some were certainly imported from Gaul, no. 1 probably from Central Gaul; and the white fabric of no. 3 points to the Rhineland, although pipeclays were used for lamps in Central Gaul also. Lamp no. 2 is probably Gaulish, whilst nos 4 and 5 were made either in Gaul or Britain. Britain was the manufacturing place of no. 7 and also probably of no. 6. Except for a few of the major cities of Roman Britain, lamps are found more often in military contexts than elsewhere, and this situation seems to have spilled over into the nearby civil settlement at Caerleon. The catalogue which follows was completed in 1994.

See also the group of lead lamps/lamp holders in the lead report, nos 13–16.

1. 2002/unstratified (2408) Rear fragment with ring-handle of a *Firmalampe* probably of Loeschcke Type IX. Orange-buff clay with grog particles; matt orange slip. Length 42mm, width 41mm. (Not illustrated.)
Made in Gaul (?central Gaul) in the late 1st to the first half of the 2nd century A.D.
2. 2247/SG70 (2589) Nozzle of a *Firmalampe* of Loeschcke Type IX. Orange clay, apparently unslipped. Length 42mm. (Not illustrated.)
Probably Gaulish, of the late 1st to the first half of the 2nd century A.D.
3. 812/SG112 (1026) Top right fragment of a *Firmalampe* of Loeschcke Type X or Evelein Type B. White clay; dark brown slip. Length 67mm, width 42mm.
Made in Gaul, probably in the Rhineland, during the third quarter of the 2nd century A.D.

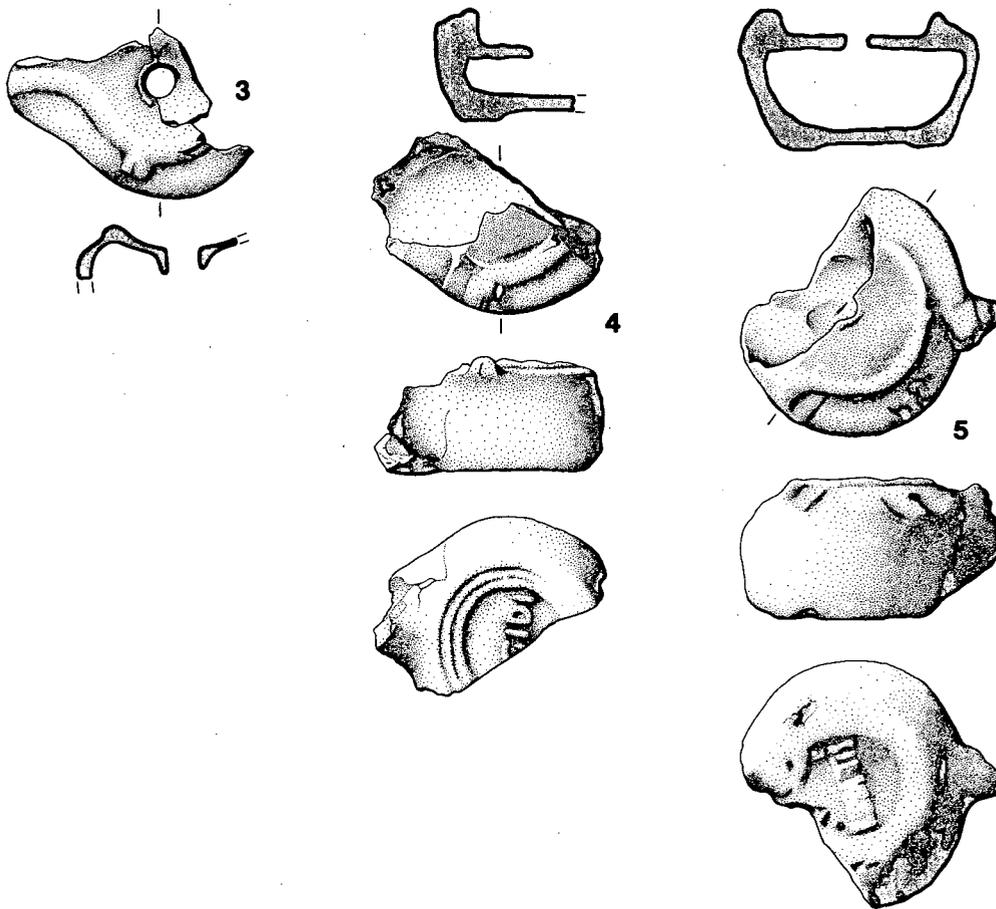


FIG. 73. Lamps. Scale 1:2.

4. 2336/unstratified (2274) Two non-joining fragments of a *Firmalampe*, probably of Loeschcke Type X; much of right side and part of left shoulder survive. Multiple base-ring, with relief name IE]GIDI. Orange-brown clay, with some mica and grog; unslipped. Length of main fragment 63mm.
Perhaps made in Gaul, but could well be British. First half of the 2nd century A.D. Jegidius was a north Italian lampmaker: see Bailey 1980, 96. The Caerleon lamp may have been from a branch-workshop of his, or the name may have been pirated.
5. 2451/SG61 (2725) Rear fragment of a *Firmalampe* of Loeschcke Type X, with a broken ring handle. Illegible name in relief within sunken base: possibly, but by no means certainly, FORTIS. Orange clay with mica and a little grog; unslipped — perhaps the same fabric as no. 4 above. Length 68mm, width 63mm.
Perhaps made in Gaul, but could well be British. First half of the 2nd century.
6. 3001/unstratified (3408) Rear fragment of a *Firmalampe* of Loeschcke Type IX or X, with a broken ring-handle. Grey clay with an orange surface, perhaps with a slip. Length 40mm, width 38mm. (Not illustrated.)
Probably made in Britain during the 2nd century A.D.
7. 016/unstratified (1759) Left side fragment of a *Firmalampe* of Loeschcke Type IX or X; perhaps the former, with start of nozzle. Grey-buff clay with white grits (?sand) and light red-brown surface. Length 40mm, width 29mm. (Not illustrated.)
Made in Britain during the 2nd century A.D.

OTHER CERAMIC OBJECTS (FIGS 74–5) By Joyce Compton, Edith Evans, S.H. Sell and Peter Webster

The reports that follow were completed in 1994.

Possible portable ovens (*clibani*)

Clibani have only recently been recognised in the archaeological record, probably because sherds from them have previously been included in the mass of tile fragments discarded from sites without examination (see Williams and Evans 1991, 52, n. 1). Examples from Italy were published by Cubberly *et*

al. in 1988, together with a survey of the literary evidence for their use; since then two examples from Britain have been published, one from Prestatyn by Blockley (1989b), and another from Catterick by Williams and Evans (1991), to add to the possible example found at Holt in the 1920s (Grimes 1930, fig. 60.9; Brodrigg 1987, 20–1, regards this example as a hood for a tegula with central perforation). *Clibani* of several different types were among the ceramics recovered from a pit group in the 1st century fortress at Usk (Old Market Street 1986), as yet unpublished. Cubberly *et al.* (1988) use the term ‘baking covers’ to describe the Italian material, but ‘portable ovens’ is probably a more inclusive term, since the Catterick example certainly, and our no. 1 probably, had integral bases.

Although both the examples published here are of different types from those previously noted, there seems little doubt that no. 1 must have been a *cliburnus*. No. 2 is more problematical since so little of it survives, but there is nothing about it which is inconsistent with use as a portable oven, and it is difficult to suggest an alternative function.

No. 1 differs most markedly from previously published examples in its apparent two-piece construction and in the shape of the wall. As far as can be determined from the surviving fragments, the vessel consists of a hollow dish with a separate cover, the two fitting together like the two halves of a Russian doll. The Italian examples may have been designed to stand on a separate base-plate (Cubberly pers. comm.), an arrangement for which there is evidence in one of the Usk pieces (IF no. 525) which had a flat base-plate apparently not joined to the wall. Our example appears to be more like the one from Catterick, where the bevelled edges of the base and wall were luted together; although our example has come apart at the join, it has similar bevels which show signs of scoring to ensure that the joint held. The wall of the lower (dish) section curves out, and the wall of the upper (cover) section initially follows the same line, so that the diameter at the base is smaller than the diameter half-way up the assembled vessel. One of the Usk examples (IF no. 386) also has a slight counter-curve at the base of the wall. It is possible that the counter-curve of the wall could be a device to increase its surface area slightly without increasing either the base diameter or the height. Although this would not appear to be the most practical shape for baking a loaf placed on the base of the oven, a passage from Festus quoted by Cubberly *et al.* (*op cit.*, 99) and André (1981, 67–8) suggests that smaller breads were stuck on the walls in the manner of a tandoori oven, and detached themselves when they were done. In any case, *cliburni* were used for other types of cooking as well, and a dish-shaped base would have prevented juices, for example from cooking meat (see Apicius VII, 5, 5; VII 8, 1; VIII, 9, 1), from leaking onto the hearth. In addition to its two-part construction, the vessel has an additional opening, probably to permit the escape of steam, but it is not possible to say whether the opening was in the side, or in the top as illustrated. The former arrangement appears in the Holt and Prestatyn examples, and in this case the fragment preserved would probably have been from the top of an arched opening. Examples with openings at the top are known from Italy, see Cubberly *et al.* 1988, fig. 2, no. 6.

The rim of no. 2 which is wheel-made and therefore circular, and has a short but well-marked neck internally: this makes it unlikely that it was for a side opening. It must have been either at the top; or alternatively the object may conceivably have stood the other way up, with the rim, the outer part of whose horizontal surface is on a plane, forming the bottom of the vessel when in use. This is the case with IF no. 386 from Usk, which also preserves part of a side-opening and must have been a ‘cooking-bell’ along the lines of the Holt and Prestatyn examples. In this case the wall of this object would have had the same counter-curve as no. 1 but would probably have sat directly on the hearth; there are faint traces of secondary firing on the inside of the rim. The burning on the outside would seem to indicate either that it was nested in the coals if it was used rim down, or that they were piled above it if it was used the other way up.

We are grateful to Paul Jones for his assistance in determining the form of no. 1.

1. 3009/SG153, 3047/SG155, 3086/SG159 (3316, 3318, 3319) *c.* 70 fragments, representing approximately one-third of a hand-made vessel in a soft, sandy buff-coloured fabric with some larger ?quartz inclusions, closely resembling the fabric of the Baetican Dressel 20 amphorae (David Williams *in litt.*).

As most of the pieces are non-joining, the exact form is somewhat difficult to reconstruct, but the vessel appears to have been made in two halves, as illustrated. In the lower half of the vessel, part of one section of the base survives. It was flat underneath with a bevelled edge and a maximum thickness of *c.* 26mm. Although no clear evidence for a join survives on the other half of this section which forms part of the lower wall, its lower edge appears to have been shaped to fit on the first half, since it has a corresponding bevel, which is lightly scored. At the bottom of the wall, the diameter of the vessel is 141mm, but it flares out sharply from here at an angle of about 55°; the

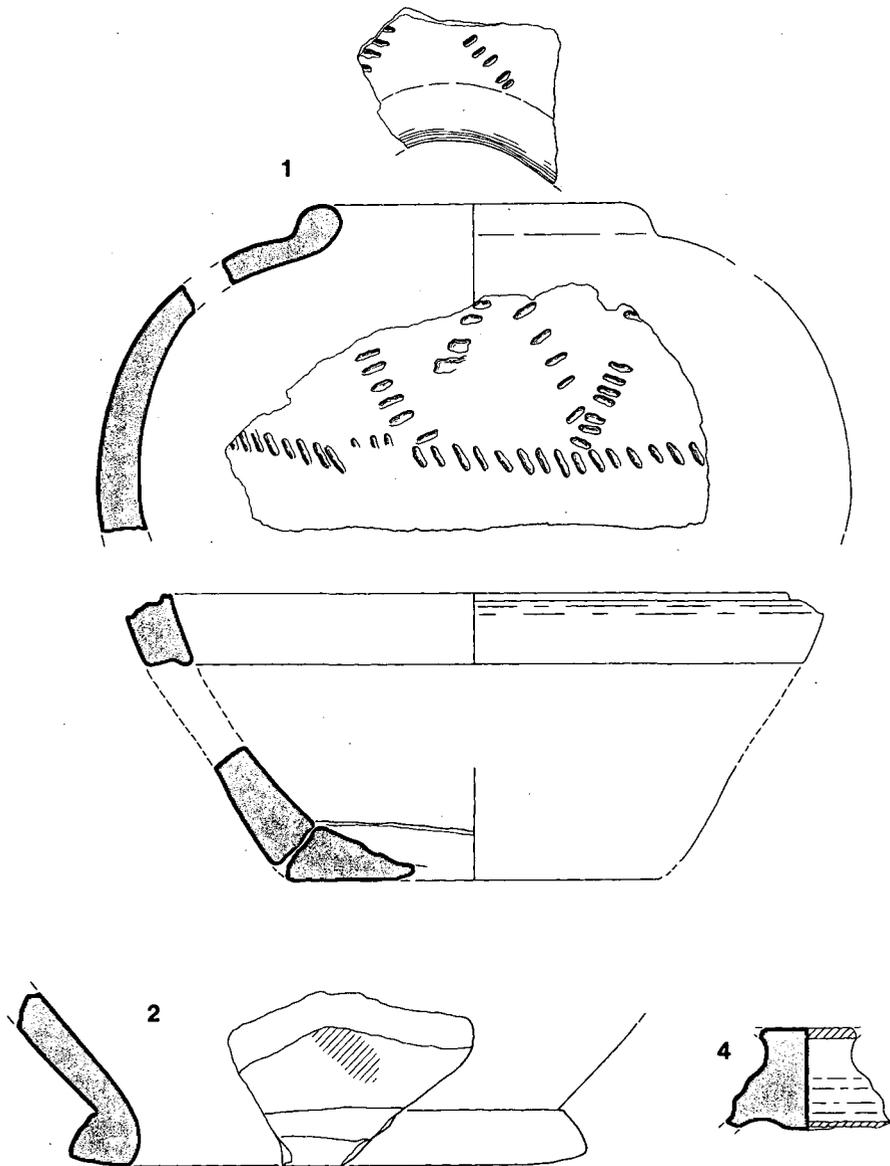


FIG. 74. Other ceramic objects nos 1, 2 and 4. Scale 1:4.

two sides of the section appear to converge at the top, but this must be an irregularity due to the method of manufacture. The rim of the lower section is roughly reeded, and appears to have been made from a ring-shaped rather than continuous coil. The wall of the upper half of the vessel continues again at an angle of approximately 55° before curving round to form a dome over the top, and its lower rim has a slight lip. The thickness of this half ranges from 25mm (at the bottom of the wall) to 12mm. Two sherds from around the opening indicate that this had a wide, flattened, irregular beaded rim. The curve of the opening represented in the larger of the two surviving pieces had a radius of approximately 70mm, but its position on the vessel cannot be determined with any accuracy; it is shown here as an opening in the top.

The exterior of the vessel is crudely ornamented with irregular bands of rouletting, some running horizontal and others at an angle of 65° to the horizontal. The lowest band of rouletting is some 20–30mm above the bottom of the upper half, but did not apparently run all the way round the vessel. Other bands of rouletting run at an angle to the opening. The interior is marked by systems of irregular hard-edged grooves running at an angle to one another and to the horizontal. There are traces of sooting on parts of both the interior and exterior surfaces, and on the underside of the base.

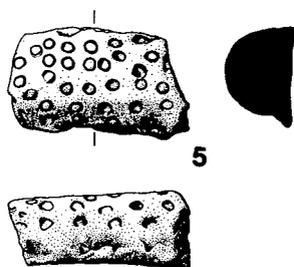


FIG. 75. Other ceramic objects no. 5. Scale 1:2.

2. 2437/SG64 (2867) Sherd of a large vessel of double curvature in a fairly hard-fired version of Caerleon tile fabric C, with a triangular rim flattened on its upper surface. The rim is wheel-made, but it is not possible to determine whether this was the case with the rest of the vessel. Maximum thickness of wall 20mm. There are patches of secondary burning on both the interior and exterior surfaces.

Other ceramic objects

3. 809/SG120 (158) Wheel-made object or vessel in a buff fabric with a greyish core containing coarse quartz grains and flecks of mica. It has a pie-crust frill. Wall thickness 9–11mm; diameter at frill 220mm (Not illustrated.)

This object lacks sufficient diagnostic features to enable its affinities to be determined. The most striking feature is the pie-crust frill, which appears most characteristically on *tazze*, but our object is too large to be a *tazza*. This type of frill is also used to ornament 'chimney pots' and allied objects (Lowther 1976). Most of these are commonly made in tile fabrics (*ibid.*, 37), but there are a few ('Group A') in pottery (see especially *ibid.*, 48, no. 4 and fig. 4.1, whose lower sections are of comparable diameter although it lacks the frill).

4. 3044/SG164 (3327) A knob, possibly from a chimney pot, in a moderately soft version of Caerleon tile fabric B. The edges of the knob proper have been chipped away, though it is not certain whether this was deliberate or merely accidental damage. There is a slight groove around the shoulder and another c. 15mm above. The inner surface is sooted. Present diameter of knob 50mm; thickness of wall 15mm.

This object resembles the knob from the top of a chimney pot from York (Lowther *op cit.*, 47 no. 23 and fig. 3.1)

5. 2459/SG168 (2672) Fragment, of hemispherical section and with the outer surface covered with an irregular arrangement of small circles (av. diameter 3.6mm) incised before firing, perhaps with a quill. The fabric is soft, fine and slightly micaceous, with occasional quartz grains and larger fragments of sandstone, orange-red in colour and paler on the curved surface. It is of local origin. Length (broken) 45.7mm; width of base 25.6mm; maximum depth 18.8mm.

Part of a longer object, probably a remnant of a cordon or similar, applied to a very large vessel or other ceramic object evidenced by a series of deep indentations at the base of either side and by the paler colour of the curved surface.

Reworked ceramics

There was an unusually large number of ceramic discs or roundels from the excavations at Mill Street. A total of 132 sherds of pottery and tile appear to have been trimmed to a roughly circular shape for further use as counters, potlids or for other purposes. A very few (seven in all) have been drilled centrally. The larger diameter pieces are considered to be column members and are not included in this discussion, which also excludes trimmed pottery items which may well represent further use for the bases or lower parts of broken vessels.

Spindle-whorls/pierced ceramic roundels

Pierced roundels have been conventionally classified by archaeologists as spindle-whorls. More recently Crummy (1983, 67 and 94) has attempted to refine the classification of roundels as spindle-whorls by

discarding those whose size, balance and lack of finish would make spinning with them inefficient or impossible. In the examples which she catalogues, however, she does not note the weight. The weight is essential for assessing the size of thread which could have been produced (Barber 1991, 52), and also serves to separate out those items (particularly lead objects) which, although corresponding to spindle whorls in other respects, are so heavy that they would break the thread before it could be formed. The examples catalogued here all fall within the size parameters quoted by Crummy (overall diameter no greater than 50mm, perforation no smaller than 5mm, and all have central holes and are well balanced for spinning, though this does not prove that they were so used. All could cope comfortably with the production of a 0.2mm worsted thread. None are illustrated.

6. 1450/SG8 (1427) Fragment of a pierced roundel made from a samian base, possibly of South Gaulish origin. The edge has been ground and the hole is drilled from both sides. Estimated diameter 33mm, present weight 6g.
7. 834/SG125 (1028) Pierced roundel made from a Black Burnished dish base. The edge has been ground and the hole has been drilled centrally. Now in two joining pieces. Diameter 40–44mm, thickness 4mm, hole diameter 7mm, weight 12g.
8. 834/SG125 (1028) Pierced roundel made from a Black Burnished ware dish base; broken into two pieces. The edge has been ground and the hole has been drilled in the centre. Diameter 40–44mm, thickness 4–6mm, diameter of hole 7mm, weight 4g.
9. 312/SG189 (1431) Pierced roundel made from the base of a pottery jar in a grey-buff fabric with a dark grey external surface. The edge has been ground but has suffered recent damage. Centrally drilled hole. Diameter 32mm, thickness 8mm, hole diameter 6mm, weight 12g.
10. 2005/SG168 (2039) Pierced roundel made from the wall of a pottery jar in a mid grey fabric with a reddish grey core. The edge has been ground. Centrally drilled hole. Diameter 37mm, thickness 5mm, hole diameter 7mm, weight 37mm.
11. 2001/unstratified (2056) Pierced pottery roundel in a pale grey fabric, probably made from a base sherd. The edge has been ground. Centrally drilled hole. Diameter 37mm, thickness 5mm, hole diameter 7mm, weight 18g.

A further fragment of a pierced roundel in Black Burnished ware was noted. Other pierced roundels can be found among the stone objects (nos 16–17).

Unpierced ceramic roundels

A selection only of these objects are catalogued below. Full details of the whole assemblage are to be found in the site archive, with certain of the samian and coarseware examples also appearing within those reports. Summary details are as follows:

pottery discs	120
tile discs	12 (including 1 <i>tessera</i> , see below)

The pottery discs may be further broken down thus:

Black Burnished wares	34
Greywares	30
Redwares	14
Imports	3
Samian	32
Amphorae	7

Discs, presumably with similar functions, are also represented in other materials. Details of these are given in the relevant specialist reports; lead (nos 42–55), glass (nos 134–8), bone (no. 4) and stone (nos 18–21). It is the plano-convex discs in white, black and occasionally blue or green glass, occurring so widely on Roman sites, to which the most certain attribution — that of gaming counters — can be given. Discs of polished bone are likely to have had a use far removed from those of stone or even of lead, but ceramic items probably had a much wider range of functions. They vary considerably in size (on the Mill Street sites from 15mm to 95mm in diameter). In most fabrics the sizes cluster between 25 and 40mm, representing well over half the objects. This is a suitable size for counters (compare the examples in glass, especially nos 134–6 and note that another six unpublished glass counters also fell within this range); but over a quarter of the greyware discs (mainly jar bases cut down) are between 65 and 95mm in diameter.

We would suggest that they may have been used as pot lids, but during cooking rather than storage (*pace* Crummy 1983, 93): experiments by one of us in cooking in replica Roman pots has highlighted the problems of persuading them to boil if uncovered.

Discs of all sizes were made both from the walls of vessels and from basal sherds. On the Mill Street sites discs from wall sherds are in the great majority: although superficially they may appear to be less suitable than basal sherds (for whatever purpose), their predominance may simply be down to the greater availability of wall sherds in any assemblage of smashed crockery. Discs of tiles (excluding those considered to be used in construction) show even greater variation in size, from 23mm to 160mm in diameter and 5mm to 53mm in thickness. Only one piece (of tile) appears to have been deliberately fashioned into a form which is not discoidal — a cube, presumably for use as a *tessera*, although in a few other cases the end product as we have it is more square or rectangular than circular. Several discs are distinctly elliptical and in many cases, although the intention is certain, the end product is so crude as to be termed unfinished, particularly when other examples have been ground round the edges to a greater or lesser extent. The explanation for this may be no more than Crummy's division of the Colchester roundels (*ibid.*, 95) into 'roughouts' and finished objects.

There is little indication of date to be obtained from these objects, but it may be noted that at least six of the BB1 and one of the greyware discs were 3rd or 4th century (on the basis of surviving lattice decoration), the two Central Gaulish colour-coated pieces are presumably later 2nd century and the amphora sherds are all likely to be 1st or 2nd century. The oxidised sherds include at least one piece of Caerleon ware (dated elsewhere in this report *c.* A.D. 110–160/70) and one *Verulamium* flagon fragment (probably late 1st or early 2nd century).

The choice of materials is interesting and does not necessarily reflect the proportions of the different wares in use. One would probably expect that Black Burnished ware and greyware (mainly local in manufacture) to be well represented. The colour-coats, however, are more unusual and probably reflect the ease with which the bases of beakers in this fine-grained fabric could be trimmed. Amphora and tile are less usual materials for counters and other discs. The sources may be noted: three discs were of Dressel 20, three of Italian fabric (presumably Dressel 2–4) and one Gaulish (presumably Pélichet 47/Gauloise 4). This hardly reflects normal proportions of such amphorae normally found on British sites but may, again, be related to the ease with which the finer grained fabrics could be worked.

None of the roundels catalogued below are illustrated.

12. 927/SG53 (1603) Roundel made from a sherd of a Black Burnished jar wall which has obtuse-angled lattice under a horizontal line (3rd–4th century). Diameter 33mm, thickness 4mm, weight 7g.
13. 1450/SG8 (410) Trimmed base sherd from a Black Burnished dish or bowl. Elliptical. The edge has been partially ground. 72 × 62mm, thickness 7mm, weight 6g.
14. 2002/unstratified (2053) Base sherd from a Black Burnished dish or bowl. The edge has been ground. Diameter 39mm, thickness 5mm, weight 14g.
15. 2065/SG84 (2429) Trimmed base from a Lezoux colour-coated beaker, possibly reused as a counter. Diameter 40mm, thickness 5mm, weight 8g.
16. 1450/SG8 (1702) Large sherd, roughly trimmed, from a jar wall in a light grey fabric with darker surfaces. Diameter 80–85mm, thickness 5–8mm, weight 62g.
17. 1450/SG8 (1703) Oval sherd from a wide-mouthed jar wall with a combed wavy-line decoration. Grey-buff fabric. Diameter 28–33mm, thickness 6mm, weight 8g.
18. 3500/unstratified (3190) Roundel made from a wall sherd in gritty, mid grey fabric, with abraded external surface. Diameter 43mm, thickness 7mm, weight 18g.
19. 600/SG183 (396) Roundel made from a wall sherd in light orange fabric. There is an 'X' incised on the upper surface. Diameter 23mm, thickness 7mm, weight 6g.
20. 928/SG53 (652) Roundel made from a wall sherd of Gaulish amphora. Diameter 18mm, thickness 9mm, weight 2g.
21. 3001/unstratified (3138) Wall sherd, roughly trimmed, of an Italian amphora. Diameter 40–45mm, thickness 12mm, weight 22g.
22. 002/unstratified (1500) Roundel made from a fragment of Caerleon tile fabric B with a sanded lower surface. Diameter 31mm, thickness 11mm.
23. 667/SG181 (1560) Roundel made from a fragment of Caerleon tile fabric B. Diameter 46mm, thickness 17mm (= thickness of tile), weight 48g.
24. 957/SG35 (1364) Irregular trimmed fragment of Caerleon tile fabric C with a rebate cut before firing, possibly a brick but the full thickness of the tile does not survive. Diameter 105–115mm, maximum thickness 35mm, weight 360g.

THE METALWORK

THE COINS By Rodney Hudson

Discussion

The total of 465 coins from the excavations (catalogued in 1990) follow an expected pattern and only limited comment is required.

One illegible Republican specimen was found, in contrast to the sixteen examples from the 1965–75 Usk excavations (Boon and Hassall 1982) which is logical enough for a site of earlier occupation. Usk produced 190 Roman-British Claudian copies of dupondii and asses, but considering that these issues continued to be produced beyond the Claudian period it is unusual that they are totally absent from Mill Street. The earliest Imperial coin is a solitary sestertius from Rome (A.D. 64–67). The dearth of official coinage in the area at the end of the 1st century is evident from the numerous lightweight cast copies of asses of Domitian noted in earlier excavations at Usk, Caerwent and Caerleon, and represented here by six specimens. As with the examples already noted, they are likely to have been produced from local moulds (Boon 1965). From Nerva to Hadrian (A.D. 96–138) regular coinage is once more prevalent, but only base metal types were noted at Caerleon, and these still predominate during the Antonine period (A.D. 138–192) when only six genuine denarii were represented. Counterfeit coins include two plated denarii of Pius, a barbarous denarius of Faustina I, an extremely lightweight cast sestertius of Pius (9.8g) and three lightweight cast asses, also of Pius.

Silver issues outnumber aes from the final years of the 2nd century up to the end of the third decade of the 3rd century. Four denarii from the Severan period are forgeries and the silver drachm of Severus from Caesarea, dated 208/9 (Hudson 1989) obviously passes for a denarius. A total of only five coins belong to the period between the death of Severus Alexander (A.D. 235) and the joint reign of Valerian and Gallienus (A.D. 253), one each of Maximinus and Philip II and three of Volusian.

The fact that Britain was part of the Gallic Empire (A.D. 260–274) is most evident now — all except one of the joint reign issues of Valerian and Gallienus from A.D. 257–260 are from Gaul, with a single specimen from Rome. With the control of the West under Postumus from A.D. 260, the supply of coinage from Rome was almost non-existent and the earlier issues struck in Gaul under Valerian were used to supplement Postumus' own issues from his Gallic mint. A similar distribution pattern can be seen in the Bassaleg hoard (Besly 1992, 87–100). Gallic Empire coinage is well represented from Postumus through to the Tetrici (although no examples of Laelian or Marius were found); of the total of 124 identifiable coins of this period 37 were barbarous, and a further 113 undiagnostic barbarous radiates, many heavily worn, some now fragmentary, will also belong to this period. It is concluded by eight specimens of Claudius II and sixteen DIVO CLAUDIO types with a terminus of A.D. 270 or possibly a little later in the case of semi-regular issues from Gaul. No later official issues were recovered from the site apart from a single follis of Constantine I (Lyon, A.D. 308/9) in unworn condition. It seems highly likely that some at least of the issues of the Gallic Empire, especially the barbarous copies which, together with the regular issues, account for c. 62% of the coins recovered (see TABLE 24) continued to circulate at Caerleon until the Diocletianic reforms of A.D. 295/6.

The absence of Carausian coinage at Mill Street is somewhat remarkable, especially when one considers that 80% of the total assemblage of coins from the 'Roman Gates' site, nearby within the fortress, were issues of this emperor. 'Roman Gates' also produced a high total percentage (43%) of Gallic empire issues, yet here the coin sequence continued through to A.D. 350. The single Constantinian issue from Mill Street, however, need not represent post-abandonment loss; though coins of the period following the reforms of A.D. 295/6 are absent, coarse pottery and structural evidence give ample proof of 4th century occupation.

Though the lack of 4th century coinage at Mill Street is certainly enigmatic — especially when one notes their presence at 'Roman Gates', any consideration of the coin assemblage from Mill Street must be coloured by the severe problem of residuality on the site (see above, p.177).

A note on the hoard from Cambria House (context 2111)

The heavy bias towards the Gallic Empire is partly accounted for by the discovery of a group of 60 antoniniani, ranging from Volusian to Victorinus, in a drain fill on the Cambria House site in April 1986. It is not clear whether they were deliberately hoarded or represent an accumulation of casual losses; with this reservation in mind the total of fifty-one coins originally recognised as belonging to a possible hoard have been published separately (Besly 1992, 101–4); in the Mill Street catalogue, below, they may be identified by the context number 2111.

TABLE 24: COIN LOSSES BY PERIOD, AFTER REECE 1972

Period	Date	Number of coins	Remarks
1	to A.D. 41	1	
2	41–54	–	
3	54–69	1	
4	69–96	11	
5	96–117	17	
6	117–138	14	
7	138–161	26	
8	161–180	15	
9	180–193	7	
10	193–222	30	
11	222–238	17	
12	238–259	13	
13	259–275	168	(see note 1)
14	275–296	–	(see note 2)
15	296–317	1	
16–21	317 ff	–	
Total		321	
	Unattributed	144	of which 120 probably belong to the Gallic Empire
Total		465	

Note 1. Attributed coins of Gallic Empire account for 52% of assemblage; 83% of unattributed coins may belong to the Gallic Empire period, giving a total of *c.* 62%

Note 2. Although no official issues from Period 14 were recovered, Gallic Empire copies are likely to have continued in production during the Aurelian period

Catalogue**Notes to catalogue**

Denomination: Den = denarius (silver); Den b = denarius (base); Sest = sestertius (bronze); Dup = dupondius (bronze); As = as (bronze); Ant b = antoninianus (base silver); Ant = antoninianus (bronze); B rad = barbarous radiate (bronze); Fol = follis (bronze); Imit = imitation; Obv = obverse; Rev = reverse; G1 = Gaul; Br = Britain

Dating: The precise date or dates are given wherever possible, accompanied by the reference (see below). Dates unaccompanied by a reference occur a) when a coin is worn or damaged in such a way (e.g. part of the legend is missing) that only an approximate date within the emperor's reign can be given, prefixed with a 'w' in the catalogue; or b) when a coin is totally illegible and the emperor's identity alone can be established, and only the dates of his reign can be given.

Reference: Prefixes to reference numbers: C = *Cunetio* number (Besley and Bland 1983); E = Number in Elmer 1941. *RIC* numbers (Mattingly *et al.* 1923–84) are given without a prefix.

Mints: Where applicable all mints are given with the exception of Rome. An entry e.g. G1 (?Cologne) indicates that Gaul is certain, Cologne not; G1/Br indicates that the coin was minted in either Gaul or Britain.

Coins arranged in order of date (stratified coins also appear in TABLE 32)

Coin periods after Reece 1972

TABLE 25: ATTRIBUTED COINS

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remarks
<i>Period 1: Republican</i>							
1.	3001 (3026)	Den	Republican	1st BC			
<i>Period 3: Neronian</i>							
2.	3086 (3212)	Sest	Nero	64–67	372	Lyon	
<i>Period 4: Flavian</i>							
3.	629 (1216)	As	Vespasian	72–73	528b		
4.	2389 (2511)	As	Vespasian	69–79			
5.	2174 (2210)	As	Titus Caesar	72	618		
6.	1403 (1243)	Sest	Domitian	w 86–96			
7.	2365 (2301)	As	Domitian	88–89	371		
8.	2002 (2028)	As cast	Domitian	81–96		uncertain, ?cast locally	light weight 3g forgery
9.	2109 (2175)	As cast	Domitian	81–96		uncertain, ?cast locally	light weight 4.1g forgery.
10.	3024 (3064)	As cast	Domitian	81–96	similar to Boon no.39	uncertain, ?cast locally	light weight 5.9g copy
11.	3086 (3223)	As cast	Domitian	81–96	similar to Boon no.39	uncertain, ?cast locally	light weight 3.6g forgery
12.	3086 (3227)	As cast	Domitian	81–96	similar to Boon no.39	uncertain, ?cast locally	light weight 2.9g forgery
13.	2002 (2052)	As cast	Illegible, poss Domitian	81–96		uncertain, ?cast locally	light weight 5g forgery
<i>Period 5: Trajanic</i>							
14.	2001 (2236)	Sest	Nerva	96–98			
15.	957 (1053)	Den	Trajan	104–105	175		
16.	600 (334)	Den	Trajan	w 103–112	147 a or b		
17.	700 (358)	Den	Trajan	98–117			
18.	3047 (3065)	Den	Trajan	98–117			
19.	001 (161)	Sest	Trajan	98–117			
20.	600 (321)	Sest	Trajan	98–117			
21.	975 (1166)	Sest	Trajan	98–117			
22.	2001 (2271)	Dup	Trajan	98–99			1st issue
23.	2389 (2347)	Dup	Trajan	w 98–99			1st issue
24.	001 (1754)	As/Dup	Trajan	98–117			
25.	2001 (2228)	As	Trajan	w 98–99	poss. 402		
26.	001 (723)	As	Trajan	98–117			
27.	855 (1140)	As	Trajan	98–117			
28.	191 (1222)	As	Trajan	98–117			

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remarks
29.	2389 (2360)	As	Trajan	98–117			
30.	2405 (2363)	As	Trajan	98–117			
<i>Period 6: Hadrianic</i>							
31.	957 (1023)	Sest	Hadrian	w 125–128			
32.	3500 (3508)	Sest	Hadrian	w 134–138			
33.	007 (478)	Sest	Hadrian	117–138			
34.	1027 (942)	Sest	Hadrian	117–138			
35.	2095 (2225)	Dup	Hadrian	w 117	544 or 545		
36.	001 (141)	As	Hadrian	w 117–121			Obverse portrait early type
37.	2086 (2573)	As	Hadrian	w 119–128			
38.	2001 (2022)	As	Hadrian	125–128	674		
39.	001 (434)	As	Hadrian	117–138			
40.	002 (610)	As	Hadrian	117–138			
41.	948 (739)	As	Hadrian	117–138			
42.	952 (854)	As	Hadrian	117–138			Rev. has been mounted in antiquity
43.	1474 (1291)	As	Hadrian	117–138			
44.	3500 (3507)	As	Hadrian	117–138			
<i>Period 7: Antonine I</i>							
45.	2086 (2167)	Den	Antoninus Pius	139	28		
46.	001 (1356)	Den plated	Antoninus Pius	140–143	82a genuine	?	Plated forgery
47.	2001 (2257)	Den b forgery	Antoninus Pius	138–161		uncertain	
48.	3024 (3224)	Sest	Antoninus Pius	140–144	604		
49.	964 (1052)	Sest	Antoninus Pius	143–144	Prob 716a		
50.	3074 (3106)	Sest	Antoninus Pius	148–149	855		
51.	007 (673)	Sest	Antoninus Pius	148–149	856		
52.	3048 (3158)	Sest	Antoninus Pius	156–157	963		
53.	914 (576)	Sest (cast)	Antoninus Pius	140–144 (genuine type)	as 610a	?	Extremely light weight (9.8g) forgery
54.	3086 (3202)	As	Antoninus Pius	140–144	688b		
55.	002 (786)	As	Antoninus Pius	139–161			
56.	950 (867)	As	Antoninus Pius	138–161			
57.	2393 (2383)	As	Antoninus Pius	138–161			
58.	2395 (2882)	As	Antoninus Pius	138–161			
59.	3086 (3202)	As	Antoninus Pius	138–161			
60.	3086 (3202)	As	Antoninus Pius	138–161			
61.	2085 (2096)	As(cast)	Antoninus Pius	138–161		uncertain, ?cast locally	light weight 2.4g forgery
62.	2380 (2293)	As(cast)	Antoninus Pius	138–161	uncertain		light weight 4.1g forgery
63.	3001 (3002)	As(cast)	Antoninus Pius	138–161		uncertain, ?cast locally	light weight 2.1g forgery
64.	1011 (949)	Den	Divia Faustina I	141–161	382b		

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remarks
65.	500 (449)	Den	Diva Faustina I	161–163	410 c *	uncertain	*Barbarous issue based on Aurelius' rev. type <i>RIC</i> 410c
66.	3001 (3015)	Sest	Diva Faustina I	141–145	1127		
67.	890 (1050)	Sest	Diva Faustina I	141 or later	1103a		
68.	3086 (3202)	As	Diva Faustina I	141	1192A a		
69.	2085 (2192)	Sest	Faustina II	145–146	1374 b		
70.	3086 (3202)	As	Faustina II	138–140	1410a		
<i>Period 8: Antonine II</i>							
71.	003 (614)	Sest	Marcus Aurelius	164–165	898		
72.	957 (1180)	Sest	Marcus Aurelius	168–169	964a		
73.	3001 (3028)	Sest	Marcus Aurelius	w 174–177			
74.	914 (579)	Sest	Marcus Aurelius	161–180			
75.	957 (1175)	Sest	Marcus Aurelius	171–172	1033		
76.	843 (1076)	Dup	Marcus Aurelius	173–174	1102		
77.	3086 (3202)	As	Faustina II	161–175	1619		
78.	2002 (2216)	As	Faustina II	161–175	1647		
79.	903 (821)	As	Faustina II	161–175			
80.	3116 (3203)	As	Faustina II	161–175			
81.	950 (1326)	As	Faustina II	late 2nd		Gl/Br	Hole drilled in flan in antiquity
82.	2474 (2631)	Den	Lucius Verus	161–162	482		
83.	003 (649)	Sest	Lucilla	164–169	1736		
84.	1454 (1258)	Sest	Lucilla	164–169	1736		
85.	3001 (3016)	As	Lucilla	164–169	1729		
<i>Period 9: Antonine III</i>							
86.	317 (1424)	Den	Commodus	190	205		
87.	957 (1021)	Den	Commodus	177–192			
88.	002 (477)	Sest	Commodus	w 183–184	398 *		*Though legend is illegible, Apollo figure on rev. conforms to <i>RIC</i> 398
89.	1450 (1502)	As	Commodus	181	320		
90.	812 (1193)	As	Commodus	w 192	644		
91.	002 (795)	As	Commodus	177–192			Hole pierced through flan
92.	1216 (1126)	Sest	Crispina	177–178	62a		
<i>Period 10: Severan I</i>							
93.	929 (915)	Den	Septimius Severus	194	413		Fragmentary
94.	002 (594)	Den	Septimius Severus	194–195	46		
95.	2037 (2738)	Den	Septimius Severus	195	61		
96.	975 (1100)	Den	Septimius Severus	195–196	68		
97.	812 (1184)	Den	Septimius Severus	197	105		

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remarks
98.	1027 (929)	Den	Septimius Severus	w 193–198			Fragment obv. legend remains fall within given date range; rev. Victory advances l
99.	2010 (2026)	Den	Septimius Severus	197–198	114		
100.	2086 (2546)	Den	Septimius Severus	199–200	129		
101.	022 (029)	Den	Septimius Severus	201	153		
102.	947 (816)	Den	Septimius Severus	202	185		Fragment
103.	2086 (2883)	Den	Septimius Severus	193–211			
104.	600 (253)	Den	Septimius Severus	w 209–211			Fragment only; PMTR[...]; Jupiter standing left
105.	003 (640)	Den b barbar	Septimius Severus	210–211	*	Prob Br	*Obv. as <i>RIC</i> 330–337; rev. as <i>RIC</i> 266; wt 0.6g
106.	3047 (3172)	Den b forgery	Septimius Severus	198–202	1446 for regular issue	uncertain	
107.	2352 (2366)	Den b forged	Septimius Severus	193–211		uncertain	Fragment
108.	2086 (2118)	Sest	Septimius Severus	195–196	705 c		
109.	1002 (869)	Sest	Septimius Severus	193–211			Rev. totally illegible
110.	950 (1442)	Drachm (silver)	Septimius Severus	208–209	Hudson 1989	Caesarea in Cappadocia	Rev. reads: MHTPKAIC[AP] NEΩ. ET IS. Shows Mt Argaeus with star on summit. weight 1.5g
111.	2036 (2073)	Den	Julia Domna	196–211	564		
112.	001 (495)	Den	Caracalla Caesar	196–197	11		
113.	001 (1096)	Den	Caracalla Caesar	196–198	22 a		
114.	2086 (2115)	Sest	Caracalla Caesar	196–197	401		
115.	3001 (3017)	Den	Caracalla	201	54a		
116.	2100 (2121)	Den	Caracalla	203	69		
117.	885 (1155)	Den	Caracalla	206–210	158		
118.	002 (597)	Den	Geta Caesar	196–198	6		Fragmentary
119.	891 (1055)	Den	Geta Caesar	200–202	8		
120.	903 (965)	Den	Geta Caesar	200–202	18		
121.	903 (811)	Den	Geta Caesar	203–209	51		
122.	3503 (3521)	Den b forgery	Geta Caesar	203–208		uncertain	
<i>Period II: Severan II</i>							
123.	3048 (3208)	Den b	Elagabalus	218–222	74		
124.	912 (592)	Den	Elagabalus	218–222	153		
125.	2344 (2295)	Den	Elagabalus	218–222			
126.	016 (021)	As	Elagabalus	218–222	356		
127.	2109 (2117)	Den	Severus Alexander	222–224	178		
128.	2035 (2059)	Den	Severus Alexander	225	45		
129.	001 (174)	Den	Severus Alexander	222–228	141		
130.	2109 (2156)	Den	Severus Alexander	222–228	148		
131.	914 (701)	Den b	Severus Alexander	222–228	14		
132.	001 (432)	Den	Severus Alexander	w 222–228			
133.	003 (668)	Den	Severus Alexander	229	92		
134.	001 (1123)	Den	Severus Alexander	222–235			

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remark
135.	2368 (2288)	Den b cast forgery	Severus Alexander	228–231*	200 for struck type	uncertain	
136.	3074 (3107)	Den plated forgery	Severus Alexander	222–235		uncertain	
137.	951 (999)	Dup	Severus Alexander	222–231	582		
138.	002 (577)	Den	Julia Mamaea	222–235	335		Fragmentary
139.	600 (331)	Den b	Maximinus I	235–238			
<i>Period 12: Severan III</i>							
140.	2001 (2021)	Ant b	Philip II Caesar	244–246	218d		
141.	2111 (2141)	Ant b	Volusian	253	182		
142.	2111 (2150)	Ant b	Volusian	253	184		
143.	2111 (2665)	Ant b	Volusian	253	184		
144.	2100 (2092)	Ant b	Valerian I	253	74		
145.	2086 (2243)	Ant b	Valerian I	255–256	87		
146.	2111 (2378)	Ant b	Valerian I	255–256	128		
147.	2100 (2154)	Ant b	Valerian I	257	117		
148.	2111 (2136)	Ant b	Valerian I	257–258	E11;C708	GI (?Cologne)	
149.	2111 (2139)	Ant	Valerian I	257–258	E11;C708	GI (?Cologne)	
150.	2390 (2304)	Ant b	Valerian I	259–260	E74;C706	GI (?Cologne)	
151.	2429 (2518)	Ant b	Valerian I	253–260		uncertain	
152.	2100 (2121)	Ant b	Gallienus	255–256	162		
<i>Period 13: Gallic Empire and barbarous Gallic issues of Aurelianic period</i>							
153.	2038 (2061)	Ant b	Gallienus	259–260	E82;C728	GI (?Cologne)	
154.	2111 (2134)	Ant b	Gallienus	259–260	E82;C728	GI (?Cologne)	
155.	2111 (2202)	Ant b	Gallienus	259–260	E85;C714	GI (?Cologne)	
156.	202 (115)	Ant	Gallienus	260–268	178		
157.	003 (446)	Ant	Gallienus	260–268	471	Milan	
158.	002 (593)	Ant	Gallienus	260–268	572	Siscia	Mint mark * \perp ^s
159.	003 (940)	Ant	Gallienus	260–268	236;C1156		4th issue
160.	002 (599)	Ant	Gallienus	260–8	179;C1397		6th ser; fragmentary
161.	001 (517)	Ant	Gallienus	260–268			Sole reign issue
162.	2001 (2014)	Ant b	Gallienus	260–268			
163.	2111 (2131)	Ant b	Salonina	257–258	29		
164.	2111 (2149)	Ant b	Salonina	257–258	E60;C733	GI (?Cologne)	
165.	2189 (2266)	Ant	Salonina	257–258	E61;C734	GI (?Cologne)	
166.	2111 (2169)	Ant b	Salonina	259–260	E97;C732	GI (?Cologne)	
167.	2111 (2199)	Ant b	Salonina	259–260	E98;C735	GI (?Cologne)	
168.	252 (525)	Ant b	Saloninus Caesar	257	35;C841	Antioch	
169.	2111 (2128)	Ant b	Saloninus Caesar	257–258	E105;C745	GI (?Cologne)	
170.	2111 (2196)	Ant b	Saloninus Caesar	259–260	E107;C744	GI (?Cologne)	
171.	2111 (2130)	Ant b	Postumus	260	E123;C2371	GI (?Cologne)	

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remarks
172.	2086 (2171)	Ant b	Postumus	260	E124;C2379	GI (?Cologne)	
173.	2100 (2104)	Ant b	Postumus	260	E125;C2375	GI (?Cologne)	
174.	2111 (2662)	Ant b	Postumus	260	E129;C2387	GI (?Cologne)	
175.	951 (1125)	Ant b	Postumus	260	E130;C2385	GI (?Cologne)	
176.	2111 (2197)	Ant b	Postumus	260	E130;C2385	GI (?Cologne)	
177.	2111 (2173)	Ant b	Postumus	260	E131;C2382		
178.	2111 (2126)	Ant	Postumus	260	E132;C2381	GI (?Cologne)	
179.	2111 (2198)	Ant	Postumus	260	E132;C2381	GI (?Cologne)	
180.	2111 (2238)	Ant b	Postumus	260	E132;C2381	GI (?Cologne)	
181.	2086 (2166)	Ant b	Postumus	260	E189;C2386	GI (?Cologne)	
182.	2111 (2133)	Ant b	Postumus	260	E190;C2400	GI (?Cologne)	
183.	2100 (2154)	Ant	Postumus	260	E190;C2400	GI (?Cologne)	
184.	928 (767)	Ant b	Postumus	260–261	E288;C2391	GI (?Cologne)	
185.	2100 (2121)	Ant b	Postumus	261	E299;C2395	GI (?Cologne)	
186.	001 (1359)	Ant b	Postumus	261	E313;C2396	GI (?Cologne)	
187.	2100 (2154)	Ant	Postumus	261	E313;C2397	GI (?Cologne)	
188.	2111 (2378)	Ant b	Postumus	262	E332;C2400	GI (?Cologne)	
189.	2111 (2667)	Ant b	Postumus	262	E332;C2406	GI (?Cologne)	
190.	2111 (2146)	Ant b	Postumus	262	E333;C2405	GI (?Cologne)	
191.	2111 (2378)	Ant b	Postumus	263	E335;C2411	GI (?Cologne)	
192.	2111 (2659)	Ant b	Postumus	263	E335;C2414	GI (?Cologne)	
193.	2111 (2661)	Ant b	Postumus	263	E335;C2414	GI (?Cologne)	
194.	2111 (2137)	Ant b	Postumus	263	E336;C2404	GI (?Cologne)	
195.	2111 (2378)	Ant b	Postumus	263	E336;C2413	GI (?Cologne)	
196.	2389 (2385)	Ant b	Postumus	263	E336;C2413	GI (?Cologne)	
197.	2111 (2132)	Ant b	Postumus	263	E337;C2412	GI (?Cologne)	
198.	2111 (2378)	Ant b	Postumus	263	E337;C2412	GI (?Cologne)	
199.	2111 (2656)	Ant b	Postumus	263	E337;C2421	GI (?Cologne)	
200.	2111 (2147)	Ant b	Postumus	263	E382;C2421	GI (?Cologne)	
201.	2111 (2660)	Ant b	Postumus	263	E382;C2421	GI (?Cologne)	
202.	2111 (2378)	Ant b	Postumus	263	E385;C2425	GI (?Cologne)	
203.	2111 (2168)	Ant b	Postumus	263	E395;C2428	GI (?Cologne)	
204.	002 (1526)	Ant b	Postumus	264	E394;C2439	GI (?Cologne)	Fragment
205.	2100 (2091)	Ant b	Postumus	264	E394;C2439	GI (?Cologne)	
206.	2111 (2378)	Ant b	Postumus	264	E394;C2439	GI (?Cologne)	
207.	2100 (2091)	Ant b	Postumus	266	E563;C2449	GI (?Cologne)	
208.	2111 (2135)	Ant b	Postumus	266	E563;C2449	GI (?Cologne)	
209.	2111 (2145)	Ant b	Postumus	266	E563;C2449	GI (?Cologne)	
210.	2001 (2229)	Ant b	Postumus	266	E563;C2444	GI (?Cologne)	
211.	2111 (2378)	Ant b	Postumus	266	E565;C2450	GI (?Cologne)	
212.	700 (324)	Ant b	Postumus	266	E569;C2451	GI (?Cologne)	

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remarks
213.	2111 (2127)	Ant	Postumus	267	E565;C2450	GI (?Cologne)	
214.	2111 (2140)	Ant	Postumus	267	E565;C2450	GI (?Cologne)	
215.	2111 (2148)	Ant b	Postumus	267	E565;C2450	GI (?Cologne)	
216.	2111 (2658)	Ant b	Postumus	267	E565;C2450	GI (?Cologne)	
217.	2111 (2201)	Ant	Postumus	267	E569;C2451	GI (?Cologne)	
218.	2111 (2644)	Ant b	Postumus	267	E586;C2457	GI (?Cologne)	
219.	2111 (2666)	Ant b	Postumus	267	E597;C2462	GI (?Cologne)	
220.	2111 (2143)	Ant	Postumus	268	E593;C2444	GI (?Cologne)	
221.	2111 (2378)	Ant b	Postumus	268	E593;C2444	GI (?Cologne)	
222.	2086 (2174)	Ant b barbar	Postumus	260s	C2908	GI	
223.	2111 (2170)	Ant b forgery	Postumus	260s		GI	
224.	2111 (2194)	Ant b forgery	Postumus	260s		GI	
225.	2111 (2138)	Ant forgery	Postumus	260s		GI	
226.	2042 (2065)	B Rad	Postumus imit	260–270		GI/Br	
227.	001 (1410)	As barbar	Postumus	260–268		GI	Radiate bust r; SC Minerva advances l with round shield Marius bust
228.	2111 (2200)	Ant	Victorinus	268–269	E701;C2561	GI (?Trier)	
229.	2003 (2029)	Ant	Victorinus	268–269	E732;C25677	GI (?Trier)	
230.	2002 (2442)	Ant	Victorinus	268–269	E732;C2567	GI (?Trier)	
231.	912 (565)	Ant	Victorinus	269	E649;C2517	GI (?Cologne)	
232.	2111 (2129)	Ant	Victorinus	269	E653;C2523	GI (?Cologne)	
233.	2100 (2121)	Ant	Victorinus	269	E682;C2530	GL (?Cologne)	
234.	2111 (2657)	Ant	Victorinus	269	E682;C2530	GI (?Cologne)	
235.	2002 (2045)	Ant	Victorinus	269	E682;C2538		
236.	2111 (2142)	Ant	Victorinus	269	E683;C2534	GI (?Cologne)	
237.	2111 (2195)	Ant	Victorinus	269	E683;C2534	GI (?Cologne)	
238.	2111 (2663)	Ant	Victorinus	269	E683;C2534	GI (?Cologne)	
239.	2002 (2058)	Ant	Victorinus	269	E683;C2545	GI (?Cologne)	
240.	2111 (2588)	Ant	Victorinus	269	E702;C2562	GI (?Trier)	
241.	2100 (2093)	Ant	Victorinus	269	E732;C2567	GI (?Trier)	
242.	2100 (2120)	Ant	Victorinus	269	E732;C2567	GI (?Trier)	
243.	2111 (2664)	Ant	Victorinus	269	E732;C2567	GI (?Cologne)	
244.	002 (468)	Ant	Victorinus	269	E741;C2572	GI (?Trier)	
245.	3044 (3048)	Ant	Victorinus	270	E683;C2541	GI (?Cologne)	
246.	2081 (2078)	Ant	Victorinus	270	C2550	GI (?Cologne)	
247.	991 (1142)	Ant	Victorinus	270	E699;C2553	GI (?Cologne)	Fragment
248.	252 (114)	B Rad	Victorinus	after 269	C2958	GI	
249.	812 (524)	B Rad	Victorinus	late 3rd		GI/Br	Rev. Pax-like figure l
250.	917 (694)	B Rad	Victorinus imit	late 3rd		GI/Br	Rev. Pax stands l
251.	002 (744)	B Rad	Victorinus imit	late 3rd		GI	* ₁ PAX AVG blundered, Pax l
252.	957 (1038)	B Rad	Victorinus imit	late 3rd		GI/Br	Rev. Sol-like figure copied from 'invictus' type

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remarks
253.	002 (1122)	B Rad	Victorinus imit	late 3rd		GI/Br	Rev. ∇ L, Pax-like figure stands l altar at feet
254.	205 (063)	Ant	Vctorinus/Tetric I	269–274		GI/Br	Fragmentary
255.	002 (583)	Ant	Tetricus I	272	E786;C2639	GI (?Trier)	
256.	003 (445)	Ant	Tetricus I	273	E775;C2603	GI (?Cologne)	
257.	002 (536)	Ant	Tetricus I	273	E775;C2603	GI (?Cologne)	
258.	001 (557)	Ant	Tetricus I	273	E775;C2603	GI (?Cologne)	
259.	007 (641)	Ant	Tetricus I	273	E790;C2649	GI (?Trier)	
260.	812 (1036)	Ant	Tetricus I	274	E780;C2618	GI (?Cologne)	
261.	003 (439)	B Rad	Tetricus I	late 3rd		GI/Br	Rev. reads [S]ALVS AVGG, with grotesque figure standing l
262.	003 (444)	B rad	Tetricus I	late 3rd		GI/Br	
263.	002 (587)	B rad	Tetricus I	late 3rd		GI/Br	Blundered legends; rev. Spes walks l
264.	816 (756)	B Rad	Tetricus I imit	late 3rd		GI/Br	Blundered legends; rev. togate figure stands l
265.	951 (990)	B Rad	Tetricus I imit	late 3rd		GI/Br	Blundered legend; rev. Pax-like figure l
266.	001 (1081)	B Rad	Tetricus I imit	late 3rd		GI/Br	Rev. SALVS AVGG type (crude style)
267.	913 (1109)	B rad	Tetricus I imit	late 3rd		GI/Br	Rev. SALVS AVGG type (crude style)
268.	001 (1112)	B Rad	Tetricus I imit	late 3rd		GI/Br	Blundered legends, helmeted figure to l
269.	491 (1507)	B Rad	Tetricus I imit	late 3rd		GI/Br	Rev. imitates SALVS AVGG type
270.	2003 (2044)	B rad	Tetricus I imit	late 3rd		GI/Br	
271.	2038 (2113)	B Rad	Tetricus I imit	late 3rd		GI/Br	
272.	3044 (3042)	B rad	Tetricus I imit	late 3rd		GI/Br	
273.	3086 (3220)	B Rad	Tetricus I imit	late 3rd		GI/Br	
274.	551 (107)	B Rad	Style Tetricus I	late 3rd		GI/Br	Imitating PAX AVG type. Wt 1.0g
275.	001 (488)	B Rad	Style Tetricus I	late 3rd		GI/Br	Rev. Pax-like figure l
276.	002 (569)	B Rad	Style Tetricus I	late 3rd		GI/Br	Obv. style of Tetricus I; rev. centaur to l
277.	002 (796)	Ant	Tetricus II	271–272	E764;C2608		
278.	002 (535)	Ant	Tetricus II	272	E791;C2647	GI (?Trier)	
279.	911 (929)	Ant	Tetricus II	272–273	E769;C2608	GI (?Cologne)	
280.	016 (019)	Ant	Tetricus II	273	E–;C2612	GI (?Cologne)	
281.	1027 (937)	Ant	Tetricus II	273	E791;C2647	GI (?Trier)	
282.	2428 (2680)	Ant	Tetricus II	w 273 or 274	E769 or 796	GI (?Cologne/Trier)	
283.	017 (1198)	Ant	Tetricus II	274	E781;C2619	GI (?Cologne)	
284.	3001 (3032)	Ant	Tetricus II	w 270–274	E769 or E793/796	GI (?Cologne/Trier)	
285.	3044 (3047)	Ant	Tetricus II	w 270–274	E769 or E793/796	GI (?Cologne/Trier)	
286.	001 (638)	Ant	Tetricus II	270–274		GI (?Cologne/Trier)	
287.	1053 (1115)	B Rad	Tetricus II	late 3rd	C3034	GI/Br	
288.	003 (465)	B Rad	Tetricus II	late 3rd		GI/Br	Rev. SPES PVBLICA imitation
289.	001 (499)	B rad	Tetricus II	late 3rd		GI/Br	Rev. retrogade figure r
290.	001 (539)	B Rad	Tetricus II	late 3rd		GI/Br	Blundered legends; rev. Spes stands l
291.	002 (563)	B Rad	Tetricus II	late 3rd	C3047	GI/Br	
292.	928 (765)	B Rad	Tetricus II imit	late 3rd		GI/Br	Rev. sacrificial implements

No.	Context/IF	Denom.	Emperor	Date	Reference	Mint	Further remarks
293.	957 (985)	B Rad	Tetricus II imit	late 3rd		Gl/Br	Blundered legend. Rev. retrograde figure 1
294.	001 (1092)	B Rad	Tetricus II imit	late 3rd		Gl/Br	Rev. imitates PRINCIPI IVVENTVTIS type
295.	001 (562)	B Rad	Style Tetricus II	late 3rd		Gl/Br	Rev. shows sacrificial implements. PIETAS AVGVSTOR type
296.	017 (1201)	B rad	Style Tetricus II	late 3rd		Gl	Obv. imitates Tetricus II; rev. imitates Div Claudius II CONSECRATIO – eagle
297.	001 (213)	Ant	Claudius II	268	14;C1976		
298.	002 (568)	Ant	Claudius II	268	102;C1939		
299.	001 (558)	Ant	Claudius II	268–70	15		
300.	811 (600)	Ant	Claudius II	268–270	92		Fragmentary
301.	932 (720)	Ant	Claudius II	268–70	46		2nd issue
302.	879 (996)	Ant	Claudius II	268–270		prob Rome	Rev. ?Pax stands I
303.	957 (1033)	Ant	Claudius II	268–270			Rev. illegible
304.	2065 (2165)	Ant	Claudius II	270	259	?Gl/Rome	
305.	001 (516)	Ant	Divo Claudio	270	256	?Gl/Rome	
306.	945 (818)	Ant	Divo Claudio	270	256	Gl	
307.	011 (008)	Ant	Divo Claudio	270	261	Gl/Milan	
308.	914 (580)	Ant	Divo Claudio	270	261	Gl/Milan	
309.	003 (453)	Ant	Divo Claudio	270	267	Gl	
310.	991 (1145)	Ant	Divo Claudio	270	267	Gl	
311.	003 (440)	Ant	Divo Claudio	270	274	Rome/Gl	
312.	003 (664)	Ant	Divo Claudio	270	274	Rome/Gl	
313.	001 (522)	B Rad	Divo Claudio	270		Gl	CONS[EGRATIO] (blundered) altar type
314.	551 (098)	B Rad	Divo Claudio	late 3rd		Gl	CONS[EGRATIO] (blundered) altar type
315.	912 (589)	B rad	Divo Claudio	late 3rd		Gl	CONS[EGRATIO] (blundered) altar type
316.	003 (650)	B rad	Divo Claudio	late 3rd		Gl	CONS[EGRATIO] (blundered) altar type
317.	917 (693)	B Rad	Divo Claudio	late 3rd		Gl	CONS[EGRATIO] (blundered) altar type
318.	812 (1014)	B Rad	Divo Claudio	late 3rd		Gl	CONS[EGRATIO] (blundered) altar type
319.	927 (895)	B Rad	Divo Claudio	late 3rd		Gl	Rev. CONSECRATIO (blundered) funeral pyre
320.	002 (573)	B rad	Divo Claudio	late 3rd		Gl	CONS[EGRATIO] (blundered) altar type
<i>Period 15: Diocletianic</i>							
321.	001 (877)	Fol b	Constantine I	309–310	307	Lyon	mint mark F|T PLG

TABLE 26: UNATTRIBUTED COINS

All are illegible, sometime fragmentary, and otherwise completely undiagnostic — dating in many cases is judged on fabric alone

A. Periods 1–12

No.	Context/IF	Denom.	Date
322.	2465 (2670)	Den	1st–2nd
323.	700 (345)	Sest	1st–2nd
324.	2001 (2441)	Dup	1st–2nd
325.	2095 (2235)	As	1st–2nd
326.	2491 (2671)	As(cast)	late 1st/2nd
327.	700 (397)	Sest	late 1st/2nd
328.	957 (1045)	Sest	late 1st–2nd
329.	1300 (1167)	Sest	late 1st/2nd
330.	1352 (1450)	Sest	late 1st/2nd
331.	001 (527)	As	late 1st/2nd
332.	1506 (1266)	As	late 1st/2nd
333.	001 (1360)	As	late 1st/2nd
334.	950 (975)	Den	2nd
335.	2185 (2184)	As/Dup	2nd
336.	3066 (3066)	As/Dup	2nd
337.	600 (251)	As	2nd
338.	957 (1022)	As	2nd
339.	957 (1210)	Sest	?2nd
340.	808 (484)	As	?2nd
341.	017 (1196)	As	?2nd
342.	842 (1209)	As	?2nd
343.	700 (382)	Den	2nd/early 3rd
344.	927 (747)	Den b	late 2nd/early 3rd
345.	700 (367)	As	2nd/3rd
346.	809 (671)	Ant b	3rd

B. Period 13: Gallic Empire

Most, if not all, are likely to be the remains of bronze barbarous radiates of late 3rd century date, minted in either Gaul or Britain. Many are now fragmentary

No.	Context/IF	Further remarks
347.	003 (001)	
348.	003 (002)	
349.	001 (005)	
350.	007 (027)	
351.	551 (093)	
352.	001 (212)	
353.	700 (271)	
354.	001 (438)	
355.	003 (442)	Blundered legends; Pax-like figure
356.	002 (459)	
357.	003 (463)	
358.	016 (471)	
359.	037 (482)	
360.	033 (483)	
361.	016 (487)	
362.	001 (489)	
363.	001 (497)	
364.	001 (498)	
365.	002 (503)	
366.	001 (514)	
367.	001 (528)	
368.	001 (533)	
369.	022 (537)	
370.	001 (538)	
371.	001 (540)	
372.	001 (550)	

No.	Context/IF	Further remarks
373.	001 (554)	
374.	001 (556)	Rev. retrograde 'PAX AVG' type
375.	001 (559)	Rev. sacrificial implements
376.	002 (566)	
377.	914 (571)	
378.	914 (574)	
379.	914 (586)	
380.	917 (590)	
381.	002 (595)	
382.	003 (619)	Rev. Spes-like figure 1
383.	003 (620)	
384.	928 (630)	
385.	007 (632)	
386.	003 (635)	
387.	003 (639)	
388.	806 (651)	
389.	003 (663)	
390.	917 (672)	
391.	007 (680)	
392.	003 (690)	
393.	914 (699)	Rev. sacrificial implements
394.	001 (709)	
395.	002 (716)	
396.	003 (725)	
397.	903 (732)	
398.	002 (754)	
399.	927 (755)	
400.	928 (761)	
401.	002 (763)	
402.	929 (779)	Rev. Pax-like figure 1
403.	002 (790)	
404.	903 (823)	
405.	950 (827)	
406.	950 (837)	
407.	845 (851)	
408.	812 (873)	
409.	1026 (883)	
410.	852 (901)	
411.	929 (916)	
412.	1027 (927)	
413.	1027 (931)	
414.	1027 (943)	
415.	951 (944)	
416.	951 (947)	
417.	812 (960)	
418.	860 (972)	
419.	957 (983)	
420.	957 (984)	
421.	951 (991)	
422.	846 (998)	
423.	812 (1006)	
424.	957 (1040)	
425.	957 (1046)	
426.	957 (1047)	
427.	957 (1049)	
428.	957 (1051)	
429.	957 (1060)	
430.	951 (1124)	
431.	951 (1127)	
432.	991 (1139)	
433.	1229 (1150)	
434.	957 (1164)	
435.	957 (1165)	
436.	812 (1170)	
437.	957 (1173)	

No.	Context/IF	Further remarks
438.	957 (1182)	
439.	017 (1199)	
440.	1453 (1250)	
441.	001 (1355)	
442.	001 (1361)	
443.	001 (1408)	
444.	318 (1435)	
445.	001 (1753)	
446.	2001 (2015)	
447.	2014 (2046)	
448.	2100 (2091)	
449.	2038 (2108)	
450.	2001 (2188)	
451.	2001 (2229)	
452.	2046 (2242)	
453.	2086 (2244)	
454.	2065 (2249)	
455.	2002 (2300)	
456.	2002 (2350)	
457.	2086 (2544)	
458.	3001 (3005)	
459.	3001 (3014)	
460.	3001 (3027)	
461.	3001 (3029)	
462.	3047 (3109)	
463.	3047 (3176)	
464.	3086 (3213)	
465.	3086 (3236)	
466.	002 (461)	

FINGER-RINGS, INTAGLIOS AND OTHER RING-SETTINGS (FIG. 76, PL. XXX)

By M. Henig and G. Lloyd-Morgan, with contributions by D. Allen

The small collection of gems and rings from Mill Street makes a useful supplement to other published material from Caerleon and notably to the important finds from the Fortress Baths (Zienkiewicz 1986b, 117–45). It ranges from the 1st century gold ring (no. 1), a valuable object which belonged to a young woman, in theory possessed of equestrian or even senatorial status, down to mediocre glass ringstones worn by quite ordinary people.

Although the finds come from the civilian settlement, Jupiter, Roma and Victory are entirely appropriate to Roman soldiers, and so is Hercules' contest with Antaeus. However Good Luck (*Bonus Eventus*), *Fortuna*, the cupid-head, the hound leaping from the nautilus and the browsing goat all reveal that general desire felt by both soldiers and civilians for prosperity and fecundity.

The material is arranged in the following categories:

Signet rings

Unset gems

Intaglios

Other ring settings

Other rings.

Nos 1–13 and 16–20 are reported upon by MH and GLM, nos 14 and 15 by DA. The report was submitted in 1993. Intaglios nos 1–6 and 8–13 can be found on PL. XXX; an asterisk indicates that the piece has been drawn (FIG. 76). See also no. 67, jewellery report.

Catalogue

Signet rings

- *1. [1] 305/SG189 (1181) Gold ring with narrow hoop, expanding towards bezel. Henig type III (as Henig 1978, pl. xlvi, no. 523). External diameter 23 × 18.6mm; internal diameter 16.4 × 12.9mm; maximum height of bezel 9mm. (PL. XXX.)

The type is typical for the 1st century; see Stefanelli 1992, 241, no. 79, fig. 121, for an example from the jewellery and silver cache found in the Casa del Menandro, Pompeii.

The bezel is set with a nicolo intaglio with bevelled edge (shape F4), measuring 8.7×6.3 mm, and cut in the classicising style (see Maaskant-Kleibrink 1978). It is cut with the device of a hound leaping from a nautilus shell to left (to right on an impression). There is a short ground line.

For a parallel see Henig 1978, no. 391 (a nicolo from Wroxeter, Shropshire), and note no. 390 (a sardonyx from Colchester, Essex, in which a hare is shown as well as a hound) and no. 392 (a red jasper from Corbridge, Northumberland, with a mouse emerging from a shell). Compare also, for type and style, Maaskant-Kleibrink 1978, no. 618, a donkey in a shell. For a selection of related devices, including elephant, horse, donkey, ram and hare, see Zwierlein-Diehl 1991, nos 2130–36, and see also Henig 1984b. The shell symbolises the womb; and as hounds are certainly chthonic creatures the device is generally taken to allude to rebirth. However, it would not be inappropriate as an amulet to be worn by a pregnant woman living in the civil settlement or even, considering the material of the ring, the wife or daughter of the commander of Legio II. The hare, shown on the Colchester intaglio, symbolises fecundity as does the mouse on the Corbridge gem.

- *2. [2] 1015/modern intrusion (846) Silver ring with broad hoop expanding towards the bezel. Henig type V. External diameter 27.3×20.7 mm; internal diameter 19.7×16.3 mm; maximum height of bezel 13.7mm. (PL. XXX.)

The bezel is set with a moulded glass intaglio 11.8×9.6 mm, imitating nicolo and depicting Victory in profile to the left holding a wreath and palm. The relatively high status implied by the material of the ring is at variance with the low quality of the setting, and points to the period when glyptic art began to decline in the late 2nd and 3rd centuries A.D.

For a similar glass gem showing Victory on a globe, from the Fortress Baths drain at Caerleon, in a context dated c. A.D. 160–230, see Zienkiewicz 1986b, 136, no. 52. An even closer parallel is the intaglio set in a gilded copper alloy ring from Upper Northgate Street, Chester (Henig 1977, 43, no. 3, with pl. on p.44; Henig 1978, no. 311). For other parallels see Henig 1978, nos 306–10.

- *3. [3] 859/SG124 (1185) Iron ring, hoop expanding towards the bezel. It has quite prominent shoulders. The lower part of the hoop is lost. Henig type III/V. External diameter 26mm; width across bezel 15mm. (PL. XXX.)

The intaglio is a milky chalcedony, cut with a convex upper surface and measuring 15×12 mm. It is somewhat stained by iron corrosion. Its device shows Jupiter, the lower part of his body draped in a *himation*, enthroned in profile to the right, his sceptre in his right hand and *paterna* in his left hand. Unusually, though not uniquely, no eagle is shown. Ground line. The intaglio is executed in the chin-mouth-nose style, probably early 2nd century A.D. (see Maaskant-Kleibrink 1978) and exhibits some fine cutting in the rendering of hair and textile.

Milky chalcedony is quite often employed for this type (too often for coincidence), see Henig 1978, no. 8 (Wroxeter, Shropshire); Sena Chiesa 1966, nos 9–13; Zazoff 1975, nos 1366–73 (the last without eagle); Maaskant-Kleibrink 1978, no. 846 (no eagle); Dimitrova-Milcheva 1981, nos 3 and 4; Spier 1992, nos 263, 264. However other gems such as cornelian are also employed, as for example Zienkiewicz 1986b, 134, no. 35, from the Fortress Baths at Caerleon.

- *4. [4] 1501/unstratified (1723) Iron ring, with wide ribbon hoop; the lower part is lost. Henig type V. External diameter 27.6mm; internal diameter 21.5mm; height of bezel 14.2mm. (PL. XXX.)

The gem is a red jasper with flat surface, 15×11.5 mm, and depicts a goat to the left, standing on its hind legs and browsing off a broad-leaved tree.

The ring type, material, style of cutting and shape of ring point to the 2nd century (small grooves style; as Maaskant-Kleibrink 1978, no.746).

Comparison may be made with Zienkiewicz 1986b, 139, no. 77, another red jasper, from a context in the Fortress Baths dated A.D. 160–230. Henig 1978, no. 609 differs in that the stone is a cornelian (burnt or leached) and the tree is a palm, but it too comes from Caerleon. Also see Henig 1978, nos 610–12 for red jaspers from Cirencester, Gloucestershire, High House milecastle on Hadrian's Wall and Charterhouse-on-Mendip, Somerset. Also see Henkel 1913, 133, no. 1440, Taf. lv and lxxvii, 256 (Eining); Sena-Chiesa 1966, nos 1134–6.

- *5. [5] 002/unstratified (462) Ring of copper alloy, gilded. It has a setting for an oval intaglio, and pronounced shoulders with approximately triangular form. Henig Type VIII. External diameter 25mm; internal diameter 20mm. (PL. XXX.)

The setting is of moulded glass imitative of nicolo (as no. 2 above), flat with a bevelled edge (shape F4), measuring 14.5×11.8 mm. The device depicts Mercury seated to the right, his caduceus in his right hand and his purse in his left. In front of him is his cockerel.

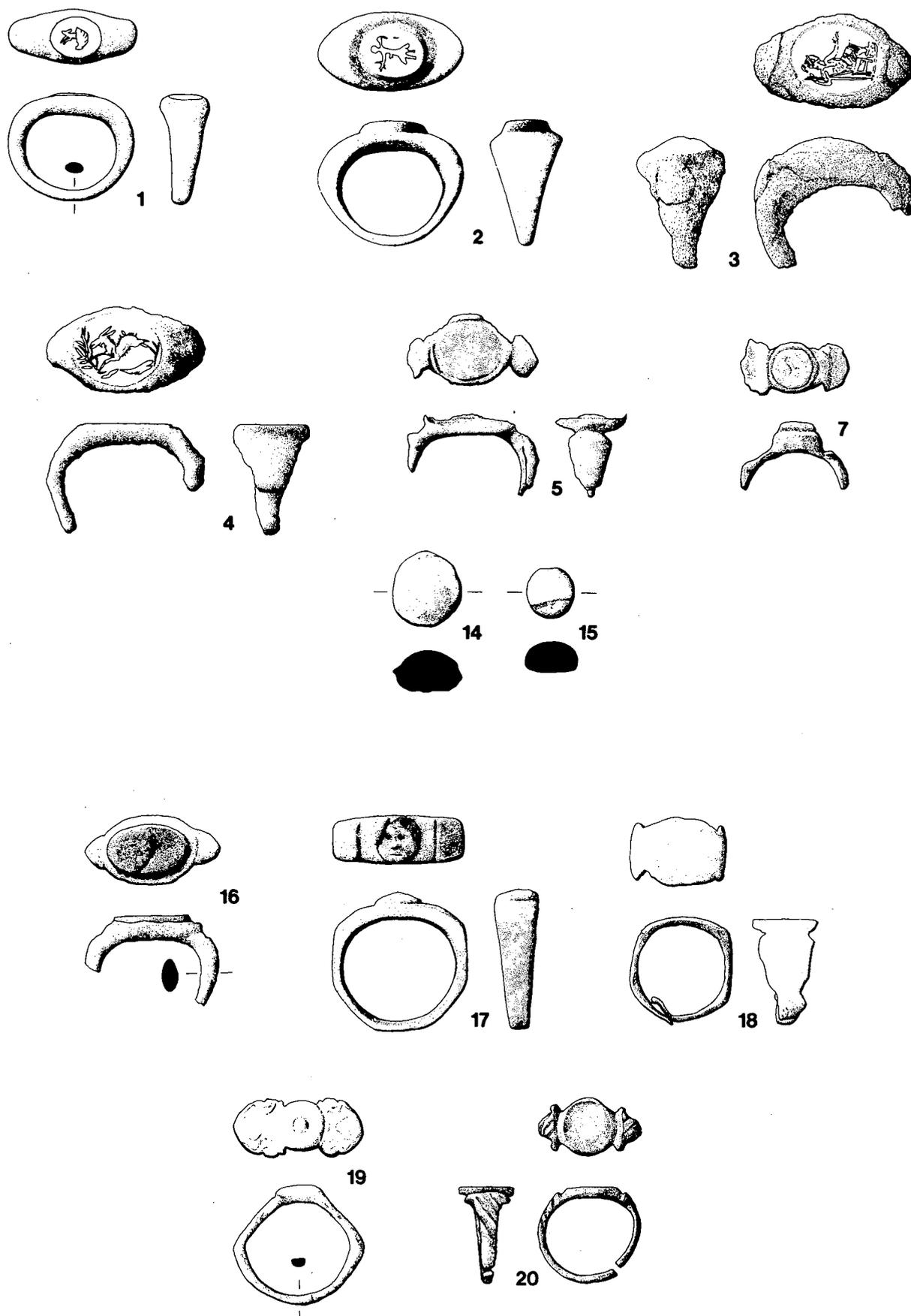


FIG. 76. Finger-rings and ring-settings. Scale 1:1.

The type is a common one for these low-quality intaglios; compare Henig 1978, nos 55–66, of which no. 55 from Reculver, Kent, is the most similar, showing the god with a cockerel, and no. 58 is from Caerwent, Gwent. Also Guiraud 1988, nos 181–4, for examples from Gaul. 3rd century A.D.

6. [6] 002/unstratified (802) Ring of copper alloy; fragment with prominent shoulder and raised setting for intaglio. Original diameter *c.* 17mm. (PL. XXX.)

The setting, of moulded glass imitative of nicolo, as usual with bevelled edge, is now broken into two pieces and the top quarter is lost. It measures 12 × 9.7mm and is 3.3mm in thickness. The device is a huntsman, dressed in a short tunic, advancing left; he carries his quarry, a hare or small deer, slung from a pole over his shoulder. For a close parallel from Corbridge, Northumberland, see Henig 1978, no. 181. 3rd century A.D.

- *7. [7] 911/SG29 (1144) Ring of copper alloy, with raised octagonal bezel set with a jewel of greeny-blue glass. The shoulders have ovoid projections with vertical concave mouldings, now damaged at the edges. The hoop had an angular D-shaped cross-section, but most of it is now missing. Form Henig VIIIa. External diameter 20mm; internal diameter 16mm.

A ring from Balkerne Lane in Colchester, Essex, is virtually identical and came from a context dated *c.* A.D. 250–300 (Crummy 1983, 49, fig. 50, no. 1780). Also note examples from Cirencester, Gloucestershire (McWhirr 1986, 111, fig. 80, no. 55) and Upmarden, West Sussex (Henig 1979, 149–51, fig. 44, no. 10).

The gem, 6 × 6mm is very simple and highly stylised, probably representing a human figure (too indistinct to photograph adequately). Until recently all examples known to us were from Britain and mainly from southern Britain, though recently Kathy Sas has brought two examples from Belgium to the attention of one of us (MH). Nevertheless the designation 'Romano-British imitation' probably still holds. Compare Henig 1978, nos 539–89, app. no. 11–19, 164–71 and distribution map, p.132, fig. 2 (= type 3). Note too that the rings cited above contained 'imitations' of this type.

Unset gems

Intaglios

8. [8] 838/SG124 (1068) Intaglio of black onyx, oval with bevelled edges. Shape F4. Upper face 8 × 6mm; lower face 11.2 × 9.5mm; thickness 1.75mm. (PL. XXX.)

Roma seated left upon a cuirass, wearing helmet and *parazonium*. She holds a Victory on her right hand. Behind her is a shield. Short ground line. The cutting is in the 'round-head style' (see Maaskant-Kleibrink 1978, 285). 1st–2nd century A.D.

For the type see Sena-Chiesa 1966, no. 646. Most other examples show Roma to the right, viz. Zienkiewicz 1986b, 135, no. 42 (broken), from a drain deposit dated A.D. 160–230 in the Fortress Baths at Caerleon; Henig 1978, no. 249 from Silchester, Hampshire (but with *patera* rather than a Victory); app. no. 85 (York). Also Henkel 1913, 163, no. 1809, Taf. lxxv, 101 (Trier); Sena-Chiesa 1966, nos 647–50; Maaskant-Kleibrink 1978, no. 655; Henig and Whiting 1987, nos 159, 160, from Gadara in Jordan; Maaskant-Kleibrink 1986, app. no. 37. It is thought that the type represents a pre-Hadrianic image of the deity.

9. [9] 2393/SG44 (2538) Nicolo intaglio, oval with bevelled edges. The gem has a speckled white/blue upper face. Shape F4. Upper face 9 × 7mm; lower face 13 × 9mm; thickness 2.5mm. Stone is chipped on the right side. (PL. XXX.)

The gem is cut in the 'small grooves style' (Maaskant-Kleibrink 1978, 251). It shows *Bonus Eventus* in profile to the left. He wears a *chlamys*. In his right hand he holds a dish and in the left two ears of corn. The type may be based on an image by Euphranor (Pliny NH xxxiv 19, 16).

Compare Henig 1978, app. no. 113 (from Newstead, Borders). Also see Zienkiewicz 1986b, 130–1, no. 14 (with a tree shown behind), from a horizon in the drain of the Fortress Baths, Caerleon, *c.* A.D. 85–110 but possibly intrusive. Also Sena-Chiesa 1966, no. 541; Maaskant-Kleibrink 1978, no. 598.

10. [10] 3046/SG162 (3046) Nicolo glass intaglio, oval with bevelled edge. Shape F2. Upper face 6 × 4.5mm; lower face 8 × 6.5mm; thickness 2.5mm. (PL. XXX.)

Fortuna stands in profile to the right, holding a steering-oar with rudder in her left hand and a cornucopia in her right. Ground line. Compare Henig 1978, app. no. 138 from *Vindolanda* near Hadrian's Wall for a nicolo glass of this common type (nos 314–23 for cut gems). 2nd or 3rd century A.D.

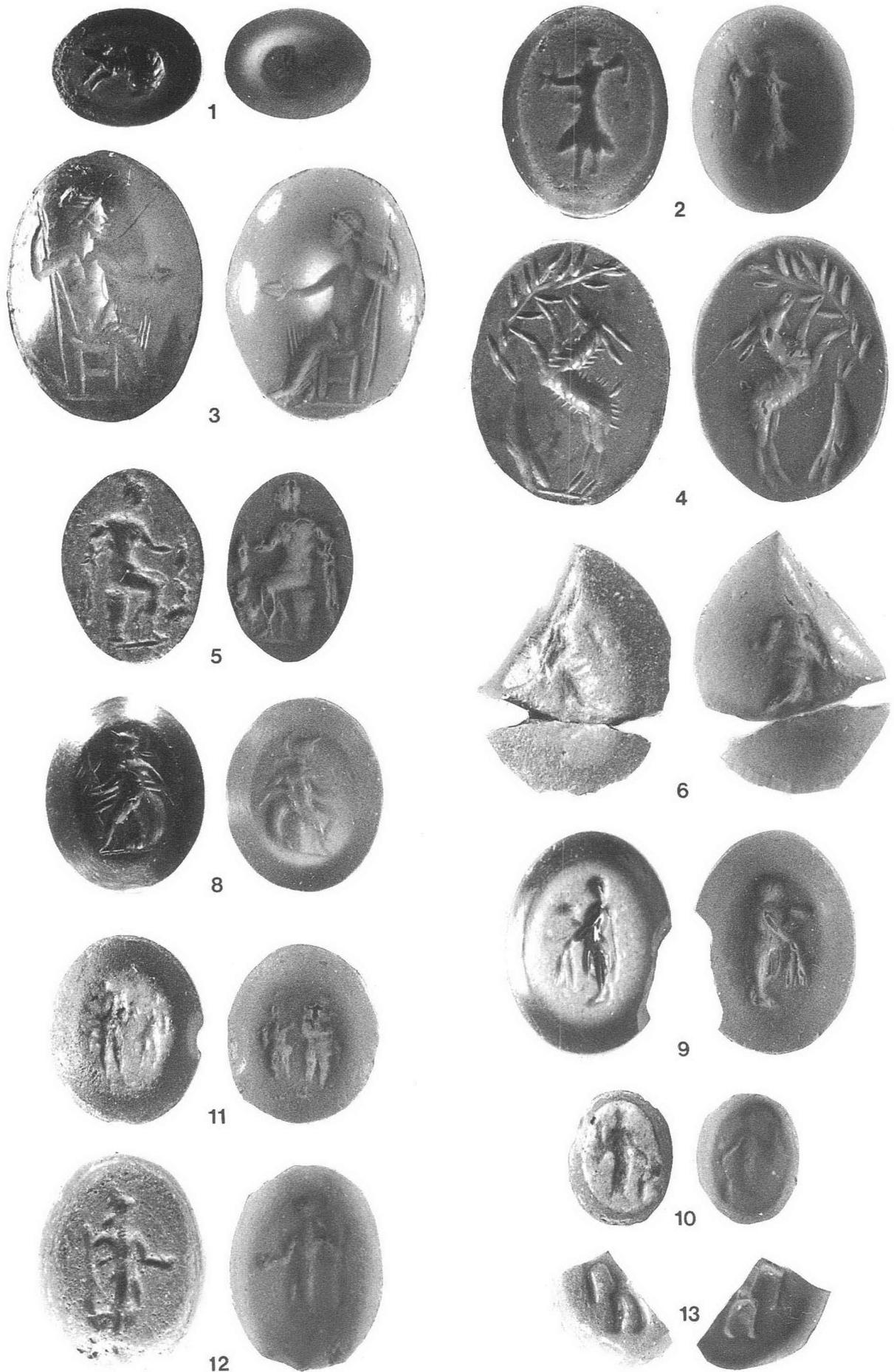


PLATE XXX. Intaglios: impression to the right of each pair.

11. [11] 002/unstratified (729) Nicolo glass intaglio, oval with bevelled edge. Shape F2. Upper face 7 × 5mm; lower face 11 × 9mm; thickness 2mm. (PL. XXX)
Hercules to left lifting Antaeus, watched from the right by his patroness Minerva. For the same subject but reversed, on an early (1st century) glass gem from Richborough, Kent, see Henig 1978, no. 437. Also see Guiraud 1988, 135 and pl. xxviii, no. 420, for a 1st or 2nd century nicolo glass from a villa at Saint-Eloy-les-Tuileries (Corrèze). 2nd or 3rd century A.D.
12. [12] 928/SG53 (903) Nicolo glass intaglio, oval with bevelled edge. Small chip on side below feet of figure. Shape F2. Upper face 10 × 8mm; lower face 13 × 9.5mm; thickness 3.5mm. (PL. XXX.)
Male figure in 'Polykleitan' stance, one leg crossed behind the other, in profile to the right. He holds an object in his left hand and has a *chlamys* draped over his right arm and leans on a ?spear. Possibly a hero such as Alexander or Achilles.
Guiraud 1988, 133 and pl. xxvii, no. 412, from Corvol-d'Embernaud (Nièvre), placed amongst the genii, could have come from the same mould. The type seems close to representations of heroes, such as Henig 1978, nos 460 and 469; Zienkiewicz 1986b, 135–6, nos 47 and 48, all from Caerleon, but is not identical. 2nd or 3rd century A.D.
13. [13] 2429/SG168 (2514) Fragmentary intaglio of blue glass. Greatest dimension 8mm; thickness 2mm. (PL. XXX.)
Romano-British imitation. A standing male figure. The device is incomplete, but approximates to Crummy 1983, 48–9, fig. 50, no. 1786, likewise of blue glass.

Other ring settings

There were two circular ring settings, one of blue-green glass, one of dark red glass or jasper. Another glass setting, still *in situ* in a fragmentary piece of jewellery (no. 67), may also have been from a ring.

- *14. [Glass 159] 454/SG189 (1528) Plano-convex disc of blue-green glass; edges bevelled, apparently traces of adhesive on flat surface. Probably the setting from a ring or other item of jewellery. Diameter 12mm; height 6mm.
- *15. [Glass 160] 001/unstratified (553) Plano-convex disc of dark red glass or jasper. Possibly the setting from a ring or other item of jewellery. Diameter 9mm; height 5mm.

Other rings

- *16. [14] 2046/SG84 (2100) Ring of copper alloy, gilded. Thin everted shoulders and prominent bezel set with an unengraved, slightly convex cornelian gem. Silvering or gilding behind the stone helps to reflect the light. External width of ring 24.1mm; internal width ring 17.8mm; height of bezel 11.8mm; gem upper face 13 × 7mm, gem lower face 14 × 9.1mm; gem thickness 2mm.
The ring form is characteristic of the 3rd century, cf. Henig 1978, 35, fig. 1; type Xb. The use of uncut gems chosen for colour and glitter rather than for their devices is a feature of the middle and late Empire, see Henig 1981 (note p.134, fig. 81, bottom left, for a gold ring of this type from a Severan cache at Lyons).
- *17. [15] 2389/SG72 (2524) Silver ring with irregular octagonal outline and ovoid inner profile. The rectangular bezel section is ornamented with a cupid-head in low relief cast in one piece with the hoop, but now worn as shown by the condition of the nose. External diameter 24 × 21.3mm; internal diameter 17.5 × 19.4mm; maximum height of bezel 8.6mm.
For heads in metal shown on rings see especially Zienkiewicz 1986b, 144, no. 19, pl. xixb, a roundel showing a bust of Saturn from the upper sediments of the drain (A.D. 160–230). For possible cupid-heads, see Marshall 1907, 42–3 no. 247, pl. vi (from Amiens) and 178, no. 1116, pl. xxviii. Also note cupid-heads as gemstone insets, Henig and Whiting 1987, nos 412–15; Henig 1990, nos 112–17; from Britain, Henig 1984b, 89–91 = Henig 1978, app. no. 205 (Staines) and app. no. 206 (Shakenoak, Oxfordshire). Also three unpublished examples from Chester, one of blue glass from Sedan House, and two of green/white glass from Crook Street.
- *18. [16] 927/SG53 (887) Silver finger-ring with oval bezel, perhaps originally engraved. The sub-rectangular shoulders certainly preserve traces of engraved detail. The back of the hoop is worn and broken, and the hoop is hammered together so that the two ends overlap. External diameter of ring 18.4 × 18mm; bezel 11.7 × 15.3mm.
Compare the related but better-preserved example from Lydney Park (Wheeler and Wheeler 1932, 82, fig. 16, no. 53).
- *19. [17] 871/SG29 (992) Silver ring with triangular shoulders (Henig Type VIII). It has a raised disc-shaped bezel engraved with two concentric circles to suggest a setting. The shoulders are engraved

with scroll-shaped motifs. External diameter of ring 20.9 × 23.1mm; internal diameter 15.8 × 18.2mm; diameter of bezel 8.4mm; maximum height of shoulders 10mm.

The ring type is dated to the 3rd century (see Henig 1978, 38–9 and fig. 1). Compare a silver ring of similar design but with bezel inscribed 'ToT' from Lincoln (Henig and Ogden 1987, 366–7, fig. 2B).

- *20. [18] 2352/SG72 (2286) Copper alloy finger-ring, the hoop broken at one point but otherwise complete (Henig type VIIIa). The circular bezel was originally set with enamel, and the triangular shoulders are decorated with heavy hatched lines at an angle to the vertical. External diameter 18.1 × 16.5mm; internal diameter 15.6 × 13mm; height of bezel 9.6mm.

Compare the example from a grave fill at Butt Road, Colchester, Essex, in a 4th century context but probably 3rd century in date (Crummy 1983, 49, fig. 50, no. 1785); and an incomplete, unstratified example from Watercrock, Cumbria (Potter 1979, 215, fig. 86, no. 64).

OTHER JEWELLERY AND DRESS ACCESSORIES IN GOLD, SILVER AND COPPER ALLOY (FIGS 77–81) By G. Lloyd-Morgan

As might be expected from an extra-mural site, there is an interesting range of personal jewellery covering most of the period of Roman occupation within the area. This report, submitted in 1993, covers only metal jewellery, except for finger-rings (category 1.3) which can be found as a separate report above. Other jewellery can be found in the glass report (beads nos 139–59), the jet and shale reports (jet beads nos 1–3, jet armlets nos 4–5, jet pin no. 6, and shale bracelets nos 1–31) and bone report (pin no. 6 and bead no. 11). Most of the pieces reported upon here were of copper alloy, although a few items of gold and silver were also recovered. The gold jewellery consisted of a small hemispherical stud-like earring no. 61 and a fragment from a more complex piece with pendant drops, no. 60; and fragments of a delicate gold necklace with green disc-shaped glass beads, no. 63. Silver jewellery was represented only by fragments (nos 64 and 65).

The objects are arranged in the following categories (numbers in square brackets refer to archive categories, see p.467 and TABLE 30).

Brooches	[1.1]
Bow brooches	
Plate brooches	
Penannular brooches	
Bracelets	[1.2]
Earrings	[1.4]
Miscellaneous jewellery	[1.5]
Copper alloy beads	[1.6]
Pins	[1.7]
Amulet/cosmetic grinder	[1.8]
Buckles and related items	[1.9] — None considered worthy of publication.

Unpublished parallels from other sites, quoted without further references, are taken from the writer's card-index. All unpublished examples from Chester are in the Grosvenor Museum, unless otherwise indicated.

Catalogue

The copper alloy fibulas

(Total number recorded = 50)

The fibulas are represented by bow brooches, penannulars and plate types. The largest range of types is, as might be expected, found amongst the bow brooches, the earliest of which is the La Tène II example (no. 1) which is found in the late Iron Age and into the 1st century A.D. Other early types include a Hod Hill (no. 2); two headstud types, two Polden Hills and three trumpet brooches, and five T-shaped brooches, with three examples of the less common bridge, or equal-ended, brooches. Curiously, no dolphin types have been recognised. Two trumpet derivatives of the later 2nd century A.D. (nos 11 and 12), and the T-shaped plate headed brooch (no. 15) show the development within their types. Later types of the 2nd and 3rd century include a useful collection of six knee brooches in two distinct versions, with three P-shaped fibulas, one (no. 27), with a divided bow. Two early crossbow brooches of the late 3rd century (nos 29–30) appear to be amongst the latest bow brooches.

Five penannulars belonging to four of Fowler's types — A2, A3, A4, and D1 were noted, and five plate brooches. The triskeles plaque (no. 32) can be paralleled by earlier finds from the Caerleon region and elsewhere in Britain, but the damaged no. 33 with its decorative frontal face is a useful addition to the modest number of earlier finds from the country. The zoomorphic brooch in the form of a horse (no. 34) is a type well known from several sanctuary sites as well as domestic contexts. Unfortunately the diamond-shaped brooch (no. 35), and the later oval brooch (no. 36) with a setting for a central paste gem, are somewhat poorly preserved. Other fragments of brooches and pins have been recorded. In many respects the brooches can be compared with the finds from the Chester region, which also has examples from a La Tène II fibula to the late 3rd and 4th century crossbow types, though, as always, the vagaries of accidental loss, and local taste, as well as the chance of discovery, can give only a rough indication of what was in use at any time.

Bow brooches (FIGS 77, 78)

Total number recorded = 37

1. [1.1a.14] 928/SG53 (953) Fibula of La Tène II type; the spring, pin and foot are now lost. Length 48.3mm.
Compare the pieces from Lydney described as probably dated *c.* 150 B.C. onwards (Wheeler and Wheeler 1932, 68–71, fig. 8, no. 1); from the western defences of the fortress at Chester, found in a 1st century 'Ash pit in Trench 1' (Webster 1953, 8, fig. 5, no. 1), and two from Richborough, Kent, the first from a deposit dated pre A.D. 85 and the second found with Flavian and pre-Flavian pottery (Bushe-Fox 1949, 107–8, pl. XXV, nos 1 and 2).
2. [1.1a.17] 851/SG114 (1235) Hod Hill type fibula; a little distorted and the hinged pin lost. The upper half of the bow is decorated with a lightly moulded border and a central, crudely hatched, rib. The catch is damaged and the surface is rather poor. Length 42mm.
See the examples from Lowbury Hill, Berkshire (Atkinson 1916, 37, pl. IX, no. 43, length 35mm); Nor'nour, Scilly (Dudley 1967, 36, fig. 15, nos 61, 62) and Puckeridge-Braughing, Hertfordshire (Potter and Trow 1988, 48, fig. 20, no. 60, length 41mm).
3. [1.1a.8] 600/SG183 (244) Headstud brooch, with the headstud now lost and the upper part of the head and bow damaged and eroded. The wings to either side of the head appear to have been stepped, and there may have been small panels of enamel down the length of the bow. The catchplate is damaged and the hinged pin is broken off near the swivel. Length 34.3mm. (Not illustrated.)
See the more complete brooch dated late 1st century, from Woodcock Hall, Saham Toney, Norfolk, which has also lost its stud (Brown 1986, 27, fig. 22, no. 147); the larger almost complete example from Old Winteringham, Lincolnshire (Stead 1976, 198, fig. 99, no.13); and the closely related piece from Loughor, West Glamorgan (Lloyd-Morgan 1997, 238, no. 7).
4. [1.1a.9] 600/SG183 (250) The foot and lower part of the bow of a headstud/Lamberton Moor fibula with a continuous panel of enamel on the bow, consisting of a central line of diamond-shaped fields inlaid with blue enamel, and on either side triangular fields; the enamel is now either a decayed cream colour or a decayed brown. The foot is decorated with a neat series of mouldings. Length 30.2mm. (Not illustrated.)
See the example from Nor'nour, Scilly, where a mainly 2nd century date is suggested (Dudley 1967, 42, fig. 17, nos 99, 101, dating on p.40). Note also the example now in the British Museum, dated A.D. 175–200.
5. [1.1a.36] 2445/SG90 (2580) Fibula with integral head loop, with similar proportions to some of the headstud brooches, but with no headstud present. The surface is eroded and part of the pin lost, otherwise virtually complete. Length 49.4mm.
Compare the headstud brooch dated 2nd century from Kingsholm, Gloucestershire (Brailsford 1951, 18, fig. 9, no. 15, accn no. 70.10-10.24); and the related examples from Corbridge, Northumberland, with a date of *c.* A.D. 80–150 (Bishop and Dore 1988, 161, fig. 76, no. 6, length 48mm); and the closely related piece from Goss Street, Chester, from the 'lower barrack floor' dated probably late 1st century/post A.D. 78 (Richmond and Webster 1951, 27, fig. 12, no. 7).
6. [1.1a.27] 2086/SG94 (2287) Polden Hill fibula, the bow decorated with a zigzag line of narrow lentoid moulding with central longitudinal engraved lines, arranged symmetrically about a raised central rib down the length of the bow which is decorated with hatching to suggest beading. There is some damage to the central section of the bow which is bent out of true. The spring, chord and iron axis bar survive but the pin is lost. Length 64mm.

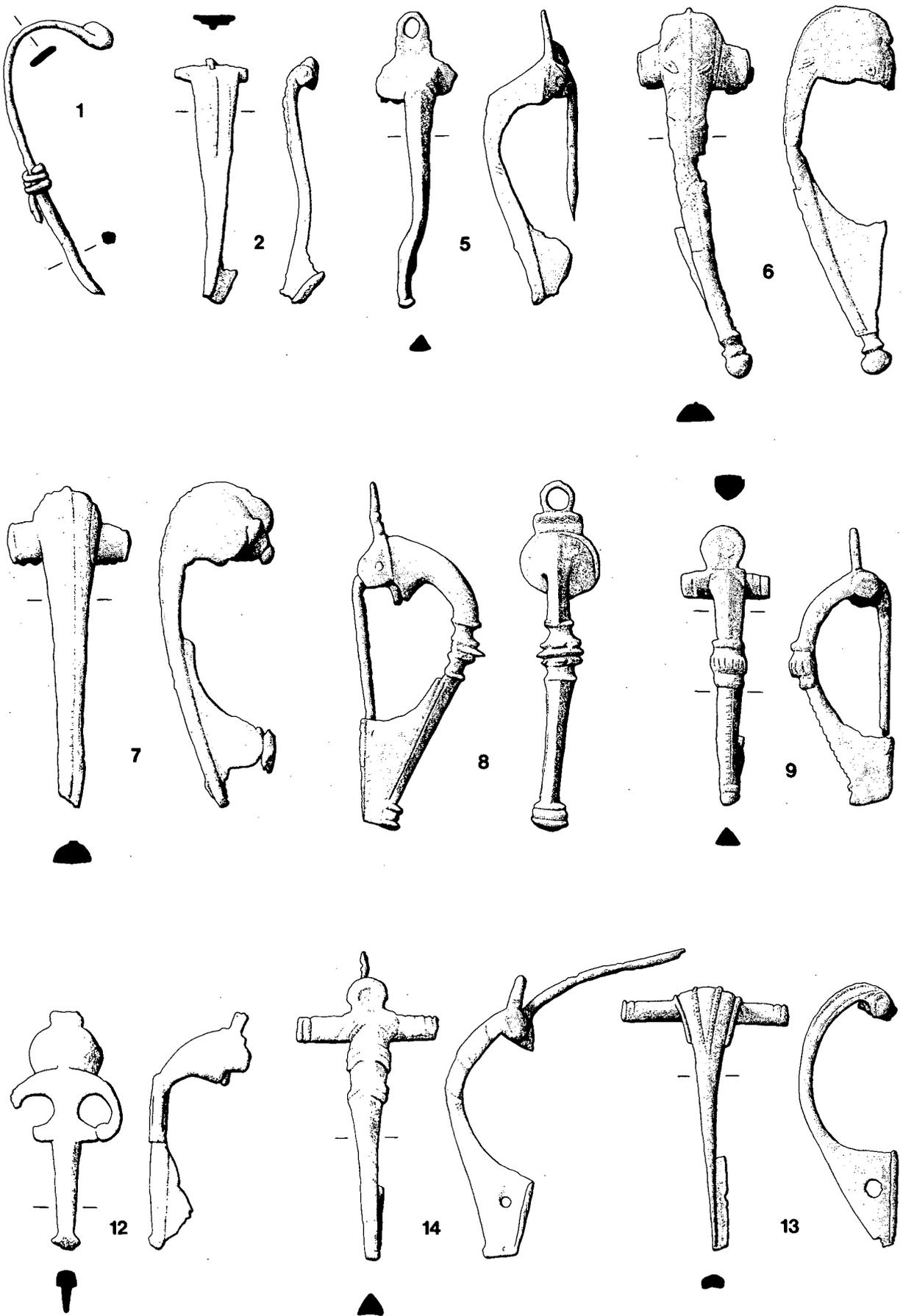


FIG. 77. Jewellery nos 1-14: bow brooches. Scale 1:1.

Compare the identical examples from the lost village of Meols off the northern coast of the Wirral, Cheshire, ex colln Ecroyd Smith (Hume 1863, 72, pl. IV, no. 4; Watkin 1886, 278–9, fig. 4); Brockworth, Gloucestershire (Rawes 1981, 66, no. 3 = fig. 8, no. 4, dated by Mackreth as late 1st into the 2nd century); and two further pieces, from Peterfield, Hampshire, and East Anglia with a date suggested as A.D. 50–70 (Hattatt 1985, 84, fig. 36, no. 380, 379, respectively); also the unpublished piece from excavations at Abbey Green, Chester.

7. [1.1a.30] 2405/SG72 (2348) Polden Hill fibula with raised central rib running the surviving length of the bow. The foot of the bow, part of the catchplate and most of the pin are lost, but the chord, spring and axis bar are intact. Length 55.4mm.

Compare the Polden Hill fibula no. 6 above, also with a central rib down the length of the bow; the damaged example from The Lunt, Warwickshire (Hobley 1973, 65, fig. 19, no. 2); and the related item from Kenchester, Herefordshire (Jack and Hayter 1916, pl. 51, no. 6).

8. [1.1a.16] 1205/SG106 (1054) Trumpet brooch, virtually complete, of Collingwood Group R(ii) with integral head loop. The sharp collar in the middle section of the bow is framed by neat, stylised acanthus moulding, framed in turn by lighter moulded collars, all of which continue in modified form round the back of the bow. The cross-section of the bow is sub-triangular. The edge of the lower part of the bow is emphasised by incised lines on either side. The foot has a raised moulding. The catchplate is decorated on the outer face by a line of punched dots, and the return has incised decoration comparable with examples found in Gloucester and district. Length c. 60mm.

Compare the decoration on the return of the catchplates of two brooches from Gloucester, the first being an Riii type trumpet brooch from an inhumation burial at Gambier Parry Wood, Kingsholm; the other, a trumpet derivative, was found near Hucclecote Villa (Cracknell 1990, 204, fig. 3, nos 14, 15, respectively). Compare also the unpublished, damaged, fibula from Doncaster with hinged pin.

9. [1.1a.23] 1474=1527/SG25 (1444) Fibula with integral head loop which has not been cleared of the internal flashing. The wings are roughly oval in cross-section and are incised at the ends. The bow is angular in cross-section with three moulded collars in the centre; the larger, middle one, being hatched vertically, is reminiscent of the central mouldings of the trumpet fibulas of Type Riv. The lower part of the bow is hatched along the central rib at right angles to the line of the bow. There is a neatly-moulded small foot. The tip of the hinged pin is lost. Length 47.6mm.

Compare the trumpet brooch from Cirencester, Gloucestershire, for which a late 1st or early 2nd century date is suggested (Hattatt 1987, 135, fig. 44, no. 963); and the piece from Prysge Field, Caerleon, dated A.D. 150–200 (Nash-Williams 1932a, 79, fig. 31, no. 6).

10. [1.1a.33] 2405/SG72 (2369) Head of a small trumpet brooch with an integral circular head loop, perhaps belonging to Group Riii or Riv; the spring and upper part of the pin survives. Length 13.7mm. (Not illustrated.)

11. [1.1a.26] 2140/SG71 (2162) Trumpet-derivative brooch with broken integral head loop and the remains of a pelta-shaped plaque on the bow. The lower part of the bow, foot and catchplate are lost, as is the pin from the spring fitting. There is some surface damage, but traces of tinning/silvering remain on the edge of the trumpet-shaped head. Length 29mm. (Not illustrated.)

See the example from a robber trench at Fishbourne, with a date suggested as the second half of the 2nd century (Cunliffe 1971, 104, fig. 39, no. 36); also the better-preserved piece no. 12 below.

12. [1.1a.34] 2389/SG72 (2382) Trumpet derivative of Collingwood Group Sii with pelta-shaped plate on the bow, and traces of silvering/tinning. The lug or head loop is broken, and part of the pelta-shaped plate, as are also the foot and catchplate. The axis bar and spring are *in situ*, though the pin is lost. Length 42.7mm.

One example came from a medieval pit in the area of the Roman civil settlement at Doncaster, South Yorkshire (Buckland and Magilton 1986, 89, fig. 20, no. 18). Compare also the piece from Newstead, Borders, dated as 2nd century (Curle 1911, 324–5, pl. LXXXVII, no. 26); and another, probably from Lincoln, with the same dating, now in the British Museum, accn no. 66. 12-3.141 (Brailsford 1951, 18, fig. 11, no. 24).

13. [1.1a.18] 001/unstratified (1344) T-shaped brooch with V-shaped mouldings on the head, lightly hatched and with shorter outer mouldings to either side. The wings have an oval cross-section with two parallel incisions at each end. The catchplate is pierced by a hole and the return of the catchplate is decorated with three sets of double hatching. The hinged pin is mostly lost. Length 45.6mm.

Compare the closely related example from Nettleton, Wiltshire (Wedlake 1982, 123, fig. 5, no. 3 from Grave 2, cemetery A, see p.91); a similar piece from Camerton, Somerset, from a slag pit dated A.D. 65–85 (Wedlake 1982, 219, fig. 50, no. 10); and a further piece from Tiddington, Warwickshire.

The decoration on the return of the catchplate can be compared with two pieces from the Gloucester region (Cracknell 1990, 201 and 203, fig. 2, no. 9, from Kingscote, Gloucestershire; and fig. 2, no. 13, from Swintbridge, Gloucestershire, Type Riii with date range *c.* A.D. 75–150/175).

14. [1.1a.19] 1451/SG4 (1401) T-shaped fibula with integral head loop which was not pierced through after casting. The upper part of the bow is decorated with two series of double raised mouldings with a single set just below the head. The wings are oval in cross-section with two incised lines on the upper surface at each end. The catchplate is pierced by a small circular hole. Only the tip of the hinged pin is lost. Length 49.3mm.

Compare the related example, without the head loop, dated *c.* A.D. 80–150 and said to have been found near Wilton, Wiltshire (Hattat 1989, 77, fig. 37, no. 1519).

15. [1.1a.20] 1485/SG104 (1425) Plate-headed T-shaped brooch with damaged semi-circular head plate; the pin is bent; otherwise complete. Length 62.7mm.

Compare the unprovenanced examples reported by Hattatt (1985, 94 and 96, fig. 40, nos 406, 407); the piece from Nettleton, Wiltshire, with a decorated head, said to be from the 1st century enclosure ditch (Wedlake 1982, 127, fig. 53, no. 49); Catsgore, Somerset, where a 2nd century date is suggested (Leech 1982, 105, fig. 77, no. 15); and a piece from the filling of no. 4 Bastion at Caerwent, Gwent, with a late 2nd century date (Nash-Williams 1930a, 279–80, fig. 12, length 80mm).

16. [1.1a.22] 1486/SG4 (1434) Incomplete brooch with integral head loop, now a little damaged. The end of each wing is decorated with three incised lines. Part-way along the upper part of the bow is a setting for a headstud, now filled with the remains of a cream-coloured enamel, with hatching to either side. The lower part of the bow has a hollow angular cross-section, and is decorated with two raised ribs with lightly hatched ornament. The hinged pin, foot and catchplate are all lost. Length *c.* 39mm.

The wings and shape of the integral head loop are all closely related to the T-shaped brooch (no. 14), and the piece may be of similar date and origin, though the presence of the stud is unusual. Compare also the T-shaped brooches with two studs from Nor'nour, Scilly (Dudley 1967, 38, fig. 16, no. 85, and no. 86 without a head loop).

17. [1.1a.25] 2001/unstratified (2007) T-shaped brooch, consisting of the undecorated wings and the upper half of the bow only. The head is decorated with a raised tapering rib with incised zigzag ornament. The centre section has a raised transverse moulding with vertical hatching, and a small collar to either side. Some incised decoration is visible below this centre section. The hinged pin is worn and near complete. Present length 27mm.

Compare the less ornate related piece said to be from East Anglia (Hattatt 1987, 104, fig. 37, no. 907); and another from Nor'nour with ornament related to that on the central section of our Caerleon piece (Dudley 1967, 40, fig. 17, no. 94).

18. [1.1a.28] 2389/SG72 (2298) T-shaped brooch with rectangular panel divided into triangular and diamond-shaped fields for enamel inlay. The head loop is broken; the foot and catchplate are lost, as is much of the hinged pin. Length 41mm.

Compare the piece from Nor'nour, Scilly where a 2nd century date is suggested (Dudley 1967, 34, fig. 12, no. 26); Woodcock Hall, Saham Toney, Norfolk (Brown 1986, 27, fig. 20, no. 137); and the related example from Shakenoak, Oxfordshire, where a late 1st or early 2nd century date was suggested by Mackreth (Brodribb *et al.* 1968, 94–5, fig. 27, no. 5).

19. [1.1a.32] 2389/SG72 (2365) Small T-shaped brooch with eroded surface and a decorative lozenge-shaped panel on the bow. The lower part of the bow, foot and catchplate are lost, as is the hinged pin. One wing is also damaged. Length 30mm.

Compare the unstratified example from Nettleton, Wiltshire (Wedlake 1982, 128, fig. 53, no. 58), with another from Nor'nour, Scilly (Dudley 1967, 32, fig. 11, no. 7); and the related piece from the Fortress Baths at Caerleon, from a Hadrianic to Antonine context (Zienkiewicz 1986b, 170, fig. 54, no. 6, length 56mm).

20. [1.1a.5] 102/unstratified (106) Equal-ended or bridge brooch, virtually complete apart from the pin. The centre panel was inlaid with enamel, originally in two different colours, in the six circular cells; a little damaged. Length 34.8mm. See no. 21 for parallels.

21. [1.1a.29] 2389/SG72 (2337) Equal-ended or bridge brooch, a little distorted, and the end with the catchplate is now lost, as is the spring and pin. The central rectangular panel has six small circular cells for enamel inlay. Length 27.8mm. (Not illustrated.)

See the better preserved piece no. 20 above; and the examples from the Caerleon Amphitheatre, said to have been found with pottery of *c.* A.D. 110–140 in entrance G (Wheeler and Wheeler 1928, 164 and 166, fig. 14, no. 19); and from the Fortress Baths at Caerleon from a general context dated

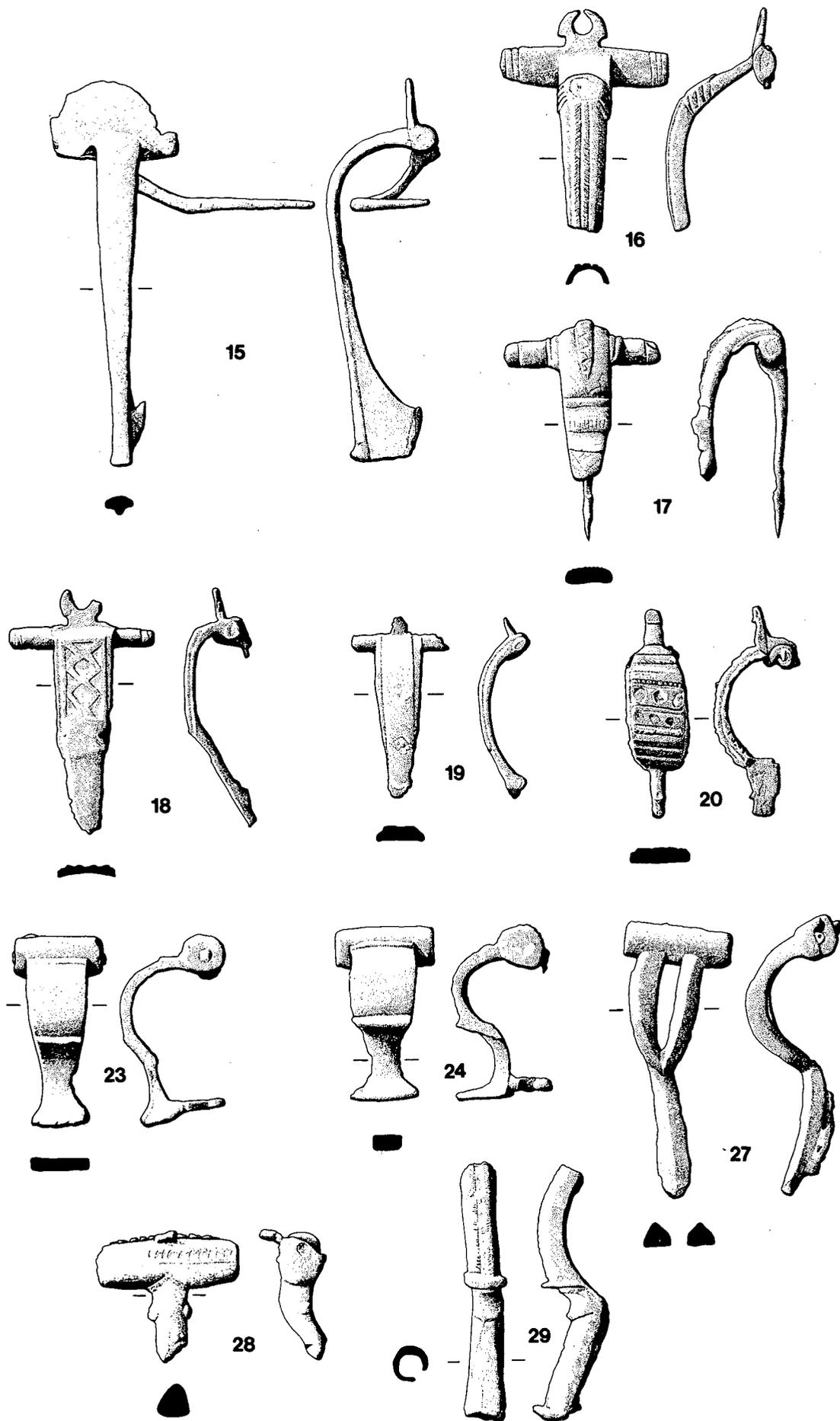


FIG. 78. Jewellery nos 15-29: bow brooches. Scale 1:1.

A.D. 75 to late 3rd century (Zienkiewicz 1986b, 170, fig. 54, no. 7, length 25mm). Other finds include one from *Verulamium* found in a context dated A.D. 270–310 (Frere 1984, 29, fig. 8, no. 46); Shakenoak, Oxfordshire (Brodribb *et al.* 1968, 82, fig. 27, no. 8) and Gadebridge Park, Hertfordshire (Neal 1974, 127, fig. 55, no. 23).

22. [1.1a.3] 202/unstratified (086) Knee brooch in two pieces:
 i) Part of the head with angular cross-section and remains of the decorative flange, now damaged. The spring still survives *in situ*, the pin is lost. Height 10mm.
 ii) The lower part of the brooch with a fragment of catchplate surviving. Length 15mm. (Not illustrated.)
 See the piece from inside the fort at *Segontium*/Caernarvon, Gwynedd (Wheeler 1923, 137, fig. 58, no. 1); and the examples from the Fortress Baths at Caerleon from Drain Group 4 = *c.* A.D. 160–230 (Zienkiewicz 1986b, 172, nos 16, 17, 18 and fig. 55).
23. [1.1a.6] 302/unstratified (119) Knee brooch, Collingwood Group V, with traces of tinning. The pin is lost and the iron hinge is corroded in the cylindrical head. The fibula has an S-shaped scroll-like outline in side view, with some slight hatched decoration on a slight moulding at the head. The catch is chipped and incomplete. Length 28.2mm.
 Compare the piece from Woodeaton, Oxfordshire (Kirk 1949, 11, no. 21, fig. 2, no. 10, length 32mm). Bidwell gives a 3rd century date for the item from *Vindolanda* near Hadrian's Wall (1985, 119 fig. 39 no. 6), whilst Mackreth suggests late 2nd into the 3rd century as a date for the fibula from Chilgrove Roman Villa, near Chichester, West Sussex (Down 1979, 145, fig. 43, no. 5). Another, almost identical piece (length 30.5mm) came from context 973; see no. 24 below.
24. [1.1a.15] 973/SG129 (1000) Knee brooch, virtually complete but with the pin now lost. Length 29.4mm. For parallels see the identical item no. 23.
25. [1.1a.37] 3065/SG151 (3110) Upper part of a knee brooch with angled upper section; the head originally may have had a flat semicircular flange, which is now broken. The spring, pin and other fittings for attachment are broken. Length 17.7mm. (Not illustrated.)
 See the related find no. 22 for parallels.

Another fragment, probably from a knee brooch, was noted.

26. [1.1a.1] 011/unstratified (007) Head of a bow brooch, originally a P-shaped type. The spring of *c.* twelve turns is still *in situ*; the pin is broken but the ends of the axis are held in place by the oval plates covering the ends of the spring casing. The surface is still heavily tinned or silvered. Length 14mm; width 19mm. (Not illustrated.)
 Collingwood and Richmond originally suggested a 3rd and 4th century date for the type (1969, 298–9, Group T, fig. 105), whereas Hattatt notes a late 2nd to early 3rd century date for brooches with heads similar to ours (1987, 276, fig. 86c).
27. [1.1a.7] 154/unstratified (137) P-shaped brooch with divided bow. The pin is lost, and there is some damage to the catch; the surface is a little worn and chipped. The lower section is bent slightly out of true. Length 46.7mm.
 Compare the example from *Vindolanda* near Hadrian's Wall, said to have come from a context dated *c.* A.D. 235 (Bidwell 1985, 119, fig. 39, no. 5), and the piece reportedly found at Worthy Down near Winchester, Hampshire (Hattatt 1985, 128, fig. 54, no. 496).
28. [1.1a.29] 003/unstratified (443) Upper section of a P-shaped bow brooch, with traces of gilding and silvering. The spring of *c.* ten turns is *in situ*, the chord and pin are lost. A line of hatching runs across the upper part of the head. The bow rises steeply from the head and has the remains of a small knob to either side. Length *c.* 21.4mm.
 Compare the piece from Prys Field, Caerleon, with a suggested date of 'no later than 200' (Nash-Williams 1932a, 80, fig. 32, no. 10); and a complete piece from Hollytree's Meadow, Colchester, Essex (Hull 1958, 117, fig. 47, no. 2, length *c.* 54mm).
29. [1.1a.12] 002/unstratified (789) Foot and part of the curved bow of a cross-bow fibula with traces of tinning. The bow has an angular cross-section with a central channel on the upper face, and hatched decoration on the lip to either side. A little chipped and worn in some places. Length 40.2mm.
 Compare the complete piece from Richborough, Kent, with a suggested late 3rd or early 4th century date (Bushe-Fox 1926 pl. XII no. 9); and related examples from *Lauriacum*, Austria (Jobst 1975, 87–9, Taf. 28, no. 209; no. 210 from the civilian settlement was reported to have been found with coins dated to the first quarter of the 3rd century, and has a central channel up the bow like the Caerleon piece; no. 212 was found in a grave at Ziegelfeld).

30. [1.1a.21] 317/SG189 (1426) Head only of an early form of a crossbow brooch, with onion-shaped knobs at either end of the wings and one in the centre; all cast in one piece. Length 14.6mm; present width 45.2mm. (Not illustrated.)

An example from Richborough, Kent, was dated to the late 3rd or early 4th century (Bushe-Fox 1926, 44, pl. XII, no. 9). The same dating was suggested for the fibula from Coventina's Well on Hadrian's Wall (Allason-Jones and McKay 1985, 25, no. 49, and fig. on p.24). A complete example from a context dated A.D. 280–360 was excavated at *Verulamium* (Frere 1984, 29, 31, fig. 9, no. 54).

31. [1.1a.31] 2389/SG72 (2359A) Foot of a fibula, complete with catchplate. The lower part of the bow is decorated with an incised line at each edge of the upper face. The foot is a heavy truncated cone-shape. Length 21mm. (Not illustrated.)

Five further fragments of bow brooches were noted.

Plate brooches (FIG. 79)

Total number recorded = 7

32. [1.1b.1] 001/unstratified (176) Circular plate brooch with circular repoussé plaque soldered on, decorated with a flowing clockwise triskeles pattern, and single ring ornaments in the field between each leg. The edge is marked by a beaded border. Rather damaged in places with some loss of the plaque, especially towards the edge. Most of the hinged pin is lost, and part of the catchplate is damaged. Diameter 28.0–29.8mm.

Compare the slightly larger but damaged example from the Fortress Baths at Caerleon, from a context dated to the late 3rd century, with another, more complete piece, also illustrated, from elsewhere in Caerleon (Zienkiewicz 1986b, 170, fig. 54, no. 9). Leeds discussed these brooches and

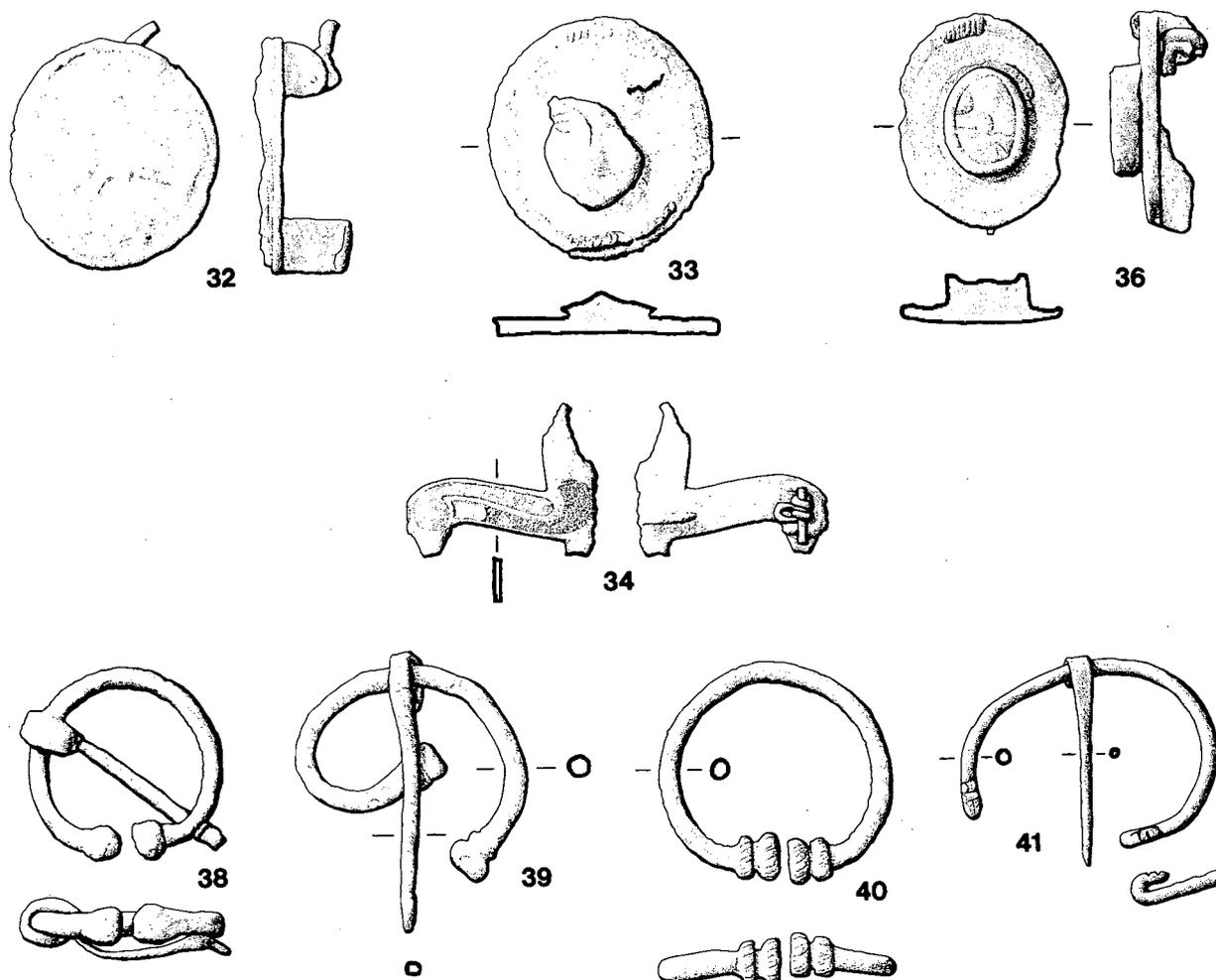


FIG. 79. Jewellery nos 32–41: other brooches. Scale 1:1 (see Fig. 85 for enamelling details on nos 34 and 36).

noted three pieces from Silchester, Hampshire, and others from Brough, Cumbria, and Corbridge, Northumberland (Leeds 1933, 139–40 fig. 36a); another piece from Richborough, Kent, was noted by Bushe-Fox who suggested a 2nd century date for the type (Bushe-Fox 1949, 139–40, pl. XLV, no. 170, from topsoil). Megaw and Merrifield suggested that a mid 1st century A.D. date was likely (Megaw and Merrifield 1969, 154–9, pl. XVIIc and fig. 1g, with dating and discussion on pp.157–8). This date was also put forward by Allason-Jones and Milet in discussing a brooch with a gilded silver plaque from South Shields, Tyne and Wear (Allason-Jones and Milet 1984, 118, no. 3, and 148 fig. opp., diameter 30mm). Another, unpublished, example came from Cantley/Rossington Bridge, Yorkshire.

33. [1.1b.4] 2076/SG81 (2086) Circular plate brooch with damaged repoussé plaque soldered on. In the centre is a frontal human face framed by a symmetrical arrangement of hair in a series of waves. A beaded border with a plain raised circle inside completes the design. The catch is damaged, and virtually all the pin is lost. Diameter 29.5mm.

Compare the examples from Nor'nour, Scilly (Dudley 1968, 52, fig. 21, no. 184); and Campsfield, Kidlington (Oxfordshire) with a suggested 2nd century date (Hunter and Kirk 1952/53, 53, 57–8, fig. 25, no. 1, diameter 29mm, now in the Ashmolean Museum, Oxford). The type was noted briefly by Hattatt (1982, 147, 145 fig. 62 no. 137).

34. [1.1b.3] 812/SG112 (1041) Zoomorphic plate brooch in the form of a horse seen in right profile and inlaid along the body with blue and red enamel (see FIG. 85) in elongated comma-shaped cells. The head, tail and legs are lost, as are the catch, lugs to hold the pin, and axis bar. A small fragment of the spring survives. Present length 25mm; present height 20.3mm.

Compare the smaller example from Hungerford, Berkshire (Hattatt 1987, 236, fig. 75, no. 1180). Other horse brooches, with varying arrangements of enamel inlay and pose, include the piece from York (RCHM 1, 1962, pl. 34, 91); another from Richborough, Kent (Butcher 1981, 20–2, fig. 1, no. 2); Water Newton, Cambridgeshire, dated to the 2nd century A.D. (Butcher 1977, 54, 56, fig. 7.12); an unprovenanced piece now in the British Museum, (Brailsford 1951, 22, fig. 11, inv. no. 1872.5-20.8); and an unpublished piece from Tiddington, Warwickshire. The best-known versions are the horse and rider brooches, with one example from Nor'nour, Scilly (Dudley 1968, 48, fig. 18, no. 132); six from Hockwold-cum-Wilton, Norfolk (Butcher 1977, 54, 56, fig. 7, no. 11); another damaged item from Nettleton, Wiltshire (Wedlake 1982, 132, fig. 54, no. 73); and two damaged pieces from Woodcock Hall, Norfolk (Brown 1986, 39, fig. 25, nos 177, 178) and five from Lamyatt Beacon, Somerset (Leech 1986, 316–19, fig. 34, nos 6–10).

35. [1.1b.5] 2086/SG94 (2212) Flat diamond-shaped plate brooch with two concentric rings at the centre to hold the enamel inlay. Broken and generally poorly preserved, though the catch, pin and fitting on the underside survive. *c.* 24.2 × 36.5mm. (Not illustrated.)

See the examples from Lowbury Hill, Berkshire (Atkinson 1916, 35, pl. IX, no. 33); Camerton, Somerset (Wedlake 1958, 232, fig. 54, no. 54 with a suggested date of pre A.D. 180); Nettleton, Wiltshire 'found in association with 1st and 2nd century pottery' (Wedlake 1982, 132, fig. 54, no. 72); and Balkerne Lane, Colchester 1973–6 (Crummy 1983, 18, fig. 14, no. 89, with a suggested 2nd century date). An unpublished, damaged and incomplete example was excavated at Tiddington, Warwickshire.

36. [1.1b.6] 2002/unstratified (2447) Oval plate brooch with an outer field of blue enamel (see FIG. 85) round a raised oval setting for enamel or, more probably, a paste 'gem' stone. The edge of the brooch and the inner border round the centre are decorated with an applied strip with hemispherical cross-section and hatched decoration, which survives only in small fragments. Part of the spring is still *in situ*; the pin is now lost. External measurements 22.6 × 27.4mm; centre setting 11.5 × 14.1mm; depth 6.7mm.

Compare the almost identical item from Derby Racecourse 1968 with blue enamel and 'at the centre probably ... a glass embellishment' (Brassington 1980, 18, fig. 8d); Doncaster (Buckland and Magilton 1986, 89, fig. 20, no. 19); and a further piece with blue enamel in the outer field noted by Hattatt (1987, 252, fig. 79, no. 1207).

Parts of two other plate brooches were noted.

Penannular brooches (FIG. 79)

Total number recorded = 6

37. [1.1c.1] 001/unstratified (148) Incomplete; only one terminal surviving with simple angular knob bearing heavy hatched decoration. Half the hoop survives and the tip of the pin is lost. Diameter *c.* 16.4mm; cross-section hoop 1.6mm; length pin 15mm. (Not illustrated.)

The brooch is Fowler's type A2, with a suggested date range of 1st to 4th century A.D. inclusive (1960, 152, fig. 1, 14; 174 where an example from Caerleon is noted). Examples have been recorded from Chester (Newstead 1928b, 158, graphically described as having 'written knobs'); Heronbridge, near Chester (Petch 1933, 43, pl. XV, no. 2); Corbridge, Northumberland (Bishop and Dore 1988, 163, fig. 77, no. 14; they note that four other examples are known from the site); the Walbrook, London (Brailsford 1951, 22, fig. 12, no. 50, British Museum inv. no. 1934.12-10.6); Old Winteringham and Winterton, South Humberside (Stead 1976, 198, fig. 100, no. 20, from a 3rd or 4th century context; and 201, fig. 102, no. 33, from a 3rd or 4th century context respectively); and the Roman fort at Brecon, Powys (Wheeler 1926, 115, fig. 58, no. 7).

38. [1.1c.3] 2185/modern intrusion (2214) Penannular brooch of Fowler Type A2, as item no. 37 above. The pin is intact but the tip is lost; there is also some general surface damage. The knobs are sub-spherical in shape. Diameter hoop 25.2×26.3 mm; cross-section of hoop 2.6mm; length pin 31mm. For dating and parallels see no. 37.
39. [1.1c.4] 2389/SG72 (2349) Penannular brooch of Fowler type A3; the hoop is a little distorted otherwise the piece is complete. The terminals are plain and sub-spherical in shape, with a neat collar behind them. The pin is intact. Present size of hoop 30.4×29 mm; cross-section hoop 3mm; length pin 37.1mm.

Fowler notes that Type A (i) penannulars have a life span from the 1st century A.D. and into the Early Medieval period (1960, 152, 174 where an example from Caerleon is noted). One brooch from Maiden Castle, Dorset, was said to have come from a context dated c. 150–100 B.C. (Wheeler 1943, 264, fig. 86, no. 2). Another from Prestatyn, Clwyd, came from a period II context dated from the A.D. 70s to c. A.D. 160 (Blockley 1989b, 98, fig. 40, no. 25, for dating see pp.54–5).

40. [1.1c.5] 3500/unstratified (3502) Brooch of Fowler Type A4 with double disc-shaped terminals, decorated with light hatching. The pin is lost and there is some slight surface damage. Diameter 31×29.3 mm; diameter hoop 2.8mm.

Fowler Type A4 has a date range from the 1st to the 3rd century A.D. inclusive (Fowler 1960, 152, fig. 1, 175). One example from the Jewry Wall, Leicester came from a context dated A.D. 90–100 (Kenyon 1948, 252, fig. 82, no. 10, see p.42 for chronological summary). Another was noted from excavations at Wroxeter, Shropshire (Bushe-Fox 1916, 32, pl. XXI, fig. 1, no. 4); and an incomplete item from Hopyard Meadow, Cowbridge, South Glamorgan (Lloyd-Morgan and Webster 1996, 191, no. 58). Unpublished examples include one from Crook Street, Chester 1973–4.

41. [1.1c.2] 001/unstratified (1470) Complete penannular brooch, slightly bent out of shape. The terminals are bent back upon themselves and the upper faces decorated with two transverse incisions. The pin is complete. Diameter c. 24mm; cross-section hoop c. 2.1mm; length pin c. 27mm.

The brooch belongs to Fowler's Type D1 with a suggested date range of 1st to 3rd century inclusive (1960, 152, 176, fig. 1, two items from Caerleon are noted). Compare the example from *Verulamium* (Wheeler and Wheeler 1936, 210, fig. 45, no. 39, said to come from a context dated A.D. 80–150); and another from Lydney Park, Gloucestershire (Wheeler and Wheeler 1932, 78–9, fig. 14, no. 31).

Another fragment, possibly from a penannular brooch, was noted.

The copper alloy bracelets (FIG. 80)

Total number recorded = 22

Some 22 fragmentary bracelets were found in varying states of preservation, ranging from simple pieces made of two or three wires twisted together, as for instance no. 43 and the D-shaped strips which were both plain in several instances, and decorated with a modest incised pattern in others. A more elaborate but incomplete example, no. 48, had a central panel with traces of an applied plaque. Two bracelets, nos 58 and 59, each have a surviving terminal in the form of a stylised snake's head, a motif which can be found on bracelets in precious and base metals from the 1st century A.D. onwards. Six pieces have hatched decoration giving a segmented appearance, perhaps intended to imitate the twisted wire examples. Two more solid but incomplete items, nos 46 and 57, are typical of the 3rd century and later, with their moulded and incised ornament.

42. [1.2.10] 1450/SG8 (400) Twisted wire bracelet with two copper alloy and one iron wire strand in two adjoining pieces. Length c. 82mm. (Not illustrated.)

See the similar bracelet from Castle Street, Carlisle, Cumbria (Padley 1991, 108–9, fig. 71, no. 32 from a context dated to c. A.D. 105); see also no. 43 below for dating and parallels.

43. [1.2.15] 2471/SG168 (2592) Bracelet made of three wires twisted together; the surface is rather eroded. Length c. 90mm; height 4.5mm; thickness 3.0–3.7mm.

The bracelet belongs to Clarke's Type A2a from the Lankhills cemetery at Winchester, Hampshire (Clarke 1979, 303, fig. 84, no. 73) Grave 100 (A.D. 330–370), and others in Graves 122, 139, 155, 183, 188, 256 and 323, with a similar date range; from Butt Road, Colchester 1976–9 from a grave deposit dated c. A.D. 320 to c. 450 (Crummy 1983, 38, fig. 41, no. 1628); from Shakenoak Farm, Oxfordshire, from a late 4th century context (Brodribb *et al.* 1968, 88, fig. 30, nos 25, 26). Compare also the piece from the Arthur John Car Park, Cowbridge, South Glamorgan (Lloyd-Morgan and Webster 1996, 187, no. 33).

44. [1.2.17] 3001/unstratified (3009) Wire bracelet with square cross-section. One end twisted to give a spiral effect; the other end is roughly D-shaped in section. Length c. 80mm; cross-sections 4.1 × 3.1mm, 3.7 × 2.4mm.

Compare the example from *Vindolanda* near Hadrian's Wall, from a context dated c. A.D. 370 (Bidwell 1985, 122, fig. 42, no. 45); another from topsoil at South Shields, Tyne and Wear (Miket 1983, 109, fig. 68, no. 3); and two from Portchester, Hampshire (Cunliffe 1975, 203, fig. 111, no. 25; and 205, no. 27).

Two further fragments from twisted wire bracelets were noted.

45. [1.2.4] 001/unstratified (511) Curved fragment of strip or bracelet, with narrow D-shaped cross-section; undecorated. Length c. 24mm; diameter c. 70mm; depth 5.2mm; width 2.7mm. (Not illustrated.)

See the example from Lydney, Gloucestershire (Wheeler and Wheeler 1932, 82–3, fig. 17, no. 56); Gadebridge Park Villa, Hertfordshire (Neal 1974, 139, fig. 60, no. 157); and from Shakenoak Farm, Oxfordshire, from a context dated later 3rd century (Brodribb *et al.* 1971, 110, fig. 48, no. 74).

Fragments were noted from two further, apparently plain, bracelets with a D-shaped section.

46. [1.2.12] 2184/modern intrusion (2217) Incomplete bracelet with narrow D-shaped cross-section and one surviving terminal. This is marked by light incisions to suggest a small collar just inside the edge of the terminal, with two other collars a little further in. The main body of the hoop is decorated by two parallel lines incised longitudinally along the centre of the outer face, with lines of hatching to either side. Present length 52mm; height 6.8mm; depth 2.6mm.

Compare the related example from Shakenoak Farm, Oxfordshire, from a later 3rd century deposit (Brodribb *et al.* 1971, 112, fig. 48, no. 75); and an unpublished piece from Thistleton, Black Wong, Rutland (now Leicestershire), complete, but with no incised ornament beyond the terminals.

47. [1.2.7] 904/SG139 (826) Fragment of bracelet with oval or D-shaped cross-section, the outer face decorated with two parallel incised lines; corroded and encrusted. Length 31mm; diameter c. 45mm; maximum height 6mm; maximum width 3.5mm.

Compare the related example from Whitton, South Glamorgan (Jarrett and Wrathmell 1981, 185, fig. 74, no. 74).

48. [1.2.5] 814/SG125 (547) Fragment of bracelet with D-shaped cross-section, the band tapering towards one end and the outer face heavily hatched. A ?central panel has traces of an applied pentagonal plaque. Present length c. 84mm; maximum height 11.8mm; thickness 2.6mm.

Compare the hinged bracelets with applied rectangular plaques attached by rivets, from Plunton Castle, Kirkcudbright 1826, now in the National Museum of Antiquities, Edinburgh; and from Thirst House, Derbyshire 1890 now in Buxton Museum (MacGregor 1976, vol. 2, nos 211 and 212 respectively). Compare also the four applied plaques in the shape of aediculas, 13mm wide and 15mm high, on the small copper alloy cosmetic box from cemetery WW, Nijmegen, a little larger than the lost plaque originally on this piece (Zadoks-Josephus Jitta *et al.* 1973, 81, no. 136 and pls).

49. [1.2.13] 2086/SG94 (2240) Fragment of bracelet with circular cross-section, the hoop ornamented with rings to suggest a series of segments. One terminal survives in the form of a strip rolled into a loop, suggesting that the other terminal would have ended in a hook fitting. Present length 69mm; diameter c. 50mm; depth 4.2mm; width 3.4mm.

Compare the unstratified piece from Whitton, South Glamorgan (Jarrett and Wrathmell 1981, 185, fig. 74, no. 78).

50. [1.2.18] 3044/SG164 (3044) Damaged fragment of bracelet with circular cross-section, the outer casing engraved or cast with rings to produce a segmented effect, now curled into an irregular loop. Length 55mm; cross-section c. 5.1 × 4.7mm. (Not illustrated.)

See the example from Coygan Camp, Carmarthenshire (now Dyfed: Wainwright 1967, 91, fig. 23, no. 1); and the unpublished fragment with smaller cross-section from Nicholas Street Mews, Chester 1988; also the larger fragment no. 59 below.

51. [1.2.9] 1267/SG108 (1212) Fragment of bracelet with oval cross-section; encrusted, and with no certain traces of decoration. Length *c.* 48.5mm; maximum cross-section 6.3 × 3.0mm. (Not illustrated.)

See the complete, undecorated pieces from Colchester (Crummy 1983, 38, fig. 42, no. 1644, Butt Road 1976–9, from a context dated 2nd century to *c.* 320 A.D.; nos 1643 and 1650, from a context *c.* A.D. 320 to *c.* 450; no. 1651, Inner Relief Road site B 1972, in a grave deposit of a 3rd to 4th century inhumation). Compare also the lighter example from Cuppin Street, Chester 1986.

52. [1.2.16] 2471/SG168 (2639) Major fragment of a bracelet, including one terminal, with a solid, oval cross-section, and a ?moulded pattern suggesting a twisted wire bracelet. Present length 100mm; height 4.7mm; width 3.5mm.

Compare the piece from Grave 117 in the Lankhills cemetery, Winchester (Clarke 1979, 304, bracelet type C2a, fig. 75, no. 142, dated A.D. 350–370); the unprovenanced piece from Richborough, Kent (Cunliffe 1968, 98, pl. XLI, no. 155); and another from Lydney, Gloucester (Wheeler and Wheeler 1932, 82–3, fig. 17N).

53. [1.2.1] 154/unstratified (096) Fragment of bracelet with oval cross-section, the outer face hatched to give a segmented appearance, but a little worn in places. Length *c.* 100mm; height 3.8mm; width 2.6mm. (Not illustrated.)

Compare the related fragments with smaller cross-section from the Bear Field, Cowbridge (Lloyd-Morgan and Webster 1996, 183, nos 13 and 14); and the piece from Richborough, Kent (Cunliffe 1968, 98, pl. XLI, no. 155).

54. [1.2.6] 814/SG125 (548) Fragment of bracelet with oval cross-section, the outer face engraved to give a segmented appearance; rather worn, and part of the surface is lost. Length 63mm; diameter *c.* 50mm; height *c.* 5.7mm; width 4.8mm. Compare no. 53 above. (Not illustrated.)

55. [1.2.19] 3008/SG152 (3156) Fragment of bracelet with sub-rectangular cross-section, decorated with light diagonal hatching on the outer face. Length 55mm; width 2.6mm; thickness 1.4mm.

A similar piece from Butt Road, Colchester 1976–9 came from a context dated *c.* 320 to *c.* 450 A.D. (Crummy 1983, 41, fig. 44, no. 1693); another piece was reported from the east entrance of the amphitheatre at Chester (Thompson 1976, 192, fig. 27, no. 38), with a third from the Roman villa at Boxmoor, Hertfordshire (Neal 1974–6, 78, fig. XLV, no. 19). Two further items were noted from Milton Keynes, one from the Bancroft Villa, Buckinghamshire, destruction level of Building 1; the other unstratified piece from Woughton, Buckinghamshire (Zeepvat *et al.* 1987, 133, fig. 42, no. 25, and 135, fig. 42, no. 27, respectively).

56. [1.2.22] 3073/SG151 (3244) Fragment of bracelet with sub-rectangular cross-section, the outer face decorated with light diagonal hatching. Some surface damage. Length *c.* 50mm; height *c.* 2.7mm; width 1.5mm. (Not illustrated.)

The piece may be part of the same bracelet as no. 55 above, for which see also for parallels.

57. [1.2.8] 1026/SG146 (880) Terminal and part of hoop of a penannular bracelet, with a saltire of two crossed parallel lines at the terminal bracketed by two engraved vertical lines at the end, and a series of vertical lines on the surviving section of the hoop. Length 29mm; depth 5.4mm; thickness 1.9mm.

Compare the similar complete pieces from Brockworth, Gloucestershire (Rawes 1981, 66, fig. 8, no. 8); from Whitton, South Glamorgan, unstratified (Jarrett and Wrathmell 1981, 185, fig. 74, no. 75); Balkerne Lane in Colchester, Essex, also unstratified (Crummy 1983, 40, fig. 44, no. 1684); and from a 3rd century level at Gorhambury, Hertfordshire (Neal *et al.* 1990, 122, fig. 122, no. 77). Note also an unpublished piece from Piddington villa, Northamptonshire 1981; and from the temple site at Thistleton, Black Wong, Rutland, now in Leicestershire.

58. [1.2.14] 2002/unstratified (2434) Fragment of bracelet with lentoid cross-section and terminal in the form of a stylised snake's head. Some damage to the edge in places. Length *c.* 91mm; height 9.7mm; maximum thickness 2.1mm.

Compare the stylised snake bracelets from Site B of the Colchester Inner Relief Road 1972 (Crummy 1983, 44, fig. 45, nos 1711, 1712, from a grave deposit in an inhumation dated 3rd to 4th century).

59. [1.2.20] 3048/SG155 (3160) The flattened terminal is in the form of a stylised snake's head. The hoop of the bracelet has a central core, and the outer cladding was produced either by winding a wire coil about it, or made from a tube with circular cross-section and marked with rings to give a segmented appearance. Length *c.* 88mm; cross-section *c.* 4.6 × 5.1mm. Compare also no. 50 above.

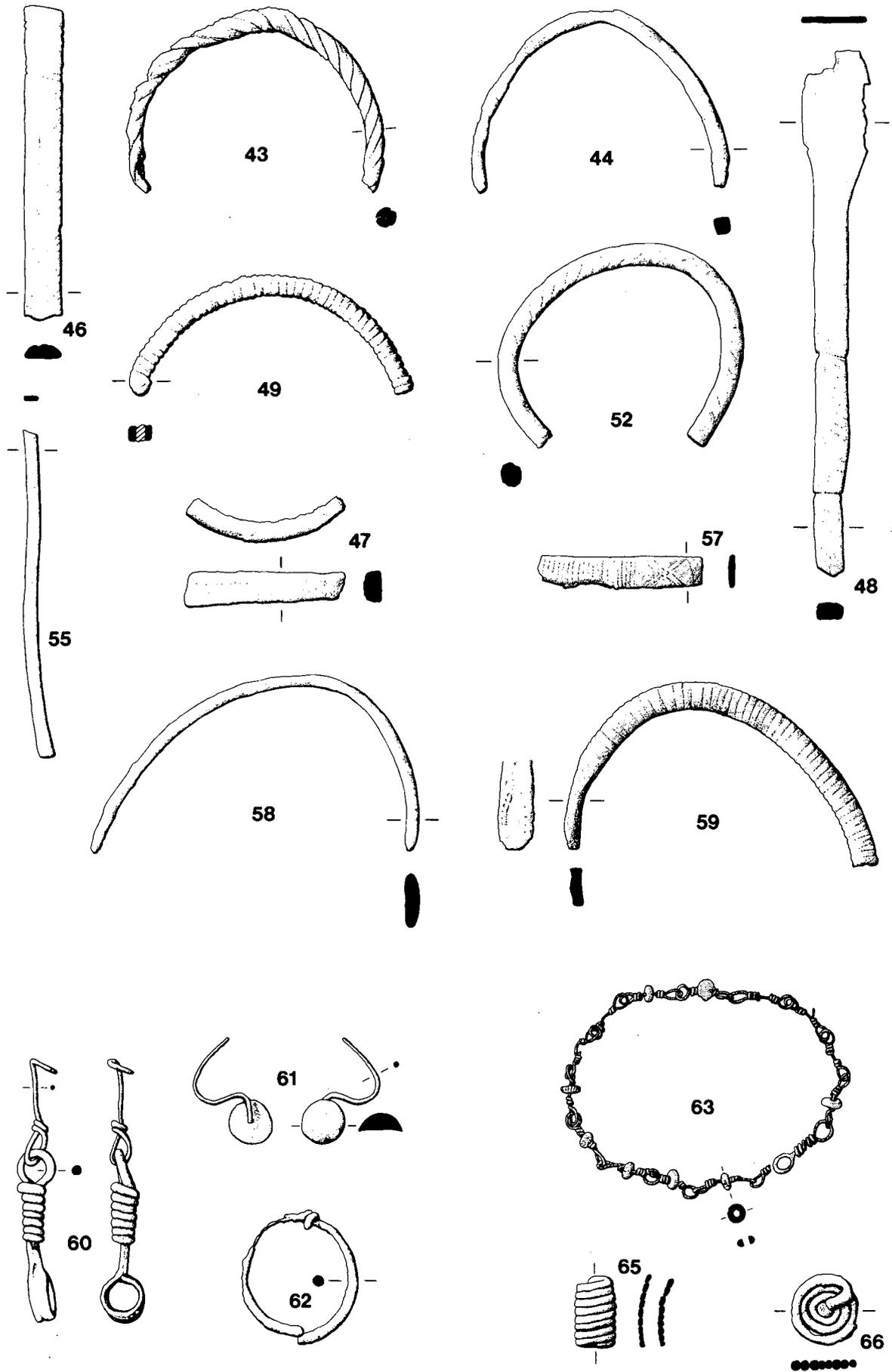


FIG. 80. Jewellery nos 43–66: bracelets, earrings and miscellaneous. Scale 1:1.

Earrings in gold and copper alloy (FIG. 80)

Total number recorded = 3

60. [1.4a.1] 600/SG183 (273) Pendant section from a complex gold earring, consisting of an ornamental loop with the end drawn out into a long tapering wire which has been folded back on itself to make a second loop, the loose end then being twisted round the shaft seven times. From the second, lower, loop is a length of fine gold wire to take a decorative bead, of pearl, a semi-precious gemstone or paste. Length of upper link 14.8mm; length of lower section *c.* 9.3mm.

Compare the pendant wires with beads on the earrings from Amathus, Cyprus (Marshall 1911, 293, pl. LIII, nos 2524 and 2526, dated by coins of Antoninus Pius and Marcus Aurelius); and a pair with three links suspended from a horizontal bar, the beads now lost, 'found in a tomb at Tortosa in Syria' dated by associated coins to the 2nd to 3rd century (Marshall 1911, 306, nos 2659, 2660, pl. LV; Pfeiler 1970, Taf. 2, no. 1); and the 3rd century piece from the Castellani collection 1872 (Marshall 1911, 306, pl. LV, no. 2655). All are of Allason-Jones Type 17 (1989, 48, no. 19, pl. 16).

61. [1.4a.2] 820/SG113 (964) Gold earring consisting of a hollow hemispherical stud, undecorated, and with a small hook emerging from the centre of the reverse. Diameter stud *c.* 7.2mm; depth *c.* 3mm.

Allason-Jones Type 13 (1989, 48, no. 17); compare the equally simple gold stud from a tomb at Karpathos dated 2nd to 3rd century (Marshall 1911, 303, pl. LV, no. 2634).

62. [1.4b.1] 957/SG35 (1179) Simple copper alloy earring with the ends tapered and wound round each other, though only one section survives. The hoop is broken at the lowest point. Diameter 22mm.

The earring belongs to Allason-Jones Type 3 (1989) and can be paralleled by an earlier unstratified find from Caerleon (Nash-Williams 1929, 255, fig. 16, no. 5), with others from Chichester, West Sussex (Down 1974, 141, fig. 8.16, no. 32 from the Central Car Park, David Greig site); and *Verulamium* from a context dated A.D. 155/160 (Frere 1972, 124, fig. 36, no. 86). A silver, unpublished, example was found during excavations at Tiddington, Warwickshire 1938.

Miscellaneous jewellery in gold, silver and copper alloy (FIG. 80)

Total number recorded = 5

63. [1.5.4] 1474=1527/SG25 and 001/unstratified (1290) Gold necklace in three sections and incomplete, consisting of wire links with a loop at both ends and the wire twisted back upon itself three times at each end. In the centre of each link there would originally have been a disc-shaped green glass bead in imitation of emeralds; only nine beads still survive. One section retains the loop end link for fastening the necklace, with two-and-a-half gold links, and one bead still attached. The fastening loop has a hole pierced in a flat disc, the wire is then looped back on itself and wound round the shaft five times to make a strong connection with the rest of the chain. Another length consists of four complete and two half links retaining two beads; the third section consists of five complete and two half-links with five beads *in situ*. There is one unattached bead. Length of terminal section 36mm; second section 48.5mm; third section 57.5mm. Size of beads in range 1.1–1.5mm (height), 2.9–3.7mm (diameter).

Guido notes that the earliest examples of these green glass beads are 1st century B.C. in date, but they reached their maximum popularity in Britain after the 3rd century (1978, 95, fig. 37, no. 5, with schedule of finds listed pp.211–12). A short length of a gold wire necklace of similar construction to the Caerleon piece, but with no beads surviving, is reported from *Verulamium* from a context dated A.D. 385–400 (Frere 1984, 19, fig. 4, no. 2). Johns reports two gold necklaces from Canterbury: the first, dated 3rd to 4th century, has no beads surviving on the chain; the second example has four opaque green glass beads with hexagonal cross-section with lengths of gold chain as spacers, and is dated 3rd to early 4th century (Johns 1979, 420–1, pls LXXVIa and LXXVIb respectively). Compare this last with the complete necklace from the Winkle, Cheshire, hoard of gold jewellery dated 2nd to 4th century A.D., which has seven beads of green opaque glass and one true emerald bead (Johns *et al.* 1980, 50, 52, fig. 2, no. 1, pl. Ia). Compare also the small green glass cylindrical-shaped beads with a circular cross-section from Gestingthorpe, Essex (Draper 1985, 68, fig. 31, no. 347).

A necklace, apparently entirely composed of glass beads, and other individual beads are catalogued in the glass report as nos 139–59.

64. [1.5.2] 003/unstratified (657) Curved silver rod with rectangular cross-section at one end and a

- circular cross-section at the other. Probably a pin from a buckle or a (pen)annular brooch. Length 32mm; rectangular cross-section 3.4 × 1.5mm; circular cross-section c. 2mm. (Not illustrated.)
65. [1.5.3] 838/SG124 (1057) Silver wire in a coil of eight and a half turns; oval cross-section. Length 11.6mm; cross-section 7.2 × 4.7mm. ?From a silver fibula with spring and pin fitting.
66. [1.5.1] 903/SG137 (840) Flat coil of four turns of copper alloy wire. Diameter 12.1mm; maximum depth 4mm.
- Compare the wire finger-rings with spiral bezel from Rudston, Yorkshire, probably 2nd century in date (Stead 1980, 99, fig. 63, no. 28, for dating see pp.16–17); and from a medieval layer at *Verulamium* (Frere 1984, 31, fig. 10, no. 57); and the unpublished complete ring from Priory Place, Chester. See also the earrings with a spiral ornamental stud from King Harry Lane, St Albans (Stead and Rigby 1989, 23, fig. 13, no. 61); and from Baldock, Hertfordshire, from contexts dated pre-Claudian to Neronian (Stead and Rigby 1986, 128, fig. 54, nos 202–5).
67. [1.5.6] 2085/SG94 (2158) Glass paste 'gem' in damaged copper alloy mount from a finger-ring or similar piece of jewellery. Diameter setting 10 × 9.4mm; depth 4.7mm; diameter of 'gem' 5.4mm. (Not illustrated.)

Copper alloy beads (FIG. 81)

Total number recorded = 5

68. [1.6.1] 403=103/SG185 (124) Small barrel-shaped bead or collar; part of one side lost; some encrustation. Diameter 10.1mm; height 7.7mm.
- Compare the examples from South Shields, Tyne and Wear (Allason-Jones and Miket 1984, 220 no. 3.754 and fig. opp); and the Fortress Baths at Caerleon (Zienkiewicz 1986b, 181, fig. 59, no. 111, from Drain Group 4 dated c. A.D. 160–230).
69. [1.6.2] 700/SG183 (325) Bead or collar made from a strip of ridged metal rolled into a cylinder. Diameter 6.6–7.2mm; height 6.1mm.
70. [1.6.3] 2002/unstratified (2272) Undecorated spherical bead. Diameter 10.5mm, height 9.9mm. Compare the larger but damaged piece from Corbridge, Northumberland (Bishop and Dore 1988, 170, fig. 80, no. 93). (Not illustrated.)
71. [1.6.4] 2002/unstratified (2506) Solid sub-spherical bead; decayed under the earth encrustation. Diameter c. 13mm; height 12.3mm. Compare the example from *Vindolanda* near Hadrian's Wall (Bidwell 1985, 126, fig. 42, no. 59 unstratified). (Not illustrated.)

A further possible bead of copper alloy was noted.

Copper alloy pins (FIG. 81)

Total number recorded = 6. Additionally, two pins from penannular brooches or buckles are reported upon here (nos 78–9); a total of 11 buckle fragments were recorded.

Six copper alloy pins were found with dates covering the 1st to late 3rd or 4th century — including no. 75 with a yellow glass 'gem' inset in the head; and the neatly proportioned no. 76.

72. [1.7.3] 2086/SG94 (2207) Pin with low biconical head and disc-shaped collar beneath. The lower part of the shaft is bent and there is some surface damage. Length c. 115mm; diameter head c. 5mm.
- Pins of this type, Cool Group 2, appear to have continued in use throughout the Roman period (Cool 1990a, 154, compare fig. 1, no. 9, and fig. 2, no. 3). Note the example from Castle Street, Carlisle, found in a context dated late 70s/mid 80s to A.D. 92–3 (Padley 1991, 110, fig. 73, no. 38; 97, table 20 for summary of dating).
73. [1.7.5] 2429/SG168 (2513) Pin; the baluster-moulded head has two fine collars above and below. The lower part of the shaft and tip are lost. Diameter head 2.3mm; height 76mm.
- The pin is a Cool Group 3 piece, with a suggested date of 1st to 2nd century (1990a, 154, fig. 2, no. 6). Compare the examples from Nettleton, Wiltshire, found in a 3rd century context (Wedlake 1982, 216, fig. 93, no. 2); Lowbury Hill Berkshire (Atkinson 1916, 42, no. 4, pl. XII, nos 11 and 5, pl. XII, no. 10).
74. [1.7.6] 2429/SG87 (2531) Pin of Cool Group 3, similar to the example above, but with some damage to the head. The point and lower part of the shaft are lost. Diameter head 3.2 × 3.5mm; height 56.7mm. (Not illustrated.)
- Compare the example from the King Harry Lane site, *Verulamium* (Stead and Rigby 1989, 23, fig. 13, no. 74).

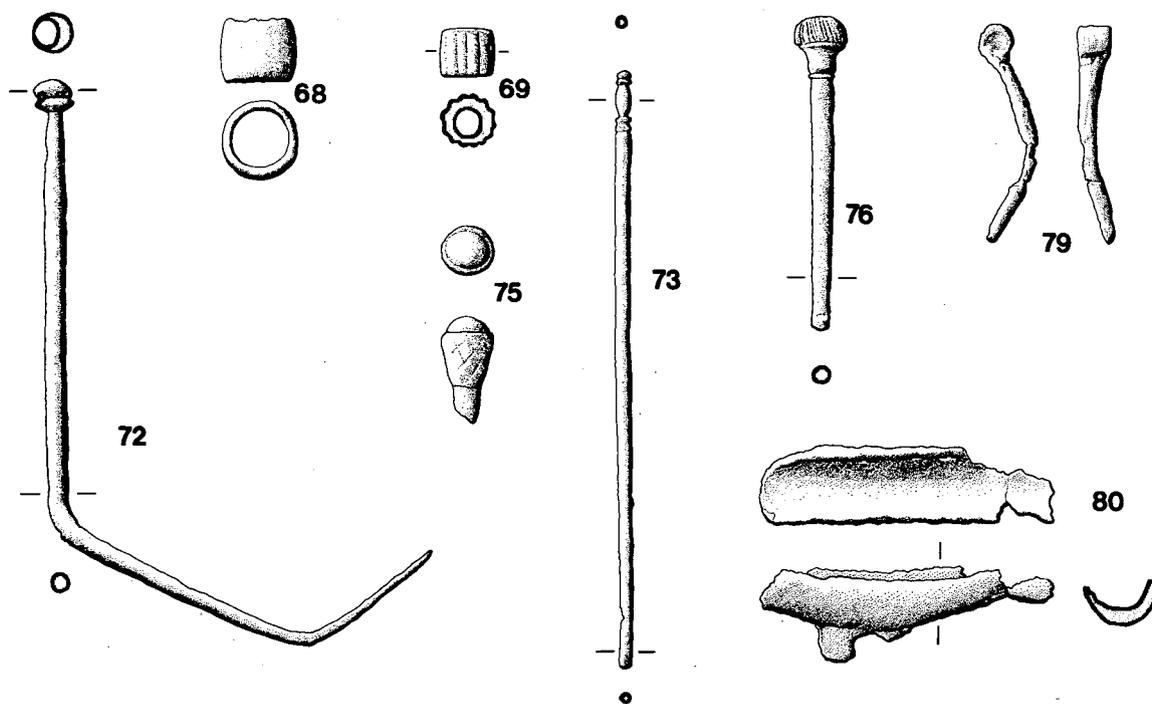


FIG. 81. Jewellery nos 68–80: beads, pins and amulet/cosmetic grinder. Scale 1:1.

75. [1.7.2] 812/SG112 (1020) Pin-head consisting of an inverted cone with cross-hatched decoration and inlaid with a yellow glass 'gem'. Below the head are three lightly-indicated collars. Maximum diameter head 6.3×7.0 mm; height 8.8mm.

The fragment belongs to Cool Group 14 pins, dated by her to the late 3rd or 4th century (1990a, 164, fig. 9, no. 4). Compare the piece from Chichester, West Sussex, from the Central Car Park excavations (Down 1974, 141, fig. 8.15, no. 19, with blue glass inset); Lydney, Gloucestershire, with a green glass 'gem' (Wheeler and Wheeler 1932, 82, fig. 18, no. 69); and the piece from Camerton, Somerset, which has a 'blue-coloured stone' (Wedlake 1958, 264, fig. 60, no. 50).

76. [1.7.4] 2086/SG94 (2281) Pin; the domed head is decorated with fine radial hatching above a concave-side inverted conical moulding, with a neat collar between it and the shaft. Most of the shaft and tip are lost. Maximum diameter head 6.1×7.1 mm; height 40.2mm.

The pin belongs to Cool Group 22 which has a suggested date of later 2nd to early 3rd century. Compare the examples from Nettleton, Wiltshire, said to have been found in a 1st to 2nd century context (Wedlake 1982, 216, fig. 93, no. 16); and from Exeter (Holbrook and Bidwell 1991, 260, fig. 118, no. 128, from a mid 4th century context); and an identical unpublished piece from Birch Abbey, Alcester, Warwickshire.

77. [1.7.1] 003/unstratified (437) Fragment of pin with part of shaft surviving. The crudely ornamented head is of roughly rectangular cross-section, and consists of a faceted rectanguloid section, with a group of two angular mouldings below and a group of three above. Present length 42.3mm; height of head 17.1mm; cross-section head 5.5×4.5 mm. (Not illustrated.)

This fragment may not belong to a Roman-period pin for the hair or dress, but could be from a ring pin or penannular brooch.

78. [1.7.5] 700/SG183 (278) Pin for buckle, made of folded sheet metal; tip damaged. Length 62mm. (Not illustrated.)

79. [1.7.10] 453/SG189 (1536) Pin from buckle or (pen)annular brooch; bent with some surface damage. Length *c.* 30mm.

Copper alloy amulet/cosmetic grinders (FIG. 81)

Total number recorded = 2

80. [1.8.1] 3500/unstratified (3519) Fragment of a boat-shaped amulet or fitting with U-shaped cross-section. There is a broken loop, originally in the form of a flat pierced flange, in the centre of the

underside. Both ends are lost, and there are no traces of decoration. Present length *c.* 38mm; maximum depth 12mm; maximum width 9.5mm.

These fittings were discussed by Trett (1983) who suggested an amuletic use; and by Jackson who listed nearly a hundred examples in his survey (1985a), since when further pieces have been recorded (Jackson pers. comm.). Jackson (1985a) described these pieces as parts of cosmetic sets consisting of a boat shaped 'mortar' with crescentic 'pestle', and although dating evidence is scarce, he suggests that the majority of these objects were made in the 1st and early 2nd century A.D. (*op cit.*, 176). Only one example has to date been recorded from Gwent. This was found at Liswerry, Newport, and published by Nash-Williams, who described it as having a 'large loop (incomplete) at one end and the 'keel' inlaid with white metal' (1924, 389–91 with pl. on p.389, no. 7, length 64mm). It is listed by Jackson, who notes that the other associated finds ranged from the late 1st to late 3rd century A.D. (*op cit.*, 187, cat. no. 37).

81. [1.8.2] 2081/SG94 (2181) The item is described as having a complete loop in the centre of the curved underside, but is otherwise damaged and incomplete. Not located. Length *c.* 45mm. (Not illustrated.)
See no. 80 above.

OTHER OBJECTS OF COPPER ALLOY (FIGS 82–94) By G. Lloyd-Morgan

Although the datable material found on the three Mill Street sites covers the 1st to the 4th centuries, the greater proportion of objects appear in the main to belong to the 2nd and 3rd century. Items are arranged in the following categories (numbers in square brackets refer to archive categories, see p.467 and TABLE 30). The archive report also contains items not considered worth publication in the following categories: slag and waste [8.2] (38 items), rods and wire [9.1] (38 items), crude rings and ring-shaped fittings [9.2] (53 items), sheet, strips and offcuts [9.3] (75 items). This report was submitted in 1993.

Toilet and surgical instruments

Mirrors	[2.1]
Tweezers	[2.2]
Toilet/medical instruments	[2.3]

Household utensils and furniture

Spoons	[3.1]
Vessels	[3.2]
Box and casket fittings	[3.3]

Objects associated with trade and communication

Seal boxes	[4]
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Fasteners and fittings

Studs, nails and rivets	[5.1]
'Bell-shaped' studs	[5.2]
Plaques, inlays and bindings	[5.3]
Locks and keys	[5.4]

Figural bronzes

	[6]
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Military items

	[7]
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Raw materials, slag and waste from metalworking

Metalworking residues	[8.1]
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Miscellaneous

Chains	[9.4]
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Misc. fragments and fittings	[9.6]
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No particular concentrations of artefact type were noted in different areas of the site, with the possible exception of surgical implements in the destruction deposits of Building 2 on the Cambria House site. A breakdown of objects by stratigraphic group is given in TABLE 30 (p.461).

Catalogue

Unpublished parallels from other sites, quoted without further references, are taken from the writer's card-index. All unpublished examples from Chester are in the Grosvenor Museum, unless otherwise indicated.

Toilet articles and surgical implements

Total number recorded = 18

Mirrors (FIG. 82)

Total number recorded = 6

Fragments of six mirrors were noted. Curiously all were 1st century types, and despite the wide date range suggested by other artefact types, no 2nd or 3rd century items were found.

1. [2.1.4] 815/SG113 (1203) Edge fragment of a rectangular mirror, the edge bevelled to the reflecting side. The surface is now in poor condition but still shows traces of its earlier finish. The reverse is the usual pocked, unfinished surface. Surface area 22.5×9.3 mm; thickness 1.4mm. (Not illustrated.)

Rectangular mirrors of Group A with their distinctive straight, or very slightly bowed, edges are unmistakable, and are one of the three most common types of mirror found throughout the Roman Empire (Lloyd-Morgan 1981, 3–20). One of the earlier records describes the find at Chesterfield, Sandy (Bedfordshire), in around the 1780s, of one of these mirrors, which was at one time in the collection of Sir Philip Monoux (Pownall 1787, 381–2). The 1st century date for the group is confirmed by two finds from the temple at Hayling Island, Hampshire. One fragment was found in the central ‘ritual’ pit in the Iron Age temple with other finds, including a minim of Aminus dated *c.* A.D. 15, the whole group being dated *pre* A.D. 50; the other fragment was from the 1st century occupation material above the central pit area, a context dated *c.* A.D. 65–150 (Downey *et al.* 1978, 6, 10; Downey *et al.* 1979, 6, 17). Another, almost complete, mirror came from Grave 60 of the St Pancras Cemetery in Chichester, Sussex, with a date *c.* A.D. 80–100 (Down and Rule 1971, 97, fig. 5.21) whilst a further fragment was discovered in a Flavian context during excavations at the Post Office, Newgate Street, London, in 1975. Finds from South Wales include an edge fragment from the Roman camp at Gelligaer, Mid Glamorgan, now held in the National Museum of Wales; another fragment came from a pre-Flavian context during excavations at Usk under the direction of Professor Manning; and there are two pieces from Loughor, West Glamorgan (Lloyd-Morgan 1997, 244, nos 38–41). As might be expected, there are a number of fragments from Caerleon, including three from early excavations in Jenkins Field; one from Great Bulmore Farm and another from the ‘Roman Gates’ excavations of 1980–81, from a context dating towards the end of the 1st century A.D. (Lloyd-Morgan 1992a, 161, no. 426a).

2. [2.1.5] 2389/SG72 (2308) Fragment of edge of rectangular mirror, with one surviving bevelled edge, and two tiny associated fragments. Surface area 53.4×26.5 mm; thickness 2.4mm. For discussion and dating see above, no. 1. (Not illustrated.)
3. [2.1.6] 2367/SG86 (2615) Corner of a rectangular mirror with bevelled edges to the reflecting side. Surface area 29.1×27.5 mm; thickness *c.* 1.7mm. For discussion and dating see no. 1, above.
4. [2.1.1] 001/unstratified (216) Edge fragment of the disc of a hand mirror with penannular border of countersunk holes. The reflecting side is turned, with a fine set of concentric circles just inside the border of holes. The reverse side is turned with a set of concentric circles at the edge, along the line of, and inside, the border of holes; with a further group of two, some 15mm from the edge, and a trace of a further one or more circles a little further inside. Surface area 27×31.4 mm; thickness *c.* 1.4mm; estimated diameter *c.* 110mm.

Mirrors of this type, with a separately-cast handle, belong to Group K hand mirrors, one of the most common types found during the 1st century A.D., with some examples, perhaps heirlooms, continuing in use into the 2nd century (Lloyd-Morgan 1981, 49–56). One complete example (diameter 71mm) is now in the Antiquarium at Pompeii, with at least fourteen other similar pieces in the Museo Nazionale Archaeologico, Naples. A silver mirror with kidney-shaped perforations as a border was found with the silver hoard in the Casa del Menandro, Pompeii (Maiuri 1932, 350, figs 135–6, no. 15, pls XLVII–XLVIII). One of the earlier dated fragments comes from excavations at Usk in 1973, and was thought by the excavator, Professor Manning, to be dated to *c.* A.D. 60–75. Another from Loughor, West Glamorgan (Lloyd-Morgan 1997, 244, no. 39), came from a context dated Flavian to Hadrianic. Another fragment came from a Hadrianic deposit at Wroxeter, Shropshire, with another from excavations at Dwr-y-Felin School, Neath, West Glamorgan (Lloyd-Morgan 1992b, 245, no. 1).

5. [2.1.3] 1027/SG145 (921) Ten fragments of a hand mirror, the largest piece of which has a slightly convex reflecting side with no trace of ornament. The reverse has spin marks and remains of a ring

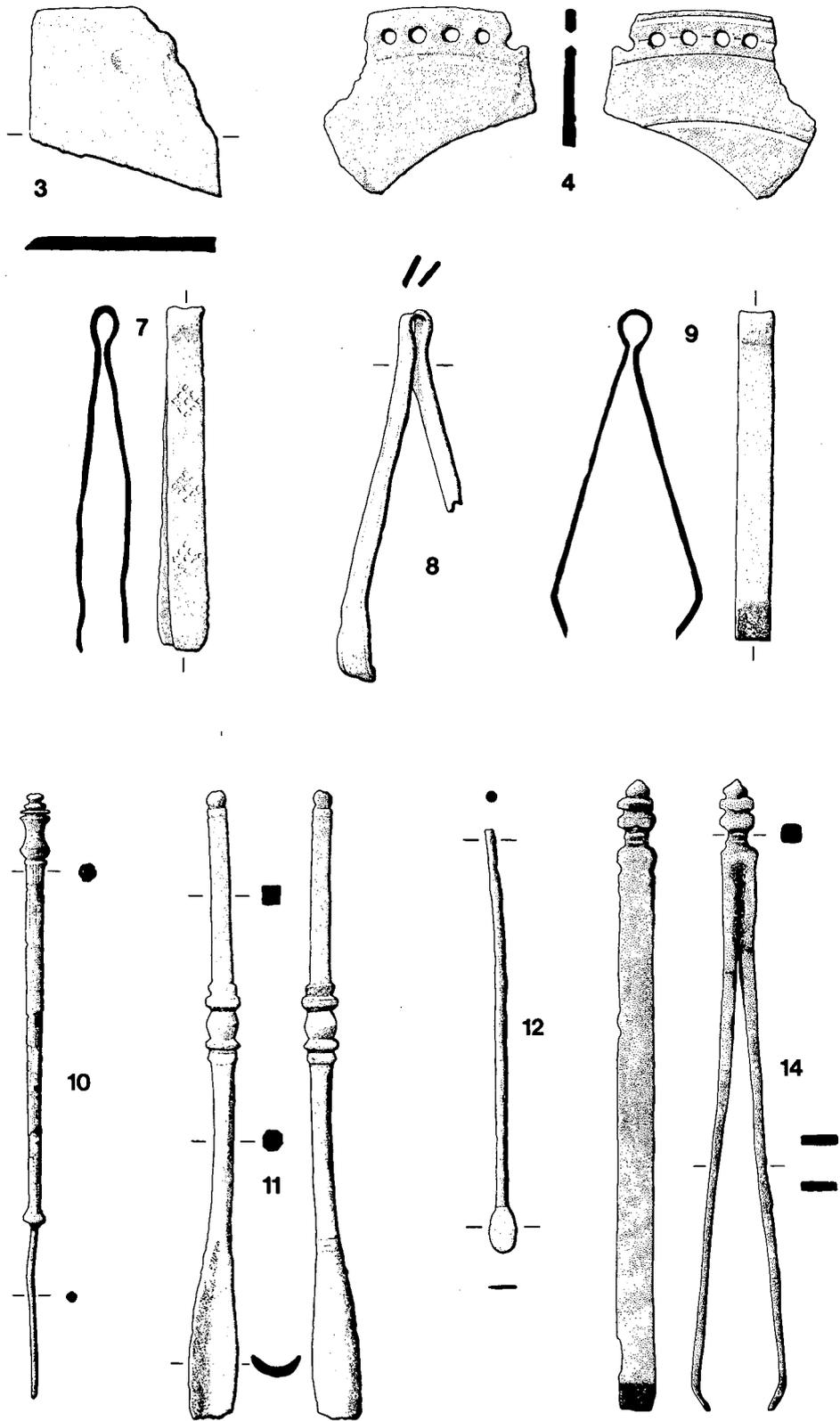


FIG. 82. Copper alloy objects nos 3-14: mirrors, tweezers and toilet/medical instruments. Scale 1:1.

of three turned concentric circles. All the other fragments have been badly affected by oyster-shell corrosion. Largest fragment 33.6mm; thickness 1.3–1.5mm; estimated diameter *c.* 60mm or greater. (Not illustrated.)

Since there is no properly identifiable edge to the disc, nor any surviving border decoration which might help to identify the piece, it can only be classed with other internal fragments of 1st century hand mirrors as Group Zb (Lloyd-Morgan 1981, 108–9). Other finds from Britain include one from Priory Place, Chester 1989; and three from Canterbury, Kent — one from a ?1st century context under a primary Roman road, Cakebread Robey site 1976; and two from Marlowe Site I, 1978, both redeposited in 11th century contexts.

6. [2.1.2] 002/unstratified (526) Internal fragment of a mirror. The reflecting side is plain and finished, the reverse has an unfinished, slightly pocked surface. Surface area 30.4 × 18.3mm; thickness *c.* 2.3mm. (Not illustrated.)

This fragment could have been part of a modest-sized rectangular-shaped or disc mirror but, without any evidence for either a curved or a straight edge, it can only be classed as Group Za, and roughly dated to the 1st century A.D. (Lloyd-Morgan 1981, 107–8). As these mirrors were made of a brittle, high-percentage tin-bronze, it is hardly surprising that many of these disc and rectangular forms were dropped and broken leaving many anonymous fragments. Finds from South Wales include the following: Dwr-y-Felin School, Neath, West Glamorgan (Lloyd-Morgan 1992b, 245, nos 2 and 3); Loughor, West Glamorgan (Lloyd-Morgan 1997, 244, nos 37, 40, 42, 43), and Usk, Gwent, *c.* fourteen unstratified fragments, possibly all from one mirror. At least four fragments are now in the collections of the Roman Legionary Museum, Caerleon.

Tweezers (FIG. 82)

Total number recorded = 4

Four pairs of tweezers were found, of which two were decorated, no. 7 with punched decoration on the arms; and no. 8 having the better known incised ornamentation.

7. [2.2.1] 700/SG183 (323) Complete pair of tweezers. Each arm is decorated with three sets of decorative punch marks, each being of nine indentations set in a lattice diamond-shaped pattern. Length 49.6mm; maximum width 6mm.

Compare the example from Cirencester, Gloucester, where the identical stamp is seen, but with ten repeats of the lozenge pattern (McWhirr *et al.* 1982, microfiche 2/5 frame BO8, no. 19, frame BO9, fig. 53, no. 19); another unpublished piece from Tiddington, Warwickshire, has eight repeats of the identical pattern. Compare also the example from Baldock, Hertfordshire (Stead and Rigby 1986, 130, fig. 57, no. 312, uncertain date); and one with additional incised lines as borders from Gorhambury, Hertfordshire, from Building 39 period 9 dated to A.D. 175–250 (Neal *et al.* 1990, 124, no. 119, fig. 124).

8. [2.2.4] 2451/SG61 (2561) Tweezers decorated along the outer edges with an engraved line, with a heavily incised saltire on the upper loop section and traces of a lighter one to either side. Half of one arm is lost; the surviving part is a little distorted. Length 53.3mm; maximum width 6.1mm.

Compare the similarly decorated tweezers found on a ring, with a nailcleaner, during excavations at Birch Abbey, Alcester, Warwickshire, 1964–66; and the closely related piece from Kingsdown Camp, Somerset (St George Gray 1930, 84, fig. 6, no. E4); and the related pieces from Bays Meadow, Droitwich, Worcestershire, 1954–5 (Gelling 1957, 16, fig. 10, no. 9), and Tiddington, Warwickshire.

9. [2.2.2] 002/unstratified (475) Undecorated tweezers, in two pieces, otherwise complete. Length 48.1mm; maximum width 5.2mm.

Compare the examples from Chichester, West Sussex (Down 1978, 302, nos 92, 93, fig. 10.37); Dover, Kent (Philp 1981, 161, fig. 38, no. 177, dated to later 2nd century A.D.); Fishbourne, West Sussex (Cunliffe 1971, 110, fig. 42, no. 61 from a context dated to A.D. 75–80; no. 65 from late 3rd century rubble and robber levels); and from inside the fort at *Segontium* (Wheeler 1923, 139 fig. 58 no. 7); and an unpublished item from Nicholas Street Mews, Chester.

An arm from a further undecorated pair of tweezers was also noted.

Toilet/medical instruments (FIG. 82)

Total number recorded = 8

An incomplete cataract needle, no. 10, was noted, as was a decent pair of small forceps, no. 13. Other medical implements included a piece with a damaged elongated oval spoon, no. 11, and two small *ligulas*.

10. 2.3.1] 605/SG183 (337) Needle, probably for cataract operations, set into a reeded grip, with baluster-shaped turnings and four collars at one end; now broken and damaged and part of the surface lost. Overall length 85.6mm.
Compare the finds from Montballet (Saone et Loire) discussed by Feugère *et al.* 1988; and Milne (1907, 69–71). Note also the related grip from a similar implement found during excavations at Birch Abbey, Alcester, Warwickshire, said to come from a context dated to the later 3rd century.
11. [2.3.2] 001/unstratified (513) Incomplete instrument, consisting of an elongated oval spoon with a damaged tip. The shaft is square in cross-section with moulded detail half-way along consisting of an angular baluster moulding with two collars to either side. There is a further incomplete moulding at the broken end of the shaft. There was probably a probe at the other end of the implement. Length 90.2mm.
Compare the examples from the Trier region (Künzl 1984, 173–4, no. K.1, K.2, K.4, Taf. 22; 174, K.12, Taf. 23), and from a set of medical instruments found in Italy and dated *c.* 1st or early 2nd century (Jackson 1986, 128, fig. 4, no. 30, length 165mm, and p.120 for dating).
12. [2.3.6] 2398/SG70 (2364) Incomplete *ligula* with flat, oval spoon section. Length 60.8mm.
Compare the pieces from Old Winteringham, Lincolnshire (Stead 1976, 212, fig. 110, no. 101, from a 3rd century context; 212, fig. 110, no. 102, of Flavian date); Shakenoak, Oxfordshire, where a 'predominantly 2nd century date' is suggested (Brodribb *et al.* 1978, 96, fig. 40, no. 231); from Chichester, West Sussex (Down 1981, 169, fig. 8.32, no. 46); and Heronbridge near Chester (Petch 1933, 43, pl. XV, no. 8).
13. [2.3.4] 001/unstratified (1346) Fragment of a *ligula* or toilet implement, with remains of coiled wire around part of the shaft. Length 18.3mm. Compare the more complete no. 12 above. (Not illustrated.)
14. [2.3.5] 2112/SG70 (2267) Medical forceps, the upper part with square cross-section ornamented with two collars and a terminal knob. Both arms of the forceps are undecorated, of rectangular outline, rectangular cross-section and neatly curved inwards to touch at the tips. The surface is a little worn and decayed in places. Length 90mm.
Compare the examples from Northchurch villa, Hertfordshire (Neal 1974–6, 6, 21, fig. XI, no. 5, from a context before the late 1st century/early 2nd century); from Italy of the 1st or early 2nd century A.D. (Jackson 1986, 123, no. 10, fig. 1, length 82.5mm, for dating see p.120); and the larger, related piece from the Fortress Baths, Caerleon (Zienkiewicz 1986b, 189, fig. 64, no. 188). Note also the items recorded by Milne (1907, 92, pl. XXVI, nos 1, 6, from Naples; 96, pl. XXVIII, no. 3; 96, pl. XXIX, nos 2, 4).
15. [2.3.7] 2389/SG72 (2881A) Rod with angular cross-section tapering towards each end, probably part of a shaft of a medical implement. Length 49.4mm; maximum cross-section *c.* 3mm. (Not illustrated.)

Household utensils and furniture

Total number recorded = 35

Spoons (FIG. 83)

Total number recorded = 9

Eight spoons and one possible example were found of varying dates from the 1st to the 4th century A.D., and with different bowl types. The most important pieces are nos 20 and 21, which have recesses for inlaying enamel to enhance the inscriptions which now consist in each case of a couple of letters only.

16. [3.1.5] 1102/unstratified (890) Fragment of a circular bowl of a spoon, with a small part of the handle still *in situ*. Now in two joining pieces. Present size *c.* 23 × 11.4mm; estimated diameter *c.* 36mm. (Not illustrated.)

Strong dates this type of spoon, the *cochleare*, with a smooth internal concave cross-section to the bowl, to the 1st century A.D. (Strong 1966, 155, fig. 32a). One example from the Jewry Wall, Leicester, came from a level II context dated to c. A.D. 150–160 (Kenyon 1948, 259, fig. 87, no. 3, see p.42 for chronological summary); another was found in a Flavian-period burial at Winchester and dated to c. 85–95 (Biddle 1967, 242, fig. 19, from Grave II, for discussion of dating see p.245). Unpublished examples from Warwickshire include two pieces from the Birch Abbey excavations at Alcester 1964–66. Amongst the finds from Wales are one from *Segontium* said to have been found in the early 2nd century floor of Room 9 of the Commandant's House (Wheeler 1923, 141, fig. 61, no. 20), and two pieces from Loughor, West Glamorgan (Lloyd-Morgan 1997, 247, no. 52), and a second, unpublished, item only slightly damaged, length c. 66mm.

17. [3.1.1] 024/unstratified (025) Pear-shaped bowl of spoon with the offset handle attached to the broader end. The narrow rounded tip of the spoon is lost, and parts of the edge are damaged. Present length 73.1mm; maximum width bowl 36.4mm.

This is one of the two main types of 1st century A.D. spoons, the *ligula* described by Strong (1966, 155–6, fig. 32b, c). Compare the related incomplete example from Ilchester, Somerset (Leach 1982, 252, fig. 120, no. 106, unstratified); and perhaps the damaged piece with a more ovoid bowl from *Verulamium* (Frere 1984, 41, fig. 15, no. 119 from a context dated A.D. 345–350).

18. [3.1.6] 2045/SG81 (2076) Damaged spoon with a pear-shaped bowl, the narrow curved end being attached to the offset handle, which only survives in part. Present length 55.3mm; maximum width bowl 19.6mm.

This type of spoon with convex moulding on the inside of the rim of the bowl is characteristic of the 2nd century (Strong 1966, 178, fig. 36b). Compare the examples from Fishbourne, West Sussex (Cunliffe 1971, 112, fig. 47, no. 123, from Third period occupation layers = c. A.D. 100–270, see p.318); and Lower Thames Street, London (Miller *et al.* 1986, 236, no. 14.5 with fig. and pl. on p.19).

19. [3.1.9] 3001/unstratified (3004) Pear-shaped bowl of spoon with only a tiny stub of an offset handle surviving at the narrow, rounded end. Much of the edge of the bowl is damaged. Length 46.4mm; maximum width 21.6mm.

Strong notes that this type first came into use in the 2nd century and continued into the 4th century and beyond (1966, 177–8, fig. 36b; 204–5, fig. 40c, d, and pl. 67c). One example comes from the Jewry Wall, Leicester (Kenyon 1948, 259, fig. 87, no. 2); another from Cirencester (McWhirr *et al.* 1982 microfiche 2/5, fig. 57, frame CO1, no. 84, frame CO2); with a further item from Puckeridge-Braughing, Hertfordshire (Potter and Trow 1988, 61, fig. 24, no. 17).

20. [3.1.2] 607/modern intrusion (427) Spoon with fiddle-shaped bowl and offset handle; now broken and incomplete. There are traces of tinning. The upper face of the handle nearest to the bowl is inlaid with red enamel (see FIG. 85) in two surviving cells to give the beginning of an inscription: 'VT [...]'. Present length c. 59mm; maximum width bowl 25.5mm.

Fiddle-shaped bowls of this type were dated by Strong to the 2nd and 3rd centuries A.D.; he also noted that some spoons were 'decorated and inscribed in this period' (1966, 177, 178, fig. 36c, d). It is interesting to note that two of the spoons in the Chalain d'Uzone (Loire) hoard, which was deposited c. A.D. 260 have applied inscriptions on the underside of the handles, just before the curved offset linking them to the bowls. One spoon has 'MER' in punched dots; the other a single incised letter 'M'. There are graffiti on several of the other spoons (Feugère 1985, 44, fig. 15, nos 36, 39 respectively, fig. 30: for discussion and the dating of the spoons to the second half of the 3rd century see pp.61–3, and pp.68–9 for discussion of the complete hoard and the date of deposition). Compare also the similar unpublished bowl fragment from Priory Place, Chester. It is possible that the inscription may have been of one or more words. The cheerful motto '*Utere Felix*' which could be translated as 'Use and be happy' or 'Use to your good fortune' is perhaps the most obvious one that may have been intended. It occurs on the well known Motto-beakers of the Trier region (Harris 1986), as well as on a silver ring from Bradfield, Northamptonshire (Hassall and Tomlin 1978, 480, no. 62 pl. XXIIB), and on copper alloy fittings with inlaid enamel lettering from South Shields, Tyne and Wear, and Chester (Allason-Jones and Miket 1984, 214, 215, no. 3 726).

21. [3.1.4] 003/unstratified (879) Fragment of spoon with fiddle-shaped bowl and offset handle closely resembling no. 20 above, though less well preserved. It too has a fragmentary inscription on the handle nearest the bowl which was probably originally inlaid with (?)enamel, reading: FE [...]. There are traces of tinning. Length 26mm; maximum width 7.2mm.

The inscription again suggests the beginning, or part of a longer motto or phrase, perhaps spread over a number of spoons or other utensils to add an amusing touch to a formal dinner party. One obvious suggestion would be that this word could well be the beginning of '*Felix*' or 'Lucky'. For discussion and dating see no. 20 above.

22. [3.1.3] 003/unstratified (848) Fiddle-shaped bowl of spoon, with 'rat-tail' on the underside of the bowl suggesting the use of an offset handle, now virtually all gone. The surface was originally tinned, but the bowl is generally poorly preserved and is worn and chipped in places. Present length 33.2mm; maximum width 23.1mm. (Not illustrated.)

The bowl type was dated by Strong as being characteristic of the 2nd and 3rd centuries (1966, 177–8, fig. 36c, d). Other examples have been noted from Neatham, Hampshire (Millett and Graham 1986, fig. 73, no. 107); Wakerley, Northamptonshire (Jackson and Ambrose 1978, 221, fig. 58, no. 13); and Bignor, West Sussex, where it was described as 'particularly characteristic of the 3rd century' (Frere 1982, 179–80, fig. 27, no. 14).

Another fragment, possibly from a spoon, was noted.

Vessels (FIG. 83)

Total number recorded = 14

Not unexpectedly, fragments of copper alloy vessels have survived, as for instance the handle of a Gødåker type *patera* (no. 25), and fragments of vessel walls and bases such as nos 23, 24 and 33; and fittings such as the bucket escutcheons nos 26 and 29, and the bucket foot no. 30.

23. [3.2.2] 001/unstratified (163) Rim and part of side of a bowl or *patera*. The rim has a triangular cross-section. Spin marks from the turning process are visible but there is no trace of any incised decoration. Some traces of tinning survive on the outer face. Diameter *c.* 260mm, depth *c.* 52mm, width 79.2mm; thickness of wall 0.2–0.4mm.

The diameter of the surviving fragment suggests that the piece was probably not from a *patera* but a larger vessel, probably a bowl or basin, but without further adjoining fragments to help give a complete profile, full identification and dating is uncertain. Compare the 1st century example from Mook, Netherlands, of Campanian manufacture, and another with a Gaulish origin dated late 1st or 2nd century (den Boesterd 1956, 52, no. 174, diameter 278mm; compare pl. VIII, no. 172, and 55–6, no. 189, diameter 296mm).

24. [3.2.6] 202/unstratified (1171) Fragment of a *patera* base with a rounded moulding at the angle between the wall and the base, with the remains of a further moulding just inside it. On the inner face there is a crisp angle made between the face of the wall and the base. Diameter base *c.* 90mm; present dimensions 78.3 × 31.1mm. Compare the complete *patera* illustrated by Radnóti (1938, 53, pl. IV, no. 15). (Not illustrated.)

25. [3.2.14] 001/unstratified (1762) Handle, probably from a *patera* of Gødåker type. The handle ends in a disc pierced by a round hole with turned and incised decoration, which has slipped at one point along the grip. There is no cord decoration on the handle mouldings as would be expected on a Gødåker type handle, but there is a single dot-and-circle ornament on the grip near the terminal disc. The handle has been broken and repaired. Length 97.6mm; diameter of terminal disc 36.4mm; depth of handle 1.7–2.6mm.

For a Gødåker *patera* from South Wales, compare the near-complete piece from Loughor, West Glamorgan (Lloyd-Morgan 1997, 247, no. 56). The type is dated from the late 1st and into the 2nd century A.D. (den Boesterd 1956, 10–11, pl. II, nos 27–29). A handle from the same type of *patera* was reported from the east *vicus* at Watercrook, Cumbria, from a context dated Antonine to early 3rd century (Potter 1979, 215, fig. 85, no. 48). For undecorated *paterae*, compare the disc and part of the handle from Leicester, from a Claudian to last quarter of the 1st century A.D. context (Kenyon 1948, 260, fig. 87, no. 6) and a 1st century A.D. piece from the Waal at Nijmegen described as being 'probably of Capuan manufacture' (den Boesterd 1956, 9, no. 23, pl. II).

26. [3.2.3] 903/SG137 (961) Escutcheon for a bucket with concave sides. The loop to take the handle shows signs of considerable wear; the lower edge of the escutcheon is worn and damaged. Length 54.1mm; maximum width 26.4mm.

Compare the complete bucket in Nijmegen (den Boesterd 1956, 47–8, see no. 153, pl. VI) and the escutcheon (den Boesterd 1956, 47–8, no. 154, pl. VI). Den Boesterd notes that the bucket type was described by Wiles as being of Gaulish manufacture *c.* A.D. 150–350, whereas Werner describes it as provincial Roman of late 2nd or early 3rd century date. Another example from Mount Berny, Forêt de Compiègne, is described by Tassinari (1975, 58, pl. XXVIII, no. 139).

27. [3.2.9] 2389/SG72 (2355) Heavy leaf-shaped escutcheon with loop for attachment bent, and traces of solder on the reverse. There are no traces of decoration. Length 28.1mm; maximum width 16.5mm.

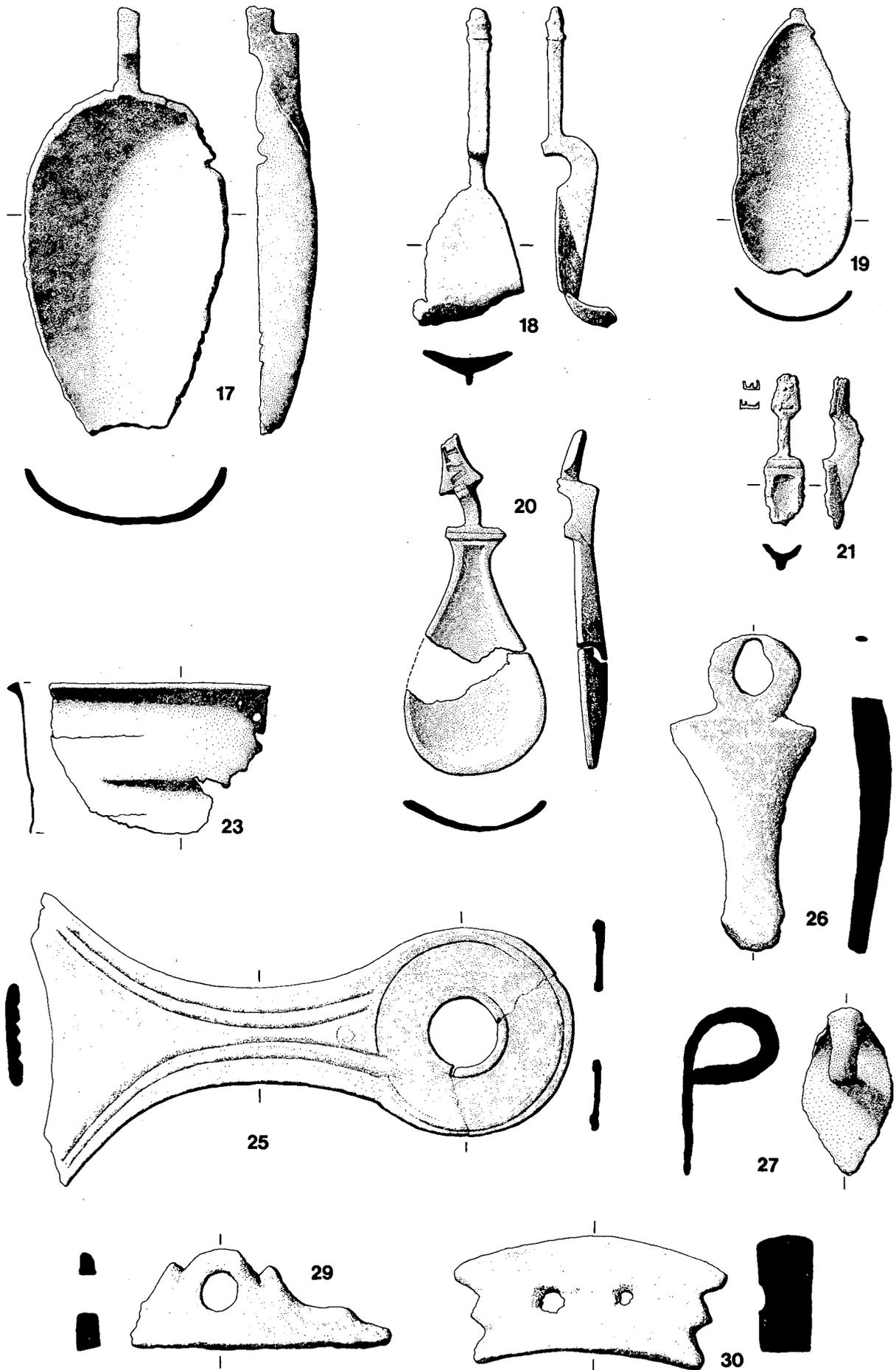


FIG. 83. Copper alloy objects nos 17–30: spoons and vessels. Scale 1:1 (see Fig. 85 for enamelling details on no. 20).

Compare the slightly smaller piece from Chichester, West Sussex (Down 1989, 200, no. 70, fig. 27.5) and the less well-preserved example from Loughor, West Glamorgan (Lloyd-Morgan 1997, 247, no. 54).

28. [3.2.10] 2405/SG72 (2368) Fragmentary fitting, probably the loop of a vessel escutcheon, decorated on the outer face with linear and punched dot motifs. Height 19mm; maximum width 20.5mm; depth 3.3mm. (Not illustrated.)

See the complete escutcheon with linear and punched dot decoration from a bucket, found at Bratislava, Slovakia, and dated to the 1st century A.D.; and a related piece from Grave 117 found at Ockov, Trenčín district, Slovakia, thought to have belonged to a *situla*, and dated to the second half of the 2nd century A.D. (Kraskovská 1978, 5, no. 1, pl. I.6; 17–18, no. 1, fig. 9.6, respectively, for summary of dating see p.23).

29. [3.2.12] 2002/unstratified (2500) Incomplete escutcheon from a bucket or similar vessel, pierced in the deeper central section to take the handle, and with stylised birds' heads to either side originally, though one is now lost. The escutcheons, separately cast, would have been soldered directly on to the rim of the vessel. Present length 47.3mm; original length c. 63mm; height 17.8mm; thickness 3.7mm; estimated diameter of vessel at rim c. 150mm.

Compare the example from *Verulamium* said to have come from an 'Antonine fire, disturbed' context (Frere 1972, 130, fig. 40, no. 130); an unstratified piece from Richborough (Cunliffe 1968, 104, pl. XLVII, no. 207; and a cut-down fragment from Brancaster, Norfolk (Hinchliffe and Sparey Green 1985, 211, fig. 90, no. 55).

30. [3.2.13] 2429/SG168 (2527) Curved bucket foot, pierced through by two holes; the finished ends have a zigzag profile. The outer convex face has an incised herringbone pattern, which may have been inlaid. Length 49.6mm; maximum width c. 20mm; depth 9.8mm; estimated diameter of bucket base c. 110mm.

The feet were used to protect the bases of buckets and some early forms of *paterae* from damage to the edge and excessive wear on the base. Compare the example from the Vallée de la Saône with a guilloche pattern incised on the outer face (Tassinari 1975, 58–9, pl. XXVIII, no. 147, also nos 144–6, 148); another in the collections at Vienne (Isère) dated from the 1st century onwards (Boucher 1971, 167, nos 363–72 with pl.); two feet from buckets of the Augustan period now in Nijmegen (den Boesterd 1956, 39, nos 113, 114, pl. V, the latter with engraved cable ornament on the outer face; den Boesterd notes that similar feet are found on later 1st century buckets). Note also the pelta-shaped item from the Fortress Baths at Caerleon (Zienkiewicz 1986b, 173, fig. 56, no. 8, from a context pre A.D. 100/110).

31. [3.2.8.] 2086/SG94 (2190) Fragment of crude lug-shaped escutcheon or loop attachment with the remains of an iron nail of square cross-section *in situ*. From a vessel, perhaps a wooden bucket with copper alloy bindings and fittings. Length 30mm; maximum width 15.5mm. Compare the related unstratified piece from *Vindolanda* near Hadrian's Wall (Bidwell 1985, 126, fig. 43, no. 71). (Not illustrated.)

32. [3.2.1] 015/unstratified (020) Fragment of a curved foot or fitting from a vessel with a heavy L-shaped cross-section. Date uncertain. Height 17mm; width 14mm; curvature with maximum diameter c. 240mm. (Not illustrated.)

33. [3.2.4] 969/SG135 (987) Fragment of wall of vessel with four turned circles on the inner face; bent and distorted, and with some surface loss. Height 43.8mm; width 55.7mm; thickness of wall 0.7mm. (Not illustrated.)

34. [3.2.5] 835/SG117 (1107) Fragmentary fitting with stylised bird's head terminal; from a vessel or utensil. Length 37.7mm. (Not illustrated.)

There is a similar fragment from a context dated before A.D. 100/110 from the Fortress Baths at Caerleon (Zienkiewicz 1986b, 173, fig. 56, no. 6).

Box and casket fittings (FIG. 84)

Total number recorded = 12

Small personal belongings, such as jewellery, money, documents, or the needles, spindles and other items used for making and mending clothes and furnishings, were probably kept in small chests and caskets, and it is thus not surprising to find examples of drop handles and other fittings. Three handles, now incomplete, were in the form of two dolphins *vis-à-vis*, nos 36, 37 and 38. Two lion-headed studs, used to ornament the lock plates, were also found, nos 41 and 42, with other fragmentary attachments including a short damaged length of binding with a raised repoussé border.

35. [3.3.2] 600/SG183 (327) Acorn-shaped pendant; a terminal from a drop-handle for a box or casket. Height 24.4mm; maximum diameter. 11.6–11.8mm.

Compare the handle with the acorn terminal from Princess Street, Chester, from a suggested Antonine context (Newstead and Droop 1939, 41, no. 22, pl. X); an elongated acorn from a context dated 310–315 at *Verulamium* (Frere 1972, 126, fig. 38, no. 113); with another, Neronian period acorn from Baldock, Hertfordshire (Stead and Rigby 1986, 139, fig. 61, no. 402); and a further example from Shakenoak, Oxfordshire, from a context dated late 2nd or early 3rd century (Brodribb *et al.* 1968, 88, fig. 30, no. 37).

36. [3.3.3] 001/unstratified (222) Incomplete drop handle in the form of a dolphin, with the tail flexed round to provide a loop to which a leaf-shaped solder plate/attachment has been added. Originally, there would have been a second dolphin *vis-à-vis* with the first, the gap between the two being filled with spherical, or other ornamental moulded detail. The dolphins would have hung upside down when the box was not in use. Details have been picked out with light hatching and punched dots on the head and tail areas, though there is heavier cutting around the beak and dorsal fin. Length dolphin *c.* 40mm; height *c.* 39.3mm; maximum thickness *c.* 7.2mm; length of leaf-shaped plate *c.* 38mm; width 15.5mm.

The two dolphins *vis-à-vis* are not uncommon on drop handles. A range of these handles from Trier and region are illustrated by Menzel 1966 (123–30, nos 302–17, Taf. 96, Abb. 54–67). Of these, eight examples have split pins for attaching the handles to the box (*ibid.*, nos 302, 305, 308, 309, 310, 311, 315, 317); one item (no. 309, Abb. 59) also has a damaged circular plate on the split pin. This would have helped to keep the handle in place and prevent excessive wear round the hole pierced through the thickness of the side of the wooden box. Another handle is still attached by split pins to an undecorated binding strip, and was probably from the centre of the front edge of the lid (*ibid.*, 123, Taf. 93, no. 303, unprovenanced). Compare also the examples now in Museum Kam at Nijmegen (Zadoks-Josephus Jitta *et al.* 1973, 87, no. 105; 88, no. 151 with split pins; 88, no. 152, an example similar to our piece; 88, no. 153, an incomplete example with only part of one dolphin). Examples from Britain include one from 'late rubble levels' at Fishbourne, West Sussex (Cunliffe 1971, 118, fig. 48, no. 127); Gadebridge Park, Hertfordshire (Neal 1974, 132 fig. 57, no. 72) and the tail section only from Puckeridge-Braughing, Hertfordshire (Potter and Trow 1988, 66, fig. 28, no. 108).

37. [3.3.4] 007/SG35 (692) Fragment of a dolphin handle consisting of one dolphin with a spherical ornament in its beak. The surface is chipped and poorly preserved. Present height 45.1mm; length 55.7mm; thickness 6.8mm.
38. [3.3.5] 1403/SG108 (1242) Fragment of a dolphin handle consisting of an incomplete dolphin; much of the head is now lost. There is some incised detail, and the surface is damaged in places. Height *c.* 36mm; length *c.* 34mm; thickness 7mm.
39. [3.3.9] 2389/SG72 (2336) Split pin; complete. Length 41.7mm.

Compare the use of split pins to hold handles onto the boxes noted in 36 above. Compare the incomplete examples from Corbridge (Bishop and Dore 1988, 189, no. 311, fig. 88, length 24mm; no. 312, fig. 89, length 31mm; and the pieces from Balkerne Lane, Colchester (Crummy 1983, 119, fig. 125, no. 4061, length 32mm, from a context dated A.D. 100/125 to *c.* 300; fig. 126, no. 4066, dated either A.D. 49–50/55 or 50/55–60/61).

A fragment of another possible split pin was noted.

40. [3.3.10] 2429/SG168 (2554) Domed circular plate pierced with central square hole, to take the split pin for part of a ?drop-handle. Diameter 60.8mm; depth *c.* 6mm. (Not illustrated.)
41. [3.3.6] 627/SG178 (1284) Lion-head stud in stylised high relief with slot on the centre inner face for attachment of a pin, which was most probably secured with a lead-based solder. The mane, eyes, mouth and muzzle have been suggested by incised and applied detail. Diameter 24.5mm; height 11.7mm.

These lion-head studs are well-known from a number of surviving boxes utilised to hold a cremation, with or without surviving grave goods. The decorative studs were used to conceal the iron nails or pins which attached the lock-plate to the box, and it seems likely that they were gently inserted into a previously prepared hole. The remains of one casket of this type were found at Wavendon Gate, Milton Keynes, Buckinghamshire (Frere 1989, 298); another similar example coming from Godmanchester, Cambridgeshire. Another casket burial from the Gallo-Roman cemetery at Solre-sûr-Sambre, Belgium, has a fairly well-preserved lockplate with six lion-headed

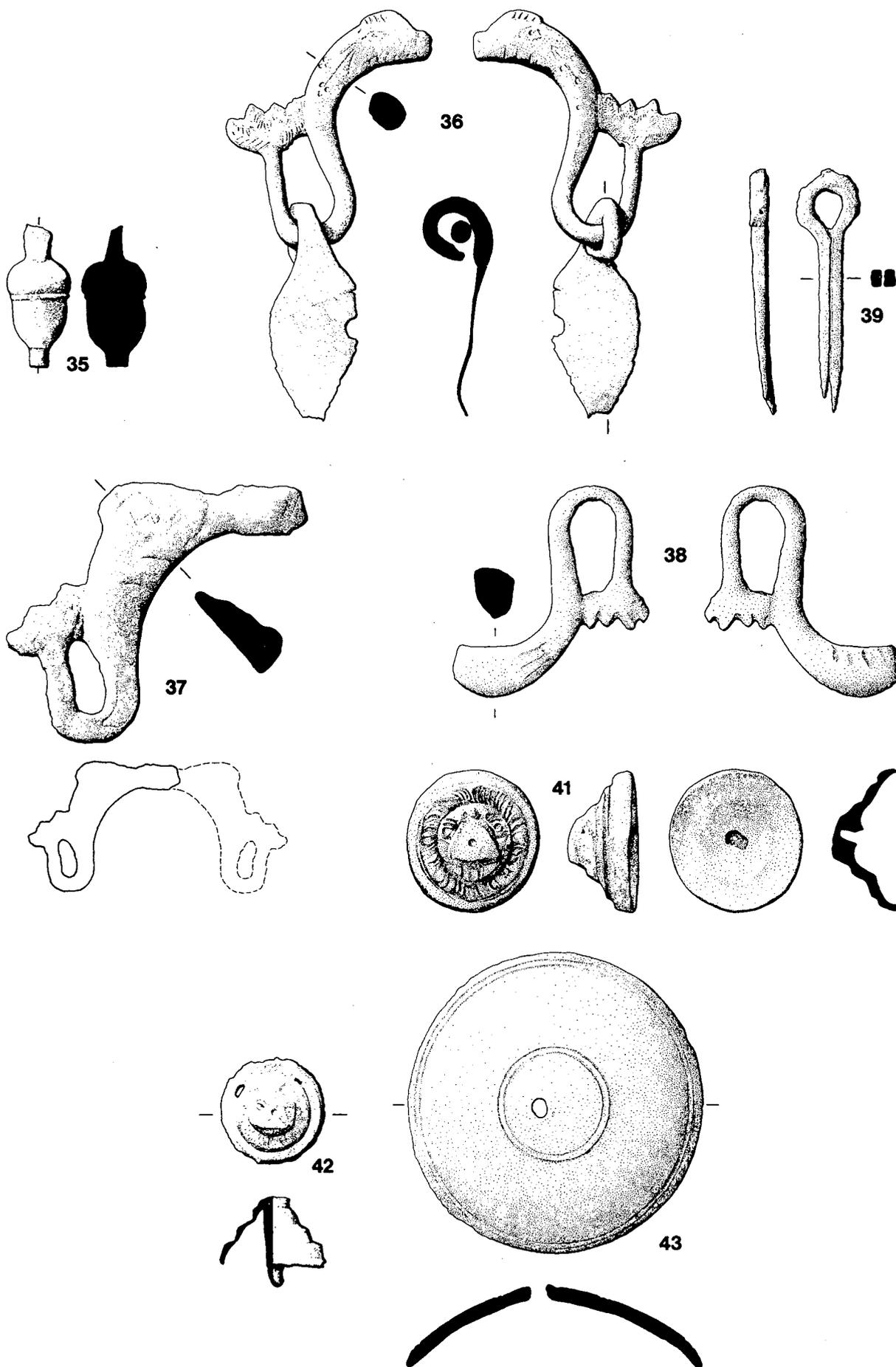


FIG. 84. Copper alloy objects nos 35–40: box and casket fittings. Scale 1:1.

studs still *in situ* (Brulet 1972, 57–66, figs 36–40, Grave 32, see 62 fig. 14a). In his review of the excavation report Thoen (1973, 308–9) suggested that the grave should be dated to the Flavian period. Other examples coming from Cemetery A at Skeleton Green were from Burial 3 (Partridge 1981, 312–13, fig. 117, with two samian dishes dated as ‘Antonine’); and Burial 4 (314–15, fig. 119, with a samian plate dated ‘Vespasianic’). A checklist of other casket burials with associated lion-head studs is also given (Partridge 1981, table XLVI, 320–21). Stray finds of these studs are not uncommon, with examples from Carlisle, Cumbria (McCarthy 1990, 128, fig. 113, no. 72, diameter 16mm, dated to the Flavian-Trajanic period, see discussion pp.22–30); Richborough, Kent (Bushe-Fox 1949, 139, pl. XLIV, no. 168, diameter 19mm with traces of iron pin, dated ‘before A.D. 275–300’); Caerleon (Zienkiewicz 1986b, 189, fig. 63, no. 183, diameter 16mm unstratified); with numerous other examples from Britain and the northwestern provinces.

42. [3.3.11] 2491/SG56 (2673A) Light-weight stud, tiered and in the form of a stylised lion’s head with incised detail. An iron pin is still *in situ*, and some associated fragments of wood from the casket. Diameter 19mm; depth 12.3mm. For discussion and parallels, see no. 41.
43. [3.3.12] 2491/SG56 (2673B) Heavy sub-hemispherical disc-shaped fitting with slightly off-centre nail-hole, turned with two fine sets of concentric circles near the centre and just inside the edge. There are traces of wood inside the concave face of the disc. Diameter 52.6mm; height *c.* 13mm. Compare no. 40.

Seal boxes (FIG. 85)

Total number recorded = 9

Eight seal boxes in varying states of preservation are catalogued here, five of which still had traces of enamel inlay. The hinge of another, with part of its lid, was recorded. Four shapes — circular, tear-shaped, diamond-shaped and square — were noted. The last (no. 51), a virtually complete box, has a delightful celtic design on the lid, of scroll and trumpet patterns in a sinuous swash N-shape, inlaid with blue and green enamel.

44. [4.2] 001/unstratified (200) Circular seal box lid with central field in the shape of a heart-shaped leaf set in a disc-shaped field, with an outer ring-shaped field as a border. Badly damaged and distorted; the enamel inlay is either decayed or lost, and the hinge section has mostly gone, as has some of the edge. Diameter *c.* 23mm; depth *c.* 1.5mm. (Not illustrated.)

An unpublished identical, but better preserved, piece (diameter 24mm) was found during excavations at Crook Street, Chester. Compare also the example from ‘disturbed levels’ at Jewry Wall, Leicester (Kenyon 1948, 255, fig. 84, no. 9); and two other pieces from ‘Norfolk’ and East Anglia (Hattatt 1989, 463, fig. 24, nos 146 and 147 respectively).

45. [4.3] 700/SG183 (275) Circular seal box lid; the outer ring-shaped field has six raised copper alloy dots to help key the blue enamel. The small circular inner field has a central raised dot surrounded by red enamel. Part of the edge is missing or damaged; the hinge has also suffered. Present length 18mm; present width 19mm.

Compare the related example from Hunter Street, Chester, found June 1909 during excavations for the foundations of the Masonic Hall. This was originally published by Newstead who described it incorrectly as a disc brooch (1948, 146–7, fig. 33), and subsequently by Lloyd-Morgan (1978, fig. 2A, 30, no. 2).

46. [4.8] 2001/unstratified (2234) Circular lid of seal box decorated with a pattern of four turned concentric circles, and with white filler or enamel in the centre. The hinge is damaged. Diameter 18.6mm; length 22mm; depth 2.3mm.

Compare the examples from Hengistbury Head, Dorset (Cunliffe 1987, 156, fig. 112, nos 66, 67); Canterbury, Kent, from a context dated A.D. 190–220 (Frere *et al.* 1982, 127, fig. 60, no. 27 complete); and the slightly smaller piece from Loughor, West Glamorgan (Lloyd-Morgan 1997, 255, no. 76).

47. [4.9] 3026/SG159 (3238) Base of seal box, tear-shaped and incomplete, with the tip and part of one side now lost. Only one hole pierced through the base survives. Present length 26.1mm; maximum width 18.5mm. (Not illustrated.)

See the base of a similar box found at Kingsholm, Gloucester, in a post-Roman context; the example from Bear Field, Cowbridge, South Glamorgan (Lloyd-Morgan and Webster 1996, 185, no. 16); and the unpublished pieces from Hunter Street School, Chester.

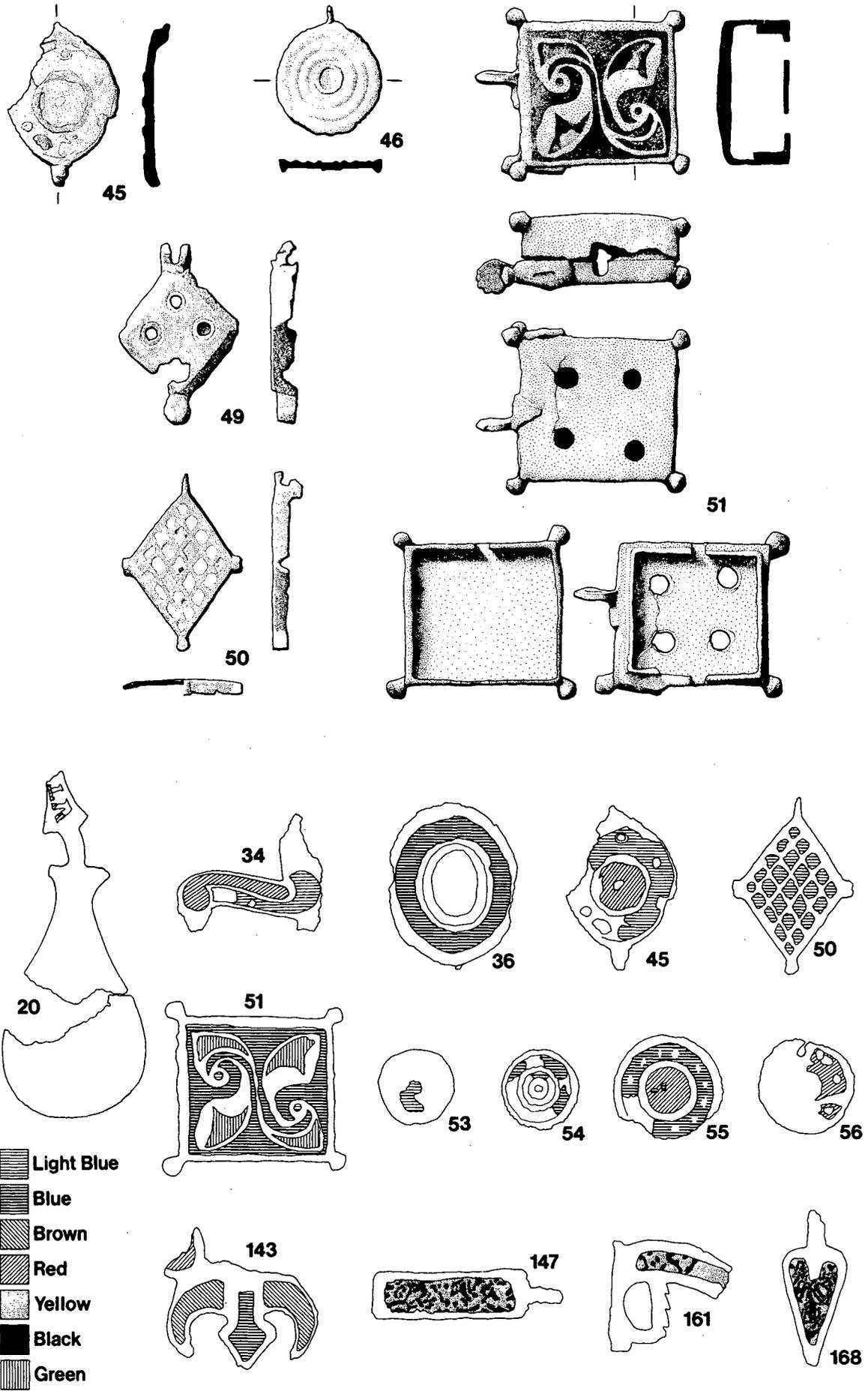


FIG. 85. Copper alloy objects nos 45–51: seal boxes. Scale 1:1. Also details of enamelling for all copper alloy objects, including jewellery.

48. [4.4] 605/SG183 (288) Fragment of a seal box base with the remains of the hinge section. Two circular holes piercing the base have survived in part. Probably part of a tear-shaped box, as no. 47 above. Present length 17.6mm; present width 23.4mm; depth 4.9mm. (Not illustrated.)
49. [4.5] 814/SG125 (544) Base of a diamond-shaped seal box pierced by four circular holes. The hinge section is damaged, and the item is now in three pieces and incomplete. Maximum width 20.8mm; length *c.* 31mm; depth *c.* 4mm.

Compare the complete example of a diamond-shaped seal box from the Fortress Baths, Caerleon, from a context dated *c.* A.D. 100/110–230 (Zienkiewicz 1986b, 186, fig. 61, no. 154); and the unpublished piece from the Hunter Street site, Chester.

50. [4.6] 851/SG114 (1223) Diamond-shaped seal box lid with blue enamel inlay in the 25 diamond-shaped cells, laid out in a regular reticulate pattern, on the outer face. The hinge section is a little damaged. Length 30.2mm; width 21.3mm; depth 3.4mm.

Compare the examples from Blackfriars Street, Carlisle; the first, from a mid 2nd century context has blue enamel inlay; the second from medieval levels has yellow, green and turquoise inlay (McCarthy 1990, 115, fig. 106, nos 30 and 31 respectively). Another from Wroxeter is said to have had 'brick red, dark blue and light yellowish-green enamel' (Bushe-Fox 1916, 27–9, pl. XVIII, no. 25). A fourth piece from the Roman fort at Mumrills, Stirlingshire had 'red and green chequered' enamel (MacDonald and Curle 1929, 555, fig. 115, no. 8). Compare also the unpublished pieces from Coleshill, Warwickshire with yellow coloured enamel, and Hunter Street School, Chester.

51. [4.7] 851/SG114 (1225) Square seal box, the angles of both base and lid ornamented with a tiny knob. The lid is decorated with scroll and trumpet patterns in a sinuous swash shape, inlaid with blue and ?green enamel; the hinge section is lost. The base is pierced by four holes, and part of the hinge fitting is lost. Lid maximum area 29.2 × 32.3mm; lid depth 7.5mm; base maximum area 27.4 × 37.5mm; base depth 7.2mm.

A virtually identical item from Billingsgate, London, was noted by Hattatt (1989, 426, no. 142, fig. 24), with a related example coming from Lincoln (Brailsford 1951, 78, fig. 40, no. 10). The same design is found on military buckle plates of the 1st century A.D., as for example the pieces from Richborough, Kent (Bushe-Fox 1949, 123, pl. XXXIII, no. 73); and Caerleon (Fox 1940, 128, fig. 6, no. 10); and as decorative panels applied to hinged bracelets from Plunton Castle, Kirkcudbright 1836, and Thirst House, Derbyshire 1890 (MacGregor, 1976, vol. I, pl. 2b, vol. 2, cat. no. 211, and vol. I pl. 3c, 102, vol. II, cat. no. 212, said to have been found with 'coins of A.D. 150–270, samian of A.D. 100–250, and 2nd century brooches').

Fasteners and fittings

Total number recorded = 105

Studs, nails and rivets (FIG. 86)

Total number recorded = 79

As might be expected, a large collection of studs was found. Eight of these were either enamelled, still held slight traces of enamel, or had cells to receive inlay — for instance nos 53, 55, 56, 57 and 59 respectively. There are eleven dome-headed studs with lead filler originally holding in an iron pin, which in three cases has survived (nos 65, 66, 70; see also lead report nos 22–3); they were used to help attach the lock plate to a small chest or casket. Other small dome-headed studs may have had a similar function in attaching plaques and bindings to items of furniture. Nails with solid domed or sub-spherical heads may have had a similar function. Larger rivets with a low conical head, dating to the mid 2nd century, may have been used as fittings on harness. Other large studs with diameters of up to 30mm may also have been used as fastenings where heavy wear and tear was expected, for example nos 60 and 62. The overall date for most of the studs and related items appears to be the 2nd or 3rd centuries.

52. [5.1.76] 3065/SG151 (3100) Disc inlaid with enamel. The inlay in the central disc-shaped panel is too badly damaged for identification; the outer ring is inlaid with alternating panels of enamel, four of yellow and green millefiore, and four of dark green, white and red millefiore in a white background. The disc is bent and damaged but has traces of iron corrosion products on the reverse — probably a ?stud or appliqué. Diameter *c.* 22.2mm; height 2mm.

Compare the closely related piece from the Baths at Newstead (Curle 1911, 331, pl. LXXXIX, no. 21) and another example from topsoil in Myrtle Cottage Orchard, Caerleon (Fox 1940, 130, fig. 6, no. 15).

53. [5.1.12] 001/unstratified (224) Stud or rivet with disc-shaped head, the edge folded back at a slight angle to the upper surface to produce a slightly hollow centre, which is now filled with a ?pale blue enamel (see FIG. 85). There is some damage to the edge of the head. The splayed end of the pin suggests its use as a rivet. Diameter head *c.* 13.1mm; height 7.5mm.

Some heavier examples are known including an unpublished piece from Hunter Street School, Chester.

54. [5.1.13] 600/SG183 (240) Stud with flat disc-shaped head with two concentric ring-shaped fields filled with blue enamel and a tiny central circular field, also with remains of ?similar enamel (see FIG. 85). The outer edge of the head is incised to give a serrated outline. Most of the pin is now lost. Diameter head 13.5mm; height 4.2mm.

Compare the similar, larger example from Beeches Road excavations, Cirencester (McWhirr 1986, 111, no. 41, fig. 80), and another from a context dated A.D. 150–155/160 at *Verulamium* (Frere 1972, 126, no. 96, fig. 37); and a further piece from a 2nd century ditch fill at Gorhambury, Hertfordshire (Neal *et al.* 1990, 130, fig. 126, no. 211, diameter 18mm).

55. [5.1.20] 700/SG183 (340) Enamelled stud with serrated edge. The central circular field is filled with red enamel and millefiore with some dots of blue enamel; the outer circular ring has blue enamel with ?black and white millefiore (see FIG. 85). Diameter 19.1mm; height 9.4mm.

Compare the smaller related piece, also with a hatched edge, from Butt Road, Colchester (Crummy 1983, 118, fig. 121, no. 3220, diameter 15.5mm, height 4mm); another from the Cattlemarket, Chichester (Down 1989, 202, fig. 27.6, no. 88), and a further related piece said to be from Spain (Hattatt 1989, 425, fig. 16, no. 52).

56. [5.1.75] 3047/SG155 (3089) Worn stud inlaid with enamel. The central disc-shaped field has yellow or green enamel with an off-centre black dot (see FIG. 85). The outer ring-shaped field is filled with red enamel with a ring of randomly-placed white or cream-coloured dots towards the outer edge. Diameter 15.7–16.6mm; height 6.4mm.

Compare the unstratified example from Lion Walk, Colchester 1971–4 (Crummy 1983, 118, fig. 121, no. 3218, diameter 18mm).

57. [5.1.66] 2393/SG44 (2377) Disc, originally inlaid with enamel which is now almost completely lost. The outer ring-shaped field probably had four panels of two alternating designs. The small central field was also enamelled. No trace of a pin or other attachment has survived. Diameter 15mm; height 2.7mm.

Compare the example from the Prysog Field, Caerleon, with a suggested 2nd century date (Nash-Williams 1932a, 83, fig. 32, no. 19).

58. [5.1.37] 812/SG112 (855) Stud or button with small central disc-shaped field and outer ring-shaped one, ?for enamel. Incomplete, damaged and much of pin lost. Diameter 15.3mm; height 3.3mm. (Not illustrated.)

See the piece from *Verulamium* which may be related (Frere 1984, 51, fig. 20, no. 179), from a context dated A.D. 380–390.

59. [5.1.44] 891/SG106 (1065) Stud with disc-shaped head, decorated with four raised concentric rings about a central dot; may have been inlaid. Tip of pin lost, and head a little damaged. Diameter head 8.6mm; height 7.6mm.

Compare the related example from a context dated A.D. 100/110–230 in the Fortress Baths at Caerleon (Zienkiewicz 1986b, 186, no. 152, fig. 61); and the slightly heavier piece from Dwr-y-Felin House, Neath (Lloyd-Morgan 1992a, 249, no. 14).

60. [5.1.69] 2491/SG56 (2678) Flat-headed stud or fitting with rectangular cross-sectioned shaft; incomplete. The head is turned with several concentric circles just inside the edge, and one around the centre point. Diameter head 25.7mm; height 12.4mm.

Compare the piece found in topsoil at Myrtle Cottage Orchard, Caerleon (Fox 1940, 127, fig. 5, no. 4).

61. [5.1.41] 1027/SG145 (936) Stud with flat head, the edge turned back, broken. Diameter head *c.* 20mm; height 5.7mm. (Not illustrated.)

See the examples from Corbridge, Northumberland (Bishop and Dore 1988, 185, nos 225, 226, fig. 87; and Puckeridge, Hertfordshire (Potter and Trow 1988, 63, fig. 26, nos 66, 67) and from Loughor, West Glamorgan (Lloyd-Morgan 1997, 258 no. 97).

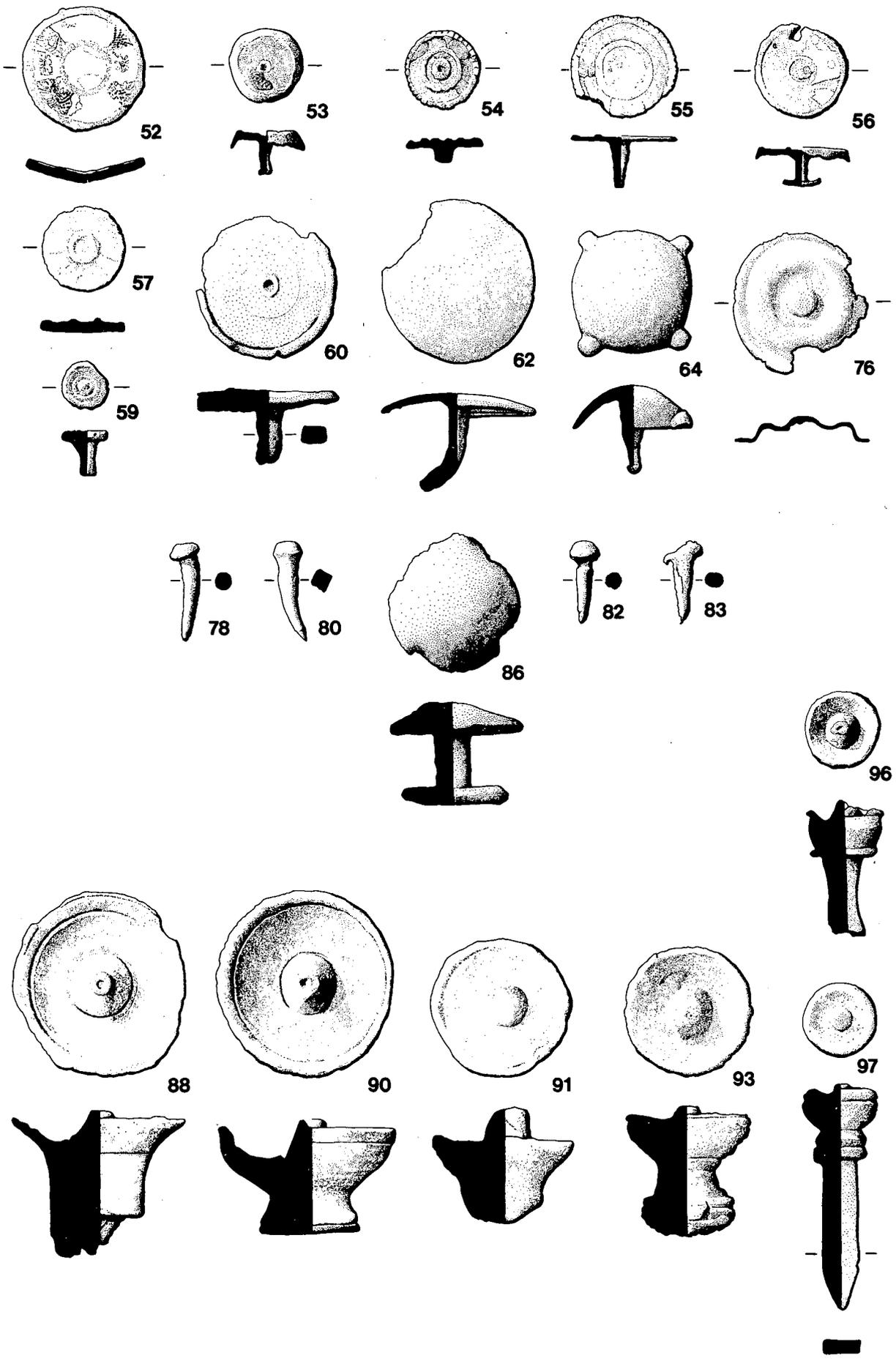


FIG. 86. Copper alloy objects nos 52-97: studs, nails, rivets and 'bell-shaped' studs. Scale 1:1 (see Fig. 85 for enamelling details on nos 52-6).

62. [5.1.54] 2014/SG83 (2074) Stud with slightly domed head, decorated on the underside by two moulded concentric circles just inside the edge. Square cross-sectioned pin; tip missing, head slightly damaged. Diameter head 27.7mm; height *c.* 18mm.

Compare the examples from Chichester (Down 1989, 196, fig. 27.2, no. 32); and *Verulamium*, from a post-Roman layer (Frere 1984, 47, fig. 17, no. 150).

63. [5.1.1.] 013/unstratified (034) Remains of a large, hollow domed-headed boss with lead alloy filler, and the remains, as an orange-coloured oxide, of the original square cross-sectioned pin; fragmentary. Estimated diameter *c.* 46mm, height *c.* 20mm. (Not illustrated.)

See the examples from Colchester (Crummy 1983, 119, fig. 124, no. 4036, Lion Walk 1971–4, probably dated A.D. 150–275/300; no. 4044, Balkerne Lane 1973–6, from a context dated A.D. 250–300 or earlier; no. 4045, Butt Road 1979, grave fill dated early to mid 2nd century); from Rudston Villa (Stead 1980, 103, fig. 66, no. 52); South Shields, Tyne and Wear (Miket 1983, 116, fig. 74 no. 114, topsoil); with two unpublished examples from Loughor, West Glamorgan.

64. [5.1.42] 860/SG53 (967) Hollow dome-headed stud with four small knobs spaced equidistant round the edge; the pin is bent. Maximum diameter 27.6mm; height *c.* 7mm.

65. [5.1.56] 2095/unstratified (2099) Remains of a hollow dome-headed stud with the slight traces of turning on the head; with lead alloy filler inside, and the remnants of an iron pin shaft. Diameter *c.* 24.2mm. For parallels see no. 63. (Not illustrated.)

66. [5.1.72] 2002/unstratified (2439) Hollow dome-headed stud with lead alloy filler and well-preserved iron pin. Diameter head 21.8mm; height 24.4mm. For parallels see no. 63. (Not illustrated.)

67. [5.1.52] 2037/SG82 (2069) Hollow dome-headed stud with lead alloy filler; damaged and encrusted. Diameter head 19.7mm; height 10.8mm. For parallels see no. 63. (Not illustrated.)

68. [5.1.35] 928/SG53 (760) Hollow dome-headed stud, damaged. Diameter head 18.7mm; height 9.2mm. (Not illustrated.)

69. [5.1.34] 002/unstratified (737) Hollow dome-headed stud filled with lead alloy solder. Diameter head; 17.5mm height 7.4mm. Compare no. 63 above. (Not illustrated.)

70. [5.1.61] 2086/SG94 (2239) Hollow dome-headed stud filled with lead solder and remains of the iron pin shaft; poorly preserved. Diameter *c.* 17.5mm. For parallels see no. 63. (Not illustrated.)

71. [5.1.25] 002/unstratified (460) Stud with lead alloy filler inside head, damaged and decayed. Diameter 14.2–15mm; height 5.3mm. For parallels see no. 63 above. (Not illustrated.)

72. [5.1.3] 403=103/SG185 (070) Hollow dome-headed stud with lead alloy filler. Diameter head 11.3mm; height 6.8mm. For parallels see no. 63 above. (Not illustrated.)

73. [5.1.4] 202/unstratified (084) Hollow dome-headed stud; rather squashed and encrusted. Diameter head 9.4mm. (Not illustrated.)

See the example from the Fortress Baths, Caerleon (Zienkiewicz 1986b, 175, fig. 56, no. 17, diameter 14mm, from earlier than A.D. 100/110; 178, fig. 59, no. 86, diameter 14mm from Drain Group 4 of *c.* A.D. 160–230); Northchurch villa, Hertfordshire (Neal 1974–6, 21, no. 15, fig. XII), and the Arthur John Car Park, Cowbridge; Loughor, West Glamorgan (Lloyd-Morgan 1997, 256, nos 89, 90).

74. [5.1.21] 600/SG183 (346) Fragment of stud with hollow domed head, heavily encrusted and decayed. Diameter head 8.4mm. Compare no. 73 above. (Not illustrated.)

75. [5.1.18] 605/SG183 (335) Hollow domed head of stud; encrusted. Diameter head 7.3mm; height 3.0mm. Compare no. 73 above. (Not illustrated.)

76. [5.1.51] 2002/unstratified (2055) Hollow stud-head with small raised central boss flanked by two raised concentric rings; the underside holds remains of lead solder and an iron pin. Diameter head *c.* 25mm; height 4.4mm.

Compare the examples from Lion Walk, Colchester 1971–4, from a context dated A.D. 40–60/61 (Crummy 1983, 119, fig. 124, no. 4037); from Exeter dated Hadrianic-early Antonine (Holbrook and Bidwell 1991, 252, no. 65, fig. 112); and from County Hall, Chichester (Down 1989, 218, fig. 29.1, no. 15); with unpublished examples from Doncaster 1972; Abbey Green, Chester, and York.

77. [5.1.32] 001/unstratified (706) Stud, or tiny ?button, with disc-shaped head, and rectangular cross-sectioned shaft. Damaged and a little encrusted. Diameter head 6.5mm; height 5mm. (Not illustrated.)

78. [5.1.6] 252/unstratified (117) Nail with solid slightly domed head. Diameter head 5.5mm; height 17.4mm.

Compare the items from Montagu Close, Southwark (Graham 1978, 287, no. 189, no. (ii) fig. 131, Flavian period, for dating see p.247; no. (i) probably late 1st century, for dating see p.245; and from Colchester, Lion Walk (Crummy 1983, 115, fig. 118, no. 3082 from a context dated *c.* A.D. 60/61–100).

79. [5.1.9] 001/unstratified (144) Tack or nail with eroded sub-spherical head. Diameter head 6.4 × 7mm; length 12.4mm. (Not illustrated.)
See the examples from Corbridge (Bishop and Dore 1988, 187, no. 272, fig. 88; 188, no. 279); the Amphitheatre at Chester (Thompson 1976, 195, fig. 28, no. 47 unstratified); and the examples from Colchester described as 'almost certainly from furniture upholstery' (Crummy 1983, 115, fig. 116, no. 2992, Lion Walk 1971–4 from a context dated A.D. 150–275/300; no. 2995 same site dated A.D. 150–?200; no. 3002 Lion Walk context dated A.D. 60/61 to c. 100; Balkerne Lane 1973–6 no. 3021 found during site clearance; no. 3029 same site context 80/85–400+ A.D.); and from the Fortress Baths at Caerleon, all from Drain Group 4, dated c. A.D. 160–230 (Zienkiewicz 1986b, 178, fig. 59, no. 80, 83, 84). Other examples from South Wales include from Loughor, West Glamorgan (Lloyd-Morgan 1997, 258, no. 99, plus fifteen further unpublished pieces); and an unpublished one from Dwr-y-Felin House, Neath.
80. [5.1.28] 001/unstratified (512) Small nail or stud with square cross-sectioned pin, and angular sub-spherical head. Head 4.9 × 5.5mm; height c. 18mm. Compare no. 79 above.
81. [5.1.22] 700/SG183 (368) Nail or tack with solid sub-spherical head, heavily encrusted. Diameter head 7.2 × 7.9mm; height c. 29mm. Compare no. 79 above. (Not illustrated.)
82. [5.1.23] 600/SG183 (420) As above, tip slightly damaged. Diameter head 5.4 × 5.8mm; height 14.6mm.
83. [5.1.10] 001/unstratified (191) Tack or rivet made of folded and rolled sheet metal. Length 13.6mm.
Compare the items from Northchurch Villa, and Boxmoor Villa, Hertfordshire (Neal 1974–6, 21, fig. 12, no. 13, and 80, fig. 46, no. 27, respectively); and Brancaster, Norfolk, for a rectangular sheet, a ?patch with six nail holes, five of which still have rivets of sheet metal still *in situ* (Hinchliffe and Sparey Green 1985, 215, fig. 92, no. 70). Six similar tacks/rivets were found during excavations at Hopyard Meadow, Cowbridge; with another eleven from Loughor, West Glamorgan.
84. [5.1.14] 700/SG183 (252) Crude rivet with hollow domed head, square cross-sectioned shaft, and damaged ?washer. Incomplete and distorted. Diameter head c. 22mm; diameter washer c. 17mm; height 21mm. (Not illustrated.)
85. [5.1.17] 700/SG183 (330) Damaged rivet in two sections, the head consisting of a flat disc with the edge turned up to hold the cover in place. The cover has two indented concentric circles, and there may be traces of filler between the two sections. The shaft is rather stubby in appearance. Diameter head c. 8.6mm; height 5.1mm. (Not illustrated.)
86. [5.1.55] 2082/SG94 (2082) Rivet with low conical-shaped head and disc-shaped washer at the other end; some slight damage to the edge. Diameter head 23.6–23.8mm; diameter washer 16.7–19mm; height 17.3mm.
Discussed by Oldenstein, who dates the type to c. A.D. 150 (1976, 170, Taf. 47, nos 490–2); a similar date, A.D. 140–150 is suggested for a piece from *Verulamium* (Frere 1972, 126, fig. 38, no. 103). Another example from Winterton Villa, Lincolnshire, was dated Antonine/3rd century (Stead 1976, 214, fig. 112, no. 123); with further items from Gorhambury, St Albans (Neal *et al.* 1990, 134, fig. 130, nos 353, 354).
87. [5.1.48] 851/SG114 (1232) Conical head of a pin, rivet or finial. Incomplete, and with damaged tip. Maximum diameter c. 9mm; height 7.1mm. (Not illustrated.)

'Bell-shaped' studs (FIG. 86)

Total number recorded = 11

The much heavier bell-shaped stud, which varies greatly in its size and proportions, appears to have a similar date to those catalogued above. In most cases there is the decayed fragment of an iron rod or tang inserted in the upper section (Type 1). Moulds for the manufacture of these items have been found at Heronbridge, a couple of miles up the River Dee from Chester. They were associated with other moulds which appear to have been used to cast fittings for small chests and caskets, according to the excavator, who also proposed that the studs may well have been used as feet for these boxes (Hartley 1954).

Closely related, but with a copper alloy tang of rectangular section cast in one piece with the bell-shaped base, are four further studs (Type 2) which have been described as lock-pins. They have the same date range as the other group, namely 2nd to 3rd century.

Type 1

88. [5.2.1] 403=103/SG185 (071) 'Bell-shaped' stud or fitting with remains of iron tang, now decayed, still *in situ* in the upper section. The lower edge is damaged. Maximum diameter 33.4mm; height 28.2mm.

The object is discussed by Allason-Jones as her Type 1 'Bell-shaped studs': she notes that 'the majority appear to come from military contexts rather than civilian sites' (1985, 97, fig. 1), though she notes one from the Isle of Wight (*op cit.*, 100). There are, however, other examples from civilian sites, as for example from Milton Keynes, Buckinghamshire (Zeepvat *et al.* 1987, 138, fig. 43, no. 87); Gadebridge Park villa, Hertfordshire (Neal 1974, 130, fig. 56, no. 56); Fishbourne, West Sussex (Cunliffe 1971, 112, fig. 46, no. 118, from plough soil); and from two unpublished civilian sites in Warwickshire; Tiddington; Alcester Birch Abbey excavations 1964–66 as well as from *Verulamium* (Frere 1984, 51, fig. 20, no. 177, from a context dated A.D. 250–280; and no. 178 from a context dated A.D. 430–440); and Colchester, Essex (Crummy 1983, 165, fig. 203, no. 4640, Balkerne Lane 1973–6, diameter 25mm dated *c.* 300–400; 165, fig. 204, no. 4650 diameter 28.5mm from the Cups Hotel 1973–4, found in an 11th–12th century robber trench). At a bronze-working site first located in the late 1940s at Heronbridge, near Chester, a number of one-piece mould fragments were discovered, and have been described by Hartley (1954, 5, fig. 3, nos 1, 2):

'...the mould cavity approximates in form to the truncated cone with somewhat concave sides ... In two cases the top edge of the mould is slightly rebated and the casting was evidently flanged. A bronze from a similar mould which was found in a pit on site II had part of an iron rivet embedded in the narrow end. The other bronzes in this pit were all fittings for a small chest or box and it may plausibly be suggested that the castings from this class of mould were intended for similar use. They would serve admirably as knobs for attachment to lids or as feet.'

This reference seems to provide the first record of the actual manufacture of these fittings, and it can hardly be surprising to find a wealth of examples, varying enormously in size, in Chester and district; from inside the fortress Hunter Street School, Hunters Walk 1980; and from outside the walls, one from the amphitheatre (Thompson 1976, 192, fig. 26, no. 19, from a 4th century layer below collapsed masonry). Other examples include three from Coventina's Well (Allason-Jones and McKay 1985, 31–3, nos 80, 82, 84, with discussion pp.30, 32, under item no. 79); and one from a 4th century context in the Fortress Baths at Caerleon (Zienkiewicz 1986b, 188, fig. 62, no. 172).

89. [5.2.2] 927/SG53 (753) Bell-shaped fitting with remains of square cross-sectioned iron tang in upper section. Some slight damage to the lower edge. Maximum diameter 23.8mm; present height 20.9mm. (Not illustrated.)
90. [5.2.3] 903/SG137 (819) Bell-shaped fitting with remains of square cross-sectioned inset iron tang in the upper section. The diameter of the lower section is about twice the size of the upper part. Maximum diameter 32.2mm; height 21mm.
91. [5.2.4] 1027/SG145 (933) Bell-shaped fitting with remains of the iron tang still *in situ*. The central moulding in the lower section protrudes noticeably below the splayed flange in the lower half of the piece. Maximum diameter 25mm; height 20.4mm.
92. [5.2.6] 2046/SG84 (2184) Bell-shaped fitting, but rather more squat and cylindrical than the other examples listed above. Maximum diameter 18.2mm; height 15.3mm. (Not illustrated.)
93. [5.2.7] 2459/SG168 (2677) Bell-shaped fitting with trace of iron tang of rectangular cross-section in the upper half; surface chipped and damaged. Maximum diameter 22.7mm; height 23.1mm.

A further stud of type 1 was noted.

Type 2

94. [5.2.8] 860/SG53 (1160) Bell-shaped fitting with tapering integral tang of rectangular cross-section; now broken. Maximum diameter 24mm; length 33.8mm. (Not illustrated.)
- Usually described as 'lock-pins', with a circular perforation in the upper part of the tang, these items were discussed by Allason-Jones (1985, 95–105, Type 2, fig. 1), and again by Allason-Jones and McKay in their survey of finds from Coventina's Well on Hadrian's Wall, where a 2nd and 3rd century date range is noted for their use on the northern frontier of the province (1985, 30, nos 79, 81, 83, 85, figs on pp.31, 33).
95. [5.2.9] 2321/SG86 (2390) Bell-shaped fitting, rather squat and cylindrical in appearance, with remains of a rectangular tang in the upper section. Maximum diameter 18.3mm; height 16.1mm. (Not illustrated.)
96. [5.2.10] 3044/SG164 (3163) Bell-shaped fitting cast in one piece with rectangular cross-sectioned tang; now incomplete. Maximum diameter 14.8mm; length 23.7mm; cross-section tang 2.6 × 6.6mm.
97. [5.2.11] 3500/unstratified (3504) Bell-shaped fitting as above. Maximum diameter 13.2mm; overall length 39.3mm; cross-section tang 2.5 × 6.4mm.

Plaques, inlays and bindings (FIG. 87)

Total number recorded = 13

98. [5.3.6] 839/unstratified (762) Trapezoidal fragment with raised geometric decoration. Surface area 7.7×6.6 mm; depth 1.6mm. (Not illustrated.)
99. [5.3.8] 110/SG10 (900) Fragment of openwork plaque or fitting. Surface area 16.4×14 mm; thickness *c.* 1mm. (Not illustrated.)
100. [5.3.10] 1459/unstratified (1264) Plaque or binding from box, casket or larger item, with raised repoussé borders and nail holes for two decorative studs, now lost. May have been reutilised, as there are three smaller nail holes made from the other side. Length 54mm; width 25.4mm; thickness 0.4mm.
101. [5.3.12] 2085/SG94 (2094) Scroll-shaped fragment of openwork plaque or inlay. Length 18mm; width 11.4mm; thickness 2.6mm. (Not illustrated.)
102. [5.3.13] 3003/unstratified (3180) Fragment of openwork plaque or inlay. Surface area 28.8×25 mm; thickness *c.* 1.7mm. (Not illustrated.)

Locks and keys (FIG. 87)

Total number of Roman keys recorded = 12.

Several small ring-keys with a bezel cut to match the lock of a small casket were found, of which no. 103 is the best preserved. Two lock-bolts survived, and keys of the lock slide type as nos 107 and 108. The most elaborate piece was the latch-lifter key, no. 111, the working section being iron, with the copper alloy handle in the form of a crouched lion of rather mournful aspect. For other locks and keys, see report on ironwork nos 41–50.

103. [5.4.10] 3001/unstratified (3013) Ring-key, for use with small boxes and caskets. Most of the hoop is now lost, but the key section is reasonably well preserved. Height key 21.9mm; surviving loop length 14.2mm.

Compare the examples from Colchester, Essex (Crummy 1983, 84, no. 2164, fig. 89, and no. 2165 from Balkerne from a context dated *c.* A.D. 250 to *c.* 300; and no. 2169 from Butt Road, found in grave fill dated *c.* 320 to *c.* 450); from Gorhambury, Hertfordshire (Neal *et al.* 1990, 132, fig. 128, no. 252, 4th century); and an unstratified piece from Richborough, Kent (Cunliffe 1968, 104, no. 198, pl. XLV).

104. [5.4.7] 1454/SG35 (1256) Ring-key; the surface is eroded and the key section damaged and incomplete. Diameter ring 17.8×19.4 mm; height of key 13.6mm. (Not illustrated.)

Compare the pieces from Chester dated 'not later than the closing years of the 2nd century' (Newstead and Droop 1939, 39, pl. IX, no. 6); from Balkerne Lane, Colchester (Crummy 1983, 84, fig. 89, no. 2163 from a context dated *c.* A.D. 50–5?); 201–211 Borough High Street, Southwark, London (Ferretti and Graham 1978, 156, fig. 62, no. 9); and the Jewry Wall, Leicester (Kenyon 1948, 258, fig. 86, no. 12) from 'disturbed levels'.

Parts of two other ring keys were recorded.

105. [5.4.5] 1229/SG54 (1153) Lock-bolt, a little damaged at one end. Length 42.7mm; height 11.8mm; depth 5.7mm.

Compare the examples from Silchester, Hampshire (Boon 1974b, 204, 206, fig. 32, no. 4) and *Verulamium*, from a context dated *c.* A.D. 130 (Frere 1972, 130, fig. 39, no. 119).

106. [5.4.3] 003/unstratified (491) Small incomplete lock-bolt, encrusted. Length 26.1mm; height 10mm; maximum depth 5.1mm. Compare the better-preserved piece no. 105 above. (Not illustrated.)

107. [5.4.2] 704/SG182 (383) Lock slide key, with offset handle of rectangular cross-section, pierced by a square hole in the upper section, and with slight moulded decoration. Height 52.3mm; width 23.5mm; maximum depth 7.1mm.

Compare the closely related iron key from Silchester, Hampshire (Boon 1957, 204, 206, fig. 32, no. 3); the related piece from Richborough, Kent (Bushe-Fox 1949, 147, no. 218, pl. LIV); and the iron keys from *Verulamium* (Wheeler and Wheeler 1936, 219, no. 23, pl. LXV.B, from a late 3rd/4th century context; 220, no. 27 from a context before A.D. 160).

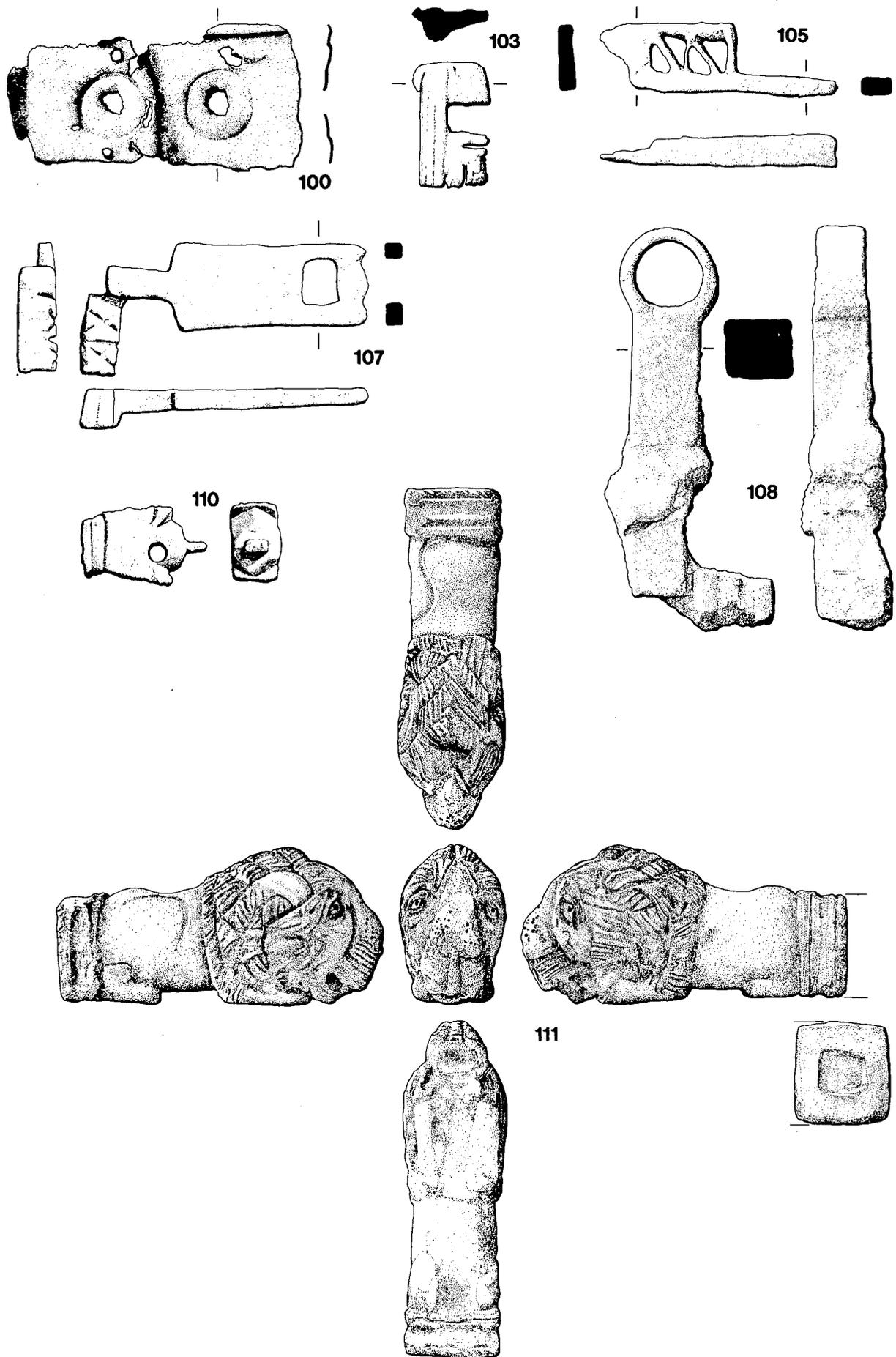


FIG. 87. Copper alloy objects nos 100–11: plaques, inlays, bindings, locks and keys. Scale 1:1.

108. [5.4.6] 892/SG106 (1205) Tumbler-lock slide key of iron with copper alloy handle of rectangular cross-section, and plain ring-shaped terminal. Total height 66.2mm; height copper alloy handle section 37.5mm; width loop 17.4mm; width key section 24.7mm.
Compare the related piece from Lower Market, Fore Street, Exeter (Holbrook and Bidwell 1991, 254, fig. 114, no. 90); and Lion Walk, Colchester (Crummy 1983, 125, fig. 140, no. 4150, from a context dated A.D. 49/55–60/61); and the example from Loughor, West Glamorgan (Lloyd-Morgan 1997, 259, no. 107) where most of the iron section has been lost.
109. [5.4.8] 2065/SG84 (2124) Fragment of a heavy slide key. Height 28mm; width 37.1mm; thickness 4.5mm. (Not illustrated.)
Compare the smaller complete example from topsoil at Richborough (Bushe-Fox 1928, 49, fig. 2, no. 58, pl. XXXI); and an incomplete piece from Puckeridge, Hertfordshire (Potter and Trow 1988, 66, fig. 28, no. 10).
110. [5.4.9] 2128/SG81 (2241) Decorative finial for key with socket to take the iron shaft of the key section. The finial has a rectangular cross-section, light incised decoration and the remains of a loop on the head. Maximum length 23.2mm; width 13.9mm; depth 9.2mm. Compare the complete key no. 108, of similar construction.
111. [5.4.4] 103/SG185 (997) Latch-lifter key with copper alloy handle in the form of a crouched lion backed up against a moulded collar of square cross-section. The mane is indicated by heavy hatching, the tail by an incised line curling over the back and down the right side of the body. The head rests between two diminutive paws. The collar is pierced by a square cross-sectioned hole into which the iron shaft of the key section was slotted. Length handle 59.1mm; width 19.6mm; height 27.8mm. With fragment of iron shaft; circular cross-section, partially mineralised. Length 30mm; cross-section 9mm.
Compare the complete key with a crouched lion as handle, and the well-preserved key section (Espérandieu and Rolland 1959, 76, no. 163, pl. LI, thought to have come from the cemetery at Londinières 1836). Note also two further unprovenanced handles with similar crouched lions (Espérandieu and Rolland 1959, 76, no. 165, pl. LII; and no. 164, with the head raised). Another example originally described as a knife handle, showing the lion emerging from an angular collar, and closely related to the Caerleon find, comes from Wall, Staffordshire (Webster 1958, 94, no. 225, fig. 8). Other related examples show the lion with prey, for instance a piece from Bavai (Nord) where the lion has a wild boar (Faider-Feytmans 1957, 108, no. 253, pl. XLI); and another from Bampton, Norfolk, where the lion is mauling a man (Henig 1984a, 407–8, fig. 14, pl. LVII). Another version of the handle shows a crouched lion emerging from a spray of stylised acanthus leaves, with examples found at Fishbourne, West Sussex (Cunliffe 1971, 118, fig. 50, no. 144, from a context dated c. A.D. 100–270); *Verulamium* (Frere 1984, 49, fig. 18, no. 165, from a context dated A.D. 220–240); and Baldock, Hertfordshire (Stead and Rigby 1986, 136, fig. 59, no. 370, from a context dated 3rd or 4th century).

Figural bronzes and related items (FIGS 88, 89)

Total number recorded = 11

Virtually all domestic buildings would have had a shrine for the *Lares* and *Penates* who guarded the house and its inhabitants. It is, therefore, not surprising that a number of small bronzes were found which were probably placed as offerings to the gods. Three items (nos 112–14), one a cockerel and two other damaged pieces which most likely were also cockerels, can be associated with Hermes/Mercury, and, less commonly in Britain, with Aesculapius, the god of healing. An incomplete fragment (no. 115) may be another cockerel head, or some other animal such as a dolphin. The goat was also associated with Mercury, and is represented by a virtually complete miniature piece (no. 116). Other items include a child, perhaps Cupid, holding a bird (no. 117) perhaps part of a larger group. An axe/hammer (no. 120) may have been part of a set of miniature tools offered up by a local craftsman working in the settlement. The most curious piece is a bust of Minerva (no. 118) looking much like a miniature trophy, with flame-like projections at each corner of the aegis. A T-shaped lug at the back suggests that it was originally part of a much larger fitting or ornament, perhaps on furniture or, more likely, in the centre of a roundel on a ?military standard or ensign.

112. [6.1] 015/unstratified (032) A cockerel modelled in the round with the head turned a little to the right, and standing on a slightly domed disc-shaped base; some incised detail. There is some surface loss and the tail section has suffered some damage. Present height 19.9mm; maximum width 10.8mm; maximum length 14.4mm.

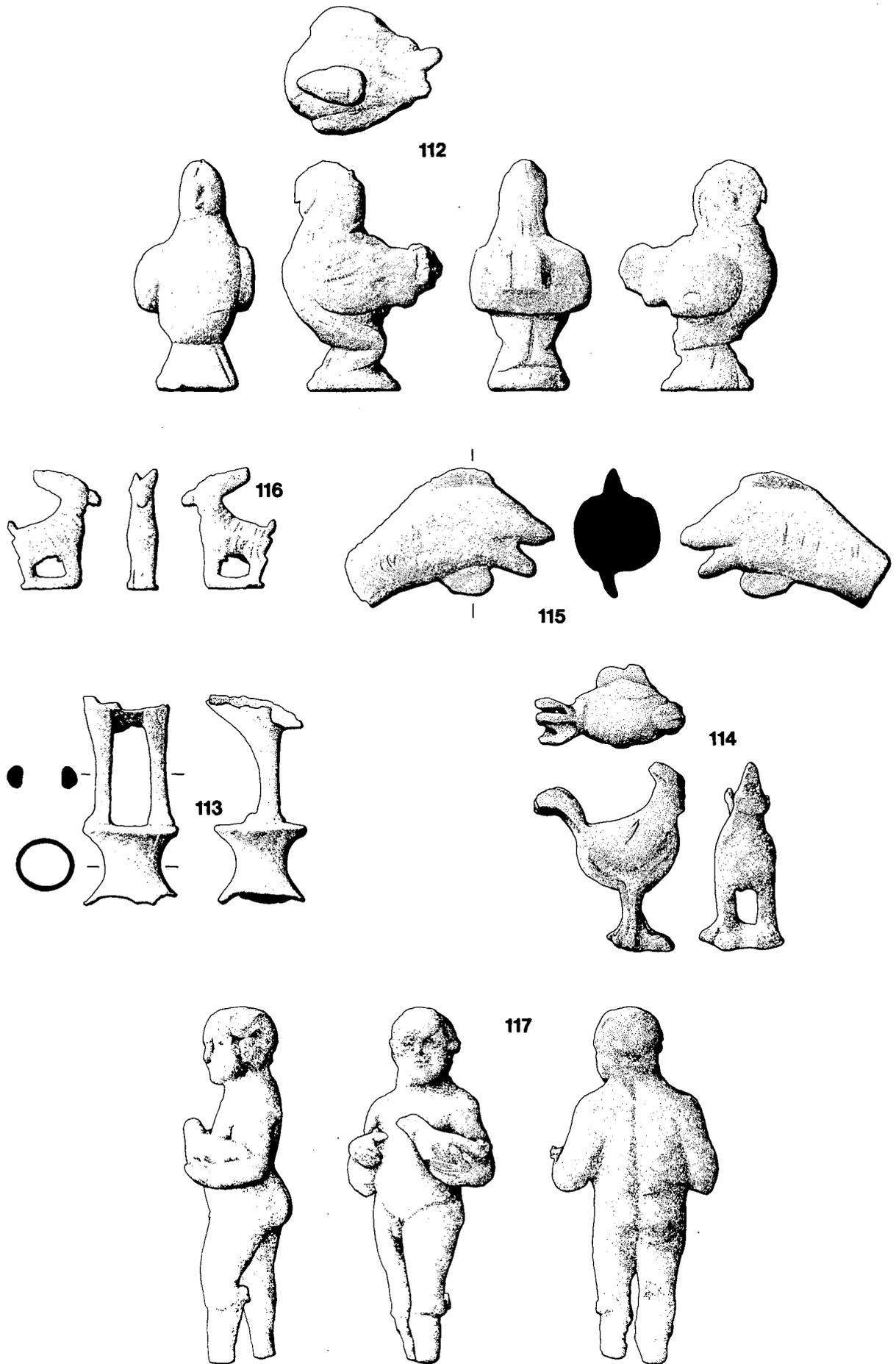


FIG. 88. Copper alloy objects nos 112-17: figural bronzes. Scale 1:1, except for no. 112, which is at 2:1

Compare the similar miniature figurines of cockerels, as for example the piece 30mm high, also on a disc-shaped base, found in tomb no. 485 at Bavai (Nord) in September 1913, with 1st century pottery and a coin of Nero (Faider-Feytmans 1957, 87, no. 169, pl. XXXII); and a smaller one 25mm high said to be from Mons, now in the Musée du Centenaire (Faider-Feytmans 1979, 98, no. 124, pl. 61). A slightly larger piece comes from Vaison-la-Romaine, height 52mm (Rolland 1965, 133, no. 279 with pl.); and another from *Carnuntum*, Austria, height 34mm (Fleischer 1967, 189, no. 272, Taf. 129). Amongst the examples from Britain is an unstratified piece from the *mansio* area at *Vindolanda* on Hadrian's Wall, height 25mm (Birley 1973, 122, no. 23, pl. XXI).

The cockerel is one of the animals associated with the Greek god of healing, Asklepios (known to the Romans as Aesculapius), as witnessed by the celebrated last words of Socrates, recorded by Plato in *Phaedo* 118: 'Crito, we ought to offer a cock to Asklepios; see to it and do not forget' (translated Hugh Tredennick). In the western provinces of the Empire, and particularly in Britain and Gaul, the cockerel is more closely associated with Mercury. For example, the excavations at Uley, Gloucestershire, uncovered not only the temple and associated buildings, but also a good proportion of what was the cult statue of Mercury, with a ram and a cockerel at his feet. A small group in bronze from the King Harry Lane area, St Albans, shows Mercury standing with a cockerel, ram and tortoise at his feet. It has been dated to the 2nd or 3rd century, and is now in the *Verulamium* Museum (Wilson 1972, 329–30, pl. XXV B, C). A group from Bavai, now in the Musée de Mariemont, Belgium, shows Mercury with a cockerel and a goat (Faider-Feytmans 1957, 47–8, no. 29, pl. VI). It is interesting to note, at Caerleon, the other two copper alloy figurines of cockerels from Mill Street described below (nos 113, 114); the statue of the god from the Amphitheatre (Wheeler and Wheeler 1928, 161, pl. 32, fig. 1), as well as the inscription on a dedication, of which only Mercury's feet have survived (Collingwood and Wright 1965, *RIB*, 110, no. 321 and fig.).

113. [6.5] 2002/unstratified (2054) A small incomplete statuette of a cockerel, consisting only of the legs and part of the underside of the body, on an integral cylindrical base with concave sides, the lowest part now lost. Surviving height 35.6mm; present height of base 14.2mm; maximum diameter of base 17.5mm.

Compare the more complete example from the Ludwig Marx collection (Behn 1913, 22, no. 227 Abb. 23); another now in Museum GM Kam at Nijmegen, height 71mm (Zadoks-Josephus Jitta *et al.* 1973, 34, no. 44 with pl.); and a third piece from Le Landeron in the canton Bern and Wallis, Switzerland, dated 1st or early 2nd century A.D. (Leibundgut 1980, 79, Taf. 106, no. 74), height of bird 68mm, height with base 87mm).

114. [6.6] 2032/unstratified (2161) Roughly-modelled cockerel with beak and comb heavily damaged, with some surface loss. The overlarge feet form a flat base, although the figure cannot stand unaided. Height 32.6mm; length *c.* 27mm; maximum width 11.3mm.

Compare the related example from *Verulamium*, from a context dated A.D. 270–80 (Frere 1972, 144, fig. 49, no. 159); one from Bad Deutsch Altenburg near *Carnuntum*, Austria (Fleischer 1967, 189, no. 273, Taf. 129, height 33mm, and now in the Museum Carnuntinum); and another from Chelmsford, Essex (Drury and Wickenden 1982, 239, pl. XVIII, no. 1). Compare also no. 112.

115. [6.8] 2309/SG92 (2262) Solid cast head and neck of a ?dolphin or, more probably, a cockerel with slight wattle and comb, open beak with V-shaped punches to suggest ?scales or ?feathers. Broken from a larger item, a fitting or knife handle. Present length 37mm; height 22.6mm; maximum width 15.7mm.

Perhaps part of an ?ornamental carriage fitting, or from a large balance as in the example from Trier (Menzel 1966, 113, no. 276, Taf. 85, now in the Landesmuseum, Trier).

116. [6.10] 2429/SG168 (2519) Free-standing figurine of a goat on an integral rectangular base, with deep incisions indicating a shaggy coat. Height 21.2mm; length 17.3mm; width 5.6mm.

Mercury was closely associated with his birthplace in Arcadia in southern Greece, where he was seen as being connected with human fertility as well as that of the flocks, herds and the earth itself. Hence he is often depicted with a ram, as for example in the group from King Harry Lane, St Albans, noted in the discussion of no. 112 above. He is also seen with a goat, as for example in two of the pieces from Augst, Switzerland, one with a goat almost identical to ours standing by the left foot of the god, found in one of the houses burned down in the mid 3rd century. A third piece, with the base for a group showing only the goat and the tortoise (the figure of Mercury has been lost), was found with 2nd century pottery (Kaufmann-Heinman 1977, 37, Taf. 23–5, no. 32 from Augst; 89, Taf. 94, no. 95; 105, Taf. 103, 104, no. 155 from Augst). Compare also the votive goat from Ursin, West Schweiz, on a rectangular base inscribed: DAEO / MERCVRIO / IVL[IA] IVLIANA / VSLM, now in the Musée Cantonal d'Archéologie, Lausanne (Leibundgut 1980, 74–5, Taf. 100, no.

63). Examples from Britain include a goat from Uley very similar to the Mill Street piece, with a suggested Antonine date (Ellison and Henig 1978, 369, pl. LXXIIe); another from Brigstock, Northants (Dix 1986, 127, 129, fig. 2, no. 2, height 27mm); and an unpublished piece found near the centre of the Roman fortress at Chester during excavations on the Old Market Hall site Phase I 1967–9.

117. [6.7] 2095/SG84 (2180) Statuette of a male child, head in left profile, holding a bird, probably a pigeon or dove, in his left hand. The child's right arm is flexed; the fingers curled down and thumb outstretched, suggesting that he is about to caress the bird. The child's head is turned slightly towards the left; the curly hair ends at the nape of the neck. Most of the legs are lost below mid calf, with the left leg slightly in advance of the right. There is a fragment of a horizontal support behind the left knee, suggesting that the figure, who may well be Cupid, was part of a larger group. Height 62mm.

Compare the statuette of the running Cupid with a bird in his right hand, and the seated male child with a bird in the left hand, both from the Lambert Collection, now in the Musée des Beaux Arts, Lyons (Boucher 1973, 5–6, no. 9 with pl., height 100mm; 125, no. 192, height 70mm); and the unprovenanced standing figure with a bird/dove in the left hand, and another with a child advancing holding a bird by the wings in his left hand, found at Volx in 1903 or 1904, height 165mm, and dated to the 3rd century: both pieces now in the Museum Calvet, Avignon (Rolland 1965, 74, no. 114 with pl., height 70mm; 74–5, no. 115 with pl.).

118. [6.2] 700/SG183 (352) Bust of Minerva with stylised, plumed Corinthian-style helmet, the plume supported from behind by a short bar running from the peak of the helmet. The helmet has a border of notches round the edge of the peak and is further ornamented with scroll and punched-dot motifs. The feathered *aegis* is truncated just below the breast, and at the four corners of the *aegis* are stylised, torch-like projections suggesting a military trophy. Each projection has a concave underside as if to fit over a penannular fitting with internal diameter of 28mm (= 1 Roman inch). A horizontal T-shaped lug behind the neck suggests that the bust and ring fitting or ornament was slotted onto a more solid backing. Most of the back of the piece is hollow, with no trace of solder. Some traces of gilding survive, especially in the areas such as the hair, where it could not be easily eroded. The incised detail and modelling are extremely fine, and it seems likely that the piece may have been a continental import. Height *c.* 68mm; maximum width 39.7mm; maximum depth 29mm.

The feathered *aegis* is clearly represented on the copper alloy statuette of Minerva from the shrine near Ettringen, near Koblenz in the Rhineland, now in Boston, Massachusetts (Comstock and Vermeule 1971, 92–3, no. 97 and pl.); and on the Cancelleria relief, found in Rome in 1937, showing the *Profectio* of Domitian (Hanfmann 1964, 109–10, pls 111, 113; Hannestad 1986, 135–7 pl. 85). This bust is too large and heavy to have been used to ornament the large decorative roundels on horse trappings, as for example the 1st century A.D. set from Xanten (Jenkins 1985, see figs 2, 3); or to have been part of the military *phalerae* used as awards for bravery (Maxfield 1981, 91–5, figs 11, 12, pls 15, 16). The T-shaped fitting suggests that it was attached to a fairly substantial item, either a major piece of furniture, where it could have been put onto the fulcrum of a couch (Nicholls 1979, 8–9, fig. 4, with carved bone medallion; Ransom 1905, 98–9, pls IX and XIIa, b, c; 99–100; 100–1, pl. XVc, height 102mm, of copper alloy, and all in high relief and larger than the circular backing plate section of the fulcrum). An alternative suggestion might be that it had once been attached to one of the roundels on a military standard, though there is no direct evidence to support this tentative hypothesis.

119. [6.3] 1226/SG125 (1157) Miniature fitting in the form of a left foot and part of the lower calf wearing a boot or sandal, with the remains of a socket in the upper part. The surface is very eroded and poorly preserved. Height 33.4mm; length of foot *c.* 14.6mm.

Compare the following identical pieces: firstly an unprovenanced and unpublished item from the old collections in the Grosvenor Museum, Chester, height 3.5mm; another unpublished example from excavations at Birch Abbey, Alcester, Warwickshire, length 35.3mm; and a third on display in the City Museum and Art Gallery, Gloucester (from the collection of Miss Purnell of Stancombe Park 1872, and said to have come from Stancombe Park villa, Stinchcombe, Gloucestershire). It seems likely that these items were part of an attachment for the modest ornament of a slight piece of furniture.

120. [6.9] 2001/unstratified (2265) Model or votive axe-hammer; the surface a little chipped and worn. Height 38.6mm; length of head 27.2mm; maximum width of head 9.6mm.

Miniatures of objects in everyday use are found not infrequently in graves, as for example the well-furnished Grave 2 at Bachemerstasse, Köln-Lindenthal (Noelke 1984, 386, Abb. 7–8, nos

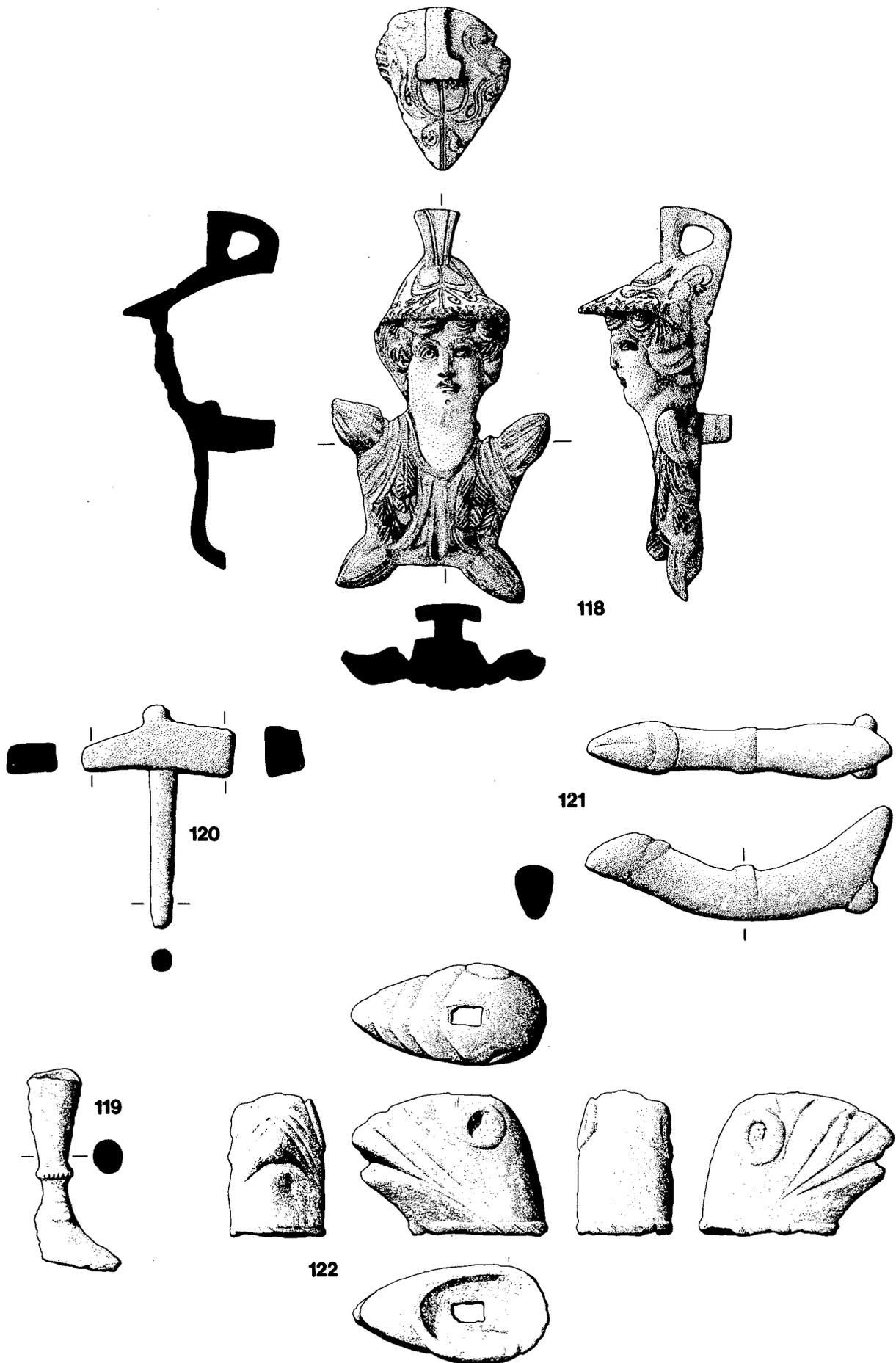


FIG. 89. Copper alloy objects nos 118–22: figural bronzes. Scale 1:1.

8–17), as well as in association with well-established shrines and religious centres within a domestic context, as for example the copper alloy axe from Tiddington, Warwickshire (Green 1985), or the unpublished miniature oval Celtic shield excavated at Malton, Yorkshire, measuring 39.0 × 23.4mm. Green (1981, 266) has commented that axes are among the most common type of model objects. The head of this particular item is somewhat different from the usual axe type as it has a solid, square-ended hammer section at one end, and a tapering narrow axe-like end at the other. The ‘shaft’ of the handle is represented as emerging from the socket at roughly the centre of the head. In spite of the length of the ‘blade’, this object cannot be described as an adze; the blade is in the same plane as the shaft, and with relatively little damage to the piece there can be no doubt that the model is still much as the maker intended it to be. It is thus interesting to note the related axe-hammer recorded from Richborough, Kent (Bushe-Fox 1949, 146, nos 2–8; Green 1978, 69, no. 31; Green 1981, 269, no. 15d).

121. [6.11] 001/unstratified (1761) Phallic amulet or votive with no traces of any fittings for attachment or suspension. Length c. 54.7mm; height 18mm, maximum width 12.5mm.

Possibly used as a votive object in a domestic or street shrine; or set in an appropriate place, such as the main entrance to a house or shop to repel the entry of any evil influences or bad luck (see the discussion in Johns 1982, chapter 3, especially pp.67–70 with pls).

122. [6.4] 001/unstratified (1751) Animal head terminal in the form of a griffin, or an eagle’s head, with a rectangular hole in the top of the head for a ?tang or other attachment. Height 24.4mm; maximum dimensions 35.5 × 17.0mm; diameter of base 16.1 × 24.0mm.

It seems likely that this may have been the pommel for a sword or similar weapon, as seen for example on the porphyry sculpture groups of the Tetrarchs from Istanbul and now built into an angle of the exterior of St Mark’s, Venice, dated 3rd or 4th century; where each figure is seen holding a sword with eagle’s head pommel in the left hand (Strong 1976, 151, pl. 204). Note also the miniature ?votive sword from *Verulamium* (Frere 1972, 132, 138, fig. 44, no. 147, from a context dated c. A.D. 60).

Items of military use

Total number recorded = 75

As might be expected from a settlement close to a military base, finds of complete and broken military equipment are not unusual. Many soldiers would have had either unofficial connections or relatives there, and traders, craftsmen and other personnel with army contacts would have lived or lodged there. In the general to-ing and fro-ing personal items and other bits and pieces could have been accidentally lost, though this is more likely to have affected items like studs and pendants (which form the bulk of objects in this category) than sections of armour (see Bishop and Coulston 1993, 33–7, for a fuller discussion). The relative proportions of military and non-military items in the total copper alloy assemblage, however, together with the nature of the deposits in which they were found, suggests that a significant proportion of these military items may originally have been deposited within the fortress and arrived on the site as a result of secondary disturbance (see pp.466–7 for further discussion).

Fittings for weapons (FIG. 90)

Total number recorded = 6. See also ironwork report no. 10

Scabbards and related fittings from swords and daggers are witnessed by two scabbard runners — the incomplete no. 125 and the better preserved no. 126. Scabbard binding for a dagger is represented by no. 127; a 1st or 2nd century date seems most probable. A chape, most likely intended for a dagger, was also noted (no. 123). A damaged oval knife- or dagger-guard was found, no. 124, as was an animal head terminal which is probably a sword pommel, catalogued above under the figural bronzes (no. 122).

123. [7.22] 001/unstratified (532) Sword or dagger chape with single incised line just below the upper edge, and with four incisions at the tip giving a star-shaped pattern when seen from above. Now squashed and heavily encrusted. Height 32.6mm; maximum cross-section 29.0 × 12.5mm.

Compare the closely-related example from the Deanery Field, Chester (Newstead 1928a, 19 pl. VIII, no. 1, found in association with copper alloy ‘sheath mounting for sword’).

124. [7.37] 812/SG112 (1034) Oval dagger or knife guard with central rectangular hole for tang; damaged. Length 29.1mm; present width 16.5mm; thickness 0.9mm. Compare the piece from Corbridge (Bishop and Dore 1988, 177, fig. 84, no. 147).

125. [7.20] 600/SG183 (423) Upper part of a scabbard runner with moulded ring-shaped terminal. Present length 69.6mm; maximum width 16.4mm. Compare the examples from Fremington Hagg, Yorkshire (Webster 1971, 120, fig. 16, no. 82 and the incomplete no. 83); South Shields, Tyne and Wear (Allason-Jones and Miket 1984, 192, 198, nos 3.646 and 3.647); and Housesteads on Hadrian's Wall, from a context dated to the early 3rd century (Allason-Jones 1988, 89, fig. 9, no. 19); and the unpublished but more crisply modelled broken loop section, from excavations at Hunter Street School, Chester 1979.
126. [7.33] 003/unstratified (898) Scabbard slide with leaf-shaped lower terminal and the remains of two iron pins or rivets for attachment on the underside. A little damaged in places. Length 104.4mm; maximum width 11.2mm; maximum height *c.* 10–10.7mm.
Compare the examples from Thomas Street, Southwark, London (Dennis 1978, 390 fig. 177 no. 125); Brancaster, Norfolk (Hinchliffe and Sparey Green 1985, 211, fig. 90, no. 53, incomplete); Gorhambury, St Albans, Hertfordshire, found in a context dated A.D. 100–175 (Neal *et al.* 1990, 129, fig. 125, no. 179, for dating see pp.44–55 and especially p.50); the unstratified piece from the eastern corner of the Caerleon Fortress (Hawkes 1930, 194, fig. 32, no. 9) and the Prysg Field, Caerleon (Nash-Williams 1932a, 88–9, fig. 36, nos 4, 5, 6, 7 and the incomplete nos 10 and 11). Note also the fragment from Bear Field, Cowbridge (Lloyd-Morgan and Webster 1996, 185, no. 18, length 25mm).
127. [7.45] 001/unstratified (1218) Scabbard binding in two major adjoining pieces, probably for a dagger. It consists of a narrow binding-strip of U-shaped cross-section, with two deep sheet-metal loops as binding round the circumference of the sheath, and riveted on to the lengthwise strip. A further loop, now lost, would have been placed between the two surviving loops, as witnessed by a broken rivet hole. There are some further fragments of binding-strip, and some encrustation inside the curvature of the binding. Overall length 101.7mm; width of loops 15.2mm; 15.9mm, external dimensions of binding loops 36.7 × 14mm, 34.4 × 12.4mm; internal dimensions of binding loops 29.6 × 12.7mm, 27.1 × 9.8mm.
Compare the fittings on the piece from Hod Hill 1951–8 (Richmond 1968, 114, fig. 57, no. 23); and the dagger with wooden sheath and two copper alloy bands binding it at the top, and just above the point where the blade tapers, found in a grave in the Grote Markt, Nijmegen dated *c.* A.D. 200 (Gerhartl-Witteveen and Hubrecht 1990, 104, fig. 13, no. 11).

Armour and armour fittings (FIGS 90, 91)

Total number recorded = 15. See also ironwork report nos 11–14.

A fragment of a Newstead-type *lorica segmentata* with copper alloy reinforcing plate, no. 128, was uncovered, as was also a set of lobed hinge-plates from the shoulder section of another *lorica*, no. 129. Other fittings include girdle-plate tie hooks, no. 132, and five cuirass loop-fittings in varying stages of completion and preservation, such as nos 133 and 134. Items from helmets include two fragments of beaded wire, as for instance no. 139; and three ornamental finials from the brow bands of helmets dated to between the late 1st and the 3rd century A.D.

128. [7.56] 2038/SG206 (2110) Square plate with central hole riveted at the corners to a damaged iron sheet. Overall size 56.0 × 44.3mm; copper alloy plate 29.5 × 26.3mm.
The fragment can be compared with a larger piece from Newstead (Curle 1911, 156–8, pl. XXII). It came from a *lorica segmentata* of Robinson's Newstead type and was from one of the major shoulder plates. The hole in the Caerleon fragment would have taken the hooked section attached to one of the upper plates, either for the right or left half of the chest section (1975, 180, fig. 181, for reconstruction drawing). A larger, unpublished piece from the back right section shoulder piece was recently identified amongst finds from excavations at Carlisle, Cumbria.
129. [7.64] 2405/SG72 (2612) Set of lobed hinge-plates from the shoulder section of a *lorica segmentata*, with fragments of the iron *lorica* plate still *in situ*. Overall length *c.* 71mm; maximum width 32.4mm.
Compare the pieces from Scole, Norfolk (Rogerson 1977, fig. 57, no. 26); Wroxeter, Shropshire, from a context dated *c.* A.D. 160 (Atkinson 1942, 209, pl. 48A, no. 7); and Longthorpe, Cambridgeshire, which was occupied between *c.* A.D. 44–48 and *c.* A.D. 62 (Frere and St Joseph 1974, 46, fig. 26, no. 17).
130. [7.30] 947/SG130 (853) Cuirass fastening-loop for *lorica segmentata*, unfinished, with the tang not yet trimmed to size. Length 24.7mm; maximum width 14.4mm.
Compare the examples from the Fortress Baths, Caerleon from Drain Group 4 of *c.* A.D. 160–230 (Zienkiewicz 1986b, 175, fig. 57, no. 30); a finished piece from the Deanery Field, Chester

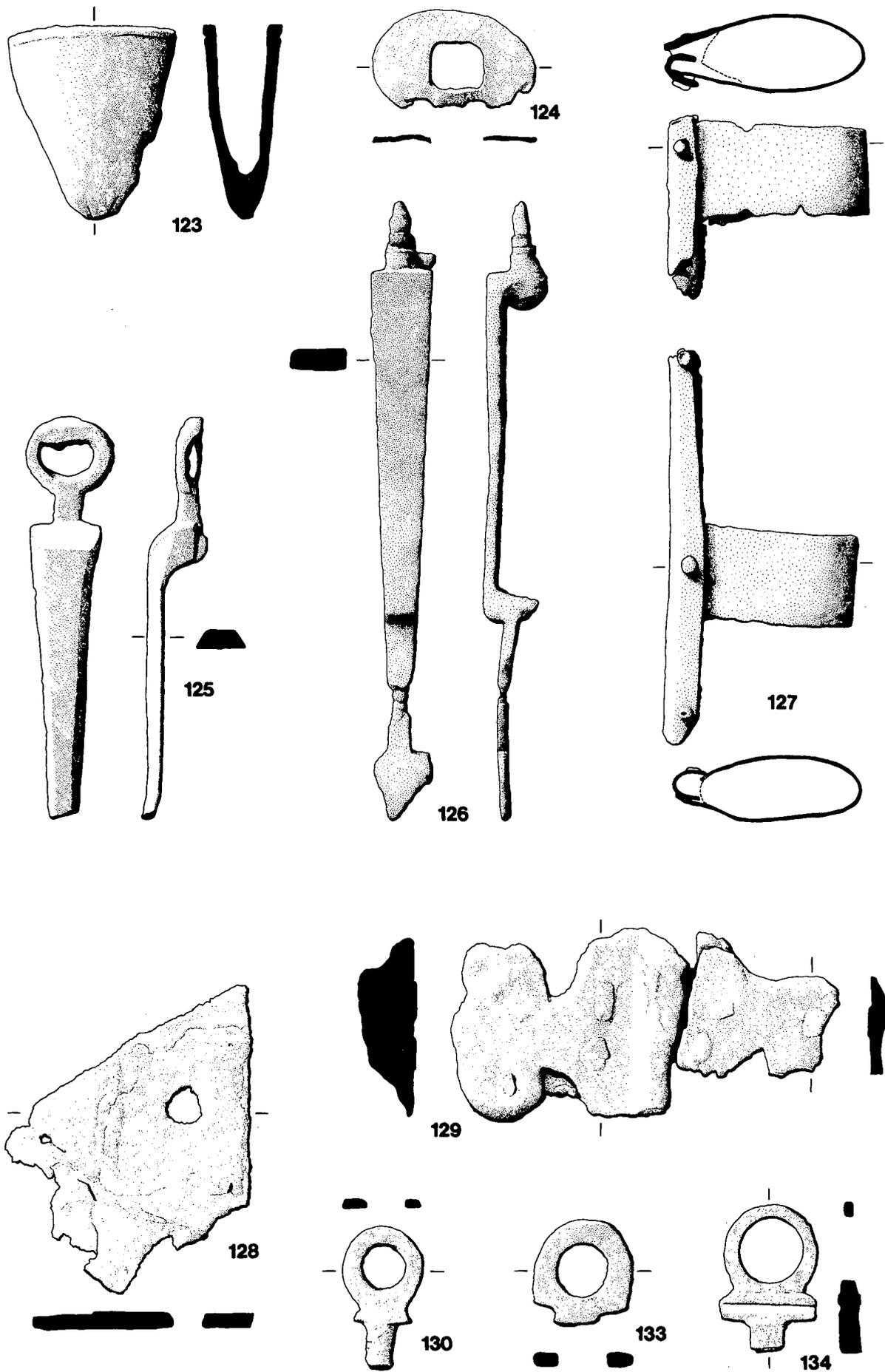


FIG. 90. Copper alloy objects nos 123-134: military items — fittings for weapons and armour. Scale 1:1.

(Newstead 1928a, 21, pl. IX, no. 11 from an 'undated deposit'); and a third item from Manchester, incorrectly described as a key, from the *vicus* (Bryant *et al.* 1986, 67, fig. 5.5, no. 3150).

131. [7.68] 3062/SG160 (3086) Girdle-plate tie hook from *lorica segmentata*, of which only the loop and part of the plate section survive. Present length *c.* 20mm. Compare no. 132. (Not illustrated.)
132. [7.48] 1350/SG128 (1445) Loop section only of a girdle-plate tie hook from a *lorica segmentata*. Length 16.6mm; height 10.4mm; maximum width 9.3mm. Compare no. 131. (Not illustrated.)
Compare the complete examples from the legionary hospital site, Caerleon, dated A.D. 75/80 to *c.* 100 (Murray Threipland 1969, 111, fig. 9, no. 12 and discussion pp.90–3); and Myrtle Cottage Orchard, Caerleon, from a 1st century context (Fox 1940, 134, fig. 7, no. 29).
133. [7.63] 2459/SG168 (2591) Fastening-loop for *lorica segmentata*. Height 18.5mm; width 17mm.
Compare the examples from Myrtle Cottage Orchard, Caerleon (Fox 1940, 136, fig. 8, no. 36, with three further pieces not illustrated, all from 3rd century contexts); and one from the Fortress Baths, Caerleon, in Drain Group 4 of *c.* A.D. 160–230 (Zienkiewicz 1986b, 175, fig. 57, no. 29); and an unstratified piece from the defences at Chester, not a key finial (*pace* Webster 1953, 8, fig. 5, no. 6).
134. [7.53] 2002/unstratified (2047) Cuirass loop fitting. Height 25.7mm; maximum width 17.1mm.
Compare two identical examples from Chester, one from the Infirmary Field (Thompson 1962, 3, fig. 2, no. 4), and the other from Hunter Street (Newstead 1939, 59, fig. 12, no. 5); with another from Blackfriars Street, Carlisle (McCarthy 1990, 120, 122, fig. 109, no. 48, from a late 4th or 5th century context, see p.45 for summary of dating), and one from the Fortress Baths at Caerleon, found in Drain Group 4 of *c.* A.D. 160–230 (Zienkiewicz 1986b, 175, fig. 57, no. 31).

Three other possible fasteners from *lorica segmentata* were noted.

135. [7.4] 154/modern intrusion (095) Incomplete fragment, bent and pierced by *c.* four holes, probably a fragment of ?scale armour. Surface area 14.7 × 14.5mm; thickness *c.* 0.6mm. (Not illustrated.)
Compare the examples noted by Robinson (1975, 153–61, especially p.154, fig. 159) and finds from Malton, Yorkshire (Mitchelson 1964, 253, fig. 19, no. 24); Longthorpe, Cambridgeshire (Frere and St Joseph 1974, 50, fig. 27, no. 35, where the fortress was occupied from *c.* A.D. 44/8 to *c.* A.D. 62, see pp.36–8 for discussion of dating), and the item from the Fortress Baths at Caerleon found in a late 3rd century context (Zienkiewicz 1986b, 186, fig. 62, no. 155). Other examples from South Wales include three items from Loughor, West Glamorgan (Lloyd-Morgan 1997, 262–3, nos 122–4).
136. [7.6] 252/unstratified (134) Conical-headed finial with remains of a rivet for attachment on the underside, tip damaged. Height 23.7mm; maximum diameter 14.2mm.
Compare the examples from the fort at Cramond, Edinburgh (Rae and Rae 1974, 195, fig. 14, no. 12); Chester (Newstead 1924, 80, pl. VII, no. 14); and Caerleon (Wheeler and Wheeler 1928, 168, pl. XXXII.2, no. 8). All are described as a weight or a plumb-bob, but none appear to be pierced by a hole to attach a cord in such a way as to give a true vertical drop running from the string down through to the terminal point. A military use, as suggested by finds from within the various forts noted above, seems highly likely.
137. [7.6a] 957/SG35 (1172) Conical-headed finial with remains of the rivet for attachment on the underside, with an incised line just above the lower edge of the cone. Height *c.* 25mm. For discussion, see no. 136.
138. [7.73] 3117/SG159 (3200) Baluster-shaped finial with remains of an iron nail or rivet *in situ*, with square cross-section; a little damaged. Height 20mm; maximum diameter 12.2mm.
Compare the example from the Jewry Wall, Leicester from Level I, dated A.D. 125–30 (Kenyon 1948, 259, fig. 87, no. 5, see table on p.42 for summary of dating); from Butt Road, Colchester, from a context dated *c.* A.D. 320–450 (Crummy 1983, 168, fig. 204, no. 4656); Birrens, Dumfriesshire, from the Antonine I fortress dated to *c.* A.D. 142–155 (Robertson 1975, 112, no. 50, fig. 32, no. 7, with summary of dating on p.286); and the unpublished pieces from Goss Street, Chester and Abbey Green. Compare the finials or rivet-heads from the brow-bands of Roman helmets of Robinson's Imperial Italic type D, dated to the second half of the 1st century A.D.; and type H, dated late 2nd to 3rd century (1975, 68–70, pls 166–9, and 73–4, pls 179, 181 respectively).
139. [7.19] 711/SG182 (418) Section of beaded wire. Length *c.* 80mm; width 2.3mm; depth 1.9mm.
Beaded wire of this type was applied as ornament to helmets of Robinson's Imperial Italic type H, dated to the late 2nd to early 3rd century (1975, 73–4, for discussion, with pls 179–86, 192, 193). Compare the examples from Princess Street, Chester 1939 described by Newstead and Droop as 'several strips of beaded bronze 2.5mm wide... found with Antonine pottery over wall D' (1939, 42); and from the Fortress Baths at Caerleon (Zienkiewicz 1986b, 183, fig. 61, no. 142 from a context dated A.D. 100/110–230; 186, fig. 62, nos 160, 161, from a late 3rd century context). Note also the piece from Loughor, West Glamorgan (Lloyd-Morgan 1997, 262, no. 116).

Another fragment of beaded wire was noted.

Belt plaques and fittings (FIG. 91)

Total number recorded = 18

Amongst the belt plaques and fittings, perhaps the most important but incomplete item is no. 151, which has only the first two letters 'I O...' of the name of Jupiter/Iovis in openwork. The piece can be paralleled by a complete example found at Brampton, Cumbria, some time before 1789. Another example was published by Oldenstein (1976) as coming from Osterburken, with a suggested date between the 2nd and the first half of the 3rd century A.D. A more commonly found type has an openwork lattice grid (nos 142 and 144) which is well known from other sites in Caerleon, Chester and elsewhere in Britain, as well as the German *Limes* area. Two other openwork belt plaques were found, one with a simple symmetrical scroll-like pattern, no. 145; the other, no. 152, is more in the Celtic style with scroll and trumpet-like ornament which can be dated to the second half of the 2nd into the early 3rd century. Several other fittings have enamel inlay, as for example no. 147 with yellow and black enamelling; no. 143, the surviving pelta-shaped terminal of a large belt plaque with blue and a second colour, now a dull buff; and the centre bar with enamelled oval panels, no. 146. A buckle-plate with a recessed field for enamel, no. 157, is one of the pre-Flavian types, examples of which have been found on a number of British sites. Three other items are naturalistic in design. One (no. 150) is in imitation of a cockle-shell, originally with four lugs for attachment, and has a late 2nd century date. Two others are amuletic in type. One (no. 148) is a stylised phallic shape; the second (no. 149) is in the form of a stylised female pudenda. It can be dated to the mid 2nd century.

140. [7.3] 501/unstratified (087) Fragment of belt-plaque terminal with curved, raised flange on the upper face. Length 10.8mm; width 19.3mm; height 6.5mm. (Not illustrated.)
Compare examples from Ffrith, Clwyd (Blockley 1989a, 148, fig. 5, no. 6); Birrens, Dumfriesshire from an Antonine I context of c. A.D. 142–155 (Robertson 1975, 112, no. 54, fig. 33, no. 5, and pp.280, 283 for discussion of dating). Compare also the related item from Woodcock Hall, Saham Toney, Norfolk, where a mid 1st century date is suggested for the military finds from the site (Brown 1986, 44, fig. 28, no. 198, with discussion on pp.42, 44).
141. [7.8] 001/unstratified (175) Incomplete military belt-plaque with part of the original rectangular sunken section probably used for inlay, perhaps of enamel. A damaged light moulded border and a rivet for attachment survive. Present length 18mm; present width 27.7mm.
Compare the better-preserved example from Aalen, dated to the last third of the 2nd to the first half of the 3rd century A.D. (Oldenstein 1976, 193–7, Taf. 62, no. 784), and the piece from Abbey Green, Chester (McPeake *et al.* 1980, 29, fig. 8, no. 2).
142. [7.10] 600/SG183 (254) Corner of rectangular military belt-plaque with openwork stepped-lattice pattern of well-known type, heavily encrusted by clay material. Largest surviving fragment 16.5 × 12.5mm. For parallels and date see no. 144 below. (Not illustrated.)
143. [7.12] 600/SG183 (265) Pelta-shaped terminal of a rectangular military belt-plaque with dull buff-coloured enamel (see FIG. 85) in horn-shaped cells, and blue enamel in the central arrow-shaped field. The remains of a stud or rivet survives in the centre of the underside. Maximum width 26.5mm; present length 24mm.
Compare the example from Zugmantel (Oldenstein 1976, 202–3, Taf. 68, no. 887); and the pieces from *Segontium* (Wheeler 1923, 139, fig. 61, no. 10, 'from the mid 4th century floor of the Commandant's House room 5'); Ravenglass, Cumbria, found in a Phase 4 context, dated c. A.D. 360–400 (Potter 1979, 69, fig. 26, no. 13); and from the Prysog Field, Caerleon (Nash-Williams 1932a, 83, fig. 33, no. 23).
144. [7.17] 600/SG183 (399) Fragment of rectangular military belt-plaque with openwork stepped-lattice pattern, as no. 142 above. Only one end with a rivet for attachment survives. Present length 20.3mm; width 19mm.
Compare the examples from the Fortress Baths at Caerleon, from Drain Group 4 dated c. A.D. 160–230 (Zienkiewicz 1986b, 175, fig. 57, nos 36, 37) and from Myrtle Cottage Orchard, Caerleon (Fox 1940, 132, fig. 6, no. 19); Ffrith, Clwyd (Blockley 1989a, 148, fig. 5, no. 5), and Goss Street, Chester, said to be 'from the clean fill associated with 3rd century reconstruction' (Richmond and Webster 1951, 29, fig. 12, no. 10), and from the unpublished excavations at Goss Street 1968–70.
145. [7.32] 003/unstratified (885) Openwork belt-plaque with scroll-like design and two rivets for attachment on the back. Some traces of tinning survive, but a small section of edge has been lost in one place. Length 40.4mm; width 17.8mm. Compare the related piece from Corbridge (Bishop and Dore 1988, 181, fig. 86, no. 174).

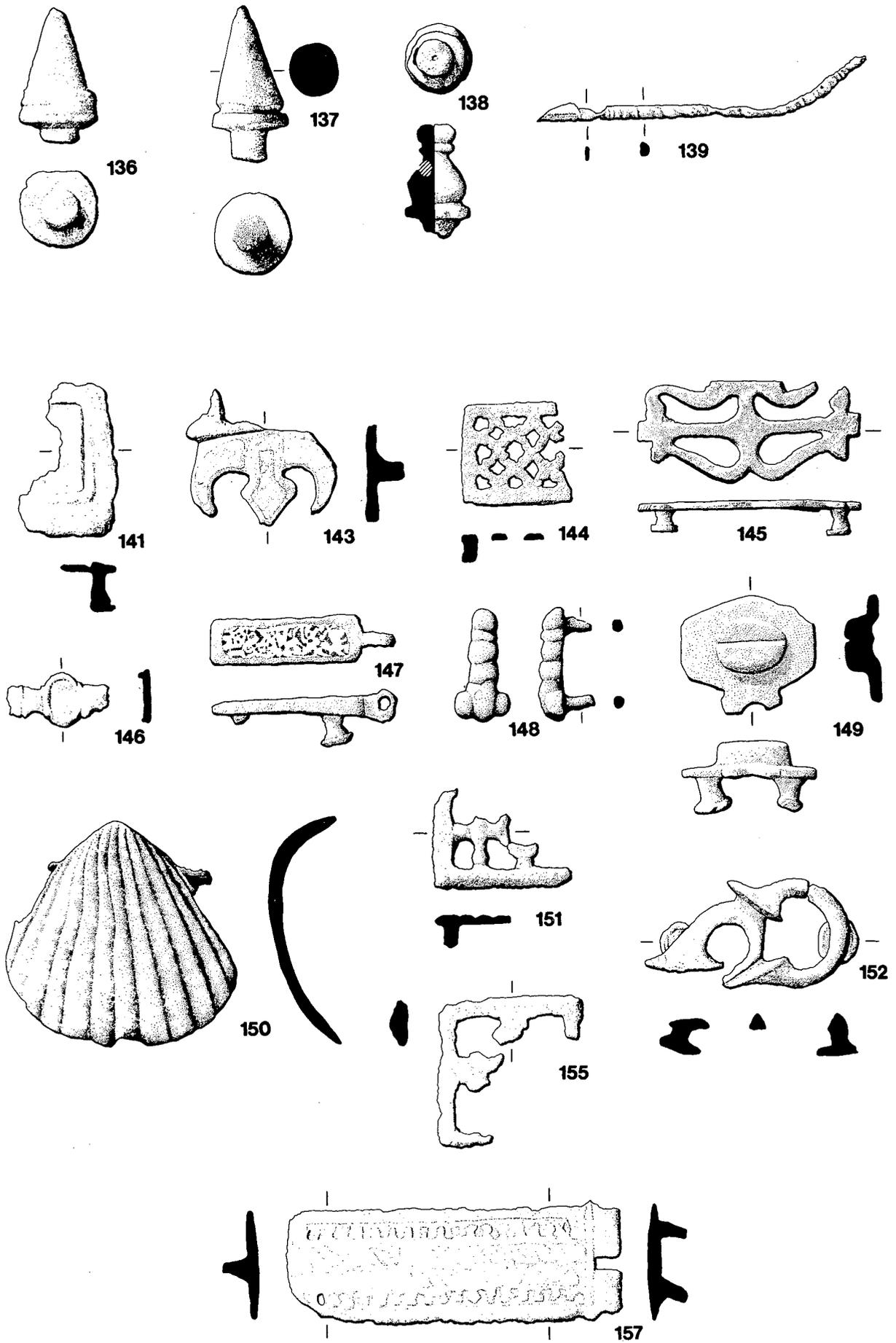


FIG. 91. Copper alloy objects nos 136–57: military items — armour, belt-plaques and associated fittings. Scale 1:1 (see Fig. 85 for enamelling details on nos 143 and 147).

146. [7.40] 835/SG117 (1066) Central bar from an ornamental enamelled belt-plaque; incomplete, with only one complete oval-shaped enamelled panel surviving, but with a trace of a second further oval panel. Length 19mm; maximum width 10mm.

The bar would have been made for use with a belt-plaque similar to no. 143 above, or as in the plaques from sites such as the three items from Corbridge, with a suggested late 2nd to early 3rd century date (Bishop and Dore 1988, 177, fig. 84, no. 146); Newstead (Curle 1911, LXXVII, no. 8 for central bar only); Scole, Norfolk, from a late 3rd to 4th century context (Rogerson 1977, 136, fig. 57, no. 25); Caerleon, Prysg Field site (Nash-Williams 1932a, 83, fig. 33, no. 24), and the unpublished bars from Chester, found at Goss Street 1973, and from Crook Street 1973–4.

147. [7.50] 453/SG29 (1517) Small rectangular belt plaque inlaid with a panel of yellow and black millefiore (see FIG. 85), with a small vertical loop at one narrow end. One rivet is still intact on the underside, the other is now broken. Maximum length 33.5mm; width 8.3mm.

Compare the plain plaques from Saalburg, and especially the enamel-inlaid example from Butzbach-Degerfeld, which has a date with *terminus ante quem* of A.D. 160–175 (Oldenstein 1976, 191–2, Taf. 60, nos 748, 749; and no. 750 respectively).

148. [7.60] 2389/SG72 (2339) Belt-plaque in the form of a phallic amulet with transverse mouldings, and the remains of two rivets on the underside. Length 19.4mm; maximum width 9.8mm; height (excluding rivets) 4.5mm.

Compare the piece from Zugmantel (Oldenstein 1976, 158–60, no. 412, Taf. 42); and the item from South Shields, Tyne and Wear (Allason-Jones and Miket 1984, 188, no. 3.588). Note also the related example from the Bear Hotel, Cowbridge (Lloyd-Morgan and Webster 1996, 185, no. 28), which is incomplete and has only one rivet for attachment.

149. [7.51] 001/unstratified (401) Stud in the shape of a hexagonal shield with a stylised vulva in the centre of the convex upper face, and the remains of an angular ornamental suspension loop on one of the longer sides for a pendant, now lost. Two rivets for attachment survive on the underside. Present width 20.6mm; length 25mm; height 12.4mm.

A complete example from Niederbieber, now in the Landesmuseum, Bonn, was dated from mid 2nd century to *c.* A.D. 260 (Oldenstein 1976, 137, 138, Taf. 34, no. 268); another is now in the archaeological collections at Vienne (Isère) (Boucher 1971, 211, no. 868 with pl.); an unprovenanced piece is in Museum Kam at Nijmegen, as are four other related pieces (Zadoks-Josephus Jitta *et al.* 1973, 50–1, no. 73 and pl.; 50–1, no. 72, 74–6 with pl. respectively). British examples include a piece from Saham Toney, Norfolk (Brown 1986, 44, fig. 28, no. 199), and two others without suspension loops, one from Brough-on-Humber (Wacher 1969, 89, fig. 38, no. 19) and an unpublished piece from York Minster 1971.

150. [7.57] 2156/SG206 (2204) Cockleshell, being one half of the bivalve, with two lugs surviving just under the lip for attachment to a ?leather strap or fitting. The remains of two further lugs are near the hinge section of the shell. A little damaged and dented in places. Height 40mm; width 42.4mm; maximum depth *c.* 14mm.

Compare the example from Faimingen, with a suggested date *terminus post quem* A.D. 180/190 (Oldenstein 1976, 187–8, Taf. 57, no. 700); a related piece with a single stud in the centre of the concave reverse side came from Carrawburgh 1964 (Charlesworth 1967, 16, fig. 6, no. 14). Three items were found at Lowbury Hill, Berkshire, two with a rectangular-shaped loop on the back, and another with a 'T-shaped rivet' (Atkinson 1916, 45, pl. XIII, nos 3, 3a and 4 respectively).

151. [7.67] 3001/unstratified (3018) Fragment of a rectangular openwork belt-plaque, with the remains of a rivet at one end, and with the inscription: IO[VIS]. Present length 25.1mm; present width 17.2mm.

Compare the piece from Osterburken in the German *Limes*, where a date between the 2nd century and the first half of the 3rd century is suggested (Oldenstein 1976, 199, Taf. 65, no. 846); the piece from Brampton, near Carlisle, Cumbria (Rooke 1789, 222, pl. xvii.g); and another from *Arbeia* Roman fort, Tyne and Wear (A. Groom pers. comm.).

152. [7.69] 3044/SG164 (3094) Military belt plaque with openwork trumpet-scroll motif, and two rivets for attachment on the underside, a little bent and damaged. Length 37.1mm; width 19.2mm.

Compare the examples from the German frontier zone, especially the piece from Pfünz, with an overall date range of mid 2nd into the beginning of the 3rd century (Oldenstein 1976, 203–7, Taf. 69–70, especially no. 899); and the related items from the Prysg Field, Caerleon (Nash-Williams 1932a, 83–4, fig. 33, no. 30, dated *c.* A.D. 150–200; 85, no. 31, unstratified).

153. [7.66] 2490/SG59 (2689) Fragment of an openwork plaque with stylised palmette design, and the remains of a rivet on the reverse. Surface area 12.0 × 19.1mm. (Not illustrated.)

154. [7.70] 3047/SG155 (3102) Fragment of openwork plaque or fitting with the remains of a ?stud on the reverse. Surface area 15.0 × 13.3mm. (Not illustrated.)
155. [7.74] 3117/SG117 (3205) Incomplete openwork plaque with the remains of one stud for attachment. Surface area 26.1 × 26.0mm.

Compare the complete piece from Theilenhafen, and the figure showing the method of use, dated to the mid 2nd century (Oldenstein 1976, 222–3, Taf. 82, no. 1091 with Abb. 9); note the incomplete but similar item from St Pancras Cemetery, Chichester, West Sussex, incorrectly described as a brooch.

156. [7.13] 600/SG183 (343) Fragment of a military fitting, perhaps a belt-plaque. Length 14.2mm; width 9mm. (Not illustrated.)
157. [7.16] 700/SG183 (391) Enamelled buckle plate, the buckle now lost, with two recessed narrow panels with a looped-wave pattern as border, and a wider central panel with a leaf pattern set against the enamel background; the enamel is not sufficiently well preserved for colours to be identified. Length 60.6mm; width 21.5mm.

Compare the examples from Holt, Clwyd (Grimes 1930, 128, fig. 56, no. 22); Manchester (Bruton 1909, 159, pl. 89, 90, no. 15 and pl. 102, fig. 3) and an unpublished fragment from Goss Street, Chester; and Chesters, Northumberland (Budge 1903, 376, nos 656 and 657, previously cat. nos 911 and 912). Henry illustrates one of the two examples from Brough, Cumbria, and one of the two pieces from Chester (Henry 1983, 58, fig. 27, no. 2; and fig. 27, no. 3 = Chesters no. 911, respectively).

Buckles (FIGURE 92)

Total number recorded = 7

Seven buckle fittings were found including the near complete 1st century example (no. 159) and one dated to the 2nd century (no. 160). A fragmentary buckle with yellow and black enamel inlay identical to a 2nd century piece found in Chester in 1928 was also identified. The latest piece (no. 162) dated to the first half of the 3rd century A.D., was in good condition and can be compared with other examples from the German *Limes* published by Oldenstein, with a suggested reconstruction of its use and placement.

158. [7.21] 803/modern intrusion (457) Military buckle with internal scroll-shaped decoration inside the curve of the semicircular hoop, slightly bent out of shape and incomplete. Length 34.6mm; present width 33.8mm.

Compare the related examples noted by Grew and Griffiths (1991, 60, fig. 5, no. 6; 60, fig. 6, no. 18; 76, fig. 15, no. 153) both from the Durden Collection; one, with niello inlay from Camerton and now in the British Museum, the other from Hod Hill, Somerset.

159. [7.44] 815/SG113 (1204) Military buckle with scroll-shaped hoop. One of the scroll ends has the remains of a rivet *in situ*, the one in the other end is lost. Only one of the lugs to take the axis bar of the hinged section of the belt plaque survives; the pin is also lost. Width 36.5mm; length 36mm.

Compare the example from Exeter, Devon, dated 1st century A.D. (Holbrook and Bidwell 1991, 247, 249, fig. 111, no. 43) and the pieces of pre-Flavian date noted by Grew and Griffiths (1991, 63, fig. 8, no. 34, from Culver Street, Colchester, Essex, in a context dated A.D. 43–9; 63, fig. 9, no. 52, from Baginton, Warwickshire, from a context dated either A.D. 60–64 or 78–80; 74, fig. 14, no. 125, a Claudian-period item from Hod Hill, from the Durden Collection but now in the British Museum).

160. [7.59] 2002/unstratified (2335) Small military buckle in two pieces but complete apart from the pin which is now lost. Probably for use with strap fittings. Length 25.5mm; maximum width 20.3mm.

Compare the examples from the German *Limes* area used between c. A.D. 150–200, and associated with a belt-plaque to which it was attached (Oldenstein 1976, 215–16, Taf. 76, nos 1011–25 and Abb. 7). Compare also the piece from South Shields, Tyne and Wear (Allason-Jones and Miket 1984, 194, no. 3.617 with fig.); and a further, incomplete piece from an Antonine context found at Blackfriars, Carlisle, Cumbria (McCarthy 1990, 138, fig. 122, no. 115, see p.39 for details of dating).

161. [7.9] 001/unstratified (211) Fragment of military buckle inlaid with black and yellow millefiore enamel (see FIG. 85) on the surviving part of the hoop. Present length 21.4mm; present width 19mm; thickness 2.5mm.

An identical fragment from the same corner of a buckle also inlaid with black and yellow millefiore was found in the Deanery Field, Chester 1928 (Droop and Newstead 1931, 134, pl. XLVII, no. 45). Compare also the related buckle with two curved panels for enamel inlay, from Grave 251 at the St Pancras Roman cemetery, dated to the 2nd century (Down and Rule 1971, 117, fig. 5.18, no. 251).

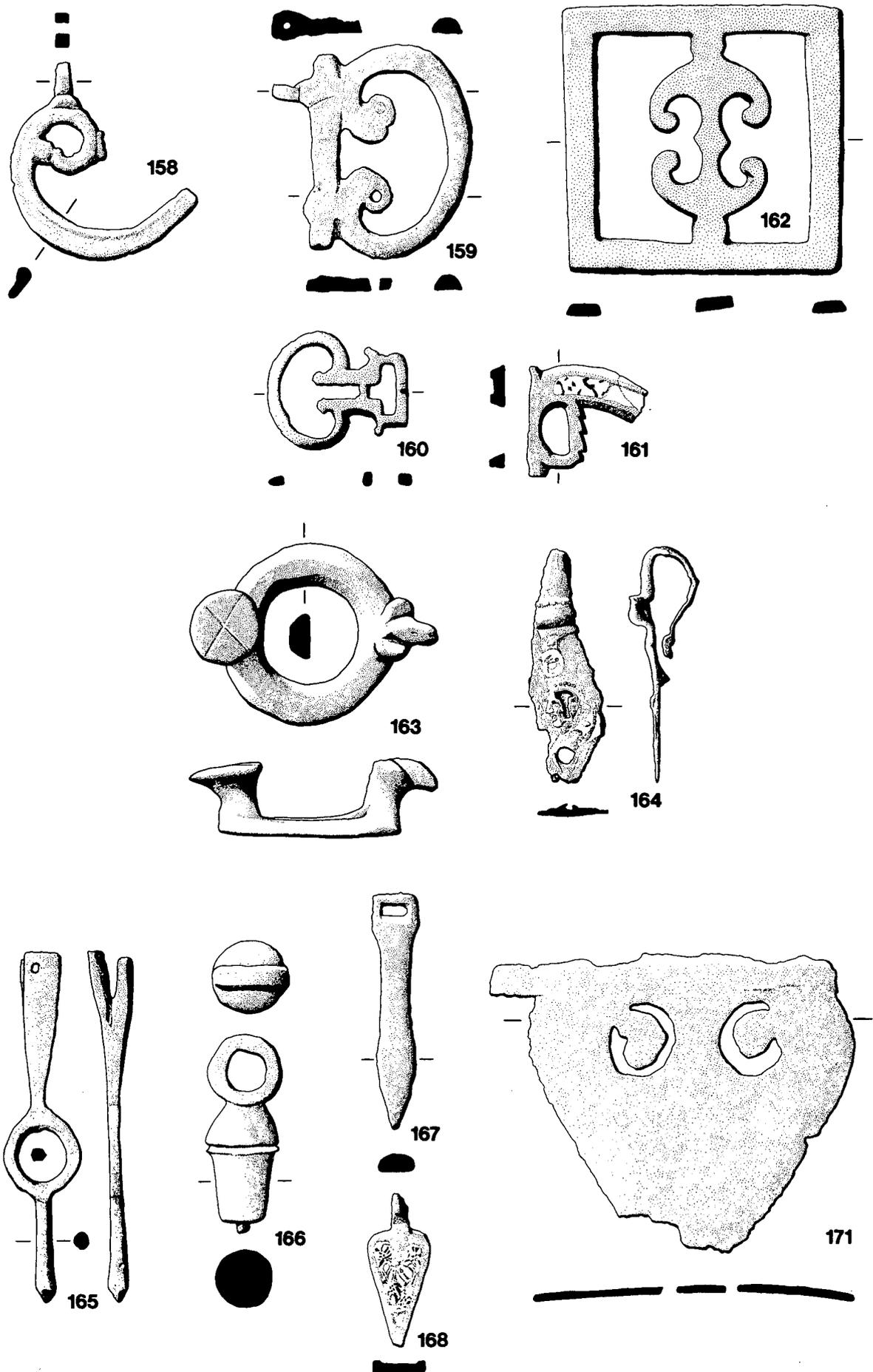


FIG. 92. Copper alloy objects nos 158–71: military items — buckles, horse gear and pendants. Scale 1:1 (see Fig. 85 for enamelling details on nos 161 and 168).

162. [7.23] 831/SG124 (613) Heavy belt-fitting or buckle of rectangular shape with bevelled edge to the frame. The piece is divided by a central bar with double pelta motif. Length 50.7mm; width 46.2mm; thickness 2.4mm.

Compare the examples from the German *Limes* area, dated to the first half of the 3rd century A.D. (Oldenstein 1976, 222–3, Taf. 82, nos 1083–91, and Abb. 9 for a reconstruction drawing showing the method of use and attachment). Compare also the piece from Richborough, Kent (Bushe-Fox 1928, 49, pl. XXI, fig. 2, no. 55, from topsoil).

Harness fittings and other horse gear (FIG. 92)

Total number recorded = 2. See also ironwork report nos 34–40

163. [7.25a] 824/SG119 (686) Ring-shaped fitting with plano-convex cross-section. At one point of the ring there is a raised, integral disc-shaped stud fitting, the flat top decorated with an incised 'X'. Diametrically opposite on the ring is a small stylised zoomorphic head looking outwards with a small flange to either side, perhaps intended as ears or tufts of feathers, and having a curved beak or muzzle. External diameter ring 31 × 32.4mm; height of ring 3.5mm; maximum diameter stud 12.8 × 13mm; height of stud 12.4mm; height of stylised head 13.4mm.

Compare the examples from Wanborough, Wiltshire, where the undecorated fitting is described as a harness attachment (Anderson and Wachter 1980, 123, fig. 4, no. 3); from Hod Hill, Somerset (Brailsford 1962, 17, pl. IX, no. 97, diameter *c.* 40.6mm); Broxtowe, Nottingham (Webster 1958, 70, fig. 3, no. 14); Wimborne, Dorset, which has some incised decoration on the flat head of the stud section (Hattatt 1989, 438, fig. 14, no. 73). Further examples are noted and illustrated by Fuentes, who suggests that the 'studded rings' were a fastening device for a handled bag used by Roman legionaries of the 1st and 2nd centuries (Fuentes 1991, 93, 95, fig. 23).

164. [7.47] 1450/SG8 (1248) Harness strap-link (or ?pendant) with worn loop and plate section. This last is decorated in the centre with an applied tinned or silvered plate with repoussé decoration, in the form of the head of an emperor or ?Roma in left profile in a circular frame bordered by repoussé dots, and is heavily damaged. One rivet survives at the back, and the front section is pierced by a hole below the applied decoration, probably indicating a repair of later date. Maximum width 13mm; present length 40.4mm.

Compare the double pelta-shaped pendant from the Saalburg, dated 1st to early 2nd century, with a silvered roundel in the centre showing the frontal bust of a cupid (Oldenstein 1976, 183–4, Taf. 54, no. 654); and the ornamental item of horse harness from *Ulpia Traiana Augusta Dacica/Sarmizegetusa* (Dawson 1990, pl. I, no. 35, fig. 3, no. 34). Note also the related ornamentation on the non-military items from the Rhineland; firstly the mirror with gilded plaque on the reverse with individual motifs including busts of gods and mortals, in circular and rectangular panels with repoussé beaded borders, formerly Niessen Collection, now Römische-Germanisches Museum, Köln (Fremersdorf 1950, 20, Group 122); and the roundel on a small copper alloy box holding a mirror, found at Nijmegen (Zadoks-Josephus Jitta *et al.* 1973, 82, no. 138, with pl.; 74–5, no. 126).

Military pendants (FIGS 92, 93)

Total number recorded = 20

Both men and horses were ornamented with pendants attached to belts and straps. One of the heavier items (no. 166) weighing *c.* 16.2g is in the form of a solid cast acorn. Most of the other items tended to be more light-weight, as for instance the simple leaf-shaped pendants (no. 167), or they could be more elaborate with openwork designs, as nos 172, 173 and 174, with trumpet-shaped moulded decoration. Other solid strap-ends include the narrow tapering piece no. 183 and the three related items with a ring-shaped section as for instance the complete no. 165. Three items (nos 177, 181 and 182) do not appear to be amongst the more usual types found in Britain, but may be dated to the late 2nd to mid 3rd century. Other pieces, such as the enamelled leaf-shaped pendant no. 168, the more substantial no. 180 and the crescentic pendant no. 179 are well known from various British sites. The damaged pendant perhaps a ?harness strap-link (no. 164, catalogued above with the harness fittings) with applied plaque is uncommon, but not without parallels in the German and Dacian *Limes*.

165. [7.31] 903/SG137 (861) Virtually complete military pendant. The upper elongated triangular section is split to take a narrow strap and has holes to take the rivet for attachment. The middle

section is an open ring shape, with an elongated drop-shaped terminal below it. Some traces of tinning are still visible. Length 58.8mm; maximum width 13.9mm.

Compare the examples from the Saalburg and Pfünz with a date-range being, at the earliest, the end of the 2nd century and into the mid 3rd century (Oldenstein 1976, 147–50, Taf. 37, nos 339 and 340 respectively). Pieces from Britain include one from topsoil at South Shields (Miket 1983, 109, fig. 68, no. 7); Cramond, Edinburgh (Rae and Rae 1974, 195, fig. 14, no. 5 from a road surface in the civil settlement); and Brancaster, Norfolk (Hinchliffe and Sparey Green 1985, 48, fig. 30, no. 16).

166. [7.54] 2043/SG81 (2062) Solid acorn-shaped pendant with integral ring-shaped loop. Length 34.5mm; maximum diameter 12.6mm; length acorn 22.8mm; weight 16.2g.

Compare the example from Zugmantel in the German *Limes* (Oldenstein 1976, 158–60, Taf. 42, especially 416); and the examples from England with one from Manchester (Bruton 1909, 165, pl. 93, no. 30), another from Watercrock, Cumbria (Potter 1979, 214, fig. 85, no. 43 — *pace* the author, it is not a steelyard weight), and Richborough, Kent (Bushe-Fox 1949, 131, pl. XXXVIII, no. 134).

167. [7.18] 706/SG182 (402) Narrow leaf-shaped military pendant with integral suspension loop, and slightly bevelled edge to the outer face. Length 41mm.

Compare the examples from the Fortress Baths at Caerleon found in Drain Group 4 of *c.* A.D. 160–230 (Zienkiewicz 1986b, 177, fig. 57, nos 49–52); from the Deanery Field, Chester 1928 (Droop and Newstead 1931, 134, pl. XLVII, nos 54, 56, 57); *Segontium* (Wheeler 1923, 141, fig. 62, no. 7); and an incomplete piece from Loughor, West Glamorgan (Lloyd-Morgan 1997, 267, no. 145). Another item from Blackfriars Street, Carlisle, Cumbria, came from a context dated *c.* late 2nd century to early 3rd (McCarthy 1990, 126, fig. 112, no. 65, and see p.45 for summary of dating).

168. [7.43] 002/unstratified (1183) Pendant with spear-shaped leaf outline inlaid with yellow and black millefiore enamel (see FIG. 85). The loop is at right angles to the plane of the pendant and is incomplete. The tip of the pendant is damaged. Present length 26.4mm; maximum width 11.3mm.

Compare the closely related example from the Fortress Baths at Caerleon with similar inlay, dated *c.* A.D. 160–230 (Zienkiewicz 1986b, 177, fig. 58, no. 56).

169. [7.55] 2037/SG82 (2102) Leaf-shaped pendant with integral loop, in two pieces; incomplete and encrusted. Present length 33.4mm; maximum width 9mm. For parallels see no. 167 above. (Not illustrated.)

170. [7.65] 2437/SG64 (2640) Narrow leaf-shaped pendant; complete. Length 38.3mm; maximum width 8.3mm. For parallels see no. 167 above. (Not illustrated.)

171. [7.71] 3071/SG151 (3149) Incomplete heart- or leaf-shaped fitting with two comma-shaped cut-outs in the upper section. Present height 51.8mm; maximum width 66.3mm. Compare the closely related example no. 188 below.

172. [7.42] 860/SG53 (1143) A long openwork pendant with elegant scroll decoration, still retaining traces of tinning/silvering. Length 51.2mm; maximum width 12.2mm; thickness 1.8mm.

Compare the example from Niederbieber dated to around the end of the 2nd century and into the first half of the 3rd century A.D. (Oldenstein 1976, 157–8, Taf. 41, nos 390, 396) and another from a context dated mid 3rd century from Housesteads 1984 (Crow *et al.* 1988, 89, 91, fig. 9, no. 13).

173. [7.46] 894/SG106 (1238) Openwork, heart-shaped pendant with trumpet-motif moulding, and pelta-form decoration on the central vertical bar. The suspension loop is damaged. Length 52.8mm; maximum width 33.8mm; maximum depth *c.* 3mm.

Compare the closely related items from Zugmantel in the German *Limes* area, where the date range is from *c.* the mid 2nd and 3rd century (Oldenstein 1976, 136, Taf. 32, nos 239, 240).

174. [7.14] 600/SG183 (347) Fragment of lower part of an openwork military pendant, originally with leaf- or heart-shaped outline, some damage and surface wear. Present length 21.1mm; maximum width 20.3mm; thickness 1.4mm.

Compare the piece from the Fortress Baths at Caerleon, from Drain Group 4 of *c.* A.D. 160–230 (Zienkiewicz 1986b, 178, fig. 58, no. 62).

175. [7.39] 1205/SG106 (1059) Spear-shaped ?pendant with traces of tinning or silvering, damaged. Present length 45.5mm, maximum width 10.6mm. Also a small fragment which may belong with the item above, or be part of a decorative openwork item. Surface area 14 × 10 × 3.6mm.

176. [7.36] 812/SG112 (1030) Incomplete military pendant, the upper triangular section split to take a strap with holes for a rivet to secure the strap. The middle section is ring-shaped; the lower terminal section is lost. Length upper section 20mm; length ring-shaped section 19.8mm. Compare the complete example no. 165 for parallels and dating. (Not illustrated.)

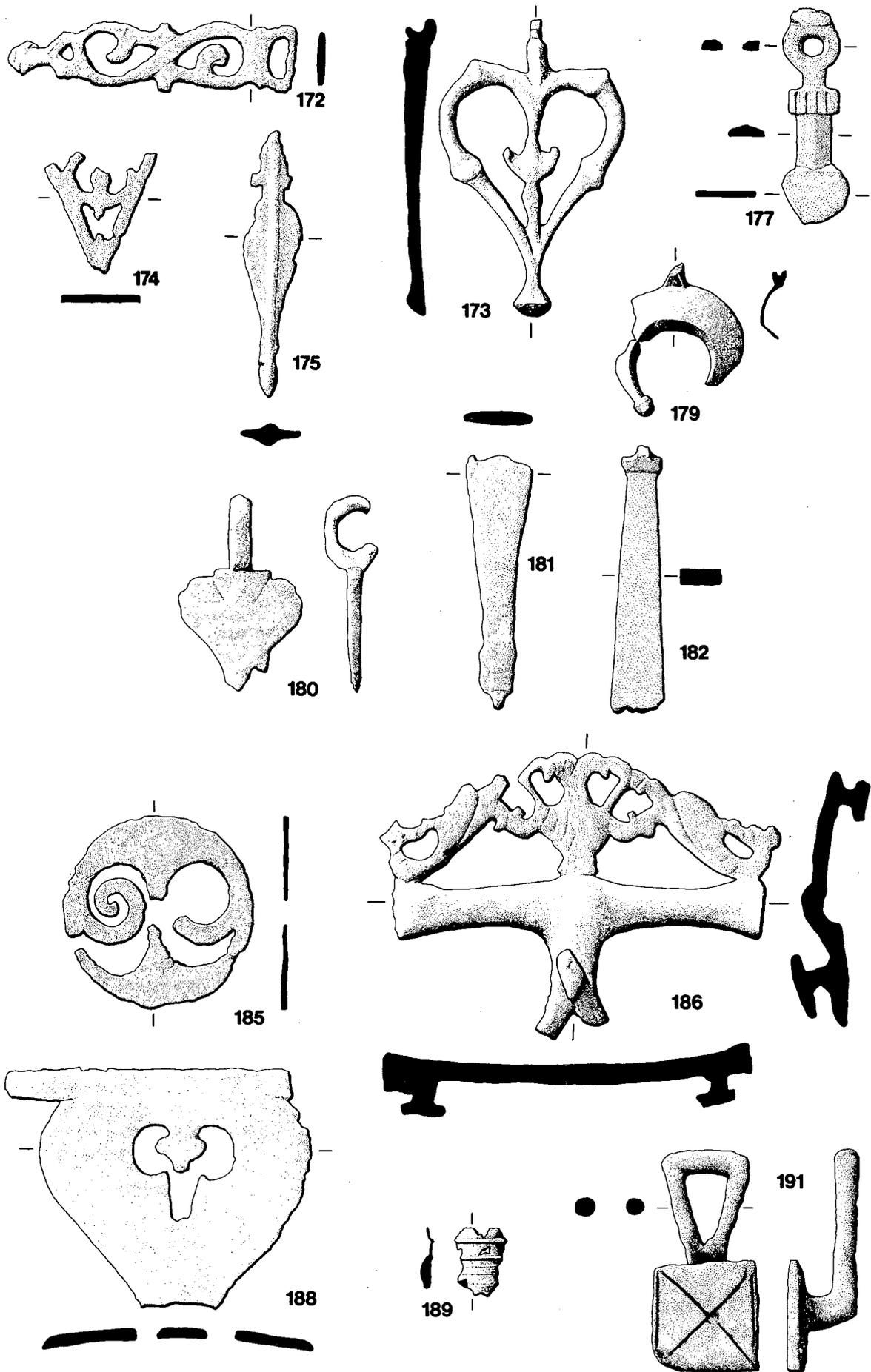


FIG. 93. Copper alloy objects nos 172-91: military items — pendants and miscellaneous fittings. Scale 1:1.

177. [7.7] 001/unstratified (143) Fitting or pendant with disc-shaped lower section, an upper wide ring-shaped loop and a transverse ornamental section between. Part of the upper section and the edge at the lower end is lost and damaged but the piece still retains much of the tinned surface. Present length 37.1mm; maximum width 12mm.
Compare the example from Zugmantel, and the closely related items from Osterburken, Feldberg and Heddernheim. A date range of mid 2nd century to *c.* A.D. 260 is suggested by Oldenstein (1976, 152–7, Taf. 39, nos 356, 362, 364 and 365 respectively).
178. [7.72] 3047/SG155 (3157) Fragment of a military pendant, with ring-shaped section and eroded drop-shaped terminal. Present length 31.7mm; maximum width 13.9mm; thickness 2.4mm. Compare the complete example no. 165 for parallels and dating. (Not illustrated.)
179. [7.34] 903/SG137 (956) Crescent-shaped pendant with knobbed ends, and with the loop at right angles to the plane of the pendant. The crescent, made of heavy sheet metal, is convex in cross-section on the outer face. One of the tips of the crescent is lost, as is part of one side and much of the loop. Height 24.6mm; width 22.5mm.
Compare the examples from the Netherlands (Zadoks-Josephus Jitta and Witteveen 1977, 177, pl. 30, no. 3 from Maurik; 179–80, no. 5 from Vechten); and from Faimingen and Straubing in the German *Limes*, dated to around the mid 2nd to the first half of the 3rd century A.D. (Oldenstein 1976, 162–4, Taf. 45, nos 444 and 447 respectively). There is also a small unpublished example from Doncaster, South Yorkshire.
180. [7.35] 860/SG53 (969) Pendant with loop set at right angles to the plane of the heart-shaped upper face. The suspension loop is incomplete and the tip is lost. Present length 33.8mm; width 22mm.
Compare the examples from the German frontier zone, dated by Oldenstein from the mid 2nd to the 3rd century A.D. (1976, 137–9, Taf. 34, nos 261–7); another from *Verulamium* was from a context dated from the 1st into the second half of the 2nd century (Frere 1984, 36, fig. 12, no. 88); and an unprovenanced piece from Cirencester, Gloucestershire (Wacher and McWhirr 1982, 114, fig. 38, no. 117). There is also a complete but unpublished piece from Loughor, West Glamorgan.
181. [7.38] 835/SG117 (1044) Military pendant, the loop is now lost, with trapezoidal outline and scalloped lower edge; now damaged, The surface is poorly preserved. Length 44mm; maximum width 12mm; maximum thickness 2.6mm. Compare the almost identical item no. 182.
182. [7.27] 002/unstratified (785) Military pendant of trapezoidal outline, and scalloped lower edge. The suspension loop, now lost, was set at right angles to the plane of the pendant. Length 46.5mm; maximum width 9.6mm; maximum depth 3.1mm.
Compare the silver example from Regensburg dated 2nd to 3rd century and the related copper alloy piece (Fischer and Rieckhoff-Pauli 1982, 32, Abb. 9, nos 8 and 7 respectively).
183. [7.15] 610/SG182 (380) Military strap-end pendant, split at the top for the insertion of a narrow strap which would have been held in place by a small nail or rivet. The tapering, moulded finial in the lower section is heavily encrusted. Length *c.* 42.7mm. (Not illustrated.)
See examples from Zugmantel dating to the 1st and into the 3rd century (Oldenstein 1976, 144–7, Taf. 36, nos 311, 312, 314); and the related example from Hod Hill (Brailsford 1962, 4, fig. 5, no. A131); also see the unpublished pieces from Crook Street, Chester 1973; and Allens Yard, Towcester, Northamptonshire, unstratified; and another from Doncaster, South Yorkshire.
184. [7.49] 450/SG29 (1524) Pinecone-shaped terminal, the tip damaged and the shank for attachment mostly lost. Height 22mm; maximum diameter 9.6–10.6mm. (Not illustrated.)
See the example from Caerleon found in a context dated *c.* A.D. 70–110 (Nash-Williams 1929, 255, fig. 16, no. 8); and the piece from Dwr-y-Felin School, Neath (Lloyd-Morgan 1992c, 248, no. 9).

Miscellaneous military fittings (FIG. 93)

Total number recorded = 7

Other unusual fittings include the large fragment no. 186 which is paralleled by a mid 2nd to late 2nd/early 3rd century piece from *Vindolanda*. Only one dress/button-and-loop fastener has been found amongst the collection of copper alloy fittings. The bust of Minerva described above (no. 118) may have been used in a military context.

185. [7.1] 001/unstratified (051) Roundel with cut-out scroll decoration; now in two pieces and incomplete, with some damage to the edges. Diameter 66.8mm; thickness 1.5mm.
Oldenstein notes several fittings from the German *Limes* area with examples from Faimingen, Pfünz and Saalburg having a date of *c.* mid 2nd to 3rd century (1976, 128, Taf. 33, nos 246, 247

- and 254 respectively); and discs from Feldberg, Saalburg and Marienfels, of which the first is dated post A.D. 150 with the other two dated from around mid 2nd century to probably mid 3rd century (1976, 237–9, Taf. 89, no. 1152; Taf. 90, nos 1158, 1165 respectively). Compare the slightly smaller disc from the Prysg Field, Caerleon 1927–9 with sixteen comma-shaped cut-outs, dated *c.* A.D. 105–200 (Nash-Williams 1932a, 91, fig. 38, no. 14); and the piece from the villa at Lullingstone, Kent, found in a 4th century level, and with a similar design to the upper section of the Mill Street find, but with punched dot decoration as border to the edges (Meates 1987, 74, fig. 30, no. 156).
186. [7.2] 001/unstratified (053) Military fitting with openwork decorative panel in the form of two dolphins supporting an urn or *cantharos*. Details on the vase and dolphins are picked out with punched dots and light hatching. The panel is set on a heavier T-shaped bar which bifurcates just above the break. There are three rivets for attachment on the reverse of the upper section, and one on the upper face just above the bifurcation. A little worn and broken. Width 71.6mm; length 49mm.
- An identical, but less well preserved example was reported from *Vindolanda* and is thought to have come from a context dated mid 2nd to late 2nd/early 3rd century (Bidwell 1985, 126, 131, fig. 46, no. 3, for discussion of dating see pp.21, 11).
187. [7.26] 002/unstratified (717) Flat-headed stud with ?pelta-shaped outline, rather damaged around the edge, with remains of tinning or silvering on the upper surface. The pin for attachment is damaged. Surface area 10.2 × 14.1mm; height 4.2mm. (Not illustrated.)
- Similar studs from Niederbieber, Saalburg and Zugmantel are noted by Oldenstein who dates them from *c.* A.D. 180/190 into the early 3rd century (1976, 178–84, Taf. 54, nos 624, 628 and 634 respectively); with another piece from Birrens, Dumfriesshire from an Antonine I context *c.* A.D. 142–155 (Robertson 1975, 110, no. 42, fig. 31, no. 12, for discussion of dating see pp.280–4 with summary table on p.286).
188. [7.52] 2010/unstratified (2035) Heart-shaped fitting, now damaged, with cut-out motif in the centre. Present height 41.4mm; maximum width 54.3mm.
- Compare the identical piece, but without the cut-out ornament, from Osterburken, and the related pieces from Saalburg, Zugmantel and Kapersburg, dated by Oldenstein from post A.D. 150 into the 3rd century (1976, Taf. 33, nos 259, 255, 256, 257 respectively, with discussion on pp.127–36, especially p.130).
189. [7.61] 2389/SG72 (2340) Fragment of a waisted 'military tube' with decoration of moulded rings round the circumference. Length *c.* 12mm; maximum surviving diameter 9.4mm.
- Compare the examples from Fishbourne, West Sussex, from the second period construction level of A.D. 75–80 (Cunliffe 1971, 112, no. 7); Blackfriars Street, Carlisle, Cumbria, from a post-Roman layer (McCarthy 1990, 132, no. 92, fig. 116); and examples from Chester: from Princess Street, which was associated 'with pottery of the 1st and 2nd centuries (Newstead and Droop 1939, 40, pl. X, no. 15), Newgate Street 1955 'from layers associated with the construction of the rampart building, Trench 1 = early Trajanic (Thompson and Tobias 1957, 36, fig. 4, no. 16, with p.31 for discussion of dating), and unpublished examples from Hunter Street School.

Another fragment of a 'military tube' was noted.

190. [7.41] 1211/SG109 (1104) Rivet or fitting consisting of two discs with moulded concentric circles on the heads, connected by a heavy central rod. Both discs are badly damaged round the edges. Diameter discs *c.* 15.2mm and 13.2mm; height 10.6mm. (Not illustrated.)
- Similar items, note especially those from Feldberg and Saalburg in the German *Limes* area, are dated by Oldenstein from the late 2nd into the 3rd century A.D. (1976, 170, Taf. 47, no. 497; and nos 498, 499, 501, 503 respectively). One from *Vindolanda* came from a context dated *c.* A.D. 275–300 (Bidwell 1985, 122, fig. 41, no. 34); another from Balkerne Lane, Colchester, Essex, was dated *c.* A.D. 250–300 (Crummy 1983, 119, fig. 123, no. 4031); Webster noted one from Broxtowe, Nottingham (1958, 70, fig. 3, no. 9); and one of 'Antonine' date was excavated at Winterton villa, Lincolnshire (Stead 1976, 215, fig. 114, no. 139). They appear to have been fittings associated with horse furniture.
191. 2086/SG94 (2270) Dress-fastener with square head decorated with a simple incised linear border and inside this a saltire. The loop is triangular in shape. One corner of the head is lost, otherwise the item is complete. Head 18.8 × 19.0mm; overall height 38.4mm.
- The piece belongs to Wild's class VI b; he suggests a mainly 2nd century date (Wild 1970, 142, fig. 2), and notes an incised example from Traprain Law (*ibid.*, 153, cat. no. 100). This was illustrated by Kilbride-Jones (1980, 164, fig. 46, no. 4). A piece with only an incised border to the

head was reported from Wroxeter, Shropshire (Bushe-Fox 1913, 29, pl. X, fig. 1, no. 4). More recently, an undecorated example was found during excavations in Blackfriars Street, Carlisle, Cumbria (McCarthy 1990, 136, fig. 122, no. 108).

Raw materials, slag and waste from metalworking (FIG. 94)

Total number of items noted = 42

Evidence for metalworking is provided by two incomplete ingots, nos 195 and 196; and also by a casting sprue with part of the runner (no. 194), and two other fragments of casting (nos 192 and 193). Two unstratified lumps of slag were noted, but are not included here. The other items noted under this head were unidentifiable lumps of copper alloy or waste.

192. [8.1.1] 403=103/SG185 (074) Failed casting with flashing still in place. Dimensions 49.5 × 34.4 × 5.9mm.

193. [8.1.2] 1296/SG111 (1229) Irregular fragment of ?casting or ?offcut with roughly V-shaped cross-section. Dimensions 44.2 × 13.8 × 7.8mm. (Not illustrated.)

194. [8.1.3] 452/SG27 (1532) Sprue from casting with part of a runner. Surface area 29.7 × 37.4mm; height 13mm. (Not illustrated.)

Similar examples come from Doncaster; and Loughor, West Glamorgan, all unpublished.

195. [8.1.4] 2001/unstratified (2341) Incomplete ingot with only one original edge preserved. The upper face was cast to give rectangular areas with bevelled edges. Surface area 73.8 × 51.5mm; thickness 11.4mm; weight 191.5g.

196. [8.1.5] 2001/unstratified (2808) Small incomplete ingot with trapezoidal cross-section. Length 50.9mm; maximum width 30.9mm. (Not illustrated.)

See the class 3 mould fragments from Heronbridge, near Chester, described by Hartley '... the casts would be bars with rectangular cross-sections, some with moulded ribs' (Hartley 1954, 6–7, fig. 3, especially mould fragments no. 8). A fragment similar to the Caerleon piece was found during excavations at Linenhall Street, Chester (Thompson 1969, 15, fig. 5, no. 10); with two other unpublished fragments from the Hunter Street School site, Chester.

Miscellaneous

As might be expected there are some fragments of chain, for example a heavy but worn link no. 197; and a 140mm length of chain, no. 198. Some small fragments of openwork plaques and lightly decorated sheeting have survived, and one damaged loop fitting, no. 203, which may be a part of a larger item. Also recorded were 38 fragments of rod and wire, 53 crude rings and ring-shaped fittings and 74 strips and fragments of sheet, none of which are published here. Details can be found in the site archive. The total number of rods and wire recorded was 38; of crude rings and ring-shaped fittings 53; sheet etc. 75, chain 3; other miscellaneous items 82.

Chain (FIG. 94)

197. [9.4.1] 963/SG129 (1454) Single link of chain with double loop, made from a single strip with square cross-section folded to produce a loop. The ends brought together have been pierced to form a smaller loop set at 90° to the other. Surface rather worn and decayed. Length 32mm; external diameter of loops 14.7mm, 11mm. (Not illustrated.)

198. [9.4.2] 2095/SG84 (2103) Heavy chain made up of continuous groups of two circular links joined to adjacent groups. The surviving length consists of 30 rings in pairs with a single ring at one end. Overall length *c.* 144mm, diameter links *c.* 15mm; depth of links *c.* 2.4–2.7mm.

Miscellaneous fragments and fittings (FIG. 94)

199. [9.6.11] 001/unstratified (209) Two rectangular strips held together at either end by two clips made of folded sheet metal. Surface area 38.4 × 16.4mm; overall depth 1.8mm. (Not illustrated.)

200. [9.6.18] 016/unstratified (473) Clasp or fitting with convex moulded edge at one end; the other end, with tapering thickness, is turned under. There are the remains of a staple and a thinner sheet plate on the underside; pierced by a ?nail hole. Overall length 44.3mm; maximum width 23mm; depth *c.* 9mm. (Not illustrated.)

201. [9.6.30] 001/unstratified (704) Square-shaped item with integral T-shaped tang; use uncertain. Length 29.5mm; width 19.6mm; thickness 4.5mm. Similar to no. 204 below. (Not illustrated.)

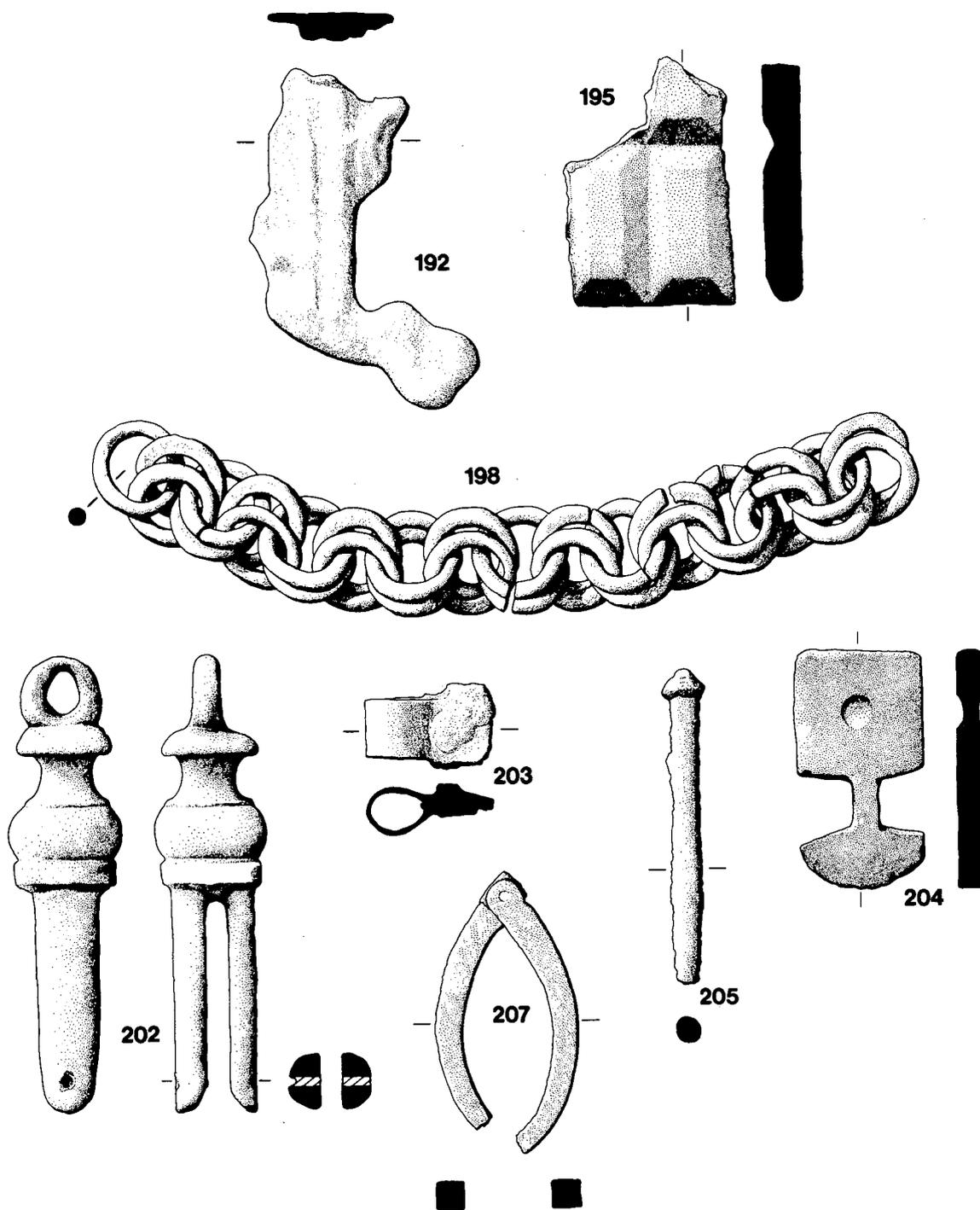


FIG. 94. Copper alloy objects nos 192–207: metalworking waste and miscellaneous items. Scale 1:1.

202. [9.6.33] 929/SG53 (776) Fitting with worn suspension ring rising from an elaborate sub-baluster-shaped terminal. Below this is a cylindrical section divided into two flanges (like a one-piece wooden clothes peg) with rounded, tapering ends, each end being pierced and having the remains of an iron swivel or rivet. Height 67.8mm; maximum diameter *c.* 17.3mm.

For parallels see the piece from a robber-trench at Winterton villa, Lincolnshire (Stead 1976, 214, no. 131, fig. 113), and another from Lion Walk, Colchester, Essex, which was found in modern rubble (Crummy 1988, 93, fig. 102, no. 3613, length 63mm).

203. [9.6.40] 860/SG53 (963) Strip metal loop-fitting with remains of a fragment of sheet rivetted *in situ*. Length 20.3mm.

204. [9.6.44a] 913/SG29 (1128) Fitting with a roughly square section with a circular depression to either face which has not been pierced through, and a small tang with an oval terminal. It may have been cast or cut out of heavy sheet metal. Height 35.4mm; maximum width 20.2mm; maximum thickness 3.6mm.

Similar to no. 201 above. Dr Andrew Poulter notes (pers. comm.) that a close parallel to the Mill Street items was found during the 1987 season of excavation, under his direction, at Nicopolis in Bulgaria. The piece came from a pit in area B which also contained fragments of armour. It is 35mm in height; the context was dated to A.D. 175–250.

205. [9.6.56] 450/SG29 (1514) Rod, with cone-shaped finial, possibly the end of a steelyard balance; heavily encrusted, surface damaged. Length 47mm; maximum diameter of finial 6.1mm.
206. [9.6.59] 001/unstratified (1763) Hook-shaped object ending in a penannular ring-shaped section. Length 35mm; maximum height *c.* 20mm; loop diameter 13.3 × 9.2mm. (Not illustrated.)
207. [9.6.75] 3044/SG164 (3051) Dividers with curved arms; only the hinged section and upper part of the arms survive. The arms have a square cross-section. Length 41.8mm; cross-section arms 3.9 × 3.3–4.6mm.
208. [9.6.78] 3086/SG151 (3168) Incomplete strap-handle with the one surviving terminal pierced to take a nail or rivet. The grip has an angular cross-section. Present length 32mm; maximum depth 10.2mm. (Not illustrated.)

OBJECTS OF IRON By Ian Scott

Introduction

The ironwork from Mill Street is notable for a number of reasons. Firstly, the overall quality of the collection is good, with a high proportion of identifiable objects (233), compared with 198 which were undiagnostic.

The quality and character of an ironwork collection is usually directly linked to the nature of the deposits from which material is recovered. The larger and better-quality pieces are most often recovered from rubbish and demolition deposits; that is, deposits in which material was deliberately placed for disposal. Larger items of ironwork are not readily lost because they are simply too bulky to be mislaid. The best archaeological collections of ironwork consist of material which has been deliberately deposited, either in rubbish (e.g. Vindonissa) or demolition (e.g. Newstead and Kunzing) deposits.

There are very few large pieces from the Mill Street sites. Nonetheless, as TABLE 27 shows, the stratigraphic groups which have produced the largest numbers of iron objects are predominantly associated with demolition or abandonment (see pp.460–7 for a fuller discussion of rubbish disposal strategies).

TABLE 27: PROVENANCE OF MAIN GROUPS OF IRONWORK

Site	SG	Description	Notes	Total no. of objects
Riding School Field	SG035	Last period of drain fill	Probably mainly derived from rubbish-dumping on waste ground	20
Riding School Field	SG144	From Building 14	Possibly rubbish generated from surrounding activity, possibly introduced with makeup from elsewhere	14
Cambria House	SG168	Abandonment of Buildings 21 and 22	This material comes from the area identified with metalworking. Stratigraphically the material is from directly below the topsoil and may be contaminated	32
Cambria House	SG094	Abandonment of Building 5	Probably mainly derived from rubbish-dumping on waste ground	17
Smallholding	SG155	Metalled surface	Possibly rubbish generated from surrounding activity, possibly introduced with makeup from elsewhere. Finds include a slave-shackle (no. 70) and an inlaid dagger sheath (no. 10)	17
Smallholding	SG159	?Phase 2 deposits in Building 18/19	Stratigraphically the material is from directly below the topsoil and may be contaminated. Possibly rubbish generated from surrounding activity, possibly introduced with makeup from elsewhere. Finds include an unfinished slide key (no. 43)	21
Smallholding	SG164	Abandonment of Building 18/19	Probably mainly derived from rubbish-dumping on waste ground	13

Composition of the collection

The collection as a whole contains the range of material which would be expected from a Romano-British site whether civil or military. It includes weapons, tools representing a number of crafts or trades, horse gear, household objects, personal items and various fixtures and fixings. The only items which would be out of place on a civilian site are the inlaid dagger sheath (no. 10), the entrenching tool (no. 14), the armour fragments (nos 12 and 13), and the helmet fragment (no. 11). The spearheads (nos 2–7), and even the boltheads (nos 8 and 9), would not be out of place, and nor would the slave-shackles (nos 70 and 71).

The trades directly represented by tools include smithing, stone masonry and plastering, carpentry, leatherworking and farming. The presence of apparently unfinished items (nos 43, 95–6) is further confirmation of smithing, to add to the evidence provided by slag and hearths (pp.154–8). Other activities can be inferred from surviving objects: for example spearheads possibly for hunting as well as fighting, and horse gear, including linch pins, suggesting the presence of carts and presumably carters. All are activities which could be found in either a civilian or military context.

Finally, a number of points need to be made about the slave-shackles (nos 70 and 71). Firstly, it must be stressed that they are shackles for humans and not hobbles for animals. Both examples are of forms which were secured by locking, which is an unnecessary precaution for animals (Thompson 1993, 59). Secondly, although they may have been used to restrain prisoners, it is more probable that they were used to secure slaves. Whilst they can simply be taken to indicate the presence of slaves, it is possible that they provide evidence of trade in slaves. The army was only involved in slave-taking indirectly; prisoners of war were often sold into slavery. Whilst there is little documentary evidence for the organisation of the slave trade, the existence of slave traders is clearly indicated (Bradley 1994, 51–6). The distribution of slave-shackles is very much concentrated on the frontier provinces, and would seem to indicate that the sources of new slaves was to be found on or beyond the frontiers.

Spatial distribution

The bulk of the catalogued and listed ironwork was recovered from the Riding School Field. Two hundred and fifty-four objects were identified. Of these, two were definitely not Romano-British. Of the remaining 252 objects, 119 objects, or 47%, were from the Riding School Field, 79 pieces, or 31%, were from Cambria House, and 54 pieces, or 21%, from the Smallholding. The quantity of material from the various sites reflects the size of area excavated.

The proportions of the different categories of iron object from the three sites was broadly comparable to the overall proportions, with the Riding School Field producing the most examples in the majority of cases. The exceptions are military items, structural fittings, knives, slave-shackles, and nails. However, it should be stressed that the number of iron objects in any one category is too small for statistical analysis. Two of the exceptions, structural fittings and slave-shackles, consist of just two examples each; there are two fragments of water-pipe collar from Cambria House, and two slave-shackles from the Smallholding. The Riding School Field and the Smallholding have produced equal numbers of knives and other blades. Those items whose function cannot be identified have not been considered.

The most interesting category is military equipment. All three sites have produced pieces with military associations. Seven of the examples of military equipment come from Cambria House, compared to four from the Smallholding and only three from the Riding School Field. Cambria House produced a fragment of cavalry helmet (no. 11), an entrenching tool (no. 14), four spearheads (nos 2, 3, 6 and 7) and a bolthead (no. 9). The Riding School Field produced two possible fragments of armour (nos 12 and 13) and a piece of sword blade (no. 1). This last is unstratified and may not be Roman. A piece of an inlaid dagger sheath (no. 10), two spearheads (nos 4 and 5) and a bolthead (no. 8) were found on the Smallholding.

Closer examination of other categories of material reveal some interesting points. Most of the smiths' tools are from Cambria House: four examples out of a total of seven. Other tools are mainly from the Riding School Field. No horse gear was found on Cambria House, and

household items were absent from the Smallholding, but in both cases the numbers involved are very small and a single find would change the picture.

Attention should be drawn to the small number of unfinished, or possibly unfinished, objects found in the Mill Street excavations (TABLE 28). The slide key (no. 43) from the Smallholding has no teeth cut into its bit and is the most convincing example of an unfinished object. The identification of the other objects, and particularly of nos 95–6, as sword blanks is less certain.

TABLE 28: UNFINISHED IRON OBJECTS

Cat. no.	Site	Context	SG	Description
43	Smallholding	3086	SG159	Unfinished slide key
95	Riding School Field	1201	SG106	Possible sword blank
96	Riding School Field	0927	SG053	Possible sword blank

Finally, two pieces of ironwork were recovered from the bottom of post-holes associated with Phase 3 of Building 1 (Cambria House). One of these pieces was a large nail (context 2452 IF 697) and the other (context 2492 IF 682) was a length of bar of sub-square cross-section. Unfortunately there is nothing intrinsically interesting about either object and neither is included in the catalogue.

Chronological distribution

It is not possible to say much about the chronological distribution of iron objects, beyond the general point already made that much of the material appears to come from demolition, or abandonment, deposits.

Catalogue composition and layout

All ironwork recognised during hand excavation was recovered from site. Subsequently all ironwork was submitted for X-ray. It was then scanned and material selected for conservation and cleaning. No stratified material was discarded either during excavation or conservation, but recognisable nails were excluded from the material sent to the specialist for study. The selection of objects for publication fell into three stages.

1. All objects were inspected and identified, and all but the most amorphous objects — fragments of slag, corrosion products, or very small iron fragments — were measured.
2. A further selection was made during the compilation of the first draft of the catalogue (to be found in the archive). All the 190 identifiable objects were included at this stage, except where these were from very late contexts or unstratified *and* of late or uncertain date on typological grounds.
3. These 190 objects were reduced to 122 when the ironwork was edited for inclusion in the full report. This was done by omitting later objects, unstratified objects other than those of particular interest, and reducing multiple examples of a single type of artefact to one or two representatives (total numbers recorded have been noted following the relevant entry).

The archive contains two levels of recording. Undiagnostic fragments were only briefly described and measured. All identifiable objects were described and sketched on record sheets, from which the catalogue for publication was compiled; the report was completed in 1994.

Catalogue

The catalogue has been organised by categories of object, starting with weapons and military finds, continuing with various tools, then various fixtures and fittings, personal items, etc. Individual entries describe and identify the object in question. Discussion in individual catalogue entries is limited to identification and dating where relevant. Parallels are quoted only where identification is doubtful, or where essential to any discussion of the identification.

Military equipment (FIG. 95; PL. XXXI)

Total number recorded = 14. See also report on objects of copper alloy nos 123–39.

1. [1] 002/unstratified (502) Possible sword blade, fragment. Tapering fragment with rounded point and diamond cross-section. The X-ray shows no signs that the core was piled. Length 200mm.
This possible blade fragment is from topsoil and therefore may not be of Romano-British date.

Spearheads

For general discussions of spearheads see Bishop and Coulston 1993, 69, and also Scott 1980 and Manning 1985, pp.160–70. Manning found that the spearheads from Hod Hill fell into four groups:

- I. Spearheads between 45mm and 65mm long.
- II. Spearheads between 80mm and 100mm long.
- III. Spearheads between 130mm and 150mm long.
- IV. Spearheads between 170mm and 250mm long.

Within each group it is possible to distinguish sub-groups based on form and width.

2. [2] 2002/unstratified (2051) Possible spearhead, with a low round-shouldered broad blade with a narrow point. The broad part of the blade has a lenticular cross-section, the point a sub-rectangular cross-section. The socket is split and was secured to the spear shaft by a nail. Length 116mm.
This represents a 2nd or 3rd century type. It has been questioned whether these are spearheads and suggested that they might be the heads of standards (Manning 1976, 19; Scott 1980). There are examples from Hadrian's Wall forts (e.g. Manning 1976, nos 16–18; Scott 1980, fig. 24.3, nos 1–3 and 5; and Jackson 1985b, 132–5 and fig. 47, nos 6 and 7) and other examples from Caerleon (Evans and Metcalf 1992, 164, with discussion) and from *Carnuntum* (unpublished, Site Museum no. 18339) This example does not fall within one of Manning's groups as defined above.
3. [3] 2033/SG83 (2066) Spearhead, similar to no. 2, but larger. The point is missing, but visible on the X-ray plate. Length c. 150mm.
This example falls within Manning's group III.
4. [4] 3044/SG164 (3068) Possible spearhead, with slim mid-shouldered leaf-shaped blade of lenticular cross-section. The blade is broken, and the point and socket are both missing. Length 103mm. (Not illustrated.)
This form of slim leaf-shaped spearhead with the widest point equidistant between the point and base of the blade is found throughout the Roman period in Britain but is especially common in the later 3rd and 4th centuries (Scott 1980, 337–9, and fig. 24.4, 3). There is a good group of slim spearheads from the Rampart Building in Prysg Field, Caerleon (Nash-Williams 1932a, figs 19–21). The small slim blade suggests that this was the head of a throwing spear, or of a cavalry lance. This spearhead is incomplete, but may have fallen within Manning's group III.
5. [5] 3024/SG18 (3233) Spearhead, with slim low-shouldered leaf-shaped blade of diamond cross-section, and a welded socket. The blade is broken. There is no visible evidence for a nail to secure the socket. Length 126mm.
A common Roman form, it is not chronologically distinctive. The small slim blade suggests that like no. 4 above this was the head of a throwing spear, or lance. This example is incomplete but would probably fall within Manning's group III.
6. [6] 2178/SG92 (2819) Spearhead, with irregular leaf-shaped blade of irregular lenticular cross-section, and open socket. The blade has rounded low shoulders. There is a possible nail head visible on the socket. Length 142mm.
This form of spearhead is most common in the 2nd and 3rd century (Scott 1980, 33 and fig. 24.2, 7 and 8). This example falls within Manning's group III.
7. [7] 2086/SG94 (2854 and 2859) Spearhead, with mid-shouldered leaf-shaped head of lenticular cross-section. The socket is slim but broken. The two pieces have separate small find numbers but appear to form parts of the same head. Length c. 145mm. (Not illustrated.)
The blade is larger and broader than nos 4 and 5. This example would probably have been in Manning's group IV when complete.

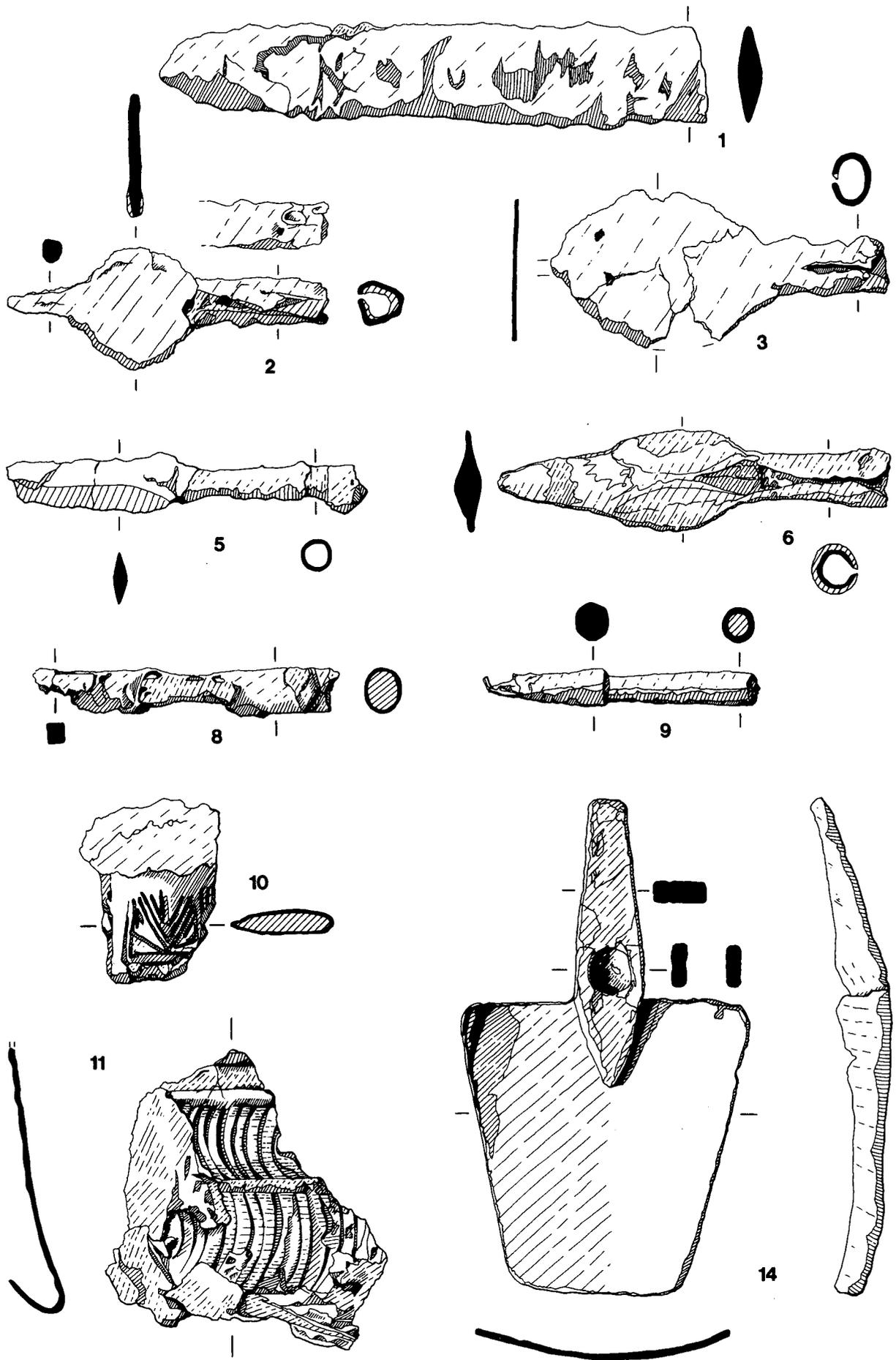


FIG. 95. Iron objects nos 1-14: military equipment. No. 14 scale 1:4; other items scale 1:2.

Boltheads

8. [8] 3070/SG157 (3092) Bolthead, with tapering head of square cross-section, and welded socket. The socket is filled with mineralised wood. There is no visible evidence for a nail to secure the head to the shaft. Length 111mm.
See Manning 1985, 170–5, nos V141–V253. These are the commonest type of artillery bolthead.
9. [9] 2173/SG74 (2816) Bolthead, with tapering head of octagonal cross-section, and welded socket. There is a distinct step between head and socket. There is no visible nail, or nail hole, but there is slight evidence for a nail on the X-ray plate. Length 100mm.
Compare the bolthead from Castle Street, Carlisle (Padley 1991, 150, and fig. 132, no. 471), and from Newstead (Curle 1911). These appear to have been introduced at a later date than the boltheads with square, or rectangular, tapering heads.

Dagger Sheath

10. [10] 3047/SG155 (3104) Inlaid dagger sheath, fragment, consisting of the upper portion of the sheath. Visual inspection and study of the X-ray plates suggests that this fragment of sheath is formed from thin sheet. The front plate appears to be strongly curved at the edges to form the sides of the sheath, while the back plate appears almost flat — there may be a slight ridge down its centre. The surface of the front plate has been engraved with broad lines for inlay. The lines have feathered edges to help secure the inlay material. The pattern does not show on the X-ray plates, and was only visible to the naked eye after cleaning. The decoration consists of a rectangular, or slightly trapezoidal, panel marked by at least two engraved lines, and filled by engraved lines in a diamond pattern. The corners appear to have been filled with engraved lines. The layout of the pattern is not completely regular, or symmetrical. Length 62mm.
This appears to be a Type A sheath with the hatched diamond motif more usually associated with the late Type B sheath (Scott 1985, 170–2 and Appendix 2, Group E). These hybrid Type A sheaths appear to be contemporary with Type B sheaths and are dated to the later 1st century A.D.

Armour

11. [11] 2393/SG44 (2482) Decorated helmet, fragment. This fragment comes from the nape, or rear, portion of the helmet and includes part of the narrow flange which formed the neck guard. The main portion of the fragment is decorated in relief. The decoration is divided into separate strips by plain raised bands. Each strip consists of rows of raised concentric arcs. The arcs in one strip face in the opposite direction from those in the adjacent strip. The pattern was probably intended as a stylised representation of human hair. Length 100mm.
Part of a cavalry parade helmet. The decoration is more stylised than that found on most cavalry helmets and so-called 'sports' helmets, but there is no doubt that this fragment is from such a helmet. Parade and 'sports' helmets of 1st to 3rd century date are widely known (Garbsch 1978; Bishop and Coulston 1993, 96 and 117–18). It is likely that this helmet dates to the 2nd or 3rd century, rather than earlier, because of its comparatively narrow neck guard; however, in the absence of an exact parallel for the decoration of the Mill Street helmet the dating cannot be confirmed on typological grounds. There is an iron helmet with hair depicted on it from Ruit (Kr Esslingen, Baden-Württemberg) (Garbsch 1978, 69, no. O 34, and Taf. 23, 4), but the representation of the hair is more naturalistic. A fragment of another iron helmet with hair decoration in relief was found at Straubing (Walke 1965, Taf. 103, 2).
12. [12] 846/SG35 (1567) ?Armour fragment, consisting of sheet iron with a double curve and a possible edge. Length 42mm, maximum width 30mm. (Not illustrated.)
This piece could be a fragment of armour from the neck piece of a segmental *lorica* or part of the rim of a vessel. Too little survives for complete certainty.
13. [13] 814/SG125 (1567) ?Armour fragment. Sheet iron with a double curve and a curving, possibly rolled over, edge. No features visible on X-ray plate. Length 67mm, maximum width 54mm. (Not illustrated.)
This piece could be a fragment of armour from the neck piece of a segmental *lorica*. Too little survives for complete certainty.
14. [14] 2002/unstratified (2050) Entrenching tool, with a wide trapezoidal digging blade and small tapering pick head. The blade is curved in cross-section, and the pick head is of rectangular cross-section. The shaft hole is oval and flanked by slight flanges. Length 348mm. (PL. XXXI)

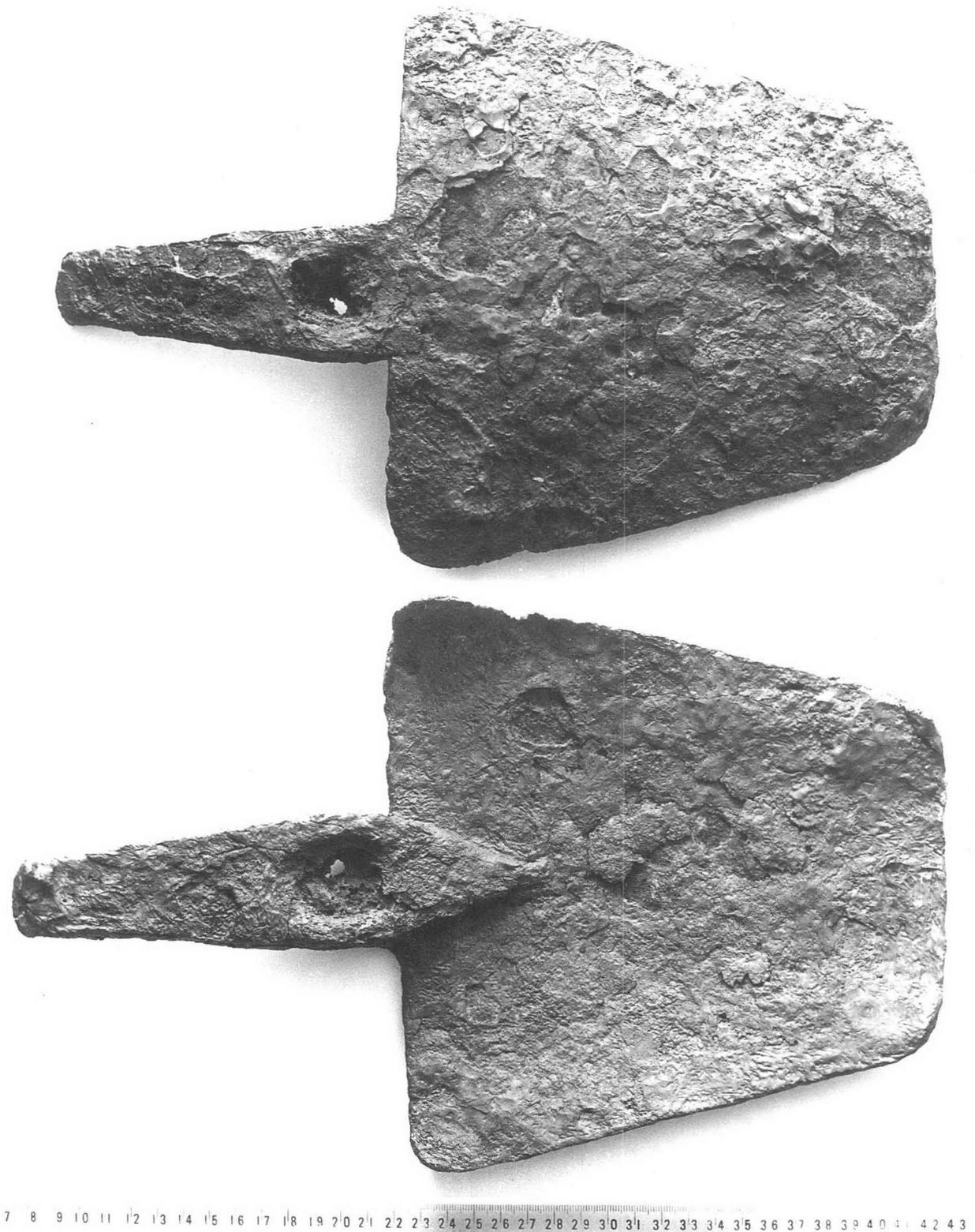


PLATE XXXI. Entrenching tool: ironwork no. 14.

Compare the examples from the Old Rhine near Xanten (Schales and Schreiter 1993, 264 and Taf. 66, Ger 12 and Ger 13). One of these examples (Ger 13) lacks the pick head — instead it has a small flat hammer head — but has a digging blade of similar proportions to the Mill Street example. The other example (Ger 12) appears a little longer and slimmer than the Mill Street example. Other examples have been published from Wiesbaden (*ORL* Abt B, no. 31, Taf. XI, 38), Zwammerdam (Haalebos 1977, 224 and Abb. 19, 61) and from the Saalburg (Jacobi 1897, 444, fig. 69, 11 and 12).

Tools (FIGS 96, 97)

Total number recorded = 22, not all certainly Roman

Smiths' tools

15. [15] 2459/SG168 (2705) Possible smith's punch, slightly curved and of square cross-section. One end is pointed, the other is square. Length 118mm. (Not illustrated.)
16. [16] 022/SG125 (055a) Wedge, or set, of rectangular cross-section. The top has slight signs of battering. Length 72mm
17. [17] 2429/SG168 (2564) Wedge, or spike, curved and of irregular oval cross-section. One end is pointed, the other may show signs of battering. Length 85mm.
18. [18] 3024/SG18 (3232) File of rectangular cross-section. The blade is slightly tapered, and has a tang at one corner. A few surviving teeth can be observed on the face of the blade. Length 94mm.
Compare a file from Aislingen (Ulbert 1959, 96 and Taf. 27, 30).
19. [19] 451/SG61 (1508) File of rectangular cross-section. The blade is slightly tapered, and has a tang at one end. A few surviving teeth can be observed near the end of the blade. Length 121mm.
20. [20] 2380/SG45 (2626) Possibly part of a file, consisting of a bar of rectangular cross-section. However, there are no traces of cuts on any face of the object. At one end there is an oval-sectioned tang rising from rounded shoulders. The other end is broken. Length 85mm.
21. [21] 2005/SG168 (2037) Possibly part of a file, consisting of a bar, or strip, of rectangular cross-section. However, there are no traces of cuts on any face of the object. At one end there is a square-sectioned tang rising from square shoulders. The other end is broken. Length 100mm.

This object may not be Roman, although the majority of the finds from this context are of Romano-British date.

Masons' and plasterers' tools

22. [22] 2095/SG84 (2426) Mason's pick fragment, broken at the shaft hole. The chisel-like or adze-like blade is extant, and is of sub-rectangular cross-section. Length 101mm.
23. [23] 928/SG53 (1573) Trowel blade fragment. Little of the blade survives, but the cranked tang is distinctive. Length 101mm.
24. [24] 1026/SG146 (1625) Modelling tool, with a broad curved angled edge at one end. The narrow end is broken and may have had a point. Length 76mm.

Compare the modelling tools with angled blades from London (Manning 1985, 32 and pl. 13).

Carpenters' tools

25. [25] 2111/SG93 (2032) Shaft-hole axe, fragment. Curved splayed blade of rectangular cross-section. It has broken at the shaft hole. Length 82mm.
26. [26] 638/SG177 (1334) Mortice chisel blade, formed from tapering bar of deep rectangular cross-section. The angled cutting edge is clear. No evidence for the method of securing the handle survives. Length 92mm.

The handle may have been secured by a socket (e.g. from Kingsholm: Manning 1985, 23, B35–B37) or a tang (see the tanged example from Hod Hill: Manning 1985, 24, B41). Other examples have solid handles. For a general discussion of chisels see Manning 1985, 21–4 and fig. 4.

27. [27] 103/SG105 (1279) Possible firmer chisel blade. The blade is of rectangular cross-section, slightly waisted, and has a tang at one end. The other end appears to end in a chisel edge, now incomplete. Length 118 mm.

The wooden handle would probably have been secured on the tang by a collar, as for example on the mortice chisels from Carlisle (Padley 1991, 139 and fig. 115, 361) and Aislingen (Ulbert 1959, 96 and Taf. 27, 37).

28. [28] 2038/SG205 (2397) Drill bit, fragment. Pyramidal point on a shaft of circular cross-section. Length 126 mm.

This is more likely to be a broken drill bit than part of a *pilum* head.

Agricultural tools

29. [29] 1450/SG8 (1443) Scythe blade fragment. The thickened back of the blade and only part of the thinner portion of the blade survive. Length 102mm.

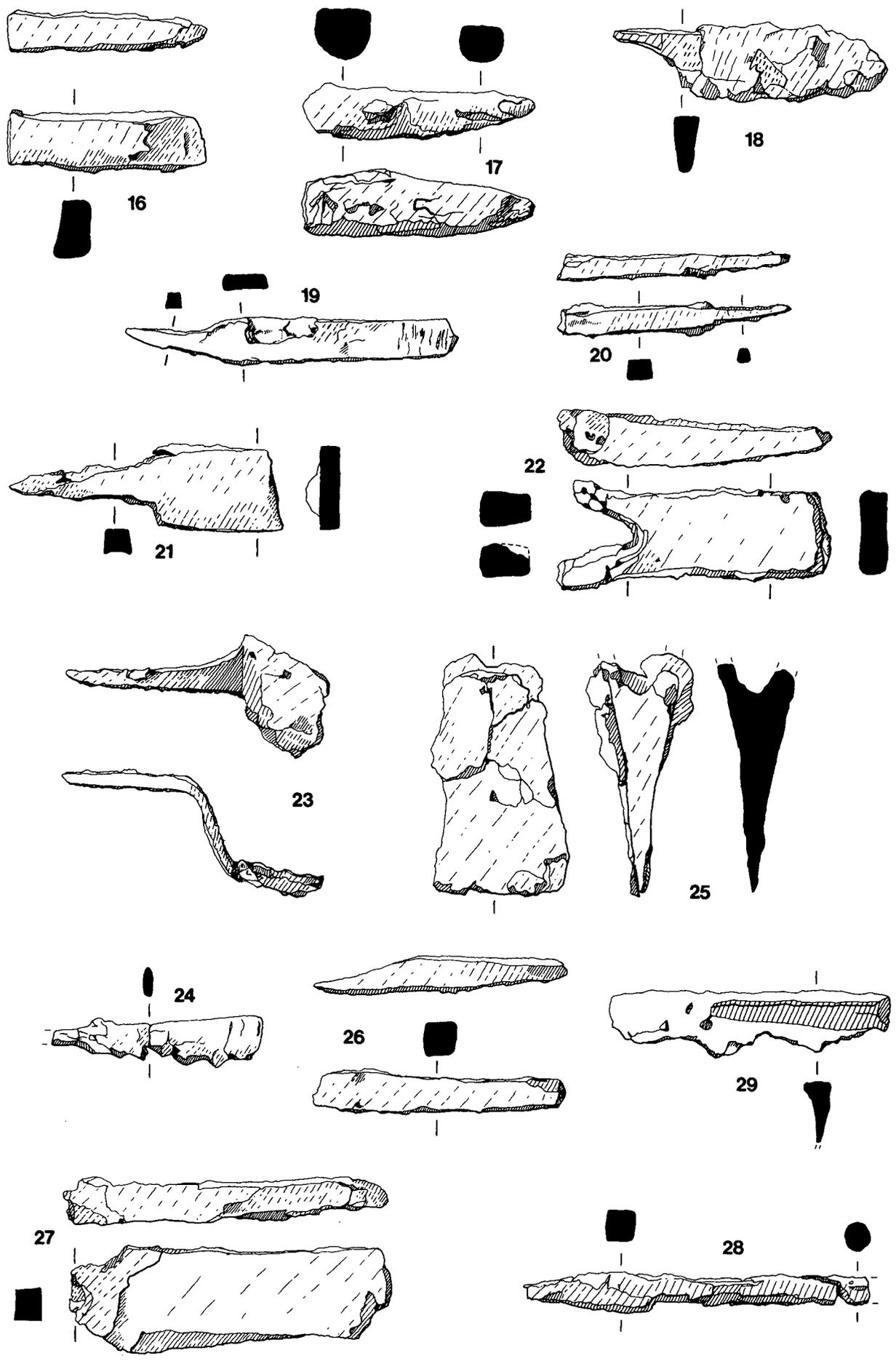


FIG. 96. Iron objects nos 16-29: tools. Scale 1:2.

From the section of the scythe blade that is almost straight. See the scythe blades from Barnsley Park, Gloucestershire and an unprovenanced example in the British Museum (Manning 1985 49–50, F18–F20), and the example from the Rhine at Xanten (Schalles and Schreiter 1993, 264 and Taf. 68).

30. [30] 2437/SG64 (2710) Reaping hook. Strongly curved tanged blade of triangular cross-section. The point is missing. Length 190mm. (Not illustrated.)
A reaping hook of Manning Type 3 (Manning 1985, 53–5 and fig. 14:3).

Other tools

31. [33] 3086/SG159 3249 Leatherworker's awl, consisting of square-sectioned bar tapering to a point at each end. Length 106mm.
A Manning Type 4b awl, compare examples from London and Hod Hill (Manning 1985, 38–41, especially p.40, E14 and E22).
32. [35] 903/SG137 (978) Forked ?tool. The tool has a shank of rectangular cross-section ending in a U-shaped fork and a substantial open socket. The arms of the fork are circular in cross-section. Length 261mm. No exact parallel is known to the writer.
33. [36] 2482/SG158 (2737) ?Scoop. The blade, which has a concave semicircular cross-section, may be incomplete. It has a tapering solid handle with a small central expansion. The expansion is slightly dished on the front face. Length 85mm.

Harness, cart fittings and horse equipment (FIG. 97)

Total number recorded = 10, not all certainly Roman. See also report on objects of copper alloy nos 163–4.

34. [37] 1458/unstratified (1333) Horseshoe, fragment. Very worn fragment with one possible nail hole visible on the X-ray plate. There is a possible calkin. Length 83mm.
35. [39] 605/SG183 (307) Horseshoe, fragment. Worn fragment with three extant nail holes visible on X-ray. There is a possible calkin. Length 110mm.
36. [41] 950/SG131 (1576) Hipposandal wing, fragment. Curved plate with remains of lip on one edge. Length 67mm. (Not illustrated.)
37. [42] 3086/SG159 (3207) Hipposandal wing, fragment. Curved plate with pointed extension at one corner. Length 97mm.
38. [43] 903/SG137 (973) Bell, fragment. Top of a small iron bell, which was coated in copper alloy. The suspension loop, which is now missing, is visible on the X-ray plate. Length 45mm.
See the examples from Heddernheim (Fischer 1973, 124 and Abb. 37, 1 and 2).
39. [44] 3044/SG164 (3041) Linch pin, with spatulate head and rolled-over loop. The shank is broken and has a sub-rectangular cross-section. Length 130mm. (Not illustrated.)
For parallels see the examples from *Verulamium* (Manning 1972 172–4 and fig. 64, 33–5, with a typology).
40. [46] 1031/SG144 (1629) Linch pin, with spatulate head and rolled-over loop. Length 162mm.

Locks and keys (FIGS 97, 98, 99)

Total number recorded = 13, not all certainly Roman. For other locks and keys, see also report on objects of copper alloy, nos 103–11.

41. [47] 843/SG111 (1217) Tumbler key with simple bit. The stem is hollow and terminates in a circular loop, or eye, of square cross-section. Length 77mm.
42. [48] 2116/SG77 (2727) Slide key with L-shaped bit. The handle is broad, slightly tapering and pierced by a large round eye. There are two extant teeth on the bit; both have diagonal cuts on their outer face. Length 77mm.
43. [49] 3086/SG159 3227 Unfinished slide key with L-shaped bit. The handle is broad, slightly tapering and pierced by a large round eye. It appears that no teeth have been cut into the bit, which suggests that the key was unfinished. Length 83mm.
The lack of teeth on the bit may indicate an incomplete key. There is a similar key with no cut teeth from *Verulamium* (Manning 1972, 182–4 and fig. 68, 77).
44. [50] 040/SG35 (060) Slide key with L-shaped bit. The handle is broad and pierced by a small sub-rectangular eye. There are three extant teeth on the bit. Length 180mm.

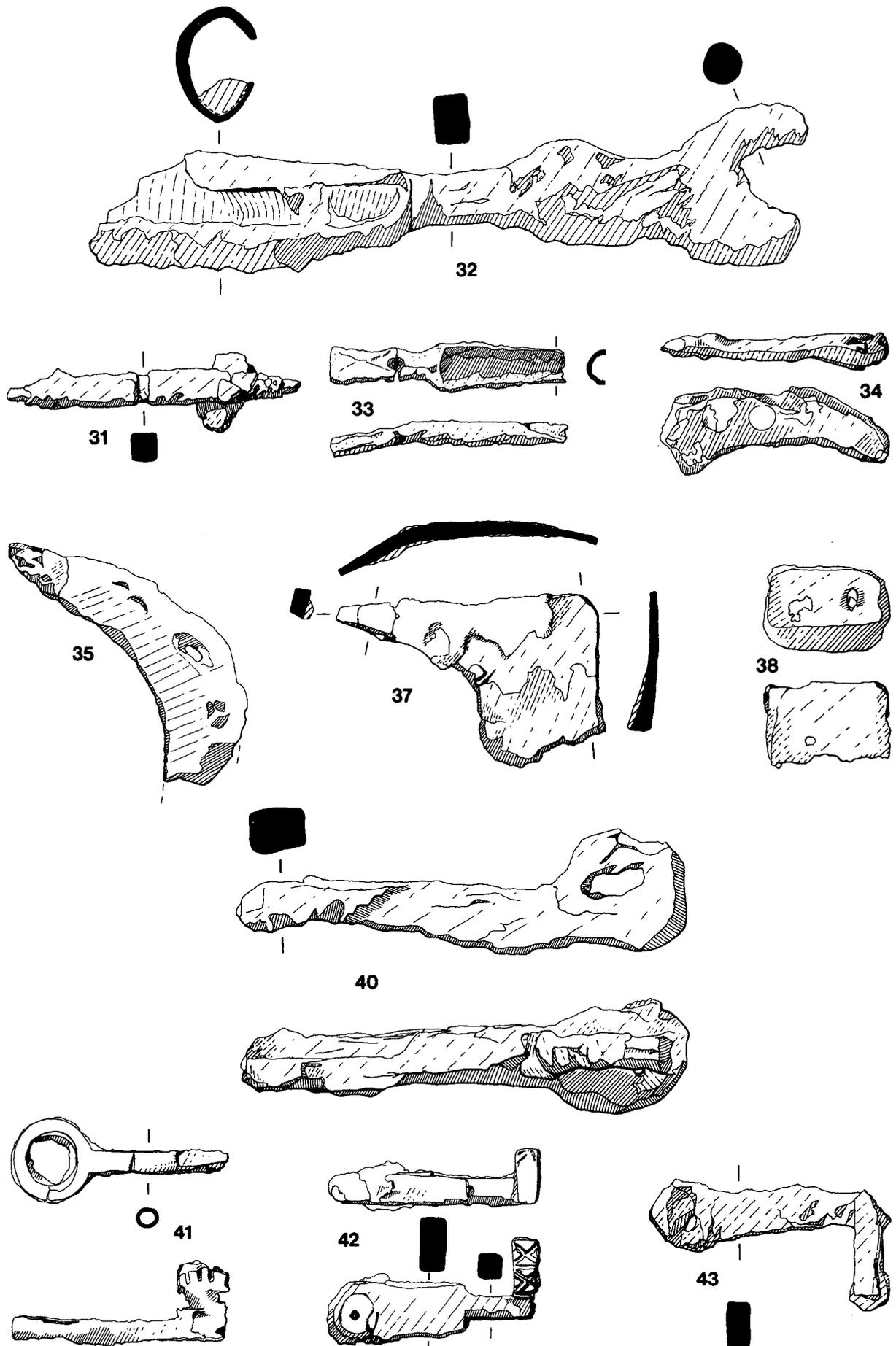


FIG. 97. Iron objects nos 31-43: tools, cart and horse gear, keys. Scale 1:2.

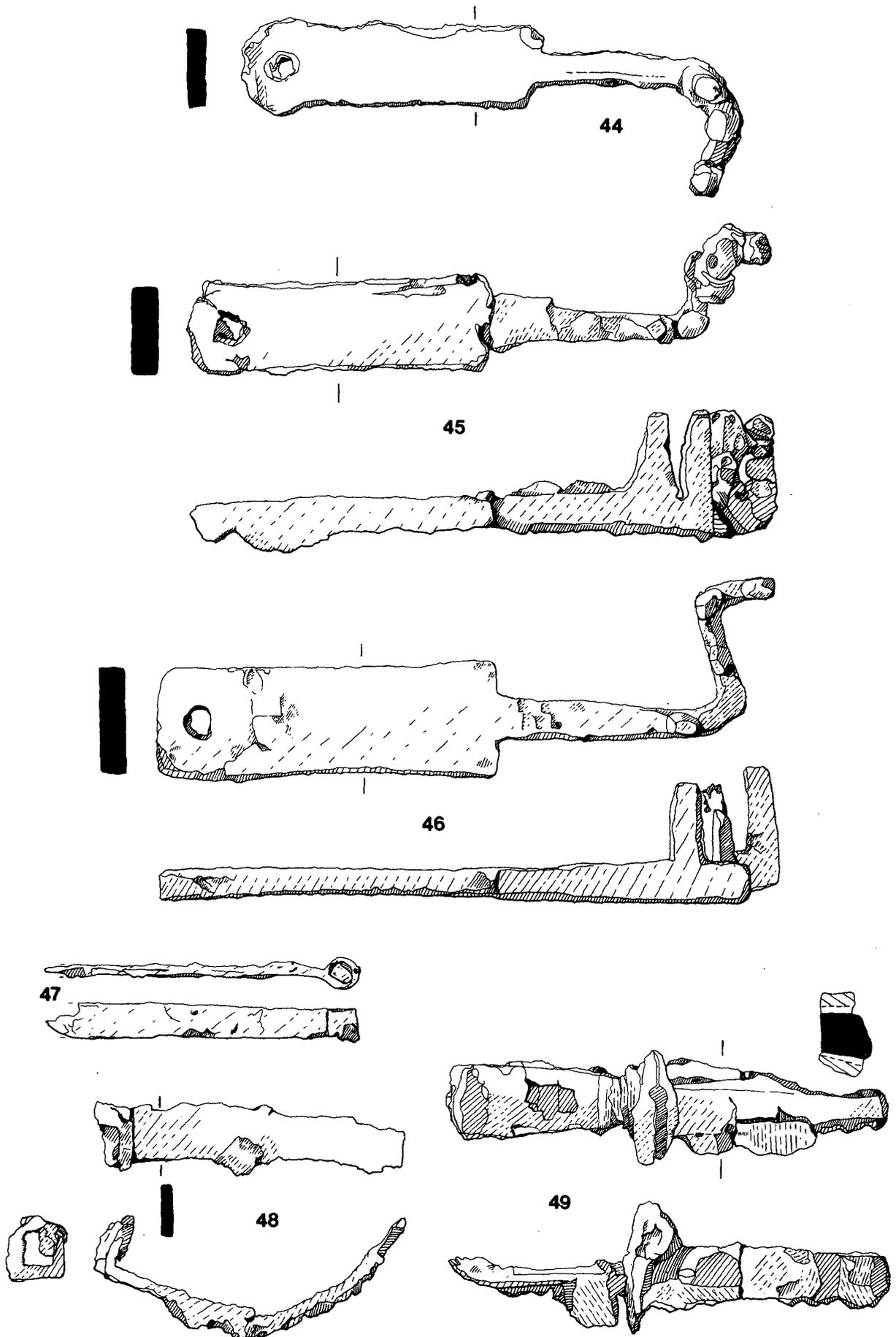


FIG. 98. Iron objects nos 44-9: locks and keys. Scale 1:2.

45. [51] 963/SG129 (1615) Slide key with Z-shaped bit. The handle is broad, slightly waisted and pierced by a small square eye. There are four extant teeth on the bit; originally there were five teeth. Length 213mm.
46. [52] 001/unstratified (1750) Slide key with Z-shaped bit. The handle is broad, slightly waisted and pierced by a small square eye. There are four extant teeth on the bit; originally there were five teeth. Length 223mm.
47. [54] 1216/SG110 (1657) Barb-spring padlock key handle. The bit is missing. The flat rectangular section handle tapers, and is terminated in a rolled over loop, which held a loose ring, a piece of which appears to be *in situ*. Length 114mm.
48. [55] 3086/SG159 (3219) Barb-spring padlock key handle. The bit is damaged but extant. The flat rectangular-sectioned handle tapers, and is bent. The rolled over loop which would have terminated the handle is missing. Length 114mm.
49. [57] 1226/SG125 (1667) Barb-spring padlock bolt. The bolt appears to be of rectangular cross-section with two springs attached; they were probably riveted. The stop ridge would have closed against the open end of the padlock case. The end of the bolt is flattened and widened; originally its end would have turned up at a right angle and been pierced to secure the bar from the top of the padlock case. Length 160mm.
50. [59] 3037/SG157 (3096) Possible latchlifter handle. The flat rectangular-sectioned handle is wider at one end and has a small rolled-over loop. The other end is broken. Length 152mm.

Hinges and fittings (FIG. 99)

Total number recorded = 4, not all certainly Roman.

51. [60] 852/SG123 (902) Pivot base, or pivot lining. This object appears to be formed from two layers of iron and a welded circular base. The outer layer does not enclose totally the inner layer; its edges do not meet, and do not appear to have been welded together. It is unlikely that the two layers form two separate parts of the pivot — namely the pivot lining and pivot collar — they were almost certainly integral parts of the same object. Length 126mm. Diameter 116mm.
This object is probably a pivot lining rather than a pivot collar. It would appear too heavy and externally too irregular to be the collar on a gate pivot. For a discussion of gate and door fittings see a note by Manning (in Manning and Scott 1988, 17–21) and the discussion of fort gates by Bidwell *et al.* (1988b, 212–14).
52. [61] 894/SG106 (267) L-shaped hinge staple. The upright arm is of circular cross-section, and the horizontal spike of square cross-section. Length 77mm.
53. [63] 2310/SG92 (2759) Hinge strap, of rectangular cross-section terminating in a rolled over loop. Attached is a second, sub-rectangular, loop. It almost appears that this second loop is fused to the strap, but this is probably the result of corrosion. There are two nails in the extant strap. Length *c.* 100mm.

Structural fittings

Total number recorded = 2

54. [64] 2380/SG45 (2625) Water pipe collar, fragment. There is slight evidence of stop-ridges on both the inside and outside faces of the collar, and some slight traces of wood graining. Length 50mm. (Not illustrated.)

Household objects (FIGS 99, 100)

Total number = 11, not all certainly Roman.

Bucket fittings

55. [66] 1452/SG54 (1268) Possible bucket hoop consisting of a curved strip, parallel-sided, and of thin rectangular cross-section. Length 83mm. (Not illustrated.)

Candlesticks

56. [68] 957/SG35 (1043) Candlestick consisting of four radiating arms. Each arm ends in a socketed candle holder. The candlestick is designed to stand on any three arms leaving the fourth arm pointing vertically upwards. Length 110mm.

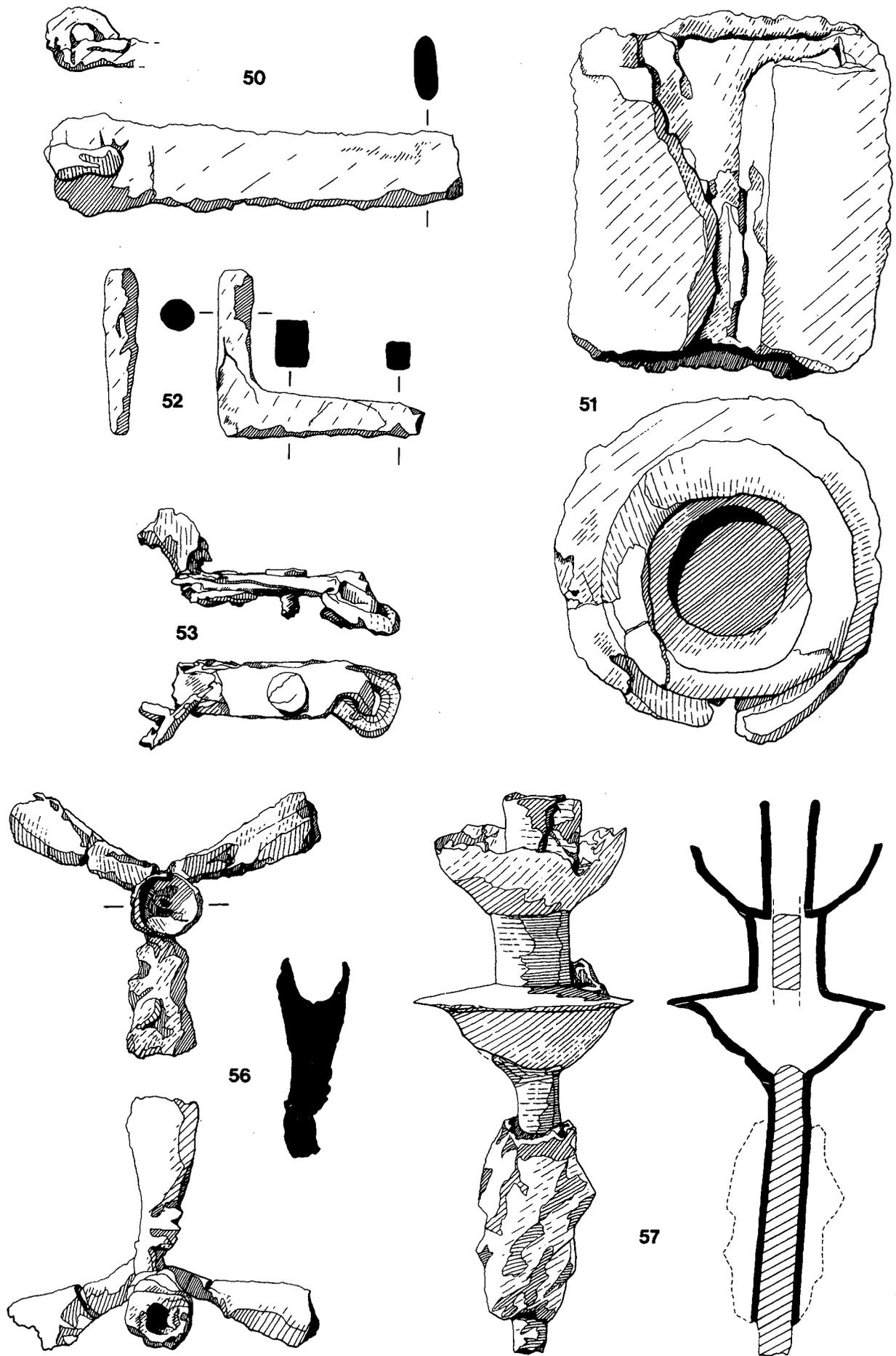


FIG. 99. Iron objects nos 50-7: keys, hinges and fittings, candlesticks. Scale 1:2.

57. [69] 1049/SG144 (1111) Candlestick, formed from iron sheet around a central rod of iron. The candle holder is a socket of sheet-iron set within a drip pan which is a hemispherical iron bowl. Below the drip pan is a small iron collar, which acts as a spacer to separate the upper bowl from a second hemispherical bowl. The latter is capped with a slightly domed circular sheet of iron. The bottom of the lower bowl is broken, and attached to the iron rod. It is not clear whether the rod was only welded to the bottom of the second bowl, or, as seems more likely, welded to, and passed up through, the second bowl. It seems more likely, and eminently more practical, for the rod to extend right up to the socket candle holder. Just below the second bowl there is evidence to indicate that the rod was sheathed in iron sheet. It is likely that the void between the rod and iron sheathing was filled with some form of filler. Length (extant) 580mm. Part of the rod was broken off and is not included in the illustration.

The candlestick may have terminated in a spike, but it is more probable that it had a tripod base. It may have been gilded or tinned originally, although there is no surviving evidence for this.

Other objects

58. [70] 2178/SG92 (2821) Ladle fragment, consisting of the flat rectangular cross-sectioned junction between the handle and hemispherical bowl. A small section of bowl, and a little of the handle survives. Length 55mm.
59. [74] 318/SG98 (1543) Handle fragment. Formed of rod of oval to circular cross-section. The surviving end terminates in a small knob. Length 63mm.
60. [75] 937/SG133 (661) Handle formed from rod of rectangular cross-section. The ends are formed into rolled over loops. Only one end survives. Length 150mm.
61. [76] 1458/unstratified (1287) Handle, or strap. The central portion is an elongated diamond shape, of flat cross-section. This expands into an ovoid plate pierced by two nail holes. These are visible on the X-ray plate. The opposing end is broken, but appears to have consisted of a similar expansion. Length 127mm.

Knives and blades (FIG. 100)

Total number recorded = 6

62. [77] 870/SG111 (977) Knife blade, fragment, with curving edge and slightly curved back. Triangular cross-section. Length 92mm. (Not illustrated.)
63. [78] 3047/SG155 (3116) Knife blade, with curving edge and slightly curved back meeting at a point. The blade has triangular cross-section. There is a small tang. Length 144mm.
64. [79] 3073/SG151 (3222) Cleaver, or large knife, consisting of a blade with a concave curved back and a curved edge. The blade is of triangular cross-section. It appears to have had a solid handle, or stout tang, of rectangular cross-section. Length 147mm.
65. [80] 3047/SG155 (3075) Curved blade, of triangular cross-section. One end terminates in a looped handle, the other is broken. Length 126mm.
No exact parallel is known to the author.
66. [81] 1229/SG54 (1134) Possible knife, fragment, with a square-sectioned handle, ending in a rolled-over loop, with a free-running ring. The blade is not centrally placed in longitudinal section, very thin and shows no signs of thickening, nor of any cutting edge. Length 102mm.
Possibly not a knife but some other unidentified form of blade, and probably not for cutting.
67. [82] 1300/unstratified (1163) Folding knife, or razor, fragment, with a bone handle. The handle has two bone plates, one of which still retains traces of reeded decoration. Very little of the handle survives. The blade appears to be straight-edged, and parallel-sided, but again little survives. The handle and blade are secured by an iron pivot. The handle plates are sheathed in copper alloy at the point where the pivot passes through. Length 52mm.

For a similar razor see the example from Frocester Court, Gloucestershire (Scott 1979, 32 and fig. 14, 28).

Personal objects (FIG. 100)

Total number recorded = 7, not all certainly Roman. They include two finger-rings, nos 3 and 4 in the ring report, which are not separately reported upon here.

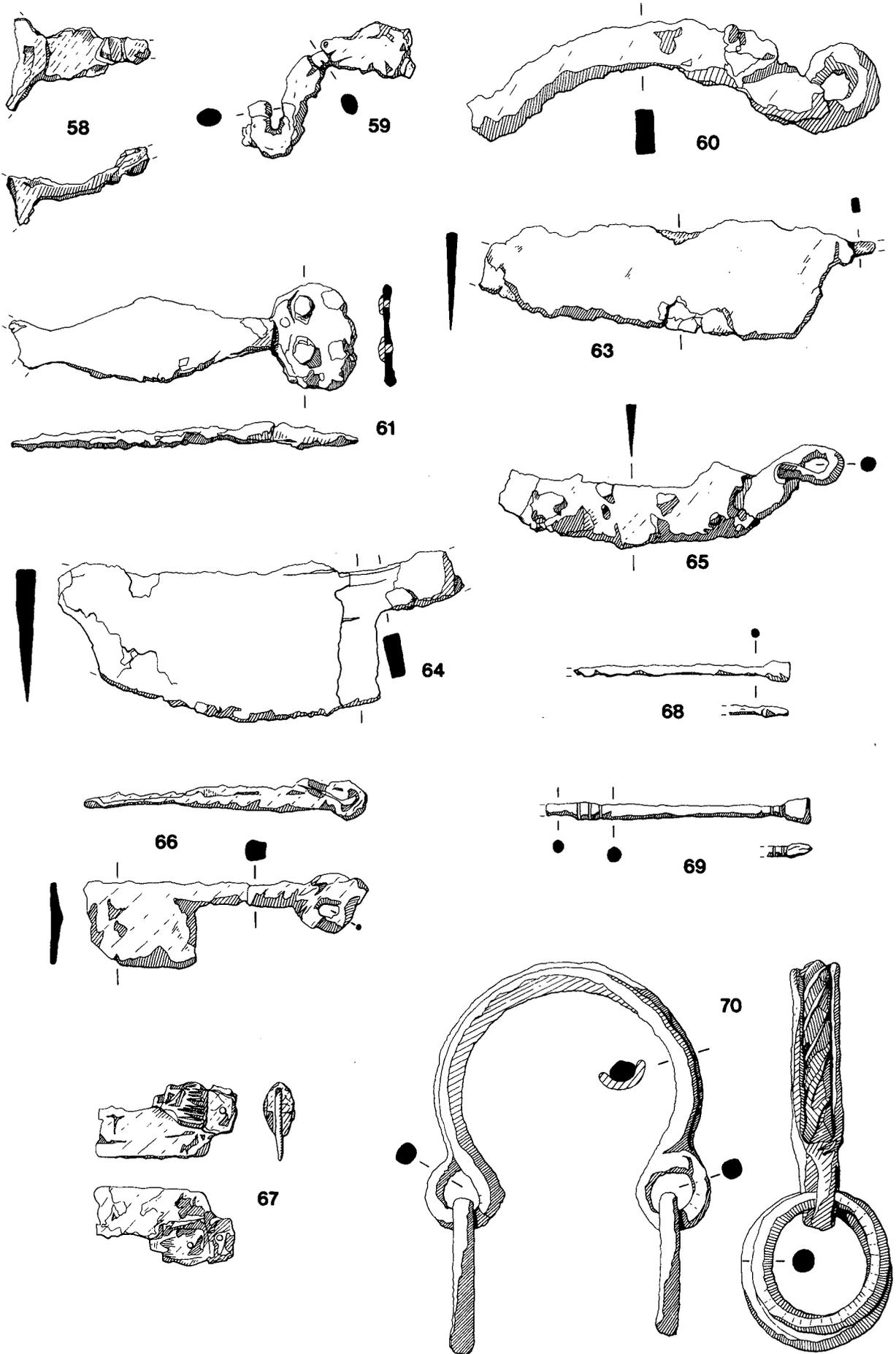


FIG. 100. Iron objects nos 58–70: household and personal objects, knives, blades and shackles. Scale 1:2.

68. [86] 2490/SG59 (2836) Stylus, fragment. Part of a large stylus with circular cross-sectioned stem and simple wedge-shaped eraser. Length 130mm.
Manning Type 1? stylus.
69. [87] 3086/SG159 (3171) Stylus, with a scribe marked by a distinct break from the stem, and a splayed wedge-shaped eraser. The scribe is broken. The stem is decorated by two thin copper alloy bands near the base of the eraser, and three bands near the scribe. Length 96mm.
Manning Type 4 stylus.

Slave-shackles (FIGS 100, 101)

Total number recorded = 2

Thompson (1993) has published a detailed study of Iron Age and Roman slave-shackles in which he discusses typology, chronology and distribution in some detail. The two examples from Caerleon are of different forms.

70. [90] 3047/SG155 (3115) Ankle fetter, consisting of strongly curved hoop with eyes, or loops, at each end. These secure free-running rings, each of a slightly different size. There is slight wear on the rings and on the eyes. The two eyes differ from one another because of the way the hoop has been made. The hoop is well preserved and shows clearly how it was formed from a single rod. Leaving a section of one end as plain rod; a portion was given a hollow semi-circular cross-section. This was separated by a length of plain circular-sectioned rod from a further portion of square cross-section which was given a barley-sugar twist. The section with the barley-sugar twist was laid into the hollow semi-circular portion, and the plain rod between the two sections formed into a neat eye. This eye has a circular cross-section. The strongly curved hoop section was finished and secured by forming the two ends of the original rod into the second eye; this has a sub-rectangular cross-section. Length of main hoop 103mm; diameter of loose rings 51mm and 55mm.

The wear on the two eyes is interesting. If the object is viewed with the eye of sub-rectangular cross-section on the left, and if the position of the hoop on each eye is taken as 12 o'clock, the wear on the two eyes can be compared. The wear on the eye of sub-rectangular cross-section is between 2 and 4 o'clock, that is on the side facing the inside of the hoop. The wear on the other loop is between 7 and 8 o'clock. Again this is on the inside of the hoop but lower down. This suggests a certain asymmetry, but the significant fact is that the wear is on the inside, showing that the rings closed the shackle.

From its internal diameter, it is probable that this is an example of an ankle fetter rather than a wrist manacle. The wear on the two eyes confirms its use as a fetter. Thompson (1993, 117) defines this form of fetter, with simple circular, or oval, rings at each end, as his *Somberton-type*. The fetter would have been closed by a padlock passed through the rings attached to the eyes at each end. The fetters were used in pairs attached to a single padlock. The type is found in both Britain and Gaul, and complete examples have been found at Somberton (Cote d'Or), Famechon (Somme) and Rhus (Val d'Oise) (Thompson 1993, illus. 75–7). Many fetters are undecorated, but the decoration on this fetter is typical of that found on slave-shackles (Thompson, 1993, 127 and illus. 96).

71. [91] 3044/SG164 (3275) Probable ankle fetter fragment, consisting of an oval or sub-rectangular ring of square cross-section and sharply bent in the middle. Attached is a sharply bent looped bar of plano-convex cross-section. Length 109mm.

Part of an ankle fetter. The plano-convex bar is part of the horseshoe-shaped fetter, and the sharply bent oval ring part of the closure. This fetter is of a form defined by Thompson as his *Bavay-type*, which differs in the form of its closure from the *Somberton-type* (see cat. no. 70). The large sharply bent oval, or sub-rectangular, ring is attached to the eye at one end of the fetter; the other eye secures a trapezoidal, or triangular, ring. The free end of the bent ring is passed through the triangular loop and secured to the padlock. Again these fetters were used in pairs attached to a single padlock. There are complete examples from Bavay (Nord), Tournus and Montbellet (both Saone-et-Loire) in France, and from Hoe (Norfolk) and Great Chesterford in Britain (Thompson, 1993, illus. 78–81 and 83–4).

Chains (FIG. 101)

Total number recorded = 6, not all certainly Roman.

72. [92] 948/SG133 (774) Chain links, fused together. Both 'figure of eight' and plain oval loops can be identified from the X-ray plates. Length 200mm.

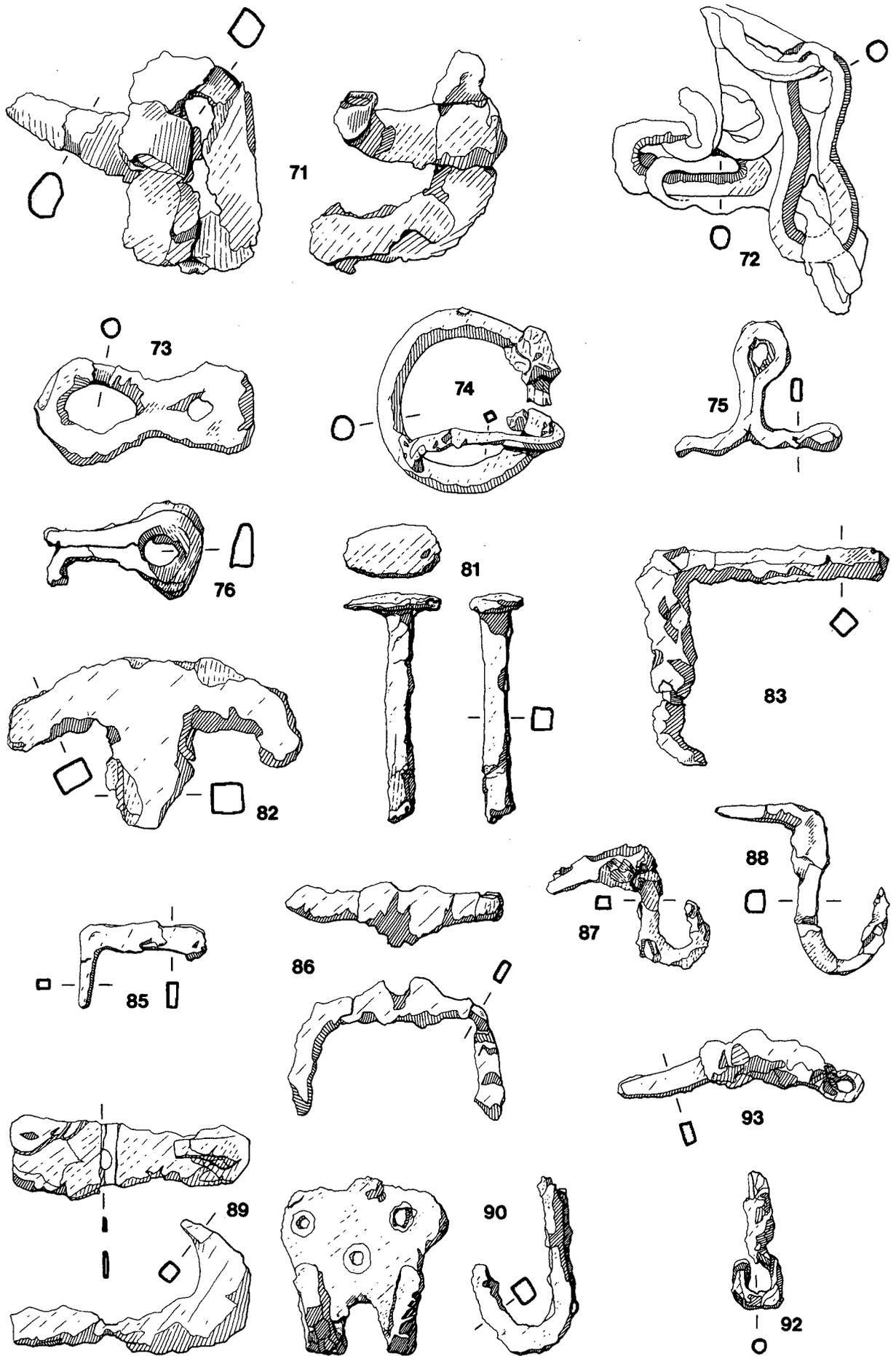


FIG. 101. Iron objects nos 71–93: shackles, chain, rings, nails, pins, staples, dogs and hooks. Scale 1:2.

73. [97] 3066/SG155 (3060) 'Figure of eight' chain link of circular cross-section. One end is larger than the other. Length 79mm.

Rings and other fittings (FIG. 101)

Total number recorded = 28, not all certainly Roman.

74. [109] 1031/SGSG144 (1630) Ring, of circular cross-section with an attached tongue of square cross-section. Diameter 65mm. Possibly a circular buckle.

Ten other rings of circular cross-section, without attachments, were noted, their diameters ranging from 9mm to 60mm; together with one of circular or oval cross-section (diameter 51mm), a fragment of one of lenticular cross-section (diameter 29mm), one of flat sub-rectangular cross-section (diameter 33mm), one of flat rectangular cross-section (diameter *c.* 50mm), two of square cross-section (diameters 39mm and 42mm), and two of indeterminate cross-section (diameters 44mm and 46mm).

75. [118] 3043/SG164 (3059) Split spike loop, formed from bar of rectangular cross-section. Length 63mm.
 76. [120] 2183/SG96 (2846) Possible split spike loop, formed from bar of rectangular cross-section. Well-formed loop. Length 57mm.
 77. [124] 2429/SG168 (2750) Collar fragment of rectangular cross-section. Length 65mm. (Not illustrated.)

Nails, pins, staples, dogs and hooks (FIG. 101)

Number of staples and dogs = 12, number of hooks = 4; not all certainly Roman. The nails have been archived separately.

For a typology of nails see Manning 1985 (134–7).

78. [126] 2086/SG94 (2864) Nail with large hollow domed head, and broken shank of square cross-section. Length 65mm. (Not illustrated.)
 Manning Type 8 nail.
 79. [128] 1229/SG54 (1660) Nail, or stud, with incomplete circular section stem and substantial rectangular head. Length 49mm. (Not illustrated.)
 Possibly a variety of Manning Type 6.
 80. [129] 2355/SG96 (2843) Nail, or pin, with head of lenticular section. Its shank is of indeterminate cross-section and appears to thicken further from the head. Encrusted with corrosion products. Length 78mm. (Not illustrated.)
 Manning Type 6 nail.
 81. [131] 2513/SG172 (2714) Nail, or T-staple, with shank of rectangular cross-section. Length 80mm.
 82. [133] 2045/SG81 (2792) T-staple, with broken shank of cross-section. The two arms are slightly bent down. Length 106mm.
 83. [134] 3086/SG159 (3218) L-staple, or broken dog, formed from bar of diamond cross-section. Length 88mm.
 84. [135] 2393/SG44 (2396) L-staple, or broken dog, formed from bar of square cross-section. Length *c.* 90mm. (Not illustrated.)

Four other L-staples were noted.

85. [140] 3044/SG164 (3174) Staple, or dog of rectangular cross-section. Length 45mm.
 86. [141] 003/unstratified (925) Staple, or dog. There is possible evidence that a bar, now lost, was welded to the back of the staple. Length 78mm.

Another fragment of a staple or dog was noted.

87. [143] 812/SG112 (1012) Wall hook, formed from bar of square cross-section. Small. Length 61mm.
 88. [144] 957/SG35 (1017) Wall hook, formed from bar of square cross-section. Length 75mm.
 89. [145] 1452/SG54 (1709) Hook with plate, or partial socket attachment. The hook is of square cross-section and springs from a flat, or slightly curved plate, or partial socket. The plate is pierced by a nail hole. Length 86mm.

90. [146] 3040/SG158 (3081) Double hook with plate attachment. Two hooks of rectangular cross-section spring from a flat, or slightly curved plate. The plate is pierced by three nail holes. Length 60mm.
91. [148] 2490/SG59 (2837) Ring-headed pin, or spike. Heavily encrusted with corrosion products. The X-ray plate suggests a nail-like pin with attached ring, and stop ridge. Length 77mm. (Not illustrated.)
92. [150] 950/SG131 (1570) Looped, or hooked, rod of circular cross-section. Length 48mm.
93. [151] 1300/unstratified (1673) Looped bar of rectangular cross-section. The bar describes a flat S-shape. The end of the bar is narrow and rolled over to form the loop or eye. Length 89mm.

Another similar item was noted.

Miscellaneous objects and objects of uncertain function (FIG. 102)

Total number recorded = 13, not all certainly Roman.

94. [154] 2178/SG92 (2268) Large slightly irregular annular object of flat rectangular cross-section. The ring has been pierced by two holes; one is square, and opposite is an elongated slot, or nail hole. Diameter 120–125mm.
95. [155] 1201/SG106 (1652) Bar, or strip, of rectangular cross-section, one end is rounded, the other broken. Length 167mm. (Not illustrated.)
Probably a blank for the manufacture of a sword blade.
96. [156] 927/SG53 (1571) Strip, or bar, of rectangular cross-section, one end is rounded, the other broken. Length 90mm. (Not illustrated.)
Similar to no. 95. Probably part of a blank for the manufacture of a sword.
97. [159] 3047/SG155 (3113) Hooked object, formed from iron plate. It has a flat cross-section and no definite cutting edge. One end is broken. Length 73mm.
Function unclear. The lack of a cutting edge indicates that it is not a reaping hook.
98. [160] 2459/SG168 (2707) Mount, consisting of eye, or loop, of oval cross-section formed at the end of a strip of thin rectangular cross-section. The other end is broken. Length 37mm.
99. [161] 885/SG113 (1042) Object formed from tapering rod of circular cross-section. This has been flattened and forms a slightly splayed chisel-like end. The other end is rolled over to form a loop or eye. Length 112mm.
100. [162] 2429/SG168 (2523) Strip, of rectangular cross-section, slightly tapered. One end is rolled into a hook shape and has an offset point, possibly the remains of an eye, or loop. The other end is broken. Length 92mm.
101. [163] 1031/SG114 (1638) Wedge-shaped object, small. The broad end is slightly flared. The pointed end is bent. Length 50mm.
102. [164] 3066/SG155 (3161) Possible wedge with broad chisel edge, and short rectangular-sectioned stem or tang. Length 34mm.
103. [165] 3086/SG159 (3214) Object of uncertain function, with possible blade of triangular shape with concave chisel edge at one end. The curving stem, or tang, is of rectangular cross-section. At the base of the blade there is possible evidence that a cross-piece may have been welded to the object. Length 60mm.

Bindings (FIG. 102)

Total number recorded = 16, not all certainly Roman.

104. [166] 2086/SG94 (2597) Pierced strip of flat sub-rectangular cross-section. It appears to thin towards one end in longitudinal section, and may have been cut. It is pierced by a large square nail hole. Length 33mm.
105. [168] 007/SG35 (642) Pierced strip of flat sub-rectangular cross-section. One end is rounded and pierced by a large hole or eye. Length 50mm. (Not illustrated.)
Possibly the end of a handle rather than a mount to take a handle.
106. [169] 3040/SG158 (3073a) Possible binding fragment, consisting of a strip of thin plano-convex cross-section pierced by a possible nail hole. Length 53mm. Found with no. 109.
107. [170] 950/SG131 (1609) Possible binding fragment, consisting of a strip of plano-convex cross-section. No surviving nail or rivet holes. Length 63mm.

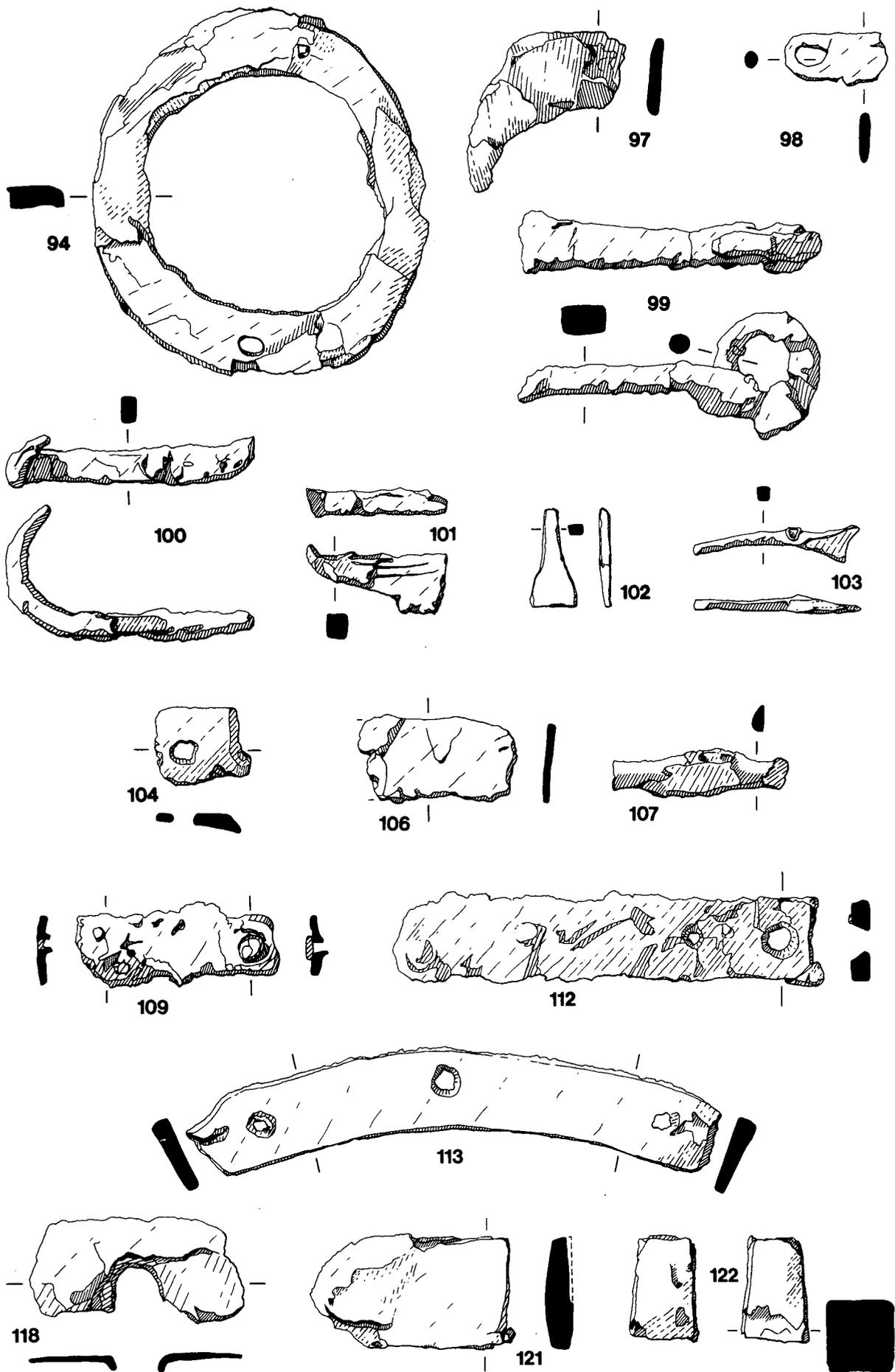


FIG. 102. Iron objects nos 94–122: miscellaneous objects, bar strip and block. Scale 1:2

108. [172] 2490/SG59 (2721) Possible binding fragment, consisting of a strip with a slightly waisted and rounded end pierced for a nail. It appears to have a lenticular, rather than rectangular cross-section. There is some wood graining on one face. Length 71mm. (Not illustrated.)
109. [173] 3040/SG158 (3073b) Possible binding fragment, consisting of a thin strip pierced by two nail holes. Length 73mm. Found with no. 106.
110. [176] 2405/SG72 (2855) Strap, or binding, fragment, of rectangular cross-section, with one nail *in situ*, and a second nail hole. The surviving nail has a domed head. There are traces of wood grain preserved on both faces of the strip. Length 104mm. (Not illustrated.)
111. [177] 3086/SG159 (3164) Binding fragments, of flat rectangular cross-section, with apparent expansions. The expansions do not show on the X-ray plate. No nail holes visible. Length 107mm and 43mm. (Not illustrated.)
112. [178] 3047/SG155 (3154) Possible binding fragment, of rectangular cross-section and pierced by two nail holes. Length 151mm.
113. [179] 644/SG177 (1285) Curved bar or strip, pierced by three nail holes. The cross-section is almost rectangular but is very slightly thicker on the outside of the curve. Both ends of the object are pinched in and broken. Length 192mm.
114. [180] 963/SG129 (1616) Strap, or binding of rectangular cross-section, pierced by six countersunk nail holes, with spacing for a seventh hole. There is narrower arm at each end set almost at right angles. Length 295mm. (Not illustrated.)
Function uncertain.

Other objects

Total number recorded = 6

115. [182] 2393/SG44 (2746) Rod of circular cross-section terminating in a large circular knob. The knob has been reduced by lamination of opposing faces. The rod is broken. Length 71mm. (Not illustrated.)
Function uncertain.
116. [183] 3041/SG158 (3191) Strip, tapering and curved with a small loop at the narrow end, and broken at the other end. Sub-rectangular cross-section. Length 54mm. (Not illustrated.)
117. [184] 2393/SG44 (2599) Pierced plate, heavily encrusted with corrosion products. A nail with a short, or broken, shank remains in place. Length 47mm. (Not illustrated.)
118. [185] 1450/SG8 (1351) Pierced plate. Large, broken, dished sub-rectangular plate with a large hole punched through the centre. Length 77mm. (FIG. 102)
Possibly some form of washer.
119. [186] 037/SG35 (485) Pierced plate, broken. Has square or rectangular cut-out and a possible nail hole. Length 42mm. (Not illustrated.)
120. [187] 2429/SG168 (2598) Plate, with one original edge, which is apparently rolled over and flattened, and which describes a gentle arc. Length 47mm. (Not illustrated.)

Rod, bar, strip, plate and block (FIG. 102)

Total number recorded = 8, not all certainly Roman.

121. [188] 1450/SG8 (1352) Bar, or strip, of rectangular cross-section, one end is rounded, the other broken. Length 72mm; width 40mm.
Possibly part of an ingot or blank.
122. [191] 1302/SG35 (1676) Billet, of square cross-section, and slightly tapering to one end. Length 37mm.

OBJECTS OF LEAD By David R. Evans

Introduction

This discussion is intended only as a brief summary. A more detailed discussion of individual items and groups of items is appended at appropriate points in the text. For this report (completed in 1990) it has been assumed that the majority of the items within the present collection are of Roman origin. In some cases their similarity to objects of Roman date makes their ascription fairly certain, in others we are in the same situation as those who study Roman

ironwork in that, once a functional form has been established, there is little reason to change it for some other shape. Although there are a number of individual items, some of which can be classified, the remainder fall into broad groups, most of which are present in greater or lesser numbers on sites of Roman origin. These comprise labels, weights, discs, pipes, repair patches or bindings of a number of distinct forms, and lamps/lamp holders.

The 'weights' are a disparate group. Some of them can be demonstrated to be units of measure, but in most other cases the mass of the object would seem to be of prime importance. In the case of the items classified as discs and pipes, there are considerable problems in assigning function because some of the discs were almost certainly intended as units of measure and some of the pipes were probably intended to be suspended. In the case of the repair patches and binding, within which we include the various cramps and plugs, we have a reminder of objects of a perishable nature to which these objects were originally attached. In the case of cramps and plugs which were in use for the repair of vessels it should not be thought that we are dealing only with the repair of ceramic vessels. Cases are known of the repair of wooden objects, such as the wooden bowl from Hungate, York, although this was of a later age and repaired with iron (Richardson 1959, 86, fig. 20).

Although a good proportion of the objects in this collection show the use of lead to repair objects of other materials, it should be noted that lead could be and was used as a simple form of binding for wooden boxes or tanks, as for example at Fishbourne (Cunliffe 1971, 144, no. 3 vol. 1, pl. 58a). The use for binding of some of the items described as repair patches cannot be discounted.

Catalogue

An attempt has been made to classify the objects from these sites by function. As is almost always the case there will be a residue of items which because they are incomplete or lack certain parallels must be called 'miscellaneous items'. Totals are given for the numbers recovered of each class of object: where there is no total, this is because there was only a single object.

Baggage labels (PL. XXXII)

Total number recorded = 9

Baggage labels are not uncommon on military sites and were attached to bundles or packages, although a brief survey of find spots (see Frere *et al.* 1990) indicates that there may be a link with legionary troops. An example from within the fortress (Hassall *et al.* 1992, no. 2) may indicate property owned by an Italian. The inscriptions have been read by M.W.C. Hassall and R.S.O. Tomlin, who have published them in full in the pages of *Britannia* (Hassall and Tomlin 1994, 310–12; Tomlin 1997, 467–9). Tomlin also examined nos 7, 8 and 9 but was unable to make out any inscriptions; these labels may be blanks.

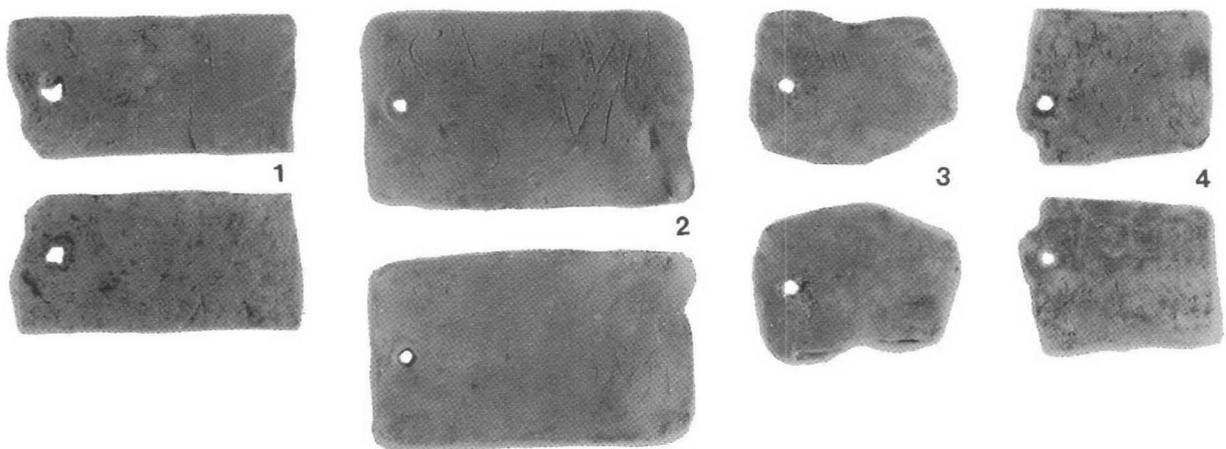


PLATE XXXII. Lead baggage labels, nos 1–4; obverse above and reverse below in each item. Scale 1:1.

1. [1] 600/SG183 (299) Inscribed tag in the form of a rectangle; pierced by a sub-square hole in the middle of one short side. One of the long sides is damaged. Length 39mm; width 21mm. The inscription reads VLPI FINITI (Tomlin 1997, 469, no. 43).
2. [2] 191/unstratified (1239) Inscribed tag in the form of a rectangle; pierced by a circular hole in the middle of one short side. Length 45mm; width 26mm. The obverse reads CALPVR | NI | EQ, and the reverse TR*I overlying an earlier inscription ARVNTI | OPTIONIS (Tomlin 1997, 468–9, no. 41).
3. [3] 001/unstratified (220) Inscribed tag in the form of a rectangle; pierced by a circular hole in the middle of one short side. The other three sides have suffered some damage. Length 28mm; width 21mm. The obverse reads AIITIIR | NALIS, and the reverse CVPITI | ACRES (Tomlin 1997, 168, no. 40).
4. [4] 600/SG183 (424) As no.2; badly corroded. Length 27mm; width 20mm. Inscribed CA.. | *traces* over traces of an earlier text on the obverse; the reverse also carries traces of an inscription (Tomlin 1997, 468, no. 42).
5. [5] 600/SG183 (236) Inscribed tag in the form of a parallelogram, originally folded. The outer side as folded has two small holes, one in the upper left-hand corner and a second, smaller, hole midway along the upper edge. The hole in the upper left-hand corner would seem to be primary. Length 43mm; width 22mm. Hassall was unable to read more than individual letters (Hassall and Tomlin 1992, 322, no. 43). (Not illustrated.)
6. [6] 007/SG35 (623) Inscribed tag in the form of a rectangle; one corner trimmed to produce a roughly pointed end which has been bent over to make a loop; two holes near loop. The other end of the label has been broken off. Present length 19mm; width now 12mm. The obverse reads, FO[...], and the reverse FLISV[...] as a secondary inscription over a primary inscription reading AI II[...]. The reading is very uncertain (Hassall and Tomlin 1992, 322, no. 44). (Not illustrated.)
 Although this fragment is probably from a label of the same type as the above items, it is possible that it may come from a simpler tag, such as the example from the Caerleon Fortress Baths (Zienkiewicz 1986b, fig. 4, no. 1).
7. [7] 2038/SG206 (2226) Fragment of thin sheet broken at both ends. Height *c.* 28mm; surviving width *c.* 28mm. Both sides are vacant and not corroded. (Not illustrated.)
8. [8] 001/unstratified (263) A rough oblong of thin sheet. There is some evidence of piercing in the upper right (or? lower left) hand corner but no evidence that the item had ever been inscribed. Dimensions *c.* 30m × 40mm. Perhaps an unused/discarded blank or, more probably, the light inscription has now disappeared. (Not illustrated.)
9. [9] 3500/unstratified (3326) Baggage label in the form of a parallelogram of cut, cast sheet, with the hole left by a pulled out nail in one corner. Both faces are vacant and not corroded. Dimensions *c.* 30 × 25mm. (Not illustrated)

Seals (FIG. 103)

Total number recorded = stack of three

10. [10] 2389/SG72 (2310) Three sub-rectangular blanks stacked one on top of another; the middle seal (b) has traces of a linking strip on one edge.
 Dimensions (a) 19 × 16 × 2mm
 (b) *c.* 18 × 16 × <4mm
 (c) 20 × 18 × 2mm

Seals such as these are often found with a variety of impressions (cf. Allason-Jones and Miket 1984, 326 and references, nos 8.1–8.37), and functioned as identifiers for individual and collective items of baggage. Other unimpressed examples are known from Caerleon Sandygate (Evans, D.R. 1991b, nos 1–5). As in the present case, the Sandygate examples included a group of three seals or tags.

Ring or pattern (FIG. 103)

11. [11] 015/unstratified (044) A ring with a rectangular bezel set to one side, and with what appears to be the remains of a casting sprue (or weld) on the opposite side. Internal diameter; *c.* 15mm external diameter *c.* 18mm; bezel 10 × 8mm.

Although this object may simply be an unfinished ring, the presence of the possible sprue suggests that it may have been intended as a pattern or die from which a mould could be produced in the so-called 'lost wax' method of manufacture (see East 1986, 1–2, fn. 2). There are obvious problems in deciding whether a lead item is complete and intended for use or whether it might be intended as a pattern or matrix. On the one hand, quite important items such as episcopal seal matrices could be

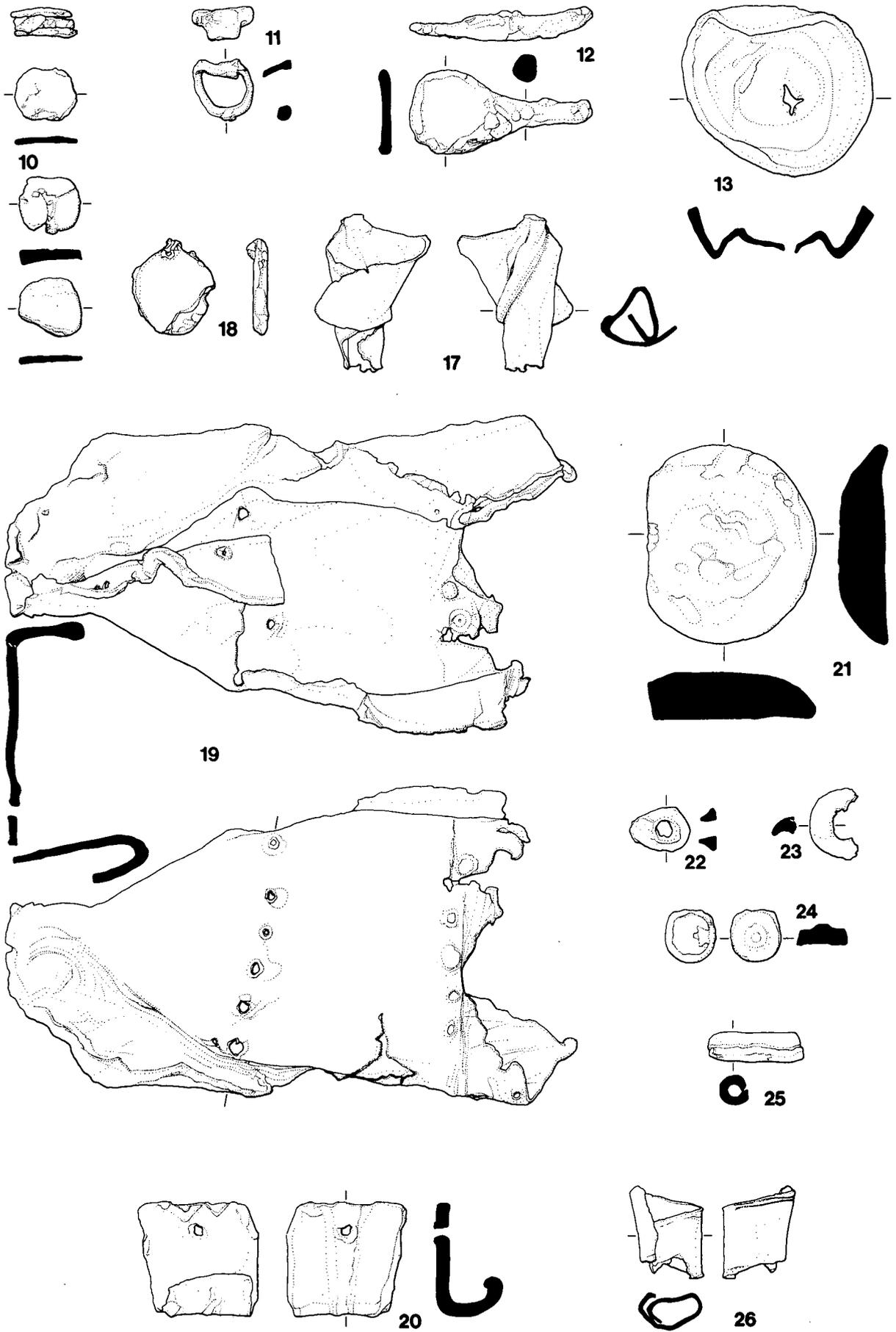


FIG. 103. Lead objects nos 10–26: seals, ring and spoon or patterns, lamps, plaque/ferrule, medallion, conduit lining, hook, ingot, studs, pipes and tubes. No. 19 scale 1:4; other items scale 1:2.

made of lead (Cherry 1985, note also the use of lead for forgeries). On the other hand, such items may be unfinished and form an intermediate stage in the casting process. This was convincingly argued in the case of the medieval lead object from Huntington discussed by East in the article cited above. Such an argument can also be applied to a pattern for a bird brooch (*vogelfibel*) from Runde Berg, Baden Wurttemberg (Christlein 1971, noted in East 1986 and Alcock 1963, 120–2; 1987, 109–10).

A lead ring fragment, possibly also a pattern but unfortunately not closely dated, has been reported from the fortress (Evans 1992a, 177, no. 27), and other local examples of patterns have been reported from Dinas Powys (Alcock 1963, 120–2, see now Alcock 1987, 109–10) and Lydney (Wheeler and Wheeler 1932, 15). More recently two particular lead objects were found among a large collection of late Roman objects (including a coin of Valentinian I), found close to the 'native' site at Biglis, South Glamorgan (for earlier work see Parkhouse 1988, 1–64). Neither was finished, but one appeared to be a partly formed brooch (type uncertain) and the other would seem to be a rough-out for a seal box (cf. an example in bronze, from 'Roman Gates', Webster 1992, 157, no. 369). Neither of these items has been fully studied, but both can be considered to be of this general type. There is some danger that arguments as to whether these items are patterns/matrices or finished objects may become circular, if the tentative suggestion that one item might be a pattern is taken to justify the assertion that another must be so (see for example Alcock 1963; 1987 just noted). In some cases, however, it is difficult to deny the ascription, as for example a pendant decorated in the Borre style with an expanding suspension loop in the form of a bird's head (Yorkshire Museum YM 702.4.48, information supplied by Mrs E. Hartley).

Spoon or pattern (FIG. 103)

12. [12] 2095/SG84 (2259) A rough, unfinished, partly worked casting with one broad flat end and the other in the form of a handle of circular section. Length 66mm; maximum width of bowl 29mm; diameter of handle section 7mm.

Although the object is unfinished there would seem to be little doubt that it was intended to be a spoon, possibly similar to 2nd century forms with a line of moulding running round the inside of the bowl, as in examples from 'Roman Gates' (Webster 1992, 151, nos 322–6) or perhaps like an iron example from *Verulamium* (Manning 1972, 176, no. 46, fig. 65). Medieval spoons of latten (a copper/lead/tin alloy) found at Hungate, York (Richardson 1959, 100, fig. 28, no. 3), also have some similarities to the present example.

An unstratified example of a rat-tailed spoon in lead, again possibly a die or pattern, is known from the site at Biglis, South Glamorgan (Parkhouse 1988, 63, no. 3, fig. 22.35), where it is described as post-medieval. It does however bear similarities to 1st and 2nd century examples (cf. Strong 1966, 155, 177; see also 'Roman Gates' Webster 1992, 151, no. 321).

Lamps and lamp holders (FIGS. 103, 104)

Total number recorded = 4. Ceramic lamps are published on pp.302–3 above.

13. [13] 2389/SG72 (2345) Bowl-shaped cast object with a pushed-in base. Diameter *c.* 60mm; height *c.* 15mm. The object has suffered some damage but the pushed-in base and nozzle/pouring-lip appear to be original features. It is very similar to a series of objects from 'Roman Gates' (Evans 1992a, 175–6, nos 3–5; no. 5 also has a pushed-in base). Note the similar ceramic lamps in the British Museum collection (Bailey 1988, Q1635–8).

The following three items (nos 14–16) were found on the site after excavation was complete and were temporarily lent, for illustration and recording, to Newport Museum by the finder Mr K.L. Morgan. Although the author was unable to examine the objects personally, the illustrations in themselves provide sufficient information for inclusion in this catalogue. There can be little doubt about their date, even though it is possible to quibble over their exact function. The drawings of nos 14–16 appear on FIG. 104; we are grateful to Newport Museum for permission to publish them.

14. [14] 001/unstratified (1755) Probably hammered from sheet, this example has a shouldered rectangular-sectioned strap handle. Whilst this could have been employed for fixing the object to a wall or similar vertical surface, it could equally well have been used as to carry the lamp. Two objects described as lamp holders came from the fort at Pen Llystyn, Caernafonshire (now Gwynedd) and are largely similar to this example, with a strap handle and flat base (Hogg 1968, 183, L1 L2): they were of approximately late 1st/early 2nd century date.

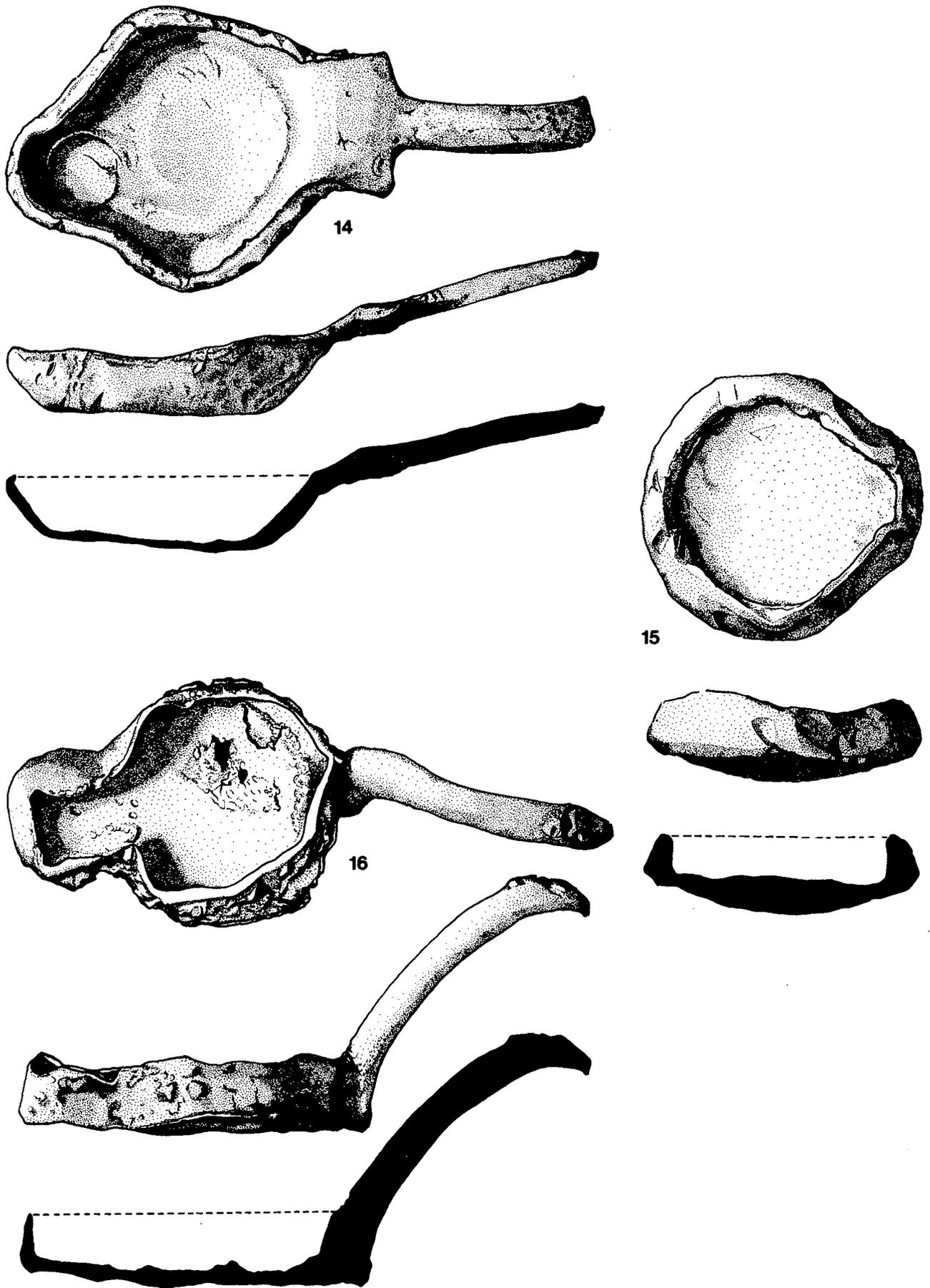


FIG. 104. Lead objects nos 14–16: lamps and lamp holders. Scale 1:2.

15. [15] 001/unstratified (1756) A very rough double casting. The object is roughly circular in plan but one end forms a crude nozzle which finishes above the level of the bowl. The fact that the base is convex is certainly intriguing and this, combined with the fact that a ceramic lamp would sit uneasily in the bowl, is another pointer to the function of these objects as lamps.
16. [16] 001/unstratified (1757) This object was formed in three parts, a flat sheet base, with welded sides and a circular-sectioned rod handle, also welded on. Although the handle appears incomplete, a good case can again be made for this part of the object's being used for carrying rather than for attachment.

In the context of the debate on the function of these objects, note should be made of two examples (both unpublished and at present likely to remain so) from recent excavations at Usk. The first example (site code 106/081 (093)), is lamp-shaped with a strap handle coming out of the base and has a nozzle which has been chamfered down so that the nozzle of a ceramic lamp would fit comfortably. It is clearly intended as a wall fitting and as a lamp holder. The second (site code 106/053 IF073), although somewhat crudely finished and more rectangular than lamp-shaped, has a well-made looped handle, and the nozzle end is raised above the level of the bowl. Whilst this wing could be seen as protection for the nozzle of a ceramic lamp, a case could be made for its being designed to hold the wick above the level of the reservoir.

Plaque/ferrule (FIG. 103)

17. [18] 973/SG129 (1010) Partly damaged but carefully shaped and folded sheet of pewter (the object has not been analysed but has a different appearance from the other objects in this collection). Thickness 2mm. It was presumably intended as some form of ferrule or binding.

The damage on the lower edge may have happened whilst the object was in use, but the existence of a moulded rib spiralling round the object almost certainly indicated that the sheet had been cut from some other piece. The small size of the remaining piece makes conjecture as to the function or appearance of the parent object somewhat difficult, although a few comments can be made: the inner surface appears to be finished which would tend to indicate that this item is not part of a plaque or closed vessel, the plainness of the rib probably indicates that the item was not cut from a coffin (for example Murray Threipland 1953, fig. 1) and the position of the rib indicates that it is unlikely to have come from the handle of a vessel. For discussion of a similar, but rather more decorative, item than the one in question see Zienkiewicz 1986b, 189, fig. 65, no. 7, pl. 19e. Lead was also used to produce cheap portable shrines, as for example ones from Wallsend (Allason-Jones 1984) and Dorchester (Henig 1987).

Medallion(?) (FIG. 103)

18. [19] 001/unstratified (1448) Roughly circular blank. The back of the object is pitted but the front is smooth and has the remains of an iron coating. At the top is a lump of iron which may be a remnant of an attachment. We suggest that what is now preserved is simply the backing to a medallion or pendant. Diameter *c.* 28mm; thickness *c.* 4mm.

Conduit lining (FIG. 103)

19. [20] 2161/SG76 (2733) Cast, hammered sheet bent into a U-shaped channel. Although somewhat damaged, especially at one end, the object appears to be largely complete. There are three transverse lines of nail holes, two of which are close together, perhaps indicating that the object to which it was attached was joined at this point. There is also a line of nail holes near to the top of one long edge. The nails were iron (corrosion products survive). Where measurable, the nails were *c.* 4mm square with *c.* 12mm diameter domed heads; such nails are common on Roman sites and are best demonstrated by those on the box containing the Corbridge 'hoard' (Allason-Jones and Bishop 1988, fig. 81). Length 400mm+; width *c.* 200mm narrowing to *c.* 150mm at the last point it can be accurately measured; height 80mm; thickness 3–5mm.

The object was clearly intended to facilitate water flow and prevent seepage through the base of the wooden conduit to which it was attached. The less damaged end has a slight lip on its underside and there may be traces of welding to the next piece in line. Owing to the damage to one end, the original form of the object is somewhat obscured, but there is a marked taper which would have increased water flow. It is unusual for a lead object of this size to survive intact but the context does not help to provide the reason for this survival.

Hook (FIG. 103)

20. [21] 2460/SG70 (2679) Rectangular cast waste pierced by a 3mm square nail hole; the lower edge has been curved round a circular bar to form a hook. Width across top *c.* 43mm; height *c.* 35mm; inner width across hook *c.* 15mm.

Ingot (FIG. 103)

21. [22] 2367/SG86 (2372) Incomplete plano-convex ingot. Ingots such as this could be produced by running the smelt into a bowl-shaped hollow lined with clay (Tylecote and Merkel 1985, 10–11). A section has been removed from one side presumably for use. Diameter *c.* 70mm; thickness *c.* 16mm; weight 455g.

Examples of such ingots are known from the fortress (Evans 1992a, 177, nos 21–3) and from the fort at Neath (Evans 1992b, 255, no. 4). All of these are firmly dated to the Roman period, where they are found in contexts dated late 1st/early 2nd century to the middle of the 4th. The fortress examples are the result of a single pour into a well-finished mould, unlike an example from Woodstock House, Cowbridge, made in a sand box (Evans 1996b, 209, no. 7), and this difference in technique may confirm the suspicion that the Cowbridge example is of post-Roman origin.

Studs (FIG. 103)

Total number recorded = 3). Cf. also the studs published with the objects of copper alloy, nos 66–72.

22. [23] 001/unstratified (551) Small elongated dome-shaped cast object with cast-in hole. Surface dimensions 15 × 21mm; thickness 7mm. Backing for a stud or boss.
23. [24] 700/SG183 (300) Fragment of dome-headed stud, originally with an iron shank of rectangular cross-section and probably with a sheathing of iron or copper alloy. Diameter 25mm; thickness 6mm.

There were a large number of copper alloy studs, many with lead backing, at the Caerleon 'Roman Gates' site (Webster 1992, 137–8, nos 156–85).

24. [25] 700/SG183 (351) Disc-headed stud with a slightly recessed face; there is a short shank on the rear which may originally have fitted into a rectangular iron shaft some 5mm in cross-section. Diameter 18mm. See also no. 86.

Pipes and tubes (FIGS. 103, 105)

Total number recorded = 7

25. [26] 452/SG27 (1511) Tube formed from rolled sheet. Length 42mm; diameter *c.* 9mm. Function unknown.
26. [27] 600/SG183 (234) Fragment of folded thin (*c.* 2mm) sheet. Length *c.* 22mm; internal measurements 18 × 8mm. This item is probably simply a lead sheet, but may be an offcut from a pipe such as no. 29.
27. [28] 605/SG183 183 (318) A fragment (*c.* 50mm long) of heavy cast pipe. Internal diameter at one end *c.* 40mm; wall thickness varies but averages *c.* 8mm. The opposite end forms an ovoid *c.* 25 × 20mm.

This pipe is of rather smaller gauge than the two most common types found in the Fortress Baths, which are of *c.* 80mm and 170mm internal diameter respectively (Zienkiewicz 1986b, 323). If it is not simply a smaller type of pipe not represented at the Baths, its size may be a result of the deliberate narrowing of the pipe to increase pressure and flow. Alternatively the object may simply be an offcut, since it can be seen to have been removed from the parent pipe by an oblique cut, probably with a chisel.

28. [29] 1031/SG144 (1731) Pipe junction composed of an 'L'-shaped cast flange. The item is too badly damaged to be able to estimate with any certainty the bore of the pipe. Present maximum diameter 71mm; thickness *c.* 7mm.

Although this item is fragmentary, it probably fitted through a hole in a rectangular sheet to form a collar attached to an up-pipe (cf. Caerleon Fortress Baths, Zienkiewicz 1986b, 321–2, pl. 49; and Fishbourne, Cunliffe 1971, 144, nos 1 and 2, pl. 19). There is a slight trace of a nail 'hole' on one edge. A item from Colchester tentatively identified as a pipe junction should also be noted (Crummy 1983, 168, fig. 208, 4717).

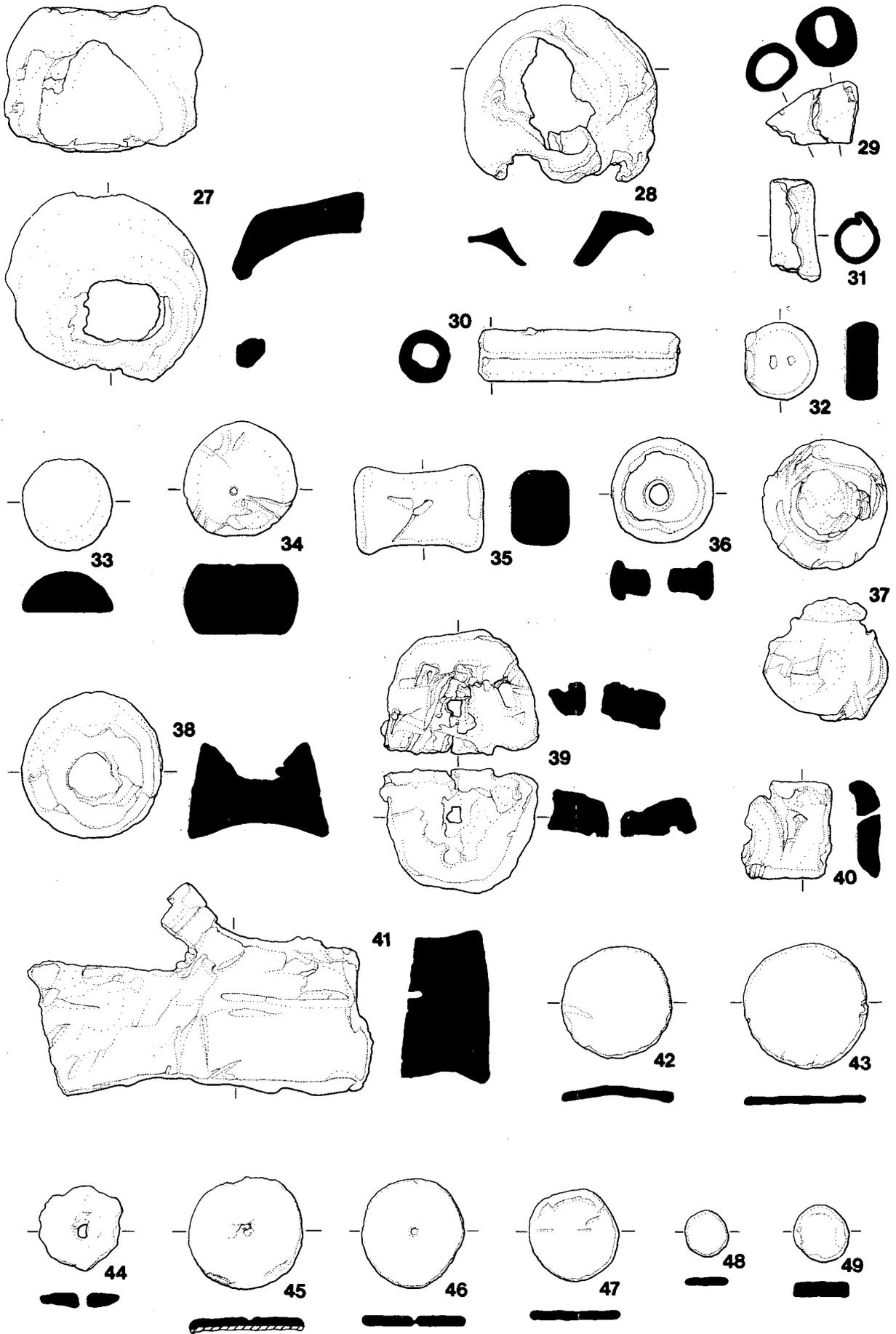


FIG. 105. Lead objects nos 27-49: pipes, tubes, weights and discs. Scale 1:2.

29. [30] 1474=1527/SG25 (1452) Two joining fragments of rolled and welded sheet broken at both ends forming a small spout, which probably functioned as part of an overflow or similar rather than part of a tap or vessel. External diameter *c.* 20mm; internal diameter varies considerably but with a *c.* 12mm maximum.
Although of rather small bore, the two items could be offcuts from water pipes, such as that which left an impression beneath the paving of the frigidarium drain (Zienkiewicz 1986a, 216; 1986b, 323) and had an external diameter of *c.* 20mm.
30. [31] 2002/unstratified (2448) Cast tube. Length *c.* 80mm; diameter *c.* 16 mm. This object was cast in a two-part mould, and part of the casting flash remains along one edge. The object is complete and is unlikely to have been a water pipe. Other similar objects are known from Roman sites such as the Caerleon Fortress Baths (Zienkiewicz 1986b, 191, fig. 65, 11) Neath (Evans 1992b, 255, no. 1) and Loughor (Evans 1997b, 294, nos 19 and 20). Function unknown.
31. [32] 3500/unstratified (3325) Sheet folded and butted to form a complete rough tube of sub-rectangular profile. It is slightly narrower at one end but this narrowing is a result of damage. Length 32mm; cross-section *c.* 30 × 25mm; sheet thickness 2mm.

'Weights'

Measures (FIG. 105)

Total number recorded = 4

There can be little doubt that items of the kind described below were used as weights. This having been said, the discrepancies between estimations of ancient weights (Boon 1974b, 292, fn. 81, also quoting Bockh and Naville) and surviving examples of weights themselves in either bronze (Bushe-Fox 1928, 46, no. 32, pl. 19) or lead (for example at Caersws, Arnold and Owen 1989, 53–4, fig. 27, or Loughor, Evans 1997b, 292, no. 13) may never be properly explained. Estimates of ancient weights, as given by Bockh, Naville and Boon, are set out in TABLE 29.

TABLE 29: ESTIMATE OF VALUE OF ROMAN AND CELTIC WEIGHTS

Name of unit	no. of ounces	estimate in grams		
		<i>Bockh</i>	<i>Roman</i> <i>Naville</i>	<i>Celtic</i> <i>Boon</i>
semuncia	0.5	13.64	13.44	12.77
uncia	1	27.29	26.88	25.75
sexcuncia	1.5	40.32	40.93	38.62
sextans	2	54.58	53.76	51.50
quadrans	3	81.86	80.64	77.25
quincunx	5	136.6	134.4	128.75
semis	6	163.73	161.28	154.50
libra	12	327.45	322.56	309.00

For the general problem of assessing the value of the Roman *libra* see Grierson (1964, especially xi–xiv (*sic*) who suggests a compromise of 325g) and for that of the Celtic pound see Allen (in Frere 1961, 302): the latter notes the further factor that the Celtic pound was also divisible by descending multiples of 1/2; 1/16=19.31g; 1/32=9.66g; 1/64=4.83g and 1/128=2.41g. The weights of a number of the discs in this collection centre around 32–36g. As they may be a little large to be counters or gaming pieces, it is possible that they represent proportions of some local measure, perhaps something similar to the 'heavy' Celtic pound of 640g *contra* Boon (1974b, fn. 81).

32. [33] 600/SG183 (405) 'Cheese'-shaped clean casting with the remains of a casting sprue and what may be two light 'pecks' on one face. Somewhat over two Roman or Celtic ounces. Diameter 28mm; height 11mm; weight 58g (2.0oz).
33. [34] 2045/SG81 (2077) Plano-convex casting. Diameter 34mm; height 16mm; weight 84g (3.0oz).
Although this object was probably intended as a unit of measure somewhat over three Roman ounces, there is a slight possibility that it was intended as a replacement for a 'black' glass gaming piece; cf. the large example from the Caerleon Fortress Baths (Brewer 1986b, 156, fig. 49, no. 19). There is a better case for a similar but far smaller object from Loughor being a gaming piece (Evans 1997b, 292, no. 16); the weight of that object was 24g, nearly one Celtic ounce.

34. [35] 2086/SG94 (2280) Large, roughly made 'cheese'-shaped cast object; slight traces of iron can be seen on the upper surface which may be the remains of a suspension loop or more probably part of an iron core. Very close to ten Roman ounces. Diameter 44mm; height 20mm; weight 270g (9.6oz).
35. [36] 3001/unstratified (3057) Knuckle-bone shaped object. A little on the low side of ten Roman ounces. Length 45mm; cross-section at widest point 28 × 24mm; cross-section at narrowest point 24 × 19mm; weight 260g (9.2oz). Cf. a similar object from the Prysgr Field (Nash-Williams 1932a, 91, fig. 39, no. 3).

Other weights (FIG. 105)

Total number recorded = 7

36. [37] 600/SG183 (298) Rather irregular, but ?complete casting. Both faces are countersunk, but the countersinking is also irregular and there is a central cast-in oval hole. Diameter *c.* 35mm; height *c.* 12mm; diameter of hole 5–6mm; weight 94g (3.2oz)
This object is too small to have been a loom or thatch weight so it may have been intended as a net or line sinker.
37. [38] 1404/SG110 (1267) Spherical, rather battered weight with traces of an iron suspension loop surviving. Diameter *c.* 50mm; height *c.* 45mm; weight 380g (13.4oz).
There are a number of similar objects from the South Shields Fort (Allason-Jones and Miket 1984, 8.44–8.47).
38. [39] 2001/unstratified (2394) Incomplete double casting; the underside is slightly dished and the upper has a circular countersinking. It seems likely that an iron core and suspension ring, together with the rest of the casting, have pulled away owing to a poor weld. Maximum diameter 52mm; height 33mm; weight 465g (16.4oz).
39. [41] 2389/SG72 (2334) A fragment from the top of a weight or plumbob which has been cast separately over an iron core, and with the hole for a suspension loop: this part of the casting has subsequently pulled away from the rest of the object. Diameter 53mm.
40. [42] 2389/SG72 (2526) Damaged sub-rectangular ?trimmed cuboid. Probably simply scrap, but a small partial piercing near one corner may indicate that it was intended as a weight. Dimensions 32 × 32 × 8mm; weight 60g (2.0oz), a 'heavy' Roman/Celtic two ounces.
41. [43] 3500/unstratified (3324) A rough rectangular block which has the appearance of an elongated sub-pyramid. It was cast but shows some signs of reworking. A section has been removed, but its original dimensions are extant: this makes it difficult to decide if the original had a cast-in hole or whether this appearance is simply the result of the later damage. Length 115mm; height 53mm; width *c.* 30mm; weight 1260g (the missing section might have contributed enough to bring the weight up to the equivalent of four Roman pounds).

Whilst it seems unlikely that the original was intended as a unit of measure, it remains possible that it was designed as something similar to a line-sinker or thatch-weight. However the most likely explanation of its original function as raw material rather than as a true ingot has much to recommend it.

Discs (FIGS 105, 106)

Total number recorded = 16

Although some of the items described in this section could be intended as units of measure or as weights, it seems likely that the rest had some other function. Most of the examples fall into three size groupings: *c.* 15–20mm, *c.* 30mm and *c.* 40mm. The diameter of the objects in the first group comes closest to that of bone counters/gaming pieces (cf. Zienkiewicz 1986b, 202–7) and the third group matches closely a group of stone discs from the Fortress Baths (Zienkiewicz 1986b, 201). The items of the middle group (those with a diameter of *c.* 30mm) and those not assigned to any group are not closely paralleled. Discs in a variety of materials and of a variety of diameters are noted from the Fortress Baths (Zienkiewicz 1986b, 214) and from Colchester (Crummy 1983, 91–6, with discussion). For a discussion of ancient board games see Austin (1934) and Bell (1960).

42. [44] 001/unstratified (195) Cast and filed. Maximum diameter 40mm; maximum thickness 3mm; weight 46g (1.6oz).
43. [45] 001/unstratified (214) Very irregular circle. Diameter 45mm; thickness 2mm; weight 38g (1.2oz).

44. [46] 001/unstratified (490) Irregular piece of scrap pierced with a hole of key-hole shape. Diameter 32mm; thickness 5mm.
45. [47] 007/SG35 (167) Rough circle formed of two discs welded together. One face has a small indentation slightly off centre. Diameter 38–40mm; thickness 4mm; weight 32g (1.2oz).
46. [48] 030/unstratified (031) One face has a slight indentation. Maximum diameter 40mm; thickness 3mm; weight 36g (1.2oz).
47. [49] 103/SG185 (1732) Very rough circle filed to shape. Possibly intended as 16th of a Celtic pound. Diameter 32mm; thickness 2mm; weight 18g (0.6oz).
48. [50] 600/SG183 (243) Diameter 16mm, thickness 2mm, weight 4g (0.1oz).
49. [51] 601/SG182 (425) Cast, possibly a plug. Diameter 20mm, thickness 5mm, weight 14g (0.4oz).
50. [52] 704/SG182 (381) Clipped from sheet, approximately one-third has been removed with shears. Possibly an offcut rather than a deliberately formed disc. Both faces have a number of scored lines, but it is difficult to tell whether they are decorative or the result of damage. Diameter 50mm; thickness 2mm.
51. [53] 827/SG118 (608) Cast. Diameter 20mm; thickness 2mm; weight 8g (0.3oz).
52. [54] 846/SG35 (989) One edge has been raised by hammering to give one face a dished appearance; this face may have been intended to be hidden. Diameter 40mm; thickness 2mm; weight 34g (1.2oz).
53. [55] 947/SG130 (813) Filed to shape. Maximum diameter 30mm; thickness 2mm; weight 12g (0.4oz).
54. [56] 969/SG135 (1636) Diameter 10mm; thickness 1mm.
55. [57] 2002/unstratified (2437) This object was formed by welding one disc over another, slightly smaller, one. The method of construction may indicate that this item was intended as a weight of two Roman ounces. Diameter 40mm; thickness 6mm; weight 50g (1.8oz).
56. [58] 2032/unstratified (2071) Incomplete and damaged; pierced with a central hole, and with a bevelled edge. Diameter 40mm, thickness 4mm, hole diameter 5mm.
57. [59] 3001/unstratified (3008) Very irregular ovoid, chiselled out and perforated by an oval hole. The opposite side to that from which the hole was cut was then filed to remove the burring. This item is far too irregular to have been used as a spindle whorl. Maximum diameter 28mm; thickness 3mm; hole diameter 4mm; weight 16g (0.4oz).

Rivets, clamps and plugs (FIG. 106)

Total number recorded = 17

Whilst lead is the most common medium of repair for vessels, iron was sometimes used, as for example at Croft Ambrey, Herefordshire (Stanford 1974, fig. 90, nos 10–23 and 36–8) and at Cefn Graeanog, Gwynedd (noted by Marsh 1981, 227). This may have been because lead as a free metal was unavailable, as was almost certainly the case at Croft Ambrey (Stanford 1974). The amphora repaired with an iron cramp from Pound Lane, Caerwent (unpublished Newport Museum and above in the amphora report, no. 180) should also be noted.

As well as the four types of clamps described here a fifth has been noted by Marsh (1981, 227) in which lead wire is employed. It was threaded through holes in the pot and the ends hammered down to secure the cramp. A length of wire (no. 69) may have been raw material for such a clamp. Rather larger patches for damaged vessels are also known, as for example one used to repair a samian vessel from Chapel Street, Chichester (Bayley and Down 1987).

Other examples of lead rivets and joining strips are recorded in the amphora catalogue, nos 179 and 181. The repairing of amphorae is perhaps more under-recorded rather than unusual.

58. [60] 001/unstratified (155) Rivet in the form of an elongated X or double dovetail. This method of riveting is usually more untidy than that in which the object to be rivetted was drilled, and appears later, becoming more common in the 2nd century. Marsh (1981, 227) suggests that this may be because there was a smaller chance that the sherds (in this case of samian) would break when they were cut than if they were drilled. Thickness varies, but averages at *c.* 8mm, which would not be inappropriate for a samian vessel.
59. [61] 001/unstratified (164) Flat-headed rivet with part of a joining strip attached. The rivet part of this item appears to have been pre-cast. This and the following three items may be parts of repair cramps for pottery, or they may be rivets attached to bindings or repair patches. Diameter of rivet 28mm; section of joining strip 10 × 6mm.

The similarity of some of these items to the heads of button-and-loop dress fasteners (Wild 1970, especially class Vc) is probably purely coincidental.

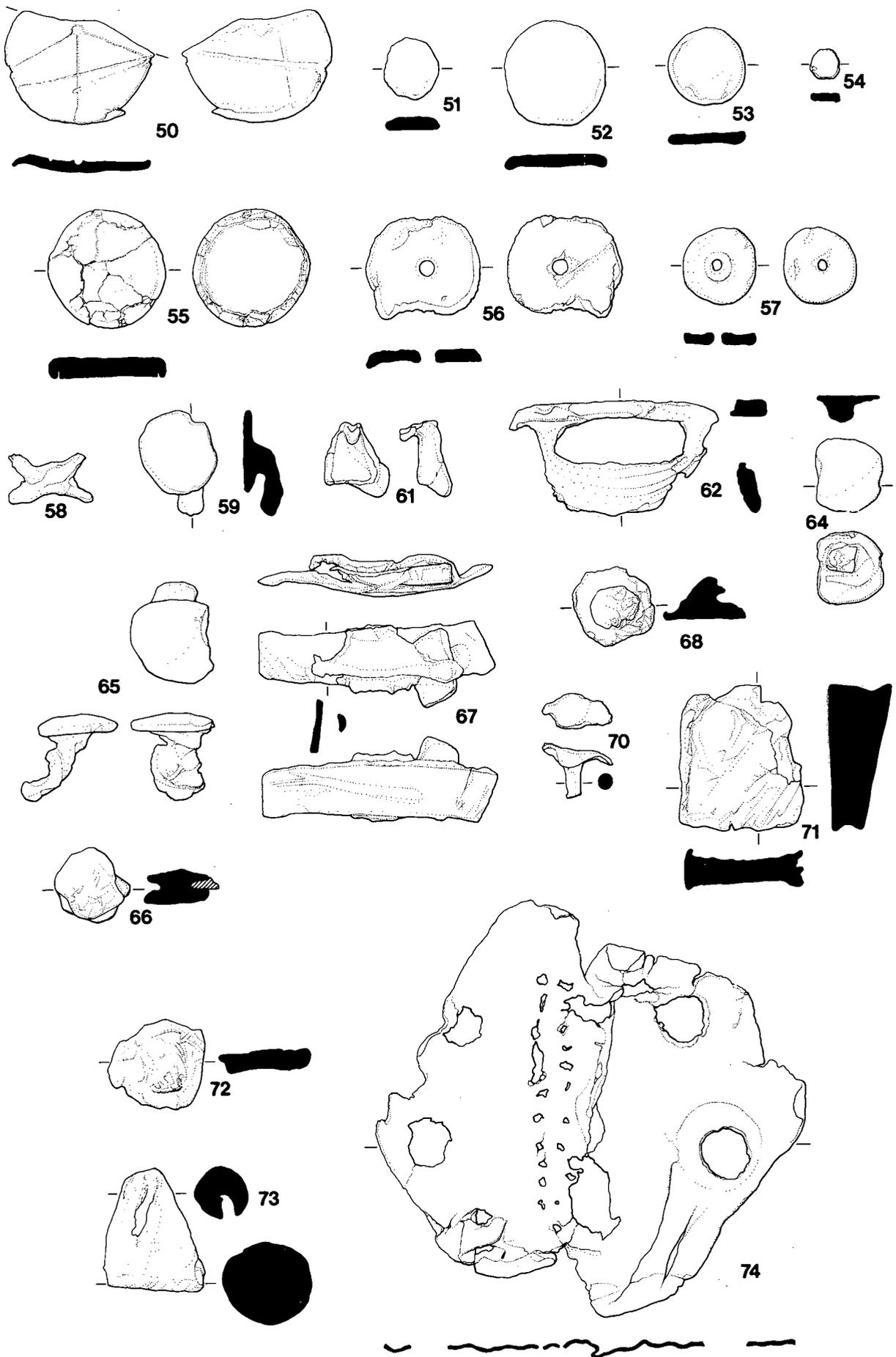


FIG. 106. Lead objects nos 50-74: discs, rivets, clamps, plugs, repair patches. Scale 1:2.

60. [64] 022/unstratified (022) Incomplete and damaged cast sub-rectangular strip. One long side has a convex moulding running along it, now formed into a rough hook, perhaps originally part of an amphora repair strip as nos 179 and 181 in the amphora catalogue. (Not illustrated.)
61. [67] 600/SG183 (303) Rough fragmentary casting with traces of a sprue. Possibly part of a rivet or clamp. Surface dimensions 26 × 20mm; thickness 8mm.
62. [68] 846/SG35 (976) Roughly formed cast clamp, pulled out of shape but complete. The parent vessel would have had two countersunk holes drilled through it from the outside: these were filled with lead and joined by two other castings. The vessel which was repaired does not survive but the depth of the rivets and the slight curve of the clamp probably indicate that a mortarium was involved. Present length 76mm; thickness 6mm.
Cf. the similar item from *Verulamium*, not recognised as a clamp (Goodburn in Frere 1984, 67, fig. 28, no. 247), which was of late 4th century date.
63. [69] 927/SG53 (893) Crude plug with a roughly rectangular flat head (c. 20 × 24mm) on one side and a crude flange (15 × 20mm), probably damaged, on the other. Shaft of plug of sub-square cross-section (10 × 10mm). Thickness of item plugged c. 6mm. (Not illustrated.)
64. [70] 929/SG53 (910) Sub-rectangular rivet, slightly smaller than no. 59.
65. [71] 957/SG35 (1577) Another example as no. 59. Diameter of rivet 30mm.
66. [72] 1027/SG145 (935) Rough-casting with a small fragment of Black Burnished ware attached. A patch or plug rather than part of a clamp. Diameter 23mm; thickness 11mm.
67. [73] 1056/SG144 (1727) Complete, slightly damaged clamp of a different type from no. 62. It was formed by threading wire through two drilled holes, after which extra lead was poured in to fill the gap in the pot and the whole finished by welding on a cast rectangular flat strip, giving a much neater finish than that which can be seen on no. 62. A few crushed fragments of the repaired greyware pot survive. Length 85mm; thickness of strip 3mm.
Cf. South Shields (Allason-Jones and Milet 1984, 8.74–8.71), another similar item from Shakenoak (Brodrick *et al.* 1968, 92, fig. 32, no. 3): a third rather more complicated item from *Verulamium* (Goodburn 1984, 67, fig. 28, no. 252, A.D. 200–25), should also be noted.
68. [74] 1485/SG4 (1483) Another example as no. 59. This example appears to be incomplete. Diameter of rivet head 30mm.
69. [75] 2429/SG168 (2528) Sub-circular hammered wire. Length 52mm; diameter c. 4mm. Probably used for riveting, but other functions are possible. (Not illustrated.)
70. [76] 3086/SG159 (3231) Incomplete cast countersunk rivet-and-plug with part of the joining strip surviving. The thickness of the mended object was c. 10mm, and this probably indicates that the repaired vessel was a mortarium. Diameter of plug 6mm; rivet head 26 × 12mm.

Other plugs (FIG. 106)

Total number recorded = 4

71. [78] 851/SG114 (1231) Irregular, incomplete but ?finished, wedge-shaped casting. One face has the ghost of a tooled stone. Dimensions 50 × 44mm, maximum thickness 22mm. The object was intended to secure an iron tie in an oversized hole, such as an example from the Fortress Baths (Zienkiewicz 1986a, 316, fig. 103, 2).
72. [79] 2002/unstratified (2890) Roughly egg-shaped cast plug for an object made of sheet iron, traces of which survive. Dimensions 35 × 29mm; thickness 6mm; thickness of repaired object c. 4mm.
73. [80] 3047/SG155 (3120) Sugar-loaf-shaped, partly hollow casting. The hollow was caused by the corrosion of a 'L'-shaped iron bar or staple. Maximum diameter 33mm; height 45mm.

Repair patches and bindings (FIGS 106, 107)

Total number recorded = 13

74. [81] 103/SG185 (1728) Roughly shaped sheet of lead. When discovered it was folded back on itself, but it would appear to have been fixed originally to its parent object on an external corner, and probably, but not certainly, at a right angle. It is pierced by two series of holes. One of the six larger holes is intact and has a diameter of c. 20mm; four and possibly five of the others appear to have been of the same general dimensions. The holes of the second series are far smaller (c. 2mm square) and are arranged in two nearly parallel rows. Surface area 144 × 144mm; thickness 2mm.

Although this item is now estranged from its parent object, it seems not unreasonable to conjecture that it was intended as a patch for a box or chest, rather than as part of the original construction. It is the larger holes which lead one towards this conclusion, because they are very similar in size to the dome-headed studs attached to the chest from the Corbridge hoard (Allason-Jones and Bishop 1988, fig. 81). If the lead item had been fixed to the parent object by the means of these studs (rather than, as seems the case, by the rather smaller tacks) as part of the normal construction, one would expect only a small hole for the shaft of these studs and a circular mark for their edges. The larger holes do not seem to have been formed when this item was torn from its parent object.

75. [85] 851/SG114 (1240) Irregular incomplete thin sheet. One edge has a double fold which may be original; close to this, but pierced from the other face, is a circular hole *c.* 6mm in diameter. Another edge has signs of a violent double fold, perhaps caused when it was torn away from the object to which it was attached. The folded-back face has a number of randomly spaced holes, most (?all) caused after removal, and finishes in a serration formed either when the object was torn away or, as in no. 80, was a deliberate finish. Surface area 149 × 103mm; thickness 1mm.
76. [87] 1485/SG4 (1468) Probably incomplete cast and welded sheet, pierced at one end by three irregular sub-rectangular holes (*c.* 8 × 7mm). At the other end there are two rough lead rivets with irregular heads but with similar-shaped shanks to the holes. These rivets have subsequently been cut off. Present length 193mm; thickness 3mm.

Function uncertain, but some form of binding strip to which a secondary repair has taken place seems probable.

77. [88] 2008/unstratified (183) Rough rectangle of sheet lead; all edges are the result of damage, as may be a punched hole near one long edge. On one short edge there is an original sub-rectangular hole (*c.* 7 × 8mm), and a dome-headed iron rivet remains *in situ*; unfortunately this is rather hidden by a fold. Dimensions 130 × 80mm.
78. [89] 2327/SG87 (2277) Buckled and slightly damaged, but almost complete 'L'-shaped angle bracket; of generally rectangular shape but with two lobate extensions on the upper edge. The bracket was attached by a series of dome-headed iron tacks with shafts of square cross-section (*c.* 4 × 4mm), a number of which survive; the lead was folded over the heads of the nails and then welded. Length 88mm; width wider side *c.* 40mm; width other side 29mm; thickness 2mm.

Although the object appears to be post-Roman, the lobate extensions are reminiscent of those on, for example, *lorica segmentata* (see for example Allason-Jones and Bishop 1988, figs 23–4) and this feature may be confirmation of the Roman date of the object.

79. [91] 2405/SG72 (2627) Badly damaged object of cast sheet. Three or perhaps four sides (one hidden by a fold) of what may originally have been a six-sided object remain; towards one corner is a hole for a 7mm-diameter domed tack with a shank of 4mm; one face has three pulled-out nail holes and towards the centre is a pulled-out sub-rectangular hole which might originally have been *c.* 20 mm square. Probably a reinforcement or seal rather than a true repair patch. Maximum width 135mm; height (incomplete) *c.* 80mm; thickness 1mm.
80. [92] 3047/SG155 (3323) Now roughly triangular shaped sheet, with the remains of two pulled-out fixing holes; the longer edge, which is original, has been shaped into a series of tongues. Function unknown but perhaps decorative edging to a box covering or binding. Maximum dimensions 100 × 49mm.
81. [93] 3073/SG151 (3217) Cast strip, truncated at both ends. One long edge has been folded back on itself and four 4mm square nail holes are present. Maximum length 89mm; width 63mm; thickness *c.* 2mm. A binding strip for box or comparable (cf. Cunliffe 1971, 144, no. 3, vol. 1, pl. 58a).

Miscellaneous items (FIGS 107, 108)

Total number recorded = 16

82. [94] 001/unstratified (319) Finger-shaped bar of irregular profile. Near to one narrow end is a shallow groove. Length 56mm; cross section 13 × 7mm. Function unknown.
83. [96] 003/unstratified (009) Curved fragment, possibly from a small bracelet, of flattened oval cross-section tapering at both ends. Internal diameter estimated *c.* 40mm; section *c.* 3 × 4mm tapering to 2mm.
84. [97] 003/unstratified (467) Complete? flat penannular cast disc; a large segment has been removed from the circumference of the item but this appears to have taken place during manufacture rather than after use. Diameter 65mm, central hole diameter 20mm. Similar to the pipe collar discussed above (no. 28) but the missing segment makes its function uncertain.

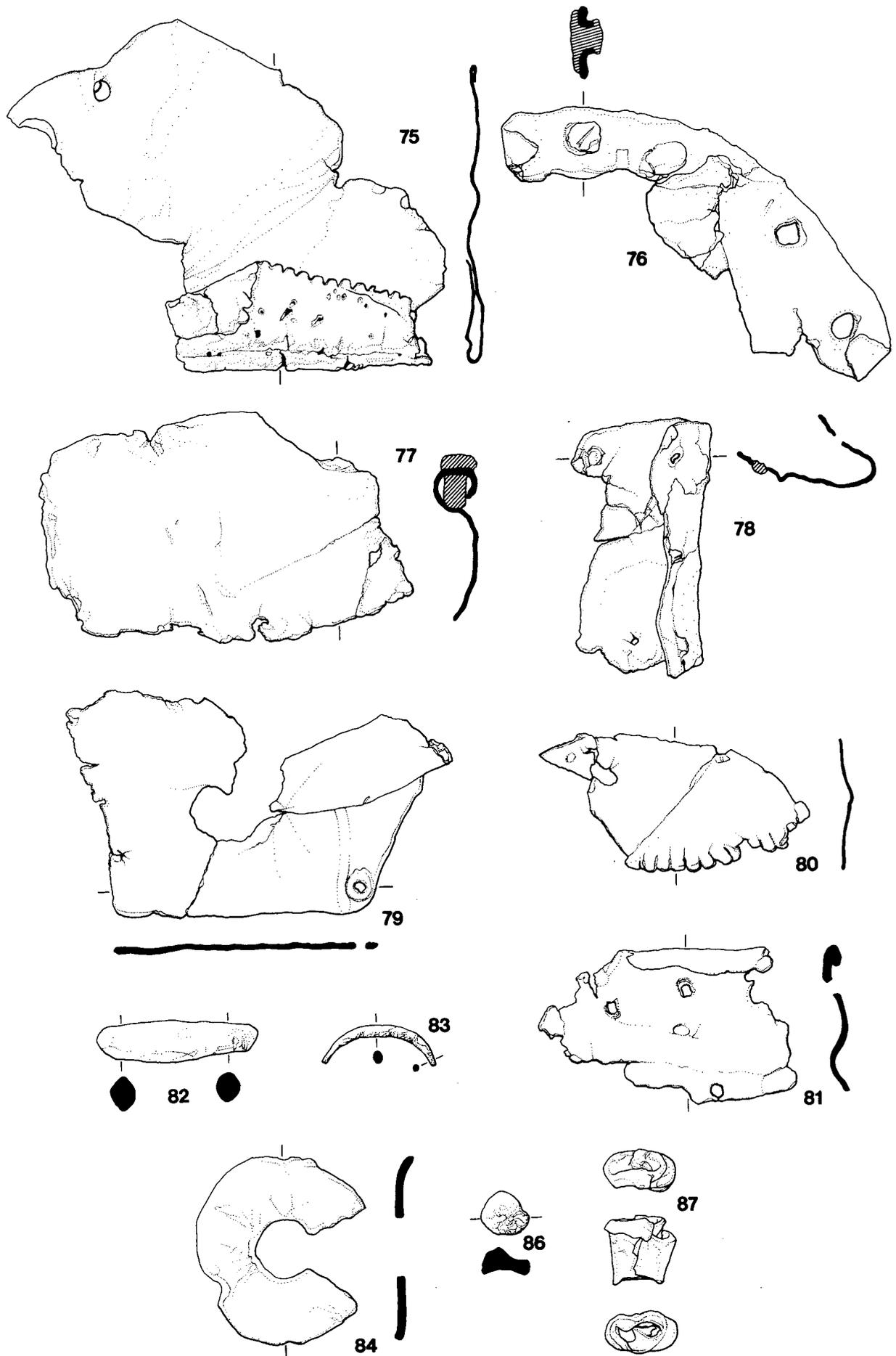


FIG. 107. Lead objects nos 75-87: repair patches and bindings and miscellaneous items. Scale 1:2.

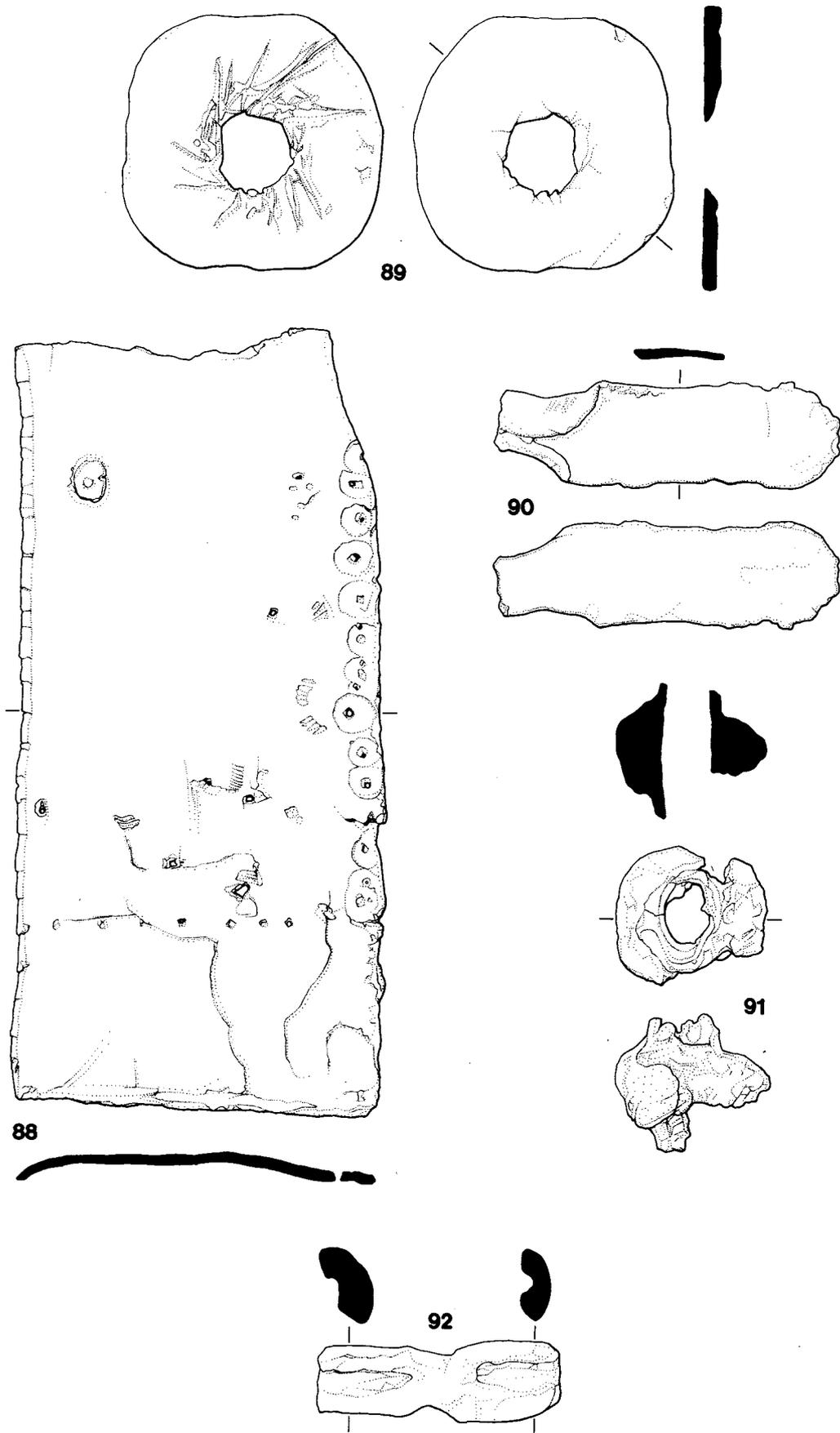


FIG. 108. Lead objects nos 88–92: miscellaneous items. No. 88 scale 1:4; other items scale 1:2.

85. [98]700/SG183 (378) Flat cube, cast but carefully finished apart from one face which is slightly crooked. Dimensions $18 \times 16 \times 4$ mm. Function uncertain but possibly a tessera. (Not illustrated.)
86. [99] 711/SG182 (416) Small dome-shaped cast object. Diameter 17mm; height 7mm. Its function is uncertain but it has some similarities to a series of small bosses filled with lead from Colchester (Crummy 1983, 19, fig. 124, 4036–45). The method of attachment of such bosses is unclear.
87. [100] 2002/unstratified (2449) At first sight this object appeared to be merely a piece of folded scrap; closer examination, however, showed that it had been carefully welded together. Length 22mm; thickness *c.* 2mm.

It is suggestive of a fragment of pipe but it bears some similarities to post-Roman chapes, cf. for example Crummy 1988, nos 1795–801, especially no. 1795.

88. [102] 2252/unstratified (2389) Rectangular sheet of which two edges, one long and one short are original, the other two have been chiselled away. The object shows an L-shape of *c.* 15mm-diameter domed nails with 4mm shanks. There are also a number of random nail holes; and the object was plugged before it was fixed in place, probably to repair a casting fault. The shorter edge has clear evidence of having been butt-welded on the side from which the nails were applied. Surface dimensions 244×491 mm; thickness varies considerably between 4mm and 6mm.

There can be little doubt that this object formed part of the lining of a tank.

89. [103] 2389/SG72 (2329) Roughly sub-rectangular object cut from sheet, with a crudely hacked-out sub-square hole near the centre. No holes for attachment are extant. It is similar to, but rather larger than no. 84. Surface area *c.* 80×85 mm; hole diameter 20mm; thickness *c.* 4mm.
90. [104] 2393/SG44 (2891) Strip of ?hammered sheet. Although the appearance of this object may be deceptive, it has some semblance of form, with one end rounded into a semi-circle and the other tapered by being folded back on itself. Surviving length 104mm; width *c.* 33mm; thickness 2mm. Perhaps a binding strip which has broken during manufacture.
91. [106] 3044/SG164 (3056) Badly corroded and damaged casting. Dimensions $50 \times 43 \times 41$ mm.

The function of this object cannot be established with any certainty, but it is clear that it originally consisted of a sub-rectangular cuboid flange with an ovoid hollow through the centre; the shell of the hollow continued some distance above and below the flange, much of the shell was seen as a thin band of corrosion in the soil containing the object.

Although the object is badly corroded, there is little doubt that the lower part of the shell (as shown by the run of the casting) was tapering, precluding the possibility that the object was a pipe-junction of some form; the small size of the bore alone cannot be used to disprove this possibility. The hollow is quite regular except where it is interrupted by a slight ridge. The tentative conclusion is that the object was cast around some other ?damaged object in order to secure it in position.

92. [109] 3500/unstratified (3518) Very shallow U-shaped object. Although now rather twisted and damaged in the centre, the object is complete, with both ends finishing with a curved chamfer. No trace of attachment survives. Length *c.* 76mm; maximum width 26mm; thickness *c.* 10mm. Function unknown.

OTHER MATERIALS

THE GLASS (FIGS 109–14) By Denise Allen, with a contribution by G. Lloyd-Morgan

The glass assemblage produced by excavations in Mill Street is a relatively large one, comprising nearly 1300 vessel fragments, 96 beads, 15 counters, another 7 glass objects and 284 fragments of window glass. Its content closely resembles that of previously excavated glass finds from in and around the fortress at Caerleon: a large proportion of bottles, and a range of tablewares which includes not only the forms in common circulation, but several finer and more unusual pieces.

Most of the vessel glass is blue-green in colour (1050 fragments), with almost half identifiable as mould-blown bottle fragments of the 1st and 2nd centuries A.D. (just under 500 fragments). Colourless glass makes up most of the rest of the assemblage (208 fragments), with an additional nine fragments of pale green glass, eight yellow-green, seven olive green, two dark brown, one amber and two polychrome, and one emerald-green cast and ground.

There are 128 vessel fragments and 32 objects which are considered worthy of illustration. These are catalogued below; this work was completed in 1993. Further details of material which

is not illustrated can be found in the site archive; archive numbers for published material are the same as publication numbers. The pieces are arranged in the following categories:

Vessel glass

Bowls and beakers, cups and plates

Cast and ground: polychrome

Cast and ground: monochrome

Mould-blown

Blown: blue-green

Cast and ground: colourless

Blown: colourless

Decorated body fragments: colourless

Base fragments

Blue-green

Colourless

Globular ribbed jars and long-necked jugs

Blue-green and coloured

Handle fragments

Blue-green

Colourless

Jugs, flasks and unguent bottles

Blue-green and coloured

Colourless

Bottles

Blue-green

Colourless

Glass objects

Miscellaneous objects

Counters/gaming pieces

Beads

Window glass

All the items are reported on by DA with the exception of no. 159, which is reported on by GLM.

Catalogue

Vessel glass

Bowls, beakers, cups and plates

Cast and ground: polychrome (FIGS 109, 110, 111)

The manufacture of cast polychrome, or 'millefiori', glass had ceased by the middle of the 1st century A.D. However, the presence of fragments in Wales and the north of Britain show that its use continued into the second half of the 1st century. At least ten fragments have come from previous excavations in and around Caerleon (Boon 1967b, 93; Allen 1986, 100, no. 7a; Allen forthcoming, no. 1). The colours employed in fragments nos 1–2, opaque red and opaque yellow in a green ground, are common ones. The form of no. 2 is likely to have been a carinated bowl with flaring lip, similar to that of no. 3 below, of emerald-green glass, and nos 38–40, of colourless glass. Another polychrome bowl of this type, but in different colours, was found many years ago in Prysrg Field, Caerleon (Nash-Williams 1932a, 87, no. 51, fig. 35).

1. 3070/SG157 (3187) Small fragment of polychrome cast and ground glass: green ground with pieces cut from three-layered rods; green surrounded by opaque yellow, surrounded by opaque red on a brown ground.
2. 001/unstratified (1080) Fragment of a carinated bowl of polychrome cast and ground glass: emerald-green ground with many small opaque yellow pieces, and a few larger opaque red pieces.

Cast and ground: monochrome (FIG. 109)

Cast monochrome glass vessels, with the exception of pillar-moulded bowls, were not made much beyond the middle of the 1st century A.D. The manufacture of carinated bowls with flaring lips, like no. 3, may have continued into the early Flavian period, since the form was copied in colourless glass during the later 1st and earlier 2nd centuries. Emerald-green was a popular colour for this glass type in the 1st century. Finds include a dish of this colour with similar rim to no. 3 from Kirkby Thore, Cumbria (Charlesworth 1959, 38–40, fig. 3, 3). Coloured glass of this general group is rare in Wales. One emerald-green shallow bowl rim fragment came from excavations at the Legionary Museum site in Caerleon (Zienkiewicz 1992b, 3–5, no. 6, fig. 1).

Pillar-moulded bowls, by contrast, represent one of the commonest 1st century glass finds, perhaps not least because they are so easy to recognise. Four examples are catalogued here (nos 4–6), all of blue-green glass, to add to a large number already found at Caerleon.

3. 2065/SG84 Rim fragment of a bowl or dish of emerald-green glass. Cast and ground: moulded flaring lip extant, diameter *c.* 200mm.
4. 3037/SG157 Rim fragment of a large, deep pillar-moulded bowl of blue-green glass. Rim and inner surfaces rotary-polished, ribbed area fire-polished. Diameter of rim *c.* 210mm.
5. 627/SG178 Rim fragment of a pillar-moulded bowl of blue-green glass. Part of one rib extant. Diameter of rim indeterminable.
6. 835/SG117 (1103) Rim fragment of a pillar-moulded bowl of blue-green glass. Ribs closely-spaced, part of three extant. Diameter of rim *c.* 140mm.

Five similar fragments were noted.

Mould-blown (FIG. 109)

It is of interest to note the presence of two mould-blown vessel fragments in the assemblage (nos 7–8), but unfortunately neither is large enough or sufficiently diagnostic to identify closely. The greatest range of vessels of this general group was produced during the 1st century A.D., but the technique continued to be used throughout the Roman period.

7. 403/SG185 (076) Small fragment of pale green glass with traces of mould-blown lozenges.
8. 002/unstratified Small fragment of blue-green glass with traces of mould-blown horizontal and vertical cordons. Diameter of vessel *c.* 100mm.

Blown: blue-green (FIGS 109, 110)

Twenty-nine blue-green rim and body fragments are catalogued here (nos 9–37).

Nos 9–23 are all rim fragments finished by fire-rounding and thickening, and since the technique was widely used on a variety of forms, most can only be used as an illustration of some of the range of cup, beaker and bowl forms employed during the Roman period. Large dish rims, like nos 20–22, have been found in previous excavations at Caerleon in later 2nd and earlier 3rd century contexts (excavations in the area of the civil settlement west of the fortress, unpublished; Legionary Bath-house excavations, Allen 1986, 107, no. 45, fig. 41).

Fragment nos 24–5 each have the remains of a folded ridge surviving around the body of what was probably a bowl. The complete vessels would almost certainly have resembled a fragmentary example from Silchester (Boon 1974b, 230–1, fig. 36, 7). The form appears to have been extremely long-lived, since fragments have come from contexts of A.D. 40–55 at Velsen II in the Netherlands (van Lith 1977, 55, no. 338, pl. 5) and Cosa in Italy (Grose 1974, 44, no. 27, fig. 5, 27), and there is also a bowl from an early 4th century grave at Trier (Goethert-Polaschek 1977, 37–8, form 26, no. 102, pl. 16:176e).

Fragments 26–37 are all rims which have been finished by folding in various ways. Nos 26–8 are likely to represent shallow or deep roughly cylindrical bowls which were most popular during the later 1st and earlier 2nd centuries (Isings 1957, 59–60, form 44).

9. 3024/SG163 Rim fragment of a bowl or cup of blue-green glass. Rim fire-rounded and thickened and turned slightly inward, diameter *c.* 90mm.
10. 2011/SG204 Rim fragment of a beaker or cup of blue-green glass. Rim fire-rounded and thickened and turned slightly inward, diameter *c.* 80mm.

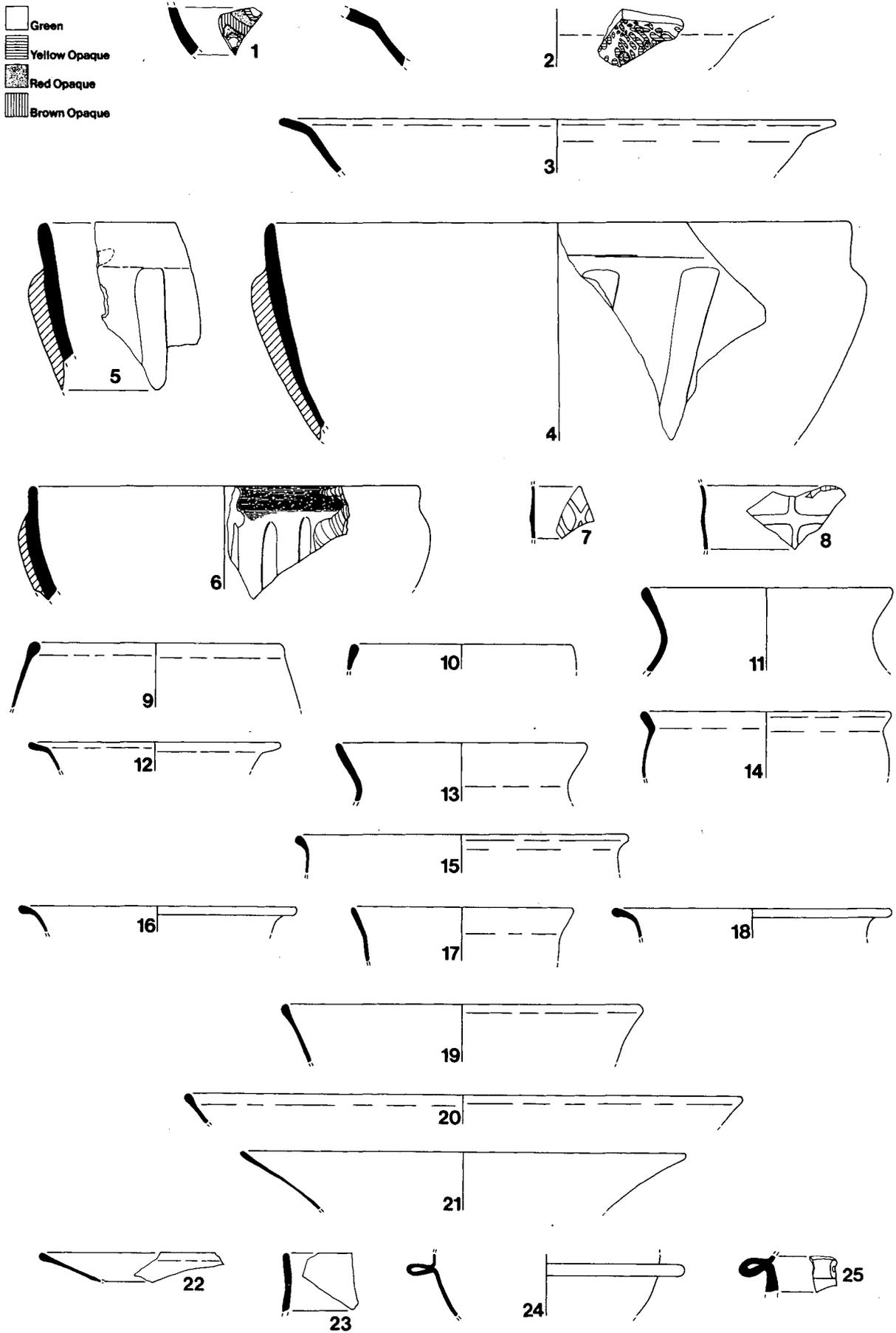


FIG. 109. Glass nos 1-25: bowls, beakers, cups and plates. Scale 1:2.

11. 2001/unstratified Two joining rim fragments of a beaker or jar of blue-green glass. Rim outflared and fire-rounded and thickened, with concave neck beneath. Diameter of rim *c.* 90mm.
12. 3001/unstratified Rim fragment of a beaker or cup of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 90mm.
13. 3001/unstratified Rim fragment of a beaker or jar of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 90mm.
14. 809/SG120 (864) Rim fragment of a bowl or cup of blue-green glass. Rim outflared and fire-rounded and thickened, body bulbous. Diameter of rim *c.* 90mm.
15. 969/SG135 Rim fragment of a bowl of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 120mm.
16. 016/unstratified Rim fragment of a beaker or jar of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 100mm.
17. 1031/SG144 Rim fragment of a cup or beaker of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 80mm.
18. 002/unstratified Rim fragment of a beaker or jar of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 100mm.
19. 001/unstratified Rim fragment of a bowl or jar of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 130mm.
20. 001/unstratified Rim fragment of a bowl or plate of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 200mm.
21. 2095/SG84 Rim fragment of a plate or dish of blue-green glass. Rim outflared and fire-rounded and thickened, diameter *c.* 160mm.
22. 957/SG35 Rim fragment of a plate or dish of blue-green glass, similar to no. 21 above. Rim diameter indeterminable.
23. 2167/SG94 Rim fragment of a beaker or cup of blue-green glass. Vertical rim, fire-rounded and thickened, diameter indeterminable.
24. 852/SG123 Body fragment of a bowl of blue-green glass, with a horizontal folded ridge around the vessel wall, diameter *c.* 100mm.
25. 012/unstratified Body fragment of blue-green glass, with a folded ridge similar to no. 24 above, but thicker-walled. Diameter indeterminable.
26. 1450/SG8 Rim fragment of a bowl of blue-green glass. Rim folded outward and downward twice, forming vertical tubular collar, diameter 140mm.
27. 1462/unstratified Rim fragment of a bowl of blue-green glass. Rim fire-rounded and folded outward and downward, forming tubular collar, diameter *c.* 150mm.
28. 703/SG182 Rim fragment of a bowl of blue-green glass. Rim fire-rounded and folded outward and downward, forming tubular collar, diameter *c.* 190mm.
29. 001/unstratified Rim fragment of a bowl of blue-green glass. Rim folded inward and downward, then outward and downward, forming tubular collar, diameter *c.* 120mm.
30. 001/unstratified Rim fragment of a bowl of blue-green glass, similar to no. 29 above, but diameter *c.* 140mm.
31. 001/unstratified Rim fragment of a beaker or jar of blue-green glass. Rim outflared and folded downward and inward, forming hollow tube, diameter 100mm.
32. 003/unstratified Rim fragment of a bowl or jar of blue-green glass. Rim outflared and folded downward and inward, forming hollow tube, diameter *c.* 150mm.
33. 812/SG112 Rim fragment of a bowl or plate of blue-green glass. Flaring rim, folded upward and inward, forming hollow tube, diameter *c.* 140mm.
34. 3500/unstratified Rim fragment of a bowl or jar of blue-green glass. Rim folded inward and downward, then outward and downward and outflared, diameter *c.* 120mm.
35. 191/unstratified (north-south road) Rim fragment of a beaker or jar of blue-green glass. Rim fire-rounded and folded upward, outward, downward, outward and upward, diameter *c.* 100mm.
36. 2355/SG96 Rim fragment of a bowl of blue-green glass. Rim folded inward and downward, then outward and downward, diameter *c.* 160mm.
37. 3062/SG160 Rim fragment of a beaker or jar of bubbly blue-green glass. Rim outflared and folded outward, upward and inward, diameter *c.* 90mm.

Cast and ground: colourless (FIG. 110)

Colourless glass vessels made by casting in a mould, and wheel-polishing, were most popular during the Flavian and Trajanic periods. The dish form represented by no. 38, and almost certainly too by nos

39–40, was one of the most common, and several examples number amongst previous finds from Caerleon (excavations in the area of the civil settlement west of the fortress and Jenkins Field site, both unpublished; Legionary Museum site, Zienkiewicz 1992b, 3, nos 3–4, fig. 1).

38. 002/unstratified Rim fragment of a dish or plate of colourless cast and ground glass. Flaring rim with slight overhang, diameter *c.* 200mm.
39. 002/unstratified Base fragment of a dish or plate of colourless cast and ground glass. Probably from a larger vessel than no. 38 above: moulded base-ring, diameter *c.* 120mm.
40. 2095/SG84 Two joining base fragments of a dish or plate of colourless cast and ground glass. High moulded base-ring, diameter *c.* 140mm.

Three similar fragments were noted.

Blown: colourless (FIGS 110, 111)

Three fragments are catalogued here (nos 41–3) of the commonest glass drinking vessel form of the later 2nd and earlier 3rd centuries. A further seventeen examples were noted. This vessel form is a colourless cylindrical cup, with slightly inturned, fire-rounded rim, and usually two concentric base-rings (Isings 1957, form 85b). More than 40 examples have been found in previous excavations at Caerleon (e.g. Allen 1986, 111 and fig. 43, nos 68–74; Zienkiewicz 1992b, 6–7, nos 18–19, fig. 2).

No. 44 (and two other fragments) with slightly everted rim and horizontal trail beneath, belongs to a form closely related to that discussed above, often called the 'Baldock' cup after a fine complete specimen from the site of that name (Percival Westell 1931, 275–6, no. 4828, fig. 6). They seem to belong mainly to the 2nd century.

None of fragment nos 46–8, also with fire-rounded rims, is sufficiently diagnostic to be closely identified.

A further ten colourless rim fragments (nos 49–58) are finished by grinding smooth and flat, and are all variously decorated with horizontal wheel-cut or -incised lines. A variety of drinking vessel forms was made in this general style during the later 1st to 3rd centuries.

Fragment no. 50 is, in addition, decorated with oval indents around the body. This was a popular glass beaker form, and dated finds again span the later 1st to 3rd centuries. Similar fragments have been found in previous excavations at Caerleon (excavations in the area of the civil settlement to the west of the fortress and Jenkins Field, unpublished; Legionary Museum site Zienkiewicz 1992b, 5, no. 8, fig. 1) and at Caerwent (Boon 1973, 120–1, no. 32, fig. 4).

41. 1031/SG144 Rim and base fragment, possibly from the same cup of colourless glass. Rim fire-rounded and thickened, and turned very slightly inward, diameter *c.* 95mm. Small applied coil base-ring, diameter *c.* 35mm, originally the inner one of two concentric base-rings.
42. 2086/SG94 Rim fragment of a cup of colourless glass. Rim fire-rounded and thickened, and turned very slightly inward, diameter *c.* 80mm.
43. 957/SG35 (1032) Base fragment of a cup of greenish-colourless glass; pinhead bubbles within the metal. Irregular and roughly made: two concentric base-rings, the outer pushed-in and folded, the inner an applied coil with pontil scar on central underside. Diameter of outer base-ring *c.* 30mm. The broken vessel walls have been chipped away around outer base-ring, presumably to allow reuse as a gaming piece or counter.

Eighteen fragments similar to nos 41–3 were noted.

44. 3001/unstratified Rim fragment of a cup of colourless glass. Rim fire-rounded and thickened and turned slightly outward, fine self-coloured horizontal trail beneath. Diameter of rim *c.* 90mm. Two similar fragments were noted.
45. 001/unstratified Rim fragment of a bowl or cup of greenish-colourless glass. Bulbous body, rim fire-rounded and thickened and turned slightly outward, diameter *c.* 90mm.
46. 2086/SG94 Rim fragment of a cup or beaker of colourless glass; surfaces dulled. Rim outflared, fire-rounded and thickened and turned slightly outward, diameter 85mm.
47. 3086/SG159 Rim fragment of a bowl of colourless glass. Rim fire-rounded and turned outward and downward forming hollow tube, which has then been turned slightly inward. Diameter of rim *c.* 180mm.
48. 2390/SG89 Rim fragment of a bowl or cup of colourless glass. Rim outflared and ground smooth, with hollow-ground ridge immediately beneath. Side of vessel expands downward, with outer surface rotary-ground. Diameter of rim *c.* 80mm.

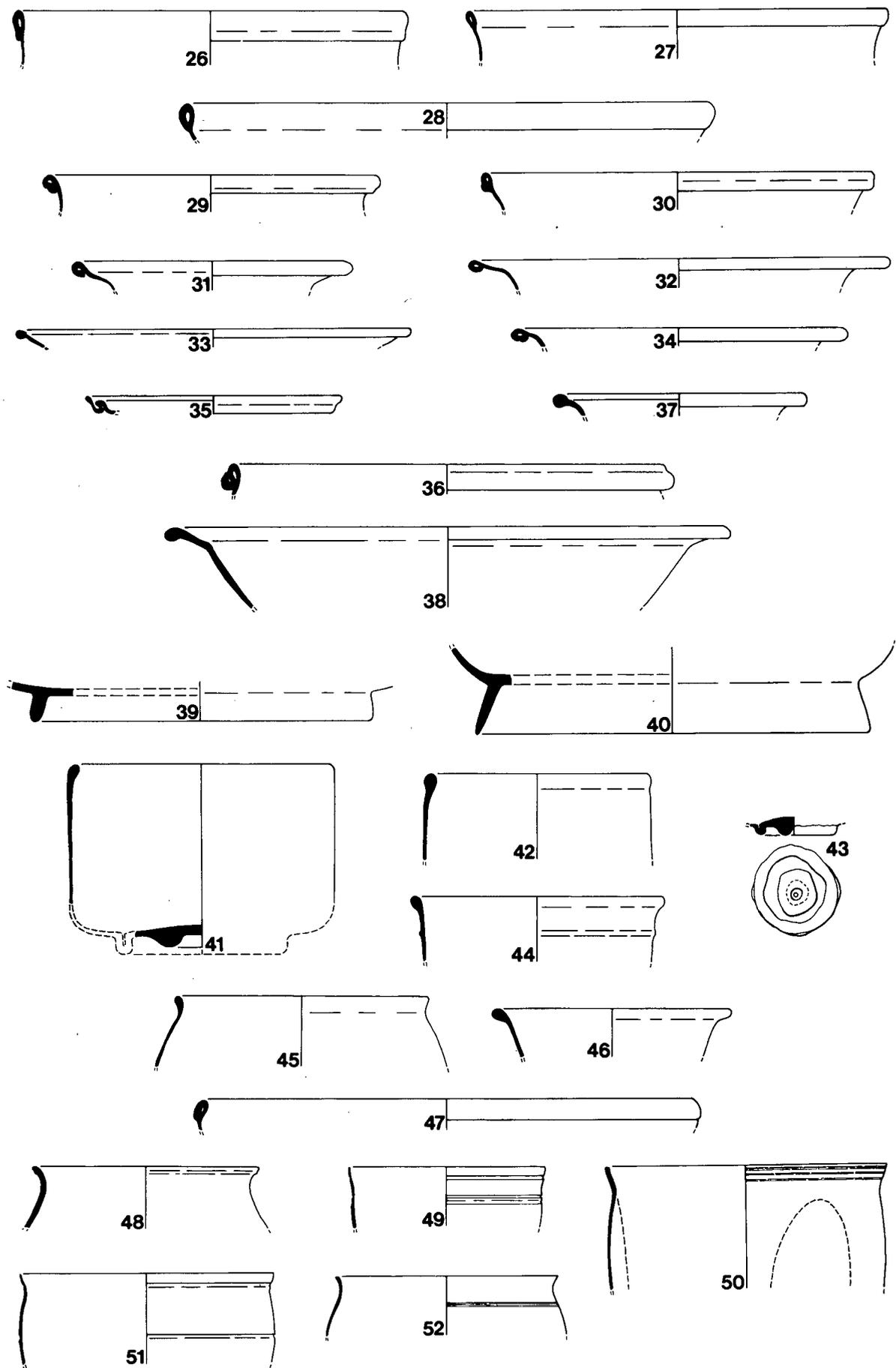


FIG. 110. Glass nos 26-52: bowls, beakers, cups and plates. Scale 1:2.

49. 009/SG35 Rim fragment of a cup of colourless glass. Rim outflared slightly and ground smooth; one horizontal wheel-cut line immediately beneath rim, two more further down side. Diameter of rim *c.* 70mm.
50. 838/SG124 Two joining rim and body fragments of a cup or beaker of colourless glass. Rim outflared and ground smooth, with two faint horizontal wheel-incised lines immediately beneath, another broader band further down side. Part of one oval indent extant in body wall. Diameter of rim *c.* 100mm.
51. 834/SG125 Rim fragment of a bowl or cup of colourless glass; surfaces dulled. Rim outflared and ground smooth, one horizontal wheel-cut line beneath, another further down side. Diameter of rim *c.* 90mm.
52. 700/SG183 (369) Rim fragment of a cup or bowl of colourless glass. Rim outflared and ground smooth; horizontal wheel-incised band around upper body. Diameter of rim *c.* 80mm.
53. 611/SG182 Rim fragment of a cup of greenish-colourless glass. Vertical rim, broken off flat and ground smooth, with one faint horizontal wheel-incised line beneath. Diameter of rim *c.* 80mm.
54. 1031/SG144 Rim fragment of a cup of colourless glass. Vertical rim, broken off flat and ground smooth, with two faint horizontal wheel-incised lines beneath. Diameter of rim *c.* 80mm.
55. 809/SG120 Rim fragment of a bowl or cup of colourless glass. Vertical rim, broken off flat and ground smooth, with one faint horizontal wheel-incised line beneath. Diameter of rim *c.* 120mm.
56. 903/SG137 Rim fragment of a cup of colourless glass. Vertical rim, broken off flat and ground smooth; one horizontal wheel-incised line beneath rim, another band of five lines further down side. Diameter of rim *c.* 80mm.
57. 2045/SG81 Rim fragment of a cup of colourless glass; surfaces dulled. Vertical rim, broken off flat and ground smooth, with band of faint horizontal wheel-incised lines beneath. Diameter of rim *c.* 80mm.
58. 192/SG9 Rim fragment of a plate of colourless glass. Flaring rim, ground smooth, with one horizontal hollow-ground ridge immediately beneath, another further down on underside. Diameter large but indeterminable.

Decorated body fragments: colourless (FIG. 111)

Excavations at Caerleon have produced some extremely fine examples of colourless glass decorated with facet- and figure-cutting, and this assemblage is no exception. There are two fragments, probably from the same vessel (no. 59) which bear deep oval facets, and another fragment (no. 60), which is decorated with rows of long, narrow cut ovals. Both are typically Roman in style, and probably belong to cups or bowls of the 2nd or 3rd centuries.

The decoration on no. 61 is more complex, with a combination of long shallow facets and curvilinear engraved lines. It can be identified as belonging to a group of glasses with figured scenes formed by facet-cutting, with engraved details. Three examples of such glass have been found at Caerleon, each from different chronological groups. The earliest is a cup with a chariot-racing scene, probably of Flavian date, found in the amphitheatre (Wheeler and Wheeler 1928, 170, no. 1; Boon 1967b, 98, fig. 3). The second fragment is a bowl rim found in a context of A.D. 130–230 in the excavations on the area of the civil settlement to the west of the fortress (Boon 1968, 83, fig. 6). This belongs to a close-knit group discussed by Fremersdorf (1951), probably made in Cologne during the late 2nd or early 3rd century. The third group of fragments has been reconstructed as a flask (Boon 1968, figs 1–3 and 5), and came from a late 3rd or 4th century context in the civil settlement west of the fortress. Stylistically this new fragment seems most akin to the third of these vessels, but with such a small piece it is impossible to be certain of its affinities.

Fragment no. 62 is decorated with linear-cutting. It is perhaps most likely to represent further examples of beakers and cups, but may be from a cylindrical bottle or flask. Colourless wheel-cut examples were made in a variety of forms during the later 2nd to 4th centuries.

There are two small fragments of colourless glass with snake-thread trails: no. 63 has colourless trails with characteristic cross-hatching, and no. 64 has a trail of opaque blue glass. Vessels of this decorative group were made in great variety in the Rhineland during the late 2nd and early 3rd centuries (cf. Harden 1987, 105–7 and 125–39, nos 56–67). Fragments occur quite frequently on British sites, and several have numbered amongst previous finds from Caerleon (civil settlement west of the fortress, context dated *c.* A.D. 130–230 unpublished; Allen 1986, 108–11, nos 59–60c, dated A.D. 160–230; Zienkiewicz 1992b, 7–8, no. 24, fig. 2, dated *c.* A.D. 200).

Another type of decorative technique is illustrated by fragments 65–6, all of which have tooled ribbing. No. 65 has been pinched into a high rib with pronounced nipple, and may belong to a group of cups discussed by Cool (1990b). These are hemispherical, with fire-rounded out-turned rims, and pinched-up or

tooled-up decoration below, in the form of ribs, lugs and nipples. She sees these as the commonest form of drinking vessel during the second half of the 3rd century.

Nipped-together ribs, as on no. 66, occur on a number of vessel forms during the 3rd and 4th centuries. No. 66 itself is most likely to have come from a hemispherical cup. Two similar rim fragments were found in excavations to the west of the fortress at Caerleon, one dated A.D. 130–230, the other late 3rd century (unpublished).

59. 007/SG35 Two body fragments, probably from the same vessel, of colourless glass. The larger bears part of two separate oval wheel-cut facets, the smaller part of two conjoining oval facets. Diameter of vessel *c.* 90mm.
60. 2429/SG168 (2742) Body fragment of colourless glass. Part of two alternating rows of sloping, shallow thin oval wheel-cut facets extant. The fragment apparently shows change of angle of side, probably just above base. Diameter of vessel at this point *c.* 90mm.
61. 2095/SG84 (2153) Flat fragment of colourless glass; on one side is part of a design made up of long, shallow, wheel-cut facets and curvilinear engraved lines. Dimensions of vessel indeterminable.
62. 957/SG35 Body fragment from an apparently cylindrical vessel of colourless glass. Band of seven faint horizontal wheel-incised lines extant. Diameter of vessel *c.* 100mm. Five similar fragments were noted.
63. 3086/SG159 (3193) Body fragment of a vessel, probably a beaker, of colourless glass. Applied self-coloured, curvilinear cross-hatched trail on outer surface. Diameter of vessel *c.* 50mm.
64. 700/SG183 (281) Body fragment of colourless glass, with fine, slightly curving applied trail of opaque blue glass. Dimensions of vessel indeterminable.
65. 2033/SG83 Body fragment of colourless glass; part of a short, pinched-up rib extant, with prominent nipple. Dimensions of vessel indeterminable.
66. 932/SG143 (907) Body fragment of colourless glass, now cloudy and opaque, surfaces dulled. Two vertical nipped-together optic-blown ribs extant on outer surface. Diameter of vessel *c.* 70mm. Another similar fragment was noted.

Base fragments (FIG. 111)

Catalogued and listed in this section are base fragments from fifteen blue-green vessels and nine colourless vessels. Most are likely to represent drinking vessels, in the form of cups, beakers or goblets. The majority are formed by folding a base-ring in the vessel wall, but there is one applied 'true ring' (no. 75) which may come from a bowl with tubular rim of the type discussed with reference to nos 26–8 above. In addition the colourless bases include one with applied coil base-ring (no. 80) and two with blown pad bases (nos 81–2). These are most likely to belong to the 2nd or 3rd centuries.

Nos 70, 71 and 78 have all been carefully grozed, that is, the broken remains of the vessel walls have been chipped and smoothed away, presumably to allow the disc of the base-ring to be reused. This is commonly seen in the Roman period, and the usual suggestion is that the discs were used as gaming pieces or counters. This explanation is less likely in the case of no. 71, which would originally have been a high base-ring. The intention may have been to produce a shallow dish of some sort from the broken base of another vessel. A complete example of a base reused as a dish occurred in a burial group from Colchester (May 1930, 445, pl. 8).

Blue-green (FIG. 111)

67. 3024/SG18 Base fragment of a vessel of blue-green glass. Pushed-in tubular base-ring, diameter *c.* 45mm; centre base rises toward slight dome, with circular ridge and pontil mark on underside. Four similar fragments were noted.
68. 451/SG29 Base fragment of blue-green glass. Slightly irregular pushed-in tubular base-ring, splayed out sideways; diameter *c.* 70mm. Another similar fragment was noted.
69. 1293/SG106 Base fragment of blue-green glass. Pushed-in tubular base-ring, diameter *c.* 60mm, central base rises to high dome.
70. 002/unstratified (1478) Base fragment of blue-green glass. Pushed-in tubular base-ring, splayed out sideways, diameter *c.* 60mm. Broken edges of vessel wall have been chipped away leaving a smooth surface, presumably so that the complete base-ring could be reused.
71. 957/SG35 (1019) Three fragments from the base of a vessel of blue-green glass. Upper part of a high tubular base-ring extant, formed by blowing a second bulb beneath the vessel body, and pushing the lower part up inside itself. The point where the vessel wall joins the base has been carefully chipped and rubbed smooth around its circumference, presumably so that the complete base-ring could be reused. Diameter of vessel at smoothed edge *c.* 55mm.

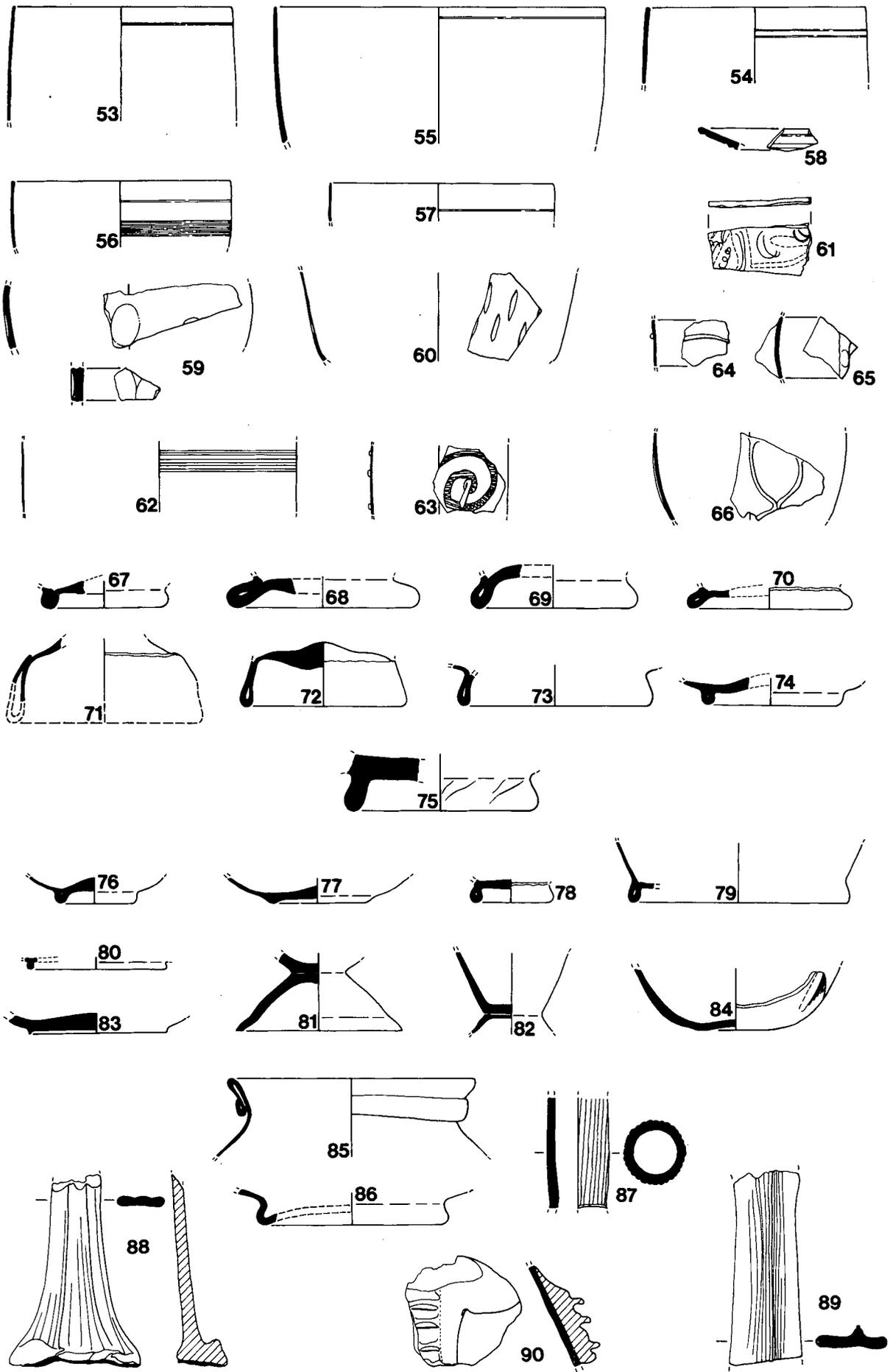


FIG. 111. Glass nos 53-90: bowls, beakers, cups and plates; base fragments; globular ribbed jars and long-necked jugs. Scale 1:2.

72. 302 and 402/both unstratified Two joining fragments from the base of a vessel of blue-green glass. High tubular base-ring, formed as no. 71 above; central base thickened above and below, with a pontil mark on the underside. Diameter of base-ring *c.* 60mm.
73. 852/SG123 Base fragment of blue-green glass; tubular base-ring, diameter *c.* 70mm.
74. 003/unstratified Base fragment of blue-green glass; applied coil base-ring, diameter *c.* 50mm, pontil mark on central underside of base. Another similar fragment was noted.
75. 2469/SG59 Base fragment of blue-green glass; applied solid base-ring, with diagonal tool-marks visible on outer surface, where it has been attached to underside of vessel body. Diameter of base-ring *c.* 70mm.

Colourless (FIG. 111)

76. 2001/unstratified (2013) Base fragment of a vessel of colourless glass; pushed-in solid base-ring, diameter 29mm, central pontil mark on underside.
77. 911/SG29 Base fragment of colourless glass. Shallow base-ring formed from a thickening of the vessel underside; central base rises to low dome, with pontil mark off-centre on underside. Diameter of base-ring *c.* 40mm.
78. 831/SG124 (615) Base fragment of colourless glass. Pushed-in tubular base-ring, diameter *c.* 30mm, central pontil mark on underside of base. Broken vessel walls have been carefully chipped away around base-ring, presumably to enable it to be reused.
79. 927/SG53 Base fragment of greenish-colourless glass. Pushed-in tubular base-ring, diameter *c.* 80mm.
80. 2111/SG93 Base fragment of colourless glass; fine applied coil base-ring, diameter *c.* 50mm.
81. 002/unstratified (799) Base fragment of colourless glass; surfaces dulled. Applied pad base, made by blowing a bulb from another paraison and applying it to the underside of vessel body. Base edge cut off flat and ground smooth, diameter *c.* 60mm.
82. 2179/SG72 Base fragment of colourless glass. Lower part of truncated-conical body extant, with blown pad base applied to underside. Edge of base missing; diameter at lower broken edge *c.* 30mm.
83. 2001/unstratified Base fragment of colourless glass; flattened base, outer surface rotary-ground, with fine, shallow, hollow-ground base-ring, diameter *c.* 50mm.
84. 3048/SG155 Base fragment of greenish-colourless glass. Base flattened and very slightly concave; part of two vertical optic-blown ribs extant on lower body. Diameter of base *c.* 30mm.

Globular ribbed jars and long-necked jugs (FIG. 111)

Finds representing this general group of vessels occur very frequently in contexts of the second half of the 1st and earlier 2nd centuries throughout Britain. Catalogued here is a jar rim (no. 85), four jug fragments (nos 87–90: another fifteen, mostly handles were also noted), and one base fragment which may be from either a jar or a jug (no. 86). Most are blue-green, but there is one each of yellow-green, amber and dark brown, all colours commonly used for vessels of this type (Price 1978, 74). Many examples have come from previous excavations at Caerleon (e.g. Zienkiewicz 1992b, 5–6, no. 13, fig. 1).

Blue-green and coloured (FIG. 111)

85. 2389/SG72 Rim fragment of a jar of blue-green glass. Uneven rim, folded inward and downward, then outward and downward, forming concave collar. Diameter of rim *c.* 90mm. Two other similar fragments were noted.
86. 611/SG182 Base fragment of a globular jar or jug of blue-green glass. Pushed-in open base-ring, diameter *c.* 70mm.
87. 1450/SG8 (1288) Neck fragment of a jug of yellow-green glass. Long cylindrical neck with slight constriction at its base; vertical optic-blown ribs along its surviving length. Diameter of neck 21mm. Two other similar fragments were noted.
88. 3500/unstratified (3503) Fragment of a handle of blue-green glass: straight, three-ribbed, expanding into three (broken) claws at shoulder. Angle of shoulder suggests a bulbous or globular body. Width of handle *c.* 17mm. Two other similar fragments were noted.
89. 001/unstratified Handle fragment of amber glass: straight, flat-sectioned, with pronounced raised central rib. Width *c.* 25mm. Eight similar fragments were noted, including one in dark brown glass.
90. 600/SG183 Lower handle fragment of blue-green glass. Central raised rib of handle has been extended in pincer tail gripping shoulder of jug. Angle of shoulder suggests that jug body was conical. Three other similar fragments were noted, including one in dark brown glass.

Handle fragments (FIG. 112)

A further six blue-green and one colourless handle fragment have been catalogued (nos 91–7), most of which are not sufficiently diagnostic to allow close identification. No. 91 may come from a spouted jug with high arching handle, like examples from Cologne (Fremersdorf 1958, 25, pl. 15) and Trier (Goethert-Polaschek 1977, 198, form 116c, no. 1226, pl. 60). There is another very fine complete vessel from a late 1st or early 2nd century burial group at Colchester (May 1930, 451, pl. 17).

Blue-green (FIG. 112)

91. 001/unstratified Lower handle fragment of blue-green glass: apparently curved handle, with at least three decorative pinches. Maximum width 18mm.
92. 2001/unstratified (2719) Lower handle fragment of blue-green glass: narrow, rounded D-sectioned handle, expanded and pinched twice at shoulder. Broken vessel edges still adhering at shoulder have been carefully ground smooth, presumably to allow reuse of handle, or part of handle. Width of handle 90mm.
93. 003/unstratified Lower handle fragment of bubbly blue-green glass: narrow, oval-sectioned handle, with expanded lower attachment fitting into angle between neck and shoulder of vessel. Diameter of neck *c.* 20mm, width of handle 60mm.
94. 2005/SG168 Upper handle fragment of blue-green glass: rim attachment, folded over and pinched once above rim. Handle itself appears to be flat-sectioned, width 11mm. Part of rim still adhering: folded inward and downward and slightly outflared.
95. 191/unstratified (north-south road) Upper handle fragment of blue-green glass: rim attachment of a flat-sectioned handle, width 16mm. Part of rim still adhering: folded outward, upward and inward.
96. 903/SG137 Upper part of a handle of blue-green glass: rim attachment, comprising a thickening of a D-sectioned handle. Part of rim still adhering: folded outward, upward and inward. Width of handle 19mm.

Colourless (FIG. 112)

97. 2037/SG82 Lower handle fragment of colourless glass: flat-sectioned handle, widening slightly where it is attached to vessel shoulder. Width of handle 15mm.

Jugs, flasks and unguent bottles (FIG. 112)

Unlike the items of tableware catalogued and listed above, many of the vessels in this and subsequent categories would have been used primarily as containers, and traded for their contents.

There are eight jug, flask or unguent bottle rims of blue-green glass (nos 98–105), none of them sufficiently diagnostic to identify closely, but showing some of the variety in shape and finishing techniques used by the Romans. No. 104 and a similar, uncatalogued, fragment both have a self-coloured spiral trail around the neck. This was a common decorative device for both blue-green and colourless vessels (see nos 114–15 below).

No. 106 is a fragmentary, very poorly-made flask. The glass is bubbly and full of impurities, the rim is crudely finished, and the shape is simple and undecorated. It is often tempting to describe such vessels as locally-made copies of imported forms, but this need not necessarily be the case. It is probably of 3rd to 4th century date.

Two fragments of small bath-flasks (nos 107, 108) were catalogued; a third, similar to no. 107, was noted. Very many examples of vessels like these were found in the drains of the legionary bath-house at Caerleon, most of them in a deposit of A.D. 160–230 (Allen 1986, 104–6, nos 32–42, fig. 41).

The olive-green colour and bubbly metal of no. 109, together with its decorative spiral trail, suggest that it is of later Roman date, but closer identification is not possible.

Six colourless jug or flask rims have been catalogued (nos 110–15). One, no. 110, has been pulled up to form a spout — insufficient remains to tell whether this was opposite or at right-angles to the handle. Both forms were quite common during the 2nd and 3rd centuries. Two, nos 114–15, have decorative spiral trails around their necks, particularly popular from the late 2nd to the 4th centuries.

Blue-green and coloured (FIG. 112)

98. 2113/SG76 Fragment of blue-green glass, probably from a jug shoulder: body wall has been folded twice to form a horizontal ridge, diameter indeterminable.
99. 3500/unstratified Rim fragment of a jug or flask of blue-green glass. Rim folded inward and downward, then outward and downward, diameter *c.* 20mm.

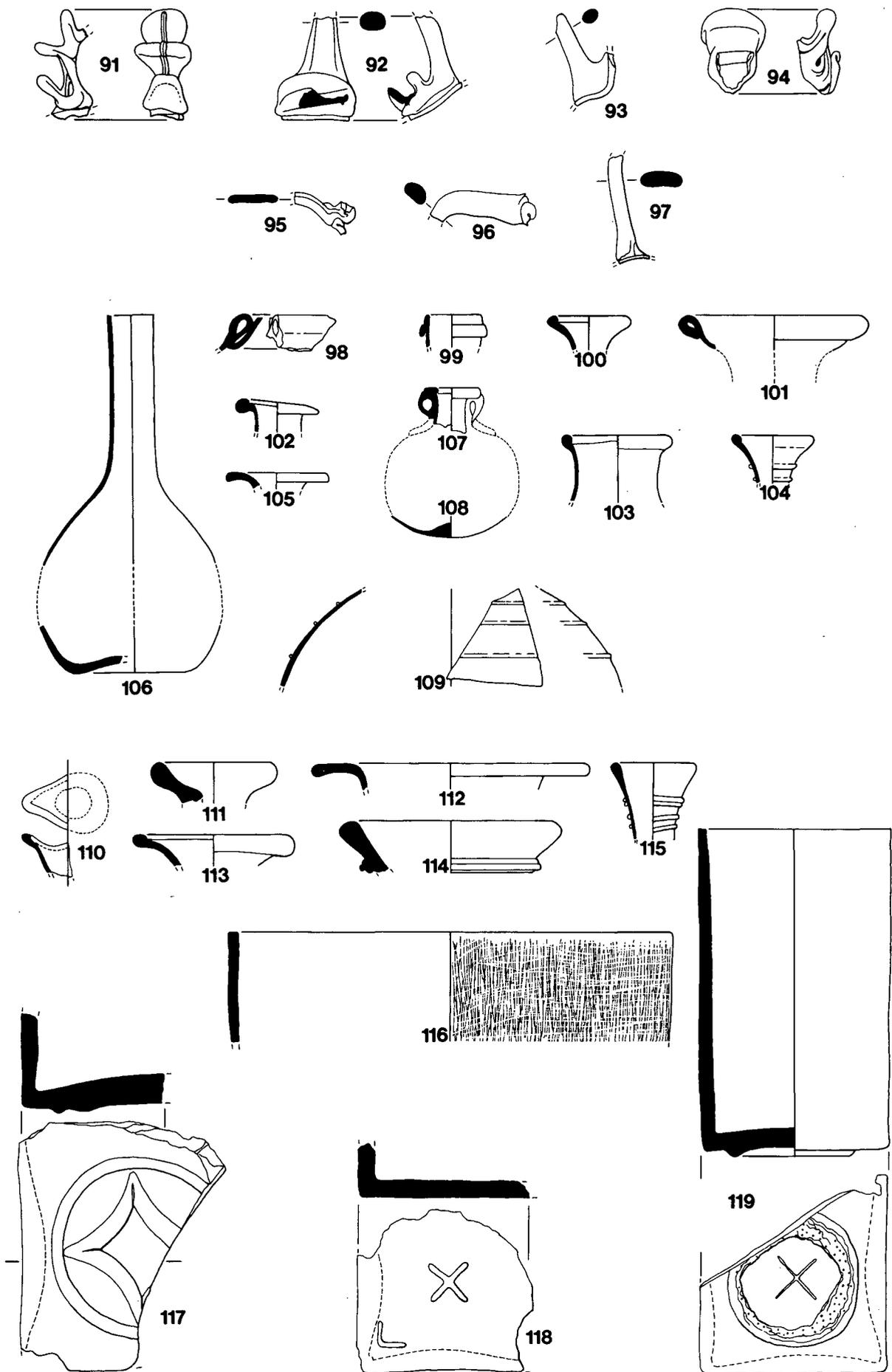


FIG. 112. Glass nos 91–119: handles; jugs, flasks and unguent bottles; bottles. Scale 1:2.

100. 2367/SG86 Rim fragment of an unguent bottle or flask of blue-green glass. Rim outflared and folded upward and inward, diameter *c.* 30mm.
101. 600/SG183 Rim fragment of a flask or jug of blue-green glass. Rim outflared and folded outward, downward and inward, diameter *c.* 70mm.
102. 3047/SG155 Rim fragment of a jug or flask of blue-green glass. Irregular rim, outflared and folded outward, upward and inward. Dimensions 30 × 34mm.
103. 2002/unstratified Rim fragment of a flask of bubbly blue-green glass. Irregular rim, outflared and folded upward and inward, diameter *c.* 40mm.
104. 016/unstratified Rim fragment of a jug or flask of blue-green glass. Rim outflared and folded inward and downward, diameter *c.* 30mm; two strands of a self-coloured spiral trail extant around neck. Another similar fragment was noted.
105. 191/unstratified (north-south road) Rim fragment of a flask of blue-green glass. Rim fire-rounded and turned outward to form horizontal lip, diameter *c.* 35mm.
106. 1229/SG54 (1149) Fragmentary flask of extremely poor quality blue-green glass: very bubbly, with many large black impurities. Vertical rim, broken off flat; cylindrical neck, curving smoothly into bulbous body; base slightly concave. Diameter of rim 17mm; maximum body diameter *c.* 65mm.
107. 3001/unstratified (3025) Rim fragment of a bath-flask of blue-green glass. Rim folded outward, upward and inward and flattened, diameter 20mm; short cylindrical neck with two thin 'dolphin' handles attached beneath rim. Another similar fragment was noted.
108. 1027/SG145 Base fragment, almost certainly from a bath-flask, of blue-green glass. Rounded base, with thickened dome at inside centre, and pontil mark on central underside.
109. 2355/SG96 and 2367/SG86 Two body fragments of a jug or flask of bubbly dark olive-green glass. Globular body, with remains of at least three strands of a fine, applied self-coloured spiral trail. Maximum surviving body diameter *c.* 120mm.

Colourless (FIG. 112)

110. 2005/SG168 Rim fragment of a jug of greenish-colourless glass. Rim folded inward and downward, and pulled upward into a pointed spout. Width of rim across unspouted side *c.* 20mm.
111. 2459/SG168 Rim fragment of a flask of colourless glass. Rim outflared and folded inward and downward so that only a narrow mouth opening remains. Diameter of rim *c.* 45mm; diameter of opening *c.* 10mm.
112. 957/SG35 Rim fragment of a flask or jar of colourless glass. Rim fire-rounded and thickened, and turned outward to form broad horizontal lip, diameter *c.* 100mm.
113. 2156/SG206 Two joining rim fragments of a flask or jug of colourless glass; surfaces dulled and streaky. Rim outflared, fire-rounded, and partially turned upward and inward, diameter 58mm.
114. 1027/SG145 Rim fragment of a flask, jug or bottle of colourless glass; surfaces dulled. Rim outflared and fire-rounded, with applied horizontal, self-coloured trail beneath. Diameter of rim *c.* 80mm.
115. 2389/SG72 (2303) Rim fragment of a flask of colourless glass. Rim outflared slightly and fire-rounded and thickened; applied self-coloured spiral trail wrapped at least seven times around neck (two lowest strands survive only as scars on outer surface). Diameter of rim 30mm.

Bottles (FIGS 112, 113)

Approximately half the assemblage comprises blue-green mould-blown bottle fragments. The breakdown by body shape is as follows:

- 333 fragments of prismatic bottles (of which 71 were square, 1 hexagonal)
- 34 fragments of cylindrical bottles
- 131 fragments of indeterminate body shape (rims, necks, shoulders, handles)
- 498 total

The square bottles were the longest-lived, spanning the second half of the 1st and the 2nd centuries A.D., and they therefore tend to dominate assemblages which extend beyond the 1st century. Many of the prismatic bottle fragments whose exact body shape cannot be determined are likely to have come from vessels of this form.

Hexagonal bottles were much less common, and had a shorter date range of late 1st century to the second quarter of the 2nd.

Cylindrical bottles often dominate 1st century assemblages, since they were common during the second half of that century. However, their manufacture ceased during the first quarter of the 2nd century, and thereafter square bottles dominated the market.

Fragment no. 116 is a particularly interesting lower body fragment of a cylindrical bottle. It has vertical scratches which are characteristic of vessels of this type, presumably caused by storage in compartmented crates (Boon 1967b, 95). However, the upper edge of the piece shows that it has been broken off flat and ground smooth, suggesting that after the bottle had broken, the lower part was adapted for reuse as some form of bowl- or cup-like container. Reuse of broken parts of glass vessels was quite common in Roman times (cf. discussion of nos 70, 71 and 78 above).

The moulded basal designs on prismatic bottles occur in great variety, and almost certainly served as trademarks. A range of common geometric patterns can be seen on nos 117–24.

The blue-green bottles of the first two centuries A.D. were replaced during the 3rd and 4th centuries by a range of glass containers, but they were never anything like as common as the earlier vessels. This is reflected in this assemblage, where later Roman bottle fragments number only six.

No. 125 probably represents one of the mould-blown barrel-shaped bottles often called 'Frontinus bottles' after their most prolific maker. Their manufacturing centre was in northwestern Gaul, and some date from the 2nd century, although most belong to the 3rd and 4th centuries (Chaussaing 1961). Several complete examples have been found in Britain (e.g. CAT 1978, 1 and 3 from Butt Road, Colchester), and there has been at least one fragment from previous excavations at Caerleon (NMW accn no. 39.386 from Myrtle Cottage barracks site).

Three further fragments (nos 126, 126A, 127) come from colourless bottles of later Roman type. No. 126 has a multi-ribbed handle and cylindrical body decorated with bands of wheel-incised lines; 126A is a similar handle fragment. Such vessels were common during the 3rd and 4th centuries (Isings 1957, forms 126 or 127). No. 127 is part of a 'dolphin' handle used on vessels of the same period (Isings 1957, form 100).

Blue-green (FIGS 112, 113)

116. 601/SG182 (1438) Body fragment of a cylindrical bottle of blue-green glass. Vertical scratches visible on outer surface. Upper edge of fragment has been broken off flat and ground smooth — presumably this continued around full circumference of bottle body, to allow reuse, perhaps as a bowl. Diameter of 'rim' *c.* 160mm.
117. 1460/unstratified (1277) Base fragment of a square bottle of blue-green glass. Moulded basal design comprising a concave-sided diamond surrounded by a circle. Width of sides 85mm.
118. 2429/SG168 (2739) Base fragment of a square bottle of blue-green glass. Moulded basal design, in very low relief, comprising a central diagonal cross, and a right-angle extant in one corner. Width of sides *c.* 64mm.
119. 1450/SG8 (1432) Body and base fragment of a tall square bottle of blue-green glass. Moulded basal design comprising a circle with a clearly-defined outer edge, but an uneven and irregular inner edge. A faint central diagonal cross reveals how the design was originally marked out. Height surviving 111mm; width of sides 68mm.
120. 2100/SG94 Base fragment of a square bottle of blue-green glass. Moulded basal design comprising two concentric circles with a central dot. Width of sides 56mm.
121. 600/SG183 (232) Base fragment of a square bottle of blue-green glass. Moulded basal design comprising a circle with central bow-motif. Width of sides *c.* 70mm.
122. 600/SG183 Base fragment of a square bottle of blue-green glass. Moulded basal design in low relief, comprising a square surrounding a series of semi-circles, quadrants and probably a central circle. Width of sides *c.* 90mm.
123. 2095/SG84 Base fragment of a square bottle of blue-green glass. Moulded basal design comprising at least one circle surrounded by a square. Dimensions of vessel indeterminable.
124. 809/SG120 Base fragment of a prismatic bottle of blue-green glass. Badly chipped, but remains of basal design suggest it was originally spoked wheel, or sun-ray motif. Dimensions of vessel indeterminable.
125. 928/SG53 Body fragment, probably of a mould-blown barrel-shaped bottle, of blue-green glass. Part of three horizontal corrugations extant. Diameter of body *c.* 60mm. Two other similar fragments were noted.

Colourless (FIG. 113)

126. 1481/SG4 (1402) Rim, neck, handle and upper body fragments of a bottle of greenish-colourless glass. Rim fire-rounded and thickened and folded outward, downward, outward, upward and outward, forming a horizontal ridge. Neck is cylindrical; handle is angular and multi-ribbed. Cylindrical body, with evidence of five bands of horizontal wheel-incised lines around upper part — presumably these continued further down. Diameter of rim 85mm; diameter of body 108mm.

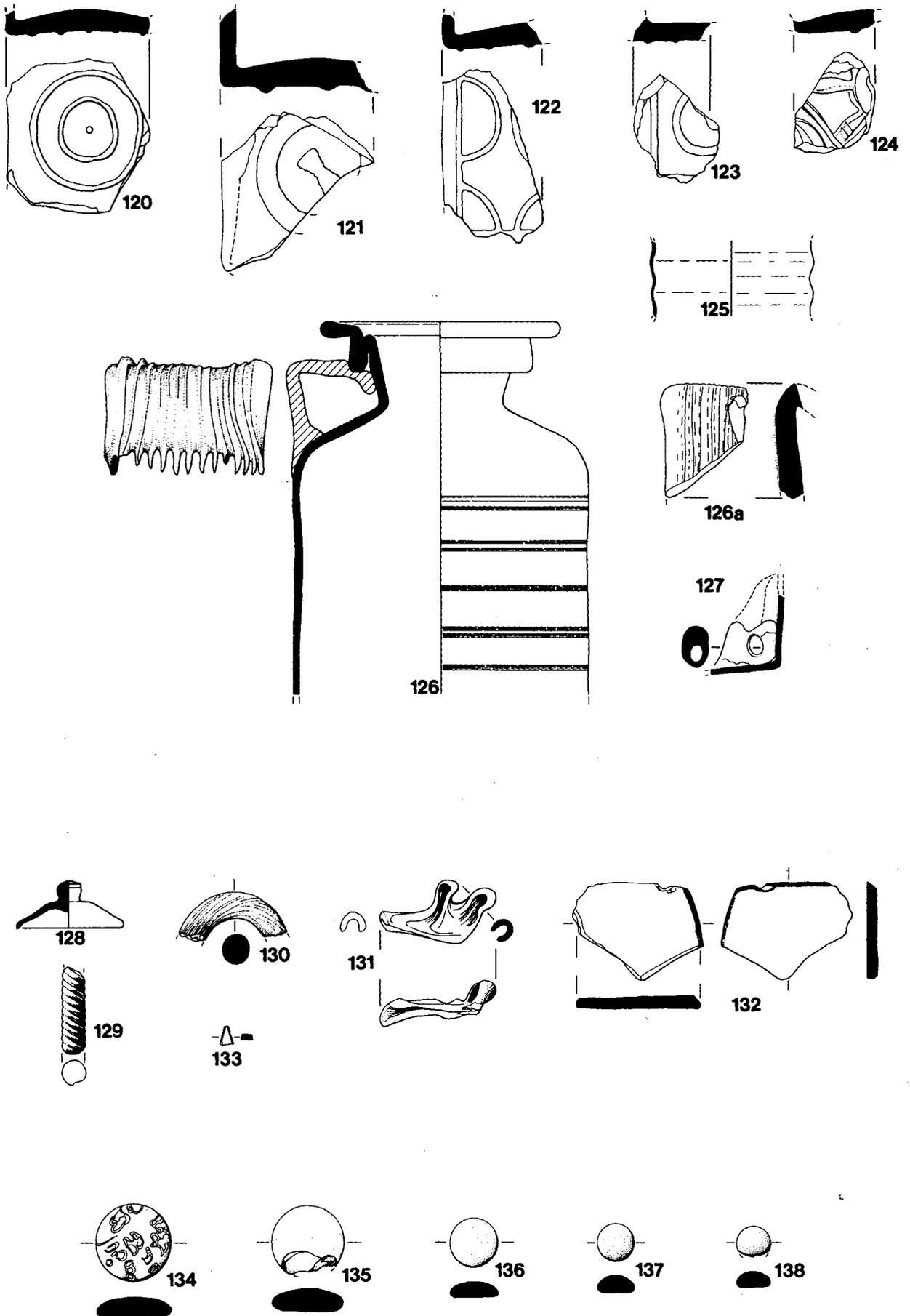


FIG. 113. Glass nos 120-38: bottles, miscellaneous objects, counters. Scale 1:2.

- 126a. 667/SG181 Handle fragment of a bottle of colourless glass: flat, multi-ribbed, angular handle; original width indeterminable. Another neck fragment similar to 126 and 126a was noted.
127. 2002/unstratified Very crumbled neck and handle fragment of a bottle of colourless glass. Cylindrical neck with constriction at its base; partly hollow 'dolphin'-shaped handle. Diameter of neck at constriction *c.* 20mm.

Glass objects

A motley collection of glass objects is included in the catalogue. It comprises part of what was probably a small domed lid (no. 128), a fragment of a twisted stirring rod (no. 129), a fragment of a solid glass ring, too small to be a bangle (no. 130), part of a strange branching object (no. 131), a prismatic bottle fragment with bevelled edges (no. 132) and a possible tessera of turquoise glass (no. 133). The way in which some of these were used is now a mystery, and those objects which can be surmised, such as the lid, stirring rods and tessera, cannot be closely dated.

Also catalogued are five complete or fragmentary plano-convex discs (nos 134–8), which would have been used as counters or gaming pieces: fifteen were noted altogether. The commonest colours for these were black (as no. 136 and nine similar, uncatalogued, examples) and opaque white (as no. 137 and another uncatalogued example). More unusual are the examples here of amber glass (no. 135), opaque turquoise (no. 138), and dark green with faint yellow rings within (no. 134). This latter has almost certainly been made from a piece of mid 1st century polychrome cast and ground vessel. Such reuse can be paralleled by a marbled pillar-moulded bowl fragment from Traprain Law which was heated and refashioned into a bangle (Stevenson 1954–6, 216)

Miscellaneous objects (FIG. 113)

128. 2429/SG168 (2716) Fragment of a probable lid of greenish-colourless glass; many pinhead bubbles within the metal. Low domed lid, edge fire-rounded; thickened at centre, with applied knob on upper side. The knob has traces of a broken edge all around it near the top. Diameter *c.* 40mm.
129. 2086/SG94 (2279) Fragment of a spirally twisted solid rod of blue-green glass. Diameter 8mm; surviving length 30mm. Another similar fragment was noted.
130. 3079/SG18 (3153) Fragment of a solid glass ring of yellow-green glass. Circular cross-section, with faint, slightly spiralling corrugations. Outer diameter of ring *c.* 40mm; diameter of cross-section *c.* 10mm.
131. 2043/SG81 (2893) Piece of blue-green glass, folded double and pulled into two curved branches with hollow ends. A broken edge indicates that there may originally have been at least one more branch. Length surviving 42mm.
132. 812/SG112 (1475) Fragment of blue-green glass, almost certainly originally a prismatic bottle fragment, on which two edges have been bevelled and ground smooth: one is slightly curved, with a single bevel, and this turns a rounded corner into an edge bevelled on two faces to form a point. Maximum length surviving 45mm.
133. 951/SG35 (831) Small chip of opaque turquoise glass, flat and roughly triangular; possibly a tessera or part of one. Maximum length 7mm.

Counters/gaming pieces (FIG. 113)

134. 3001/unstratified (3037) Plano-convex disc of dark green glass, with faint opaque yellow rings just visible within it. Diameter 27mm; height 6mm.
135. 1031/SG144 (924) Most of a plano-convex disc of amber glass. Diameter 26mm; height 6mm.
136. 001/unstratified (552) Plano-convex disc of very dark glass, appearing black. Surfaces pitted. Diameter 17mm; height 5mm.

Nine similar discs were noted, surviving either whole or in part.

137. 705/SG182 (384) Plano-convex disc of opaque white glass. Diameter 14mm; height 6mm. Part of another similar white disc was noted.
138. 2437/SG64 (2675) About three-quarters of a plano-convex disc of opaque turquoise glass. Irregular striations on underside. Diameter 12mm; height 6mm.

Beads (FIG. 114)

Twenty individual beads of glass and glass paste have been catalogued out of a total of ninety-six noted. In addition there is what may have been a necklace of fourteen glass beads; a second necklace, of nine glass beads threaded on gold links, is discussed elsewhere (jewellery report, no. 63).

Earliest of the individual beads is no. 139, which belongs to Guido's Class 9A of natural translucent greenish glass beads with coloured cables (1978, 76–7, fig. 26). The earliest dated finds belong to the 1st century B.C., but several have come from Roman contexts of the 1st century A.D.

There are two complete or fragmentary melon beads, one of blue glass, and the other (with five similar examples) of turquoise faience (nos 140–1). These were very common during the 1st century A.D., becoming less so during the 2nd.

Six colourless glass beads enclosing gold foil were found, five of them (no. 142 and four similar examples) of the rounded segmented variety found previously at Caerleon and discussed elsewhere (Boon 1966a; Boon 1977b; Guido 1978, 93–4, type b, fig. 37, no. 3). They originated in the Near East and Egypt, but may have been copied elsewhere. Finds in Britain span the 2nd to 4th centuries. No. 143 is a bead made by the same technique, but with a longer, biconical, shape.

Three beads (no. 144 and two similar examples) can be identified as Guido's 'square-sectioned bead with band or chevron in opaque white with a red line in the centre' (1978, 98, fig. 37, no. 15). Most dated British finds belong to the 3rd and 4th centuries.

Nos 145 and 147 are round beads with a flat section (Guido 1978, 99, fig. 37, no. 17). These were made in a variety of colours, throughout the Roman period.

No. 146 is a bead of unusual shape, and may have acted as a spacer in a necklace.

The remainder are beads of common Roman shapes, as follows:

Three long, biconical beads, blue or green glass (no. 150 and two similar examples), most popular during the 2nd and 3rd centuries (Guido 1978, 98, fig. 37, no. 14).

Two small biconical beads, blue glass (no. 151 and a similar example), mostly late Roman in date (Guido 1978, 97, fig. 37, no. 11).

Twelve rounded and annular beads of various sizes and colours, common types (nos 148, 152 and eight similar examples, 153, 154).

One small green segmented bead (no. 155) of a type common from the 2nd to the 4th centuries (Guido 1978, 91–3, fig. 37, nos 1–2).

Three green cylindrical beads, common throughout the Roman period (Guido 1978, 95–6, fig. 37, no. 5).

Thirteen hexagonal-sectioned beads of green glass, one of blue, and one blue pentagonal-sectioned bead, common throughout the Roman period (Guido 1978, 96–7, fig. 37, nos 8 and 9).

Twenty-two small square-sectioned beads of blue glass, fourteen of green glass, one of turquoise glass. Very common, mostly dating from the 3rd and 4th centuries (Guido 1978, 96, fig. 37, no. 7).

The original shape of a further two fragments could not be identified.

139. 951/SG35 (1129) Large annular bead of blue-green glass, with marvered blue and white striped cable forming a wave pattern around widest point, bounded on each side by a marvered opaque white band. Worn and cracked, with several chips missing. Diameter 27mm; length 16mm.
140. 629/SG174 (1230) About half a melon bead of blue glass, six segments surviving. Diameter 26mm; length 15mm.
141. 815/SG116 (1013) Melon bead of turquoise faience, glaze almost entirely rubbed off. Roughly made, with oblique score-marks. Large chip missing. Diameter 13mm; length 10mm. Five similar melon beads in turquoise faience were noted, some represented only by fragments.
142. 812/SG112 (1189) Rounded segmented bead of colourless glass enclosing gold foil. Rough edges apparent around perforation where segment has been separated from its neighbours. Diameter 6mm; length 5mm. Six similar beads and a fragment of another were noted.
143. 102/unstratified (103) Long, biconical colourless glass bead enclosing gold foil. Maximum diameter 4mm; length 6mm.
144. 002/unstratified (757) Small square-sectioned bead with a chevron band of opaque white with a red line in the centre. Width 3mm; length 4mm. Two similar beads were noted.
145. 001/unstratified (147) Round bead with flat section, very dark purple glass, appearing black, with fine opaque white marvered lines. Diameter 13mm; height 4mm.
146. 002/unstratified (567) Fragment of a ?spacer bead of green glass. Rounded end extant, flat-sectioned with two fine perforations from one face to the other. Thickness 6mm.
147. 812/SG112 (1002) Round bead with flat section, opaque turquoise glass. Broken and mended. Diameter 8mm; length 7mm.
148. 551/unstratified (094) Fragment of an annular bead of pale green glass. Diameter c. 16mm; length 9mm.
149. 001/unstratified (1345) Biconical, hexagonal-sectioned bead of blue-green glass. Maximum diameter 9mm; length 19mm.

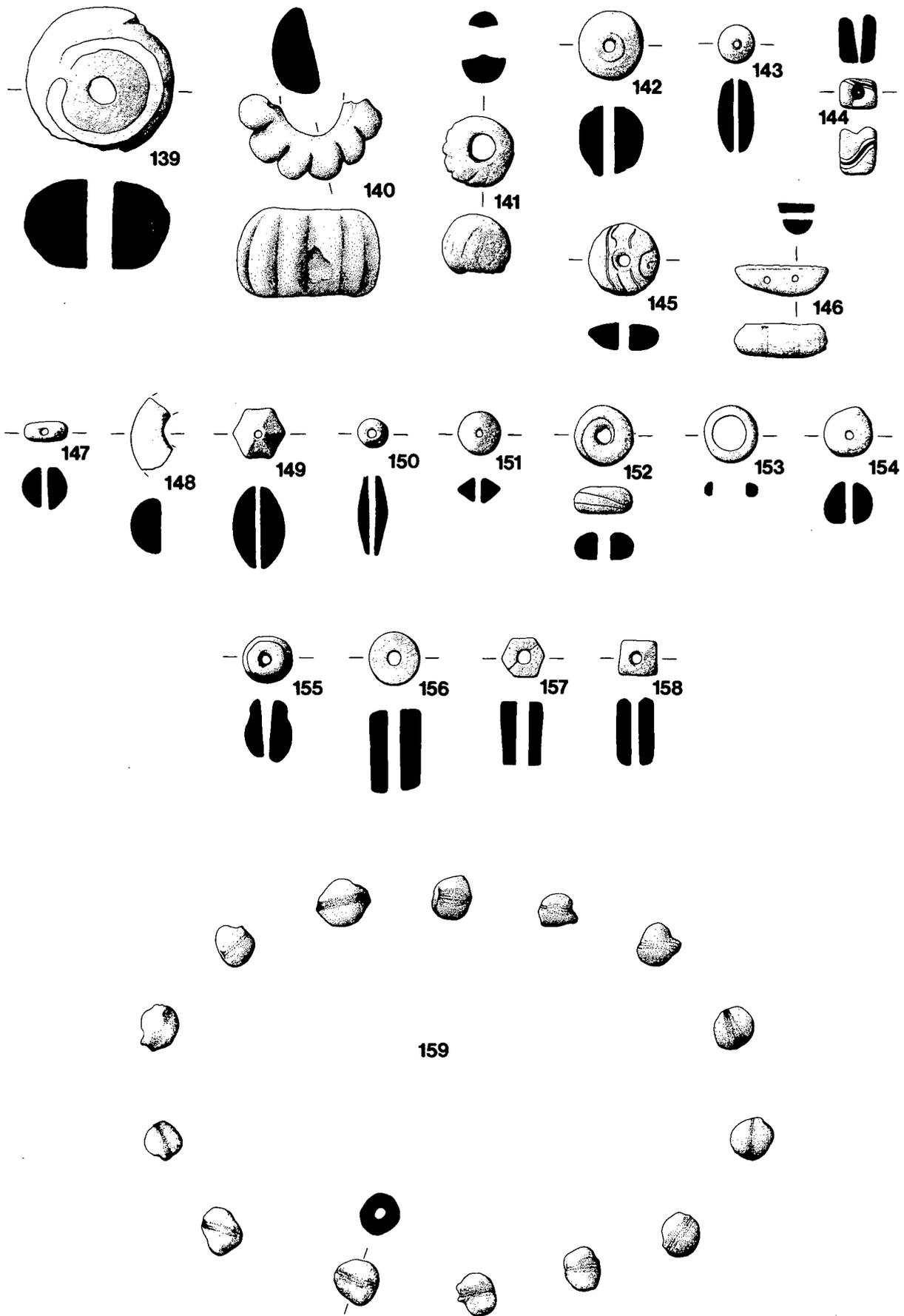


FIG. 114. Glass beads nos 139-59: nos 142, 143, 144, 155, 156, 158 scale 2:1; other items scale 1:1.

150. 948/SG133 (912) Long biconical bead of blue glass. Maximum diameter 5mm; length 14mm. A similar bead and a fragment of another were noted.
151. 302/unstratified (102) Biconical bead of blue glass. Maximum diameter 7mm; length 6mm. Another similar bead was noted.
152. 003/unstratified (656) Small annular bead of blue glass. Diameter 5mm; length 2mm. Eight similar beads were noted, some fragmentary.
153. 2373/SG66 (2391) Annular bead of pale amber glass. Diameter 10mm; length 2.5mm.
154. 3051/SG18 (3087) Globular bead of blue-green glass, irregularity on one side; diameter 8mm; length 7mm.
155. 3001/unstratified (3121) Fragment of a segmented bead of green glass; part of two segments extant. Diameter 4mm; length surviving 5mm.
156. 202/unstratified (081) Cylindrical bead of green glass. Diameter 4mm; length 7mm. Two other similar beads were noted.
157. 001/unstratified (662) Long, hexagonal-sectioned bead of green glass, maximum diameter 8mm; length 11mm. Fourteen similar beads were noted.
158. 252/unstratified (121) Small square-sectioned bead of blue glass. Width 3.5mm; length 5mm. Thirty-eight similar beads were noted.
159. [Ae 1.5.5] 1450/SG8 (1294) Fourteen sub-spherical transparent pale green-tinged glass beads from a necklace, now restrung on modern copper alloy wire. Originally discovered as a cluster with no apparent means of attachment.

<i>diameter</i>	<i>length</i>
7.1 × 8.5mm	8.1mm
7.4 × 7.3mm	7.5mm
6.7 × 7.6mm	6.7mm
7.8 × 8.9mm	6.3mm
6.0 × 6.8mm	7.7mm
6.8 × 7.8mm	7.8mm
7.2 × 7.7mm	7.3mm
6.6 × 6.9mm.	6.8mm
6.0 × 6.7mm	6.4mm
6.6 × 7.4mm	6.3mm
7.1 × 8.3mm	8.7mm
7.3 × 7.8mm	6.6mm
6.6 × 6.7mm	7.7mm
5.7 × 6.5mm	6.5mm

Compare the example from Lydney, Gloucestershire, with beads of white, blue, black and green from a context dated 'late in the 4th century' (Wheeler and Wheeler 1932, 86–7, fig. 20, no. 104); and the necklace from inhumation no. 328 at West Tenter Street, London E1, with alternating blue and green glass beads (Whytehead 1986, 95, fig. 39, no. 4); and a fragment from excavations at Whilton Lodge, Northamptonshire (Dix and Taylor 1988, 335, fig. 19.5).

Window glass (Not illustrated)

Two hundred and eighty-four fragments of window glass were found, all of the cast matt-glossy variety in use to about A.D. 300 (Boon 1966b). Most are blue-green in colour (238 fragments), but there are 32 colourless fragments and 14 of pale green glass. Forty-five of the fragments have characteristic thickened 'thumb' edges surviving, formed during the manufacture of the panes. In addition, eight fragments have grozed, or chipped edges, suggesting that they were reshaped after manufacture.

OBJECTS OF JET (FIG. 115) By Stephen Greep

Only six objects of jet were recovered from the excavations at Mill Street, all from the Riding School Field, and these were catalogued in 1992. This is in contrast to the relative abundance of objects of shale, to which such finds are often compared; jet objects are, however, rarely recovered from Caerleon and are uncommon throughout South Wales. At the Fortress Baths, Caerleon, for example, 24 shale objects (Zienkiewicz 1986b, 213–16; mainly bracelets) were recovered but finds of jet were entirely absent.

1. 317/SG189 (1453) Small, spherical bead. Diameter 9mm (cf. Lawson 1975, fig. 1, 2).
2. 007/SG35 (024) Cylindrical bead, decorated with longitudinal lines. Length 11mm.

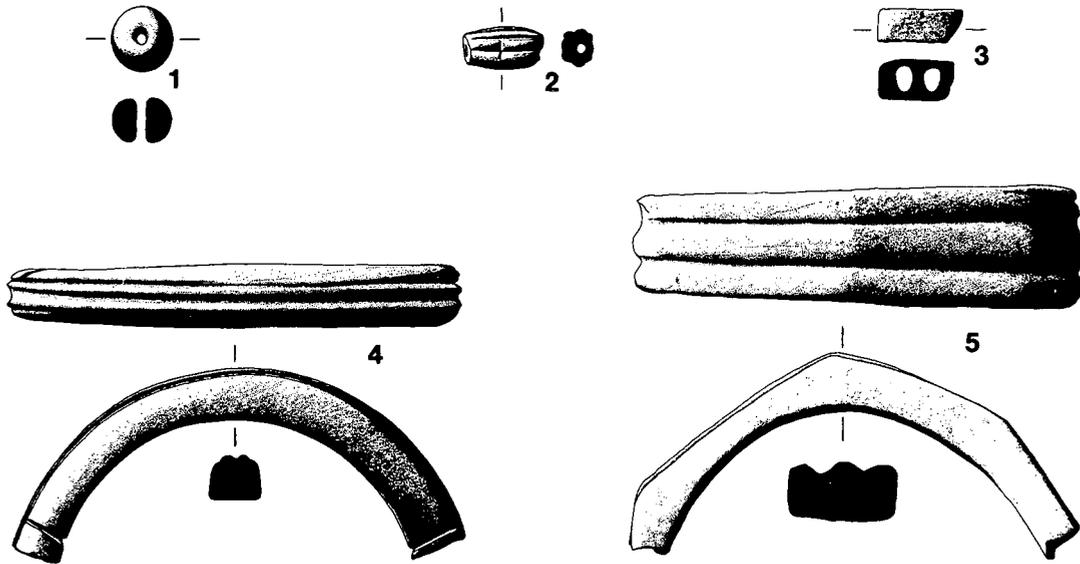


FIG. 115. Jet objects. Scale 1:1.

3. 007/SG35 (678) Sub-rectangular bead with two perforations. Chipped at one end, but otherwise complete. Length 11mm.
4. 827/SG118 (604) Sub-rectangular sectioned armlet decorated with two external ridges (e.g. Lawson 1975, fig. 5, 32). Diameter 50mm; thickness 7mm.
5. 805=831/SG124 (464) About half an armlet with rectangular section, oval internally, octagonal externally where it is decorated with three ridges (e.g. Lawson 1975, fig. 5, 44; Crummy 1983, fig. 38, 1568 noting parallels from the late 2nd–early 4th century).
6. 1452/SG54 (1249) Jet pin with a faceted head (e.g. Lawson 1975, 258); complete. Length 45mm. Now missing.

OBJECTS OF SHALE (FIGS 116, 117) By Stephen Greep

Fifty-one shale objects were recovered from the excavations and the report on them was completed in 1992. Not only is this an exceptionally large number of finds from any one site, but also the numbers of shale objects from Caerleon now recorded is surprisingly large, especially for a military site. Even more unusual, however, is the fact that the types represented at Caerleon are confined to armlets and vessels, an odd combination given the range of output of the Kimmeridge industries (e.g. Lawson 1975, for the extensive collection from Silchester).

Armlets/bracelets (FIG. 116)

Thirty-two shale armlet fragments were recovered from the Mill Street excavations, the largest number recorded from any individual site at Caerleon. No complete armlets were recovered, and although a number of the armlets' cross-sections appear similar, in only one case (no. 11 below) is it possible to argue that the fragments are from the same object. It seems, therefore, that the finds recovered represent at least 30 separate examples.

Previously recorded shale armlets from Caerleon include those from the Fortress Baths (26 examples; Greep 1986b, 213–14), Roman Gates (13 examples; Greep 1992a, 187), and from unpublished excavations in the civil settlement to the west of the fortress (10 examples). There are now more shale bracelets from Caerleon than were, for example, recorded from the extensive series of excavations at Colchester during the 1970s (Crummy 1983, 36), and the numbers are approaching those from Silchester (Lawson 1975). That the overwhelming majority of armlets have been recovered from extra-mural/*canabae* sites or from the Fortress Baths, which females (and presumably civilians) were allowed to frequent (Zienkiewicz 1986b, 17–23), is undoubtedly significant: excavations at the Amphitheatre and sites within the fortress have produced few shale finds.

Plain shale armlets/bracelets

All of the examples were recovered in a fragmentary condition and it is difficult to divide them on the basis of dimensions or profile. Three examples (nos 1–3), however, have a particularly ‘heavy’ profile, which appears to be more typical of early Roman finds (e.g. Fortress Baths and Roman Gates examples). The majority of the shale armlets from the Fortress Baths came from 1st century deposits (Greep 1986b, 212) though those from the unpublished excavations on the civil settlement to the west of the fortress were from 2nd and 3rd century contexts (G.C. Boon, pers. comm.).

Internal diameters, thickness (measured from inside to outside), and width of each piece is listed. All armlets appear circular, although oval examples have been recorded from other sites. The catalogue of plain armlets is arranged according to thickness and cross-section.

1. 2429/SG168 (2570) Diameter 61mm; D-shaped section, tapering from 16 × 21mm to 13 × 18mm.
2. 3079/SG18 (3246) Diameter 50mm; D-shaped section, tapering from 14 × 19mm to 9 × 13mm (broken and damaged at this point). (Not illustrated.)
3. 001/unstratified (188) Diameter 62mm; D-shaped section, 11 × 18mm.
4. 001/unstratified (702) Diameter 90mm; oval/D-shaped section, 8 × 12mm. (Not illustrated.)
5. 950/SG131 (832) Diameter 80mm; oval/D-shaped section, 8 × 11mm. Very similar in profile to no. 4 above, but the slightly smaller diameter suggests a different bracelet. About half survives.
6. 001/unstratified (847) Diameter 75mm; oval/D-shaped section, 9 × 12mm. (Not illustrated.)
7. 001/unstratified (217) Diameter 78mm; round section, 10mm. (Not illustrated.)
8. 945/SG131 (830) Diameter 83mm; round section, 9mm.
9. 806/SG139 (685) Diameter 80mm; oval/D-shaped section, 9 × 11mm (average).
10. 2086/SG94 (2176) Too small a fragment to establish diameter. Similar to no. 9; oval/D-shaped section, 9 × 10mm. (Not illustrated.)
11. a) 002/unstratified (708) Diameter 78mm; oval section, 8 × 11mm.
b) 002/unstratified (773) Diameter 78mm; oval section, 7 × 11mm.
Probably from the same bracelet. (Not illustrated.)
12. 700/SG183 (365) Diameter 80mm; oval/D-shaped section, 9 × 13mm.
13. 002/unstratified (793) Diameter 75mm; oval section, 8 × 13mm. (Not illustrated.)
14. 001/unstratified (1085) Diameter 74mm; round/D-shaped section, 9mm.
15. 700/SG183 (364) Diameter 56mm; round/D-shaped section, 9mm.
16. 809/SG120 (682) Diameter 84mm; oval section, 8 × 10mm.
17. 3086/SG159 (3248) Diameter 88mm; oval section, 7 × 10mm. (Not illustrated.)
18. 700/SG183 (276) Diameter 83mm; ?oval section, broken. (Not illustrated.)
19. 903/SG137 (870) Diameter 59mm; oval section, 8 × 9mm. (Not illustrated.)
20. 001/unstratified (1328) Diameter 76mm; round section, 7mm.
21. 001/unstratified (456) Diameter 50mm; oval section, 5 × 7mm.
22. 3079/SG18 (3247) Diameter 51mm; round section, 5mm. (Not illustrated.)
23. 927/SG53 (772) Diameter 45mm; oval section, 5 × 7mm. (Not illustrated.)
24. 928/SG53 (780) Diameter 60mm; D-shaped section, 5 × 8mm.
25. 1027/SG145 (1739) Diameter 46mm; D-shaped section, 6 × 8mm.

Decorated armlets/bracelets

26. 667/SG181 (1293) About half survives; decorated with a single groove on the exterior. Diameter 75mm, oval/D-shaped section, 9 × 10mm.
27. 1057/SG144 (1645) Decorated on the exterior with three turned grooves. Diameter 72mm; oval section 6 × 7mm.
28. 2036/SG82 (2075) Decorated with three grooves on the exterior. Too small a fragment to measure the diameter; flattened oval section, 5 × 9mm.
29. 957/SG35 (1188) Cable decoration on the exterior, as Lawson 1975, fig. 6, 45. Diameter 51mm; oval/D-shaped section, 8 × 11mm.
30. 2082/SG94 (2088) Decorated with stepped or notched decoration, as Lawson 1975, fig. 6, 55). Diameter 51mm, oval/D-shaped section, 5 × 7mm.
31. 003/unstratified (868) Decorated with V-shaped cuts in either side. Diameter 58mm; almost square section, 5 × 6mm.

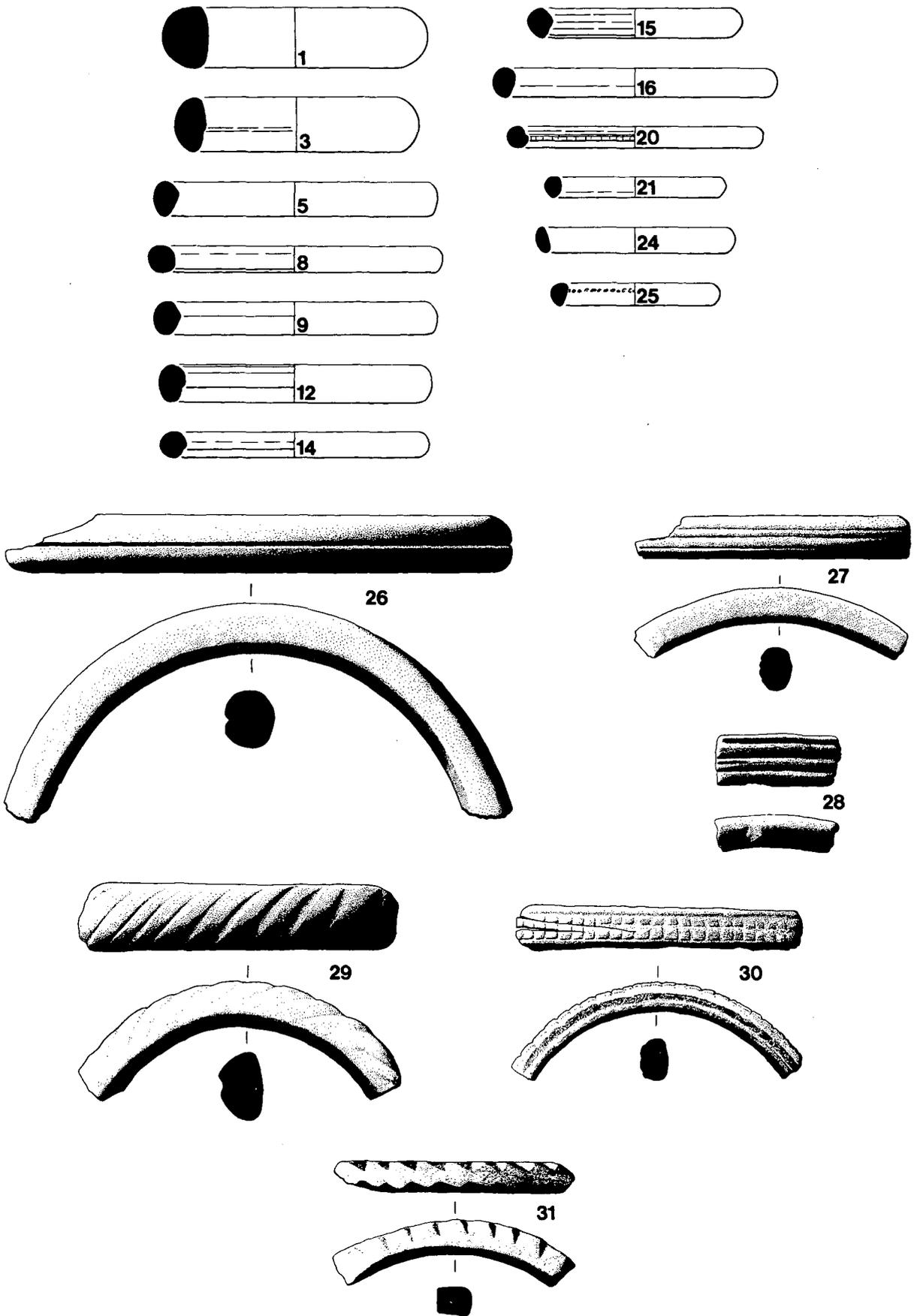


FIG. 116. Shale objects nos 1-31: armlets/bracelets. Nos 26-31 scale 1:1; other items scale 1:2.

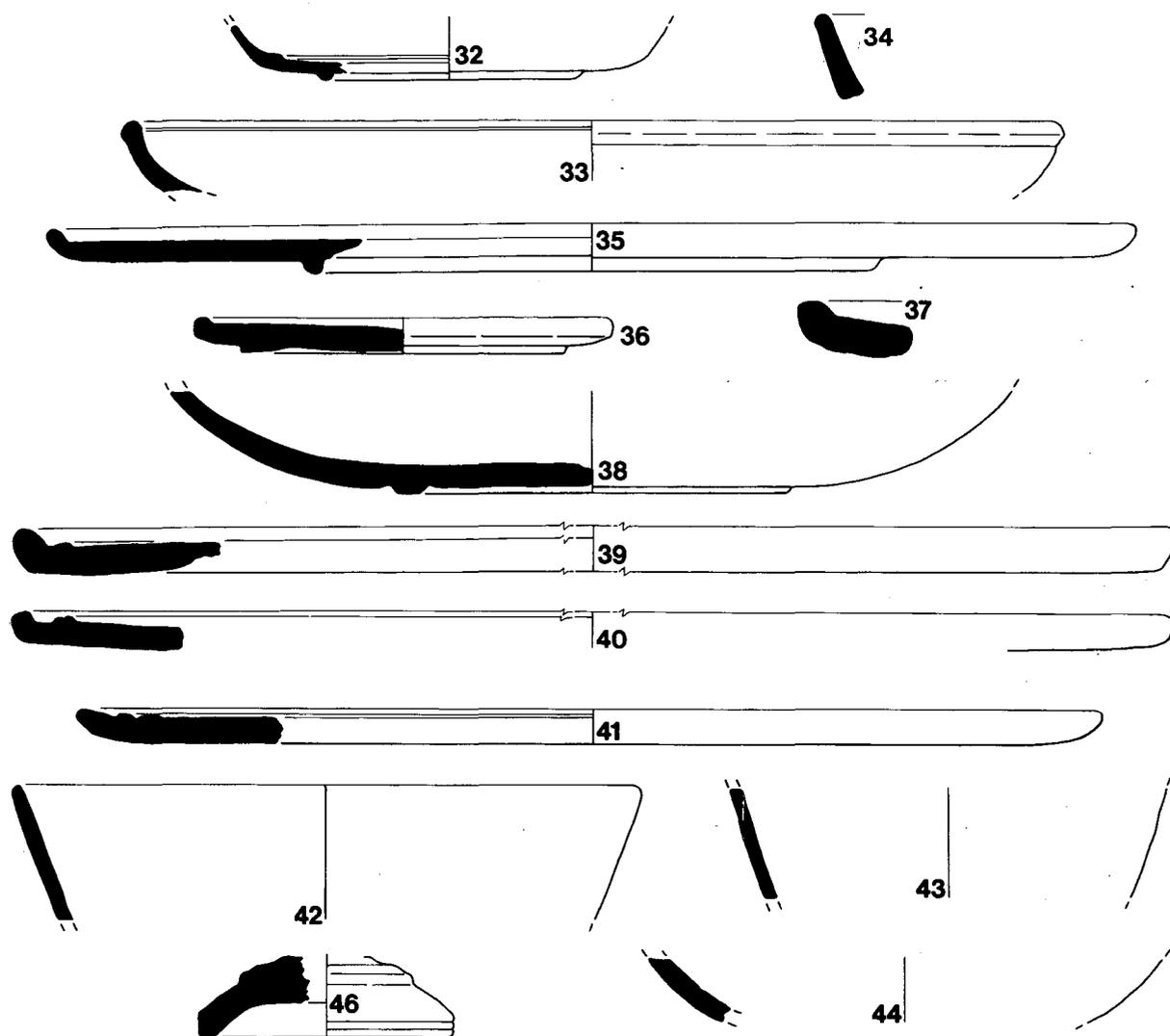


FIG. 117. Shale objects nos 32-45: vessels. Scale 1:2.

Shale vessels (FIG. 117)

A total of 19 different vessels were recovered. The majority are plates of a variety of forms, several of which are paralleled by finds from the unpublished excavations in the civil settlement to the west of the fortress. In addition to the material catalogued below, there were three fragments which did not appear to belong to any of them and presumably therefore represent separate vessels. Another three fragments came from vessels of uncertain type.

Shallow plates

32. 001/unstratified (261) Small, fine, plain-rimmed shallow plate with a simple, low footring and a single, internal groove.
33. 252/unstratified (185) Rim of a shallow platter with a simple rounded rim.
34. 600/SG183 (354) Small fragment of a shallow plate with a simple rim similar to no. 33 above (but not the same vessel). The fragment is too small to estimate the diameter of the vessel.

Flat plates

35. 614/SG182 (428) Flat plate with a simple upright rim. An adjoining fragment from the same context (individual find no. 431) includes the footring.
36. 957/SG35 (1048) Flat plate similar to no. 35 above but with a lower rim, and a broader footring.
37. 951/SG35 (994) Weathered example of a flat plate similar to no. 34 above.

38. 033/unstratified (476) Fragment of a shallow plate with a broad, low footring, similar to that on no. 35 above and possibly from a similar vessel.
39. 600/SG183 (231) Flat plate with an upright rim and a turned undercut groove on the edge of the plate itself. No trace of a footring has survived. Diameter 330mm.
40. 2250/SG45 (2222) Large, flat, plate with an upright rim and a pair of turned ridges and grooves on the inside. For a similar plate see Lawson 1975, fig. 8, 78. Diameter 440mm.
41. 2429/SG168 (574) Large flat plate similar to no. 40 above but badly weathered and missing the rim, which was probably as no. 40.

Other vessel forms

42. 001/unstratified (1082) Rim from a thin-walled ?straight sided bowl or beaker. Slightly distorted.
- 43–4. 002/unstratified (542) Body sherd from a ?beaker of uncertain form. Similarly shaped pieces (but probably not from the same vessel as no. 43) were recorded from context 600/SG183 (359) and 037/SG35 (059). The profile and surface weathering of nos 43–4 are, however, consistent with being from the same vessel.
45. 937/SG133 (1738) Weathered, thick, base fragment, from a bowl or beaker, the exact form is uncertain. (Not illustrated.)
46. 001/unstratified (458) Pedestalled base from a vessel of uncertain type but probably a small bowl or beaker.

OBJECTS OF WORKED BONE AND ANTLER (FIG. 118) By Stephen Greep

Soil conditions were not conducive to the survival of bone; the catalogue below, which was completed in 1992, represents all identifiable bone objects.

1. 1452/SG54 (1255) Small, burnt, fragment of bone, decorated with a curving line of punched dots. Length 52mm.

There is little doubt that the decoration is a part of a pelta shape and that this fragment is all that survives of a sword scabbard chape, a form well known at Caerleon (e.g. Nash-Williams 1932a, fig. 43 and Greep 1992b). Not enough remains to demonstrate whether this was of rectangular (Nash-Williams 1932a, fig. 43, 2) or oval type (Allason-Jones 1984, 2.81), although the former is more likely. A late 2nd–3rd century form. For brief discussions of the type see Greep 1992b and 1993b.

2. 1492/SG4 (1510) D-sectioned curving and tapering strip of antler, broken at the tip. The reverse has been sawn and one edge of the obverse roughly filed. A sub-rectangular cut has been made at the broad, rounded end. Length 205mm.

This is an antler ear lath or 'stiffener' from a composite bow, the cut to retain the string of the bow, the roughened edge to assist in the binding of the parts. The composite bow is a weapon which has been the subject of much discussion (e.g. Balfour 1890; Paterson 1966; Rausing 1967; Coulston 1985). The term derives from the techniques of manufacture in which a number of parts, glued together, endow the bow with certain mechanical advantages over many other types of bow (Gordon 1978).

The type is well known from Caerleon. Nash-Williams (1932a, 94–6) recorded 44 examples, interpreted by him as 'weaving implements' (see also Birley 1977, pl. 60), from the building he identified as a *fabrica* behind the rampart in the Prysg Field. The occurrence of such a large assemblage, together with pieces of sawn antler, strongly suggests manufacture here. The large deposits from *Carnuntum* (Groller 1909, 39–40) and *Intercissa* (Salamon 1976) might be interpreted likewise. Although a few (but not all, as Nash-Williams believed) of the Caerleon examples were manufactured from split *bos* ribs, a weaker and rather unsuitable material, the majority were of antler as is the present example.

Whilst specific units of auxiliary archers are well recorded (e.g. at Housesteads; Smith 1968), it is clear from finds such as those at Caerleon, Mainz (Klumbach and Moorgat-Correns 1968), *Vindonissa* (unpublished, Vindonissa Museum, Brugg) and *Carnuntum* (Groller 1909, 39–40) that the legions possessed small contingents of such men. The occurrence of ear laths at a large number of other sites (e.g. Corbridge, Bishop and Dore 1988, fig. 95, 11 and Coulston 1985; South Shields, Allason-Jones and Miket 1984, 39, fig. 2.16 and 2.18, with further references; Bar Hill where *Cohors I Sagittariorum* from Syria formed a part of the garrison, Robertson *et al.* 1975, fig. 18, 8–10) might be taken to suggest that other units too had men trained in the use of the bow, even if this was not

their primary function. Finds from Silchester (Boon 1974b, fig. 8, 7), *Verulamium* (c. A.D. 155–60; Frere 1984, fig. 32, 293) and Colchester (c. A.D. 100/125–150; Crummy 1983, fig. 160, 4245) may suggest that the use of the composite bow was not restricted to the military, although these objects could be residual from earlier contexts.

The use of antler ear laths on composite bows lasts throughout the Roman period, and beyond (e.g. MacGregor 1985, 155–8). The occurrence of ear laths from Dangstetten (Rausing 1967, 66) and Velsen (unpublished excavations) demonstrates their use by the Roman army during the Augusto-Tiberian period. In Britain they are first recorded at Waddon Hill (Webster 1965, fig. 7, 21) in pre-Flavian contexts with other examples of 1st, 2nd and 3rd century date. Those from *Carnuntum* noted above (Groller 1909) are from 4th century contexts.

3. 2123/SG71 (2723) Strip of antler of D-shaped section, snapped at both ends. The exterior has been knife-cut removing the original irregular surface and a small notch has been cut towards one end. Length 93mm.

The cross-section and working on this piece strongly suggests that it is an object broken during the process of manufacture rather than a simple waste discard as nos 1 and 2 above. The apparent preparation for a notch at one end suggests that an ear lath is the intended product. Knife cuts down the same side as the notch, in preparation for the filing which is characteristic of these objects, adds weight to this suggestion. If this identification is correct it must be seen in the same light as the workshop previously recorded from Caerleon (Nash-Williams 1932a, 92–4 and see no. 2 above).

4. 2001/unstratified (2083) Type 3 gaming counter with obverse surface decorated by a series of concentric circles. 19mm diameter, broken and burnt. These forms, undatable within the Roman period, are well recorded at Caerleon (e.g. Greep 1986, 202–7).
5. 1485/SG4 (1520) Single piece cubic die with well-rounded edges of normal configuration, with opposite sides adding up to seven. The 'pips' are represented by double ring and dot motifs. The sides are irregular in dimension, with surfaces numbering six and one being the larger. Although single-piece cubic dice occur throughout the Roman period, examples with irregular surfaces are

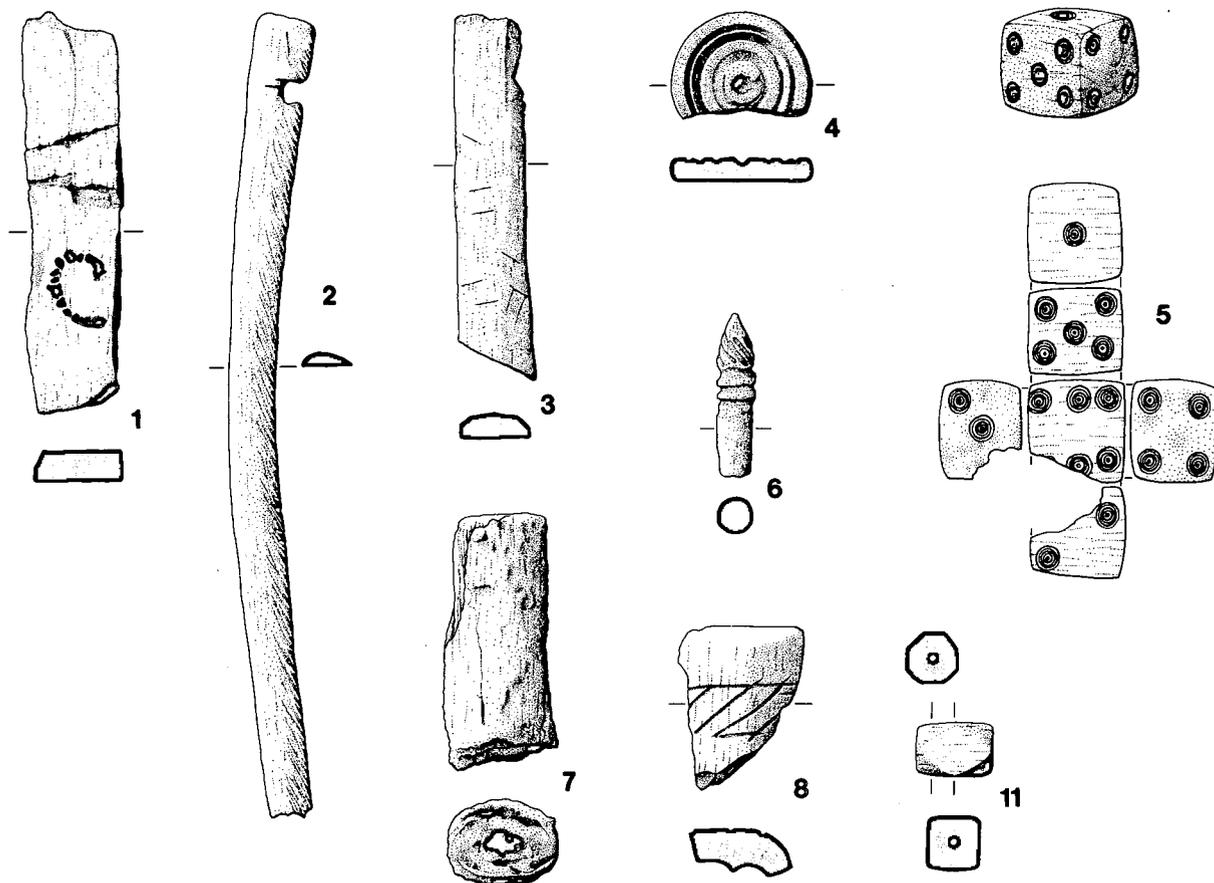


FIG. 118. Worked bone objects. Nos 2, 3, 7 scale 1:2; no. 11 scale 2:1; other items scale 1:1.

more typically found in earlier Roman contexts (e.g. Hassall and Rhodes 1974, fig. 28, 34). For previous examples from Caerleon see Greep 1986b, 211–12.

6. 2002/unstratified (2596) Hairpin, 21mm long, broken and burnt. The head is conical and decorated with single diagonal lines above a pair of collars. The form is well known and associated with pins with tapering stems, a trait of the earlier Roman period *c.* A.D. 40–200/250 (e.g. Greep 1986b, 197–8).
7. 002/unstratified (384) Fragment of antler tine sawn at both ends, but with an unworked surface, retaining the remains of an iron tang. Length 64mm.

Simple plain antler handles such as this are common finds throughout the Roman period (e.g. Greep 1985, fig. 33, 385–7 and 390) and served to haft a wide variety of implements. The relatively small size of the present example suggests a slender object such as a knife.

8. 015/unstratified (042) Small fragment of burnt bone, decorated with a band of trellis work. Broken both ends. Length 21mm.

This is a small piece of a bone handle, although not enough survives to determine whether it is of two-piece composite form (e.g. Wheeler and Wheeler 1928, fig. 16, 60) of earlier Roman date, or of the later Roman simpler, single-piece, type (e.g. Greep 1985, fig. 33, 392).

9. 2001/unstratified (2522) Red deer antler tine, sawn to remove it from the beam but otherwise unworked. Length 129mm. A waste product. (Not illustrated.)

Enough waste material from the manufacture of objects from red deer antler has been recovered from Caerleon to demonstrate that production was widespread throughout the Fortress during the Roman period (e.g. Nash-Williams 1932a; Greep 1992b). With the exception of the ear laths (see nos 2–3 above), however, there is little evidence for the types of objects being produced. Likewise the evidence is not concentrated in any one particular area demonstrating that either the main dumps of waste remain to be discovered or that although widespread geographically, the use of antler was never particularly common.

10. 1491/SG8 (1498) Part of the beam of a red deer antler, sawn at both ends and with a snapped tine, but otherwise unworked. Length 200mm. A waste product. (Not illustrated.)
11. 3086/SG159 (3202) Small bone bead; found in association with two gold-in-glass beads (see glass no. 142 and unpublished) and six *asses* (coin nos 54, 59, 60, 68, 70, 77), and stained green by the coins. Length 5.5mm.

Bone beads are rare and this form cannot be paralleled, although the type is common enough in other materials (e.g. Guido 1978, 96–7 and fig. 37, 8–10).

THE LEATHER (FIG. 119) By Carol van Driel-Murray

Introduction

Apart from the shield cover no. 15, discussed fully in an earlier publication (van Driel-Murray 1988), the leather recovered from the Mill Street sites is in poor condition, consisting predominantly of decayed footwear and some small offcuts and snippets and scraps of leather which happen to have become incorporated in contexts conducive to preservation. As such, the fragments are no more than the background 'noise' present on any site where leather goods are being manufactured and used. The offcuts of new leather are too few in number and too small to give any indication of the products concerned, though the presence of both cowhide and sheep/goatskins suggests the manufacture of both footwear (which tends to use mostly cowhide) and of sheet leather items, such as tents, bags or shield covers (all of which employ skins). A few reused offcuts, discarded from still-usable old leather, point to the general maintenance of the leather equipment as is only to be expected on a military site. The removal of the seams from a piece like no. 13, from a tent panel, would still have left a substantial area of leather for reuse in repairs or for other smaller items. The salvage of old leather would appear to be standard practice in military contexts, and the discarded, unusable material is, in fact, the origin of many of the major complexes of military leatherwork such as those from Castleford, *Vindolanda* and Bonn (unpublished, and van Driel-Murray and Gechter 1983). Since only very small areas of the waterlogged deposits at Mill Street were excavated, the fragments here are but a pale reflection of the vast quantities of refuse dumped by the military leatherworkers at these other sites; they are certainly evidence of a *fabrica* at work somewhere in or near the fortress.

As to date, the wide blunt shape of the insole no. 4 is reminiscent of the late 1st-very early 2nd century soles from Castleford and *Vindolanda* (c. A.D. 80–105), whilst tent flaps such as no. 14 are in evidence from at least A.D. 80 to the 150s (Bonn and *Vindolanda*)

The material consists predominantly of scraps and small fragments; no dimensions are given unless relevant. The report was completed in 1993.

Catalogue

Footwear

The footwear is totally decayed and disintegrated. Most fragments belong to the usual nailed shoes. No uppers have been preserved, but various elements of the construction can be identified: insoles as well as outer soles, heel stiffeners, laminae of thin leather scraps either sewn or thonged to the insole, and nailing possibly arranged in a pattern under the tread. The thong slits on the insole may, in one case, have been arranged in a diamond pattern (cf. Rhodes 1991, 195–6). No. 10 may have been entirely sewn, as the upper seems to have been sewn to the underside of the insole and there are no visible nail punctures. In dimensions, this shoe belongs to a juvenile or female foot. One of the single-piece shoes (*carbatinae*) also belongs to a child (no. 2). Footwear from a number of military sites is providing increasing evidence for the presence of women and children in and around even the early forts (such as Velsen, *Vindolanda* and Bonner Berg), and there can be little doubt but that the population would be more balanced than is generally envisaged. Both *carbatinae* are made from good quality cow/calf skin which has been pretreated by pounding and polishing to give a denser structure. Only the backs remain, and the soles of both have been entirely worn through.

Carbatinae

1. [11] 1481/unstratified (1477) Quarters of a decayed *carbatina* of smoothed cowhide, rising to a peak at the back, with the edge/flesh back seam and a single tie-loop remaining.
2. [12] 1492/SG4 (1486) Child's left *carbatina* of smoothed cow/calfskin; seat worn through, front and inner quarter missing. Usual edge/flesh T-seam at back.

Nailed footwear

3. [13] 2632/SG194 (2507A) Totally decayed fragments of an inner and outer sole, probably belonging together. Adult, with very sparse nailing around the outer edge and some tunnel stitches on the flesh side of the outer sole.
4. [14] 2632/SG194 (2507B) Front of a left insole. Blunt, wide shape, much worn and with denser nailing than no. 10; probably a decorative arrangement under the tread. (Not illustrated.)
5. [15] 001/unstratified (1084) Scraps of decayed middle or lamina. (Not illustrated.)
6. [16] 1481/unstratified (1476B) Forepart of a worn, left, adult's insole with nail punctures. The thong slits for the attachment of a middle sole are arranged in a diamond pattern. In addition there are five large round holes, apparently made by pegs, though there is nothing to indicate their purpose. Tread width 78mm.
7. [17] 1491/SG8 (1485) Fore fragment of a decayed insole with thong slits, perhaps arranged in a diamond pattern, and nail punctures suggestive of pattern 3c. (Not illustrated.)
8. [18] 001/unstratified (1457) Decayed heel stiffener. (Not illustrated.)
9. [19] 1492/SG4 (1487) Decayed cowhide heel stiffener. (Not illustrated.)
10. [20] 1492/SG4 (1489) Scrap of an insole with thong slits near the edge. Forepart of a small insole of pointed shape with tunnel stitching around the edge of the under surface, from the attachment of the upper. Width at tread 48mm.
11. [21] 1494/SG4 (1736) Decayed fragments of an insole with nail punctures, together with some fragments of thin sheep/goatskin, probably from a packing of thin scraps between the soles. (Not illustrated.)

Tents

Three fragments of sheet leather belonged to tentage (nos 12, 13 and 14). The leather is old and worn, and the seams had already been restitched at least once before it was decided to discard the tent and salvage what leather remained in good condition. Salvage proceeded along the usual lines: the seams were ripped off and any damaged areas on the remaining sheets were cut away. The unusually hard section of

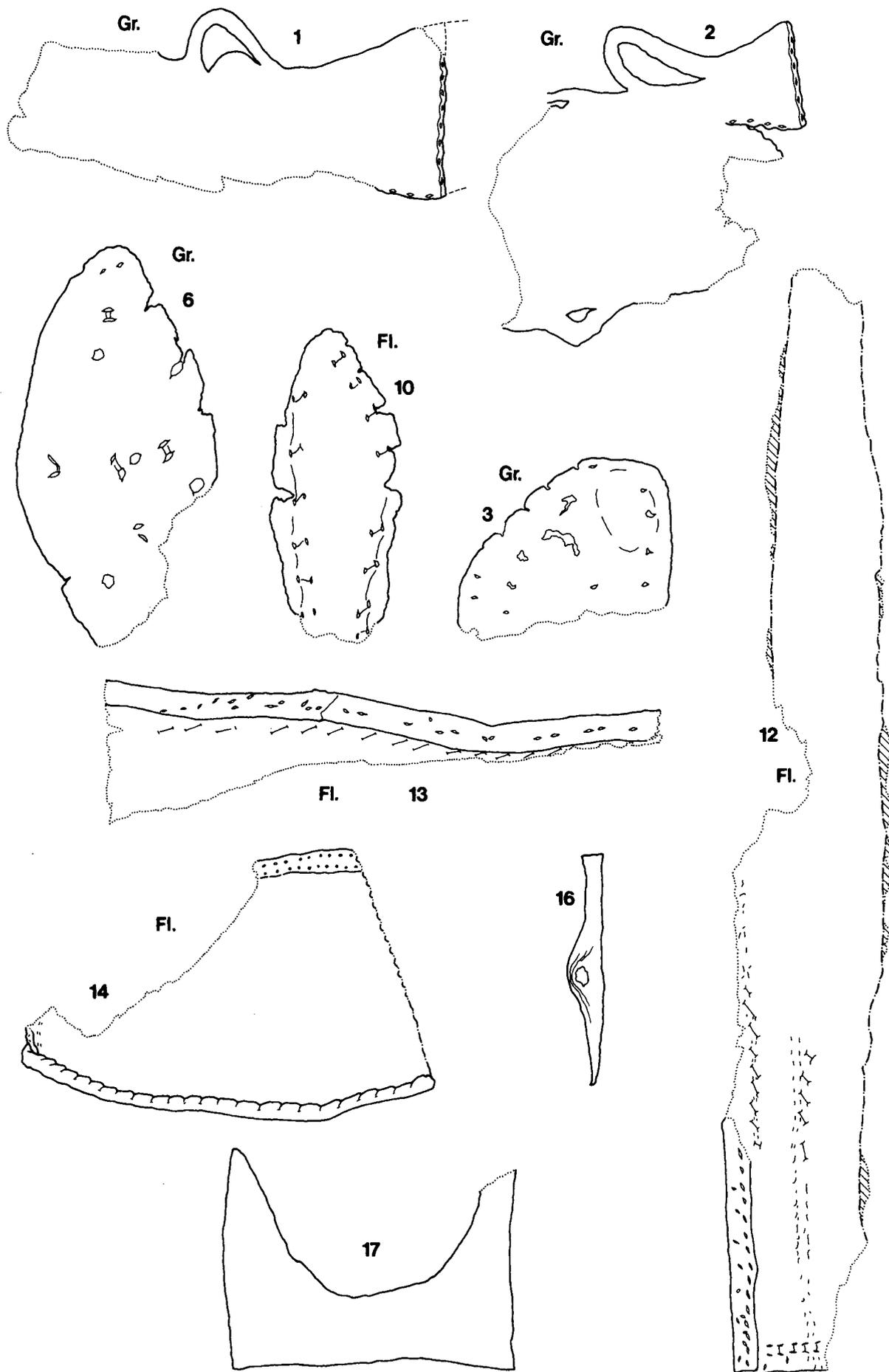


FIG. 119. Leather. Scale 1:2. Fl = flesh; Gr = grain.

skin in the corner of panel no. 12 is presumably the reason for its removal. A few creases mark the centre folds of the panel (skins appear to have been folded in four, leaving characteristic crease lines which cross in the middle of the panel, van Driel-Murray 1990, 118), giving a total original length of 740mm, which accords well with the dimensions of the largest roof and wall panels from *Vindolanda*. As there is no stitching for a guy rope attachment, the piece is unlikely to come from the tent wall, and a roof panel is more probable. Furthermore, at *Vindolanda*, the wide swallow-tail reinforcements almost invariably seem to indicate roof panels. Also belonging to the tent roof is the narrow hemmed strip no. 14. Such flaps were inserted at the roof/wall junction in order to protect the seam and the pole on which it rested, as well as the guy rope, from the weather. Since their identification in 1989 at *Vindolanda* (van Driel-Murray 1990), these flaps have been recognised at several other sites, including Castleford, Carlisle (Winterbottom 1992, fig. 17) and Bonn (van Driel-Murray and Gechter 1983, no. 136). The example from Caerleon is useful in extending the distribution, and tends to confirm that this is a standard feature of Roman tents. This, and the fact that the seams and stitching used are also identical to those employed at the sites mentioned, justifies the comparisons with the very much better preserved *Vindolanda* material: military leatherwork was clearly made to similar specifications throughout the northwestern provinces.

12. [22] 2413/unstratified (2510A) A long strip removed from a larger panel, preserving the corner. The unusually thick skin in the corner is perhaps the reason for removal of a larger area once the seam had been stripped off. A few creases mark the centre folds of the panel. The long side seam is a NRa or IIa with wider stitching of a swallow-tail reinforcement at the corner: all felling stitches have been re-sewn with larger diagonal stitches over the finer, more closely spaced original sewing. Little of the side seam remains, but it seems to be a IIb with a narrow reinforcement. This is probably a tent roof panel. Goatskin.
13. [23] 2413/unstratified (2510B) Ripped fragment of a restitched and carelessly sewn IIIa with diagonal felling stitches.
14. [24] 1451/SG4 (1458) Flap with parallel edges. On one side a whipped hem, with opposite two rows of stitching, probably from a seam IIb. One short side is torn along a stitching, the other preserves the remains of a seam IIa. Good-quality goatskin. (150) × 95mm.

Shield cover

15. [25] 2635/SG194 (2003, 2004, 2005) Semi-circular piece of goatskin, now in three pieces, with a folded, tacked hem which had formed the channel for a draw-string and lines of stitching revealing the position of panels which had once been sewn to the front. 760 × 400mm. This item represents the top section of a broad oval shield cover, and has been published fully in van Driel-Murray 1988. (Not illustrated.)

Offcuts

16. [1] 2413/unstratified (2871) A sliver of manufacturing waste cut very close to the skin edge, showing a hole made by a stake. With other slivers of manufacturing waste, mainly sheep/goatskin, all cut very close to the skin edges; one comes from the leg.
17. [2] 2413/unstratified (2868) Fine goatskin offcut left after removal of a circular object from a roughly rectangular piece, itself probably an offcut.
18. [4] 1450/SG8 (1456) Primary cowhide offcut, probably an edge lobe into which a shoe upper has been fitted. (Not illustrated.)

Seven further offcuts were noted, four of them being reused offcuts.

OBJECTS OF STONE (FIGS 120, 121; PLS XXIII, XXXIV) By Jonathan Parkhouse

The stone artefacts from Mill Street include little in the way of exotica. Apart from the querns of basalt lava from the Eifel (nos 3–5 below), which occur frequently throughout Roman Britain, and the probable mortar (no. 22), all the stone originates from local sources mainly in the Carboniferous or Devonian sandstones and gritstone which outcrop in the Usk Valley, although the stone used for the possible statue base (no. 25) came from the coast of the Bristol Channel. The querns are all common forms (although no. 1, a copy of a lava prototype, is of interest), whilst the most surprising feature of the whetstones is the relatively small size of the assemblage, given the area excavated.

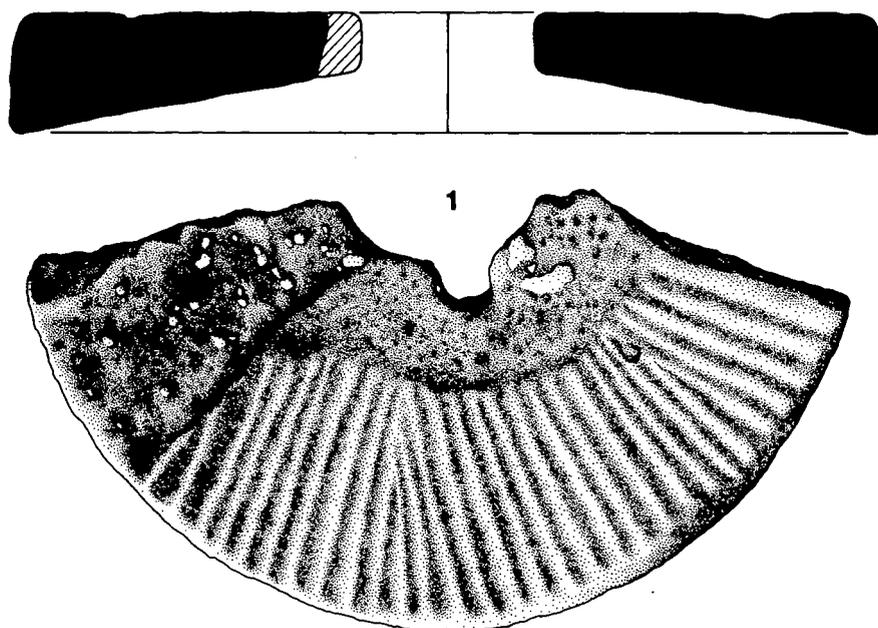


FIG. 120. Stone objects no. 1; quernstone. Scale 1:4.

Forty-seven stone objects were examined, but not all of them showed certain evidence of working. The entry on no. 25 is by E.M. Evans, and no. 26 by J. Compton. The report was submitted in 1994.

Catalogue

Illustrated items are marked *.

Quernstones (FIG. 120)

Thirteen fragments of quernstone were noted.

- *1. [1] 2405/SG72 (2388) Approximately 35% of upper stone in medium to medium-coarse sandstone with occasional quartzitic inclusions <24mm. The upper surface is very slightly convex and carefully dressed, with an outer 'flange' c. 40–45mm wide around the outer edge, a feature also encountered on many imported lava stones whose form this stone resembles and was probably deliberately designed to imitate. The flange has no apparent function, being too shallow to act as a hopper, and one wonders why the manufacturer thought it necessary to copy this detail from his continental prototype. The relatively unworn concave grinding surface is dressed in harps, with the grooves disappearing c. 50mm from the inner edge. There is a rynd chase 25mm wide and 16mm deep. Radius c. 230mm; hopper radius c. 45mm; thickness 63.9mm (maximum, outer edge) and 32.3mm (maximum, inner edge).
2. [2] 3024/SG18 (3258) Approximately 30% of lower stone in medium-grained sandstone. The grinding surface has a concave profile, rising towards a small central spindle hole positioned eccentrically. The grinding surface is moderately worn and dressed in harps with slightly curved grooves. The radius varies between c. 230mm and 250mm.
3. [3] 3501/SG18 (3253) Small fragment from circumference of lava quern, probably an upper stone. The outer edge is carefully dressed, with traces of the vertical striations often encountered on lava stones. The grinding surface is moderately worn. The upper surface has traces of a shallow groove (also a typical feature of lava stones) c. 51mm from the outer edge. There is insufficient to determine the radius, which appears to have been greater than 250mm. Thickness (at outer edge) 72mm.

4. [9] 928/SG53 (759) Small fragment from the circumference of an upper stone of lava. There is some abrasion but the condition of the surface is more stable than much of the other lava material from Mill Street, which is clearly residual. The grinding surface shows a slightly worn but prominent dressing of grooves incised some 3mm deep; the upper surface and outer edge have also been carefully dressed in a manner typical of many lava imports. Thickness at outer edge (maximum) 44.6mm, reducing to 26.6mm at a point *c.* 90mm from the outer edge.
5. [11] 927/SG53 (745) Fragment from the circumference of an upper stone of lava. Not greatly abraded; the surfaces are stable. The grinding surface is well-worn, particularly near the centre where the grooves become indistinct (it is more usual for the greatest wear to be evident near the skirt than close to the centre). There is no flange, but the upper surface is dressed with furrows *c.* 11mm apart. The outer edge is carefully dressed with vertical striations. Insufficient of the stone survives to be able to reconstruct the radius, which was probably between 250mm and 300mm. Thickness at outer edge (maximum) 63.4mm, reducing to 25.2mm at a point *c.* 155mm from the outer edge.

Whetstones (FIG. 121; PL. XXXIII)

Nineteen fragments of whetstones or possible whetstones were noted. It is not always possible to determine whether a stone of suitable size, shape and composition was actually used for sharpening blades; for a discussion of this problem, see Parkhouse 1997, 418–19.

- *6. [14] 001/unstratified (098) Whetstone in greenish-grey siltstone with rectangular cross-section. There are occasional traces of some form of ferruginous concretion, presumably post-depositional, on one of the main surfaces. All surfaces show fine scoring from sharp points, and there are three cuts, 14mm wide and from 3.2mm to 5.6mm deep, along one edge. Overall dimensions (maximum) 65.4 × 25.3 × 10.3mm.
7. [15] 3001/unstratified (3033) Small fragment of very fine-grained siltstone, evenly polished on all the original surfaces. Broken at both ends, but it is evident that one end was wider than the other. Sub-rectangular cross-section, 17.0 × 28.6mm.
8. [16] 002/unstratified (371) Possible whetstone; irregular pebble but with an essentially sub-rectangular cross-section, in fine-grained grey sandstone. One surface is more polished than the others and this may well be the result of deliberate wear. Maximum dimensions 29.7 × 23.6 × 104.1mm.
9. [17] 3001/unstratified (3127) Whetstone; grey siltstone (similar in texture to no. 6 above) with sub-rectangular cross-section. One end damaged. One of the main faces is extremely worn and distinctly hollowed. Maximum dimensions 62.6 × 31.8 × 12.0mm. (PL. XXXIII.)
10. [18] 1027/SG145 (934) Possible whetstone; sub-rectangular pebble in fine-grained slightly micaceous sandstone. The shape and proportions are suited for use as a whetstone, but whilst most of the faces are slightly polished, there are no certainly diagnostic signs of wear which would be consistent with such use. Dimensions 82.5 × 31.1 × 16.9mm.
- *11. [19] 252/unstratified (139) Flat sub-rectangular pebble in grey siltstone, broken at both ends. Scratches and faint incisions on one of the main faces are assumed to be the result of use as a whetstone rather than the manner of excavation. Maximum length 91.4mm; cross-section 42.8 × 14.1mm at one end, 38.6 × 15.9mm at the other.
- *12. [21] 174/SG7 (1220) Whetstone in medium-fine-grained slightly micaceous grey sandstone; sub-rectangular cross-section, utilised on all four main surfaces, which show concavity and/or incisions, all indicative of use. Maximum dimensions 72.0 × 31.5 × 28.9mm.
13. [22] 838/SG124 Pebble of fine-grained grey sandstone/siltstone. All sides uniformly polished, probably as a result of deliberate wear. Sub-rectangular cross-section 20.5 × 25.8mm; 45.7mm long (broken at both ends).
14. [23] 405/SG72 (634) Irregular sub-rectangular pebble in fine-grained sandstone/siltstone. All four main faces are clearly worn, with concavities and minor striations. The shape of the stone may possibly be consistent with having been held in the left hand by a right-handed person: cf. examples from Loughor, nos 25, 32, 37 and 47 (Parkhouse 1997, 420–4). Dimensions 84.6 × 36.1 × 23.2mm. (PL. XXXIII.)
15. [25] 812/SG112 (856) Elongated pebble of medium-fine-grained grey sandstone, broken at both ends; sub-square cross-section with rounded corners. All four facets are worn evenly, as are the corners. The regular shape suggests that this is likely to be a whetstone, although there are no certainly diagnostic features. Dimensions 41.8 × 19.6 × 18.3mm.

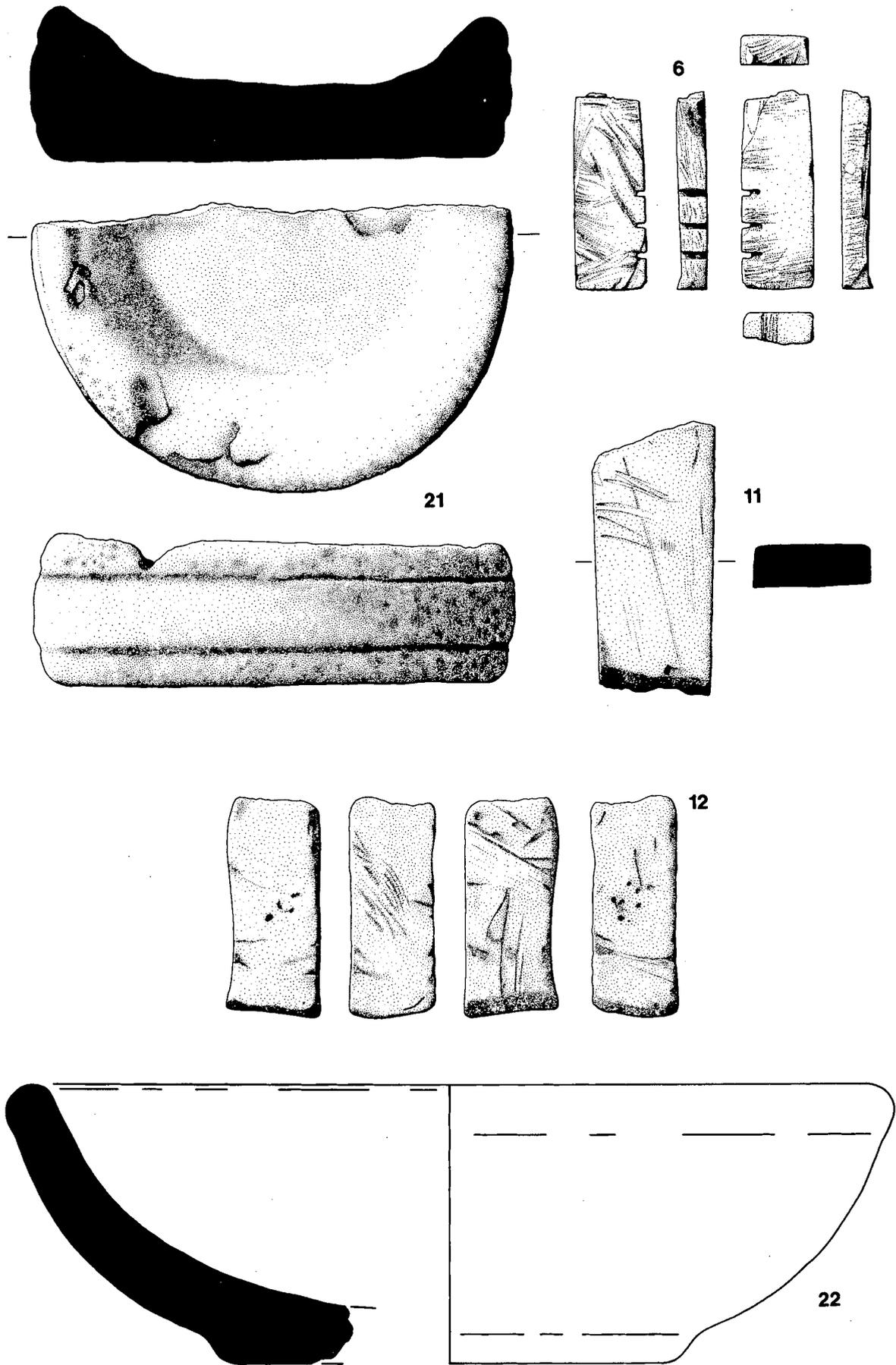


FIG. 121. Stone objects nos 6-22: quernstones and miscellaneous items. Scale 1:2.



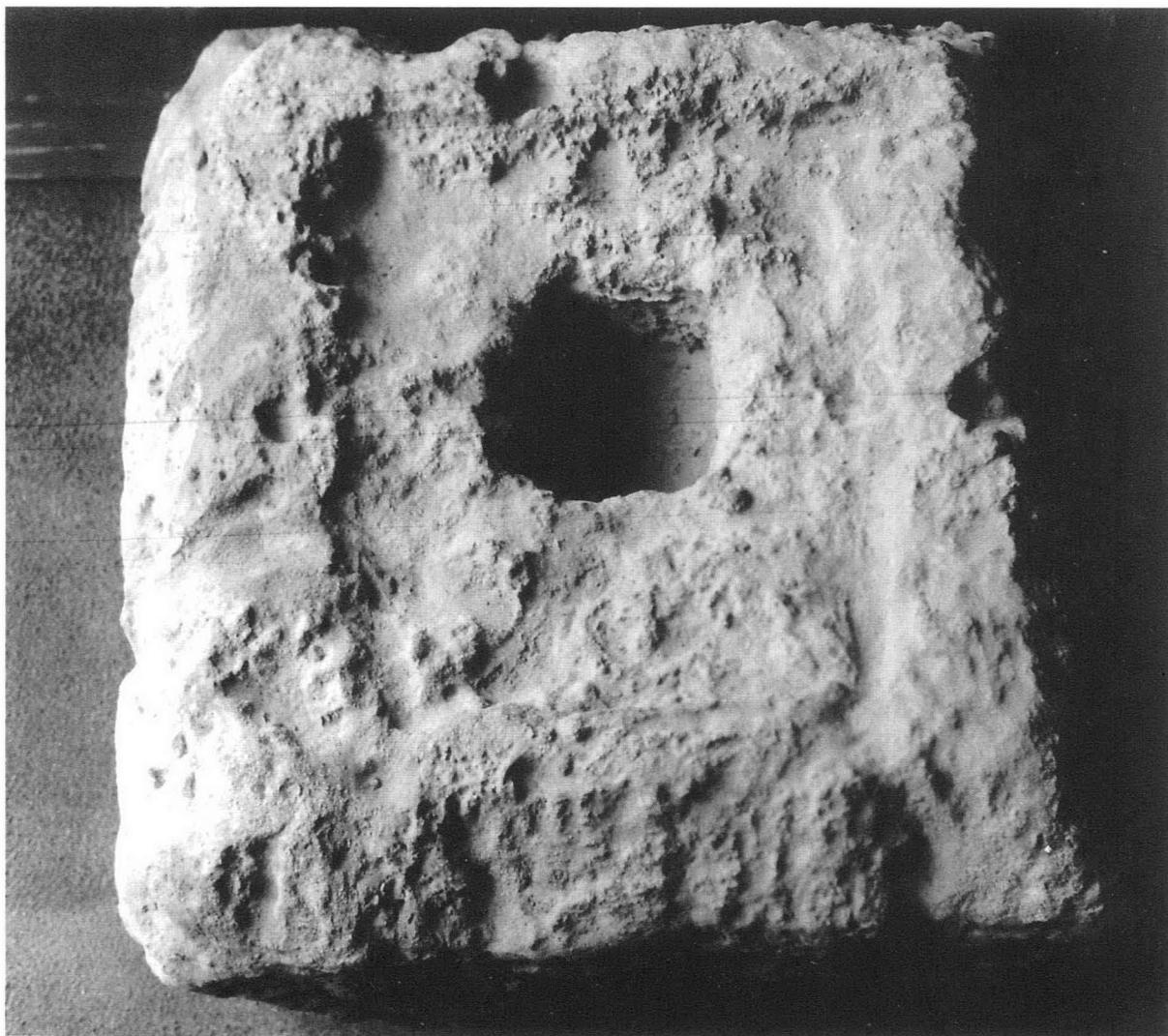
PLATE XXXIII. Whetstones nos 9 (centre) and 14 (top). Scale of 50mm, divided into sections of 5mm and 10mm.

Miscellaneous items

Seven roundels were noted. For discussion of such items, see the report on ceramic objects, nos 6–24. Two of them were pierced and could have served as spindle-whorls; the size and weight are comparable with those of the ceramic examples.

16. [33] 928/SG53 (781) Pierced roundel in pinkish-grey sandstone (probably Pennant Sandstone). Diameter 33.0–33.6mm; thickness 12.7mm; diameter of perforation 6.5mm; weight 20g.
17. [34] 2306/SG91 (2392) Pierced roundel in pinkish-grey Pennant Sandstone. The diameter (33.7mm) is unusually consistent. Thickness 7.0mm; diameter of perforation 5.5mm; weight 12g.
18. [35] 948/SG133 (1099) Carefully trimmed roundel in grey fine-grained granular Coal Measure sandstone; possibly a counter. Diameter 17.8–18.9mm; thickness 4.2mm; weight 2g.
19. [39] 003/unstratified (447) Roundel in pinkish-grey micaceous Coal Measure or Pennant Sandstone; counter. Diameter 44.0–44.8mm; thickness 13mm; weight 38mm.
20. [37] 1027/SG145 (1089) Roughly trimmed roundel in grey Pennant Sandstone; possible a pot lid. Diameter 128.1–140.9mm; thickness 15.6mm; weight 480g.
- *21. [44] 1452/SG54 (1259) Half of a crudely worked shallow bowl, made of Pennant or Coal Measure sandstone. There are two shallow grooves roughly incised around the edge. Diameter (average) 166mm; height 45.5mm.
- *22. [45] 002/unstratified (741) Stone vessel, probably a mortar, with a distinct foot. About 20% of the circumference is present. The inner surface is evenly worn. Probable volcanic/metamorphic stone. Radius *c.* 155mm; height 94.5mm.
23. [40] 002/unstratified (792) Roughly worked piece of sandstone with what appears to be part of a roughly rectangular aperture. The function is uncertain, although it is possible that it may have held some form of bearing. Width 192mm; thickness 58mm; width of aperture 73mm on one side, 101mm on the other.

24. [43] 2045/SG81 (2358) Slab of medium-grained Coal Measure sandstone. The two main faces appear to be water-worn; one edge apparently has a slight rebate. The stone might be naturally shaped, but it is more likely that it is part of a coping stone. See Vyner 1978, 34, for the general type. Maximum thickness 96mm.
25. 001/unstratified (1202) Square block of yellow coarse-grained Sudbrook sandstone. The piece has suffered from erosion. The upper surface is recessed by up to 45mm (possibly more before erosion), apart from a border 40–100mm wide around the edge, and there is a sub-square socket in the middle. Probably the base for a statue. Sudbrook sandstone, part of the Triassic series, was extensively used in the primary phase of construction in the Fortress Baths (Zienkiewicz 1986a, 341). Maximum area 580 × 580mm; maximum height 287mm; dimensions of socket 125 × 100mm, depth 101mm. (PL. XXXIV.)
26. 2373/SG66 (2344) Small fragment of a decorative architectural ?pilaster in grey-green sandstone, apparently identical with Zienkiewicz 1986b, 312, fig. 101, no. 1. Dimensions 120 × 75 × 30mm.



0  0.5m

PLATE XXXIV. Stone base no. 25.

CHAPTER FOUR

THE CAERLEON *CANABAE*: A GENERAL DISCUSSION

THE MILL STREET AREA

Before any attempt is made to summarise the information gained from the Mill Street excavations, it is necessary to consider how representative the results are of the civil settlement as a whole. Two aspects require comment, the proportion of the settlement which was excavated, and the relationship of the finds to the structures.

INTRODUCTION

The excavated area as a proportion of the settlement area

Reference to FIG. 3 shows clearly that the excavations provided no more than a small sample of the likely remaining area of the civil settlement at the eastern side of the fortress. The total area theoretically available for excavation (i.e. the whole of the four parcels of land comprising the Riding School Field, Allotments, Smallholding and the grounds of Cambria House) was some 28,400m². To this may be added a further *c.* 3,500m² in Millmead into which the settlement is known to extend, giving a total of 31,900m². Only a small proportion of this was examined archaeologically. A total of 3,630m² was excavated down to the final or penultimate Roman levels, representing 11.38% of the potential area available. To a certain extent this information can be supplemented by the results of the watching brief on the topsoil strip,¹ but there are problems in attempting to use these results, since over most of the area the resolution of archaeological deposits was too poor to do more than confirm that the land was utilised in a manner similar to the better-studied areas to the north and south. An exception might be made for the Cambria House frontage with Mill Street, where it was possible to determine that the land had been vacant, with no more than a light scattering of cobbles. The inclusion of this area (*c.* 2,750m²) gives a 20% figure for the sample of land utilisation in the final phase. The sample studied of the earlier deposits is far smaller. A total area of some 443m² was excavated as far as the grey silt and clay deposits forming or overlying the undisturbed substratum (it is not always certain which was the case). This represents only 1.39% of the area theoretically available. A total of *c.* 1,709m² (5.36%) was excavated to an intermediate depth. Over 39.1% of the area no form of archaeological investigation was carried out at all. A further 19.5% is still open ground at the time of writing.

It is difficult to be certain what proportion this area represents of the total area of Roman settlement to the east of the fortress. The extent of this to the north is uncertain: test pits were dug in the Council Depot to the north of the Riding Stables in 1985 by prospective developers which indicated that this area had been made up in modern times to a depth of over 3m, and Roman levels, if they were present, were not reached. To the south, trial cuttings and map evidence indicate that the Afon Lwyd has encroached as far as the southern boundary of the Cambria House site. The position of the river in Roman times is unknown: where last picked up

¹ The topsoil strip was observed over a further *c.* 7,250m² (22.73%). The quality of the data obtained from the topsoil strip at the rear of Cambria House, the Smallholding and Allotments was generally poor. The stripping of the overburden in the Riding Stables did not penetrate as far as Roman levels.

in excavation *c.* 12m from this boundary, the main north–south road appears to have been continuing on the same line southwards, and no sign of anything resembling a quay was noted. It would seem likely that the settlement continued in this direction but has been truncated by river erosion. The same problem occurs also to the east; the results from the test pits LB and HE suggest that the settlement may have been petering out at this point, but this is by no means certain, as sondages in the known area of the settlement but between buildings (CC, KD) display very little evidence for intensive human activity either. To the west, the whole of the area as far as the fortress was theoretically available for use, even though the results of the excavation seem to suggest that some of it may deliberately not have been used for building.

Relationship of finds to structures and other activity within the settlement

The main problem in relating the finds to the various structural and sedimentary episodes on the site is the vast quantity of residual material encountered. This was particularly obvious in the composition of context groups of samian and coarse pottery (see pp.178–97 and 198–264, especially pp.178 and 198).

Discussions of artefact deposition have tended to assume that residual pottery can readily be recognised by a degraded state, exemplified by small sherds exhibiting signs of attrition (see for example Fulford *et al.* 1994, 181 and 206). This is patently not the case with the Mill Street assemblages. We may cite, for example, the half samian bowl no. 12 (form 37), from the Phase 2 flood deposits on the Riding School Field which also contained material dating to the second half of the 2nd century A.D.; the soot on the rim of the 1st century flagon (coarse pottery no. 169) from the same context (658/SG175) as three 4th century Black Burnished ware vessels; and the complete neck and shoulders of a 1st century amphora (no. 23), also from this context.

Given the vast quantities of material recovered, it was not however possible for budgetary reasons to carry out an analysis of sherd size, which would have been extremely time-consuming, and not necessarily particularly effective, given Tyers's observations (1993, 141) that breakage patterns differ between vessels of different types and different sizes. Only general impressions of pottery assemblages are therefore available. In neither the samian nor the coarse pottery was it noticeable that the earlier material was in a significantly more fragmented or abraded state than the later. With the samian, although the surfaces of the sherds were in poor condition, this had been caused by the action of the soil chemistry on the slipped surfaces; there was little evidence for damage on the breaks. Indeed, although Mr Hartley notes high proportions of residual material within context groups, it was not apparent to him, without the benefit of the coarse pottery report, that entire groups were residual in contexts which could be dated by Black Burnished ware to the later 3rd and 4th centuries.

A different approach was therefore adopted, which sought to evaluate the potential of the various groups of deposit for attracting residual material. The results are presented in TABLE 30. An important factor influencing the condition of buried pottery is the degree to which it has been subjected to disturbance between the time when it was discarded initially and the time when it became incorporated in the deposit where it was eventually discovered. Differing degrees of attrition can be expected between the deposit which was buried almost immediately after formation, the deposit which was dumped in an unfrequented area, the superficial deposit made around a building in use, and the deposit which has been incorporated into cultivation soil. A further complication is that buried deposits will not necessarily stay buried: where ground disturbance of any kind takes place it will result in their disturbance, and the greater the scale of the disturbance, the greater will be the chances that the resultant spoil will be dumped in an area removed from its point of origin.

Artefacts become incorporated into archaeological deposits through a number of different routes. They pass out of the life of the community in four main ways:

1. Deliberately being set aside from everyday life (grave goods, votive deposits);
2. Abandonment in their place of use or storage;
3. Accidental loss;
4. Disposal of rubbish.

At Mill Street, there are few deposits in which the artefacts fall into category (1); only the cremation (SG186) and possibly the inclusion of the two nearly complete antefixes in SG62 are likely to qualify. There are also few deposits where the artefacts can be shown to fall into category (2). The clearest is the hoard (see SG93); also possible are parts of the destruction deposits associated with the buildings. Although many articles may have entered the archaeological record as the result of accidental loss (category 3), there are few items for which this mechanism can be assumed, principally valuable articles which are either undamaged or damaged in such a way as would lead to their loss (e.g. finger rings cat. no. 1; earring cat. no. 61 in the jewellery report). Most of the artefacts probably arrived on the Mill Street sites as the result of rubbish disposal (category 4). This can be further subdivided into:

- Uncontrolled dumping either (a) in the area where waste is generated; or
 (b) on waste land (flytipping);
- Controlled dumping either (c) as makeup material in construction or to fill holes or hollows; or
 (d) as fertiliser on fields and gardens, following temporary collection on middens.

In the third column of TABLE 30 is a suggestion of the most likely ways in which artefacts will have become incorporated into the Mill Street deposits, according to the categories suggested above. A fifth category has been added to identify layers which are likely to have incorporated artefacts disturbed from surrounding deposits during the digging of pits and ditches, and a sixth for those deposits where there is no information about contemporary ground use. How rubbish (category 4) was incorporated has been judged largely with reference to the general nature of each stratigraphic group (second column) and the place of the deposits within the spatial/temporal arrangement of the settlement, i.e. on grounds other than artefact content, in order to avoid circularity of argument.

TABLE 30: DEPOSIT TYPE AND ARTEFACT DEPOSITION

SG	Deposit type	Source	Notes on finds
SG1	Ditch fills	6	
SG2	Ditch fills	6	
SG3	Ditch fills	6	
SG4	Water-laid	2, 4b, 5	Stakes <i>in situ</i> . AeO 14, 18
SG5	Water-laid		No finds
SG6	Water-laid	2, 4b	Stakes <i>in situ</i>
SG7	Water-laid	4b	
SG8	Water-laid	4b, 5	AeM 164; AeJ 42
SG9	Water-laid	4b	AeO [8.2.25]
SG10	Water-laid, dump	2, 4b	Stakes <i>in situ</i>
SG11	Brushwood raft	2	
SG12	Road construction		No finds
SG13	Road construction	4c, ?4a	
SG14	Road construction	4c, ?4a	
SG15	Road construction	4c, ?4a	
SG16	Road construction	4c, ?4a	
SG17	Road construction	4c, ?4a	
SG18	Road abandonment*	4b	AeO [5.2.79, 8.2.36]
SG19	Road construction	4c	
SG20	Road construction	4c	
SG21	Road construction		No finds
SG22	Road construction	4c, ?4a	
SG23	Road construction	4c	AeO [9.1.36]
SG24	Road construction		No finds
SG25	Road construction	4c, 5, ?4a	AeJ 9, 63

SG	Deposit type	Source	Notes on finds
SG26	Road construction		No finds
SG27	Road construction	4c	AeO 194
SG28	Drain fills		No finds
SG29	Road construction/?abandonment	4c, 5, ?4a/b, ?3	AeM 184; AeR 7, 19
SG30	Road construction	4c, ?4a	
SG31	Road construction		No finds
SG32	Road construction		No finds
SG33	Drain fills	4a, 4b	
SG34	Road construction		No finds
SG35	Drain fills	4b	AeM 137; AeJ 62; AeO 37, 104, [5.2.29, 5.1.5, 8.2.13, 8.2.15, 9.1.1, 9.1.5, 9.1.24]
SG36	Culvert fills*	4b	
SG37	Road abandonment*	4b	
SG38	Drain fills*	4b	
SG39	Drain fills*	4b	
SG40	Road abandonment	4b	
SG41	?Water-laid, dump		No finds
SG42	Road construction		
SG43	Road construction	4c, ?4a	No finds
SG44	Road construction	4c, ?3, ?4a	AeR 9; AeO 57
SG45	Road construction	4c, 5, ?4a	
SG46	Road construction	4c, ?4a	AeO [5.2.62]
SG47	Cobbled surface		No finds
SG48	Ditch cut		No finds
SG49	Ditch fills	4c, ?4a	
SG50	Ditch cut		No finds
SG51	Ditch fills	4c, ?4a	
SG52	Cobbled surface		No finds
SG53	Ditch fills*	4c, ?3, ?4a	AeM 172, 180. AeJ 1, [1.12, 1.2.3]; AeR 12, 18; AeO 64, 68, 89, 94, [5.2.39, 5.2.43, 5.2.46, 8.2.16, 8.2.22, 8.2.26, 9.2.9–10]
SG54	Ditch	4c, ?4a	AeO 96, [8.2.24]
SG55	Building construction		No finds
SG56	Building construction	4c, ?2	AeO 42, 43, 60
SG57	Building construction/makeup	4c, ?2	
SG58	Building construction		No finds
SG59	Building construction	4c, 5, ?2	AeM 159
SG60	Building/road construction	2, 4c, 5, ?4a	
SG61	Building construction	4c, 5, ?2	AeO7
SG62	Building construction	4c, ?1, ?2	Contained two nearly complete antefixes, possibly foundation deposit
SG63	Building construction	4c, ?2	
SG64	Building construction	4c, ?4a	AeM 170, [6. 65]; AeO [5.2.73]
SG65	Building construction		No finds
SG66	Pit fill	6	
SG67	Building construction	6	
SG68	Building construction	6	
SG69	Building construction/use	4a, 4c	
SG70	Building construction	4c, 5	AeO 12, 14
SG71	Building construction	4c	AeJ, 11
SG72	Building demolition	2, 4a, 4c, 5, ?3	AeM 129, 148, 189; AeJ 7, 10, 12, 18, 19, 21, 31, 39; AeR 17, 20; AeO 2, 15, 27, 28, 39, [5.2.65–8]
SG73	Building construction	4c, ?2, ?4a	AeO [8.2.33]
SG73	Building construction	4c, ?2, ?4a	
SG74	Building construction	4c, ?2, ?4a	

SG	Deposit type	Source	Notes on finds
SG75	Building construction		No finds
SG76	Building construction	4c, ?2, ?4a	AeM [6.55]
SG77	Building construction	4c, ?2, ?4a	
SG78	Building construction		No finds
SG79	Building construction	4c	
SG80	Building construction	4c	
SG81	Abandonment/demolition*	4b	AeM 166; AeJ 33; AeO 17, 50, [9.1.27]
SG82	Abandonment/demolition*	4b	AeM 169; AeJ [1.9.27]; AeO [9.1.26]
SG83	Abandonment/demolition*	4b	AeO 62
SG84	Abandonment/demolition*	4b, ?3	AeR 16; AeO 65, 92, 109, [5.2.59, 9.1.35]
SG85	Associated with timber building on the ground	?4a, ?4c	
SG86	Open area	5, ?4a, ?4c	AeO 3,104
SG87	Open area	?4a, ?4c	AeJ 74
SG88	Building construction	4c, ?4a	
SG89	Drain blocking	4c, ?4a	
SG90	Building construction	4c, ?4a	AeJ 5
SG91	Building construction	4c, ?2, ?4a	
SG92	Building construction	4c, ?4a	AeO [5.2.60, 5.2.70, 5.2.72]
SG93	Drain fill	2, ?5	AeO [9.1.30]. Coin hoard
SG94	Abandonment/demolition*	4b, 5	AeM 191, AeJ 6, 35, 67, 72, 76, 81; AeO 31, 70, 86, [5.2.58-9, 5.2.64, 8.2.29, 8.2.30, 8.2.32-3, 9.1.28-9, 9.1.31-2, 9.1.34].
SG95	Building construction	4c, ?4a	
SG96	Abandonment/demolition*	4b, 5	AeO [5.2.63]
SG97	Building construction	6	
SG98	Building construction	6	
SG99	Building construction		No finds
SG100	Building construction		No finds
SG101	Building construction		No finds
SG102	Building construction	6	
SG103	Building construction		No finds
SG104	Building construction	4c, 5	AeJ 15
SG105	Building construction		No finds
SG106	Building construction	?4c	AeM 173, 175; AeJ 8; AeO 59, 108, [2.2.3, 9.1.18]
SG107	Building construction	4c, ?4a	
SG108	Cobbled surface	4c, ?4a	AeJ 51; AeO 38
SG109	Cobbled surface	4c, ?4a	AeM 190; AeO [5.2.47, 9.1.16]
SG110	Cobbled surface	4c, ?4a	AeO [5.3.9, 9.1.19]
SG111	Cobbled surface	4c, ?4a	
SG112	Building construction	4c, ?4a	AeM 124, 176, [6.36]; AeJ 35, 78 [1.1.6]; AeO 58, [8.2.23]
SG113	Building construction	4c, ?4a	AeM 159; AeJ 61; AeO 1
SG114	?Subfloor	4c, ?4a	AeJ 2; AeO 50, 51, 87
SG115	?Subfloor	4c, ?4a	
SG116	Building construction	4c, ?4a	AeO [8.2.18]
SG117	Building construction	4c, ?4a	AeM 146, 155, 181; AeO 34
SG118	?Floor	4c, ?4a	
SG119	Building construction	4c, ?4a	AeM 163
SG120	?Black earth	?4a	AeJ [1.9.8]; AeO [5.2.31, 8.2.8]
SG121	?Floor/subfloor	4c, ?4a	
SG122	Building construction	4c, ?4a	
SG123	Cobbled surface	4c, ?4a	AeO [5.2.38]
SG124	Cobbled surface	4c, ?3, ?4a	AeM 162; AeJ 65; AeR 3, 8; AeO [5.2.36, 9.1.6]
SG125	Abandonment*	4b, 5	AeJ 48, 54, [1.2.6]; AeO 49

SG	Deposit type	Source	Notes on finds
SG126	Building construction	4c, 5	
SG127	Building construction	4c	AeO [9.121]
SG128	Building construction	4c	AeM 132
SG129	?Building construction	4c	
SG130	Destruction	?2, ?4a	AeM 130
SG131	Destruction	?2, ?4a	AeM [6.29]
SG132	Building construction	4c	AeM [6.29]; AeO [9.114]
SG133	Destruction	?2, ?4a	
SG134	Cobbled surface	4c	
SG135	External to building	?4a	AeO 33
SG136	Building const./?black earth		No finds
SG137	?Black earth	?4a	AeM 165, 179; AeJ 66, [11.13]; AeO 26, 90, [2.2.3, 8.2.20, 9.1.10–12]
SG138	Cobbled surface	?4c, ?4a	
SG139	Building construction	?4c, ?4c	AeM [6.28]; AeJ 47
SG140	?Metalled area	?4c, ?4a	
SG141	Building construction	?4c, ?4a	
SG142	Cobbled surfaces	?4c, ?4a	
SG143	Robbing	5	
SG144	Building construction and use	?4c, ?4a	
SG145	External to building	?4a	AeO 5, 61, 91, [5.2.4, 9.1.13]
SG146	Abandonment	4b, 5	AeJ 57
SG147	Building construction/destruction	6	
SG148	Cobbled surface	6	
SG149	Building construction and use		No finds
SG150	Building construction		No finds
SG151	Pre-building makeup deposits	4c, ?2	AeM 171; AeJ 25, 56, [1.2.22]; AeO 52 [5.2.77; 9.1.38]
SG152	Building construction	4c, 5	AeJ 55
SG153	Building construction	4c, 5	
SG154	Building construction ?and use	4c, 5, ?4a	
SG155	Metalling	4c, ?4a	AeM 154, 178, [6.72]; AeJ 59; AeO 56, [5.4.11]
SG156	Building construction	4c, 5, ?4a	AeO [5.4.12]
SG157	Building construction and use	4c, ?4a	AeO [8.2.37–8]
SG158	Building construction and use	4c, ?4a	
SG159	Building construction and use	4c, ?4a	AeM 138; AeJ [1.2.21]; AeO 47
SG160	Building construction and use	4c, ?4a	AeM 131
SG161	?Floor/subfloor	4c, ?4a	
SG162	Building construction	4c, ?4a	AeR 10
SG163	Building construction and use	4c, ?4a	
SG164	Abandonment*	4b, 5	AeM 152; AeJ 51, [1.1.7]; AeO 96
SG165	Building construction		No finds
SG166	Building construction	?4c, ?4a	
SG167	Building construction	?4c, ?4a	
SG168	Abandonment/destruction*	4b, 5	AeM 13, [6.62]; AeJ 43, 52, 73, [11.35]; AeR 13; AeO 30, 40, 93, [8.2.34]
SG169	Industrial complex	2, ?4a	
SG170	Industrial complex	2, ?4a	
SG171	Industrial complex		No finds
SG172	Pit fills	4a	
SG173	Industrial complex		No finds
SG174	Water-laid/dump	4b	
SG175	Water-laid/dump		No finds
SG176	Drain construction	2, 4b, ?5	Stakes <i>in situ</i>
SG177	Makeup	2, 4b, ?5	Stakes and planks <i>in situ</i>

SG	Deposit type	Source	Notes on finds
SG178	Water-laid drain fills	?4a	
SG179	Drain construction	4b, ?5	AeO 41, [5.3.11]
SG180	Water-laid drain fills		No finds
SG180	Makeup, pole and pits	2, 4c	Pole <i>in situ</i>
SG181	?Makeup	?4a, ?4b	AeO [9.1.20]
SG182	Gullies*	?4a, ?4b	AeM 139, 167, 183; AeO 107, [9.2.4]
SG183	Dump*	4b	AeM 125, 142, 143, 144, 156, 157, 174, [6.10–11]; AeJ 3, 4, 62, 69, 78, [1.2.2, 1.9.4–5]; AeO 7, 10, 35, 45, 48, 54, 55, 74, 75, 81, 83, 84, 85, [5.2.15–6, 5.2.19, 5.3.1, 8.2.7, 8.2.9]
SG184	?Dump	6	
SG185	Uncertain	6	AeJ 68; AeO 72, 88, 111, 192
SG186	Cremation	1, 5	
SG187	Uncertain (trial cutting)	6	
SG188	Uncertain (trial cutting)	6	
SG189	Uncertain ?building	6, ?3	AeM 147; AeJ 30, 79; AeR 1, 14
SG190	Uncertain ?building		No finds
SG191	Various (sewer trench WB)	6	
SG192	Various (electricity pole WB)	6, (?4b)	
SG193	Various (geotechnical pit WB)		No finds
SG194	Various (geotechnical pit WB)	6	
SG195	Various (geotechnical pit WB)		No finds
SG196	Various (sewer trench WB)		No finds
SG197	Various (sewer trench WB)		No finds
SG198	Various (trial pit)	6	
SG199	Various (trial pit)	6	
SG200	Various (trial pit)	6	
SG201	Various (sewer trench WB)		No finds
SG202	Various (sewer trench WB)		No finds
SG203	?Use of ruined building*	5	AeJ [1.2.11]
SG204	?Use of ruined building*	5	
SG205	Stone robbing*	5	
SG206	Inhumation*	1, 5	AeM 128, 150

* Finds probably deposited after site went out of use

Source: coding for likely source of artefacts

1. Deliberately set aside from everyday life
2. Still in place of use or storage
3. Accidental loss
4. Disposal of rubbish:
 - (a) dumped in the area where waste is generated
 - (b) dumped on waste land (flytipping)
 - (c) used as pit fill/makeup/construction material
 - (d) used as fertiliser on fields and gardens
5. Derived from disturbance of surrounding deposits
6. Insufficient information about contemporary land use to evaluate

Abbreviations for classes of copper alloy objects: AeM = copper alloy item of military use. AeJ = item of jewellery. AeR = finger rings. AeO = other item of copper alloy. These are followed by the catalogue no. (for published pieces: a number in square brackets refers to the archive, see p.344) and below.

Copper alloy objects unstratified and in modern intrusions:

Military = 23 objects

Jewellery = 32 objects: Brooches = 16; bracelets = 5; misc. jewellery = 2; beads = 2; pin = 1; cosmetic grinder = 1; buckle frags = 5
Finger rings = 6

Other objects of copper alloy = 82 objects: Toilet articles/surgical implements = 6; household/furniture = 15; seal boxes = 2; fasteners/fittings = 34; metalworking = 16; miscellaneous = 9

There are few deposits in which many finds are likely to have been incorporated as the result of manuring (4d), since few (apart from SG182) can be identified as fields or gardens. This is the one type of deposition in which significant attrition of sherds is likely to take place. The conclusion therefore is that either Roman ceramics withstand repeated disturbance much better than is generally realised, or that their history between their manufacture and their final burial did not include much activity which would lead to excessive wear or breakage. One possibility, since we are dealing with an area adjacent to the fortress, is that some residual material represents military supplies where small excess quantities were allowed to build up over a period before being turned out and dumped. Waste ground, such as the area of the Riding School Field, would have been ideal for this purpose, and once there, they would not have been liable to much disturbance. Another possibility is that some of the material was disturbed during the digging of pits or ditches, either inside the fortress or in the civil settlement. Such activity anywhere in Caerleon after the initial phases would have been bound to disturb large quantities of artefacts which had been buried earlier, and, if not required for immediate backfilling, the spoil would again have been dumped in the most convenient place. Such dumps would not necessarily show up in the archaeological record. Relatively small quantities of soil, of a composition not too inimical to invertebrate life, superficially dumped, can quickly have all traces of their origin destroyed by normal soil processes (Limbrey 1975, 237) with no abrasion of artefacts. And if the object of the dumping was to fill cut features or hollows in another location, the fill could be transported with very little damage to the objects it contained.

A high proportion of residual material can be seen in the assemblages of easily datable artefacts, particularly coins, samian and coarse pottery. There is no reason to suppose that rubbish disposal strategies would have affected less-closely datable material in a different way; we may instance the condition of some of the lava querns, which suggests that they had formed part of type 4b deposits (see above, p.461). How far, therefore, do the artefact assemblages reflect what was being used in this part of the settlement, and how far do they represent the dumping of rubbish which was being generated elsewhere, perhaps in the fortress? It is of particular importance to establish which is the case since, if the material found on the site came from the fortress, it will not be possible to use it to make any assessment of life in the civil settlement.

Two groups of deposits can be singled out as containing rubbish dumped from elsewhere, rather than generated close at hand. These are the deposits in the sedimentary sequence discussed above (pp.28–38), and the deposits made after the site had gone out of use. In the former case, dumping seems to have been taking place when this area of the site was marshy wasteland at an unknown distance from the nearest inhabited area. In the latter case some distinction might perhaps be drawn between the sites of buildings, where rubbish generated when they were in use might form part of the destruction deposits. This can be seen for example in the destruction levels of Room 5.3 (SG94) which contain coins which have clearly been derived from the hoard in the culvert (SG93), showing that some disturbance of existing deposits took place after this building had been abandoned. However, the material dumped over the roads (SG18, SG35–40) and in the southwest corner of the Riding School Field (SG183) must have come from elsewhere. The large quantity of finds which came from the last-mentioned deposit gave it every appearance of having been a rubbish dump.

The only series of deposits which can be shown to incorporate significant quantities of material which probably originated on the site are those marking the construction of Building 3 and the demolition of Building 1. Here, before analysis of the coarse pottery had taken place, the dump deposits were identified from their composition (not the contents) as probably originating in the superstructure of Building 1. The pottery assemblage from these deposits tends to bear this out inasmuch as there is very little residual material, in marked contrast to most other groups on the sites. It does not seem to have incorporated a large amount of miscellaneous rubbish.

For the purpose of trying to assess how much of the material on the site was derived from the fortress rather than the civil settlement, copper alloy objects of overtly military purpose were used as a marker. They are not completely satisfactory for the purpose, since some of the military items might have gone missing on their way for recycling, and articles of kit could as

readily have been lost by soldiers during visits to the *canabae* as within the fortress itself, but soldiers would have formed a smaller percentage of the people present there than inside the walls, a situation which should have diluted the potential pool of lost items.

Military items were calculated as a percentage of the overall collection of copper alloy objects from each site, and also from the Mill Street area as a whole. This corresponds to items in the reports on jewellery, finger-rings (excluding unset gems) and other copper alloy objects. A rapid scan was then made of all the objects of copper alloy from intramural excavations at the fortress, held in the collections of the Legionary Museum, and similar percentages were calculated for each of these sites and for the fortress as a whole. The results of this work were not encouraging. Individual sites from within the fortress showed a considerable degree of variation, from an approximate 39% of military objects at Vine Cottage to 14% from the Museum Garden, which produced a large amount of scrap. The total from the fortress as a whole was 19%. Twelve out of the nineteen sites produced over twenty items, and of these five produced over 20%, three 15–20% and three 10–15%. Only the Museum Garden had a smaller percentage. The overall percentage from the Mill Street sites was just over 13%, of which the Riding School Field and the Smallholding contributed over 14% and Cambria House just under 10%. If the distribution of these finds is plotted against deposit type however (TABLE 30), and if all unstratified objects and objects from deposits which are likely to have been derived from elsewhere (4b, 4d) are removed, the percentage of military items rises to nearly 19%, or the same as the average for the fortress. There is therefore sufficient doubt about the original provenance of the Mill Street finds to preclude any study which seeks to contrast patterns of consumption in the civil settlement with those in the fortress, as has been done for example at Newstead (Clarke 1994). In the long run, it may be possible to compare whole assemblages, but at the moment the paucity of groups of finds from the fortress (particularly from the time of the main Mill Street *floruit* in the 3rd century), collected and studied according to modern criteria, makes it impossible to do this within the confines of post-excavation work. However, some assemblages, especially the shale objects and the ceramic figurines (see above, pp.444 and 302), do appear to have a makeup which appears to be more typical of civilian than military sites.

SETTLEMENT LAYOUT

Relationship between buildings, street network and open spaces

Since it was possible only to sample this area of the site rather than to strip it completely, it is not possible to be certain of the exact layout of this area, but a number of features are clear. A road (p.35) left the *porta principalis sinistra* and traversed the site, where it could be traced as far the eastern side of the Smallholding. Beyond this point, the marked change of level from the Smallholding to the adjacent field indicates that the immediate continuation of the road is likely to have been washed out, but on a direct line in the opposite bank of the Afon Lwyd, a localised and deep band of cobbles probably represents the road as it proceeds towards the known cemetery area on this side of the river. The ultimate destination of the road is Usk, where there was a fort. As the base of this road was seen only in a small sondage and during the watching brief on the sewage pipe trench, and no datable material was recovered from it, it is not possible to determine when it was constructed, but since it forms part of the network radiating from the fortress it seems likely that it was laid down when the fortress was constructed. The depth of the road deposits noted is consistent with heavy use over a prolonged period. Some deliberate build up to counteract flooding is possible, but the depth of the clay and charcoal banding seen to the south of the road during the watching brief on the sewage pipe trench (p.166) suggests that flooding was not a major problem on this part of the site where the natural ground level is higher.

Running roughly at right angles to this major road was another, the main north–south road (p.38), consisting either of a single entity meeting the extension to the *via principalis* at a crossroads, or two of two separate sections to north and south, meeting the *via principalis* at a staggered junction. Since it was not possible to examine the junction, the exact relationship between the sections to the north and south was uncertain: the dating evidence for the northern part indicates that it was not constructed before the mid 2nd century at the earliest. The

foundation date of the southern part was not established, but it was in use by Phase 3 of Building 1, before A.D. 180.

Once established, these roads continued in use and controlled the basic layout of this part of the settlement, although they themselves were not fully 'urbanised' until their open drainage ditches were replaced by stone drains, probably at the beginning of the 4th century. All known buildings, with the exception of Building 18/19, were aligned reasonably squarely on one or other of them. All of those buildings excavated in any detail were on the frontages of one of these main roads, but Building 7, which was set back from both of them, may have been accessible from a side-street. An undatable cobbled surface, which may have been part of a side street, was noted in this area of the site during the topsoil watching-brief (p.48), in a position compatible with giving access to Building 7. Building 17, only a single corner of which was recovered, probably also needed side-street access unless it was very deep from front to back. A definite side street is known from the Cambria House site (SG45–SG46), but this could not be followed far enough from the main north–south road to determine whether it gave access to other buildings. It does not appear to have been in existence before the construction of Building 3, probably no later than A.D. 180.

Because of the relationship between the main Roman roads and the areas available for excavation, that part of the site which contained Buildings 7 and 17 was one of only three areas where Roman occupation could be examined away from the main road frontages. Whereas the evidence from this area tends to suggest, albeit inconclusively, an urban-type development pattern, the area in the southeast corner of the Riding School Field was clearly open space. The network of drainage ditches here suggest that, in the final phase at least, it was being used for horticulture or small-scale agriculture, a hypothesis enhanced by the unusually high concentration of finds (p.163), which might be derived from the spreading of midden material as fertiliser. Also open space was the western part of the Cambria House site, for which no evidence for utilisation was recovered other than a scattering of cobbles. The evidence from these two western areas would suggest that there may have been a zone in the immediate vicinity of the fortress which was deliberately kept clear of occupation. Alternatively, occupation could have spread out from the main roads, but there was not sufficient pressure on land in at least this part of the settlement (see below, p.469), for it to spread as far as the fortress.

Land allocation and ownership

The incomplete picture of the topography does not allow for a detailed discussion of land-allocation, but some glimpses can be obtained. The relationship between Buildings 1 and 2, separated by a gap of less than 0.3m, and between Buildings 18/19 and 20, separated by a similar distance, suggests that, at the time these buildings were constructed (respectively the first half of the 2nd century or earlier, and the later 3rd century), the ground on which they stood was in separate ownership. It is not possible to determine with the evidence available whether this was ever preceded by a period in which an extensive area, possibly in single ownership, was developed at one time as a block of units which were then eventually sold off separately, as has been postulated for *Verulamium* (Frere 1972, 12–13). What can be suggested, however, is an amalgamation of properties *before* the construction of Building 3. Since the Phase 4 Building 1 had a doorway opening to the north, it is likely that it led directly to Building 2 (unless Building 2, unlike Building 1, preserved the original line of the frontage). The consolidation of the two properties had certainly taken place before Building 3 was constructed over both of them. The subsequent history of this enlarged property is unclear. There is no evidence that Building 5 in its original form had any connection with Building 3, but the area over which Room 5.6 was constructed certainly remained in direct communication with Building 3 and was therefore presumably in the same ownership.

A further complication is introduced by the possibility that Buildings 3 and 6 could have had independent upper floors (pp.82, 99). Here, however, even if there were different occupants on upper and lower floors, they must according to Roman law have had the same owner (Casey 1985, 47). Roman law will certainly have applied in the civil settlement at Caerleon after the

constitutio Antoniana, and probably before it as well, if the land on which it stood was under the control of the legion. It is another matter how strictly it was enforced: the fact that partitions were altered in Buildings 1, 3 and 12 ought, for legal reasons, to mean that these buildings were owner-occupied (Casey 1985, 46 and pers. comm.) but we cannot be certain how strictly the law was observed.

Buildings 12–14 pose other problems. The ground on which they were built may have been reclaimed from the Afon Lwyd as the result either of natural processes or of deliberate policy; in any case, the plant macrofossil evidence shows that is likely to have been lying waste in the years immediately before it was built over (p.33). It is not clear why the decision was made to build here. The most obvious explanation is pressure on building land; but this could in turn mean either that other, previously constructed, quarters of the town had reached maximum density as the population grew, or that properties within them were being enlarged by the acquisition of their neighbours (as with Buildings 1–5), and the displaced inhabitants were being forced into buildings of lower standards constructed in new and less favourable locations. Only a consideration of the dynamics of the civil settlement overall is likely to provide any answers to this question. A further point which needs to be considered is whether the construction of Buildings 12–14 took place as a planned development or on an *ad hoc* basis. At first sight the layout of the three buildings appears to favour the first hypothesis, with buildings of similar size, similarly placed on plots of similar width. Building 12's size in Phase 2 onwards, however, is the result of the addition of Room 12.5, and there is no evidence either way that would indicate whether Buildings 13 and 14 were, in their original form, closer to the original size of Building 12. The apparent similarity of plot size may also be illusory, since no southern boundary to Building 14's plot was recovered and it was anyway clearly larger than that of Building 12. No boundary ditch was located to the north of Building 13, but there was a short length of wall (p.129), which could be an outbuilding, if it is not a neighbour placed in a totally different relationship to the plot with a dissimilar type of boundary.

THE BUILDINGS

The buildings are arguably the single most important group of artefacts on the site. An interpretation of each individually is offered with the description of the building, where the data supporting each interpretation are discussed fully. For this reason, the conclusions reached there will be accepted here without further caveats, except in cases of ambiguity.

All the buildings encountered appear to have been either domestic or domestic/industrial in nature and of vernacular type, with the possible exception of Building 18/19 which, although the full plan was not recovered, was obviously of greater complexity. All the buildings were Romanised inasmuch as they were all rectilinear, but a wide range of construction techniques was encountered.

Construction techniques

The techniques employed varied considerably even within single buildings: differences were observed between internal and external walls, and between walls of different phases.

Use of the following techniques can be demonstrated in the superstructure:

- coursed rubble of Old Red Sandstone (Buildings 1, 2, 3, 6, 7, 8, 9, 10, 11), probably rising to eaves height at least in the case of Building 3;
- crude rubble dwarf walls in Old Red Sandstone, probably combined with some sort of timber framing (Building 12, external walls);
- timber sills laid on the ground with coursed rubble of Old Red Sandstone above (Building 1, Phase 2 internal walls);
- cobbled foundation raft with built-in emplacements for internal walls, either of mud brick or clay mass (Building 1, Phase 5) or timber (Building 5, Phase 1);
- mud brick reinforced with timber framework, over sill walls formed from massive blocks of Old Red Sandstone and conglomerate and/or raised cobble foundations (Buildings 13, 14, 15, 16, 17, 18/19, 20);

- sills of flagstone fragments, presumably foundations for timber sill-beams (internal walls Building 13);
- interrupted stone sills, formed either from large blocks of Old Red Sandstone and conglomerate irregularly set (Buildings 21, 22), or from smaller blocks more regularly set (internal walls Building 5, Phase 2 and Building 12, Phase 2);
- timber sill-beams set directly on the ground with no foundation (Building 12, Phase 1 east and west walls);
- groundfast timber sill-beams (Building 12, Phase 1 outshut);
- post-holes (Building 1, Phase 3 extension).

What is particularly striking about this diversity of construction techniques is the wide range in use at any one time. Even allowing for the fact that 1st century buildings, which are usually of less permanent construction than their successors, were not encountered during the excavations, there was no progression from the use of one type of construction to another. The choice of construction technique for use in any particular building therefore must have been governed by other considerations.

Clay building materials other than fired brick and tile did not survive at all well in the archaeological record, except in Building 13 where it had not been burnt sufficiently hard to enable it to be removed from the ground. Only 1.18kg of such material which had been accidentally burnt was recovered from all the Mill Street sites together, and it is usually not possible to determine how it was used, whether as mud brick, clay mass or wattle-and-daub. A single fragment (from context 927/SG53) bore the marks of a squared timber but no indication of wattlework: it is possible that this was derived from the neighbouring Building 13 for which a mud-brick and timber superstructure has been conjectured. Only one fragment (from context 3047/SG155) had a possible impression of a wattle at one side, but the piece was so large that, if it was derived from wattle-and-daub, the wattlework would have been very open.

Two features of the Mill Street buildings assemblage may perhaps be singled out for special mention. The first is that very limited use was made of timber generally, and hardly any use of ground-fast timber construction. This may be connected with the chronological range of the excavated buildings, since none were excavated dating to the 1st century A.D. or the early years of the 2nd century, which between them probably account for the highest proportion of timber buildings in Britain at any period. The second notable feature is the employment of massive blocks in Buildings 13–17. These are so large, heavy and awkward to manoeuvre that there must have been a perceived advantage to outweigh the manifest disadvantages. It is possible that this may have consisted, at least in part, of availability of surplus blocks from the remaking of the road drains in the late 3rd century or early 4th. That they were not necessarily always available may perhaps be seen in Building 14, where the sills are constructed partly of blocks and partly of cobbles with no apparent reason for the variation.

Foundations, where excavated or visible at the bottoms of robber trenches, were always of cobbles, except in the case of the Phase 2 internal walls of Building 12. These were usually laid in foundation trenches slightly wider than the walls which they supported, although in the case of Building 5 the foundation took the form of a raft under the whole building. Substantial cobbled foundations may have been necessary to guard against subsidence into underlying features (p.80), and this may also have been the case with Buildings 12 and 13. However, in other structures, such as Building 18, there was no indication anywhere within the excavated area that subsidence had been a significant problem. It may be that massive foundations were used as a matter of course because of a general distrust of the stability of the ground in general. Clay walls are particularly susceptible to damage if there is movement of the foundations (Michel 1986, 173), and such an attitude would have saved a lot of potential problems.

There is very little direct evidence for roofs. Two roof-fall deposits in Building 18 showed that this building was covered with sandstone slates, and the quantity of reed seeds in the lowest deposits in the ditch immediately north of Building 12 suggest that it may have been thatched. Otherwise the only evidence available is the composition of the destruction levels, which may not reflect a building's structure, particularly if the roofing materials were salvaged before the

building fell into ruin, or its area was subsequently used for dumping (see above, p.466). Building 1's destruction deposits are the most likely to reflect the actual composition of its structure and we suggest that the roof was of ceramic tile, as appreciable quantities of this material were recovered from them. Fragments of sandstone roof-slate also formed part of the destruction deposits; however, whereas all the ceramic tile was retained, fragments of sandstone roofing slate without diagnostic features were not, so it is not possible to give comparative figures. Since ceramic tiles seem to have been largely replaced as a roofing material by sandstone slates within the fortress before the end of the 3rd century (J.D. Zienkiewicz, pers. comm.), it does not seem likely that the situation in the extra-mural settlement would have been otherwise.

Comparative plan types

Three main groups can be distinguished among the Mill Street buildings: strip-buildings of coursed rubble construction; rather smaller rectangular buildings, of more vernacular construction but still with substantial remains, set in their own plots of land; and timber framed buildings resting on the ground or on vestigial sills. There are a few buildings which do not fall into any of these categories, notably Buildings 5 and 18/19. The evidence for Building 5 suggests that it was probably no more than an out-house. Building 18/19 is more complicated. Although it seems originally to have been constructed as a single range with its long axis parallel to the street, it was very soon elaborated to form a building with at least two ranges. This is the most complex plan of all the buildings, but the scant evidence available for the construction technique employed in its walls suggests that they may have been mud-brick. Mud-brick has only recently been established through excavation as a building material in use in Roman Britain, but the evidence available so far suggests that its use was not necessarily restricted to buildings of few pretensions to Romanisation (Perring *et al.* 1991, 30, 36).

Strip buildings

The buildings constructed largely or completely of coursed rubble masonry could be seen, where all or most of the plan was recovered, to be of strip-building type (Buildings 1 and 3). Where more restricted parts of the plan were recovered, there was nothing inconsistent with an interpretation as strip-buildings (Buildings 2, 6, 7). Building 3, however, because of the enclosure attached to its southern side must be regarded as an elaborated strip-building, created by the amalgamation of two plots. This building was the most highly Romanised of all those excavated, displaying a reasonably sophisticated layout and (in the second phase) floors of *opus signinum*.

The internal layout of all these buildings was different, and was presumably determined by the use for which the building was first intended. Building 3 was characterised by the presence of a spine wall running down the length of the building and dividing it into two unequal parts. These were in the ratio of 4:3 at the east end of the building where its full width can be seen, and the same was probably intended in the western end of the building although the alignment is slightly different. The space on either side of the spine wall was divided into a file of rooms, three to the north, with the one on the street possibly being open-fronted, and four to the west; there does not appear to have been any communication across the spine wall, as far as the positions of the doorways could be ascertained. There is sufficient evidence to suggest that there may have been an upper storey in the second phase at least, possibly accessible from outside the building rather than inside, and thus potentially an independent tenurial unit (see above, p.82). Building 6 seems to have taken the form of a file of rooms at the northern side, with the one on the frontage open to the street, and a corridor at the south side, possibly leading to a staircase extending across the back of the building (unless this too was accessible from outside). The internal layout of Building 1 is difficult to determine because of the damage to the internal walls (which may in any case have been sleepers to support the floor rather than partitions), but is likely to have involved a major north-south (i.e. side-to-side) division. It is not however possible to determine whether there was any communication between the two halves.



PLATE XXXV. Riding School Field looking northwest: general view of Buildings 12–14 during excavation. Building 14 is in the foreground to the left, and the stone-lined drain of the main north–south road to the right.

Buildings in their own plots

The other main group of rectangular private buildings found in towns consists of those, usually of entirely domestic character, set within their own plots (PL. XXXV). They are generally smaller and less Romanised than strip-buildings, with a strong connection to sites with a marked agricultural bias (Burnham and Wacher 1990, 17–18, 28). These are represented at Mill Street by Buildings 12, 13 and 14, and probably also 15, 16 and 17. Buildings 21 and 22 appear to fall roughly within this group, although they may share part of a wall and there is a clear connection with industrial processes.

The main difference in internal layout of these buildings, and in their relationship to their surroundings is that there was an entrance in the middle of the long side, leading from a yard or open area which extended around at least two sides of the building. In the case of Building 14 this appears to have been a back door, but there is no evidence in Building 13 that there was any other external doorway. In Building 12, there was another doorway in the short end facing the main north–south road, but it led to a yard and not directly to the road itself; and this door became an internal one after the construction of Room 12.5. The layout of these buildings shows no sophistication at all: Building 21 with its internal corridor is the most complex. The less urbanised plan types of Buildings 12 and 13 combine with the use of less overtly Romanised materials in their construction to give a more ‘vernacular’ feeling to these buildings.

The reasons for believing Buildings 13–17 to have been constructed largely of mud brick are discussed above. Building 12 must have been essentially of timber-framed construction, even if it was later extended in mud-brick (Room 12.5), and the rubblework composing the sills of the two long walls is of much lower quality than that employed in the ‘strip buildings’. This building combines some aspects of Burnham and Wacher’s type D (‘timber framed on a stone foundation’) with their type F (timber-framed resting on the surface of the ground: Burnham and Wacher 1990, 17). The evidence for Buildings 4, 21 and 22 is of a more conventional form

for their type F buildings, except insofar as Building 21 cannot have had a timber floor in Room 21.3 if the furnace was being used; and the use of cobbles for flooring some but not others of the rooms in this building and in Building 22 also points to only partial use of timber floors. Floors in the other buildings were of timber, cobbles or flagstones with no indication of the more sophisticated *opus signinum*. There is also no evidence that 'hard' roofing materials (tile or stone slate) were used in the roofs of any of these buildings.

Size of buildings

Burnham and Wachter (1990, 19–20) suggest that there is a correlation between the floor area of a building and its degree of Romanisation and type (strip building versus 'domestic vernacular within...spacious plots'). The area occupied by the various buildings which lay completely within the excavated area can be tabulated as follows (measurements to the nearest 0.1m):

TABLE 31: SIZE OF BUILDINGS

Building	Phase or element	Length	Width	Area (sq. m)
Building 1	Phase 1	19.7m	9.1m	179.27
	Phase 3	21.9m	9.1m	199.29
	Phase 4	c. 23.7m	9.1m	c. 215.67
Building 2		–		
Building 3		c. 20.5m	11.3m	c. 231.65
Building 4		c. 5.7m	2.4m	c. 13.68
Building 5	Phase 1	c. 9.5m	6.0m	c. 57.00
	Phase 2	c. 11.2m	6.2m	c. 69.44
Building 6		?12.6m	>5.6m	>70.56
Building 7		>7.9m	>3.6m	>28.44
Building 8		>7.8m	–	–
Building 9		–	–	–
Building 10		–	?7.6m	–
Building 11		–	?15.5m	–
Building 12	Phase 1	10.6m	8.0m	84.80
	Phase 2	15.3m	8.0m	122.40
Building 13		16.9m	8.0m	135.20
Building 14		18.5m	7.0m	129.50
Building 15		>9.3m	c. 5.7m	53.01
Building 16		>8.1m	–	–
Building 17		–	–	–
Building 18/19	S. wing	c. 27.0m	7.0m	c. 189.00
Building 18/19	E. wing	>6.2m	6.2m	>38.44
	Courtyard	>6.1m	c. 20.0m	>122.00
	Total, with courtyard			>349.44
	Total, excluding courtyard			>227.44
Building 20		9.5m	–	–
Building 21		8.0m	5.5m	44.00
Building 22		13.0m	5.8m	75.40

Notes:

'Width' = measurement along frontage; 'length' = measurement back into building plot

Building 1 does not include the 'annexe'

Building 3 does not include attached yard; if this is added, the total area is c. 481.75m²

Building 12 includes outshut; if this is excluded, the area is 10.6 × 6.4m (67.84m²)

Although the buildings of more 'vernacular' type are consistently smaller than the 'strip buildings', the difference between the largest of the former (135.20m²) and the smallest of the latter (179.27m²) is not especially significant.

CHRONOLOGY AND THE DEVELOPMENT OF THE SETTLEMENT

It is conventional for the writers of archaeological reports to provide in the overview an arrangement of material into periods. We do not feel that this is an appropriate treatment of the Mill Street material. Instead, we present the relative chronological positions of the various structural and depositional sequences diagrammatically in FIGS 122, 123, 124, and provide a general chronological overview.

There are two reasons for this approach. One concerns the relationship of the excavations reported here to the totality of the original civil settlement (see above, p.459). From the percentage estimates for the excavations as a proportion of the total inhabited area given above, it is clear that they give only a snapshot of what was happening at any one time, and there is no way of determining whether this was representative of the area as a whole. The other reason concerns the nature of settlement archaeology generally. In any community it is unlikely that synchronous development on all sites can be maintained beyond the initial foundation. Even where a single body such as the Roman army was in overall charge of building operations, it may not be easy to divide the work in different buildings into unified periods (Evans and Metcalf 1992, 59, 60, 72). In a settlement where individual buildings can reasonably be expected to be in separate ownership (see below p.496), events which are detectable over larger areas are likely to be rare; building history probably relates more to the fortunes of individual owners.

TABLE 32: DATING OF STRATIGRAPHIC GROUPS BY ARTEFACT GROUPS AND RADIOCARBON

SG	Context	Status	Material	Cat. nos	Remarks
SG1	1493	C	¹⁴ C bone ¹⁴ C wood	CAR-1082 CAR-1083	Features cut into substratum: Distribution of ¹⁴ C dates favours a deposition date before the foundation of the fortress. It is possible, although less probable, that the deposition date falls within the 2nd century A.D.
	1499	B	¹⁴ C wood	CAR-1084	
SG4	1105	B	Coarse pottery Samian	8 1	Grey (Phase 2) deposits in sedimentary sequence (1540): Samian is largely 2nd century, with the latest piece A.D. 170–200. There is very little coarse pottery but what there is favours a 2nd century date.
	1451	C	Samian	2–11	
	1485	C	Coarse pottery Samian	1 12–13	
	1486	C	Samian	14	
	1489	B	Coarse pottery	2–5	
	1488	B	Coarse pottery	6	
	1494	B	Coarse pottery Samian	7 15	
SG7	174	E	Coarse pottery	84	Grey (Phase 2) deposits in sedimentary sequence (068, 182): Very little; probably 2nd century, though one piece could be 3rd century. Attribution is however not certain.
SG8	1242	C	Samian	16	Red deposits (Phase 3) in sedimentary sequence (1540): Late 2nd century date, after A.D. 181.
	1450	C	Coins Coarse pottery Samian	89 9–45 17–30	
	1491	B	Coarse pottery Samian	46 31–33	
	1498	B	Coarse pottery	47–9	

SG	Context	Status	Material	Cat. nos	Remarks
SG10	112	B	Coarse pottery	50-1	Red deposits (Phase 3) in sedimentary sequence (068, 182): Context 112 gives a date of mid-late second century. The material from 114 is rather earlier and may all be residual.
			Samian	34-45	
	114	B	Samian	46-8	
SG15	3503	F	Coins	122	Final phase of <i>via principalis</i> continuation: After A.D. 203-208.
SG18	3024	F	Coarse pottery	412-27	Abandonment of <i>via principalis</i> continuation: Late 3rd century to early 4th.
	3051	F	Coarse pottery	430-7	
		F	Coarse pottery	428-9	
SG20	472	B	Coarse pottery	General summary (p.198)	Phase 1 deposits of north-south road, to north of <i>via principalis</i> continuation (489): Very little material, but generally 2nd century.
SG22	468	B	Coarse pottery	53	Phase 2 deposits of north-south road, to north of <i>via principalis</i> continuation: Very little material, but what there is suggests late 3rd to early 4th century.
SG27	452	B	Coarse pottery	54	Phase 3 resurfacing of north-south road, to north of <i>via principalis</i> continuation: Mid 3rd century to mid 4th.
SG29	017	F	Coins	283, 296, 341, 439	Final (Phase 4) surface and drains of north-south road, to north of <i>via principalis</i> continuation: Coinage is mostly Gallic Empire; the coarse pottery includes late 3rd century types.
	450	B	Coarse pottery	55-6	
	491	B	Coins	269	
	855	F	Coins	27	
	911		Coins	279	
	913		Coins Coarse pottery	267 57-8	
SG35	846	B	Coarse pottery	59-62	Phase 5 west drain fill of north-south road, to north of <i>via principalis</i> continuation: Early to mid 4th century at the earliest, possibly mid 4th century.
	914	F	Coarse pottery	69	
	951	B	Coarse pottery	63-8	
SG36	1257	F	Coarse pottery	70	Phase 5 culvert fill of north-south road, to north of <i>via principalis</i> continuation: Early to mid 4th century.
SG44	2393	E	Coins	57	Surfaces of north-south road, to south of <i>via principalis</i> continuation, post-dating Building 3: Antonine.
	2456	E	Coarse pottery	199-200	
SG45	2380	B	Coins	62	Lower surface of side street between Buildings 3/5 and 6: After A.D. 138.
SG53	860	F	Coarse pottery	General summary (p.198)	Phase 4 deposits overlying boundary ditch between Buildings 12 and 13: Early-mid 4th century.
	929	F	Coarse pottery	General summary (p.198)	

SG	Context	Status	Material	Cat. nos	Remarks
SG54	1229	C	Coins	433	Final fills of boundary ditch between Buildings 12 and 14: The coins from these deposits were unidentifiable Gallic Empire. The coarse pottery was not examined.
	1453	F	Coins	440	
SG56	2491	B	Coins	326	Building 1, Phase 1 internal deposits: Very little material, but what there is suggests 2nd century.
			Coarse pottery	196-8	
			Samian	49-50	
SG57	2498	B	Samian	51-2	Building 1, Phase 2 makeup: 2nd century, Hadrianic at the earliest.
*SG59	2465	B	Coarse pottery	201	Building 1, Phase 3 main modifications: Very little material. The coarse pottery indicates a late 2nd/early 3rd century date; most of the samian is somewhat earlier. There is a coin of Postumus (no. 189) in context 2465, but this is clearly intrusive.
	2490	B	Coin	322	
		Coarse pottery	202-4		
			Samian	53-9	
SG61	2451	B	Samian	60-3	Building 1, Phase 4, all modifications: Hadrianic or early Antonine.
*SG62	2448	C	Coarse pottery	211-12	Building 1, Phase 5 deposits over demolition: Very little material: Antonine, but the coarse pottery includes intrusive material.
			Samian	64-5	
SG63	2400	C	Coarse pottery	206-8	Building 1, Phase 5 Room 1.11 and door blocking: Early Antonine at the latest.
	2411	B	Coarse pottery	66	
*SG64	2437	B	Coarse pottery	209-10	Phase 5 deposits south of Building 1: Mid 2nd century, but the coarse pottery includes intrusive material.
			Samian	67	
	2438	B	Samian	76-7	
SG69	2377	B	Samian	78	Building 2 internal deposits: ?Hadrianic
SG70	2007	F	Coarse pottery	315-16	Building 3 yard wall, Phase 1 construction: Mid-late 2nd century.
			Samian	79-84	
*SG72	2352		Coins	107	Building 1 destruction (Phase 6): The date is provided by the very homogeneous coarse pottery group in context 2389 (later 2nd century, possibly with a <i>tpq</i> at A.D. 180). This is supported by the samian. There were six coins. Four were residual (one of Vespasian, no. 4, and three of Trajan, nos 23, 29 and 30). The other two were intrusive: a coin of Postumus (no. 196) from context 2389 (?same disturbance as before); and a coin of Septimius Severus (no. 107) which came from context 2352, the deposit over the east end of Building 1 immediately underlying topsoil.
			Coarse pottery	312-3	
			Samian	85-97	
			Coarse pottery	309	
			Coins	4, 23, 29, 196	
			Coarse pottery	213-301	
			Samian	98-116	
2397	Coarse pottery	314			
	Samian	117-18			
2405	Coins	30			
	Coarse pottery	302-8			
	Samian	119-27			
2410	Coarse pottery	310-11			
SG73	2368	B	Coin	135	Building 3, lower deposits Room 3.1: After AD 193. There is little pottery, which is probably all residual.
SG74	2074	B	Coarse pottery	340-1	Building 3, upper deposits Room 3.1: Late 3rd century to early 4th.

SG	Context	Status	Material	Cat. nos	Remarks
SG76	2161	B	Samian	128–34	Building 3, all deposits, Room 3.3: End of the 2nd century.
	2394	B	Samian	135–7	
SG77	2118	B	Samian	138–9	Building 3, all deposits Room 3.4: Antonine, after A.D. 138.
	2395	C	Coin	58	
SG80	2099	C	Coarse pottery	342	Building 3, floor deposits Room 3.7: Late 3rd–4th century.
SG81	2041	C	Coarse pottery	384	Building 3, destruction Rooms 3.4 and 3.6: Early to mid 4th century.
	2043	B	Coarse pottery	385–6	
	2076	B	Coarse pottery	General summary, p.198	
	2128	B	Coarse pottery	381–3	
SG82	2036	B	Coarse pottery	387	Building 3, destruction Room 3.5: Early to mid 4th century.
	2037	B	Coarse pottery	388	
SG83	2014	C, F	Coarse pottery	389	Building 3, destruction Room 3.7: Early to mid 4th century.
SG84	2046	F	Coarse pottery	394	Building 3, destruction Rooms 3.1, 3.2 and 3.3: Early to mid 4th century.
	2065	B	Coarse pottery	390–3	
	2095	B	Coarse pottery	395–6	
SG86–87	2367	C	Coarse pottery	320–3	SG86 and SG87 represent a series of surfaces contemporary with either Building 4 or Building 5. Because of the amount of residual material present, the only one for which a date can be given is context 2367 (mid 3rd century).
SG88	2315	B	Coarse pottery	328	Original Phase 1 Building 5: Most of the material is residual, but there is enough 3rd century material to allow a date in the middle of the century to be tentatively suggested.
	2317	C	Coarse pottery Samian	324, 326 140–5	
	2318	C	Coarse pottery	325	
	2337	B	Coarse pottery	327	
SG89	2390	B	Coins	150	Primary fill of Building 3/5 culvert: After A.D. 259.
SG91	2314	B	Coarse pottery	330–2	Refurbished (Phase 2) Building 5: See SG92
SG92	2176	D	Coarse pottery	333–5	Additions to Building 5 (Phase 2): There is much residual material in SG91 and SG92, but taken together they suggest a date into the 4th century.
	2310	B	Coarse pottery	336	
SG93	2111	F	Coins	141–3, 146, 148–9, 154–5, 163–4, 166–7, 169–71, 174, 176–80, 182, 188, 190–5, 197–203, 206, 208–9, 211, 213–21, 223–5, 228, 232, 234, 236–8, 240, 243	Eastern culvert fill: The probable hoard from context 2111 closes in A.D. 269, but could have been deposited before drain silted up.
	2189	B	Coins	165	

SG	Context	Status	Material	Cat. nos	Remarks
SG94	2081	F	Coins	246	Building 6: The pottery would suggest a date in the first half of the 4th century, possibly in its first quarter.
	2082	F	Coarse pottery	General summary, p.198	
	2085	F	Coins	61, 69	
	2086	F	Coins Coarse pottery	37, 45, 100, 103, 108, 114, 145, 172, 181, 222, 453, 457 344-80	
	2100	B	Coins Coarse pottery	116, 144, 147, 152, 173, 183, 185, 187, 205, 207, 233, 241-2, 448 343	
SG96	2183	C, F	Coarse pottery	397	Destruction of Building 6: First quarter of the 4th century.
SG104	816	F	Coins Samian	264 146-50	Building 12 Phase 1 construction: Whereas most of the samian is 2nd century, with one piece late 2nd/early 3rd, the coarse pottery extends into the early to mid 3rd century. The coin (a Tetricus I imitation) is intrusive: it came from one of the walls, whose construction and stratigraphic position make the introduction of later material not at all unlikely.
	874	C	Coarse pottery	General summary, p.198	
	1287	B	Samian	151	
	1472	B	Coarse pottery	General summary, p.198	
SG106	890	F	Samian	152	Building 12 internal deposits and structures, Phase 1: After A.D. 200.
	881	B	Coarse pottery	72	
	890	C	Coins	67	
	891	B	Coins	119	
	894	B	Coarse pottery Samian	General summary, p.198 153-6	
	1201	C	Samian	157-8	
	1293	C	Samian	159-68	
SG107	1402	B	Coarse pottery	73	Building 12 outshut deposits, Phase 1: Early to mid 3rd century date.
SG108	1267	C	Coarse pottery	115	Phase 1 yards south and west of Building 12: Late 3rd-early 4th century.
	1400	F	Coarse pottery	116-17	
	1403	B	Coarse pottery	118-19	
SG109	848	B	Coarse pottery	120-1	Phase 1 yards south and west of Building 12: Late 3rd-early 4th century.
SG110	1216	B	Coarse pottery	125-9	Phase 1 yard east of Building 12: Probably after the middle of the 3rd century.
	1277	B	Coarse pottery	130-1	
	1404	B	Coarse pottery	132-6	
	1457	B	Coarse pottery	137-9	
SG111	842	B	Coarse pottery	140	Phase 1 yard east of Building 12: Late 3rd-early 4th century pieces.
	843	B	Coarse pottery	141	
	1273	B	Coarse pottery	142-4	

SG	Context	Status	Material	Cat. nos	Remarks
SG112	812	B	Coarse pottery	77-8	Building 12, Phase 2 Room 12.5. Early 4th century or later, with one bowl mid-late 4th century.
SG113	885	B	Coarse pottery	96-7	Building 12, Phase 2 internal walls: Mid 3rd century or later.
SG114	851	B	Coarse pottery	74-6	Building 12, Phase 2 deposits Room 12.1: Late 3rd century and late 3rd-4th century.
SG116	815	C	Coarse pottery	98-9	Building 12, Phase 2 deposits Room 12.7: Possibly early 4th century.
	841	B	Coarse pottery	100	
SG117	835	B	Coarse pottery	101-6	Building 12, Phase 2 outshut: Late 3rd-early 4th century pieces.
SG118	827	F	Coarse pottery	107-9	Building 12, Phase 3 Room 12.7: Includes pieces possibly dating as late as the mid 4th century.
	829	F	Coarse pottery	General summary, p.198	
SG119	824	C, F	Coarse pottery	General summary, p.198	Building 12, Phase 3 Room 12.9: Late 3rd-early 4th century BB.
SG120	809	F	Coarse pottery	100-2	Building 12, Phase 3 Room 12.10: Late 3rd-early 4th century pieces.
SG122	806	F	Coins Coarse pottery	388 General summary, p.198	Building 12, Phase 3 Room 12.5: Late 3rd century. The coarse pottery includes late 3rd-early 4th century pieces. The coin is Gallic Empire, but otherwise unidentifiable.
SG124	811	F	Coarse pottery	146-8	Phase 2-3 yards south and west of Building 12: Early-mid 4th century pieces.
	831	F	Coarse pottery	General summary, p.198	
SG127	916	F	Coarse pottery	149	Building 13, Phase 1 outshut: Early-mid 4th century.
SG128	961	B	Coarse pottery	150	Building 13, Phase 1 floor in Room 13.1: 4th century.
		B	Coarse pottery	183	
SG129	963	B	Coarse pottery	151	Building 13, Phase 1 room 13.2: Late 3rd century to early 4th century.
SG131	950	C	Coarse pottery	154-7	Building 13, Phase 1 destruction of Room 13.3: Late 3rd-early 4th century.
SG133	948	B	Coarse pottery	158-9	Building 13, Phase 1 destruction of outshut: Mid-late 3rd century pottery.
	954	B	Coarse pottery	160	
SG139	945	B	Coarse pottery	161-2	Building 13, east end Phase 3: Mid 4th century.
SG151	3065	B	Coarse pottery	438-9	Deposits predating Building 18: Not before the second half of the 3rd century.
	3071	B	Coarse pottery	440-9	
	3073	B	Coarse pottery	450-2	
SG152	3004	F	Coarse pottery	453-4	Building 18, Phase 1 walls Room 18.2: Late 3rd century pieces.
SG153	3009	F	Coarse pottery	455-7	Building 18, Phase 1 wall Room 18.1: Late 3rd century or later.

SG	Context	Status	Material	Cat. nos	Remarks
SG155	3047	B	Coarse pottery	458-88	Building 18, Phase 1 area north of Rooms 18.1 and 18.2: 3rd century at the earliest, possibly extending into the early-mid 4th century.
	3048	B	Coarse pottery	489	
	3066	B	Coarse pottery	490	
SG156	3010	F	Coarse pottery	491-2	Building 18, Phase 2 walls of east range: Late 3rd to early 4th century coarse pottery.
SG168	2429	F	Coarse pottery	401-4	Destruction Buildings 21 and 22: Probably early 4th century.
	2459	B	Coarse pottery	405-6	
	2470	B	Coarse pottery	407	
	2471	B	Coarse pottery	408-9	
	2482	B	Coarse pottery	410-11	
SG172	2511	C, F	Coarse pottery	398-400	Pits containing slag: Very little material, but it would fit a late 2nd or early 3rd century date.
SG174	629	B	Coarse pottery	52	Area 760 before insertion of culvert: Very little material, but what there is suggests a mid-late 3rd century date.
SG176	639	B	Coarse pottery	79-80	Phase 1 construction of culvert in area 760: Early 4th century.
	658	B	Coarse pottery	53-8	
SG178	638	B	Coarse pottery	81-3	Phase 1 culvert fill in area 760: Early 4th century.
SG179	627	C	Coarse pottery	60-6	Phase 2 culvert construction: 4th century.
SG205	2049	B	¹⁴ C	CAR-1044	Inhumation burial: Distribution of ¹⁴ C dates favours a deposition date in the 6th century A.D.

Notes:

Status: A = sealed context; B = stratified but unsealed context where no evidence of disturbance was noted during excavation; C = stratified but cut by later activity; D = disturbed; E = context in unfinished section or dug as spit; F = immediately underlying topsoil either wholly or in part. The less securely stratified contexts may fall into more than one category.

Calibration details of ¹⁴C dates can be found on TABLES 3 and 7.

From the end of the second century, primarily the coarse pottery has been used to establish the sequence, as most of the samian and many of the coins can be shown to be residual either by comparison with the coarse pottery or from stratigraphic position. Where residual coins and groups consisting entirely of residual samian occur, they have been omitted. There appears to be a later disturbance, not recognised during excavation, near the southeast corner of room 1.8. Contexts affected are marked *.

Dating evidence for the 79 stratigraphic groups is set out in TABLE 32, where useful dating information is available. The problem of residual material has been discussed at length above: there were very few cases in which intrusive material was noted. The main instances concerned SG59, SG62 and SG64, all clustered around the southeast corner of Room 1.8 and just outside it: it seems likely that there may have been a later disturbance here which was not noted during excavation. Some of the groups produced very small quantities of material which by itself is insufficient for any conclusions to be formed, but which can be taken with the material from other groups in the same phase to produce a reasonably reliable date. There was only one pottery group which was large enough to establish a very precise dating. This comprised the demolition deposits of Building 1 (SG72) which also dated the virtually simultaneous erection of Building 3. The coin hoard in the fill of the shortened culvert (SG93), when coupled with a coin from the section which was filled in earlier (SG89) provides a very precise date for the culvert modifications and therefore probably also for the erection of Building 5.

By and large, provided allowances are made for the residual material, the groups are reasonably cohesive. This goes some way to offset the complete absence of sealed contexts,² and the unavoidable need to consider groups coming from deposits immediately underlying the topsoil. From the distribution of finds within the topsoil, it was clear that there had been very little disturbance of these topmost deposits since they were first buried. However, because of the need for the work on the coarse pottery to be so tightly focused, the material from those deposits was only considered where they formed the uppermost of a series. Where the material from these groups was studied, they were treated on a par with more deeply buried deposits (except insofar as they are marked in TABLE 32 as directly underlying topsoil). The only exception to this was the 'black earth' which overlay part of the Riding School Field and the Smallholding. This has been regarded as post-abandonment and essentially unstratified, except in the case in the case of Building 13 (context 903, SG134); where it was clear that 'black earth' formation took place over a period represented by Phases 2–5 of this building.

Chronological summary (FIGS 122, 123, 124)

The presence on the Mill Street sites of so much residual material is considered at some length above (pp.460–7). The problems created by this situation are however less acute when it comes to a consideration of the dating of the site. Once residual material has been discounted, the dating of stratigraphic groups proceeds in an orderly fashion from bottom to top of the stratigraphic sequences in the individual excavated areas of the site. The only sphere in which some doubt remains is where artefacts were discarded on land which was liable to flooding, and therefore soft and boggy. This applies particularly to material excavated from cuttings CB and DB (SG1, SG4, SG8, SG9, SG19, SG23, SG25, SG28, SG54, SG108, SG174–SG181). Under these circumstances, a greater than normal movement of artefacts after deposition could well be expected. This is not a problem for which any experimental data are as yet available, but the amount of displacement probably varies in accordance with the amount of trampling suffered by the deposits (N. Nayling pers. comm.). There is no evidence that trampling affected the deposits in either of these two cuttings, and accordingly the dating evidence has been taken at its face value.

Finally, something should be said about the almost total absence of official coinage after A.D. 270 from a site where the pottery shows that occupation continued at least into the first quarter of the 4th century. Contemporary coins were certainly reaching Caerleon, although at the 'Roman Gates' site only a few hundred metres from the Mill Street sites there are perhaps fewer coins of the Constantinian period (c. 317–48) than might be expected. Mr Zienkiewicz tells us that he has noted elsewhere within the fortress an apparent mis-match between coins and pottery in deposits of this period. Whatever the reason, there must have been an effect on the lives of the people living in this part of the civil settlement.

This summary includes references to stratigraphic groups to enable the descriptive text to be approached chronologically if desired. Those groups which cannot be placed with reasonable precision have been omitted.

The 1st century B.C. and the 1st century A.D.

There is no very reliable information for the site at this date, which was determined only for the lowest levels in Cutting CB (SG1). The information available suggests that this area of the Riding School Field may have been part of the river bed during this period (see above, p.33). It seems probable that the *via principalis* continuation was initially constructed (SG11) in the latter part of the 1st century A.D. when the fortress was founded, if not before, but this could not be established by the very partial excavation carried out.

² We use this in its strict sense of contexts which are entirely covered by structures or deposits which are impermeable and therefore prevent all penetration of objects from deposits above.

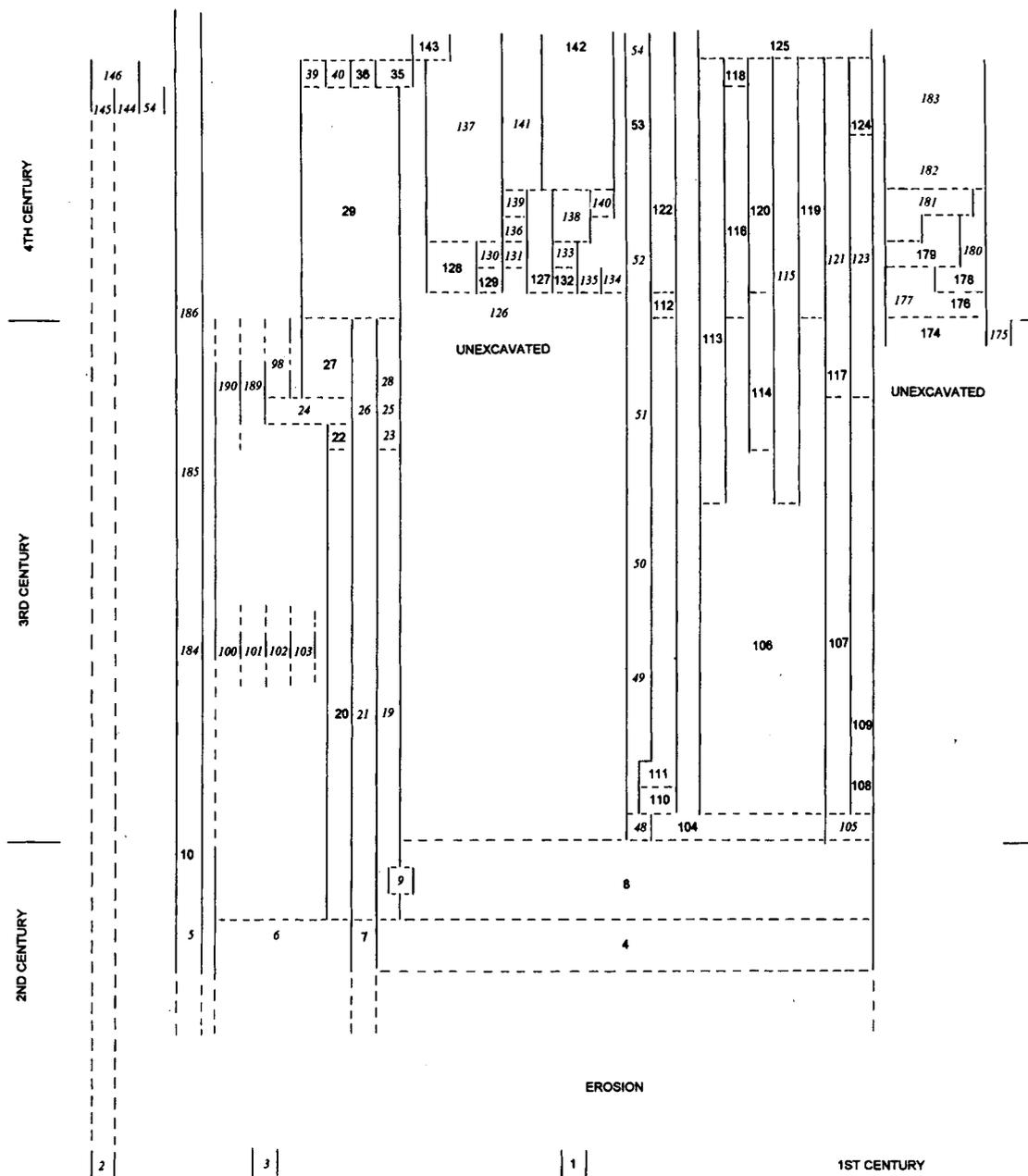


FIG. 122. Riding School Field: Temporal distribution of stratigraphic groups (axes not scaled). The numbers in italics are SGs without independent dating evidence. Solid horizontal lines represent closely datable transitions, dashed lines less closely datable ones.

The 2nd century

There is insufficient information available about the earlier part of this century to be able to determine whether the civil settlement was affected by the absence of the legion in the north during the construction of Hadrian's Wall, an absence which has on occasion been detected archaeologically within the fortress (Zienkiewicz 1986a, 47). The samian does suggest a falling-off of activity, but this material could have been derived more from the fortress than from the civil settlement itself.

The earliest definite structure is Building 1. Although there is no date for its original construction, the samian and coarse pottery relating to its occupation indicates that it was in use from the early to the mid 2nd century. This building fronts onto the main north-south road and is aligned on it; this would tend to suggest that the southern section of this road had already

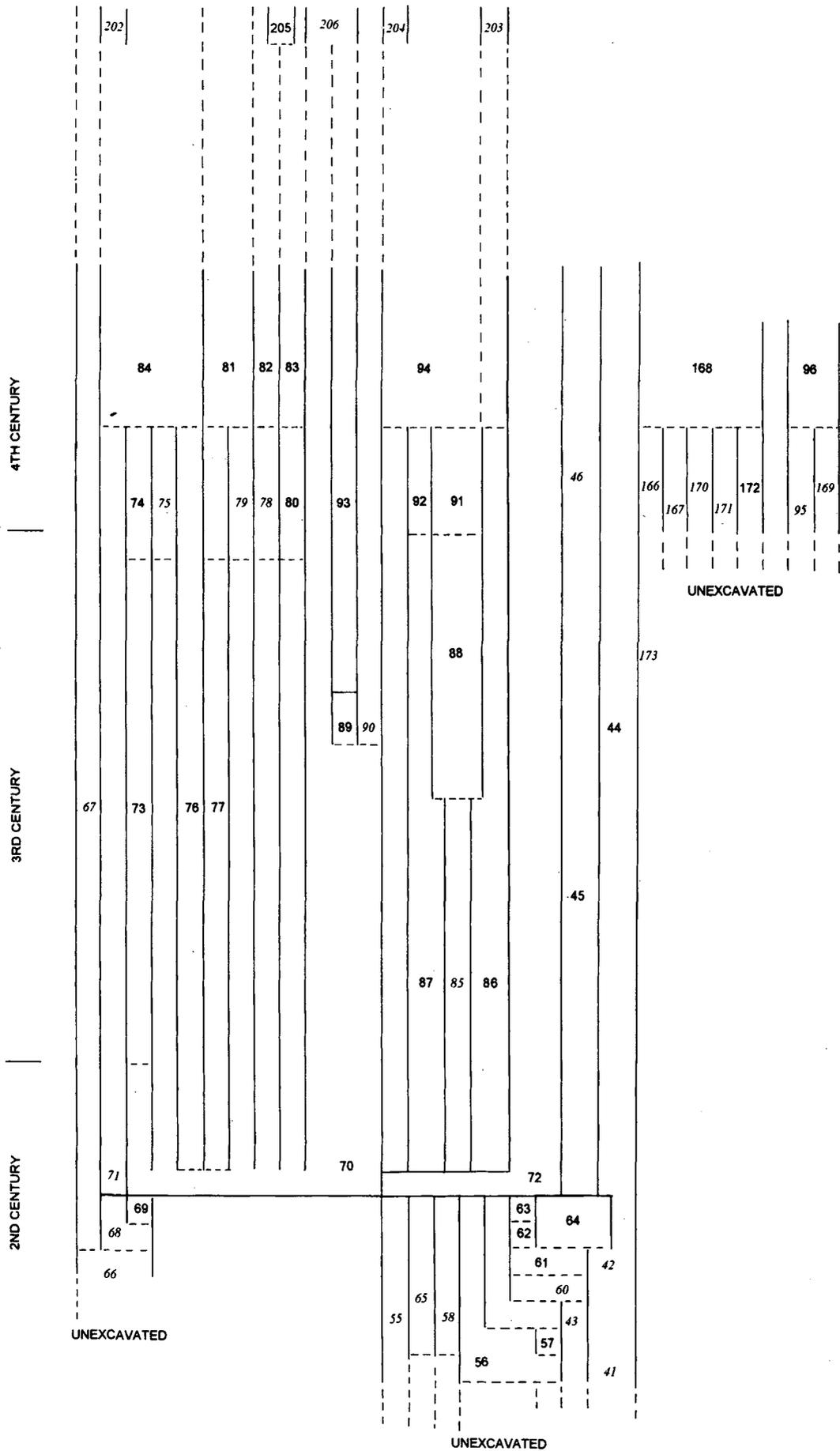


FIG. 123. Cambria House: Temporal distribution of stratigraphic groups (axes not scaled). The numbers in italics are SGs without independent dating evidence. Solid horizontal lines represent closely datable transitions, dashed lines less closely datable ones.

been constructed (SG42), though not enough of this road was excavated to allow it to be dated directly. Conclusive proof is lacking, however, and comparisons with the 'oblique shops' in the area of civil settlement to the west of the fortress suggest that caution should be exercised, since they do seem to pre-date the road which fronted them (though on a different alignment). The road was however in existence (SG43) at the time when Building 1 was in its Phase 3. The information available shows that the main north-south road did not yet extend as far the Riding School Field.

Following on its original construction (SG55-SG56), Building 1 underwent a series of modifications and extensions (SG57-SG65). Building 2 (SG66-SG69) must have been constructed before the demolition of Building 1, but there is insufficient evidence to determine when it was built. Other buildings which could have been erected at this time but for which there is no clear evidence are Buildings 10 and 11 (SG100-SG103).

The area in the Riding School Field later to be occupied by Buildings 12-14 seems to have continued to suffer from erosion during the early part of this century, but at some time towards the end this process ceased, and the accumulation of sediments rapidly turned this area into open ground, at least seasonally flooded, divided by gullies and possibly fences (SG4-SG7).

At some time in the mid to late 2nd century, no later than A.D. 180, Buildings 1 and 2 were demolished and replaced by Building 3 (SG70-SG73). The side street between Buildings 3 and 6 (SG45) also seems to have been constructed at this time, and it is therefore likely that Building 6 (SG95) was also in existence.

At the end of the 2nd century the open area on the Riding School Field was sufficiently dry to enable the main north-south road to be extended across it (SG19-SG21). To the west of the road, however, the ground continued open and prone to seasonal flooding (SG8-SG10).

The 3rd century

By the beginning of the 3rd century this area had dried out sufficiently to allow Building 12 to be erected (SG104-SG107). It was surrounded on three sides by a yard (SG108, SG110). Along the fourth side, immediately adjacent to the north wall, a ditch was excavated (SG48-9), apparently to provide a boundary. It is likely that this was done when the building was erected, though it cannot be proved. The subsequent history of the yard (SG109, SG111) and ditch (SG50-SG53) does not correspond closely with the later modifications to the building, the earliest of which are not likely to have taken place before the latter part of the century (SG113).

The main north-south road north of the *via principalis* extension was modified on a number of occasions (SG22-SG28). This work is not closely datable, but should occupy the period from the late 3rd century to the early 4th.

On the Cambria House site, Building 3 continued in occupation. In the area of its yard the out-house (Building 4), whose construction and use (SG85) are not closely datable, was replaced in the middle of the 3rd century by a larger structure, Building 5, which extended across the width of the plot (SG88). Almost certainly at the same time, the western end of the culvert was blocked off (SG89). This is dated by coin evidence to between A.D. 259 and A.D. 269. The main part of Building 3 suffered hardly any detectable change, apart from the provision of new floors in some of the rooms (SG74, SG78, SG79, SG80) late in the 3rd century or early in the 4th.

Nothing is known about occupation on the Smallholding before the south range of Building 18 was erected (SG152-SG155). On the basis of the coarse pottery from the construction deposits, this probably took place in the later 3rd century. However, the second phase of this building, in which the pottery of the foundation deposits is the same as that for the first, is dated to the early 4th century on other evidence. It is therefore possible that the initial construction may also be early 4th century and the pottery entirely residual.

The 4th century

On the Smallholding, Building 18 (if not built from new) was extended early in the century by the addition of a south range (SG156-SG162) which may have linked it with Building 19 (SG163).

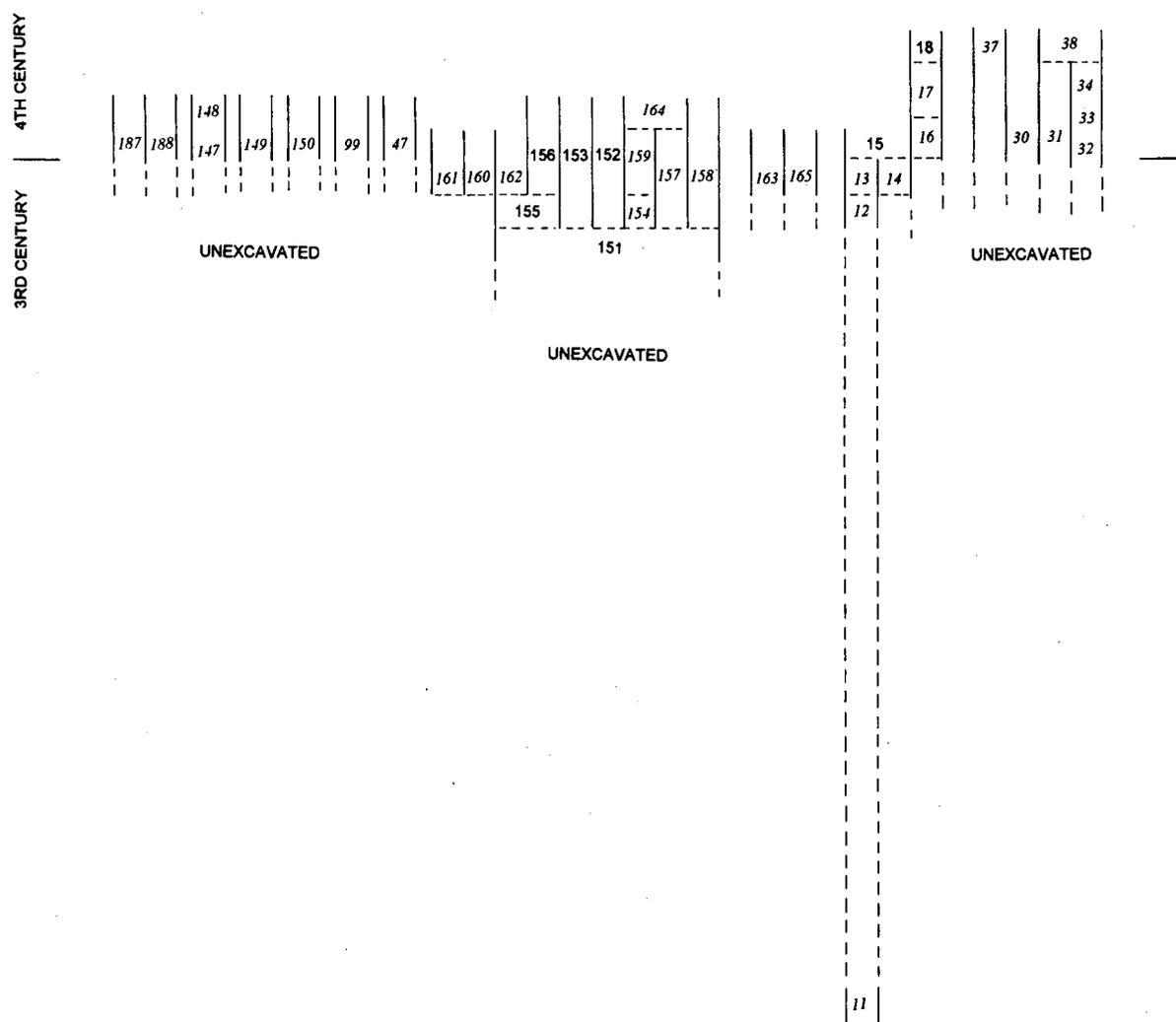


FIG. 124. The Smallholding: Temporal distribution of stratigraphic groups (axes not scaled). The numbers in italics are SGs without independent dating evidence. Solid horizontal lines represent closely datable transitions, dashed lines less closely datable ones.

On the Cambria House site, the original Building 5 was refurbished and extended into the yard area to its west to link up with Building 3 (SG91–SG92). This could also have taken place at the end of the 3rd century, but occupation certainly continued into the 4th as with Building 3. Although there are no construction or occupation dates for Buildings 21 and 22, the destruction deposits overlying them and the metalworking area date, like those over Buildings 3, 5 and 6, to the first half of the century and may indicate a cessation of occupation in its first quarter.

Further north, the final phase of alterations to the north–south road on the Riding School Field and Smallholding/Allotments (SG29–SG35) must have taken place in the early 4th century, even if the earlier ones did not. This phase involved the creation of the stone-lined drain, and is probably therefore linked with the analogous (but not independently dated) development of the *via principalis* continuation in the Smallholding (SG15–17).

We suggest above (p.470) that the construction of Buildings 13 and 14 on the Riding School Field (SG126–SG129, SG132, SG144) and Buildings 15–17 (SG147, SG149, SG150) on the Smallholding/Allotments may be linked with this phase of work on the roads, but this cannot be proved. There is nothing inconsistent in this with the late 3rd to early 4th century date for the destruction of Building 13 by fire (SG130, SG131, SG133), especially if the building had not been finished, as seems possible. Three subsequent phases of rebuilding and modification were

observed (SG136–SG143), taking the occupation of the building up to the middle of the 4th century. The neighbouring Building 12 was also remodelled piecemeal during the course of the century (SG112–SG122, SG125), going out of use at about the same time.

Also on the Riding School Field a culvert was constructed during the course of the 4th century (SG175, SG177–SG181). Since only a limited area was excavated on either side of this structure, it was not possible to determine whether this was trench-built following a recent rapid accumulation of sediments, such as had happened further west during the 2nd century, or whether its construction had involved the disturbance of pre-existing deposits over an area wider than that of the excavation (SG176, SG181).

The deposits overlying the main north–south road and filling its drains (SG35–SG40) indicate that it went out of use in the 4th century, like Buildings 12 and 13 which flanked it, very probably towards the middle of the century. There was nothing from the much smaller area which was excavated of the *via principalis* continuation on the Smallholding, however, which would indicate that this road was in use beyond the first quarter (SG18). As there were virtually no destruction deposits from the neighbouring Building 18/19, it was not possible to determine when this went out of use, but it is unlikely to have survived later than the road.

Post-Roman activity

Although slight evidence was noted for re-occupation or utilisation of the areas of Buildings 3 and 5 after they had been covered with rubble (SG202–SG204), there was nothing to suggest at what date this took place. An inhumation (SG206), which had been made after at least part of the structure of Building 3 had completely disappeared above ground, was dated to the 6th century.

ECONOMIC ASPECTS OF THE SETTLEMENT

The information available on economic aspects of the settlement is limited by the caution with which the finds assemblages must be used. For this reason all that can be said about trading patterns is that there is no reason to suppose that the full range of pottery types used in the fortress was not also available to civilians, particularly given the range of types and sources from the destruction deposits of Building 1, which are least likely to be contaminated with material from elsewhere. If true, this means that the inhabitants of the *canabae* could be potentially more Romanised in their way of life than civilians elsewhere in South Wales (Parkhouse and Evans 1996, 237–9; James forthcoming), at least in the 2nd century. The coarse pottery assemblage for the 3rd century and later incorporates a surprisingly high proportion of kitchen wares (p.202). If this is a true reflection of pottery usage on the site, it tends to suggest that the occupants were not of high economic status. This is combined on the Riding School Field with some indications of cultivation, and with buildings of a type frequently associated with an agricultural way of life. We may be dealing here with subsistence farming on the fringes of the settlement.

Given the dominance of the hearth/oven in Building 12, however, it seems likely that this building was used for some sort of industrial process. Identification of this has so far proved elusive. A fragment of smelting slag (300g) came from the base of the structure, but it represents hardcore used in construction rather than the product. If our identification of the traces behind the hearth as the emplacement of a tank is correct, it must have been some process which required both heat and water, but not one, such as dyeing or fulling, which required more than one tank.

Buildings 1 and 3 must also be regarded as potential workshops, although here too there is insufficient evidence to indicate what was being made. Building 1 also seems to have doubled as a shop, given the fact that a significant amount of its frontage was open to the street in Phases 2 and 3 at least. Building 18 may also have had a shop in Room 18.1, using the same criteria. Buildings 1 and 3 were characterised by masonry bases. In the case of Building 1 they were too large for any likely domestic use: there was such a base in the main part of the building which apparently lasted unchanged from the earliest identifiable phase until the building's

demolition, and another in the 'annexe'. The Building 3 examples were smaller, but Room 3.3 contained three of them, suggesting that they are unlikely to have been the bases for hearths or domestic shrines. This building as originally constructed incorporated a yard or other open space with a culvert built into the enclosure wall. The purpose of this culvert was not apparent, but an industrial application cannot be ruled out. Finally, discussion of the function of these two buildings cannot be concluded without mention of the three definite or possible copper alloy medical instruments (nos 12, 14, 14a) from the deposits marking the transition between the two buildings. It seems probable that their association is more than just coincidence, particularly since these deposits probably derive from Building 1 itself, and it may be that one of its inhabitants (particularly if it was in multiple occupation) may have been a doctor (but see Jackson 1990, 11).

The one industrial process which can be identified archaeologically in the Mill Street area is iron-smelting, which was taking place on the Cambria House site, possibly over an extended period of time if the material noted during the watching brief on the sewer trench (SG173) was *in situ*. The assemblage of ironwork suggests that smithing may also have taken place in the vicinity (nos 15–21, 42, 130), although no characteristic deposits or structures were noted: there were only four occurrences of possible smithing slag from all sites, and of these three were unstratified and one was in the destruction deposits overlying Building 5. This material may therefore have been dumped from elsewhere in Caerleon. The same is true of the other evidence for metalworking: most of the crucibles were either unstratified or came from contexts in which the finds are likely to be residual, which also applies to the residues from bronze-working (nos 191–4 and items coded [8.2] on TABLE 30).

It should be noted that the only evidence from Mill Street for textile working was eight pierced pottery and stone roundels of a type suitable for use as spindle whorls. No needles were noted amongst the copper alloy and bone objects, neither was any item identified which could be used in the production of cloth or bands. This may be the result of patterns of loss, deliberate discard strategies, or taphonomy (particularly at Mill Street where bone objects are concerned), or it could be a bias in artefact retrieval during excavation. It could, however, signal that, whatever activities were taking place on the excavated areas of the site, the production of clothing and soft furnishings did not figure largely.

THE CAERLEON *CANABAE* IN THE LIGHT OF THE 1984–90 EXCAVATIONS

No assessment of the excavations reported on in this volume is possible without a consideration of their place in the extra-mural settlement at Caerleon as a whole. The agenda for the study of the civil settlement was first set by the Wheelers in the 1920s. Their excavations on the amphitheatre were accompanied (1927) by limited trial work further along the Broadway (the modern road which follows the line of the *via principalis* and its continuation beyond the *porta principalis dextra*), on the opposite side of the fortress from the Mill Street excavations. Although this trial work was never published, the introduction to the amphitheatre report contained a short appraisal of the topography of Roman Caerleon which included the extra-mural areas. At the time it was written, burials were known from Lodge Hill, the Usk Road area and *Ultra Pontem*, and consequently the Wheelers made the assumption that these areas were entirely given over to cemeteries; 'the only remaining ground suitable for extra-mural habitation was the tract which intervened between the western defences and the flood plain of the recurring Usk, some 800 yards away' (Wheeler and Wheeler 1928, 112). For the next 55 years, therefore, the civil settlement was considered synonymous with this area, the point of contention being how much of it was occupied, and how far it extended towards Lodge Hill. Nash-Williams, on the basis of his excavations on the Bear House Field in the mid 1950s (unpublished; for summaries see *J. Roman Stud.* 45 (1955), 121–2; 46 (1956), 119–22), thought that it was a complete town: Boon, noting that the frontage of the street along the parade ground was not fully built up and that there was no superficial indications of building behind the frontage, thought that it was limited in extent and that its development had been stifled by the presence of Caerwent (Boon n.d., 7, 15; 1986, 16).

The time has now come for a complete reassessment of the evidence for the *canabae* at Caerleon in order that the 1984–9 excavations can be placed in their proper context. The area of known extra-mural settlement has been vastly expanded, and conclusions based on the premise that civilian occupation was limited to the area between the amphitheatre and the River Usk can no longer be regarded as tenable. At the same time, work in the surrounding area has produced further information on the neighbouring town of Caerwent, and demonstrated the existence of both another civil settlement at Usk and a settlement at Bulmore, only a couple of miles from Caerleon. The last 30 years have also seen enormous advances in Romano-British urban studies. The quantity of data available has increased immeasurably from towns of all types and sizes, ranging from chartered towns to settlements little larger than villages, and new methodologies have been devised for their study. Whatever its legal status, the civil settlement at Caerleon undoubtedly possessed urban characteristics, and no consideration of it is possible without an examination of its place in the hierarchy of towns in Roman Britain.

The use of the word *canabae* for the civil settlement outside a fortress is now standard (Salway 1981, 511, 591; Sommer 1984, 3–4). However, part of the discussion which follows concerns the relative claims of a military or civilian designation for certain of the buildings and facilities outside the fortress walls, and in these circumstances the more neutral ‘extra-mural settlement’ or ‘extra-mural development’ is preferred.

THE TOPOGRAPHY OF ROMAN CAERLEON

Natural features

The site chosen for the fortress at Caerleon occupied a terrace at the confluence of the Usk and Afon Lwyd and was surrounded on three sides by water, with the fourth side rising towards Lodge Hill, an outcrop of Old Red Sandstone of the St Maughan’s Group. The fortress itself naturally took up the prime location within this site, and any civilian occupation, even if officially encouraged (Sommer 1984, 14–15), had to fit into what was left over, including the lower ground towards the rivers. In modern times this lower ground has been prone to flooding, both with estuarine water brought by encroaching high tides and with fresh water as in the form of flash floods. It is clear, therefore, that appreciation of the history of this area of Caerleon is dependent largely upon an understanding of the development of the mouth of the Severn and the rivers which flow into it.

The floodplains of rivers which flow into the sea are complex systems and their action can still not be modelled reliably. Previous studies have been based on the premise that the hydrological conditions in the hinterland of the Bristol Channel were much the same in Roman times as they are today (Boon 1978a, 9; Boon 1980, especially 24–6 for a summary of earlier studies). However, there is now increasing evidence to indicate that the situation was a complex one. It is not yet possible to provide any definitive summary, particularly as regards the effects of the sea on Caerleon, not least because some of the evidence appears to be contradictory.

The preservation of organic material from the Roman period in the lowest levels on all the Mill Street sites indicates that these deposits have been permanently waterlogged since they were laid down (we may note the presence of plant macrofossils in the earlier deposits on the Riding School Field, the brushwood under the *via principalis* continuation and the preservation of leatherwork, pp.25, 35 and 450). Nevertheless, the absence of evidence for flooding in the levels associated with the later buildings would seem to suggest that a high water-table would not have been a particular problem when this area was settled. However, it should be noted that, because of the relatively limited nature of the excavations, our understanding is inevitably far from complete. Certainly the problems would have been no worse than those encountered within the fortress, at least on the Museum site (Zienkiewicz 1993, 31).³

³ Although it should be noted that no evidence for permanent waterlogging was noted at ‘Roman Gates’ (Evans and Metcalf 1992, 22–3, 34–6), at ‘Sandygate’ (Evans 1991, 105–6), or at the as yet unpublished Endowed School and British Telecom sites.

The courses of the River Usk and Afon Lwyd

Some idea of the development of the course of the Afon Lwyd in more recent times can be gained from a study of the river and adjacent fields on the ground, examination of map evidence and the results of trial excavations. Study on the ground of the fields west of the river indicates that there is an old meander lying east and south of the Cambria House site, extending as far west as the present Tanhouse Drive. As part of the 1989 evaluation, extensive trial works were carried out within the area enclosed by this meander establishing that there is over 3m of grey alluvium and no sign of Roman occupation. Similar observations were made in parts of Millmead, and the tenant of this field reports that only alluvium was discovered when a trench for the main sewer pipe was dug through the eastern part of this field. The tithe map (of 1840) records that much of this field lay not in the parish of Caerleon, but in the adjoining parish of Christchurch, which was largely on the other side of the river. The inference is therefore that the parish boundary fossilised the westernmost extent of the course of the Afon Lwyd in historical times (see FIG. 40).

Toft (1992) has convincingly demonstrated that the quay on the western side of Caerleon was not intended to deal with tidal conditions, but his analysis takes no account of the possibility that the quay may not have been on the river, but on a dock with a managed water supply. It was hoped that examination of the plant macrofossil evidence would produce data against which to test the hypothesis put forward by Toft that Roman Caerleon was above the tidal reach, but it is not possible to determine whether the maritime component of the assemblage was introduced through periodic flooding caused by the Severn Bore in a river normally above the tidal reach, or through periodic flooding caused, as now, by exceptionally high tides within the tidal reach.

The built environment*Extent of area examined*

Much of the previous work on the civil settlement has never been published, or only in very summary form. A gazetteer of known archaeological features is therefore included as Appendix 1. This gazetteer is divided into five sections, dealing separately with the four quadrants between the roads leading from the fortress gates and the area of *Ultra Pontem* on the other side of the River Usk.

An attempt has been made for the Mill Street sites (see above, p.459) to calculate the area excavated as a proportion of the area available for excavation in 1984–9 (11.38%).⁴ Unfortunately it is not possible to convert this into a percentage of the whole of the northern and eastern quadrants of the *canabae*, because it is not possible to determine how much of the settlement area has been lost to river erosion since Roman times. Any attempt to calculate the percentage of the settlement examined in the other two quadrants runs into problems of a different kind. River erosion is unlikely to have been so severe, although there may have been some loss downstream of the *porta praetoria*. There has clearly been accretion beyond the quay site, but for the purpose of this exercise the course of the River Usk in Roman times is taken as running from the point at which the road noted in the gazetteer as S1b has been noted in the modern river bank to the quay. The main problem lies in trying to assess the size of the area which has been examined by archaeologists. Neither the Wheelers nor Nash-Williams recorded the extent of their trenches. If Nash-Williams followed his normal excavation practice, the plans of the buildings which he excavated were recovered by trenching along the walls, coupled with very limited trenching within the rooms. The fact that nothing was recorded from his trial trenching is not evidence that no archaeology was encountered;⁵ Nash-Williams's own

⁴ This excludes the vacant area on the Mill Street frontage of the Cambria House site.

⁵ Re-excavation of part of his Gollodge's Field site has shown that he did not record all the foundations encountered within his trenches (J.D. Zienkiewicz pers. comm.).

assessment of his 1954 work was that 'extensive occupation extend[ed] over practically the whole area' (*J. Roman Stud.* **45** (1955), 122), and the watching brief carried out over the area which he trenched showed that the archaeology here was far more complex than the trial work had suggested (Boon 1972, 31). At a rough estimate, no more than about 6% has been examined in the quadrant extending from the *porta praetoria* to the *porta principalis dextra* and 13% in that extending from the *porta principalis dextra* to the *porta decumana*. A little further information is available from watching briefs.

Extent of the extra-mural settlement

Given the Roman practice of burying all but very small children outside settlement boundaries, the location of burials can be used to define inhabited areas, provided that certain provisos are borne in mind. The relationship between a town and its cemeteries is not static: the town can expand to encroach upon areas which had previously been cemeteries, or can contract freeing what had been its suburbs for burial. There is a further complication to estimating the built-up area at Caerleon, in that an apparent zone free from occupation seems to have been preserved, whether by accident or design, immediately around the fortress defences on the Mill Street side at least: was this regarded as outside the settlement boundaries?

Most of the known cemetery sites at Caerleon lie well away from the fortress and the known occupation areas. At the time of writing, the largest known burial area lies along the slopes of Lodge Hill, and apparently consisted of smaller cemeteries of limited area within the general cemetery area (Evans and Maynard 1997). On the opposite side of the fortress a certain amount of funerary material was found in the area of the Castle Baths, and whilst some of this (the gravestone of Julia [Esse]iunda, *RIB* no. 376, and the sepulchral *mensa*, Brewer 1986a, no. 18) must have been brought to the site from elsewhere,⁶ other items, such as the tile sarcophagus are unlikely to have moved far, if at all. Across the River Usk in *Ultra Pontem*, early 2nd century burials have been excavated at The Coed (Bulmore Road) just beyond the junction between the continuation of the road from the *porta praetoria* and the road to Usk *via* Great Bulmore (*Britannia* **25**, 250–1), on a site adjacent to the pipe-burial found in 1927 (Boon 1972, 107–8). Cremations are also known from along the road to Usk on the other side of the river, from well beyond any known extra-mural occupation. An isolated cremation, possibly redeposited, was found at Mill Street (p.165).

These cemetery areas seem most useful in defining occupation areas on the northern side of the fortress and in *Ultra Pontem*. At the time of writing, very few traces of occupation have ever been noted behind the fortress at Caerleon, i.e. on the side of the *porta decumana*, to the north and northwest. There are two burials to the east of the *porta decumana*, apparently outliers of the Lodge Hill cemetery, and the remains at C20 in the gazetteer could possibly be funerary.⁷ A number of watching briefs have been carried out in this area and proved completely negative (see FIG. 125). Comparisons with similar sites suggest that a zone free of occupation or only lightly occupied is to be expected on this side (see below, p.502).

The Riding School Field cremation raises interesting questions with regard to the extent of settlement. We have noted above (p.469) that the 3rd century buildings may have been erected on reclaimed waste ground, and it is possible, if the cremation is *in situ*, that this land continued to be considered as essentially *outside* the settlement, even after it had been occupied. In other words, this area may be part of the 'rural-urban fringe' (Burnham and Wachter 1990, 29), with cultivated areas extending towards the fortress rather than away from it, as might have been expected. The other point at which there is evidence for a 'rural-urban fringe' (and therefore the limits of the settlement) is in the field-system (Gazetteer D5) which lay at the extreme west of the excavated area on the other side of the fortress. Unfortunately any chronological indicators are lacking for this.

⁶ Two amphora-burials actually came from within the defences (Boon 1972, 107 n.358).

⁷ Two inscriptions were found at this point; one was a centurial stone but the other was part of a tombstone.

If the area covered by the settlement can be established, it may be possible to determine the position of its centre. Within the context of his 'stunted growth' model, Boon considered that the Bear House Field excavations were at or close to the centre. However, examination of known areas of extra-mural activity would seem to indicate that the centre of gravity of the settlement lay further towards the *porta praetoria* (FIG. 125). We now know that on the west bank of the River Usk settlement potentially extended up to the river bend to the south of the fortress (Gazetteer B2/D2) and beyond, since occupation here is revealed as the bank is eroded back. On the west side there was occupation along the road which continued the line of the *via praetoria*. It should further be noted that the largest known buildings, the Castle Baths (Gazetteer C42), and the Amphitheatre Baths with a connected or adjoining courtyard building (Gazetteer C1), lay on this side of the *via principalis*. To these can possibly be added the Uskside building (Gazetteer C43) which appeared to have thick walls and a vault. It would therefore seem probable that most of the other principal buildings lay towards the south in the unexcavated areas, possibly close to the *porta praetoria*.

The relationship of the civil settlement to the fortress

Any consideration of the civil settlement must attempt to distinguish which parts of the extra-mural settlement were civil and which were military. The gazetteer (Appendix 1) lists a number of structures as 'military'. These constitute a minimum; other buildings have been suggested as military: the Amphitheatre Baths (Gazetteer C1), the corridor building (Gazetteer C19), the quay (Gazetteer D3), and the Castle Baths (Gazetteer C42). What evidence is there which will determine whether a building was for military or civilian use?

In the past, it has been taken as self-evident that any building constructed by the legion in Caerleon was for legionary use. There are two problems with this theory. One is the criteria for identifying military construction, and the other is the fact that there is evidence from elsewhere in the Empire that the legions put up buildings which were not for their use or for the use of other troops. Inscriptional evidence from the civil settlement attached to the legionary fortress at *Lambaesis* in the province of Africa shows that monuments in the forum and the Temple of Neptune were constructed by the Third Augustan Legion (CIL VIII nos 2652, 2654, 2698) and this legion was also building in the neighbouring colony of Timgad (CIL VIII nos 17842–3). These buildings were all gifts of the emperor: the use of the army in similar building projects in Egypt is preserved in literary sources (SHA *Probus*, 9; see Watson 1969, 145 for discussion). Although definite evidence is lacking from Britain, there is no reason to suppose that similar benefactions could not have happened here. On a slightly lower official level, an inscription from Caerleon records the restoration by a legionary legate of the temple of Diana, probably towards the middle of the 3rd century (*RIB* no. 316): the gift of a building from an army officer to a local community in Judaea is recorded in the Gospels (Luke 7, 5). It is a matter of speculation whether benefactions of this type would have involved making available men and materials to carry out the necessary building work, but the possibility should always be borne in mind. The use of soldiers for private building work was obviously known, since it was one of the characteristics of a good commander not to permit it (Campbell 1994, no. 192).

It is tile stamps which have been used as the main piece of evidence to demonstrate legionary participation in building projects, but against this background it would not be surprising if legionary stamped tiles turned up in buildings constructed for civilian use.⁸ Boon has suggested (1984, 16) that the purpose of stamping tiles was to prevent unauthorised use, but tile stamps turn up in buildings which are unlikely to be other than purely civilian: he records six from the 'oblique shops' (Gazetteer C9–14), and our excavations at Mill Street produced 102 stamped tile fragments, including eight stamps from Building 1, thirteen from Building 3 and seven from

⁸ See MacMullen 1959, 231 n.80; 1963, 29–30: the list of relevant building inscriptions in the former article (p.218), however, contains a high proportion of dubious or mistaken entries.

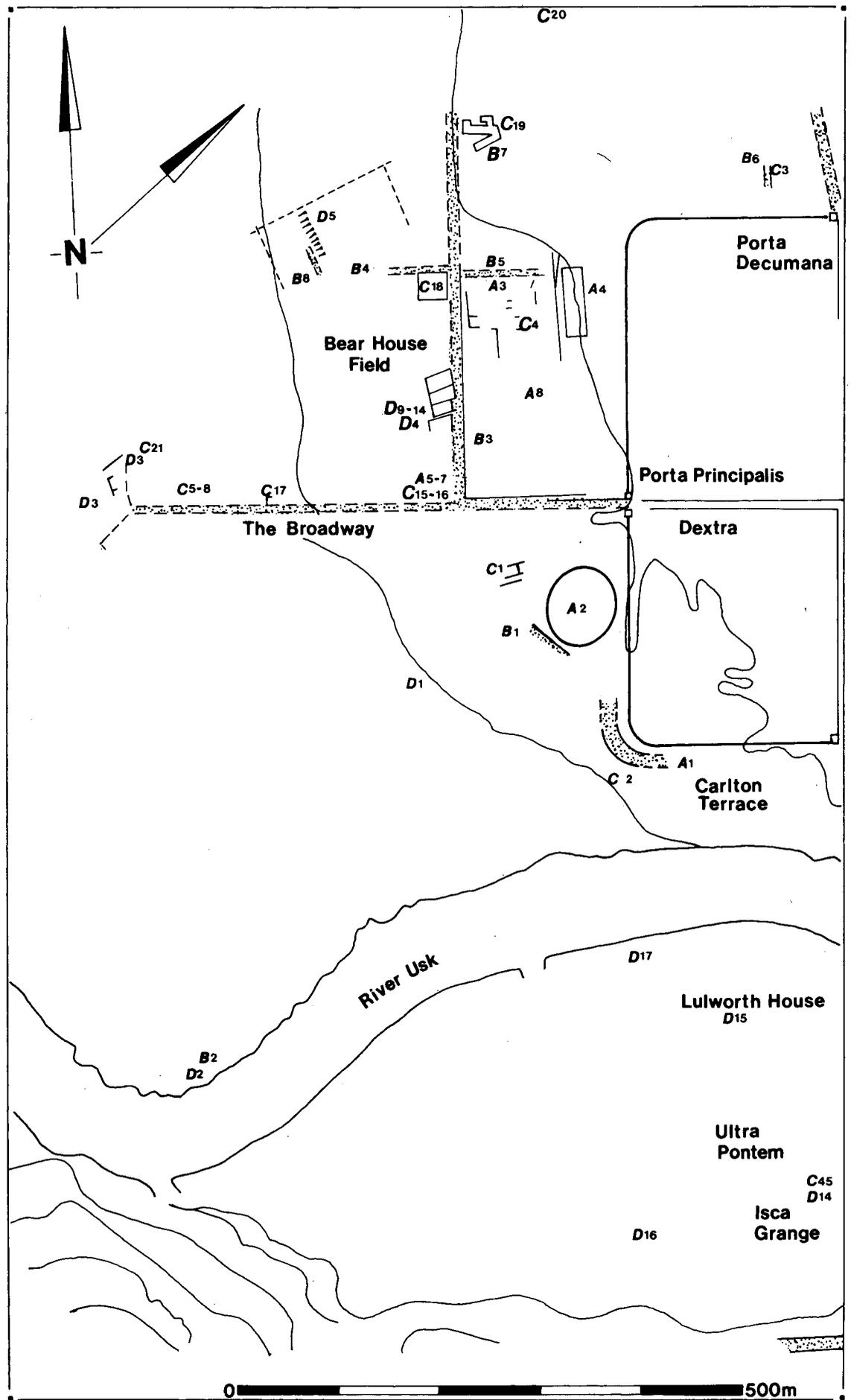
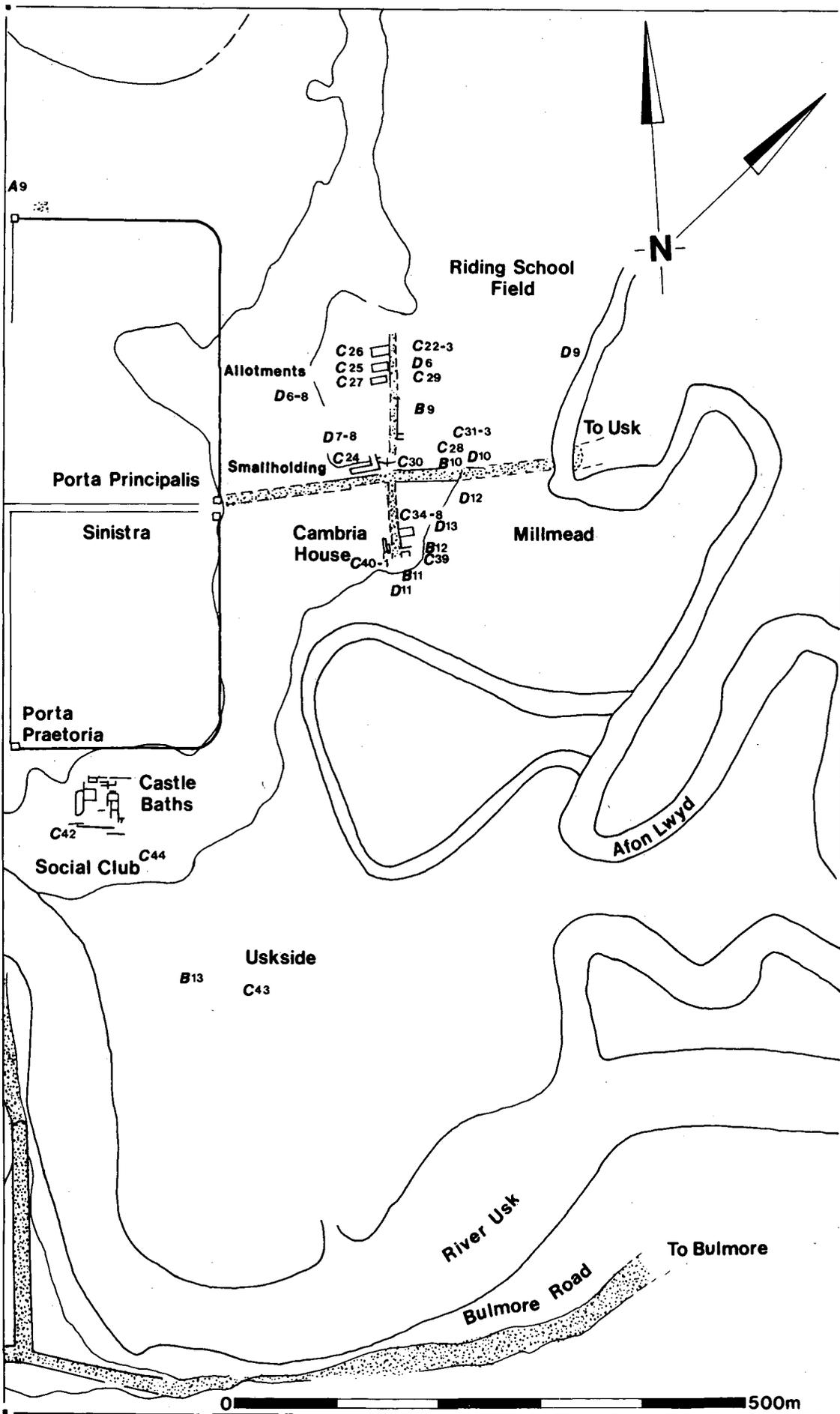


FIG. 125. Extra-mural occupation at Caerleon.



Building 5.⁹ The possibility that surplus stocks were sold off, officially or unofficially, cannot be ruled out, and it is difficult to credit that there would have been strict controls over the use of demolition debris as hard core. The much greater numbers of stamps recovered from the Amphitheatre Baths (Gazetteer C1) and the winged corridor building (Gazetteer C19) may be purely a function of the greater use of tile in their construction, as the former had a tiled roof and the latter a tile-built hypocaust. It should further be noted that a bath-building in York, on the opposite side of the river from the fortress and well into the area of the *colonia*, had a floor constructed from legionary stamped tiles (Ottaway 1993, 70, 72).

The main reason for supposing that the Amphitheatre Baths were military is the stamped tile found there (Boon 1970, 60; 1984, 49); identification as the main fortress baths can no longer be sustained now that these are known to lie within the defences. The furnace arch still visible may be 'evidently of legionary construction' (Zienkiewicz 1986a, 36), but as we have shown, this does not necessarily mean that it was exclusively for military use. Since the large, elaborate and well-appointed Fortress Baths dated to the foundation of the fortress and may have been amongst the earliest buildings constructed (Zienkiewicz 1986a, 37–8), it is a moot point whether there was any further need to provide the soldiers with baths. There is no reason therefore why the initial provision of the Amphitheatre Baths need have been for the army, nor why the restoration which provided Antonine stamped tiles for the roof should prove military ownership. Since stamps on roof-tiles remained visible once the tiles were on the roof, it is likely that they must have been there with official sanction, but the same cannot be said of the tiles used in the hypocaust of the winged corridor building: once these had been mortared into position the possibility of detection must have been extremely small.

The other piece of evidence which has been used to support the argument that the Amphitheatre Baths and the winged corridor building were military is their location within a putative 'military zone' outside the fortress, demarcated by the wall which bounded the parade ground. It is however pure conjecture that this wall continued either beyond the parade ground as far as the corridor building, or on the other side of the *via principalis* to enclose the baths; there is no evidence for either continuation.

The remaining structure of doubtful status is the quay. Whilst it is reasonable to suppose that the army provided itself with facilities on the river bank for unloading ships, we do not know enough about the riverside arrangements to be able to tell whether the area of the excavated quay represents a significant proportion of those facilities and was under military control, or whether it formed only a small proportion of a waterfront which was partly military and partly civilian. Certainly there is nothing either in its construction or the deposits associated with it to connect it to the army. It is extremely unlikely that it was the only quay, since it was not constructed until the early 3rd century, and there must have been harbour facilities from the foundation of the fortress.

The buildings of the extra-mural settlement

Materials and techniques

The building materials and techniques used on the Mill Street sites are discussed at length above. The watching brief on the playing fields indicate that earth-fast timbers were also employed, particularly for the early buildings pre-dating the parade ground (Boon 1972, 31–2). The buildings excavated on the Bear House Field were of coursed rubble.

Public buildings

There is epigraphic evidence for a number of temples in Caerleon. The temple of Diana is recorded by name in the inscription which records its restoration (see above, p.491). This

⁹ These figures are not directly comparable as the proportion of the areas excavated and the retrieval rates at least for partial stamps were both much higher in the Mill Street excavations than the Bear House Field excavations.

inscription is said to have been found with part of a statue of Diana. A temple to Jupiter Dolichenus and a Mithraeum have been surmised on the basis of dedications (*RIB* nos 320, 322), whereas a statue to Mercury and an altar to Salus the Queen (*RIB* nos 321, 324) are likely to have formed part of official legionary worship since they were found in the vicinity of the *principia*. A further altar, to Jupiter Greatest and Best (*RIB* no. 319) could be either legionary or further evidence for a temple of Jupiter. There is no excavated evidence for any of these buildings.

The only excavated buildings at Caerleon which are likely to have been public buildings are the baths. Two definite sets of baths are known in the extra-mural area, but it is possible that the Uskside building (Gazetteer C43) was also a bath-house, an interpretation based on its apparent vaulted construction and its position near the river, but there is not enough evidence for this to be regarded as more than a tentative hypothesis. The Castle Baths (Gazetteer C42) are too large to make it likely that they were attached to a private dwelling. They have produced no certain evidence for military involvement in their construction, with the possible exception of a centurial stone (*RIB* no. 338), which may have been redeposited.¹⁰ Two dedications to Fortune, coupled with one to *Bonus Eventus* (*RIB* nos 317, 318), may represent the clientele, assuming these dedications were found *in situ*. One was put up by a *praefectus castrorum* and the other by a husband and wife. The husband has a *gentilicium* and may have been a soldier, though this is not recorded; his wife was necessarily civilian.

The Amphitheatre Baths are poorly understood. Two fragments of bath-building (Wheelers' Baths A and H, adjoining amphitheatre entrances A and H) were excavated by the Wheelers as part of their amphitheatre excavations (Wheeler and Wheeler 1928, 144–5). They are usually interpreted as belonging to separate buildings because of the different alignments and rather different histories, but could be part of the same one: the difference in alignment is not conclusive (cf. the corridor building, Nash-Williams's Building VII; Gazetteer C19). It may also be the same building as that excavated in the 19th century in the field adjoining the amphitheatre, described as 'an inferior description of baths, probably cold or tepid, together with the drains for supplying them with water' (Lee 1862, 128).¹¹ Excavations in 1955 uncovered part of a very large building (Nash-Williams's Building IX, Gazetteer C1) with walls of at least four periods. The site produced fragments of Tuscan columns, engaged columns and dwarf columns in Sudbrook sandstone, as well as tiles bearing LEG II AV ANTO stamps. Nash-Williams believed this building to be part of the same complex as the Amphitheatre Baths. This site has never been published; however since Nash Williams's records were re-examined in 1995 as part of an archaeological evaluation of a proposed development on the Broadway, some attempt at an interpretation may now be offered.

The earlier phases were too fragmentary for any interpretation to be attempted, but the latest identifiable building phase included a monumental entrance with two columns *in antis*, and (probably) a courtyard surrounded by ranges of rooms, at least one of which had a hypocaust. Bath H, the larger of the two fragments excavated by the Wheelers, was constructed *c.* A.D. 70–85, provided with a new furnace at the same time as the amphitheatre was refurbished in the first half of the 2nd century,¹² and then demolished, probably shortly afterwards but certainly before the early 3rd century. The construction date of Bath A was about the same, but its post-demolition deposits were dated to the 2nd century by the pottery they contained. It is impossible to determine how, if at all, the earlier phases of Building IX relate to these baths, but the latest identifiable phase of Building IX, in which a monumental entrance and ranges of

¹⁰ It came from 'the garden of Mr John Jenkins', part of which overlay these baths. However, Brewer notes that some of the sculptured and inscribed stones found on this site may have been brought here when the castle was constructed, and the baths themselves contained sculptured stones reused as building material (Brewer 1986a, 16–17, 30; Lee 1862, 22, 86).

¹¹ This has been marked by the OS as nearly 200m south of the amphitheatre, but Lee's plate 51 shows that this was the position of a well (D1) and that the baths seem to have been closer to the Broadway.

¹² Originally dated to *c.* A.D. 125, but subsequently revised to A.D. 140 or later (Boon 1972, 45).

small rooms were constructed, extends to a later period, if the tiles with ANTO stamps were actually used on the roof at any stage. Boon (1987, 33, 41; below p.498) suggested that the building of this phase was a *macellum*, built on the site of the baths after their demolition. However, although the demolition of the Bath A and Bath H fragments pre-dates the early 3rd century, significant sections of the earlier groups of walls in Building IX appear to have been retained in use until this building was finally demolished. In addition, if we are correct in assigning to this phase a probable concrete subfloor and a possible box-tile wall-jacketing, the building had a hypocaust system during the phase in which it was provided with ranges of small rooms.¹³ If this is the case, it cannot have been a *macellum*. Use of the whole complex as a bath-building would be consistent with the evidence for the earlier structural phases. However, the ranges of small rooms represented by the Group 1 walls, have no place in the normal ground-plan for such a building. What such a plan does suggest is a large private dwelling or a *mansio*. The plans of both have many features in common (Drury 1982); these include bath-suites, and ranges of small rooms, some possibly provided with hypocausts and usually disposed around courtyards. What is known of the Amphithèatre Field building would fit either interpretation, although the excavated baths and ranges of (?hypocausted) small rooms cannot be proved to be contemporary.

The courtyard-building to the north of the *via principalis* (Building VII, Gazetteer C18) has long been identified as a *mansio* (Boon 1972, 60), and two such structures would not have existed in the same settlement. However this interpretation is not well-founded. The only evidence to support it is Building VII's courtyard plan and its situation at a street-corner, neither of which is in any way conclusive.¹⁴ Although *mansiones* are normally courtyard-buildings, it is not possible to claim that all, or even most, courtyard buildings are *mansiones*. Given that the Catterick *mansio*, much larger and more complex than the courtyard building at Caerleon, was built by the military (Burnham and Wachter 1990, 37), it seems surprising that, if the latter is a *mansio*, there is nothing about its construction which suggests military involvement, or indeed in its fittings: against the pillar fragment with a centurial inscription recovered from the site can be set a fragment of a tombstone (Wright 1956, 147–8), and neither is likely to be *in situ*. This building also seems to lack the bath-house which is otherwise a characteristic feature of the *mansio*. In short, a complex consisting of Bath H and/or Bath A with Building IX seems a much more likely candidate to be Caerleon's *mansio* than Building VII. If Building IX and the baths are separate, identification as a *mansio* is still possible, though less compelling. Identification as a utilitarian building with ranges of small rooms around a courtyard, such a *macellum* or *horreum*, is unlikely if the hypocaust belongs to the Group 1 wall phase.

Private buildings

By far the largest number of buildings excavated in the civil settlement are unequivocally private and most are of standard urban types. The plans of the Mill Street buildings, discussed above, p.471, are mainly of 'strip building' type or rather smaller, more 'vernacular' type buildings in separate plots of land, with one larger, more complex building (Gazetteer C2, Building 18/19 of this report). The identifiable building types at the Bear House Field were a row of six 'strip buildings' separated by eavesdrips or alleyways (Gazetteer C9–14), a courtyard building (Gazetteer C18, Building VII) and a corridor building (Gazetteer C19, Building VIII). Most of the other buildings excavated on this side of the fortress were too fragmentary for any

¹³ Certainty is impossible, not least because Nash-Williams's notes on the phasing of the walls, based on study of the mortar, are difficult to reconcile with his drawn section, where the foundation-trenches for almost all the walls are shown as having been cut from the same level. We consider that the notes on the walls are probably more reliable than the section, which was extremely schematic; thus where there is a conflict, the notes are preferred.

¹⁴ Boon may also have been influenced by the fact that this building is so much more elaborate than the strip buildings further down the street, but in view of the current ideas of urban morphology, a range of private building types need occasion no surprise.

conclusions to be reached regarding their form, but the spacing of the buildings located by Boon's trenches behind the quay (Gazetteer C5–8) suggests that these may have been strip-buildings separated by narrow alleys (Boon 1978a, 2).

Few of the known private buildings are more sophisticated in plan. Only three have more elaborate plans, the courtyard building, the corridor building and Building 18/19, unless the complex adjoining the amphitheatre baths was a private building rather than part of the baths or another public building (see above). Its size makes this unlikely, although the courtyard plan, elaborate entrance, hypocausts and carved stonework would not be out of place in a sophisticated town house. The case for considering the courtyard building (Gazetteer C18) as 'private' rather than as a *mansio* is presented above. It is the most sophisticated in plan of all the houses known from the civil settlement and was further embellished by mosaics and carved stonework. The corridor building contained a hypocaust. Building 18/19, however, had apparently no amenities, not even the *opus signinum* floors provided in the contemporary strip building nearby (Building 2), as well as being of mud-brick construction rather than stone. It should therefore probably be placed in a rather different category.

The streets

The evidence for streets in the settlement varies considerably from one quadrant to another. The basic framework was provided by the roads leaving each of the gates and thus running approximately at right angles to the fortifications at that side of the fortress. Streets running at right-angles to the continuations of the *via principalis*, and thus parallel with the fortifications, are known from both sides of the fortress (Gazetteer B3, B9, B11); as yet there is no evidence for streets at right-angles to the continuation of the *via praetoria*¹⁵ or the *via decumana*. These may be regarded as a secondary element in any street plan: there are also traces of a tertiary element, subsidiary streets running parallel with the main roads and at right-angles to the secondary element (Gazetteer B4, B5, B6, B12, ?B10). Thus the civil settlement possessed a street grid of sorts,¹⁶ though there are some elements which do not conform to it. The most notable of these is an alignment running nearly true east–west: this was followed by the 'oblique shops' (Gazetteer C9–14), the 3rd century street which ran obliquely past the amphitheatre (Gazetteer B1) and probably a ?lane (Gazetteer B8) and fields (Gazetteer D5). A further irregularity is the staggered junction where the two subsidiary streets (Gazetteer B4 and B5) debouch from opposite sides into the street which flanks the parade ground (Gazetteer B3). It is therefore a moot point whether the grid was ever established by a formal survey. There is no evidence regarding whether the extra-mural patrol-track (*Britannia* 21 (1990), 306–7) played any part in the street grid.

The history of the *canabae*

The chronological development of that part of the settlement which was excavated at Mill Street is set out above. How does this relate to the results obtained from the excavations on the Bear House Field?

The only published summary of these excavations is that provided in Boon 1972 which, being a general work of synthesis, did not provide detailed evidence for all the conclusions presented. This deficiency is in part made good by an unpublished conference paper prepared by Boon (n.d.). Although this paper is not dated, internal evidence shows that it was written after he had done a considerable amount of work on the finds from Nash-Williams's excavations and before

¹⁵ The apparent absence of a road of normal construction in rescue excavations outside the *porta praetoria* led to the suggestion that the continuation of the *via praetoria* was only lightly metalled and not heavily used (*Britannia* 16 (1985), 258), but a reassessment of the evidence suggests that this part of the Roman stratigraphy was truncated in the Middle Ages.

¹⁶ More streets are shown on the plan published in Boon 1972, but these are projections of the excavated streets into unexcavated areas.

he had carried out any of his own excavations which were to lead him to the conclusion that the sequence was in fact much more complicated (R. Brewer, pers. comm.). Broadly speaking, his interpretation of the development of this part of the settlement is as follows:

- After an initial phase of timber military buildings on the area which was later to become the parade-ground, this area was at least partly used for civilian buildings of post-pit construction (Gazetteer C4). These buildings were constructed on the 'oblique' orientation, but there were others (Gazetteer C5–8, C17) on the Broadway frontage and aligned with it (Boon n.d., 8–9; 1972, 31–2; 1978a, 4 and fig. 2). A fire caused widespread damage in the extra-mural area at the end of the 1st century or the beginning of the 2nd, but by c. A.D. 140 the settlement had been reconstituted, losing part of its area to the new parade ground (Boon 1972, 31–2, 35, 44–5). Both the new street flanking the parade ground wall (Gazetteer B3), and the earliest of the 'oblique shops' (Buildings I–VI, Gazetteer C9–14) across whose frontages it apparently cut, had a *terminus post quem* provided by samian of Trajanic-Hadrianic date. The building excavated by Knight (Gazetteer C3) would fall into this phase.
- Building work in the 3rd century is represented by the construction of the hypocaust in the corridor building (Building VIII, Gazetteer C19) and the provision of a (new) roof in the Amphitheatre Baths (Building IX, Gazetteer C1), both of which included tile with ANTO stamps; and by the construction of the courtyard building (Building VII, Gazetteer C18) under which were stratified very worn coins of Antoninus Pius and Faustina I. The remaking of the street flanking the parade-ground wall, characterised by a drain of massive blocks, has a *terminus post quem* provided by an ANTO tile (A.D. 213–22) in the makeup for the drain side. The drain itself contained large quantities of Severan material (Boon 1972, 59–60).
- Although later 3rd century material was noted over the 'oblique shops', no corresponding structures were identified (Boon 1972, 60). The coin list breaks abruptly after the Severan dynasty, later periods being represented only by five examples of regular issues to Valerian, another ten to Carausius, and seven Constantinian pieces (Boon n.d., 14), and by a hoard of 95 barbarous radiates, closing with a Probus imitation, which was found in the courtyard building, apparently contained in the carbonised remains of a wooden box in the foundation of an *opus signinum* floor.

The most obvious point of difference between the excavations of the 1950s–60s and the 1980s is the dating of the latest remaking of the roads with their massive block-lined drains. These were identical on both sides of the fortress (G.C. Boon, pers. comm.). The two possibilities are either that the same technique was used a nearly a century apart (with no evidence so far that it had been used elsewhere at Caerleon in the interim), or that the Bear House Field work is misdated. Boon had reasonable grounds for attributing the Bear House Field to the Severan period; not only was there an ANTO stamped tile in the make-up for the drain-edge, but also a coin of Caracalla, minted A.D. 217, in the lowest silts of the fill and abundant Severan material, including fourteen coins, in the upper fill (Boon n.d., 13; 1972, 60). However, the ubiquity of residual coins and pottery at Mill Street gives rise to the question whether a similar situation applied at the Bear House Field and misled Boon, whose sections were extremely limited in extent, into believing that the work was earlier than it in fact was. Possible support for this theory can be found on the Broadway. Although no evidence was noted for drains of the type described above,¹⁷ its latest surface contained two 4th century coins (Boon n.d., 14).

If these dates have been distorted by residual material, some of the others must also be called into question, and the uncomfortably short time-span into which has to be fitted the erection of 'oblique shops' no. VI, the addition of no. V and the construction of the road alongside the parade-ground wall can be expanded to a more comfortable size. A further difference between the two sides of the fortress lies in the occupation span as exemplified by the coins. On this evidence there would certainly appear to be a less intense occupation of the Bear House Field during the 3rd century, the main *floruit* of Mill Street, and a shift in settlement seems likely.

¹⁷ They are not present always at Mill Street either.

COMPARATIVE MATERIAL

As a settlement, the *canabae* of Caerleon falls into two different contexts. In the hierarchy of towns in Roman Britain, it is an urban settlement below the rank of tribal capital (a so-called 'small town'). It is also a civil settlement attached to a military base (a garrison town). It therefore needs to be considered in both contexts.

The place of the Caerleon *canabae* in the hierarchy of towns in Roman Britain

In their study of Romano-British 'small towns', Burnham and Wachter divide the elements of internal morphology into three classes (Burnham and Wachter 1990, 15):

- i) the range of individual building types recorded;
- ii) the overall development of the settlement plan in relation to the internal roads and streets;
- iii) the internal organisation of the buildings and land-use in relation to the roads and streets.

These criteria can be applied to the civil settlement at Caerleon. It should be borne in mind that the excavated parts are only a fraction of the settlement area, and may well be peripheral.

i) Range of building types

Burnham and Wachter see the relative presence or absence of clearly Roman-inspired structures as an important factor in distinguishing between different categories of small town, especially those represented by wealthy private houses and by public and official buildings (Burnham and Wachter 1990, 17). As has been seen above, public buildings are poorly represented in the excavated parts of the Caerleon *canabae*. There are two possible explanations for this; either there were only ever very few of them in the settlement as a whole, or they clustered in the unexplored areas (but see below, p.503). Some of the deficit can be made up by the evidence of inscriptions, from which the presence of at least three temples can be inferred, likely to be among the most Romanised elements of the town (Burnham and Wachter 1990, 22).

Since so small a proportion of the possible town area has been examined, we are not in a position to be able to determine the relative proportion of public buildings to private houses, nor what proportion of the latter were large and sophisticated and likely to have been the property of wealthy people. Two of the known houses can be regarded as being fully 'Romanised' (see above p.497), compared with a probable minimum of fifteen strip buildings, nine of more vernacular type (this category almost certainly under-represented) and a single building of reasonably elaborate plan but no other sophisticated characteristics. In the excavated areas of the civil settlement, therefore, the proportion of wealthy households is low, but this ratio may perhaps be more indicative of the individual districts rather than the whole town. Both the sophisticated buildings are to be found on the Bear House Field, and it is possible that this was a 'better' district than Mill Street. It is not however possible to base any conclusions on the apparent absence of 'vernacular' type houses on the Bear House Field, since it is possible that the 'signs of later 3rd century frequentation' noted by Boon on this site (Boon 1972, 60) were buildings of this type which were missed by the less refined excavation techniques employed in the 1950s.

ii) Settlement plan and internal street network

There is evidence that the settlement in its developed form had a street-grid of sorts (see above), but there is insufficient evidence to answer several important questions. We do not know whether the grid extended over the whole area of occupation, nor is it clear what relation the features on different alignments had to the grid in terms of both space and time. There is also no information about the initial morphology of the settlement before the grid was laid out (probably in the 2nd century), whether for example it started as a ribbon development along the continuations of the *via principalis* and *via praetoria*.

That the 'oblique' alignment, 20° from that of the fortress, was used for what were probably the earliest civilian buildings suggests that the civil settlement was not originally oriented on the fortress. It is likely the remodelling of the street-system on the Bear House Field was

occasioned by the construction of the parade ground, although the relationship between the two events may be more complex since one of the side streets (Gazetteer B5) appears to have been blocked at some stage by the parade-ground wall. That the grid cut across the earlier alignment is evidenced by the 'oblique' shops (Buildings I–VI, Gazetteer C9–14). On the other side of the *via principalis* continuation, the oblique alignment was perpetuated in the 3rd century by the street alongside the amphitheatre (Gazetteer B1).

If there is less information at Mill Street about the grid, there are also fewer buildings which are on markedly different alignments. Buildings 12, 13, 14 and 16 are not properly aligned with the north–south road, but the difference in orientation is not great and may be connected with the cruder quality of their construction. Building(s) 18/19 do however use a different alignment. Although the façade is aligned on the *via principalis*, the south wing of 18 is at approximately 20° to it, and the angle of the corner of 19 to the road is more like 45°. It was not possible to determine whether the 20° angle was directly related to the alignment in use on the other side of the fortress.

iii) Internal land-use

The density of occupation is one of the indicators of the status of a settlement (Burnham and Wachter 1990, 322), but the information from Caerleon is not very complete on this subject. Boon's assessment of the Bear House Field was that it was not heavily occupied (Boon n.d., 7), but it is possible that he may have been misled by the thoroughness of the robbing which took place in the last century.¹⁸

Since most of the excavation has been concentrated on or near the street frontages, it is not possible to determine how built up were the individual plots. However, almost all the strip buildings known from Caerleon are separated by eavesdrips or alleyways, a pattern usually associated with 'small towns' rather than towns of *civitas* capital status (Burnham and Wachter 1990, 322). With regard to the buildings of 'vernacular' type, Buildings 12, 13, 14, 15 and 16 were placed end-on to the street in the manner of 'strip buildings' but the spaces separating Buildings 12, 13 and 14 were much wider than alleyways, as wide on average as the buildings themselves. In the best-explored example, Building 12, the relationship of the building to the cobbled area to its south and the ditches which separated it from its neighbours shows quite clearly that the cobbled surface is the yard belonging to the house and not a lane. The arrangement perhaps represents a compromise between the vernacular tradition of the building with its entrance in one long side with the tighter packing-together of buildings called for by restrictions on the street frontage available to each. Buildings 21 and 22 are more conventionally placed for this type inasmuch as the long axis runs parallel to the street; they do however appear to share not only a wall but also a plot, as no boundaries were identified.

So far, there is no evidence for a focus to the settlement (Burnham and Wachter 1990, 29). Did the fortress function as a focus, or is the focus to be found in the area forward of the *via principalis*? There is some evidence for differentiation between the various districts of the civil settlement. The 2nd century buildings excavated on the Cambria House site are largely comparable with those of Bear House Field. This suggests that the social and economic character of the two areas were to some extent congruent, at least at this period. The eastern side of the main north–south road on the Riding School Field may also have been similar, but there is insufficient evidence for certainty. The western side of the Riding School Field at this period was open ground; it was developed in the 3rd century in a manner which suggests it was inhabited by people on the margins of urban society, possibly making their living mainly from the land (p.472; Burnham and Wachter 1990, 28). From what little is known of it, the eastern side of the Smallholding also seems to have been similar. The character of this area does not

¹⁸ Lee described the area on either side of the Broadway as containing 'such an abundance of stones from the ruined buildings of the suburbs, that for many years the quarrying of it formed a remunerating employment for the labourers of the town' (Lee 1862, 127). See also note 13 for Nash-Williams's recording practice, which may also have affected the data on which Boon's estimate was based.

seem to have altered until it went out of use in the 4th century. Contemporaneously on the Cambria House site there seems to have been a concentration on craft activity, marked by the evidence for metalworking. Insufficient is known about what was happening on the Bear House Field in the 3rd century to allow for comparisons, but it should be noted that the courtyard building continued in occupation into the 4th century (Boon n.d., 14).

The Caerleon *canabae* as a garrison town

Caerleon is one of the three legionary fortresses in Britain which survived into the 2nd century. Only these are directly comparable, but much can be learned about the general characteristics of garrison towns from military *vici*, the civil settlements outside auxiliary forts.

Study of military *vici* in Britain has demonstrated that they partake generally of the nature of 'small towns' of the more developed kind, in terms of layout and building types, but that fewer public facilities seem to have been provided than in the 'small towns' of the highest rank (Sommer 1984, 47–9; compare Burnham and Wachter 1990, 15–32). When *canabae* were established, a process which could be very soon after the foundation of the fortress which they served and possibly even had official support (Sommer 1984, 7, 15), they are unlikely to have been provided with more than basic facilities. How they developed thereafter must have depended upon a complex set of circumstances, including official military policy, which governed for example how much of the legion was in residence at any one time, as well as local geographic factors such as the competition provided by other towns for resources.¹⁹ The relationship between the legion and the town was symbiotic, but there is insufficient evidence from Britain to determine precisely how the two interacted. Interaction would on the whole involve serving soldiers. Settlement of veterans in the neighbourhood of the fortress in which they served is well attested elsewhere in the Empire, especially from the 2nd century, and the comparatively small amount of information available from Britain does nothing to contradict this picture (Mann 1983, 24). Given the demography of the Roman army, however (Watson 1969, 151–2), it is a moot point whether significant numbers of men were involved, and furthermore, at Caerleon, the settlement at Bulmore was an alternative attraction as a place of retirement. Two tombstones recording veterans are known from the Caerleon cemeteries (*RIB* nos 358 and 361) against one definite (no. 359) and one possible (no. 367) from Great Bulmore.²⁰

The two places in Britain which offer the closest parallel to the Caerleon *canabae* are the civil settlements attached to the other long-term legionary fortresses, Chester and York. Chester is probably a closer parallel to Caerleon, in that we have no evidence that the civilian settlements at either of these fortresses was promoted in status, as happened with York: York is also likely to have received a boost through being promoted to provincial capital when Britain was divided into two at the beginning of the 3rd century. However, the later history of both York and Chester has ensured that the pattern of recovery of evidence there has been different from that at Caerleon. The development of the towns in these two places from the Middle Ages onwards has meant that information has been built up from observations and relatively small-scale excavations spread over a much wider area, but with each site excavated in depth. At Caerleon, there had been no comparable history of observations since the *canabae* area has largely been under grass. When land has come up for development, very large areas have been involved, and the resources of time and money available for excavation during both the main campaigns (Bear House Field in the 1950s and Mill Street in the 1980s) and any watching briefs have been limited. This has resulted in the adoption of strategies which have provided a snap-shot of Roman development on a relatively large scale at a particular time coupled with a limited view of overall development.

All the long-term legionary fortresses in Britain are situated in a very similar topographical position. The *porta praetoria* faces in a southerly direction (southeast at Caerleon, just east of

¹⁹ For a summary of the close links between auxiliary fort and their civil settlement, see Davies 1990, 70–2.

²⁰ There is so far no epigraphic evidence for veterans at Caerwent.

south at Chester and southwest at York) and is situated a short distance away from a major river. At all of them there is evidence for extra-mural settlement in front of the fortress and to either side, extending also across the river to encompass at least the bridgehead (at Chester) if not a very much larger area (at York). At all the sites, however, there seems to be very little occupation, if any, behind the fortress on the side of the *porta decumana*. Study of the civil settlements around auxiliary forts in Britain has demonstrated that the area behind the fort is the least likely to have been favoured for civilian occupation; in terms of compass points the least favoured are the northerly directions (Sommer 1984, 15, 43, fig. 21), particularly the northwest, which at Caerleon is the side of the *porta decumana*. The extra-mural settlement at Caerleon thus follows the normal pattern for Britain. In the following discussion, the area surrounding the fortresses at Chester and York will be divided into the same quadrants as have been used for Caerleon (in the Gazetteer, Appendix 1).

Chester has so far produced little more evidence for public buildings than Caerleon, in spite of the much larger quantity of epigraphic material. One extra-mural bath-building is known, standing close to the *porta principalis dextra* in a similar position to the amphitheatre baths at Caerleon though on the opposite side of the *via principalis*, i.e. in the *porta principalis dextra-decumana* quadrant of the town (Mason 1987, 146–9 and fig. 3). A *mithraeum* and a shrine or temple to the *Matres* are known from inscriptions, and stones sculptured with birds sacred to Juno, Venus and Minerva were found in the 19th century close to an inscription commemorating the erection of a temple and colonnade. Chester also has a probable *mansio*, lying outside the south side of the fortress close to the *via praetoria* in the *porta praetoria-principalis dextra* quadrant. The evidence for this is very strong, unlike that for the building suggested as a *mansio* at Caerleon (Mason 1980, 80–4), and comparison between the two buildings indicates that the Caerleon courtyard house is very much smaller than the Chester building in its comparable phase. There is also some evidence for wharves (Mason 1987, 153–5).

The civil settlement at York boasts a wider range of public buildings including its own defensive circuit (for the ‘*ultra pontem*’ area south of the river), a possible forum/basilica complex, temples, baths, and some slight indications of wharves in the *porta decumana-principalis sinistra* quadrant. Two sets of baths are known at York, both in the ‘*ultra pontem*’ sector, in the area known to have had the status of a *colonia* (Ottaway 1993, 69, 70, 72). They were therefore presumably civilian, even though one of them had a floor of legionary stamped tiles (see above, pp.491–4). There is also a third possible bath building outside the southern corner of the fortress in the *porta principalis sinistra-praetoria* sector. The possible forum and basilica (‘*ultra pontem*’) are represented by a very large building marked by rows of columns; an alternative interpretation is that it was a temple of classical style (Ottaway 1993, 69–71, 73–7, 87–8). Temples to Hercules, a goddess whose name began IOV and the mystery cults of Mithras, Isis and Cybele are attested by inscribed and sculptured stones (Ottaway 1993, 69, 88).

Private buildings in Chester have been best explored at the west of the fortress, in the *porta praetoria-principalis sinistra* quadrant, where a range of types was encountered, including warehouses as well as residential buildings, and there were some changes in land use over the period of the settlement’s occupation. Houses, some of sophisticated plans, with hypocausts and painted plaster are known from here. Although the generally observed sequence of development was for timber buildings of the 1st or early 2nd century to be replaced in stone, some buildings seem to have been constructed in stone initially, in the 1st century, and one was built in timber in the 3rd century (Mason 1987, 155–8). Most of the other buildings excavated in the *canabae* were very fragmentary, and it is difficult to characterise any districts within the fortress, but there appears to have been an open space on the south (*porta praetoria*) side of the fortress between its defences and the *mansio*, crossed by an early road which was not aligned on the fortress (Mason 1987, 158, fig. 4). A possible area of industrial activity lay to the east of the fortress in the *porta decumana-porta principalis sinistra* quadrant, immediately north of the *via principalis* continuation (Mason 1987, 161). A ceramic water pipe to the south of this road indicates that the civil settlement was provided with a water supply (Mason 1987, 152–3).

There is less information on private buildings at York, particularly immediately outside the fortress where there is evidence for a street grid aligned on the defences although the road from

the *porta principalis sinistra* seems to follow a different line (Ottaway 1993, 67–9). Evidence from the ‘*ultra pontem*’ area is rather better. Houses towards the southeastern end of the *colonia* include sophisticated stone buildings with hypocausts, wall-plaster and marble veneers constructed on an artificial terrace created in the early 3rd century. Structures on this terrace seem to have been on a different alignment from the area to the north, where there seems to have been a grid aligned on the continuation of the *via praetoria*. There was also a lead water pipe running under the main road (Ottaway 1993, 72, 89, fig. 34). Timber buildings of the 2nd century, too fragmentary to give the plan, are known in the vicinity of the *via praetoria* continuation, associated with finds which suggested that metalworking and leatherworking were being carried out (Ottaway 1993, 77–81). There is little evidence for settlement on this bank of the river before the later 2nd century, and this area may initially have been allocated to cemeteries.

At neither of the other two towns is there any evidence for the ‘rural-urban fringe’ which has been found at Caerleon. It is therefore not possible to determine whether Caerleon is anomalous in this respect, or whether a similar pattern of land-use would have been a feature of the settlements at York and Chester too. The evidence from the *vici* of auxiliary forts seems to favour an involvement in agriculture, including agriculture practised on a smallholding basis (Sommer 1984, 36–8), but so far there is insufficient evidence to determine whether this was generally the case at the *canabae* of legionary fortresses.

The general picture gained from the civil settlements at the three legionary fortresses in Britain is reasonably consistent. All the towns were provided with grid layouts, though probably not at their inception since all contain some structures which do not respect the grid. York and Chester had a piped water supply; so far there is no evidence of one at Caerleon, but at the other towns pipes are known only from a single sighting. All contain a range of private buildings, with evidence both for residential properties of some sophistication and for trade and industry. The evidence for the former is better at York and Chester, but this could be because investigation sites have been spread more evenly over the inhabited area than at Caerleon. None of the towns have so far produced enough evidence to enable an assessment to be made of their density of occupation. Public buildings are best represented by baths and temples; so far there is no evidence for markets or theatres. There are amphitheatres at Caerleon and Chester (that at York has so far not been discovered), but given their close proximity to the defences in both cases, it seems certain that they were provided in both cases primarily for the soldiers. Estimates of capacity depend upon a reconstruction of the seating, but there should have been no difficulty in accommodating the whole legion at Caerleon and it would be surprising if the capacity was less at the other fortresses. It is not known whether the townspeople were permitted to use the amphitheatre but there would have been spare seats at times when vexillations were absent from the fortress, or recruitment levels were low: this may provide a context for the lead token found at the amphitheatre (Wheeler and Wheeler 1928, 168 and fig. 15; Boon 1986).

Reasons for believing that the extra-mural baths were probably open to soldiers and civilians alike are given above (p.494). The relationship of temples to fortress and *canabae* is likely to be complex. Any public worship other than cults based on the headquarters building would have to take place in the extra-mural settlement, if only because there would be no room for the erection of temples within the fortress. However, as Sommer points out (1984, 47), it is the military who would have been most likely to have had the money to pay for the necessary building work. It is probably no coincidence that the only building inscription in Caerleon from a temple commemorates the involvement of a legate in the restitution of the temple of Diana (*RIB* no. 316). The dedication to Dolichenus (*RIB* no. 320), from a very large altar, was also set up by a legate, although other, smaller, altars were erected by civilians.

A greater range of public buildings, including a possible forum/basilica, is known at York than at present from the other two sites. This may be related to the promotion of York to provincial capital at the beginning of the 3rd century, with the status of *colonia*, a development which would necessitate the provision of administrative buildings. However, evidence from legionary *canabae* elsewhere in the Empire indicates that there was nothing in the legal or

administrative status of the *canabae* which would necessarily inhibit their development as large towns, even at fortresses which had a second, independent civil settlement such as *Aquincum* or *Carnuntum* (Mócsy 1974, 139–40). To date, only a small proportion of the British *canabae* have been excavated, and there is consequently insufficient evidence available to determine whether they were significantly different from those elsewhere in the Empire. There is nothing so far however which would indicate that they had fallen behind their companion settlements in terms of importance, as is frequently the case on the Rhine-Danube frontier (Mason 1988, 174–5, 181).

One way in which the British *canabae* do seem to hang together as a group is in their topographical position in relation to their parent fortresses, but this may have more to do with the policy employed in siting fortresses than with any policy with regard to their *canabae*.²¹ On the Rhine-Danube frontier, there is a tendency for the fortresses to be sited so that the *porta praetoria* faces the river, but there is no consistency as to compass points: the relationship between fortress and Rhine or Danube was governed by important strategic, as well as local topographical considerations, in a way which was not the case with fortresses and rivers in Britain. The course of the Danube is such that it flows on the north side of *Carnuntum* and on the east of *Aquincum*. The Rhine flows on the east of Bonn and the north of Mainz. *Vindonissa* lies between two rivers. The *canabae* are also sited differently with respect to their fortresses. *Aquincum* is surrounded on four sides with an additional suburb across the river (Póczy 1986). At Bonn the *canabae* lie south of the town outside the *porta principalis dextra* which provides a more extensive river frontage than in the limited area outside the *porta praetoria* which faces the river (Horn 1987, 367). At Nijmegen the civil settlement lies to the northwest and downstream of a series of military installations, one of which is the legionary fortress (Haalebos 1995, 13 Abb. 1). The *porta praetoria* side of *Carnuntum* has been lost to erosion, but the fortress has occupation outside both *portae principales* and none apparently noted on the *porta decumana* side. The only excavations carried out so far at *Lauriacum* have revealed occupation on the *porta decumana* side (Scherrer 1988, Abb. 13), and at *Rapidum* in Mauritania the *canabae* adjoin the fortress walls in the *porta principalis dextra*-*porta decumana* quadrant, continuing to the other corner of the *porta decumana* side (Campbell 1994, fig. 4).

The extent to which the *canabae* have been explored varies from fortress to fortress, but the most extensive work has been done on the Danube frontier. The best topographical study to be published so far is probably that of *Aquincum* which extended over an area of c. 140ha around the fortress (Póczy 1986). The main through road, the so-called *Limesstrasse*, ran across the front of the fortress, parallel with the defences on the *porta praetoria* side, and a new street grid was laid out at the beginning of the 2nd century over the remains of demolished buildings. There appear to be differences in the nature of occupation in the different quadrants. The southeastern quadrant between the *porta praetoria* and the *porta principalis dextra* contained the harbour with associated warehouses, a bath building, a building which is interpreted as a *mansio* which had its own baths, and private buildings. It also contained the amphitheatre, which lay much further from the fortress than the Caerleon example. The southwestern quadrant, between the *porta principalis dextra* and the *porta decumana* was notable for the existence of a whole series of pottery kilns, mostly around the periphery of the area. It also contained a probable market which lies much nearer the fortress, close to the *via principalis* continuation. An inscription points to the existence of a forum in this area. The distinguishing feature of the northwestern quadrant, between the *porta decumana* and the *porta principalis sinistra* was its temples (dedications are known to Jupiter and Juno, Aesculapius and Hygenia, Isis, Mithras, and Sol Invictus). It also contained high-quality housing. The northeastern quadrant between the *porta principalis sinistra* and the *porta praetoria* also contained high-quality housing with

²¹ Although the course of the River Tay near Inchtuthil is unknown for the 1st century, this fortress is sited in such a way that there are significant areas of ground available in front of its southern, *porta praetoria* side (Pitts and St Joseph 1985, 41–3). Any *canabae* which had developed at this site would therefore probably have followed a similar pattern to Caerleon, Chester and York; although this cannot be certain since it is not known to what extent the plateau upon which the fortress stands has been eroded since Roman times.

painted walls, stucco ceilings and mosaic floors. *Aquincum*, like York, was also a provincial capital, and the governor's palace has been identified on the island opposite the northeastern quarter. In view of this apparent care in planning, Póczy suggests that control of the town's development was in the hands of the *praefectus legionis*.

No systematic excavation has been carried out in the *canabae* at *Brigetio* (Lenggel and Radau 1980, 258–9), but enough has been done to show that there also appears at least some zoning here. The *canabae* lay on three sides of the fortress, but mainly to the west, with an extensive Danube frontage. Industries, which included the manufacture of pottery, brick/tile and glass were located on the eastern, western and southern fringes of the town. The cemeteries suggest that the town's main *floruit* was the early 3rd century; stone houses appear from the second half of the 2nd century, and the ones near the centre were supplied with water and drainage facilities. Some luxurious houses were constructed at the end of the 2nd century and the beginning of the 3rd. A temple to Apollo Grannus has been excavated. This was enlarged *c.* A.D. 217 and provided with porticos and *tabernae*. Dedications are also known to Jupiter Dolichenus, Mithras and possibly Magna Mater.

The civil settlement at *Carnuntum* (Jobst 1983, 85–108) occupied *c.* 150 hectares and was occupied from the second half of the 1st century to the 4th century. A large number of houses (plans mostly based around a corridor) have been excavated, and there was apparently a replacement of the original wooden buildings in stone during the 2nd century. An apparent concentration of shops and workshops east of the fortress suggest that there was some zoning here, though the potteries are at the east side of the town. The town had a large bath-building situated on a line with the corner between the *porta principalis dextra* and *porta dextra*, but the most important religious complex so far discovered lay some way outside the town. The largest known public building is situated on the west (*porta principalis sinistra*) side of the fortress, a 225 × 185m forum complex. This contained a number of wells, leading to the suggestion that it had been used as a cattle market (Mócsy 1974).

Vindonissa (Lauer-Belart 1935; Drack and Fellman 1988, 539–44) also had a large forum complex in its extra-mural settlement, situated in a similar position in relation to the fortress, but very little else of the *canabae* has been excavated, beyond houses, and a *mansio* outside the east gate of the fortress. There was a theatre at Mainz, lying outside the walled area of the *canabae*. This is unusually large (116.5m diameter). From literary evidence there is known to have been a theatre in the town from A.D. 39, but the identified structure, excavated 1884, cannot be dated archaeologically (Cüppers 1990, Abb. 463–4). *Lauriacum* had a street grid (Scherrer 1988, Abb. 13); most of the buildings so far excavated here are private. This is also the case at Nijmegen (Haalebos 1995, 39–50, 80–6), where there is some evidence for industrial and commercial activity (Haalebos 1995, 67–70); but there is also a larger building which may be a *mansio* or *horreum* (Haalebos 1995, 70–6).

Setting aside *Aquincum*, where the body of information available is so much greater, there does not appear to be much which can be singled out as significantly different between the type of urbanism encountered in the *canabae* of the Rhine-Danube frontier and in Britain. The *insulae* excavated at *Lauriacum* could be transported to Caerleon, York or Chester without looking out of place. The range of building types in the known sections of the *canabae* of *Carnuntum* or *Vindonissa* (with due allowance made for local traditions in house plans) are very similar to those in the British towns, with the exception of the large fora, but even the fora cannot be considered a significant difference whilst such large areas of the *canabae* remain unexplored.

If, in the light of future excavation, there does turn out to be a difference in the development of the *canabae* attached to British legionary fortresses, this will be owing to the peculiar nature of urbanism in Britain (Millett 1990, 78). But in our present state of knowledge there is nothing to indicate that, in the 2nd and early 3rd century at least, a centurion arriving at Caerleon from a posting with any other legion on the northern frontier would have found much significant difference in the settlement which lay outside the fortress gates.

APPENDIX 1

KNOWN REMAINS IN THE EXTRA-MURAL AREA OF CAERLEON

For the purpose of this gazetteer, the area surrounding the fortress is divided into four quadrants by the four roads which lead from the fortress gates, working clockwise from the *porta praetoria*:

The quadrant between the *porta praetoria* and the *porta principalis dextra*;

The quadrant between the *porta principalis dextra* and the *porta decumana*;

The quadrant between the *porta decumana* and the *porta principalis sinistra*;

The quadrant between the *porta principalis sinistra* and the *porta praetoria*;

To these areas is added:

The area on the opposite bank of the River Usk (*Ultra Pontem*).

Known structures in these areas are divided into four groups; (A) military installations, (B) street system (excluding the continuations of the fortress streets), (C) other buildings and (D) other features. Group A is confined to those structures which, although outside the defences, formed an integral part of the fortress facilities. Other structures, such as the quays and those buildings which incorporated stamped tile in their fabric are more problematical, and are listed under other headings, although they are cross-referenced to group A. Within the groups, features are arranged as far as possible in date order, with undatable material at the end. The cemeteries have been excluded from the gazetteer. Portable finds have been excluded, except where they can be taken as a possible indicator of settlement extent. Unreferenced entries are based on field observations made by staff of the Legionary Museum at Caerleon, to whom thanks are due for providing this information.

* indicates that more than one building (or other unit) is probably represented.

The quadrant between the *porta praetoria* and the *porta principalis dextra*

Area explored

Very little of this quadrant has been investigated. Some work was done in the 19th century and was recorded in a summary fashion by Lee (1862, 128–9). Excavations were carried out in the 1920s, but they concentrated mainly on the amphitheatre excavations, and parts of the adjoining bath-building(s). A little work was done further down the Broadway, confirming the presence of Roman occupation, but it has never been published (Wheeler and Wheeler 1928). In the 1950s Nash-Williams excavated part of a very large courtyard building, and part of another large building was discovered by Boon during investigations of the southern corner of the fortress in 1962. Neither of these buildings has been published. In addition, a geophysical survey was carried out in 1989 immediately alongside the fortress wall.

The area has changed, probably significantly, as a result of river movement. Erosion is currently taking place at B2/D2, although it is not possible to determine how much has been lost since Roman times; and there appears to have been considerable accretion at D3.

Structures known

A. Military installations

A1 'Patrol track' along the outside of the defences, noted in trial excavations at the southern corner of the fortress, and running in the direction of the *porta principalis dextra*. Probably Flavian in origin: four phases of metalling were noted (*J. Roman Studies* 53 (1963), 125–6; *Britannia* 21 (1990), 306–7).

A2 The amphitheatre, constructed c. A.D. 80 and refurbished c. A.D. 140 and A.D. 213–22 (Wheeler and Wheeler 1928).

C1 and C2 may also be military, but proof is lacking and a civilian origin is much more likely for C1 at least (see discussion, pp.495–6).

B. Street system

- B1 A road at the southern side of the amphitheatre, overlying C1 and dated to the 3rd century (Wheeler and Wheeler 1928, 145). It is on the same alignment as some of the features in the western quadrant, notably the 'oblique shops' C9–14. This road was not a continuation of that noted at the southern corner (A1), as was previously believed.
- B2 A Roman street has been noted eroding out of the river-bank (Boon 1972, 2).

C. Other buildings

- C1* A building with a hypocaust, lying immediately to the west of the amphitheatre and partly demolished when the latter was erected in *c.* A.D. 80 (Wheeler and Wheeler 1928, 144–6). The remainder continued in use. The evidence is not conclusive but suggests that it may have been a bath building. It is usually described as the 'Amphitheatre Baths'. It has usually been associated with the large hypocausted structure around a courtyard (Building IX) though this is by no means certain (see pp.495–6).
- C2 A large stone building, of unknown function, whose final phase dated to the 3rd and 4th centuries. It flanked the 'patrol track' (A1) (*J. Roman Studies* 53 (1963), 126).

The possible structural remains (see below D2) alongside the street B2 may have come from buildings.

D. Other features

- D1 An 'ancient well' cleared in the 19th century contained large amounts of Roman pottery (Lee 1862, 128), and may have belonged to the civil settlement.
- D2 To the south of the road B2 exposed in erosion of the river bank, sandstone rubble and deposits of daub-like red clay have been noted.

The quadrant between the *porta principalis dextra* and the *porta decumana**Area explored*

The southern part of this area (previously the Bear House Field) was trenched by Nash-Williams in the 1950s: eight buildings identified as a result of this operation were explored more extensively to recover ground plans and some stratified artefacts. None of this work has been published, although Boon used the results of an evaluation of Nash-Williams' excavations, supplemented by some further work of his own, as the basis for his account of the extra-mural area in his 1972 study of the fortress. He also incorporated the results of a watching brief which he undertook during ground levelling in 1962. Fully published is an excavation undertaken by Boon in 1963 on the quay: this report also incorporates the results of trial trenching along the Broadway undertaken in connection with this excavation. Another small excavation along the Broadway has not been published. A number of watching briefs carried out in the 1980s and 90s on the golf course and playing fields have provided further information.

The northern section, on the *porta decumana* side of the fortress, has been less extensively studied. One small excavation produced evidence for Roman structures, but two trial excavations were largely negative.

Lodge Hill, overlooking the fortress on the *porta decumana* side, was occupied by cemeteries (see Evans and Maynard 1997), but it is unclear how close the *canabae* extended in this direction. Little evidence has been found for activity immediately outside the fortress.

Structures known

A. Military installations

- A3* Timber buildings founded on sleeper-beams, interpreted by Boon as the construction-camp for the fortress, as they are on the same alignment. Pre-date building A4 (Boon 1972, 31–2).
- A4 Large timber building (*c.* 60 × 20m) with gravel foundations. Stratigraphically later than the buildings at A3, but on the same alignment. Separated from the other buildings pre-dating the construction of the parade-ground by a ditch (Boon 1972, 31–2). Possibly military, but exact status uncertain.
- A5–7 Three successive timber buildings, probably connected with A3 and A4. The first and second, Vespasianic and late Flavian respectively, were destroyed by fire; the second contained malted grain. The third dated to *c.* A.D. 100, and was replaced by C15 (see below) (*J. Roman Studies* 48 (1958), 103; Boon 1972, 35).

- A6 Parade ground, constructed *c.* A.D. 140, lying in the angle between the fortress defences and the *via principalis*, bounded to the southeast and southwest by a wall, the southeast section of which was dated to the 3rd century. It superseded buildings A3, A4 and C4 (*J. Roman Studies* **45** (1955) 122; **46** (1956), 122; **52** (1962), 126; Boon 1972, 31–2, 44).

The quay (D3) could also be military, but definite proof is lacking (see p.494). In spite of claims to the contrary, the corridor-building C19 is unlikely to have been military (see p.494).

B. Street system

This quadrant has produced the best evidence for a probable street grid.

- B3 A street at right-angles to the *via principalis*, outside the parade-ground wall on the side away from the defences; it was 6m wide with paved side-walks and a stone-built culvert (*J. Roman Studies* **45** (1955), 122).
- B4 A street at right-angles to B3, running alongside the courtyard building C18 (*J. Roman Studies* **46** (1956), fig. 20).
- B5 A street at right-angles to B3 and leading off it, not quite opposite B4, to run back in the direction of the fortress. Recorded on the fold-out plan in Boon 1972, but not otherwise published.
- B6 A possible road characterised by a 0.075m thick layer of sandstone fragments, with a small ditch running parallel and 3.35m to its northeast. Not a drainage ditch, but possibly a marking-out ditch (Knight 1964, 41).
- B7 Two lengths of metalling on the north and east sides of the east wing of building C19 (*J. Roman Studies* **46** (1956), fig. 21), on the same alignment as the 'oblique shops' (see below). It is not certain whether this was a road.
- B8 A length of metalling marked in the vicinity of the 'field system' (D5). Recorded on the fold-out plan in Boon 1972, but not otherwise published.

An area of metalling found in 1981, approximately 800m north of B6 (*Britannia* **13** (1982), 334) is likely to be part of the *via decumana* rather than a street.

C. Other buildings

- C3 A possible building characterised by a floor consisting of a single layer of sandstone fragments, at least 6m wide, cut by a post-hole 1.5m from its southeastern edge. The layer covering the floor contained charcoal, slag and pottery. Apparently went out of use in the first quarter of the 2nd century (Knight 1964, 41–4).
- C4* Timber buildings marked by square post-pits, on the same alignment as the 'oblique shops'. They were demolished to make way for the parade-ground A8 (Boon 1972, 31–2).
- C5–8 ?Four adjoining wattle-and-daub buildings constructed on sill-beams, with clay or gravel floors or sub-floors. Three of them had been burned, and the burnt deposits incorporated iron slag and Trajanic samian (Boon 1978a, 4, fig. 2).
- C9–14 Six strip-buildings (Buildings I–VI, usually referred to as the 'oblique shops') constructed of coursed rubble, possibly rising to two stories. Their widths ranged from 7.5m to 15m and they were separated by narrow gaps. Two of them had porticoes; one of these had a hypocaust and a cellar; another example also had a cellar. Floors were recorded as being of concrete, flagstones and, in one case, of mosaic; ceramic roofing tiles and window glass were also recorded as coming from the buildings. They seem to have been constructed under Hadrian, and given that their alignment is significantly different from that of the street alongside the parade-ground (A8), they probably pre-dated it. They may have been aligned on a continuation of the road past the amphitheatre (B1). Three phases of construction were identified, and they were apparently demolished no earlier than A.D. 220 or 230 (*J. Roman Studies* **45** (1955), 122, fig. 6; Boon 1972, 44, 60).
- C15–16 Two successive stone buildings in the angle between the *via principalis* and street B3. One was dated to *c.* A.D. 130 and the other to *c.* A.D. 210–20; both were heavily robbed (*J. Roman Studies* **48** (1958), 103).
- C17* A building with five construction phases, three in timber and two in stone, with the first stone phase possibly dating to the late 2nd or early 3rd century (*J. Roman Studies* **54** (1964), 153). A watching brief carried out in 1988 during the construction of a new driving range immediately to the north of the area excavated revealed a spread of rubble immediately below the topsoil (0.05–0.10m thick) over an area of 20 × 8m. It is not possible to say whether this represents the same building that was excavated in 1963 or a neighbouring one. A watching brief carried out

during the construction of a septic tank next to the clubhouse, alongside and under the Broadway, showed that there was a build-up of nearly 1.5m under and alongside the Roman road, which was flanked by what appeared to be a masonry building with a yard or street.

- C18 A 30m square courtyard building (Building VII) standing at the corner of streets B3 and B4, and aligned on them (Boon 1972, 60). It had walls of coursed rubble, with columns around the courtyard and flanking the main entrance, and a roof of sandstone slates. Two mosaics are noted on plan, otherwise the rooms were paved, as was the courtyard, or floored with concrete; the walls were plastered and the windows glazed. The building appears to have dated from the middle of the 2nd century to the 4th (*J. Roman Studies* 46 (1956), 122, fig. 20; Boon 1972, 60).
- C19 A building (Building VIII) whose plan is a variation of the 'winged corridor' type. This building respected two different alignments, that of the fortress and the street grid, and that of the 'oblique shops'. The excavator recognised two phases of construction without regard to these differences of alignment. The corridor was paved, as was one of the other rooms; one, and possibly two, rooms had a hypocaust incorporating stamped bricks of Antonine type (*J. Roman Studies* 46 (1956), 122, fig. 21; Boon 1972, 60).
- C20 A length of wall, possibly associated with paving, noted in watching briefs (*J. Roman Studies* 46 (1956), 147; *Britannia* 1 (1970), 307).
- C21 A length of wall noted in a trial trench (Boon 1978a, 4, fig. 2).
- There may also have been later buildings overlying the 'oblique shops' (C9–14), but definite evidence is lacking (see below, D4).

D. Other features

- D3 A stone quay in two phases (Severan and later 3rd century), with a timber stage and breakwater. Associated structures included a possible boat-house (Boon 1978a).
- D4 'Signs of frequentation' were noted on the site of the oblique shops (C9–14) in the later 3rd century (Boon 1972, 60). It is possible, though it cannot be proved, that these may have been less substantial buildings of the type noted at Mill Street (for example Buildings 4, 5, 21, 22 = C37, C38, C40, C41).
- D5 Traces of a ditched field-system (*J. Roman Studies* 54 (1964), 153)

The quadrant between the *porta decumana* and the *porta principalis sinistra*

Area explored

Almost all the information on this site comes from the excavations reported in this volume. In addition a watching brief near the *porta decumana* showed the presence of the 'patrol track'. A couple of watching briefs and trial excavations carried out in Station Road and Usk Road proved the absence of Roman activity in the areas investigated; the area towards Lodge Hill has so far produced no evidence for anything other than cemeteries. The Afon Lwyd is currently eroding deposits at D9.

The features in this area are listed in the same format as the previous quadrants for easy comparison, and cross-referenced to the structural report.

Structures known

A. Military installations

- A9 'Patrol track' along the outside of the defences, noted in a watching brief near the *porta decumana*. Probably Flavian in origin (*Britannia* 21 (1990), 306–7).

B. Street system

- B9 Main north–south road in the Mill Street excavations. Constructed ?before the 3rd century, and in use probably to the mid 4th century (pp.38–46).
- B10 Possible side street (p.47).

C. Other buildings

- C22–23 Two buildings of coursed rubble construction, probably 2nd century (Buildings 10 and 11, pp.102–3).
- C24 L-shaped, or possibly courtyard building on cobbled sills, probably of mud-brick construction with some paved floors and roof of sandstone slates (Building 18/19, pp.139–48). 3rd or early 4th century.

- C25 Rectangular timber building, partly provided with rubble sill walls, with floors variously of timber, paving and clay, and roof of ?reed thatch. Surrounded by a yard and provided with a verandah on one long side. Separated from its neighbours by ditches. 3rd to mid 4th century (Building 12, pp.103–22).
- C26 Rectangular mud-brick building on sills of large blocks, with floors variously of cobbles, paving and timber and roof of ?sandstone slates, thatch or shingles. Provided with a verandah opening from a yard, and separated from its southern neighbour by a ditch. (?)Late 3rd to mid 4th century (Building 13, pp.122–34).
- C27 Rectangular building on sills of cobble and large blocks, probably of mud-brick construction with timber floors and roof of ?sandstone slates, thatch or shingles. Probably provided with a verandah on the main street frontage and a separate entrance in the middle of one long side. Separated from its northern neighbour by a ditch. (Building 14, pp.134–8).
- C28 Building of coursed rubble construction (Building 7, p.100).
- C29 Building of coursed rubble construction (Building 8, p.102).
- C30 Probable building of coursed rubble construction (Building 9, p.102).
- C31–33 Three buildings with sills formed from large blocks (Buildings 15–17, pp.138–9).

D. Other features

- D6 Waste ground with gullies and ?fences. 2nd century (pp.28–34).
- D7 Stone-lined drain. 4th century (pp.159–62).
- D8 System of gullies and small ditches. 4th century (p.163).
- D9 Stonework and timbers have been noted exposed in erosion of the river bank.
- D10 A watching brief showed Roman stratigraphy extending at least as far east as this point (p.166).

The quadrant between the *porta principalis sinistra* and the *porta praetoria*

Area explored

Extra-mural occupation of this area has been known since 1845 when the Castle Baths were discovered. The main investigation, however, was the excavation at Mill Street (the Cambria House site) and the trial works at Uskside and the Social Club, all reported upon in this volume. A little information was provided by watching briefs. There has been considerable accretion by the Afon Lwyd and River Usk, probably following erosion. For a fuller discussion, see p.489.

Most of the features described in this area are fully reported in the descriptions of the individual excavations above. They are listed here in the same format as the previous quadrants for easy comparison, and cross-referenced to the structural report.

Structures known

A. Military installations

None recognised, unless the light spread of metalling noted on the Mill Street frontage of the Cambria House site was military in origin.

B. Street system

- B11 Main north–south road in the Mill street excavations. Probably earlier in origin than B9 (pp.46–7).
- B12 Side street in the Cambria House excavations (p.47).
- B13* Possible road(s) or street(s) at Uskside, represented by cobble deposits in two locations (p.175).

C. Other buildings

- C34–38 Initially two strip buildings with coursed rubble external walls, at least one of which probably incorporated mud-brick or cob construction. It had internal walls on sillbeams and floors of cobbles, timber and clay. They were replaced towards the end of the 2nd century by a single coursed rubble building with an enclosed area attached, within which were erected successively a small timber building standing on the ground and a larger building with a cobble foundation raft and wooden sill beams. Occupation continued into the early part of the 4th century. (Buildings 1–5, pp.52–95)

- C39 A ?strip building of coursed rubble, probably a metalworker's workshop. Occupation ceased in the early part of the 4th century. Building 6 (pp.95–100 and 154).
- C40–41 Two buildings with timber sills, standing on the ground. One of them was probably a metalworker's workshop. Occupation may have continued into the mid 4th century. Buildings 21–22 (pp.149–54 and 154–6).
- C42 The 'Castle Baths'. A coursed rubble building of at least two phases, with concrete and flagged floors and hypocausts in some of the rooms. It is not clear whether this structure was actually a bath-building, or if it was a bathing suite attached to a larger complex of buildings. An altar of Mithras was incorporated within one of the walls (Lee 1862, 85–103; Nash-Williams 1930b).
- C43 A building with massive walls of mortared rubble, probably vaulted and with plastered walls (Uskside building, pp.173–5).
- C44 Probable building, represented by a wall and other deposits of Roman date (Social Club, p.175).

D. Other features

- D11 A large pit containing metal slag, near the possible metalworkers' workshops (C39, C40, C41, p.156).
- D12–13 Trial excavation showed Roman stratigraphy extending at least as far east as these points.

The area on the opposite bank of the River Usk

Area explored

Work in this area has been confined to limited excavation in advance of small-scale building work, and watching briefs. The present Isca Road is probably on the line of a Roman road which formed a continuation of the *via praetoria* beyond the presumed bridge. The information available so far suggests that occupation was limited to the frontage of the road as it crossed the low-lying ground next to the river: a cemetery was located on the lower slopes of Belmont Hill, extending nearly to the junction of Isca Road with the lane leading to Bulmore, itself probably on the line of a Roman road. C45 and D14 were discovered during the excavations at Isca Grange, publication forthcoming.

Structures known

A. Military or official buildings

None known.

B. Street system

None known.

C. Other buildings

- C45 A building or buildings represented by two walls of coursed rubble and a deposit of burnt daub (*Britannia* **16**, 258–9 no. iv).

D. Other features

- D14 A complex of pits, including cesspits, adjacent to C45 (*Britannia* **16**, 258–9 no. iv).
- D15 A surface of broken brick and tile associated with charcoal and pottery, underlying 0.6m of clean river-clay, was noted during a watching brief in 1990.
- D16 Slight indications of Roman occupation as far west as this position were noted during a watching brief on a gas pipe-line in 1987.
- D17 A geological borehole produced a couple of fragments of iron slag, possibly of Roman origin, below 8.23m of alluvium (Anderson 1974, 4, 5 and table i).

APPENDIX 2

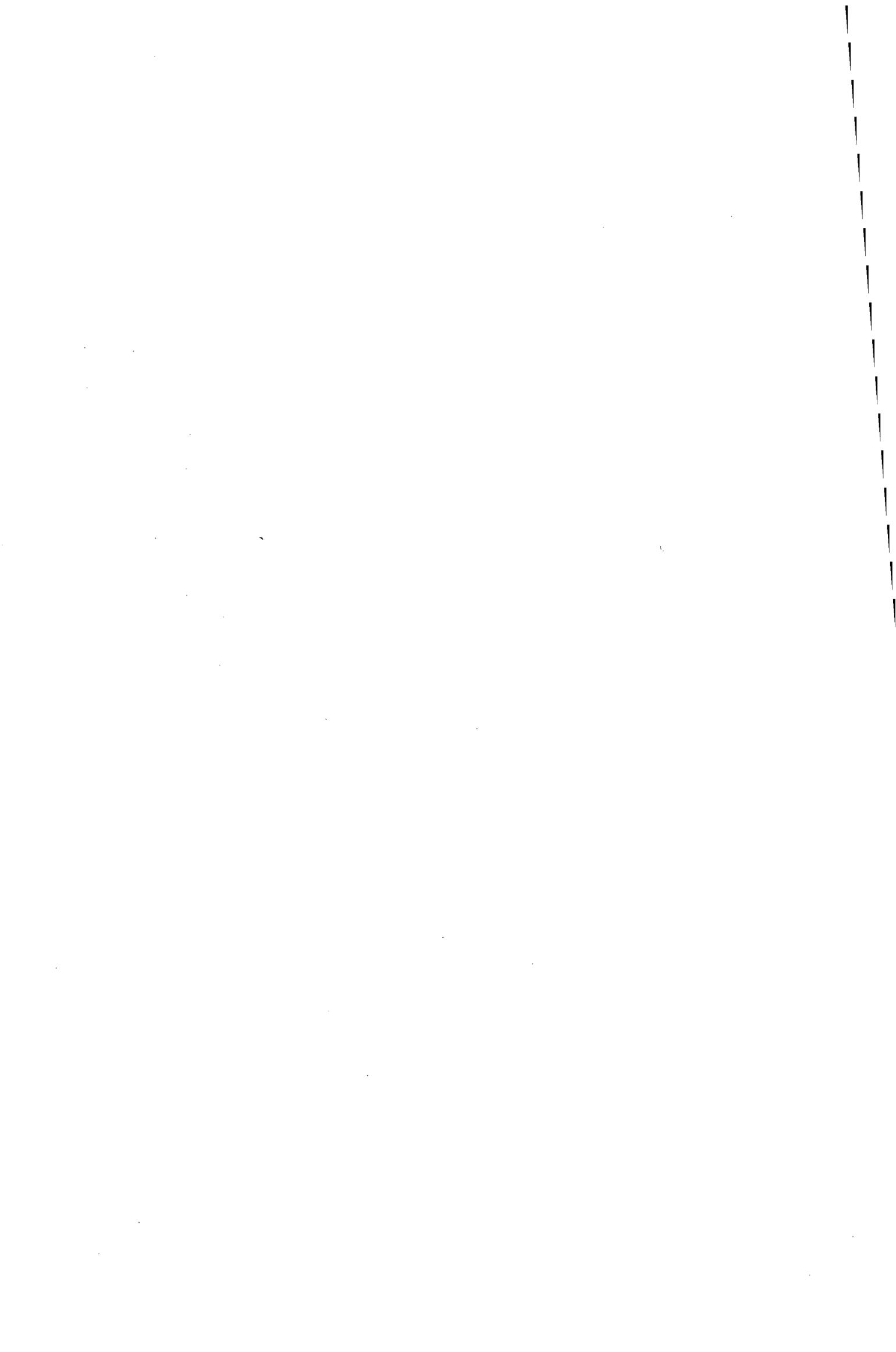
PROBABLE ESTUARINE DEPOSITS: HEIGHTS OD

In order to assist in the correlation of the probable estuarine deposits with comparable deposits elsewhere in the area, the greatest surface heights OD of the main deposits are given in TABLE 33.

TABLE 33: HEIGHTS OF PRINCIPAL PROBABLE ESTUARINE DEPOSITS

SG	Context number	Level of upper surface in metres OD	Remarks
Substratum	067	6.20	
Substratum	1109	6.39	
Substratum	1551	5.75	Possibly truncated
SG4	1105	6.62	
SG4	1106	6.39	
SG4	1485	6.00	
SG4	1486	6.62	
SG4	1489	6.45	
SG4	1529	6.24	
SG4	1539	6.18	
SG5	121	6.61	
SG7	066	6.44	
SG174	661	6.44	
SG174	662	6.55	

The overlying waterlaid deposits of pink and red colour (SG8, SG9, SG10) are not given, since they may well not be connected with the fluvial regime.



APPENDIX 3

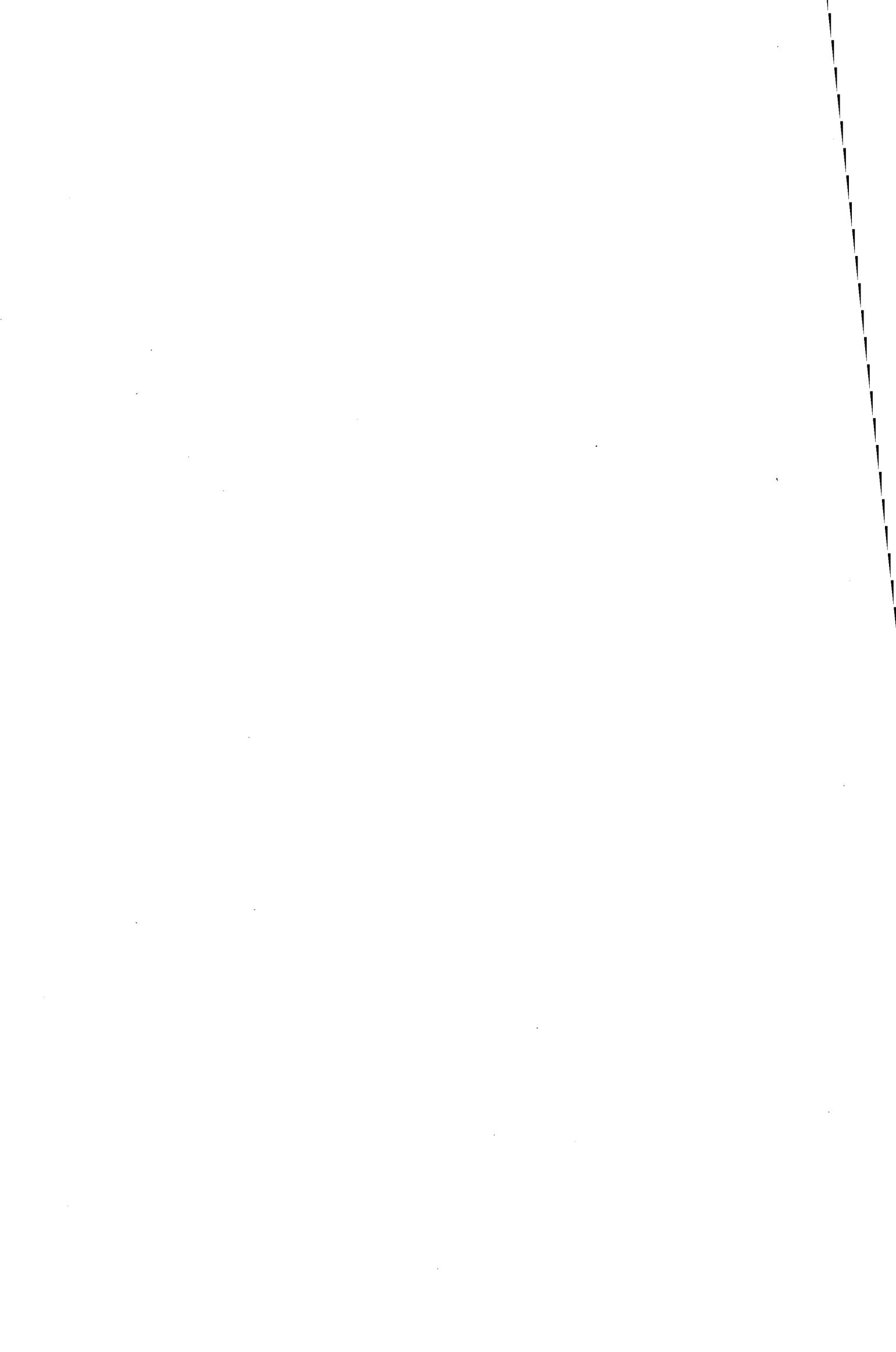
PLANT MACROFOSSILS FROM THE RIDING SCHOOL FIELD: A NOTE ON METHODOLOGY By Julie Jones

Samples were examined for plant macrofossils from the excavation of the Riding School Field in the Mill Street area of Caerleon; most of this area at the time of excavation was below the 8m contour and prone to flooding in autumn and winter and during spring tides. The samples were taken to study the development of the flood plain in the Roman and immediate pre-Roman period, and in particular to determine whether the river was tidal and, if so, whether any appreciable change in the tidal reach could be seen. The present day tidal limit of the Usk lies at Newbridge-on-Usk, c. 6km upstream from Caerleon.

Eleven 250g samples were sieved to 250 microns and examined under the microscope for plant macrofossils. Owing to the low numbers of macrofossils recovered from some samples, a further 750g was sieved from two of the contexts to see if there was any increase in the number of species recovered. The report was completed in 1987.

The plant remains from all samples were predominantly waterlogged with some charcoal fragments. These are listed in TABLES 3 and 4. Nomenclature and habitats follow Clapham *et al.* (1987).

Two of the samples, both from Building 12, one from Room 12.5 (SG121) and one from the ashpit of the hearth (SG106), did not produce any macrofossils. The remaining samples were divided into four groups and are discussed under the headings of the main sedimentary sequence (pp.24, 30 and 33) and property boundaries (p.50).



SYNOPSIS

Extensive excavations took place in the area of the civil settlement outside the fortress of *Isca* (Caerleon) in Gwent between 1984 and 1990. Most of this work was concentrated in areas adjacent to the modern Mill Street, but more limited excavation also took place off Castle Street. The principal campaign of excavations took place between 1984 and 1986, when three main sites, the Riding School Field, Cambria House and the Smallholding, were excavated in advance of building work. Subsequently, limited salvage excavation took place during construction on these sites, and field evaluation was carried out for other areas where development was proposed. This work represents the largest area of extra-mural settlement examined since Nash-Williams' work in the 1950s on the Bear House Field at the opposite side of the fortress, and is all the more valuable since Nash-Williams' excavations have never been published.

Before the work was carried out, it had been believed that the Mill Street sites lay beyond the area of Roman occupation, and outline planning permission had accordingly been granted without archaeological conditions. Because of the large size of the area under threat, the depth of the deposits, which were frequently waterlogged, and the limited resources available, only selected portions could be examined. It is estimated that just over 11% of the area was examined in its latest phase, and less than 1.5% down to the earliest levels.

The area to be developed was crossed by the road which continued the line of the *via principalis* outside the *porta principalis sinistra*, and was further divided by a road or roads which ran north-south at right-angles to it. At least one side street was noted running off the north-south street, and there are indications suggesting the presence of others. These streets do not appear to have been laid out as a single operation, but as circumstances demanded. There is insufficient evidence to determine whether they ever formed a regular network. The main north-south road was not extended into the area of the Riding School Field until the latter part of the 2nd century, following a period in which this area had probably been subjected to river erosion.

The sediments underlying the north-south road and contemporary with its construction are of particular interest. The plant macrofossils which they contain indicate that the environment was largely waste land inundated at intervals, probably seasonally, by fresh water with occasional incursions from a tidal environment. At the bottom of the sequence are a number of cut features filled with pieces of wood and bone, radiocarbon dates for which suggest that they were deposited before the start of Roman occupation in Caerleon. The deposits immediately above, however, seem from the pottery which they contain to have been laid down no earlier than the 2nd century A.D., suggesting that there may have been a period of erosion between the two periods of deposition. Further deposition, still largely the result of seasonal flooding, took place after the construction of the road, until the ground dried out sufficiently for building to take place. The relationship of this sequence with that recorded in a second section slightly further towards the fortress is unclear. This second section suggests that a similar sequence of deposition was taking place here in the early 4th century, possibly indicating the shifting of a watercourse; but alternatively the difference in the deposits could have been affected by the construction of a stone-lined culvert on this part of the site.

Twenty-two buildings or parts of buildings were excavated, mostly fronting onto one or other of the roads or streets. They ranged in form from 'cottages' with two or three rooms, through strip buildings, to a building with more than one range of rooms. Of particular interest was the range of construction techniques employed, even within a single building, from timber and mud brick to buildings which probably consisted of two storeys of coursed rubble. In spite of the time-span involved (from the first half of the 2nd century to the early 4th century), there was no 'evolution' from timber to masonry, and the choice of construction method employed must have been dependent upon other factors. Not all the buildings identified were excavated below the latest levels, but those which were displayed histories of some complexity. Little information is available on their function, although some were clearly used for craft or industrial purposes. An area where small-scale iron-smelting appears to have taken place was identified on the Cambria House site. The 'cottage'-type buildings on the Riding School Field, which seem to have been erected on reclaimed waste land, may have been associated with the traces of horticulture or small-scale agriculture which were identified between them and the fortress defences,

giving this part of the settlement the characteristic of an 'urban/rural fringe'. This aspect of the site is perhaps reinforced by the presence of a cremation close to these buildings.

Vast quantities of artefacts were recovered from the Mill Street sites. The ceramic assemblages reveal that a high proportion of the material being deposited at any one time was residual, although there are problems in determining whether this material was being generated in the *canabae* or had found its way from the fortress.

There are slight traces of re-occupation on the sites of two of the buildings after they had become ruinous: this may be connected with a post-Roman burial which had been made in the vicinity.

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ABBREVIATIONS

D	figure-type in Déchelette 1904, tome II.
BAR	British Archaeological Reports
BMC	<i>Coins of the Roman Empire</i> , British Museum Catalogue (London)
CBA	Council for British Archaeology
H	figure-type in Hermet 1934, tome 2 (Hermet numbered some types in sequence, others require a plate no.)
HBMCE	Historic Buildings and Monuments Commission for England
<i>Limes 13</i>	Planck, D. (ed), <i>Studien zu den Militärgrenzen Roms III: 13 Internationalen Limeskongress (Aalen, 1983)</i> (Aalen, 1986)
O	figure-type in Oswald 1936–7
ORL	<i>Der obergermanisch-raetische Limes des Römischen Reichs</i> , Abteilung B, 1894–1937
RCHM	Royal Commission on Historical Monuments
<i>RIB</i>	Collingwood, R.G. and Wright, R.P., <i>The Roman Inscriptions of Britain</i> (Oxford, 1965)
<i>RIC</i>	Mattingly, H., Sydenham, E.A., Sutherland, C.H.V., and Carson, R.A., <i>Roman Imperial Coinage</i> (10 vols) (London 1923–84)
Rogers	motif in Rogers 1974, <i>Poteries sigillées de la Gaule centrale, Gallia Suppl.</i> , 28

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