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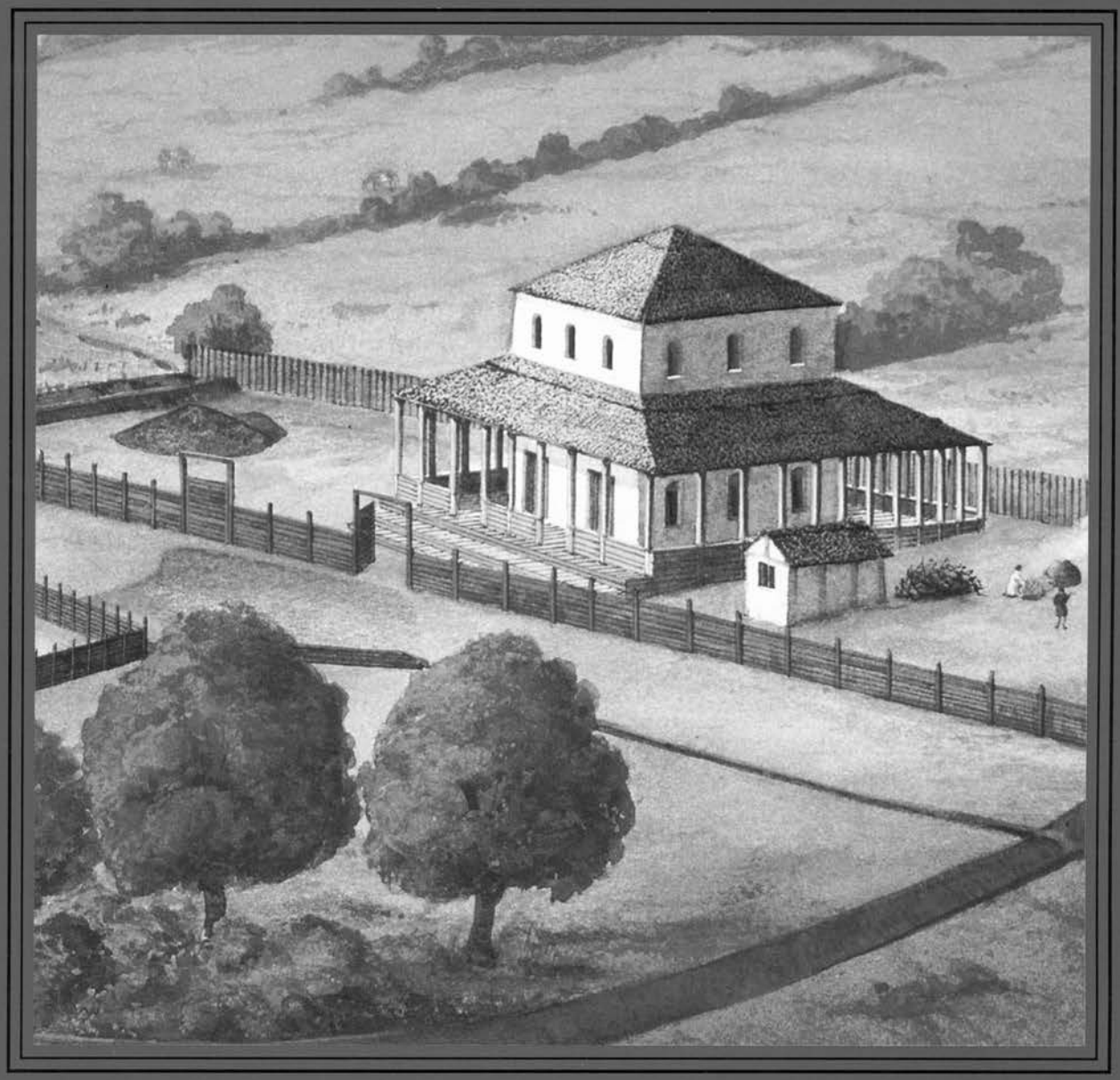


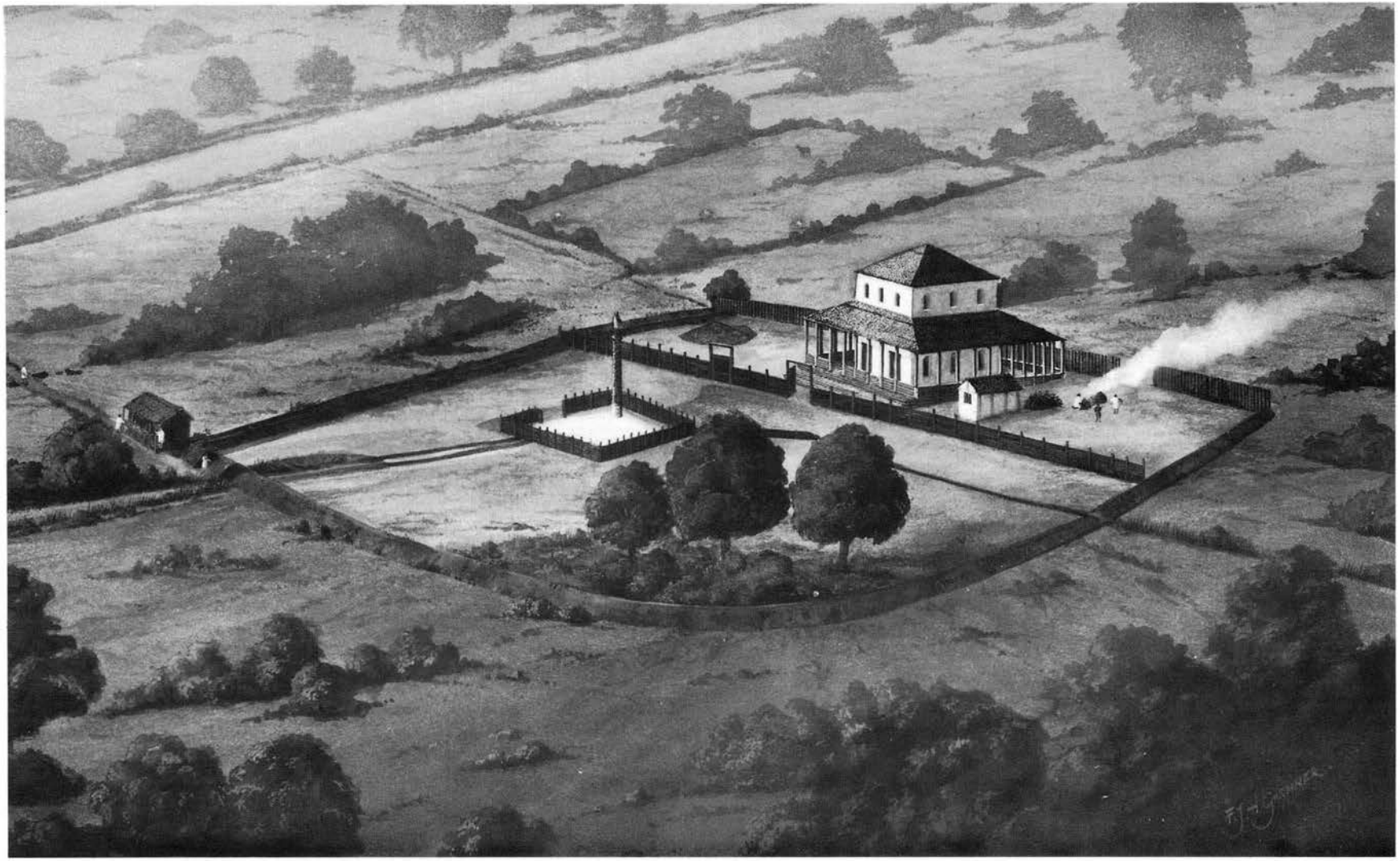
Excavations of an Iron Age Settlement and Roman Religious Complex at Ivy Chimneys, WITHAM, ESSEX 1978-83

East Anglian Archaeology

Archaeology Section, Essex County Council 1999

Joan Daniels

EAST ANGLIAN ARCHAEOLOGY



Frontispiece: An artistic reconstruction of the Roman temple in the 3rd century. Original watercolour by Frank Gardiner

Excavations of an Iron Age Settlement and Roman Religious Complex at Ivy Chimneys, Witham, Essex 1978–83

by Robin Turner

with contributions by
Denise Allen, David G. Buckley, Anthony Clark, Elisabeth Crowfoot, Nina Crummy, John Davies, Brenda Dickinson, John Evans, Miranda Green, Kay Hartley, Elizabeth Healey, Marcus Jecock, Martin Jeffries, Glenys Lloyd-Morgan, Rosemary-Margaret Luff, Donald Mackreth, Hilary Major, Peter Murphy, Warwick J. Rodwell, Catriona Turner-Walker, Colin Wallace, Graham Webster, John P.Wild and John Wymer

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Cover illustration
Detail of an artistic reconstruction of the Roman temple in the 3rd century
Original Watercolour by Frank Gardiner

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Preface

Although it was clear from the outset that the Roman religious site at Ivy Chimneys, Witham, was of low status when in use, it was for this very reason that the excavations were undertaken. All too often it has been the more impressive masonry temples which have received the greatest attention, with shrines of more local importance being ignored or missed. The excavations described in this report therefore help fill a gap in our knowledge, and those interested in Romano-British religious studies should not be deterred by the lack of spectacular finds or structures, or by the difficulties of interpreting the information revealed by the extensive rescue excavations.

The bulk of this report was completed and ready for publication in 1986. In general, contributors have not been asked to update their reports since that time.

Summary

The site at Ivy Chimneys, Witham, appears to have been occupied continuously throughout the Iron Age, and remained in use until the end of the Roman period.

Most traces of domestic Iron Age structures were removed by ploughing, but the surviving ditches seem to indicate more than a simple farmstead. Very large, probably defensive, ditches of late Iron Age date may imply that the excavated settlement at Ivy Chimneys was a focus of activity at that time, and a small amount of circumstantial evidence hints at a religious use of part of the site.

The nature of activity in early Roman times is unclear, although there is ample evidence for occupation of some form. The instigation of two large, long-lived, man-made depressions at this time may point towards the beginnings of Roman religious activity on the site. In the 3rd century AD a large, almost square, post-hole structure, interpreted as a Romano-Celtic temple, was constructed on the crest of the hill, and was enclosed by various ditches remnant of earlier activity. A large pond with a sophisticated water regulation system was constructed at about this time, and isolated timber columns may also have been present.

A new temple appears to have been constructed in the early 4th century, represented by a continuous ditch enclosing a sub-rectangular area. An adjacent depression contained votive material and may have been used for religious ceremonies, although a pottery kiln appears to have produced only conventional material.

The interpretation of a Christian phase in the mid-4th century is based on the presence of a baptismal font constructed of tile, and of a small two-celled structure, possibly a chapel. Other evidence may indirectly point to a pause in the pagan activity, but no specifically Christian portable objects were found.

In the late 4th and early 5th century the site was certainly used as a pagan shrine, as attested by numerous votive offerings such as coins and pieces of jewellery. As is often the case, there is no evidence for the date of the final destruction of the site, but the presence of a relatively high number of Theodosian coins suggests continued activity well into the 5th century.

Part 1. Introduction

I. Introduction

This report describes the excavations, between 1978 and 1983, of the Iron Age settlement and Roman religious complex at Ivy Chimneys, Witham, Essex (TL 811136: Essex Sites and Monuments Record No. TL 81/040). Where relevant, finds and feature information from previous excavations has also been included (see Part 1.III and Appendix II).

The report is supplemented by information included in microfiche (see Appendix I), and also by an extensive Archive which has evolved during the post-excavation analysis. The Primary Record Archive, including field drawings, site notebooks, context cards and finds, is held by Chelmsford and Essex Museum (Accn No. CHMER 1989:24). An interim report was published in 1982 (Turner 1982), based on preliminary post-excavation work. However, further detailed analysis of the finds has proved some of the original interpretations to be incomplete, and the phasing and conclusions have since been extensively revised.

II. Topography and surface geology

Ivy Chimneys lies 2km south-west of the Saxon burh and modern town of Witham (Fig. 1). The site stands on the west edge of the gently sloping valley of the River Blackwater, at a height of *c.* 30m OD, and has clear views to the south and east. To the north and west, the land forms a broad plateau.

The main subsoil over the site is a yellow chalky boulder clay (till), with considerable surface variation. Hollows filled with flint gravel in an orange clayey matrix are common at the top of the slope, while the boulder clay is mixed with, and gradually replaced by compacted powdery chalk lower downslope. The chalky layer is banded in soft and hard layers, which caused misleading readings during an aborted resistivity survey conducted in 1979.

The soft layers in the powdery chalk have often dissolved, causing the archaeological levels above to distort by sinking into the solution hollows. This was shown, during the 1980 excavations, to be the case even in recent times: the mortar floor of Roman building *F4044* had protected the chalky natural which lay directly underneath, while areas which had not been protected were pocked with solution hollows.

A variety of erratic stone can be found in the boulder clay, but by far the most common inclusions in this area are small chalk fragments and flint pebbles. Larger lumps of chalk are uncommon, but the flint pebbles can be up to *c.* 300mm across. Small patches of gravel, of a variety of sizes including pea-grit, are also occasionally present.

III. Archaeological background

Chance finds

The site first came to the attention of archaeologists in 1849, when labourers trenching a field found a Roman cremation cemetery (*c.* TL 812136: OS Antiquity No. TL 81 SW 10) consisting of a quantity of Roman urns containing bones, arranged in groups (*JBAA* 1850, 94, 163: *VCH* 1963, 201). About thirty coins were also found, all now lost. Three of the vessels survive in the Chelmsford and Essex Museum (Accn. No. 1978:139). The cremations appear to have been of the 2nd century, judging by the nature of the surviving pottery vessels (Pottery Report) — rather earlier than the bulk of coins also present (later 2nd century, later 3rd century, and early 4th century). The finds were made in Ivy Chimneys Field (OS No. 2366), but no traces of further cremation urns of this date were found during the excavations in this area during 1980 and 1983, nor in the subsequent watching briefs during building works.

Roman pottery was again found in 1937–8 (OS Antiquity No. TL 81 SW 9), when a mushroom farm was constructed in the area of the main 1979 excavation. The pottery, dated to *c.* AD 140–80 (*VCH* 1963, 202), was found in association with animal bones and oyster shell. The pottery dating was mainly based on two samian stamps (QVINTI M on a f. 33, and ?MARCI on a f. 18/31), but a coin of Tetricus II (270–73) shows the possibility that the deposit was of a later date.

Witham Archaeological Research Group excavations

Excavations by the Witham Archaeological Research Group (WARG) took place between 1963 and 1973, initially under the direction of Mr J. Everett, and subsequently under Mike Wadhams and Betty Loring. The excavations were undertaken because of a threat to the site from a proposed housing development. The Ministry of Public Buildings and Works (MPBW) were unable to finance the excavations, and work generally took place in evenings and at weekends. The site was unfenced, and was seriously disturbed on numerous occasions by treasure hunters with metal detectors.

Plans and sections of most of the WARG excavations are held in the primary record archive (Chelmsford and Essex Museum), and most of the finds are also still available for study in the Chelmsford and Essex and Passmore Edwards Museums.

The WARG excavations (Fig. 3) centred on the fills of a large Roman depression (*F2409*) and the area to the north-west. Exploratory trenches were also dug in various locations. Although these early excavations were ultimately fairly extensive, the size of the depression in which they were situated was sufficient to engulf the cuttings, and, at the time, to preclude the meaningful interpretation of the features encountered. Large numbers of coins and fragments of jewellery, as well as certain items of specific votive significance, were enough to

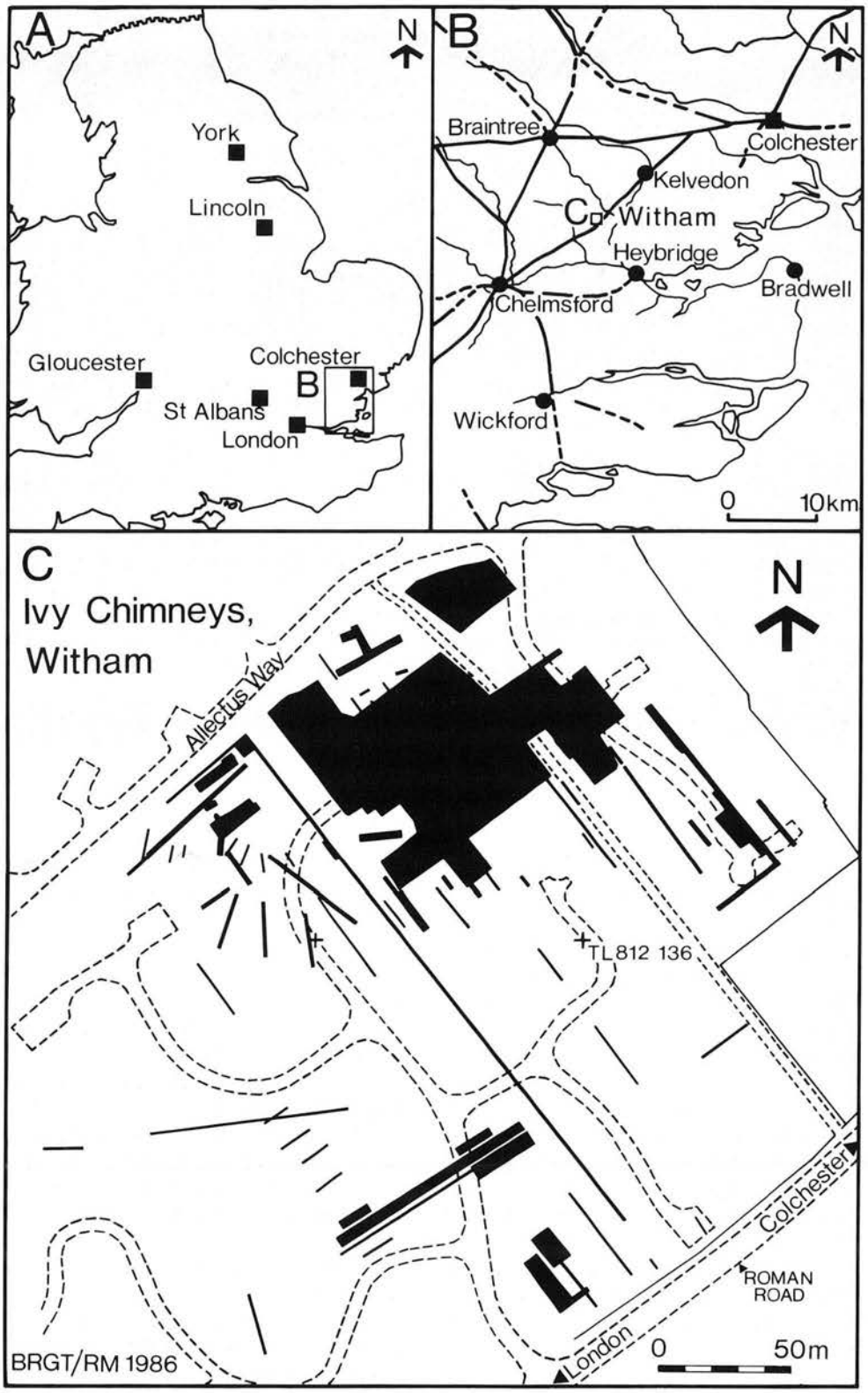


Figure 1 Site location and position of all known excavations. Scale 1:2500

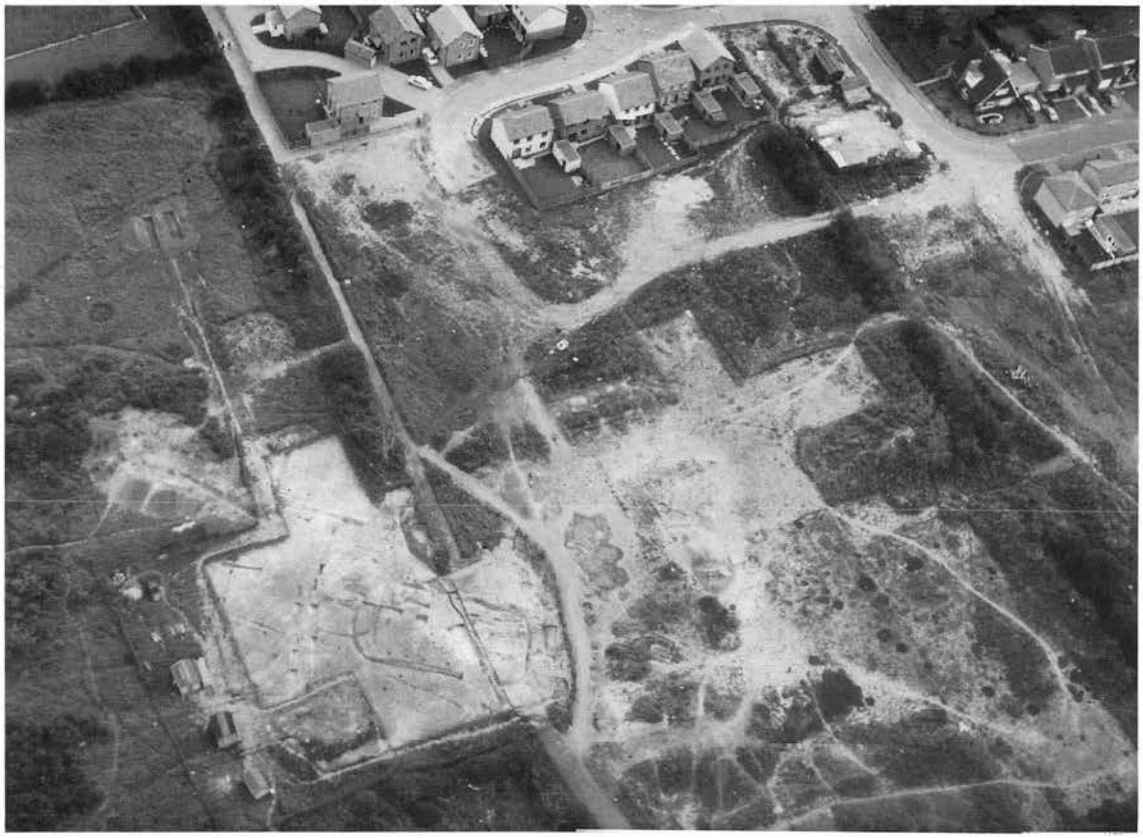


Plate I Aerial view of 1980 excavations

prove the religious nature of the site. The finds and documentation of the 1963–73 excavations (hereafter the 'pre-1978' excavations) have been integrated into this report where appropriate.

Only two reports relating to the pre-1978 excavations have hitherto been published. One is a description of four finger-rings (Henig *et al.* 1973: see also p. 79), and the second is a note on the carved septaria (*sic*) votive relief (Frere 1970: see also p. 112).

Excavations by B.R.K. Dunnett

A small area of the Iron Age settlement was excavated in July 1970, under the direction of Rosalind Dunnett, for the Ministry of Public Buildings and Works. Although none of the written documentation for this work has survived, sketches and photographs (included in the Archive) show the position of the quarter circuit of an Iron Age round-house gully which was found. The main Iron Age settlement enclosure ditch (*F549*) was also located and followed for a short distance.

Excavations by R.T. Brooks, and others

In September 1970, work on a sewer trench was observed by members of WARG, and two large ditches were found (Brooks *et al.* 1976, 107, fig. 1). Eighteen further trenches were machine-dug under the supervision of Miss K.A. Gomer (Mrs Rodwell) and Mr W.J. Rodwell for the MPBW. Various ditches were observed in these trenches, details of which are outlined in Appendix II.

Excavations by R.T. Brooks, A.H. Stokes, and others, on behalf of the Department of the Environment and Witham Urban District Council, were undertaken in May 1972. The cuttings were mainly located near Hatfield Road (Fig. B), and a number of small ditches and other features were found (Brooks *et al.* 1976). No areas of intensive occupation were located, but a certain amount of activity had clearly taken place on the periphery of the religious focus.

Treasure hunters

By 1973, very little *bona fide* archaeological work was under way, and from then until 1978 the site was open to pillaging from metal detector users. The site is still frequently described in treasure hunters' guides to the county. A substantial area of the important votive depression *F2409* was disturbed, but fortunately the font (*F1349*) was left undamaged, less than 1m from the warren of treasure hunters' holes.

The 1978–83 excavations

(Fig. 2, Pl. I)

In 1977, plans for a residential development of the site were again submitted, and the whole area was once again under threat. A small grant was made available by the Department of the Environment for the excavation of the area richest in finds. Work began in September 1978 and continued until the end of that year. During the 1978 work, traces of a large post-hole structure were found, and the font was also revealed. The potential of the site was thus realised, and a major excavation took place between March and December 1979, between May and October 1980, and finally between July and October 1983. The excavations, under the direction of the author, were funded by Essex County Council and the Department of the Environment, with a contribution from Braintree District Council.

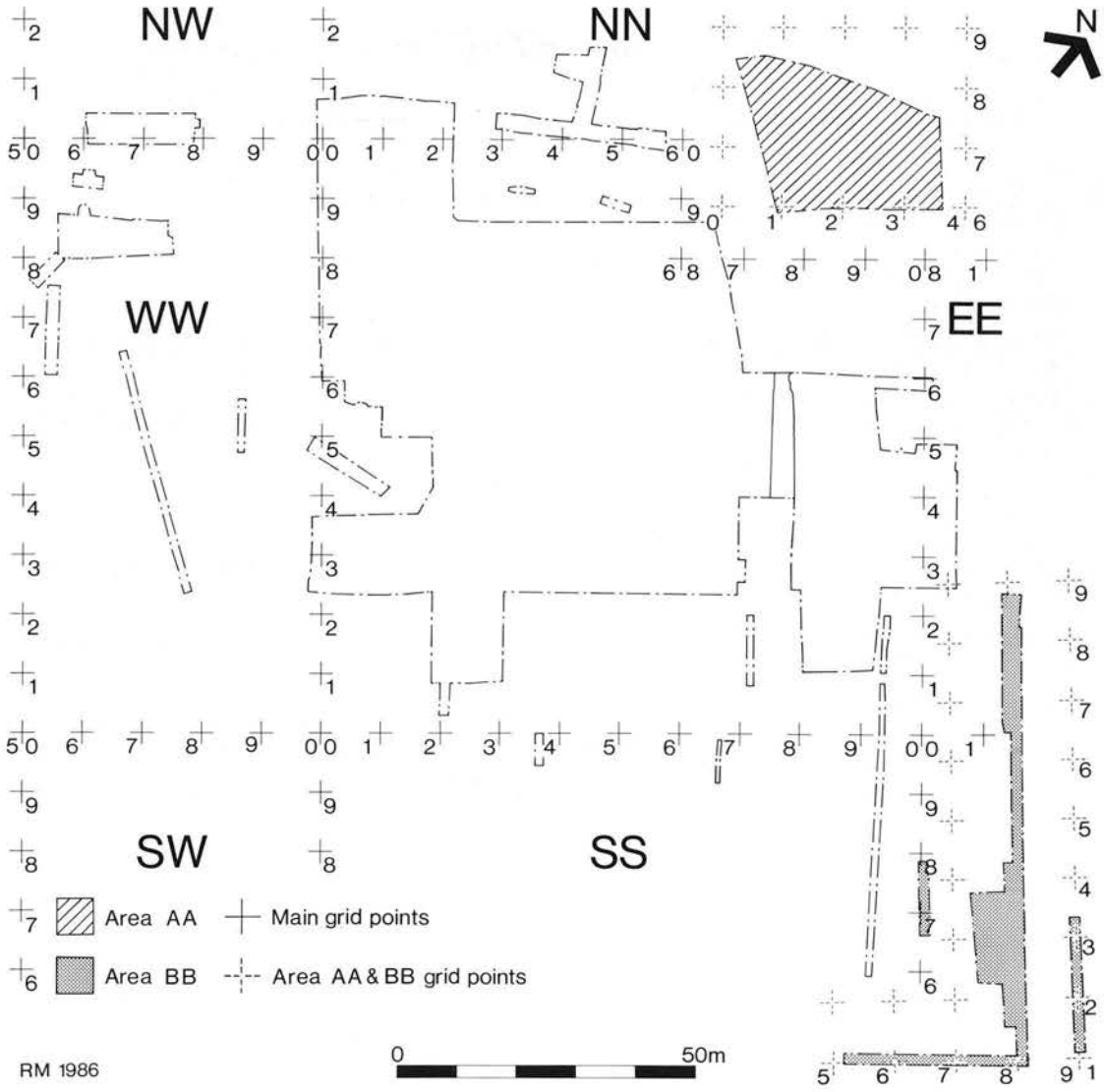


Figure 2 Plan of the 1978–83 excavations showing relationships of cuttings to grids. Scale 1:1250

IV. Methods of excavation and recording systems

Pre-1978 excavations

The pre-1978 excavations (*i.e.* Witham Archaeological Research Group, 1963–73) were conducted without the aid of machinery, and finds were kept, to some extent selectively, from the topsoil downwards. Each trench was given a separate number, and the layers within the trenches were given sub-numbers. The positions of the cuttings are shown related to the 1978–83 central site grid on Figure 3. The cuttings are also included on the detailed microfiche plans of the 1978–83 excavations.

Certain basic layers occurred in most of the cuttings, and these were assigned alphabetical layer numbers (*e.g.* topsoil = layer A). Some of the layers were subdivided where appropriate (*e.g.* layers *C, C1, C2, C3*). Fills of the very few cut features were given discrete letters in the same sequence: the only numbered cut features were two post-holes (*P.H. 1* and *2*), which can be related to fence *F197* found subsequently (p. 57). Certain contexts were not numbered, but were identified descriptively.

1978–83 excavations

The site had been ploughed for many centuries and the topsoil and lower ploughsoil were completely disturbed. This material was therefore removed by machine, and only significant finds were kept. Areas were stripped using a JCB 3C with 1.5 or 1.8m toothless ditching bucket. While this technique produced excellent results when the ground was moist, the machine took considerably longer during long dry spells. The resultant, almost flat surface was cleaned by hoeing, and the visible features were recorded at 1:20 on pre-excavation plans. Post-excavation plans were drawn at 1:20. In unstratified areas, most of the features could be included on the main plans of 10m square areas, but in stratified areas separate post-excavation plans were made of each feature before it was destroyed by further excavation. Almost all sections were drawn at 1:10.

The site grid was orientated with the field boundaries, *i.e.* north-west to south-east. All compass directions on field plans relate to the site, but published and archive illustrations show OS compass bearings.

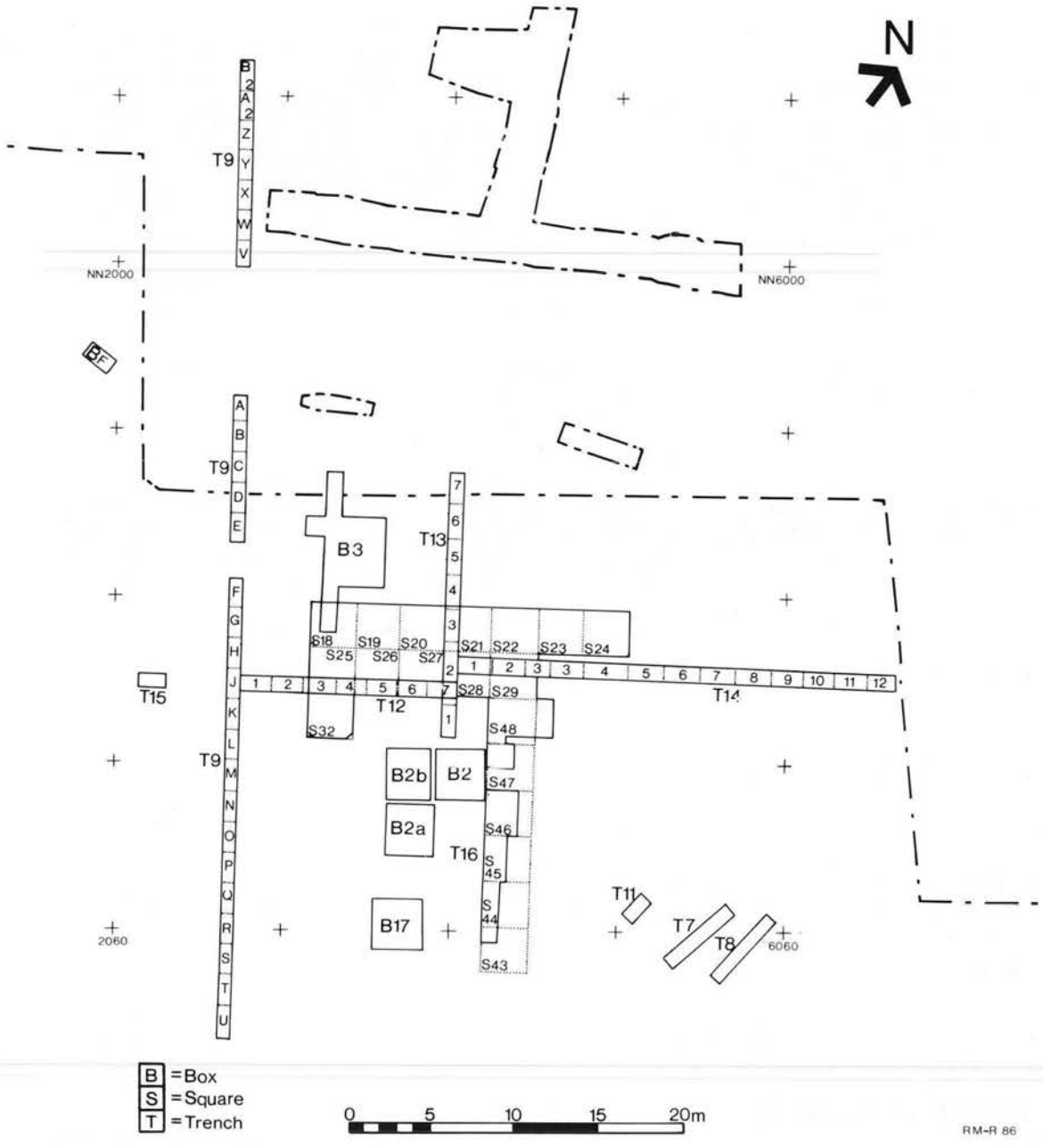


Figure 3 Plan of the pre-1978 excavation cuttings. Scale 1:400

Recording system

The context system of recording was used in the recent excavations. There is no significance in the order of the numbers, and no number was used twice. The numbers *1–5284* were used, although there are some short gaps in the sequence.

Unless otherwise stated, all depths are from the level of the interface between base of ploughsoil and undisturbed natural. In most cases, between *c.* 0.30–0.60m of soil was present above this level during modern times, and an additional measurement must be added to that of most features in order to give a true indication of their original depth.

The recording system worked in the following way: any group of features could be given a context number (*e.g.* building *F731*) within which each associated feature was embraced (*e.g.* post-hole *F1311*). Within a cut feature could be several fills, and variations within a fill could also be assigned a context number. Any group of finds of particular interest was given a number (*e.g.* coin hoard *F734*). When not part of a cut feature, certain layers were given numbers (*e.g.* soil *L224*). The descriptor prefixes 'F' and 'L' are optional conveniences, since the numbers were not duplicated: 'F' denoting a feature and 'L' a layer. The prefix 'D' identifies disturbed, unstratified or unreliable contexts.

Depression *F4502*, recorded in 1983, was excavated in six different trenches (Areas A–F), and, for easy recognition, features exclusively from these areas have been prefixed with their area code, *e.g. CF5000* was a feature in Area C.

In order to be compatible with the Archive and site records, original recording numbers for contexts, plans and sections have been used throughout the text.

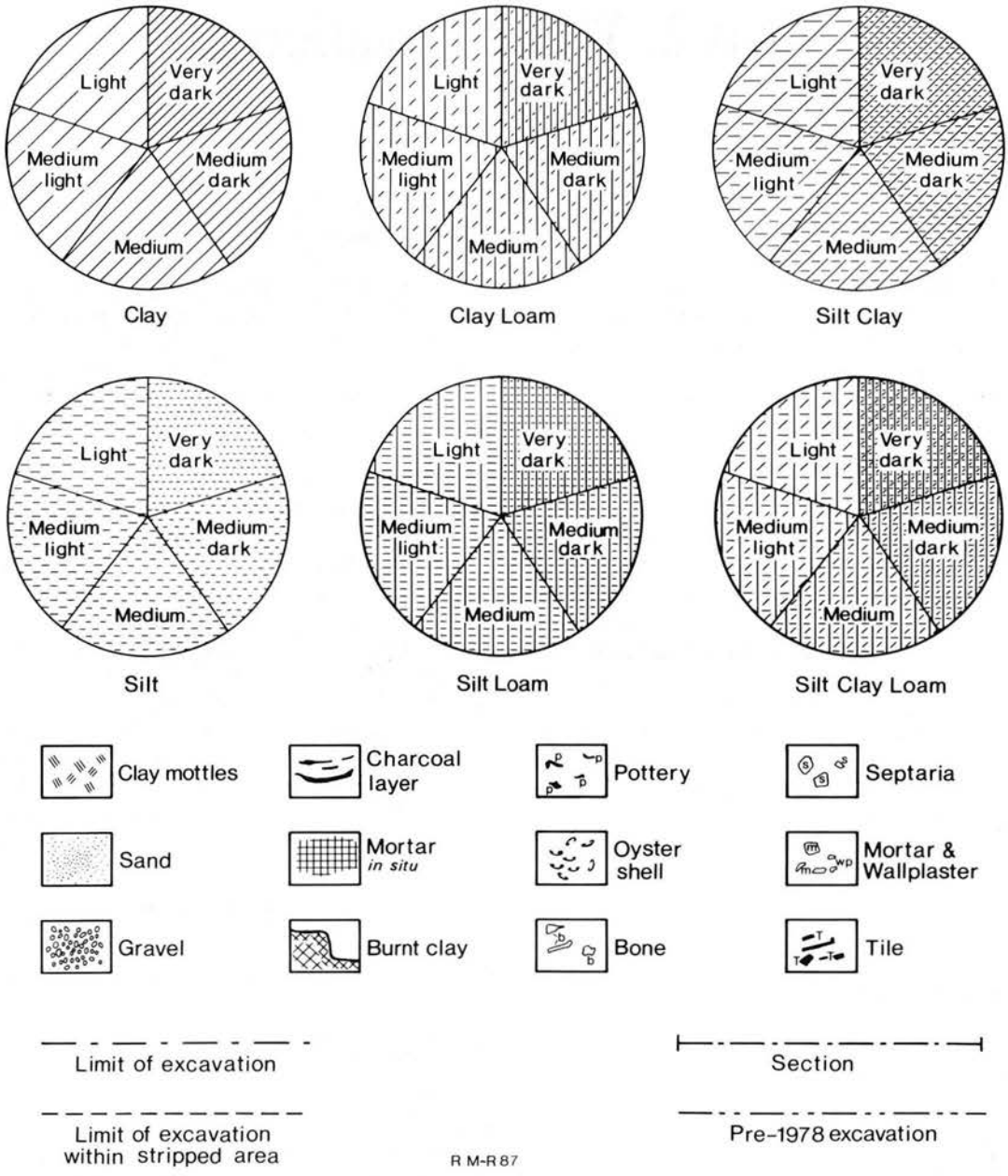


Figure 4 Key to conventions used on plans and sections.

V. Format of the report

After Part 1, The Introduction, the report is divided into four main parts:
Part 2: The Excavations
Part 3: The Artefacts
Part 4: Zoological and Environmental Evidence
Part 5: Discussion and Conclusions

Part 2 is designed to be descriptive, with a minimum of interpretation or discussion. Enough information is presented to give the reader an impression of all significant contexts, and to provide adequate supportive evidence for the discussion and conclusions. Although the excavation section is arranged by phase, many contexts were long-lived and are described under several phases; in such cases, page cross-references have been used where required. A basic amount of dating evidence has been given in addition to major stratigraphic relationships. Full details of all finds are given in the Archive, and only objects or assemblages of significance have been published in detail in Parts 3 and 4. All significant features are illustrated on the various detailed and general plans, but for clarity the numbers of certain minor contexts have been omitted from the section drawings. Where possible, section positions have been indicated on plans: where this has not been done, the microfiche plans must be consulted to locate the positions of sections (see Appendix I, 2.2).

Part 5 considers significant contexts which are well dated and allow interpretation, and also those of intrinsic interest. All phased contexts described in this report have been included on the appropriate phase plans (Figs 144, 145, 147–150). The discussion is not designed to be an all-embracing research report. The intention is to put features into their site context, and to put the site itself into wider contexts. The reinterpretation of previous theories and the citing of parallels *ad infinitum* have not been

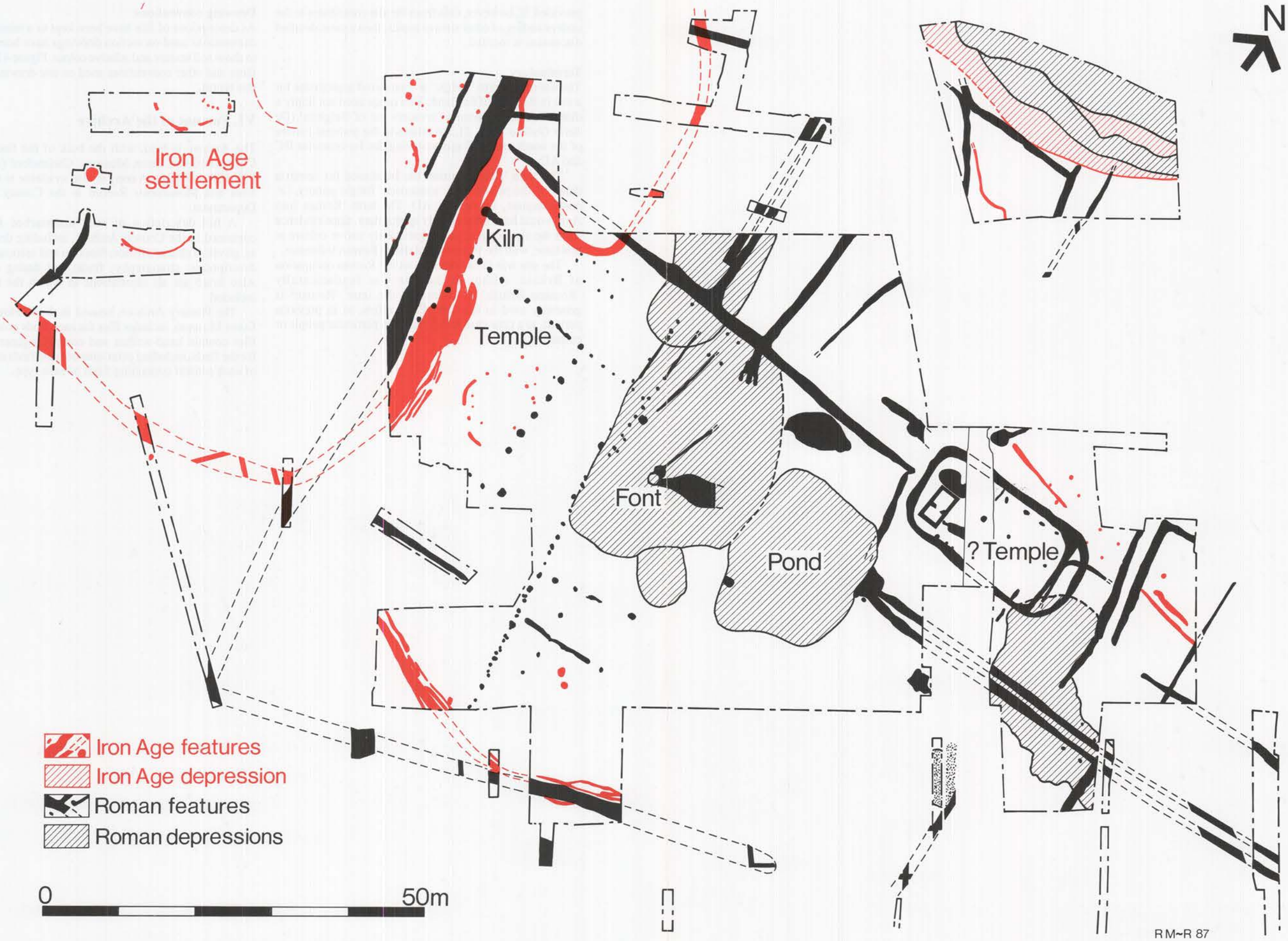


Figure 5 Overall site plan showing major Iron Age and Roman features. Scale 1:500

provided. If, however, data from the site contributes to the understanding of other sites or topics, then a more detailed discussion is merited.

Terminology

The use of the term 'Belgic' is considered appropriate for a site in this part of England. This usage need not imply a direct link with Caesar's 'invaders out of Belgium' (*De Bello Gallico* V, 12, 2), but relates to the material culture of the south-east of England during the 1st centuries BC and AD.

The term 'Belgo-Roman' has been used for contexts dated by the presence of 'romanised' Belgic pottery, *i.e.* post-conquest, 1st century AD. The term 'Roman Iron Age' would have been equally appropriate, since evidence from the site suggests a predominately native culture at this time, with the minimum of direct Roman influence.

The site was in use throughout the Roman occupation of Britain. Although the site was fundamentally 'Romano-British' in character, the term 'Roman' is generally used in this report and refers, as in previous periods, to a time span rather than to a particular people or culture.

Drawing conventions

As descriptions of fills have been kept to a minimum, the conventions used on section drawings have been adopted to show soil texture and relative colour. Figure 4 illustrates these and other conventions used on site drawings within this report.

VI. Format of the Archive

The Archive is held, with the bulk of the finds, in the Chelmsford and Essex Museum, Chelmsford (Accn No. CHMER 1989:24). A copy is also available in the Essex Sites and Monuments Record in the County Planning Department.

A full description of each undisturbed feature is contained in the Context Archive, including details such as: physical characteristics; function and associations; fill descriptions; stratigraphy; finds; and dating evidence. Also listed are all illustrations in which the feature is included.

The Primary Archive, housed in the Chelmsford and Essex Museum, includes files for each finds group. These files contain hand-written and computer-generated data for the finds, including print-outs of smallfinds and details of each context containing finds of each type.

Part 2. The Excavations

I. Introduction

Definition of terms

The following general terms have been used:

Post-hole: hole <*c.* 0.60m diameter, with or without post-pipe;

Post-pipe: hole within a post-hole or post-pit in the position of the original post;

Post-pit: hole >*c.* 0.60m diameter within which is a post-pipe;

Pit: hole >*c.* 0.60m diameter without traces of a post;

Ditch: fairly deep and regular continuous feature;

Gully: continuous feature, shallower and less regular than a ditch;

Slot: short or discontinuous gully or ditch, usually of small proportions, often with regular sides.

The use of the term 'post-hole' for a feature in which no post-pipe was visible would occasionally be misleading, but such features often formed groups as fences or structures which confirms this functional interpretation. The group of features described as 'ditches' is fairly well defined, but some overlap may be encountered between the terms 'ditch', 'gully', and 'slot'.

Most of the features described in this section are shown on the phase plans (Figs 144–145, 147–150) used in the Discussion.

II. Phasing

The features have been dated, using the usual combination of finds and stratigraphy, to one or more of the following phases:

0: Natural
1: Early to Middle Iron Age
2: 'Belgic'
2/3: Belgo-Roman
3: Early Roman
4: Late 3rd century
5: Early 4th century
6: Mid-4th century
7: Late 4th to early 5th century
9: Modern, disturbed or unreliable (not fully described in Archive).

In many cases, and for a number of reasons, it has not been possible to reliably assign features to a single phase. The task has been particularly difficult for the later Roman period (Phases 4–7). There are two main causes for the problems in dating the contexts of this period: the difficulties of close ceramic dating during the late 3rd and 4th centuries; and the nature of the fills themselves.

Ceramic dating within the crucial later Roman phases is not sufficiently well defined to enable confident phase definition. However, contexts containing flint-tempered Rettendon type wares and a range of recognised 'late' forms have been placed within Phases 4–7; contexts with 'late Roman shelly' wares have been assigned to Phases 5–7; and those with Alice Holt wares and oxidised red-slipped Oxfordshire and Hadham colour-coated wares are considered to belong to Phase 6 or 7. A discussion of the pottery dating within the later Roman period is included in the Pottery Report, and further notes on the phasing can be found in the Discussion.

The nature of the late Roman fills is an even more serious problem, since some of the key contexts in features such as pond *F679* and depressions *F2409* and *F3321* were composed of midden-type debris. The mixture of ceramic types found in these deposits spans the whole of the later Roman period, and the difficulties of date separation are compounded by severe problems of trample — causing extensive intrusions of late ceramics and other finds from later layers. The problems of dating are considered in more detail in the Archive.

The assignment of contexts within Phases 4–7 is thus more interpretative than is desirable, although an attempt has been made to isolate features of these phases using the additional aids of stratigraphy and the evidence of non-ceramic finds such as coins and glass.

The phasing given for features is based on the date of inception, usually derived from the dating of the primary or bottom fills. The suggested life span of a feature may be derived by finding the phasing of the feature context and the phasing of its uppermost fill. Where a context could not be attributed to a single phase, a suggested range is given. For example, a context of Phase 5–6 is thought to date from some time within Phase 5 or Phase 6.

The phasing of each individual context can be found by referring to the context index on microfiche (see Appendix I, 1.3). This index also contains details of the context number of the feature to which a fill belongs, or the type of a feature, *e.g.* ditch; comments, such as fills with which the context in question may be equated; and central grid references.

III. Phase 1: Early to Middle Iron Age

Introduction

(Fig. 144)

The first evidence of occupation on the site is of an Iron Age settlement at the top of the slope (Fig. 2). Although flint artefacts of earlier periods were also present, no pottery or contemporary features were found.

The Iron Age settlement took the form of a ditched enclosure, an area containing round-houses and four-post structures, and a few pits and small ditches. Other features of this date were also present outside the enclosed area.

Because of the limitations of the pottery dating, little attempt has been made to date these features closely within the Iron Age. Dating is based on Early or Middle Iron Age flint-tempered pottery, and on the sandy wares of the Middle Iron Age. In cases where sand-tempered pottery was present in reasonable quantity, a Middle Iron Age date has been suggested.

The rescue nature of the excavations and the subsequent limitations on resources dictated that the research efforts of the excavations were directed towards the Roman religious aspects of the site. Only a small part of the Iron Age settlement was consequently sampled, and the enclosure ditch was mainly excavated in order to establish its date and to follow its path. However, all of the smaller Iron Age features which occurred within the main excavation areas were fully investigated.

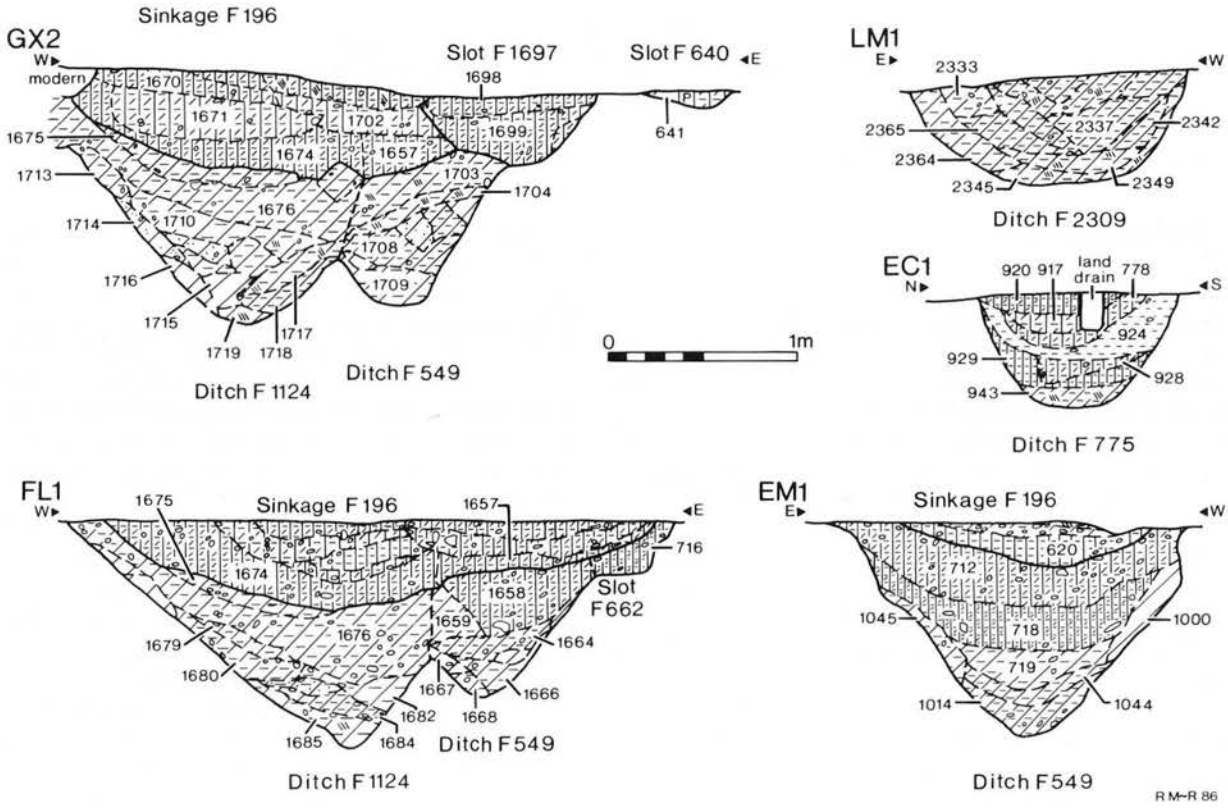


Figure 6 Main Iron Age and Belgic ditch sections. Scale 1:40

Major ditches

Main enclosure ditch F549
(Fig. 6, EA, EM1, FL1 and GX2)
The large enclosure ditch which surrounded the main area of the Iron Age settlement was followed along its east and south sides. The enclosure thus exposed was in excess of 60 by 50m (>0.3ha). The rounded south-eastern corner (*F4399*) was found in a trial trench, and further trial trenches picked up the line of the south side (*F3966*).

In places the V-shaped profile ditch was over 3m wide, and it survived to a maximum depth of 1.50m but would originally have been more than 2m deep. Although a substantial amount of upcast must have been produced during the excavation of the ditch, no evidence of a bank remained. However, an internal bank would have made an effective defensive barrier.

There was no evidence for re-cutting in the Iron Age, but the ditch was replaced by an even more substantial feature (ditch *F1124*; Fig. 6) in Phase 2 (Belgic), which caused a good deal of disturbance to the fills of the earlier ditch. The Belgic ditch included an eastern entrance, but no evidence of an entrance was found in its Iron Age predecessor.

The fills of the ditch were undisturbed in places where the Belgic ditch was absent. The lower fills were a mixture of redeposited and slumped natural chalky boulder clay near the edges, interspersed with densely mottled grey-green primary silts. The middle fills were also largely composed of redeposited natural, but green-brown silt clays were found near the edges. The redeposited natural in these secondary fills could represent the backfilling of bank material. The more homogenous green-brown silt clay upper fills contained orange mottles and fairly dense pebble inclusions, all derived from the surrounding natural. In contrast, occasional fills (*e.g.* fill *718*; Fig. 6, EM1) were black silts and may have accumulated relatively slowly. Upper sinkage fills, *F196*, were of Roman date.

Although there was some contamination from fills of Belgic ditch *F1124*, the bulk of the finds from ditch *F549* are of Middle Iron Age date. An iron nail shaft was found in fill *3984* of segment *F3966*, and an articulated dog skeleton was found in fill *718* (Bone Report).

External ?stock enclosure
(Fig. 6, EC1 and LM1)
The east and south sides of an external enclosure, attached to the east side of main enclosure ditch *F549*, were excavated in a number of segments (*F229, F269, F775, F1199* and *F2309*). The west side of the enclosure was formed by the east side of the main enclosure ditch, and the area thus enclosed was *c.* 27 by 25m (0.0675ha). The ditch was up to 1.50m wide and had a U-shaped profile. The surviving depth varied, being *c.* 0.90m near the south-west end, and becoming shallower to *c.* 0.50m over the rest of its length. Traces of an inturned entrance were found in the much-disturbed south-west corner.

Although often slightly mottled, the ditch fills generally showed no signs of backfilled bank material. Layers of grey silt clay were found in many of the primary fills, suggesting that the ditch had originally been left open and had silted to some extent. Finds from the lower fills were of Middle Iron Age date, but the ditch was re-cut in Belgo-Roman times (p.21), and Roman sinkage fills were also present.

Round-houses
Traces of four definite and two possible round-houses were found during the 1978–83 excavations (Fig. 7), and a further example was excavated by Dunnett (see below). Many more examples may have existed in the unexcavated parts of the settlement, and others were almost certainly ploughed away.

Round-house F185
A *c.* 9.50m diameter feature composed of two slots (*F532* and *F864*) and several post-holes (*?F455, F471, F472, ?F492, F529* and *F530*). Part of the structure had probably been ploughed-out. There is a possibility that post-holes *F455* and *F492* formed part of a trapezoidal four-post structure or entrance with post-holes *F454* and *F456* (*F2977*, see below).

The post-holes were fairly regularly spaced, at *c.* 2.50–3.00m, intervals, and the slots would have been *c.* 3.50m apart. Post-hole *F530* lay in the middle of the gap between the slots. The slots, up to *c.* 0.20m deep, both terminated at the gap but gradually sloped upwards at the other ends, and they may have been part of a continuous drip-gully. The gap could therefore represent the position of a south-west entrance. The post-holes averaged *c.* 0.20m deep, but no traces of post-pipes were visible.

The fills of both slots and the post-holes were generally brown silt loams. Only fourteen sherds of Iron Age pottery were found in the fills, along with four sherds from post-holes *F455* and *F492*. Fragments of Roman tile from fill *149* (slot *F532*) are considered to be intrusions from the ploughsoil. On balance, an Early Iron Age date is indicated by the predominance of flint-gritted pottery.

Although round-house *F185* substantially overlapped with ?round-house *F186*, no stratigraphic relationship was observed. However, both structures lay outside the settlement enclosure and underneath the Roman ?temple *F731*, and one is likely to have been a replacement for the other.

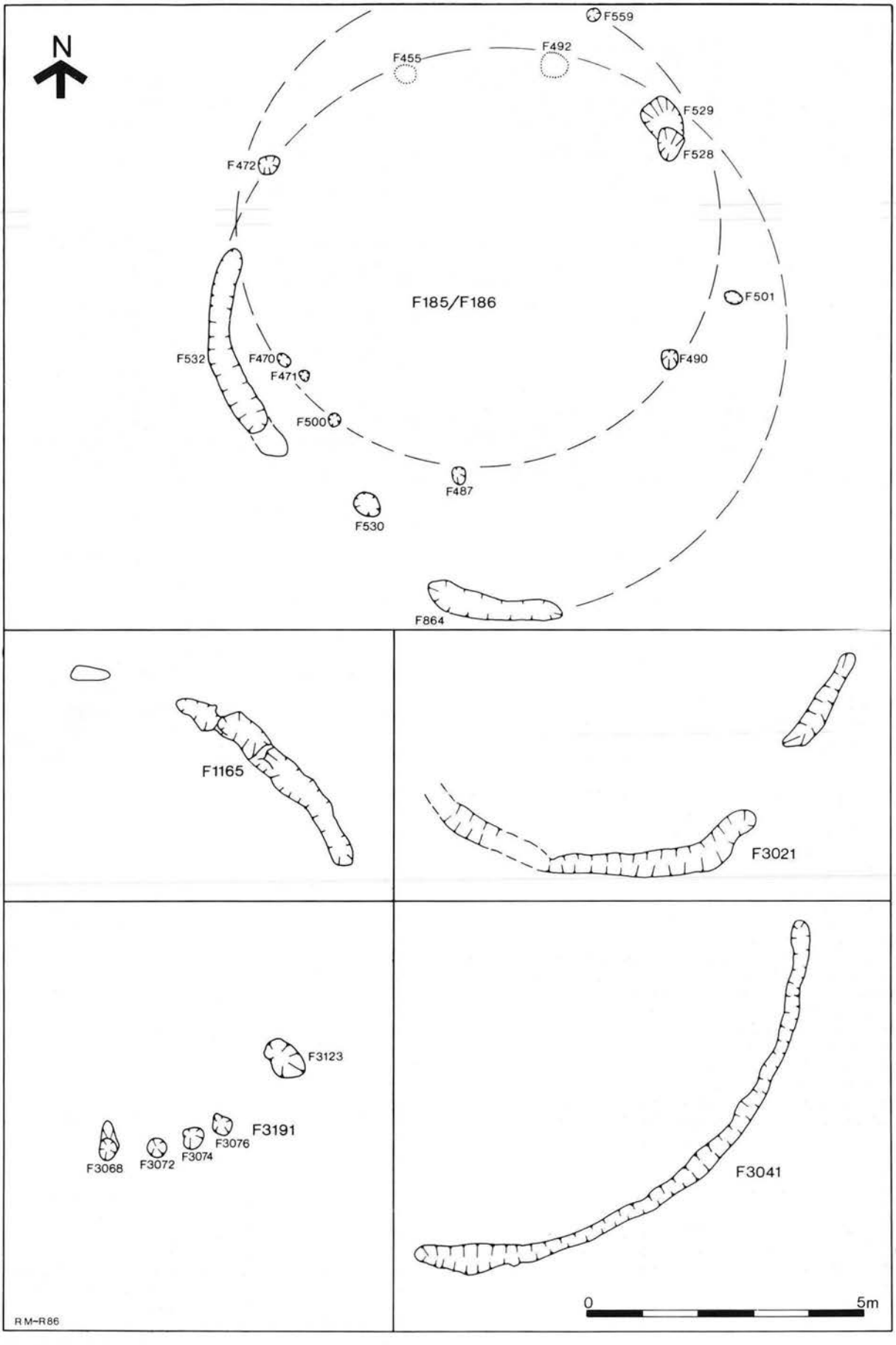


Figure 7 Plans of Iron Age round-houses. Scale 1:100

?Round-house F186
Five post-holes (*F470, F487, F500, ?F501* and *F559*) formed part of a circle *c.* 8.50–9.00m in diameter, and may represent a round-house. Post-holes *F490* and *F528* may also have been part of this structure. The post-holes were quite shallow (*c.* 0.12–0.15m) and small, but were generally well formed. The distance between the holes was generally *c.* 1.50m, allowing for ploughed-out features.

The fills were fairly dark brown silt clays or silt clay loams. The only datable find, a fragment of Roman tile, was considered intrusive.

Round-house gully F3041
This feature was the remnant drip-gully of a round-house *c.* 13m in diameter. Although a number of probably contemporary features were found both inside and outside the area enclosed by the gully, no structural features were identified. The *c.* 0.10m deep gully terminated to the east, and the position of the entrance may thus be indicated. The fill was a homogenous dark grey silt loam and contained Middle Iron Age pottery, while the gully cut two post-holes of possible four-post structure *F2982* (see below) which also contained Middle Iron Age pottery.

Round-house gully F3021
Part of the drip-gully of a round-house of *c.* 11–12m diameter, gully *F3021* was not circular, but assumed a polygonal shape of segments of varying length (*cf.* Drury 1978a, 121–2). The gully segments apparently terminated to the south-east, probably indicating the position of the entrance. The gully was fairly shallow (*c.* 0.12m), and continued to the north of the ?entrance gap as a less regular feature. This structure would have overlapped with the post-holes of ?round-house *F3191* (described below).

The fill was a brown silt clay which had derived a sand fraction from the surrounding natural. Iron Age pottery was found in the fills, and the small spherical copper-alloy head of an iron pin was also present ([1002] fill *3022*; p. 92).

Round-house excavated by Dunnett
Little is known of this structure, except that it represents an Iron Age round-house gully. About a quarter of the circumference of the structure was exposed, and the gully was found to be continuous. As far as can be ascertained, the round-house appears to have been *c.* 20m in diameter. The structure represented might also have overlapped with post-holes of round-house *F3191* (described below).

Round-house gully F1165
This small portion of a round-house gully suggests a structure originally *c.* 12m in diameter. The gully cut post-hole *F1191* of possible four-post structure *F2976* (see below). The southern end of the gully appeared to be a terminal, suggesting an eastern entrance. The irregular-bottomed feature survived to a maximum 0.10m deep, and was filled with dark grey-brown silt loam with a few charcoal flecks. A good sample of Middle Iron Age pottery was found.

?Round-house F3191
Part of a possible round-house, *c.* 6–8m in diameter, was located at the edge of a trial trench. The structure was composed of four post-holes (*F3068, F3072, F3074* and *F3076*) and a shallow pit (*F3123*). The post-holes were spaced irregularly, *c.* 0.60 to 0.80m apart, and were between 60 and 120mm in depth.

The fills were all brown silt loams, and contained no datable finds apart from a Middle Iron Age sherd from fill *3132* (pit *F3123*). However, the interpretation of these associated features as part of a round-house strongly suggests an Iron Age or earlier date. The structure could not have been extant during the life of round-house *F3021*.

Four-post structures
(Fig. 8)
Four definite four-post structures were located, and a further five possible examples were also found. Six of these structures were found within the main Iron Age settlement enclosure, one (*F2977*) was just outside and may have been the porch of round-house *F185*, and two (*F2972* and *F2973*) were over 80m to the east of the settlement ditch. Two Roman four-post structures (*F2981*, Phase 3, and *F2979*, Phase 6) were also present on the site.

The uncertain examples of four-post structures generally comprise three post-holes forming a right angle. Although these arrangements may have been fortuitous, these features are described below because of their potential interpretation as true structures, and also because of their positions near the edge of the settlement area — the location where genuine four-post structures commonly occur.

Four-post structure F2970
Post-holes *F1157, F1159, F1175* and *F1177*, represent a structure *c.* 2.50 by 1.00m. The post-holes ranged in depth from 80 to 250mm, and the long axis of these oval features was aligned north-south, as was the structure itself. The fills were brown silt loams, with a few charcoal and burnt daub inclusions. Middle Iron Age pottery was found in all of the post-holes.

Four-post structure F2971
A *c.* 3m square structure, composed of post-holes *F350, F360* (with post-pipe *F997*), *F491* and *F2574*. The post-holes were all substantial, flat-bottomed features, up to 0.50m deep. Post-pipe *F997* suggests a post of *c.* 0.15m diameter. The fills were dark silt loams with a few charcoal flecks, although much burnt daub was found in fill *361* of post-hole *F360* — a characteristic which enabled the post-pipe to be visible. Iron Age pottery was found in fills *351* (*F350*) and *361* (*F360*).

Four-post structure F2972
Four post-holes (*F3399, F3411, F3415* and *F3437*) of similar dimensions formed a four-post structure *c.* 3.00 by 2.50m, positioned over 80m from the edge of the Iron Age settlement. Post-hole *F3415* contained a post-pipe (*F3529*) of *c.* 0.25m diameter, and post-pipe *F2378* (within post-hole *F3411*) was of similar size. The post-holes varied from 0.15 to 0.25m in depth, and were generally filled with brown silt clays or silt loams with occasional orange mottles. Only four sherds of Iron Age pottery were found in the fills, and a Roman tile fragment in fill *3400* (post-hole *F3399*) is considered intrusive.

Four-post structure F2973
A group of four post-holes (*F3284, F3288, F3294* and *F3625*) formed a structure roughly 2.80m square, positioned in the gap between Belgic slots *F3242* and *F3423*. The post-holes were of similar proportions; *c.* 0.20m deep, with flat bottoms and vertical sides. The fills were grey-brown silt loams with a few charcoal flecks. Fill *3289* (*F3288*) also contained a small number of burnt daub fragments. Four sherds of Iron Age pottery were found, and a 1st-century AD sherd is considered intrusive.

?Four-post structure F2974
Three post-holes of this possible four-post structure were found (*F1139, F1141* and *F1736*). The fourth post may have been ploughed out, and the structure may originally have measured *c.* 3.50 by 2.50m. Two of the post-holes (*F1139* and *F1736*) were only *c.* 0.12m deep, and the third was *c.* 0.25m in depth. The fills were grey-brown silt clay loams, and fill *1737* (*F1736*) was also slightly mottled with orange clay. Apart from an intrusive Roman sherd from fill *1142* (*F1141*), the features produced exclusively Middle Iron Age pottery.

?Four-post structure F2975
Three shallow post-holes (*F1151, F1153* and *F1155*) may represent a four-post structure *c.* 2.50 by 0.80m. The holes were all very shallow, and the fourth post-hole may well have been ploughed-out. The fills were grey-brown silt loams, with a few charcoal and burnt daub fragments, and fill *1156* (*F1155*) produced four sherds of Middle Iron Age pottery.

?Four-post structure F2976
Three post-holes (*F1167, F1179* and *F1191*) were of similar appearance, and may have formed a *c.* 2.00 by 1.50m four-post structure. The holes were only *c.* 80 to 100mm in depth, and *F1191* was cut by round-house gully *F1165*. The fills were similar grey-brown silt loams, in which only two sherds of Iron Age pottery were found. If these post-holes do represent a structure, the fourth post-hole of which had been ploughed away, then the structure would have been orientated approximately east-west instead of north-south as in most of the other examples from the site.

?Four-post structure F2977
Two post-holes, *F454* and *F456*, may have formed a four-post structure with post-holes *F455* and *F492*. The latter two features have been attributed to round-house *F185*, but could perhaps more plausibly have been part of a *c.* 2.50m square four-post structure.

Post-holes *F454* and *F456* were fairly shallow (*c.* 0.12m) and had flat bottoms, while post-holes *F455* and *F492* were also flat bottomed but a little deeper. The fills of all four features were dark brown silt clay loams, with a few burnt daub and charcoal inclusions. Four sherds of Iron Age pottery were found in the fills of post-holes *F454* and *F456*, while seven Iron Age sherds came from post-hole *F455*.

The possibility that this tentative four-post structure represents an entrance to round-house *F185* is fairly remote since a north-facing entrance would be most unusual for a building of this type and date in this area.

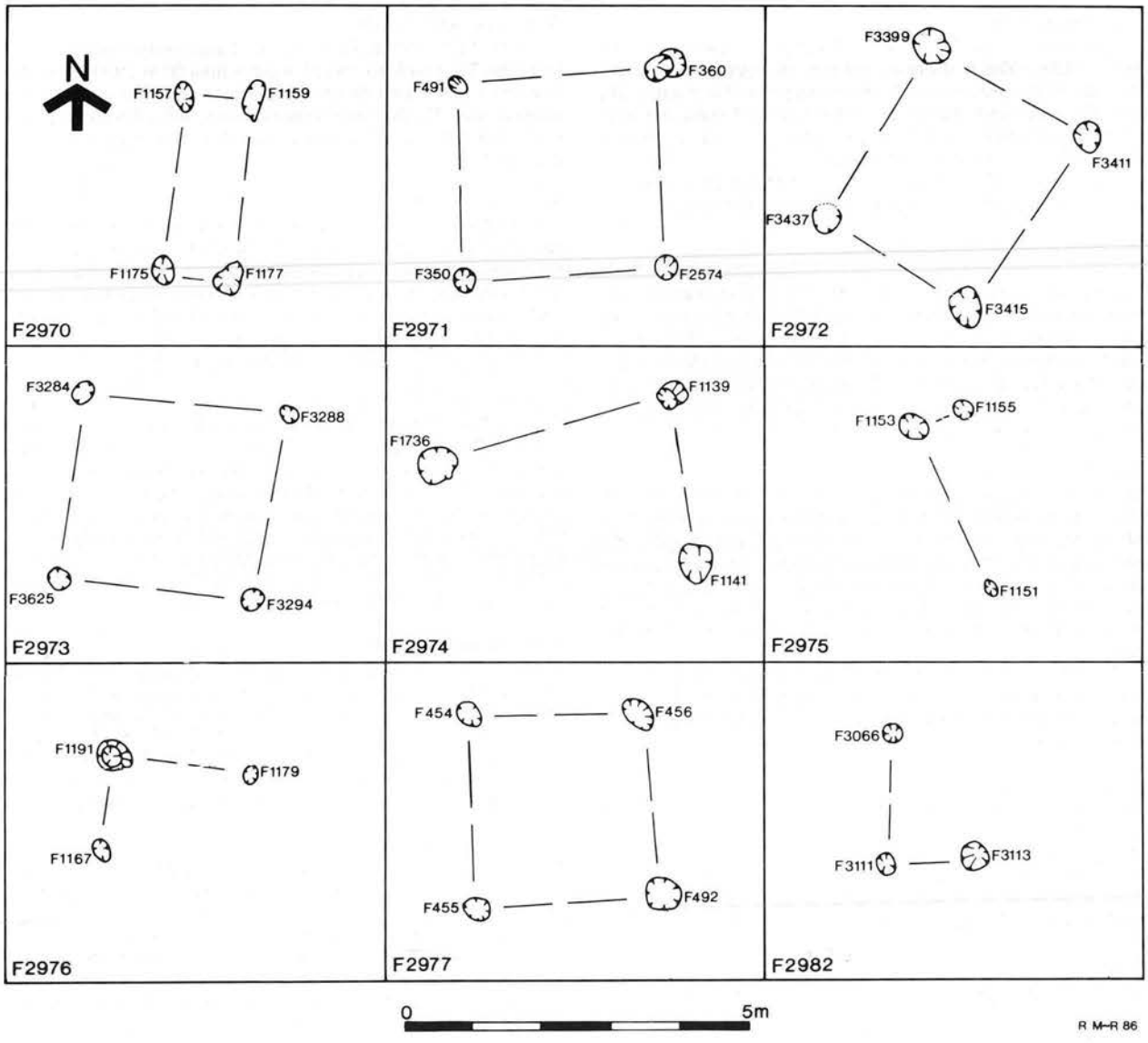


Figure 8 Plans of Iron Age four-post and ?four-post structures. Scale 1:100

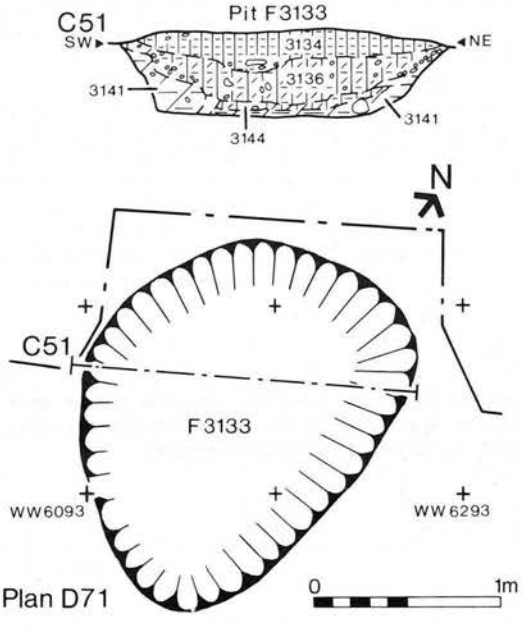


Figure 9 Pit *F3133* plans and section. Scale 1:40

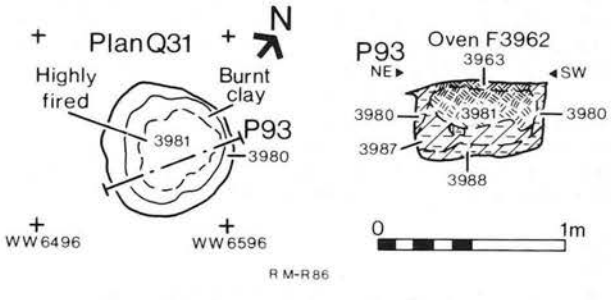


Figure 10 Oven *F3962* plan and section. Scale 1:40

Plate II Depression *F4502* Area C

?Four-post structure F2982
Composed of three post-holes between 0.12 and 0.15m deep (*F3066, F3111* and *F3113*), the suggested structure would have been approximately 2.00m by 1.30m. There was no obvious reason for the non-survival of a fourth corner post-hole. The silt clay loam fills contained two sherds of Middle Iron Age pottery, and two of the post-holes were cut by round-house gully *F3041*.

Two-post structure

Two-post structure F2978
A pair of similar large post-holes (*F1145* and *F1147*) lay, *c.* 2m apart, within the settlement enclosure. Northern post-hole *F1145* survived to only *c.* 80mm deep but was *c.* 0.70m in diameter. Post-hole *F1147* was of similar diameter, but was *c.* 0.20m deep. Most of the fills were brown silt clays with few mottles, but fill *1788* (*F1147*) was very mottled and contained patches of burnt daub, and upper fill *1148* (*F1147*) also contained a large amount of burnt daub.

Miscellaneous features in the vicinity of the Iron Age settlement

Pit F900
This well-defined circular feature, *c.* 0.80m in diameter and 0.25m deep, contained a large amount of Middle Iron Age sand-tempered pottery and burnt daub. These finds may represent kiln debris, but no diagnostic fragments of kiln furniture were found.

Pit F3133
(Fig. 9)
This roughly triangular pit was *c.* 0.50m deep and up to 2m broad. The lowest fill, *3141*, was very mottled and may have been derived from the upcast material. Upper fill *3134* contained some burnt debris and daub, and Middle Iron Age pottery was found in the upper fills. The bottom and sides of the feature were fairly regular, and it is unlikely to have been dug for clay extraction.

Oven F3962
(Fig. 10)
The base of an Iron Age oven was found just beyond the south side of the main settlement ditch. The oven was found above a *c.* 0.40m deep pit with vertical sides and a flat bottom. The *c.* 0.70m diameter fired clay base almost completely capped the underlying pit, but it is unlikely that the function of the two features was directly linked, the oven probably being in a secondary position. Two stake-holes (*F3990* and *F3992*; not illustrated) were found in the bottom of the pit. These were sealed by grey silt clay fill *3988* which contained a high proportion of charcoal inclusions. Above this, fill *3987* contained fragments of burnt daub which appear to have been derived from the oven. Fill *3986* (not shown on section) was a thin layer of almost pure charcoal upon which the fired clay base of the oven was bedded. The pit fills thus contained fragments of the oven and of charcoal debris from its firing.

The base of the oven was composed of scorched and fired chalky boulder clay derived from the local natural, and the top of the floor was fired to a white colour, indicating that a very high temperature had been achieved during firing.

The only dating evidence was from two joining sherds of Middle Iron Age pottery from the bottom fill of the pit: the oven might therefore be a later feature placed in an existing hollow.

The debris found under the oven shows that it was probably in a secondary position, and it appears to have been brought in a single piece in order to seal the pit. Spaces at the sides were then packed with dark soil *3980*. The edges of the oven were broken at an angle of about 45°, and a domed top seems likely. No indications of the function of the oven were found, and the method of firing is also uncertain.

Depression *F4502* and associated features
This depression, *c.* 80m north-east of the main Iron Age settlement, was excavated in four main areas (A–D) and two extensions (Areas E and F; see Fig. 15). For convenience, feature numbers have been prefixed with the area number where appropriate, *e.g.* well *BF5058* in Area B.

The depression was an exceptionally large man-made feature which may have been dug in the Iron Age. The depression was found, by auguring, to have had a north-west to south-east axis and was over 15m wide in places. Only the south side could be investigated.

After its instigation in the Middle Iron Age, the depression was subjected to subsequent re-cuts during the 1st century AD (p. 19). Despite extensive later disturbances, a series of Iron Age and Belgic pits (series *F5082*) and a number of other features survived within the *c.* 20% of the depression which was sampled.

Depression F4502
(Figs 11 and 12, Pl. II)
At its deepest point, the depression survived to *c.* 0.60m from the base of plough level. The lowest fills were of Iron Age date, and consisted of trampled redeposited natural which was both cut by and sealed by pits of series *F5082* (see below). Because of their disturbed nature some of the Iron Age fills were contaminated with later material, but a Middle Iron Age date for these layers is confirmed by stratigraphy.

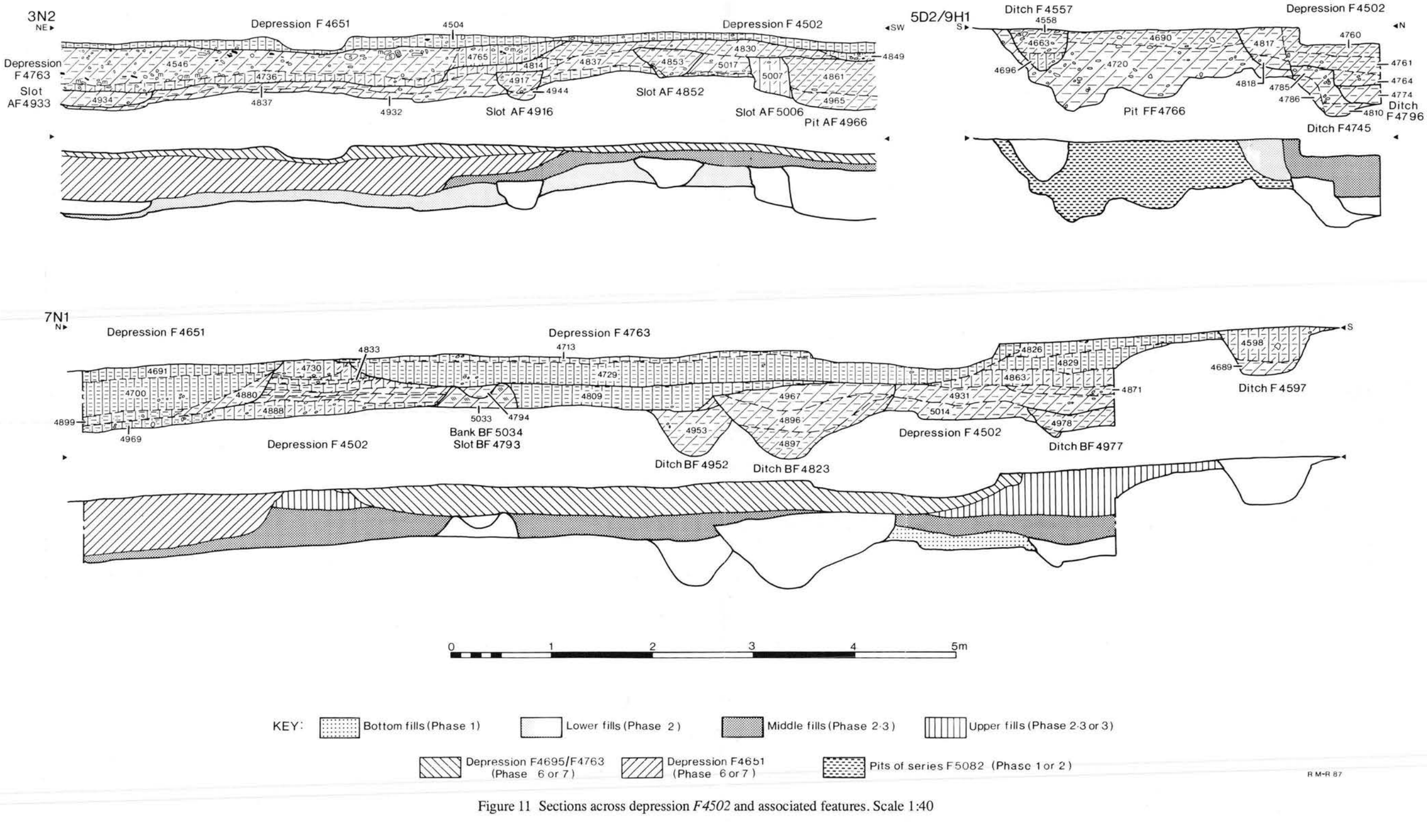


Figure 11 Sections across depression *F4502* and associated features. Scale 1:40

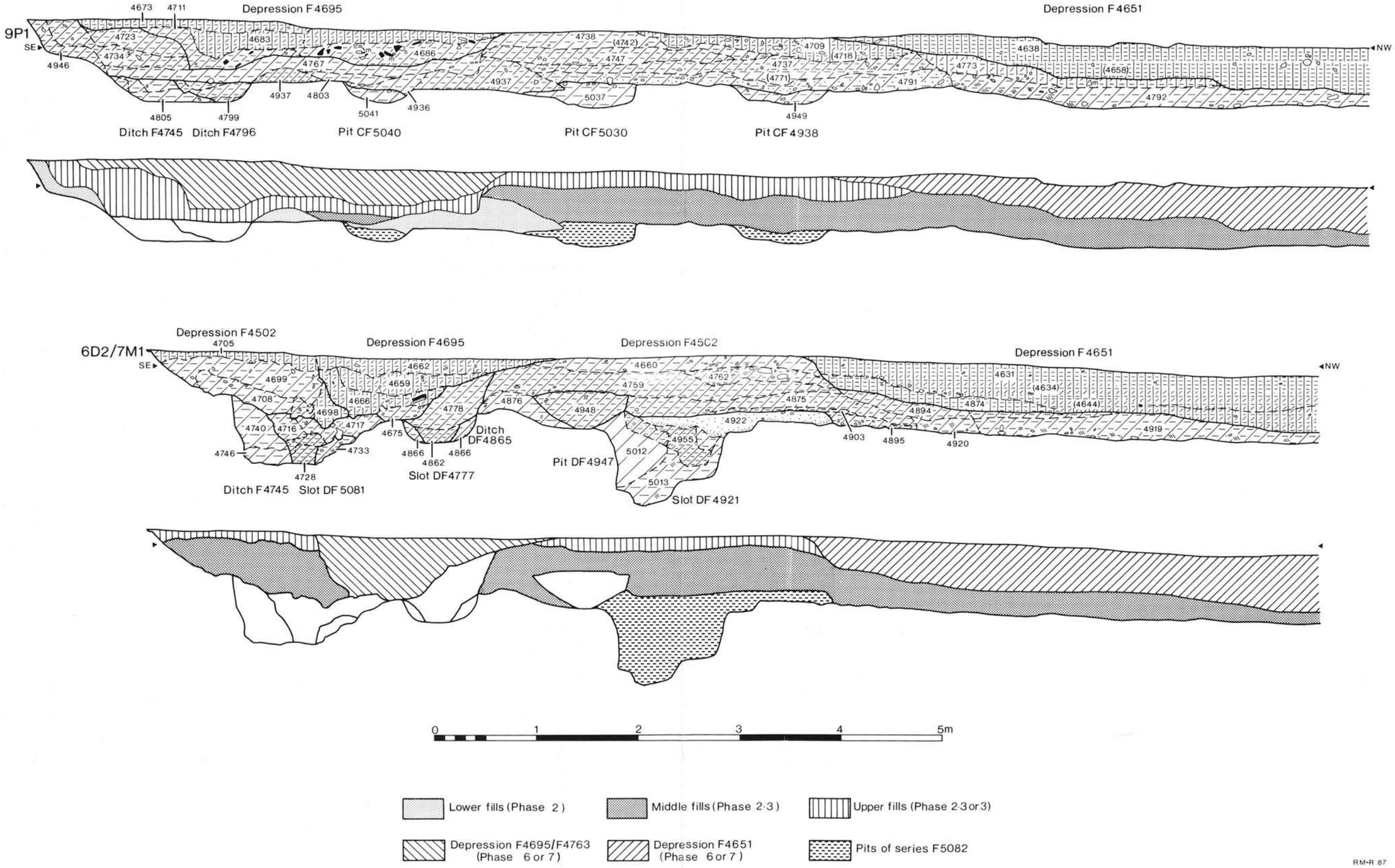


Figure 12 Sections across depression *F4502* and associated features. Scale 1:40

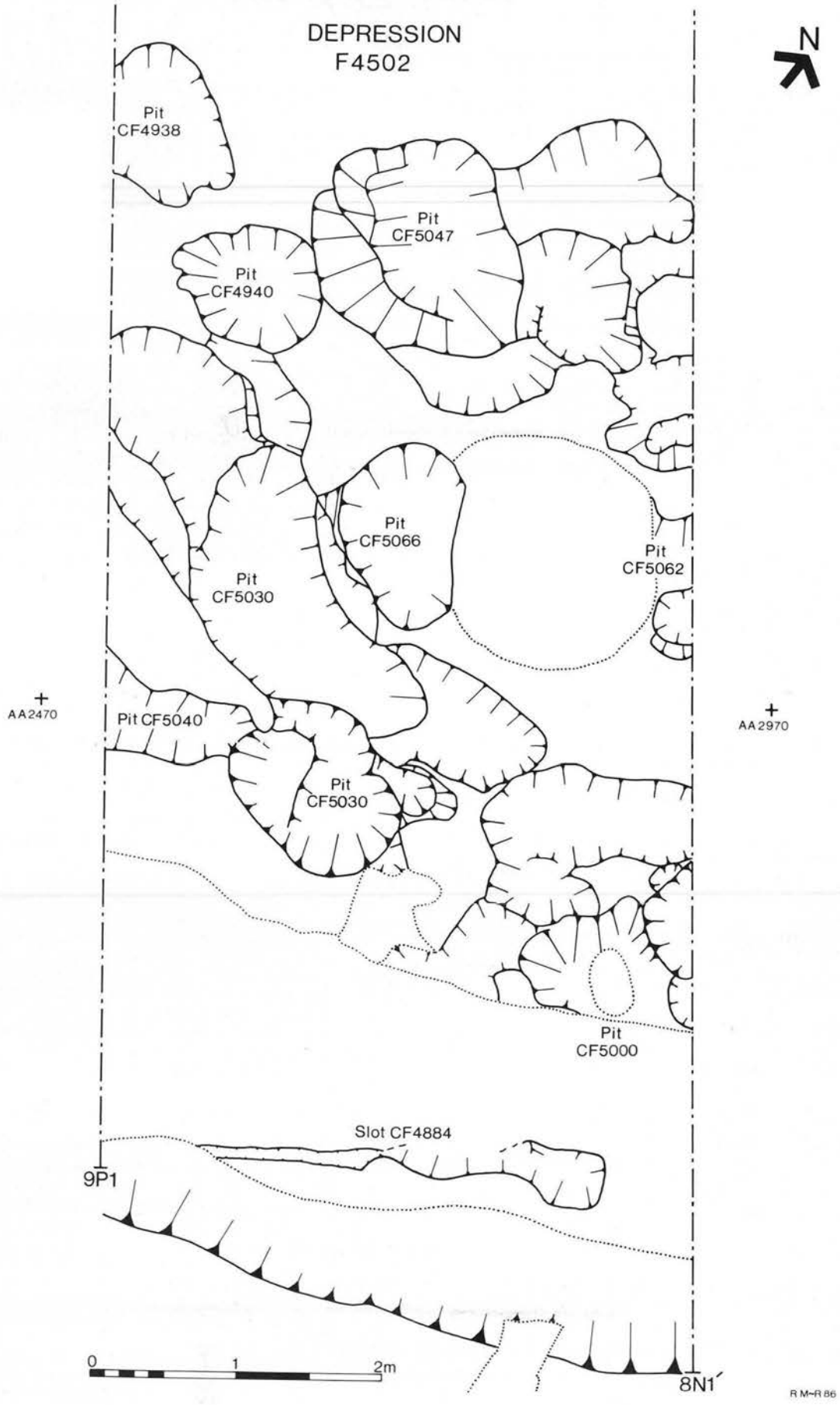


Figure 13 Iron Age pit of series *F5082* within depression *F4502* Area C.

There was no conclusive evidence of the function of this substantial artificial depression, but it could not have held water as was at first thought. Molluscan evidence (p. 225) shows that the area was fairly boggy, and springs are known to have been common in this area until modern times (M. Wadhams, pers. comm.). The action of spring water had produced soft calcareous tufa during the lifetime of the depression. The original function may have been votive, on the basis of the nature of the pits in series *F5082* (see below, and discussion on p. 231).

Pit series F5082, Iron Age features

A group of at least twenty irregular pits and post-holes of Middle Iron Age date were found within the bottom of depression *F4502*. A sample of pits of this series from Area C of the depression is shown on Figure 13. Since some of these features cut the lower trample fills of the depression, it is clear that the depression was extant before many of the pits were dug. The following features of Middle Iron Age date were in the series:

?AF4907, DF4921, CF4938, CF4940, AF4989, CF4994, CF4996, CF5000, CF5011, AF5015, BF5019, CF5030, CF5040, CF5047, CF5062, CF5066, BF5071, BF5072, BF5073, BF5075.

Other similar features were stratigraphically later (Phase 2), but might have belonged to the same series.

The features varied in size and shape, and ranged between 0.10 and 0.40m in depth (see Figs 11 and 12 for various examples). Pit *BF5019*, *c.* 0.70m deep below the depression bottom, may have been the predecessor of the adjacent Belgic well *F5058* (p. 19). Slot *DF4921* was also relatively deep (*c.* 0.85m) and of Middle Iron Age date, and contained mixed fills similar to the pits of the series.

Apart from their similar dating and location, a major reason for grouping these features was their distinctive fills. These were a mixture of large patches of pure redeposited natural and areas of grey silt or silt clay (*e.g.* Fig. 12, 6D2/7M1, slot *DF4921*, fills *5012* and *5013*). The composition of the fills suggests that the features were backfilled with their upcast soon after they were dug. This fact, and the irregular nature of the features (Fig. 13), suggests some unusual though specific function. The pits may have been used to bury organic objects of which no trace has survived (discussion, p. 231). Finds from the features listed above were Middle Iron Age, although they generally occurred in very small quantities.

Slot CF4884

(Fig. 13)

This feature survived to a depth of just 0.10m, but may originally have been substantially deeper, being truncated by subsequent activity. The fill was a light to mid-grey silt clay with numerous orange silt clay mottles. Two Middle Iron Age sherds were present, and the feature was stratigraphically very early. The slot may have been used to help drain excess water from the depression.

Ditch AF5023

(not illustrated)

Very little of this *c.* 0.20m deep feature survived, being badly disturbed by later activity. The orange-grey silt clay fill contained articulated cattle bones and butchered horse remains as well as a sherd of Middle Iron Age pottery, and was cut by pit *AF5015* of series *F5082* (see above).

Grave F5117

Part of an east-west burial was found and salvage recorded during a watching brief. The grave, to the extreme south-east of the excavated area (not shown on Fig. 2), was a regular feature over 1.70m long by 0.70m wide, and survived to *c.* 0.30m deep from the top of the natural subsoil. The burial, described in the Bone Report, was an articulated supine inhumation, fully stretched out. The body was surrounded by a grey-green silt clay fill with dense large mottles of redeposited natural silt clay, indicating rapid backfilling. The grave was cut by a Belgic feature but did not contain datable finds: it was certainly pre-Roman, and probably pre-Belgic, but was not further datable.

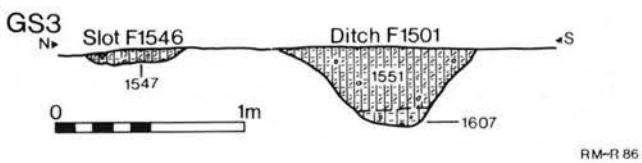


Figure 14 Field ditch *F1501* section. Scale 1:40

IV. Phase 2: Belgic, pre-conquest

Introduction

(Fig. 145)

Features attributed to Phase 2 were dated on the basis of Belgic pottery which exhibited no evidence of 'romanisation'. Such features are therefore defined as pre-conquest. Since most of the later Belgic pottery cannot be closely dated within the 1st century AD, it is quite likely that some of the contexts assigned to this phase were actually post-conquest. Only future advances in the study of the pottery of this period will enable the separation of the pre- and post-conquest features, and a good deal of overlap between features of Phases 2 and 2.3 must be accepted for the time being. Indeed, in the time since the pottery was originally dated, the identification of 'romanisation' has become even more tentative.

The main feature of Phase 2 was re-cut *F1124* of Iron Age settlement ditch *F549*. Part of a fairly long field ditch (*F1501*) was also found, and a series of palisade slots, *F1123*, which was largely post-conquest, may also have been instigated at this time. Some activity also occurred in Middle Iron Age depression *F4502* (p. 14–18) at this time, and a number of features, including well *BF5058*, were found within the depression.

Major and minor ditches

Main settlement ditch F1124

(Fig. 6, FL1 and GX2: Fig. 146)

This large, V-shaped profile ditch was up to 1.30m deep, and was found along the west side of the Iron Age settlement. Ditch *F1124* replaced the Iron Age boundary which had substantially silted-up before being re-cut in the Belgic period. The new ditch had a *c.* 5m wide entrance gap at which the terminals may have slightly inturned. At the point of this entrance and to the east of the ditch, Belgo-Roman slots of series *F1123* (see below) provided an extra defence by becoming deeper and more substantial at this vulnerable position.

The lower fills of ditch *F1124* were mottled silt clays and appear to have been a mixture of upcast and silts. The middle fills were localised and varied, but were of two main types. The middle edge fills were generally orange or orange-brown silt clays, probably washed in from the sides. The central grey-brown silt clay fills were often densely mottled and may have resulted from the backfilling of bank material. The lower fills did not produce any datable finds, and the ditch could have been begun in the Iron Age and maintained into the 1st century AD. The middle fills contained Belgic material, but the upper fills were post-conquest (Phase 2.3 and later).

It is not certain that the Belgic ditch was designed to surround a settlement, since no Belgic features were found within the area which it enclosed, and the south side (the middle fills of ditch *F3966*) would have been at least 0.70m shallower than the east.

Ditch F1501

(Fig. 14)

This fairly shallow (*c.* 0.40m), east-west aligned ditch probably began at the south-east corner of the main settlement and appeared to bend towards the north-east after about 40m. The *c.* 1m wide ditch had a V-shaped profile but was quite insubstantial and may have been supplemented by slots of series *F1123* (see below). The ditch continued to the south as much-disturbed ditch *F1866*.

All of the fills appear to have been the result of silting. Fill *1607* was particularly level and may have been formed through the action of water. The upper fills were slightly less silty but fairly dark. The ditch contained a useful assemblage of uncontaminated Belgic pottery, all possibly pre-conquest.

To the east, at the point where the ditch began to turn to the north, remnants of the ditch were observed, but it was largely destroyed by a later feature. The ditch was also cut by slots of series *F1123*, one of which (*F1555*) may have been post-conquest.

Field boundary slots F3242 and F3423

A pair of east-west aligned slots was found *c.* 70m to the east of the main settlement area, and probably formed part of a field boundary. The slots survived to *c.* 0.15m deep and 0.45m wide, and the eastern example (*F3423*) cut a post-hole of Iron Age four-post structure *F2972*. Slot *F3423* appeared to terminate at both ends, but similar information for slot *F3242* had been obscured by later activity. The slots were generally filled with brown silt clay, and contained 1st-century AD pottery without any apparent 'romanising' characteristics.

The slots may be the remnants of a discontinuous field boundary, perhaps supplemented by a hedge. Part of another slot (*F3239*) of similar date ran parallel to and to the north of slot *F3242*, and the boundary may have been double-ditched at some stage, and may have allowed for a trackway.

Series of slots *F1123*

Series *F1123* was composed of a number of narrow slots which followed the lines of the major Belgic and Belgo-Roman ditches. Some of the slots were post-conquest (Phase 2.3, p. 21–2), but others appear, on the basis of their few finds, to have been pre-conquest: a wholly post-conquest date for the series is, however, a possibility.

An unusual characteristic of some of these features was the way in which they curved outwards in broad arcs from the ditches which they followed. In most cases, the slots were deeper in the central part of their length, at their furthest point from the ditches.

The slot fills were variable, depending on the character of the surrounding natural, but were generally brown silt clays or silt loams with a few mottles of natural.

Four main groups of slots were present: those to the north of the entrance gap in ditch *F1124*; those to the south of that gap; and those in the west and east parts of ?field ditch *F1501*.

Slots to the north of ditch F1124 entrance

Three slots (*F640, F1143* and *F1777*) were found in the very disturbed area to the north of the entrance of ditch *F1124*. Little is known of the latter, more northerly pair, except that slot *F1777* (not on phase plan) had a U-shaped profile and was up to 0.40m deep. Southern slot *F640* was only *c.* 0.10m deep (Fig. 6, GX2), and was cut by Roman pottery kiln *F278*.

Slots to south of ditch F1124 entrance

A group of three slots (*F541, F652* and *F654*) were found in this area, along with part of another possible slot (*F945*; not on phase plan). Apart from the partial slot, these features respected each other. They were between 0.10 and 0.25m deep, and about 0.40m wide.

Slots along the west part of ditch F1501

A single flat-bottomed slot, *F1546*, extended from the west of the excavated area. This line was continued by slots *F1523* and *F1497*, which were straighter than the slots along ditch *F1124*. Slot *F1503* was unusual in being to the south of ditch *F1501*: it was flat bottomed and terminated at each end, and may not have been part of the series.

Slot *F1557* was a more substantial feature than the others in this area, and it too may not have been part of the series: it was re-cut (*F194*; not on phase plan), perhaps after the conquest.

Slots along the east part of ditch F1501

Several slots were found along the line of ditch *F1501* in an area much disturbed by Roman ditch *F1354*. Slot *F1918* was observed in a trial trench, and may have continued into the main excavated area where five slots of Belgic date were found (*F1358, F1364, F1373, F1575* (not on phase plan) and *F1783*). Of these, slots *F1358* (Fig. 22, GX3), *F1364* and *F1783* were relatively undisturbed and lay to the north of ditch *F1501*. Slots *F1373* and *F1575* were not well understood, the former being found to the south of the ditch.

Depression *F4502* and associated features

(Fig. 15, Pl. II)

The stratigraphy of the lower fills of Middle Iron Age depression *F4502* (see Phase 1 above) was sufficient to date several features with confidence to the pre-conquest Belgic phase. Many features of this date are likely to have been used for water collection.

Depression F4502

(Figs 11 and 12)

The lowest fill in Area A was orange-grey silt clay *4932* which was cut by Belgic features. Fills *4837* and *5017* in this area sealed almost all of the Belgic features in the trench (Fig. 11, 3N2), and were cut by features of Belgo-Roman date. In Area B (Fig. 11, 7N1) few of the lower fills are thought to have been of this phase.

Two fills in Area C were probably pre-conquest (*4768* (not illustr.) and *4946*; Fig. 12, 9P1) and both lay at the edge of the depression. These fills were clearly cut by a re-cut of the depression associated with ditch *F4745* (*e.g.* Fig. 11, 5D2/9H1), and this later activity may have obliterated similar fills in other areas. Elsewhere, fills of this period appear to have raised the level of the depression bottom by *c.* 0.15m.

Ditch F4745 and slot DF5081

(Fig. 15)

This feature was found to run along the southern edge of depression *F4502*, and was pre conquest in date. The ditch was best preserved in Area D (Fig. 12, 6D2/7M1), where it survived to *c.* 1.10m below the base of ploughsoil level. In other areas it was only *c.* 0.30m deep below the depression bottom. The ditch was numbered *F4977* in Area B, where it was *c.* 0.60m deep but otherwise similar in appearance to the portions to the north-east, exhibiting similar characteristic undulations in the bottom.

The ditch fills in Area D appeared to be the packing for a ?palisade slot, *DF5081*. The slot was of similar depth, and had been badly disturbed by later activity. Phase 1 depression fill *5014* was cut by the ditch (numbered *F4977*; Fig. 11, 7N1) in Area B. In Area F the ditch cut Belgic depression fills (Fig. 11, 5D2/9H1) and similarly cut the equivalent fill (*4946*) in Area C (Fig. 12, 9P1).

Traces of a possible palisade were found in Areas C and F in the form of small undulations in the ditch bottom filled with grey silts *4805* (Fig. 12, 9P1) and *4810* (not illustr). These holes were perhaps created through the weight of posts. They were surrounded by disturbed or redeposited natural, which may have been derived from the packing of the palisade slot. It is possible that some of the redeposited natural fills attributed to the depression edge in Areas C and F were, in fact, similar packing fills for the slot.

The lowest fill of slot *DF5081* (*4728*; Fig. 12, 6D2/7M1) was dark grey and charcoal-rich, and contained disarticulated pig bones which may have been thrown in. Slot fill *4716* was a homogenous sticky clay which may have formed through the action of water.

All of the lower fills of the ditch were Belgic, probably pre-conquest, although the upper fills in Area C are likely to have been Belgo-Roman.

Well BF5058 and pit BF5044

(Fig. 16)

Well *BF5058* was a large oval feature, being *c.* 1.10m deep from the depression bottom and over 2m from contemporary ground level. The well would have been an efficient collector of water in this area of natural springs. It had probably been wood-lined, and contained a packing of very pure redeposited natural (fill *5068*) at the sides. The vertical edge between the well packing and dark silt loam *5059* of the subsequent pit (section 3Q1) may represent the position of the wood lining. The upper fills of pit *BF5044* were accumulated after the well had gone out of use, the pit representing sinkage into the shaft. Lower pit fills *5043* and *5056* appear to have accumulated gradually, but fill *4981* represents a series of dumped layers of dark grey silt clay with bands of charcoal, slumping towards the centre of the feature. Fill *4982* was largely redeposited natural and was probably laid down in order to seal the well and consolidate the surface of the depression. The fills of the pit produced Belgic pottery, none of which demands a post-conquest date.

Pit AF5045

This *c.* 0.50m deep pit (Fig. 15) was *c.* 1m in diameter and had a flat bottom and vertical sides. Lower fill *5050* was a sticky dark grey clay, the result of silting, and a substantial amount of charcoal was found in light grey silt clay fill *5048* above. Large fragments of a Belgo-Roman pottery storage jar were found in upper fill *5039*, and post-conquest pottery was also found in fill *5046*.

The function of the pit is unclear, but it could have retained water. The vertical sides and flat bottom show that the pit was carefully dug, and it may have held some form of container. The silty bottom fills may suggest that the area was very damp while the pit was in use.

Pit AF4985

Like pit *AF5045*, this pit (Fig. 15) was a relatively deep feature (*c.* 0.60m from the depression bottom) with vertical sides and a flat bottom, and may have been used for water collection. Dark grey silt clay bottom fill *5018* was sealed by a thick layer of redeposited natural (fill *4986*). Possibly pre-conquest Belgic pottery was found in the upper fill.

Ditch BF4952

(Fig. 11, 7N1)

A short length of a ditch-like feature was found in Area B, but it was badly disturbed by later ditch *BF4823* (Phase 2.3). Ditch *BF4952* was *c.* 0.45m deep from the depression bottom, but did not continue into the

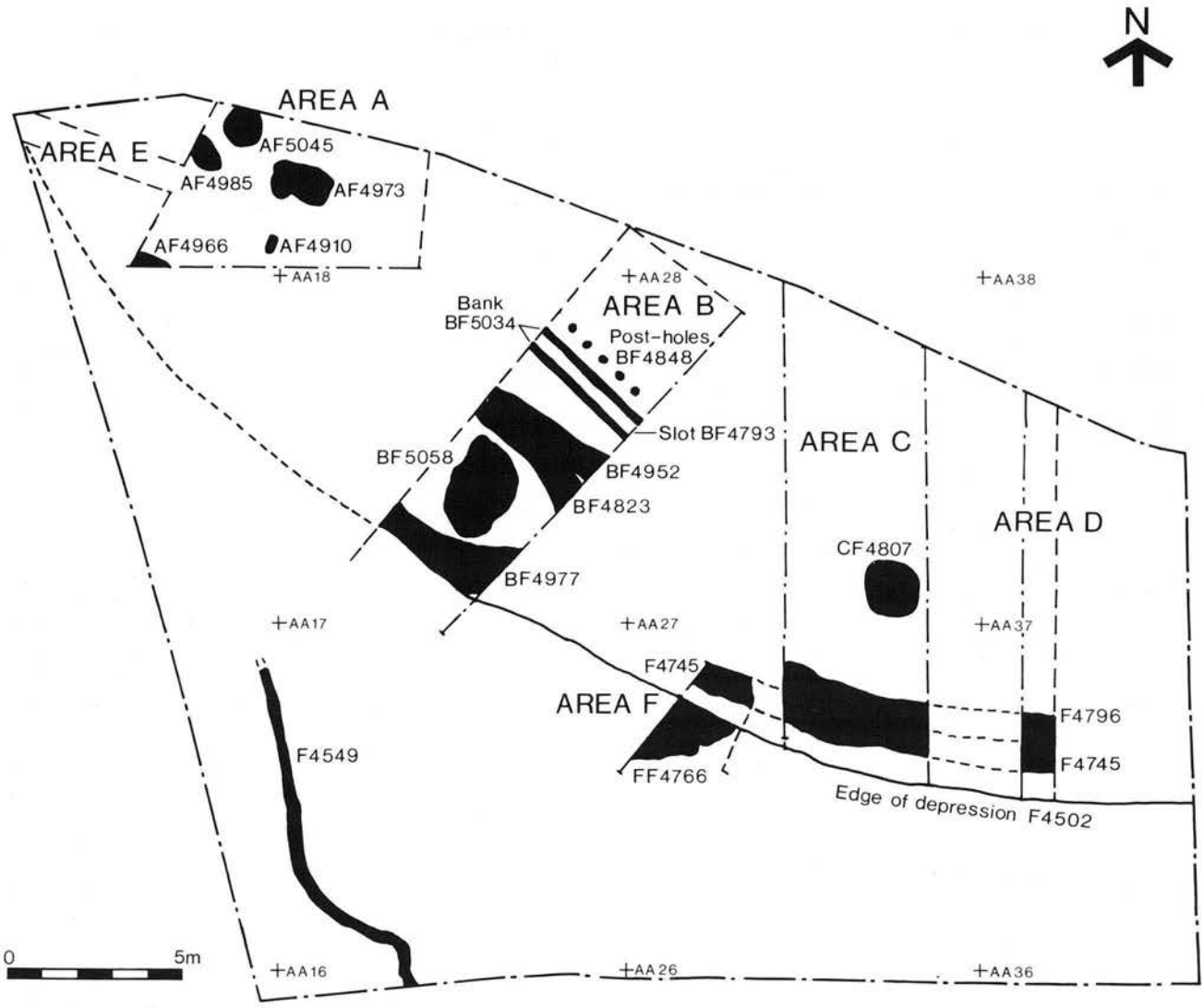


Figure 15 Depression *F4502* Areas A–F. Plan of Belgic and Belgo-Roman features. Scale 1:200

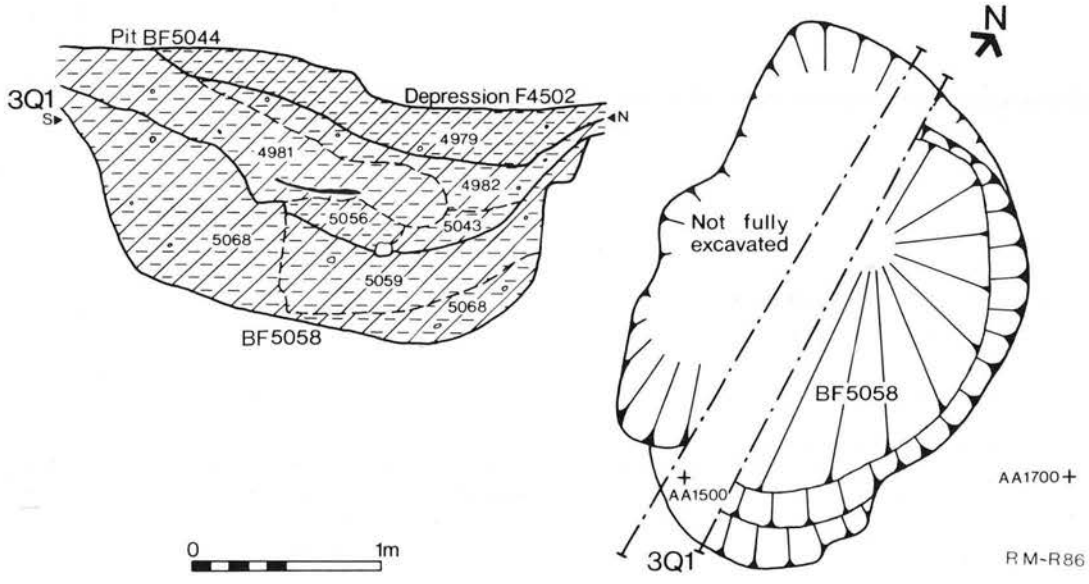


Figure 16 Well *BF5058* and pit *BF5044* plan and section. Scale 1:40

adjacent areas. The fills were mottled grey silt clays and no datable finds were made, although the ditch was stratigraphically pre-conquest. Assuming that the feature was quite short, it could have served to collect water.

Features of pit series F5082

A number of features of pre-conquest Belgic date (*FF4766, BF4925, AF4951* and *AF4961*) exhibited the same characteristics of the Middle Iron Age pits in series *F5082* (p. 18). Perhaps the most significant of these was pit *FF4766*.

Pit *FF4766* (Fig. 11, 5D2/9H1) was the only feature of the series to be found outside the confines of depression *F4502* (Fig. 15). The pit was up to *c.* 0.85m deep from the lower ploughsoil and had an irregular, undulating bottom. Like other features of the series, the fills were a mixture of very pure redeposited natural interspersed with large mottles of grey silt clay. The few finds came from the grey mottles, and indicate a 1st-century AD date. The pit was cut by a Belgo-Roman re-cut of depression *F4502* which also cut ditch *F4745*.

The redeposited natural fills of pit *FF4766* were so pure that the feature was only found by chance. It is possible that other features with similar fills were left unnoticed elsewhere on the site.

Palisade slot F4549

(Fig. 17)

This *c.* 0.20m deep slot had well-defined vertical edges and a flat bottom. Traces of numerous stake-holes (*F5079*) were seen within packing fill *4647* of the slot. The slot continued to the north in an area too disturbed to excavate, while at its southern end the slot became shallower and wider and appeared to terminate (Fig. 15). Stake-holes *F5079* formed a zig-zag arrangement, allowing the stakes to provide a continuous barrier. Pottery of the 1st century AD without obvious 'romanising' influence was found within the slot and stake-hole fills, and it is possible that the barrier served to prevent access to depression *F4502*.

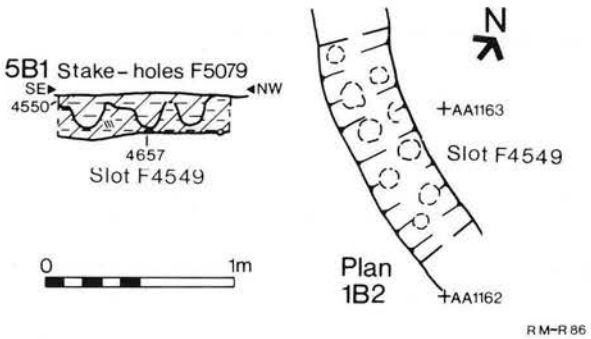


Figure 17 Palisade slot *F4549* plan and section. Scale 1:40

V. Phase 2.3: Belgo-Roman (conquest to late 1st century AD)

Introduction

(Fig. 145)

The emphasis of activity appears to have shifted at this time, from the Iron Age and Belgic settlement to a new focus to the north within depression *F4502*. This phenomenon may be more apparent than real since the bulk of the post-conquest 1st-century AD features in the new centre of activity survived by being protected by later deposits from erosion. There is every chance that the whole site was being used at this time, and that the sample was biased by factors of differential survival.

Features of Phase 2.3 were dated on the basis of 'romanised' Belgic pottery, both of fabrics and of forms. The identification of 'romanising' influences on the pottery is currently even more tentative than when the pottery was first identified, and the distinction between Phases 2 and 2.3 should be treated as possible rather than definite. However, it would appear that activity on the site in the middle of the 1st century AD was predominantly under native control, and a period with only peripheral Roman influence is envisaged — in effect, a Roman Iron Age. Towards the end of the century, mass-produced Roman pottery began to predominate.

No large ditches appear to have been instigated at this time, although the main settlement ditch *F1124* and the Iron Age stock enclosure ditch *F1199* were still extant. The series of Belgic slots (*F1123*, see below) continued to be dug to some extent after the conquest. Virtually no evidence for structures was found, the only recognised form being a possible two-post structure (*F2980*). The main evidence of post-conquest activity in the 1st century AD was found in the area of depression *F4502*, where a number of smaller features were encountered.

Remnants of major and minor ditches

Ditch F1124 and sinkage F196

Although it is possible that the upper fills of this ditch were post-conquest, *e.g.* fills *1675, 1676* and *1710* (Fig. 6, FL1 and GX2), it is more likely that the ditch had been substantially filled before the conquest. A good depth of sinkage (*F196*) covered both of the main ditches *F549* and *F1124*, surviving to over 0.40m in depth. Bearing in mind the contemporary ground level, the ditches would have remained as fairly prominent, albeit surmountable, features.

The lower sinkage fills (*F196*) appear to have accumulated gradually, but the upper fills contained a large amount of redeposited natural. Some sinkage fills (*e.g.* over *F549*; Fig. 6, EM1) were particularly stony and may represent an attempt to consolidate a pathway over the ditch sinkages.

The excavation of three substantial slots of series *F1123* in post-conquest times is of relevance to ditch *F1124*, since the slots appear to have been intended to help protect the ditch entrance (see below). The greatly diminished ditch would therefore appear still to have had an enclosing function at this time.

Re-use of Iron Age ?stock enclosure

The possible stock enclosure (Phase 1) appended to the main Iron Age settlement ditch appears to have been re-used in the Belgo-Roman period. Evidence of re-cutting was found in several segments along its south-east corner and south sides, but the line of the cuts was not able to be followed in plan due to subsequent truncation and disturbance. Examples of re-cuts are shown on two sections (Fig. 6, EC1 from fill *928*; LM1 from fill *2337*): other cases were found, and several re-cuts may have been present in some instances. The re-cuts survived up to *c.* 0.40m deep and would therefore have restored the enclosing function of the ditch.

The re-cut fills were not especially distinctive, except that they were generally less mottled than the earlier ditch fills. A British coin was found in fill *936* (re-cut *F969*), but dating was otherwise inconclusive. A small amount of Roman tile and early Roman pottery was present, but the remaining pottery favours a 1st-century, post-conquest date.

Structures

Two-post structure F2980

Two large pits (*F1290* and *F1292*), *c.* 0.40m deep and 1m in diameter, were spaced *c.* 2m apart and formed a two-post structure. The pits had flat bottoms and sides at an angle of about 45°, but no traces of post-pipes were visible. The lower fills were dark grey-brown silt loams with fairly dense mottles, while the thicker upper fills were not mottled. A layer of pottery and bone was found in upper fill *1291* of pit *F1290*, and a good sample of Belgo-Roman pottery was present in the fills. The structure was situated outside the normal settlement area, and may have been erected within a field.

Series of slots *F1123*

Three slots of the same shape and nature as those of Belgic series *F1123* were found to be of post-conquest date and were situated near the former entrance to the pre-Roman settlement area. Three other slots of this period may also have belonged to the series.

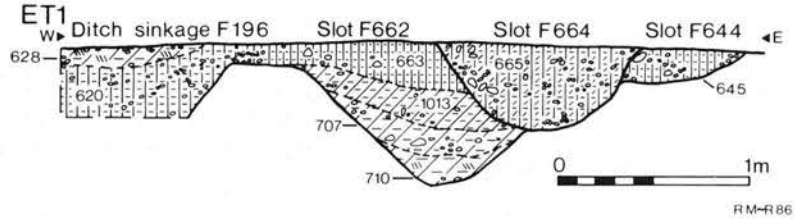


Figure 18 Sections of series *F1124* slots at entrance break in ditch *F549*. Scale 1:40

Slots outside settlement ditch entrance
(Figs 18 and 146)
A group of three associated, though not contemporary, slots were found to span the entrance gap in ditch *F1124*. Outer slot *F644* was the shallowest (*c.* 0.15m) and inner slot *F662* the deepest (*c.* 0.75m). Both were cut by *c.* 0.45m deep slot *F664* which also cut some of the sinkage fills (*F196*) over ditch *F1124*.

Only the lowest fills of slot *F662* were particularly mottled, the other slot fills being dark brown silt clays or silt loams. The fills were homogenous enough to suggest a gradual filling with topsoil material. The finds from all three slots indicate a post-conquest date in the 1st century AD. Fill *645* (*F644*) contained a high proportion of pottery.

It is quite possible that these slots had predecessors of the original, Belgic series, all evidence of which had been entirely removed on re-cutting. Even in this group of slots — the best-preserved examples found — there was no evidence of palisade posts, and the features may well have functioned in the capacity of ditches.

Other Belgo-Roman slots of series F1123
Only three other slots of the series were securely dated after the conquest; two (*F1555* and *F1903*) found along the line of ditch *F1501*, and one (*F1697*) to the north of the main Belgo-Roman entrance slots. Slot *F1555* was wider than usual and did not conform to the usual shape of slots in the series. Only a small part of slot *F1903* was excavated, but the feature was found to cut ditch *F1501*.

Slot *F1697* was up to 0.40m deep and clearly cut Belgo-Roman sinkage *F196* over ditches *F549* and *F1124* (Fig. 6, GX2). The slot was therefore securely post-conquest in date, as well as post-dating the ditches.

Miscellaneous small features

Burnt-edged features F609, F648 and F1652
(Figs 19 and 146)
These three features exhibited an unusual heavy scorching around their sides. The post-hole like features were between 0.10 and 0.20m deep, and about 0.30 to 0.40m wide, and had U-shaped profiles. The distance between *F648* and *F1652*, *c.* 2.20m, was approximately half that between *F1652* and *F609*; it is possible that an intervening feature lay undiscovered in this area, which was not fully investigated.

The scorching in features *F609* and *F648* stopped just 50mm from the bottom. It is possible that a solid base, such as a smithing bun, had been removed from these features, although there is little other evidence to support ironworking on the site at this time (see Slag Report). However, if these features were simply post-holes, it is difficult to imagine the circumstances under which their edges would be scorched in this way, since considerable and penetrating heat would have been required.

The fills were generally mottled with soft burnt daub, scorched clay and charcoal, all derived from the firing process, but there was no evidence for flues or stoke-holes. The holes cut through sinkage *F196* above the main Iron Age and Belgic ditches, and were sealed by further, probably pre-Roman sinkage deposits.

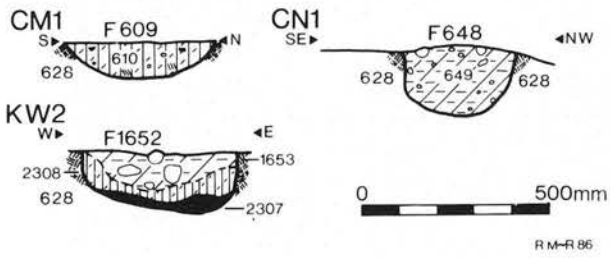


Figure 19 Burnt-edged features sections. Scale 1:20

Hearth F3265
The remains of a small hearth (not illustrated), over 100m east of the main settlement area, were found *in situ* within a pit (*F3258*). The lower pit fill (*3261*) contained charcoal and burnt clay, and it was within this layer that the fired clay remains of the hearth (fill *3266*) were found. No indication of the type or nature of the hearth was found, and the only dating evidence was a fragment of Roman tile and three small sherds of post-conquest pottery from the upper fill (*3259*) of the pit.

?Cremation pit F1495
This small feature, *c.* 1.00 by 0.70m and 0.20m deep, contained burnt bone in its upper fill, and may therefore have been associated with a cremation. The pottery finds from the fill suggest a Belgic or early Roman date.

Belgo-Roman features in the vicinity of depression *F4502*
(Fig. 15)
Depression *F4502* (see Phases 1 and 2) continued in use beyond the conquest, almost certainly being re-cut, and was gradually filled in before Roman influence on the site became predominant. A number of smaller features were found within the fills of the depression.

Fills of depression F4502
(Figs 11 and 12)
The depression fills of this date can be divided into two main episodes. The lower Belgo-Roman fills in most of the areas were fairly mixed with dumped material, but a widespread layer with fairly dense small to large gravel was generally present (*e.g.* fill *4791* in Area C: Fig. 12, 9P1). This layer formed an invaluable stratigraphically dated chronological peg against which the dates of other contexts could be measured. The gravel contained 1st-century AD pottery but sealed features with post-conquest ceramics. The second Belgo-Roman horizon consisted of two or three major layers in bands, up to *c.* 300mm in total depth. The horizontal layering of these mixed silt clay fills suggests a gradual backfilling process. The upper levels of these fills may therefore represent surfaces in use for short periods of time during Phase 2.3. The uppermost *c.* 150mm of depression fills were early Roman in date.

The Belgo-Roman features within the depression can be divided into two groups: those below the gravel depression fill, and those within the horizontal build-up layers above the gravel.

i. Belgo-Roman features below depression gravel fills

Ditches F4745 and F4796
(Fig. 12)
The upper fills of Belgic ditch *F4745* (p. 19) contained post-conquest pottery. A similar ditch, *F4796*, ran parallel to, and just north of ditch *F4745*, and was also Belgo-Roman in date. Ditch *F4796* cut its predecessor, and contained identical grey silt clay-filled pock-marks in the bottom, again probably derived from the weight of posts above. A sticky silt clay layer (*4886*; not illustr.) in ditch *F4796* probably formed through the action of water. Ditch *F4796* therefore seems to have been closely related to ditch *F4745*, and both probably served at some stage to drain water from the depression edge.

ii. Belgo-Roman features above depression gravels

Pit CF4807
(Fig. 20)
This fairly large, *c.* 0.55m deep, subrectangular pit cut depression gravel *4791* in Area C. The main lower fill of the pit, fill *4812*, was a sticky, almost anaerobic silt clay which may have formed when the pit was left open for some time, and the upper fills probably also accumulated gradually. It is likely that this feature was used for the collection of water.

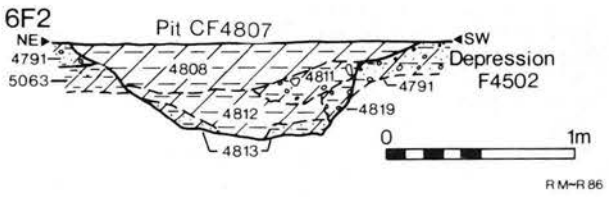


Figure 20 Pit *CF4807* section. Scale 1:40

Ditch BF4823
(Fig. 11, 7N1)
This substantial feature was found to run across Area B, but was absent from both adjacent areas. The ditch had a V-shaped profile, and was up to *c.* 1.10m deep below the bottom of the depression. The ditch fills all appeared to have accumulated gradually, and very little mottling was present. A group of disarticulated bovine bones (context *4825*) was found in the upper fill. The ditch cut, and may have replaced, earlier ditch *BF4952*, but the function of both features was unclear.

Bank BF5034 and associated features
(Fig. 11, 7N1)
The gravelly layer found in other areas was not present in Area B, and the depression appears to have been cleaned out in this area in order to prepare for bank *BF5034*. The bank was *c.* 0.40m high from the depression bottom, and was formed of fairly stony, light grey, mixed redeposited natural fill *5033*. Within the top of the bank was slot *BF4793*. The slot was *c.* 0.60m wide and 0.10m deep, and had vertical sides and a flat bottom. This was either a beam slot for squared timbers, or was used as a wood-lined leet. After a period of silting, a line of post-holes (*BF4848*), parallel to and *c.* 0.70m north of the slot, were dug into the depression fills to the north of the bank. The five shallow post-holes of *BF4848* cut depression fill *4833*, and the slot may have been re-cut at the same time. Neither the bank and slot nor the line of the post-holes continued far beyond the bounds of Area B. The purpose of these associated features is unknown.

Group of pits in Area A
Two pits, *AF4966* and *AF4973*, may, along with the upper part of Belgic pit AF5045, have been used for water collection or retention. Pit *AF4966* was *c.* 0.50m deep, with vertical sides and a flat bottom, while pit AF4973 was slightly shallower (*c.* 0.40m) and had three vertical sides, a sloping west side, and was also flat bottomed. Slot *AF4852*, which survived to a depth of *c.* 0.20m, was capable of feeding water into pit *AF4973*.

These pits were of similar form and nature to Belgic pits *AF4985* and *AF5045*, and all of these features may have been used to collect water.

Inhumation pit AF4910
(Fig. 21, Pl. III)
Pit *AF4910*, *c.* 0.10m deep from the depression bottom, contained an articulated foetal burial ([5053]). The *c.* 0.50 by 0.30m grave was orientated north-south, with the head to the north. The skeleton was complete, but was disturbed during excavation before being recognised as articulated.

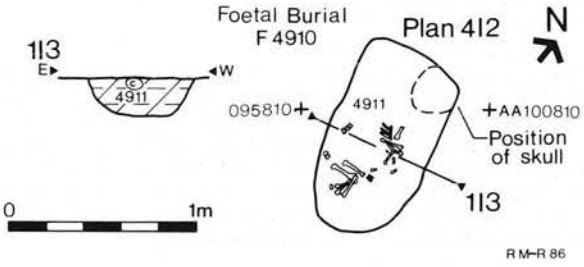


Figure 21 Infant burial *AF4910* plan and section. Scale 1:20

Miscellaneous features
Several other features of this phase were found stratigraphically above the depression gravel layers. Worth mentioning are the cremated bones and charcoal which were found in the area.

Plate III Infant burial *AF4910*

VI. Phase 3: Early Roman (2nd to mid-3rd century AD)

Introduction

(Fig. 147)

A good deal of activity occurred on the site in the early Roman phase, and continuity of occupation is indicated. Few specifically votive finds were made, but the pattern of features set out at this time appears to have formed the basis of the later religious activity.

A group of major ditches formed an enclosure within which the later votive contexts were contained. Within the area thus enclosed were sub-enclosures formed by minor ditches and fences. Major votive depressions *F2409* and *F3321* were also instigated at this time, and the remains of three timber structures of this date were also recognised.

Major enclosing ditches and associated minor ditches

Many of the most substantial Roman ditches were initially dug during Phase 3, although most continued to be visible to some extent until the end of the Roman period. Most of these ditches occurred at the periphery of the excavated area, and some were only found in trial trenches. A number of the undated Roman ditches (Phase 3–7) may have belonged to the early Roman phase of ditch digging but did not produce sufficient evidence for dating: such features are described in the following section.

The largest ditch (*F316*) of this group formed the west boundary of the enclosed area, and very little Roman activity was present to the west of this feature. The north side of the enclosure may have been defined by ditch *F738*, and the south side by ditch *F1354*.

Ditches F316 and F833, and slot F1181/344

Substantial ditch *F316* (Fig. 22, CU1 and FD1) formed the west side of an early Roman enclosure. The ditch had a *c.* 1m deep U-shaped profile, and survived to over 2m wide. In places the U-profile was less pronounced, and a step was present in the bottom of the ditch, in the 'ankle breaker' fashion of so-called 'military ditches' (Fig. 22, FD1). This apparent feature did not seem to be the result of re-cutting of the ditch since the lower fills were not truncated. The ditch was followed to the south as *F4396* and perhaps as *F3996*.

The lower ditch fills were generally slightly mottled and stony silt clays, while the later upper fills were much darker and siltier. The main exceptions were fills *700* and *709* (Fig. 22, CU1) which contained large lumps of redeposited natural. Fill *700* was re-cut, perhaps during Phase 4, at the level of fill *669*, but the line of the apparent re-cut was not able to be followed. The relative lack of very mottled fills may indicate the absence of a bank.

The lower fills contained early Roman pottery, and it is likely that the ditch assumed the approximate line of its Belgo-Roman predecessor *F1124* (Fig. 146). The upper fills of the ditch were late 3rd century and later.

?Palisade slot *F1181/F344* ran parallel to and *c.* 3m west of ditch *F316*, and the two features were presumably associated. The slot was fairly regular, *c.* 0.20 deep, but showed no traces of palisade posts. The slot contained a *c.* 5m wide gap between the two segments, but a corresponding causeway did not appear to have been present in ditch *F316*. Such a causeway could have been destroyed by a re-cut of the ditch. The date of the slot was uncertain, but nothing of later Roman character was found.

Ditch *F833* (not shown on phase plan) was a *c.* 0.40m deep feature (Fig. 22, CU1), which ran parallel to and was cut by ditch *F316*. The green-brown silt loam fill (*612*) of ditch *F833* was similar to pre-Roman fills in this area, but the accurate dating of the ditch was masked by contamination from sinkage material. The ditch would appear to have been an early Roman predecessor of the main enclosure ditch.

Ditches F738 and F1594

(Fig. 22, GU1 and IE2)

Feature *F738* was part of a ditch, found to the north of central depression *F2409* (see below) which formed a long boundary stretching from ditch *F316* in the west to ditch *F1990* to the east. Ditch *F1594* was a north-south aligned feature of early Roman date, which joined ditch *F738*.

Ditch *F738* survived up to *c.* 0.65m in depth (section GU1), and had a western terminal. The lower ditch fills were grey and silty, while the later upper fills were much darker. Early Roman pottery was present in the lower fills, and the ditch was found to cut early Roman ditch *F1028* (see below). At least two later Roman re-cuts of ditch *F738* were found, both probably associated with the later ditch *F823* (Phase 4) on the same alignment.

Perpendicular to ditch *F738*, ditch *F1594* (section IE2) was *c.* 0.60m deep, surviving to *c.* 1.10m wide. The north-south aligned ditch had a roughly U-shaped profile, and was similar in all respects to later ditch *F837* which ran parallel and *c.* 1m to the west (Phase 5). Ditch *F1594* extended to the north as ditch *F1627* where a discontinuity was found. The bottom ditch fill, blue-grey silt clay *1693*, was presumably water-borne. Above this, fill *1647* was a pure natural clay which may have been redeposited in order to consolidate the area. Ditch *F1594* had been completely sealed by fill *1647* before ditch *F837* was dug, and the lower fills of ditch *F1594* were found to contain early Roman pottery. The junction of ditches *F1594* and *F738* was excavated in pre-1978 seasons, but the former ditch was completely missed, being obscured by the redeposited natural capping.

Neither ditch *F738* or *F1594* appears to have been designed specifically for the carriage of water, and the discontinuity in ditch *F1594* would have all but precluded such a function, the silty bottom fill perhaps being formed by stagnant rainwater. The ditches therefore appear to have served an enclosing function.

Beyond the junction of ditches *F738* and *F1990*, a small length of possible ditch (*F4254*) was found. This was cut by ditch *F738* or one of its re-cuts, and did not appear to have been an expansion of the main ditch.

Ditch F1354

(Fig. 22, GX3)

This *c.* 0.65m deep, east-west aligned feature formed the southern side of the early Roman enclosed area. The U-shaped profile feature was observed to the west as *F5207*, and ran parallel to unphased Roman ditch *F1923*. Ditch segment *F3923* to the west may also have been part of this feature, and the ditch was also traced in previous excavations (Brooks *et al.* 1976, ditch D1).

The fills were fairly similar brown silt loams with a few mottles and only upper fill *1355* contained later Roman pottery. Little useful dating evidence was found during Brooks' excavations. The ditch may have joined with ditch *F316* (segment *F3996*) to the west, although ditch *F3923* cut ditch *F3996*, the presumed extension of ditch *F316* in this area. To the east the ditch was found to terminate in a position equivalent to the terminal of its northern counterpart, ditch *F738*.

Ditch F1990

(Fig. 22, Q61)

North-south orientated ditch *F1990* was *c.* 0.55m deep, and appeared to join with ditch *F738* to the north. Ditch *F1990* was *c.* 1.15m wide and had a shallow V-shaped profile with a rounded bottom. The ditch was shallower to the north, and became progressively deeper as it approached pond *F679*. Although it was ultimately cut by the later pond, it is possible that the ditch once defined the east edge of the pond. However, the ditch was certainly no more than 20m long.

The lower fills were fairly light grey silts, while the upper fills were darker and contained a high proportion of oyster shells and other domestic debris. Upper fills *1970* and *1976* (not illustr.) contained septaria rubble and may have been deposited on the demolition of building *F4044* (Phase 7). The ditch was sealed by a group of crusty mineralised layers (*F183*, see below) below which the fills were entirely early Roman in date.

Field or enclosure ditches and slots

A number of shallow ditches and slots were found in the east part of the site, and these may represent a remnant of an early Roman field system. Ditch *F3252/4* formed the corner of an enclosure, and may have been related to ditches *F3227* and *F3864* which terminated *c.* 5 and 12m respectively on either side of the south end of ditch *F3254*. Ditch *F3479* may have been part of the same system, while ditch *F5223* which also formed a corner was of similar nature to ditch *F3252/4* to the south-east.

Ditches F3252/4 and F5223

A continuous feature, represented by contexts *F3252* and *F3254*, formed the corner of an enclosure. The ditch was between 0.20 and 0.30m deep with stepped edges forming a central gully (Fig. 23, O53). This arrangement was identical in size, shape and alignment to ditch *F5223* to the south-east. Ditch *F3254* terminated to the south.

The lower fill of ditch *F3252/4* was a thin lens of silt, above which the fills were grey-brown and mottled. Pottery of 1st to 2nd-century AD date was present in the ditch fills, although fill 3263 contained late 2nd to mid-3rd-century sherds. Ditch *F5223* was not securely dated.

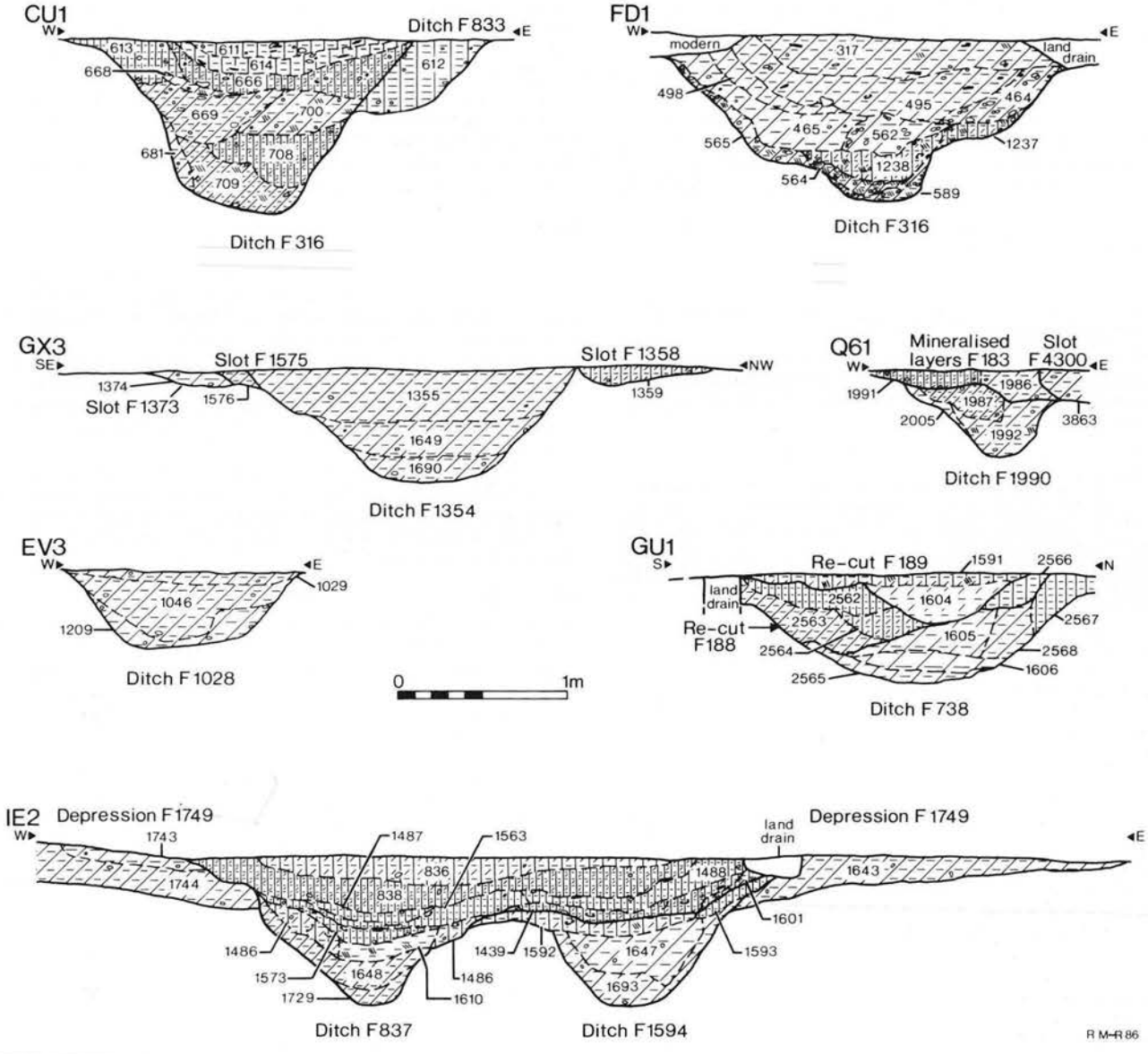


Figure 22 Major and minor early Roman ditch sections. Scale 1:40

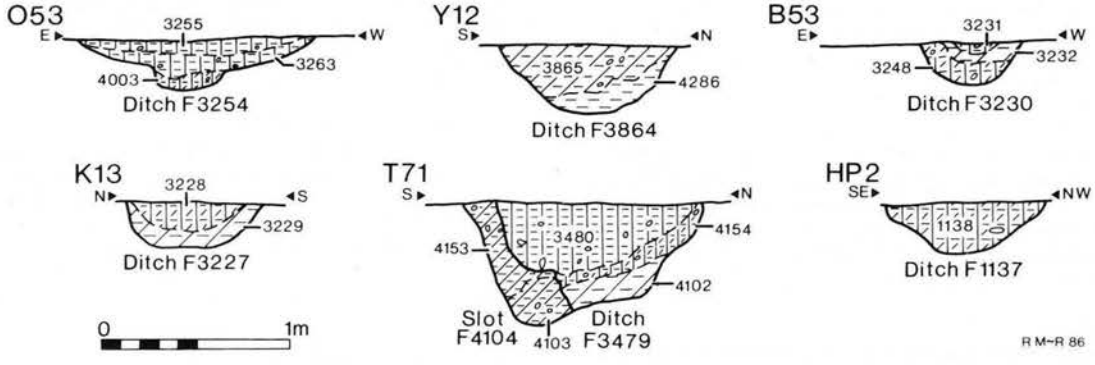


Figure 23 Minor early Roman ditch sections. Scale 1:40

Ditch F3227
A *c.* 0.25m deep, east-west aligned feature with a U-shaped profile (Fig. 23, K13). The ditch formed the south side of an enclosure in conjunction with ditch *F3252/4*, inferring a *c.* 5m wide entrance to the south-west. Ditch *F3227* may have continued to the east as ditch *F5206*.

The two main ditch fills were generally mottled brown silt loams, the interface between which was defined by a layer of large, disarticulated animal bones, whole oyster shells, and Roman tiles. As well as early Roman pottery, early Roman window glass and mortar were also found in the ditch fills.

Ditch F3864
This U-shaped profile feature may have continued the line of ditch *F3227*, on the opposite side of ditch *F3254*. Ditch *F3864* was up to *c.* 0.30m deep (Fig. 23, Y12), being wider towards its eastern terminal, and terminated *c.* 12m west of the end of ditch *F3254*.

The lower fills were grey silts, being lighter to the west, while the upper grey-brown silty fills were slightly mottled. Early Roman pottery was present in the fills, although mortar and a little, possibly intrusive, wallplaster was also found.

Ditch F3479
Parallel to ditch *F3864* but *c.* 2m to the north, ditch *F3479* was deepest (*c.* 0.55m) in the east and became progressively shallower to the west.

The dark brown, mottled, silt clay loam lower fills were sealed by grey-brown upper fills (Fig. 23, T71). The feature was probably early Roman, but some later Roman pottery was found in upper fill *3480*. The ditch cut slot *F4104* (see below).

Ditch F3230
This small north-south aligned feature was cut by ditch *F3227*, and may have been a fragment of a small early Roman enclosure. The ditch had a U-shaped profile (Fig. 23, B53) and became deeper (up to *c.* 0.25m) towards the higher ground to the north. The ditch was followed as *F5123* during a watching brief.

The bottom of the ditch was covered by a layer (*3234*; not shown on section) of pea-grit. Brown silt clay loam *3248*, to the north of the excavated portion of the feature, contained a substantial deposit of mussel and oyster shells. This extended into segment *F5123* where dense fragments of broken pottery were also found, and a complete pot (Fig. 90.62) was found in this layer. The ditch was subsequently filled with a deposit of topsoil (*3231*). Pottery finds from the lower fills suggest the possibility of a late 1st-century (Belgo-Roman) date.

Miscellaneous ditches and slots

Ditch F1137
Only a small part of this north-east to south-west aligned feature was found, but the *c.* 0.30m deep, U-shaped profile ditch (Fig. 23, HP2) appeared to join with ditch *F316* and has thus been assigned an early Roman date.

Inlet ditch F1028 and associated slots
This north-south aligned ditch is assumed to have carried water from an area of natural springs to the north, into depression *F2409* in the south. The *c.* 0.45m deep ditch had a flat bottom and sides at an angle of *c.* 60°. The end of the ditch was marked by three inter-related slots (*F1086, F1088* and *F2910*). Slots *F1086* and *F1088* terminated to the south, at the edge of the depression, which would presumably have precluded a water carrying function.

Ditch *F1028* was basically filled with a slightly mottled, brown silt clay, although redeposited natural fill *1029* (Fig. 22, EV3), found to the north, contained oyster and mussel shell. Early Roman finds were present in the fills, and the ditch was cut by early Roman ditch *F738*. The slots were cut by early Roman slot *F2869* which was itself sealed by an early gravel of depression *F2409*. Assuming the function of the ditch and its slots was to carry water to the edge of the depression, this must therefore have occurred before the depression was gravelled.

Ditch F4357
This segment of north-south aligned ditch may have been present in the early Roman period, although its upper fills were later. The *c.* 0.55m deep feature was cut by Phase 5 ditch *F3323* to the north, and appeared to cut and terminate to the south at Phase 3 pit *F4287* (not on phase plan). The early Roman date of the ditch is suggested since the lower fill (*4359*) was sealed by Phase 3 fill *4097* of depression *F3321* (see below).

Miscellaneous slots
A group of four slots (*F3871, F4104, F4300* and *F4350*; shown as *F4104* on the phase plan) formed a continuous line, partly obscured and cut by parallel early Roman ditch *F3479* (Fig. 23, T71). The slots, of U-shaped profile, were aligned east-west, and became progressively deeper (up to 0.50m) to the west, against the slope. The slots ultimately merged into later pond *F679* (Phase 4) in the west, and petered out to the east before early Roman ditch *F3254*.

Near depression *F4502*, in the north-east part of the site, slot *F4563* had a well-defined U-shaped profile and was aligned north-south. Nearby slot *F4599* merged with upper fills of depression *F4502*, and contained a layer of disarticulated large animal bones in fill *4600*.

Fences

Fence F187
Post-holes of a *c.* 14.50m length of fence were found to the west of depression *F2409*, and extended on the line of the north side of ?temple *F731* (see below). The east-west aligned fence was composed of at least eight post-holes (*F177, F1009, F1011* (and post-pipe *F1022*), *F1316, F1317, F1318, F1319* and *F1330*) spaced *c.* 1.7 to 1.9m apart, some of which were cut by features of ?temple *F731* (Phase 4). To the west the post-holes were *c.* 0.20m deep and between 0.40 and 0.60m wide, with flat bottoms and vertical sides. The post-holes to the east were shallower and less regular, suggesting that the fence might have been erected in two phases. In the east the fence terminated at structure *F181* (Fig. 25) of similar date, and the two groups of features are likely to have been associated. Finds from the post-holes suggest a 2nd-century date for the construction of the fence.

Fence F1228
A series of post-holes extended from the main early Roman ditch in the south, to join with structure *F181* (Fig. 25) The fence was largely composed of irregular post-holes, spaced *c.* 1.80m apart. Near the south end a group of three deep (*c.* 0.40–0.50m), regular, flat-bottomed post-holes was also present (*F1389, F1405* and *F1440*). Where they coincided with building *F182* (Fig. 24), the post-holes of the fence were spaced less regularly, suggesting that the building, or its remains, was extant when the fence was constructed.

The following features are attributed to fence *F1228* (post-pipes in brackets):

F1233 (F1386); F1241; F1243 (F1229); F1251 (F1259); F1261; F1341 (F1333); F1343 (F1344); F1389 (F1435); F1405; F1411; F1413; F1440; F1446; F1450; F1452; F1454; F1460; F1462 (F1491); F1581; F2051 (F2084); F2061

The dating of the fence is uncertain, but none of the post-holes contained later Roman pottery. The fence appears, in conjunction with post-holes of structure *F181*, to have separated the area of depression *F2409* to the east from that to the west subsequently used by ?temple *F731*.

Structures
Only three early Roman structures were identified: L-shaped structure *F182*; trapezoidal structure *F181*; and four-post structure *F2981*.

L-shaped structure F182
(Fig. 24)
This irregular building was composed of a number of shallow post-holes and a length of wide, shallow slot (*F1278*), and is likely to have taken one of the following two forms: an east-west aligned main room with a southern annexe; or a north-south aligned room with an eastern annexe. The former interpretation is considered more likely.

The main room of the building would have been trapezoidal, about 13m long and between 6 and 8m wide. One possible internal post-hole, *F1276*, was roughly central between the long walls. The annexe would have been about 6 by 4m, and a possible doorway between the two rooms was created by a *c.* 1m gap between slot *F1278* and post-hole *F1437*.

Most of the finds from the post-holes suggest a later 1st or early 2nd-century AD date for the structure. Since the spacing of the post-holes of fence *F1228* appears to have been modified where the fence coincided with the wall of the building, it is likely that the structure preceded the fence.

Four-post structure F2981
(Fig. 25)
This small structure, composed of post-holes *F2857, F2859, F2863* and *F2887* (with post-pipe *F2861*), lay in a corner formed by the intersection of ditches *F738* and *F1028*. The post-holes were generally only *c.* 0.15m deep and were sealed by Phase 3 gravel 93 of depression *F2409* (see below), but the structure was apparently unrelated to trapezoidal structure *F181* with which it overlapped. Post-hole *F2863* contained early Roman pottery.

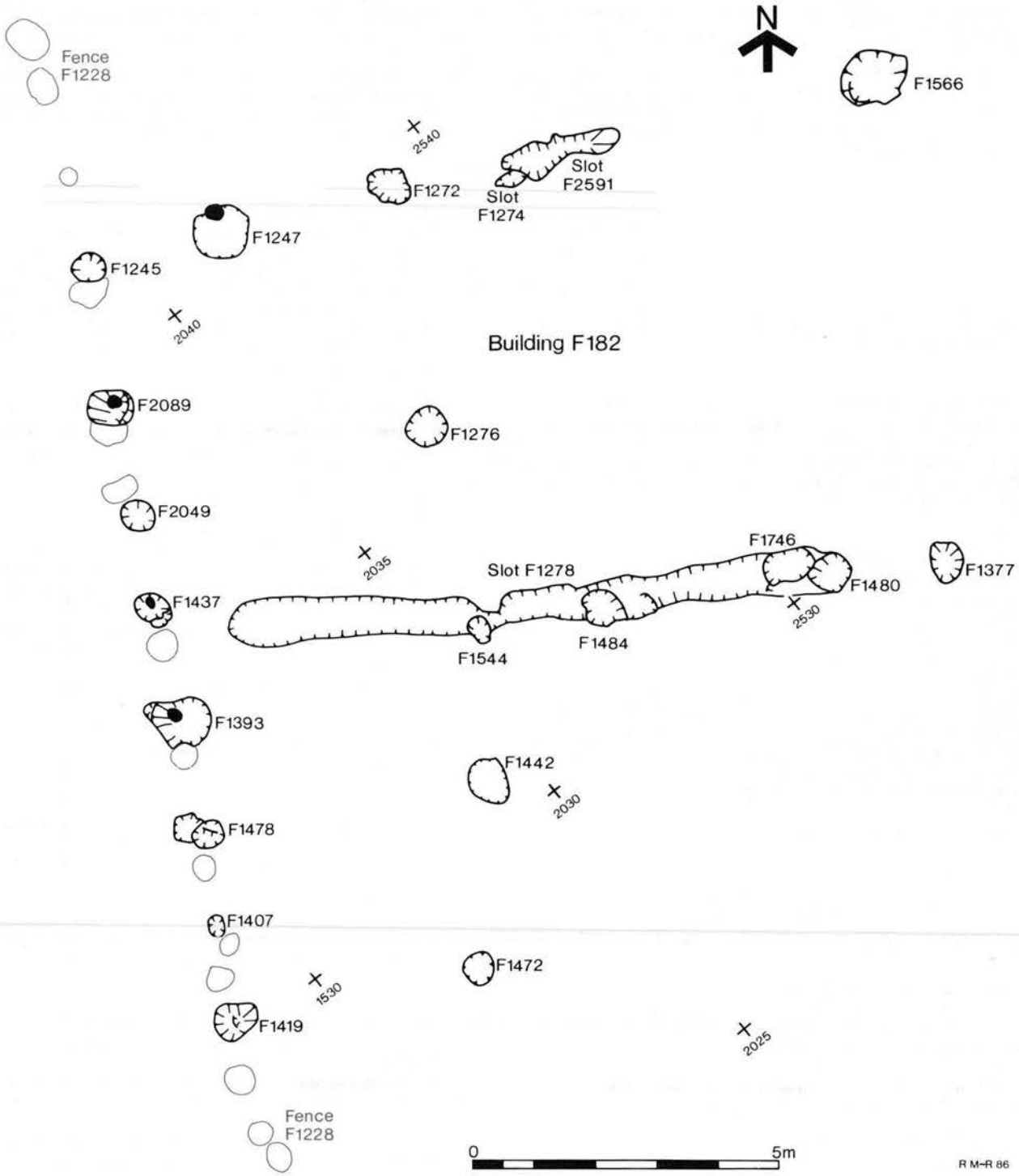


Figure 24 Building *F182* plan. Scale 1:100

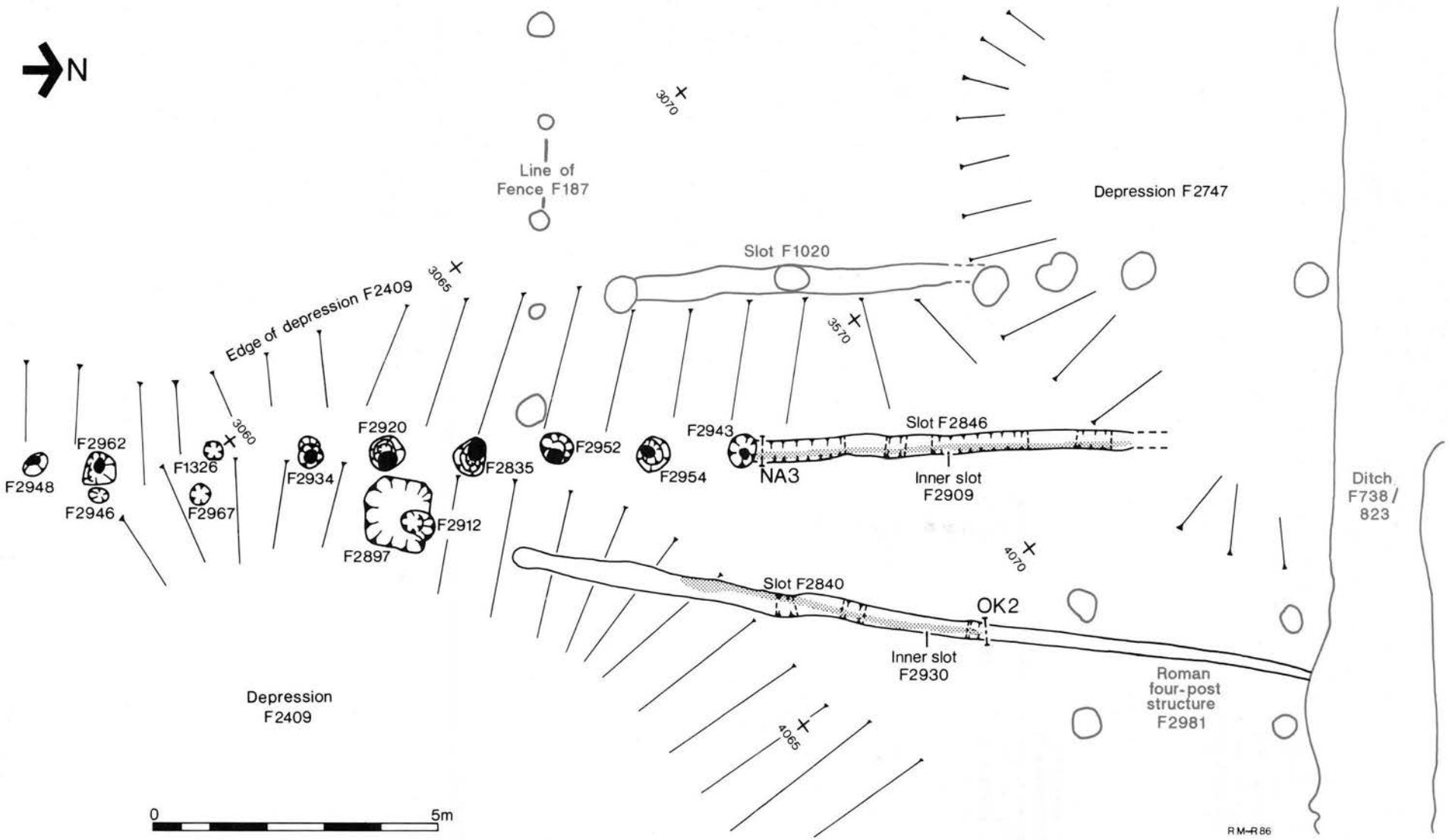


Figure 25 Building *F181* plan. Scale 1:100

Trapezoidal structure F181
(Figs 25 and 26)
This curious arrangement of slots and post-holes was associated with various early Roman ditches and fences, and appears to have formed some type of structure.

Two slots, *F2840* and *F2846*, formed the basis of the structure, and survived to *c.* 10 and 6m long respectively. The north-south aligned slots converged towards the south, and were truncated to the north by depression *F2747* — a northern continuation of depression *F2409*. A third slot, *F1001*, of very similar nature, ran parallel to and west of slot *F2846* but seems to have been slightly later in date (Phase 4).

Within each of the two slots was an arrangement of stakes, of D-shaped section, which gave the appearance of a thin internal slot (shaded in Fig. 25). The flat edges of the stakes had been arranged alternately facing east and west (Fig. 26, OG1) and were fairly closely spaced, producing a fairly solid barrier.

The fills of the main slots were basically redeposited natural with a few mottles of darker soil, while the stake-holes were filled with dark grey silt clay. Although only one sherd of Roman pottery was found in these features, they were sealed by early Roman gravel *93* of depression *F2409* (see below) and were consequently dated to Phase 3. The lack of finds in the slots and also in the associated post-holes (see below) may suggest that these features represent the first activity in the immediate vicinity.

Slot *F2846*, and the post-holes emanating from it (Fig. 25), appears to have formed a continuation of fence *F1228* (see above) and this line continued beyond ditch *F738* as ditch *F1594*. Perpendicular fence *F187* may also have been contemporary, but four-post structure *F2981* (Phase 3) appeared to overlap with slot *F2840* (Fig. 25). The northern end of the trapezoidal structure had been obliterated by later activity, but the slots converged to the south towards post-hole *F2962*.

A group of between eight and ten post-holes extended to the south of slot *F2846*. These substantial and regular features were between 0.40 and 0.60m deep and contained post-pipes between 0.20 and 0.30m in diameter. The post-holes of the *c.* 12m long series were regularly spaced *c.* 1.60m apart. The following post-holes belonged to the series (post-pipes in brackets):

F1326; F2835 (F2838); F2920 (F2928); F2934 (F2936); F2943 (F2960); ?F2946; ?F2948 (F2950); F2952 (F2938); F2954 (F2940); F2962 (F2964)

The post-hole fills were generally redeposited natural, while the post-pipes were filled with dark grey silt clay loams. Only three sherds of Roman pottery were recovered from all of the post-holes, although oyster shells and Roman tile fragments were also present.

About 1.50m south of slot *F2840*, pit *F2897* was a regular, *c.* 1.20m square feature, up to *c.* 0.60m deep. A possible post-pipe (*F2900*; not illustrated) was irregular and difficult to define. The pit was filled with disturbed and redeposited natural, while the post-pipe contained darker fills. Finds suggest a 2nd-century date for the pit, and include a fragment of 2nd-century vessel glass (Fig. 80.8). A deposit of infant bones in association with fragments of eggshell (see Shell Report) was found in upper fill 2908 of the post-pipe.

Post-pipe *F2900* was cut by substantial post-hole *F2912*, *c.* 0.75m deep. A second deep post-hole, *F2697*, was present *c.* 3.7m to the south, and these two large features, both sealed by depression gravel 93, continued the line of slot *F2840* to the south. Finds included later Roman pottery and a coin of Philip I (244–8) in the fill of gully *F2697*.

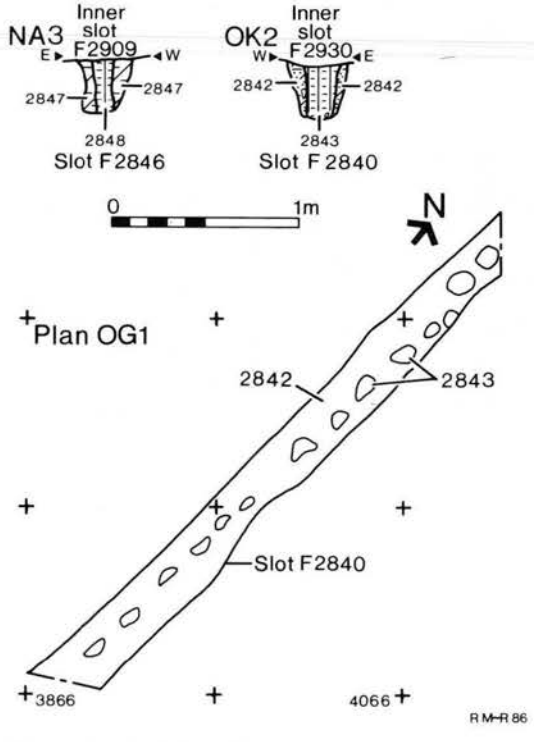


Figure 26 Building *F181* slot sections. Scale 1:40

Depressions
A number of important depressions appear to have been initiated in the early Roman period. Two of these, *F2409* and *F3321*, continued in use until the very end of the Roman period and formed foci for religious activity during that time.

Depressions F2409, F2747 and F1749
(Fig. 27)
Depression *F2409* was a major feature which extended to the north as *F2747* and *F1749*. The extent of the depression during Phase 3 is uncertain, but it is likely to have been approximately rectangular, at least 30 by 20m (Fig. 45). The depression may not have been particularly deep at this time except to the south in the vicinity of much later font *F1348* (*e.g.* Fig. 27, OU1) and to the north as depressions *F2747* and *F1749* (Fig. 22, IE2).

The earliest surviving fill of depression *F2409* was gravel *93* and its equivalents. However, ditch *F1028* (see above), which may have fed the depression with water, was stratigraphically earlier than the gravel, suggesting that the gravel was not the primary depression fill. Features of early Roman structure *F181* (see above) also underlay the gravel. Gravel *93* was one of the most enigmatic contexts on the site. It was composed of medium to large-sized flint pebbles, and was set into pure, clean, natural clay. If this was not the primary layer in the depression, then the purity of the natural into which the gravel was set could only have been achieved by the removal of all earlier layers. The gravel surrounded the southern hollow of the depression but did not extend far down into the hollow. During winter 1978–79, when the depression had been largely excavated, it filled up with water to exactly the level where gravel *93* stopped. The gravel may therefore have been used to consolidate the ground around the hollow and thereby provide access to a pond area. The water-retaining qualities of the subsoil in this area are indicated by the fact that the water in the hollow persisted for several months into 1979, while samples containing frog, water vole and shrew remains confirm that the deeper area of the depression functioned as a pond.

The dating of gravel *93* is problematic since it was partly contaminated by trampled material from later deposits. However, a high proportion of the pottery from the gravel was quite early in date, notably samian. An early Roman date is therefore suggested for the gravel. This is supported by finds from less disturbed areas where the equivalent gravel was given separate context numbers, particularly gravel *2750* from depression *F2747*. Further evidence of a Phase 3 date is suggested by the fact that only early Roman or earlier features were sealed by the gravel.

The presence of twelve Palaeolithic hand-axes may suggest that the gravel had some religious function (see Palaeolithic Flints Report and Discussion).

Depression *F2747* was mainly excavated in pre-1978 seasons but appears to have been an early Roman feature. To the north, beyond the line of ditch *F738*, depression *F1749* was cut by early Roman ditch *F1594* and also contained early Roman pottery. The depression was at least 0.30m deeper than its surroundings and may have been up to 18m wide east to west.

Depression F3321
Like depression *F2409*, depression *F3321* was mainly used in later Roman times but was begun in Phase 3. The lie of the land suggests that the depression utilised a shallow natural hollow, but the area had certainly been cleaned down to the natural subsoil before the first recognisable layer, gravel *4097* (not illustrated), was deposited.

The gravel was similar in nature to gravel *93* of depression *F2409*, but was composed of smaller flint pebbles, and no Palaeolithic hand-axes were present. The two gravels may have been laid down at the same time, probably in the late 2nd or early 3rd century according to the finds from gravel *4097*. The gravel was doubtless originally laid on a flat prepared surface, but the layer as found during excavation was very irregular due to the solution of the powdered chalk natural upon exposure to rain or surface water.

The extent of the gravel was uncertain, but it appeared to be mainly confined to the north part of the depression. It appeared to cover part of the bottom of ditch *F3203*, but it is much more likely that the ditch was a later feature, and that the gravel sealed an earlier, unidentified feature.

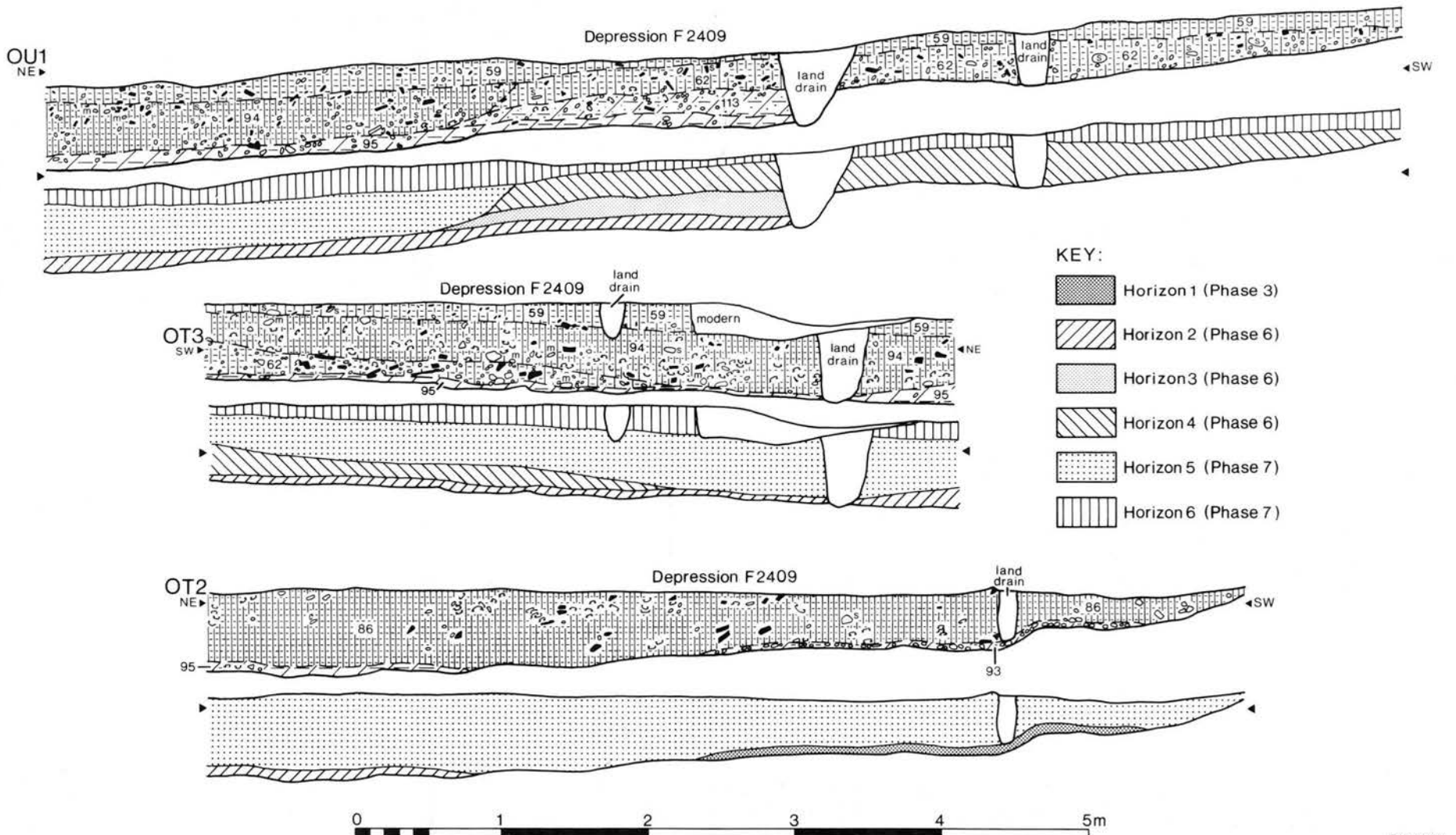


Figure 27 Sections across depression *F2409*. Scale 1:40

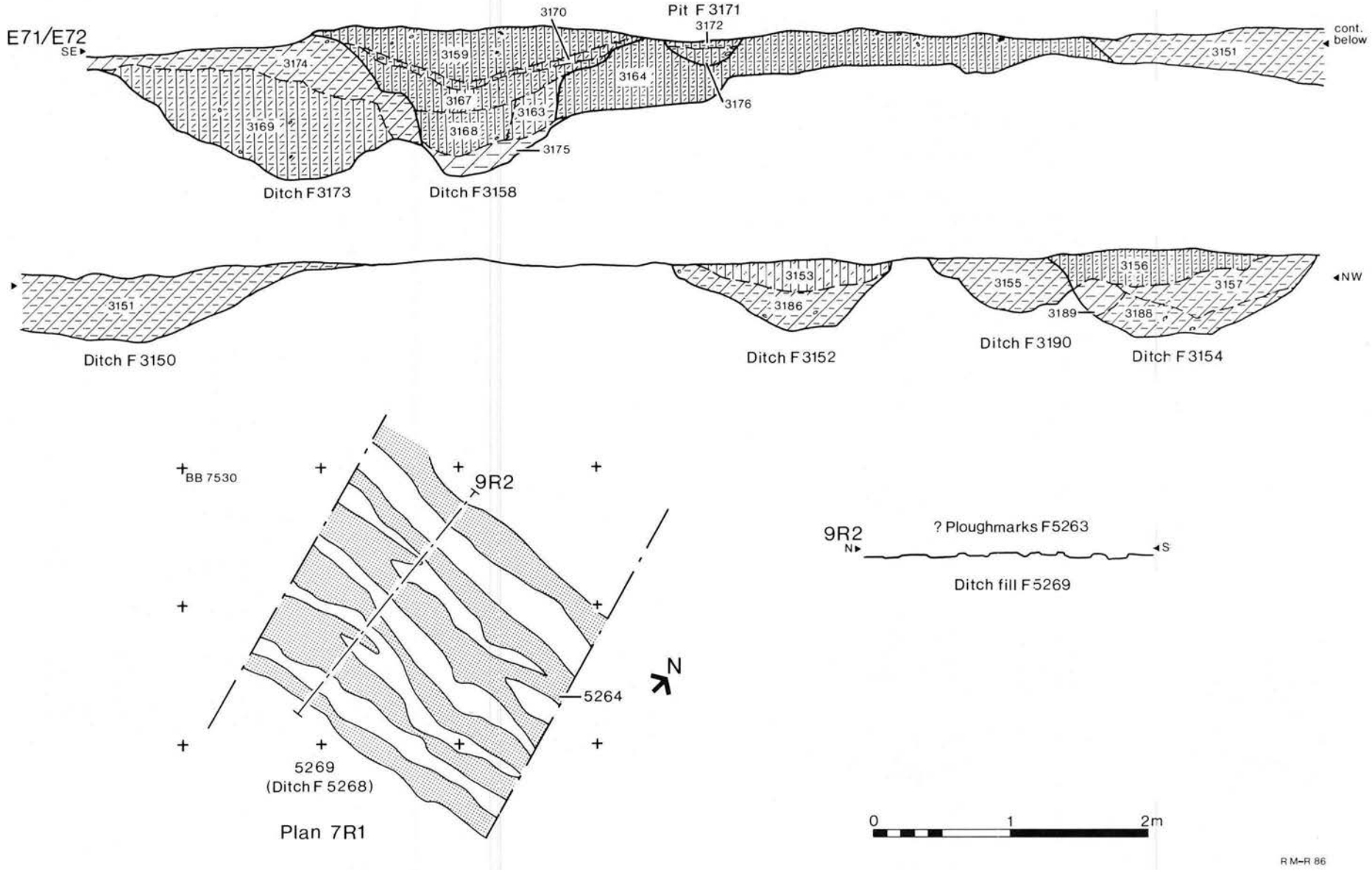


Figure 28 Above: section across various Roman ditches in grid area SS; below: ploughmarks *F5263* plan and profile. Scale 1:40

Miscellaneous smaller features

Group of ditches associated with pits
Three pairs of ditches and pits (*F1206* and *F1669; F2802* and *F2003*; and *F3433* and *F3435*), all of similar date, appear to have formed a distinctive type of feature. The pits were between 0.30 and 0.50m deep, and roughly rectangular in shape. The ditches were much less substantial, between 0.10 and 0.30m deep. Finds were not abundant from any of these features, but an early Roman date, perhaps late 2nd or early 3rd century, is indicated.

Ditches *F1206* and *F3433* were capable of carrying water to their respective pits, but ditch *F2802* led away from the pit. However, the stratigraphy of each pair shows that both features were contemporary. No signs of water-borne sediments were present in the fills, and the function of these features is uncertain.

Encrusted layers F183
A series of mineralised soils was found near and within ditch *F1990* (Fig. 22, Q61 and Fig. 29, LU2) at the north-east edge of pond *F679*. The layers were up to 0.25m thick and were characterised by their orange-brown mottles and gritty texture. These layers sealed ditch *F1990* but were cut by the pond and also by 4th-century ditch *F3203*. Finds from most of the layers suggest an early 3rd-century date.

Layers *F183* appear to have formed in some sort of artificial depression and were probably modified by the presence of a concentration of iron salts in the vicinity. A similar phenomenon was noticed in other unrelated parts of the site. The texture of these layers does not, therefore, seem to have been dictated by the users of the site, but was probably of natural origins. The movement of minerals within the soil was also noted in the north part of the site, where natural tufa had been formed.

VII. Roman features of uncertain phase (Phase 3–7)

Introduction

(Fig. 147)

Some of the most substantial ditches to be found on the site contained insufficient evidence for accurate dating, but were clearly Roman. It is possible that the lack of dating evidence suggests an earlier Roman date, and for this reason these ditches have been included with the Phase 3 plan. It is equally possible that the lack of finds is due to the location of the ditches at the periphery of the settlement, and this uncertainty of date should be borne in mind when considering these features.

Major enclosing ditches

Ditches F1923, F3152, F3173, F3190 and F5268
(Fig. 28, E71/2)
These five substantial ditches were all aligned east-west along the southern boundary of the site.

Ditch *F3152* was *c.* 0.50m deep, 1.50m wide, and had a flat bottom and sides at an angle of 45°. Nearby ditch *F3190* was a little smaller, and was cut by later Roman ditch *F3154*. Ditch *F3173*, to the south, was over 1m deep, with edges at a 30° angle, forming a width of over 3m. The ditch was cut by later Roman ditch *F3158*, and contained Roman pottery. To the east of the above group of ditches was broad ditch *F5268*, a *c.* 0.40m deep feature which was cut by later Roman depression *F5202*. A 1st to 4th-century AD copper-alloy Nauheim Derivative brooch ([213]; see Brooch Report) was found in bottom fill *5280* of the ditch.

Ditch *F1923* lay to the south-west of the site, and was also noted by Brooks as ditch D2 and as ditch B of site D (Brooks *et al.* 1976, 110, fig. 5). The ditch, up to *c.* 0.90m deep, had a broad, flat bottom and gently sloping sides. Only general Roman material was found in the 1979 season, and Brooks' dating evidence was equally vague (Brooks *et al.* 1976, 114).

Although these five ditches, along with others of similar date, all ran along very similar alignments, they could seldom be related with confidence to one another. The tendency to place these features into the earlier Roman phase should be treated with due caution.

Ditch F3037
A feature of U-shaped profile situated to the west of the main enclosed area, in the midst of the Iron Age settlement. The ditch varied from *c.* 0.60 to 1.10m wide, and *c.* 0.30 to 0.50m deep, the north butt-end being the shallowest and narrowest point of the feature. To the north, the expected continuation ditch was not located, but in the south the ditch turned towards the west.

Fills *3119* and *3122*, found to the south, were particularly mottled, and may represent backfilled bank material. The ditch contained Roman pottery and tile, but could not be more closely dated.

Other significant features

?Ploughmarks F5263
(Fig. 28, Pl. IV)
A group of roughly parallel soil-marks was found in the top fill of ditch *F5268*. The east-west aligned marks were *c.* 50mm deep and *c.* 0.15 to 0.20m wide, with flat bottoms and vertical sides (Fig. 28, 7R1 and 9R2), and were spaced roughly 0.30m apart. Their irregular alignment and unusual cross-sections may suggest that these were not ploughmarks. The marks contained Roman finds, and were cut by later 4th-century depression *F5202*.

VIII. Phase 4: Late 3rd century

Introduction

(Fig. 148)

The first recognisable Roman votive activity is thought to have occurred at this time. A small amount of coin and jewellery was in use, and the first structure which can tentatively be identified as a Romano-Celtic temple (*F731*) was probably built during the later 3rd century. This imposing building was enclosed by a series of ditches (*F316, F823 and F4403*). A major man-made pond (*F679*) was also probably first used at about this time, and an inlet ditch and a series of outlet ditches were also dug in order to regulate the water supply.

Major enclosing ditches

Evidence of large enclosing ditches of Phase 4 is incomplete because of the difficulties in precise dating at this time. It is, however, clear that ditch *F316* continued to function as an effective barrier, and was probably associated with ditches *F823* and *F4403* to form an enclosure around ?temple *F731*. Phase 3 ditch *F1594* is also likely to have been in use at this time.

Ditch F316 and re-cut
The main early Roman enclosing ditch, *F316*, may have been re-cut during the 3rd century — represented by fill *669* and above in section CU1 (Fig. 22) — to a depth of *c.* 0.60m below base of plough level. This may have joined with *c.* 0.50m deep, north-east to south-west aligned ditch *F215* to the north (see below), and also with ditches *F823* and *F4403*.

Ditch F823 and ditch F738 re-cuts
Ditch *F823* appears to have completely re-cut Phase 3 ditch *F738* in the west of its length, but is represented by re-cuts *F188* and *F189* to the east.

Ditch *F823* was of U-shaped profile with a flat bottom, and was up to 0.90m deep and 1.20m wide in the west. The ditch became shallower and less regular to the east, where it was represented by *c.* 0.50m deep re-cut *F188* (Fig. 22, GU1, fill *2563*), and by *c.* 0.30m deep re-cut *F189* (Fig. 22, GU1, fill *1604*).

The lower ditch fills were grey, silty, and slightly mottled, while the upper, later, fills were much darker and contained Roman tile and oyster shell debris.

Ditch F4403
Located during a watching brief, ditch *F4403* ran east-west, parallel to ditch *F823* but on the other side of the ?temple *F731*. The *c.* 0.20m deep ditch probably originated from ditch *F316* to the west, but petered out to the east, *c.* 8m before reaching fence *F1228*. Despite being on the same alignment, ditch *F4403* did not appear to have been contemporary with slot *F1278* of structure *F182* (Phase 3). The bulk of the pottery found is of later Roman date, and dating in Phase 4 is based on the interpreted association with ditch *F823*. Part of a similar-sized, probably contemporary perpendicular ditch originated from ditch *F4403* and ran to the south.

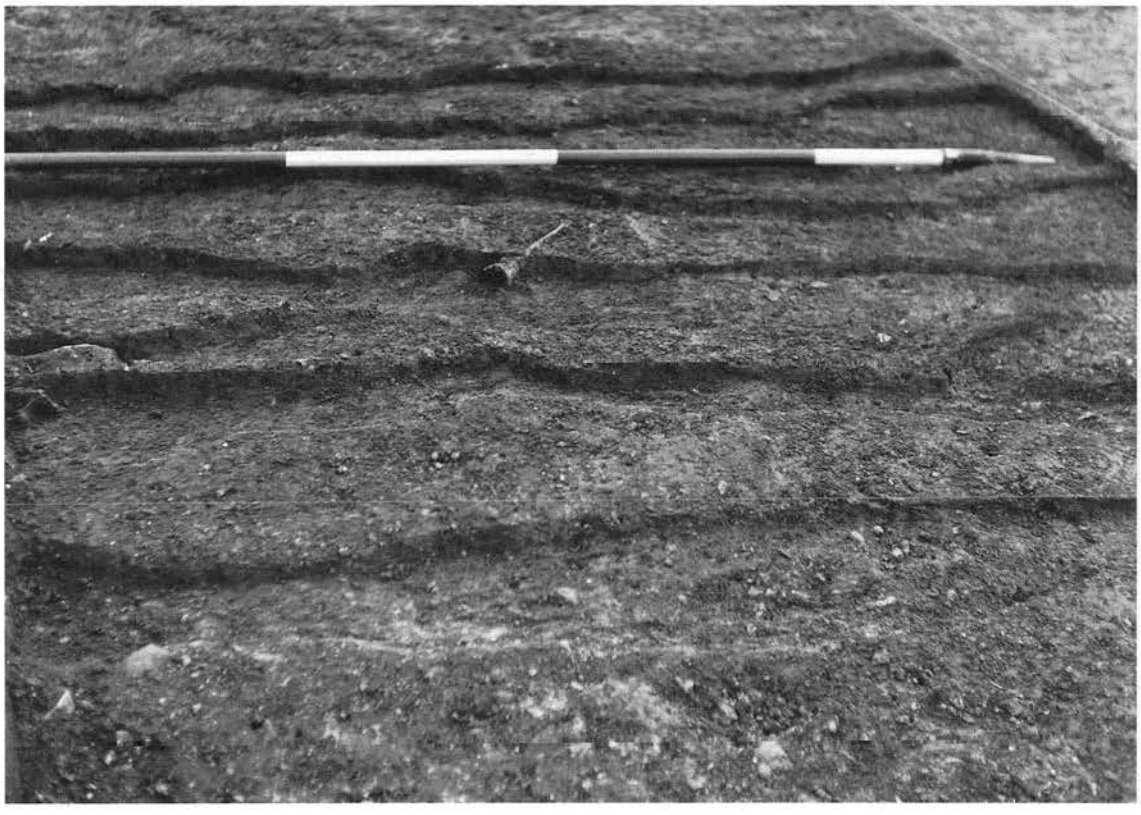


Plate IV Ploughmarks *F5263*

Considering the combination of ditches *F316, F823* and *F4403*, it seems likely that fence *F1228* (p. 26) was also extant at this time, and completed the east edge of the enclosure.

Ditch F215

This *c.* 0.50m deep ditch had a well-rounded, U-shaped profile. It ran approximately south-west to north-east, and may have continued to the west to join ditch *F316*, and as ditch *F4557/4597* (see below) in the east. The sticky, clayey nature of the fills reflects the character of the surrounding natural, modified by the abundance of natural water sources in the area. The ditch contained a few early Roman finds, but cut later Roman soil *L220*.

Ditches F4557/4597, F4555, and re-cut F5080

Two segments (*F4557* and *F4597*) of a single ditch were found to the immediate south of depression *F4502*. The ditch was of U-shaped profile, up to 0.50m deep (Fig. 11, 7N1), and its bottom sloped down towards the east.

Ditch *F4557* terminated at its junction with perpendicular ditch *F4555*, and it is likely that the two features were at some stage contemporary, despite the fact that ditch *F4555* ultimately cut ditch *F4557*. Since ditch *F215* (see above) may represent a western extension of ditch *F4557/4597*, it is possible that the ditch was meant to carry water. There was, however, no sign of water erosion at the vulnerable right-angled junction with ditch *F4555*.

Ditch *F4555* was *c.* 0.30m deep and terminated at the junction with ditch *F4557*. It was later re-cut by *F5080*, which was shallower though slightly wider than its predecessor, and continued further north into the now filled up depression *F4502*.

All of these features contained later Roman pottery, yet none of the finds necessitated a date later than Phase 4.

Ditch F2509

A *c.* 0.90m deep, south-west to north-east aligned ditch, up to 3m wide. The fills contained few mottles, perhaps suggesting the absence of a bank, and contained later Roman pottery. The upper *c.* 300mm of fills could, however, date to the 4th century. Only a short length of the ditch was identified.

Pond *F679* and associated ditches

Pond F679

(Figs 29 and 30)

The pond was a substantial and long-lived rectangular feature, *c.* 21 by 18m, orientated north-south. It was up to *c.* 1m deep, and could, on surviving evidence, have held a maximum *c.* 0.80m of water (low water mark shown on sections) when used in conjunction with a series of inlet and outlet ditches. The pond had three steep edges, but sloped very gradually to the south (Fig. 30). It is likely, from the lie of the land, that the pond utilised, and completely engulfed a pre-existing natural hollow.

The earliest pond fills survived round the edge, outside a later line of stake-holes (Phase 6). These grey silt clays (*e.g.* Fig. 29, MU3, fills *2569* and below) appear to mainly represent gradual accumulations, although they were capped in places with redeposited natural fill *2569* which was presumably laid down in order to raise the ground level around the pond. These fills, attributed to Phase 4 or 5, were re-cut when the pond was revetted in Phase 6. They contained later Roman pottery, but nothing was found which demanded a 4th-century date. Fills of this phase were associated with a pair of outlet ditches (*F180* and *F184*) which survived until the pond was re-cut in Phase 6, at which time the ditches were also re-cut.

Pond inlet ditch F1060

(Fig. 31, FZ4)

The only inlet ditch to be identified in association with the pond was *c.* 0.30m deep *F1060*. The ditch had a U-shaped profile and became shallower to the south until it petered out *c.* 12m north of the pond. The ditch was followed in the north as *F4540*, which altered from a north-south to a north-west to south-east alignment.

The bottom fill along the whole excavated length of the ditch was a light gravel (*e.g.* fill *1130*), either used to reduce water erosion or for ease of cleaning. Pottery of late 3rd or 4th-century date was present, and a glass beaker fragment ([5015]; Vessel Glass Report No. 25E) of similar date range was also found.

Although the ditch stopped well short of the pond, its water-carrying function could have been taken over by a wooden leet at about that point. To the north, the ditch appeared to lead from an uninvestigated water source beyond the excavated areas.

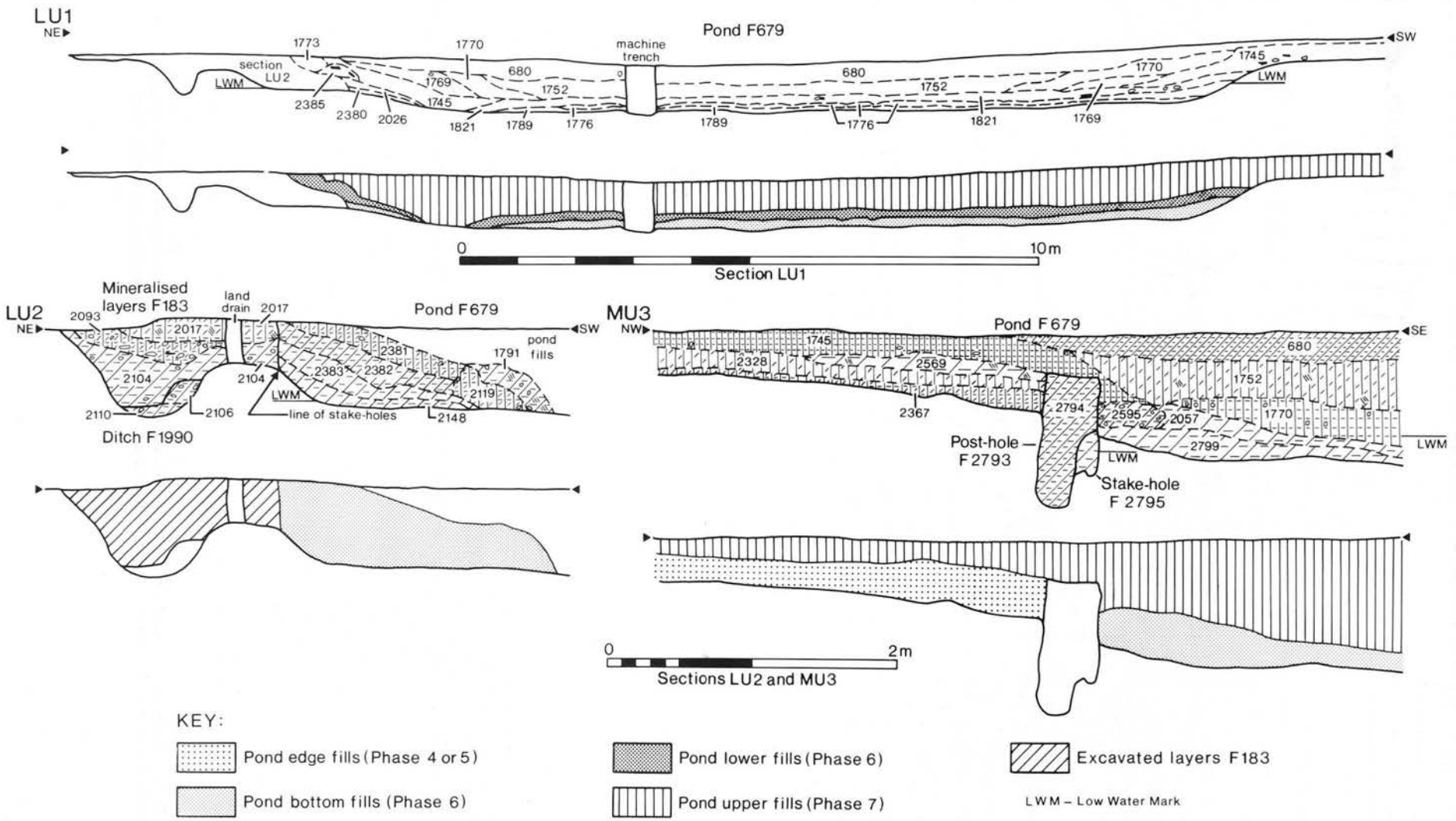


Figure 29 Sections across pond *F679* and associated features. Section *LU1* scale 1:100; sections *LU2* and *MU3* scale 1:40

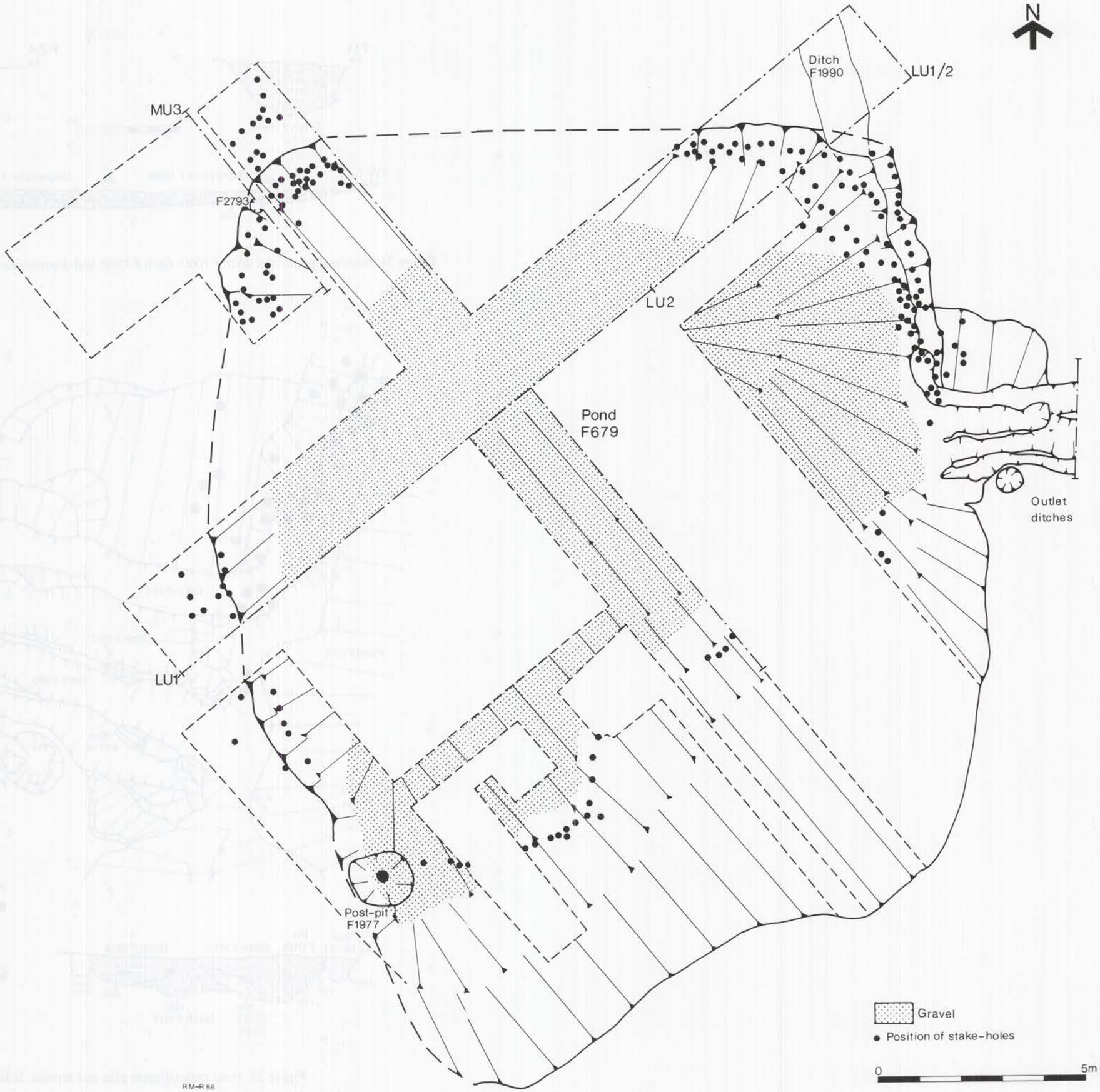


Figure 30 Pond *F679*. Scale 1:100

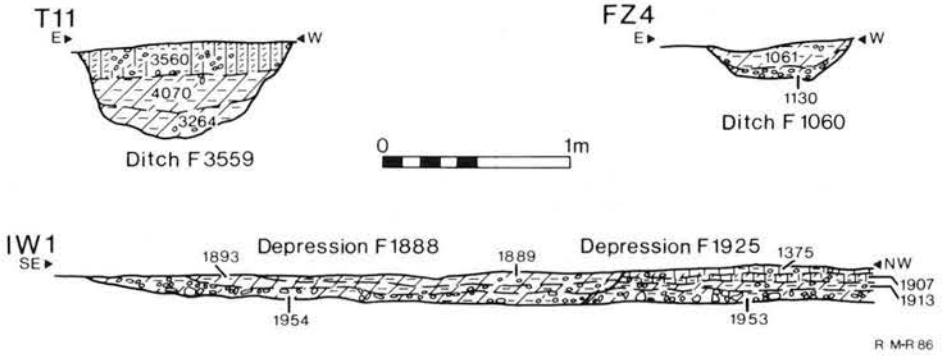


Figure 31 Sections: pond inlet ditch *F1060*; ditch *F3559*; and depressions *F1925* and *F1888*. Scale 1:40

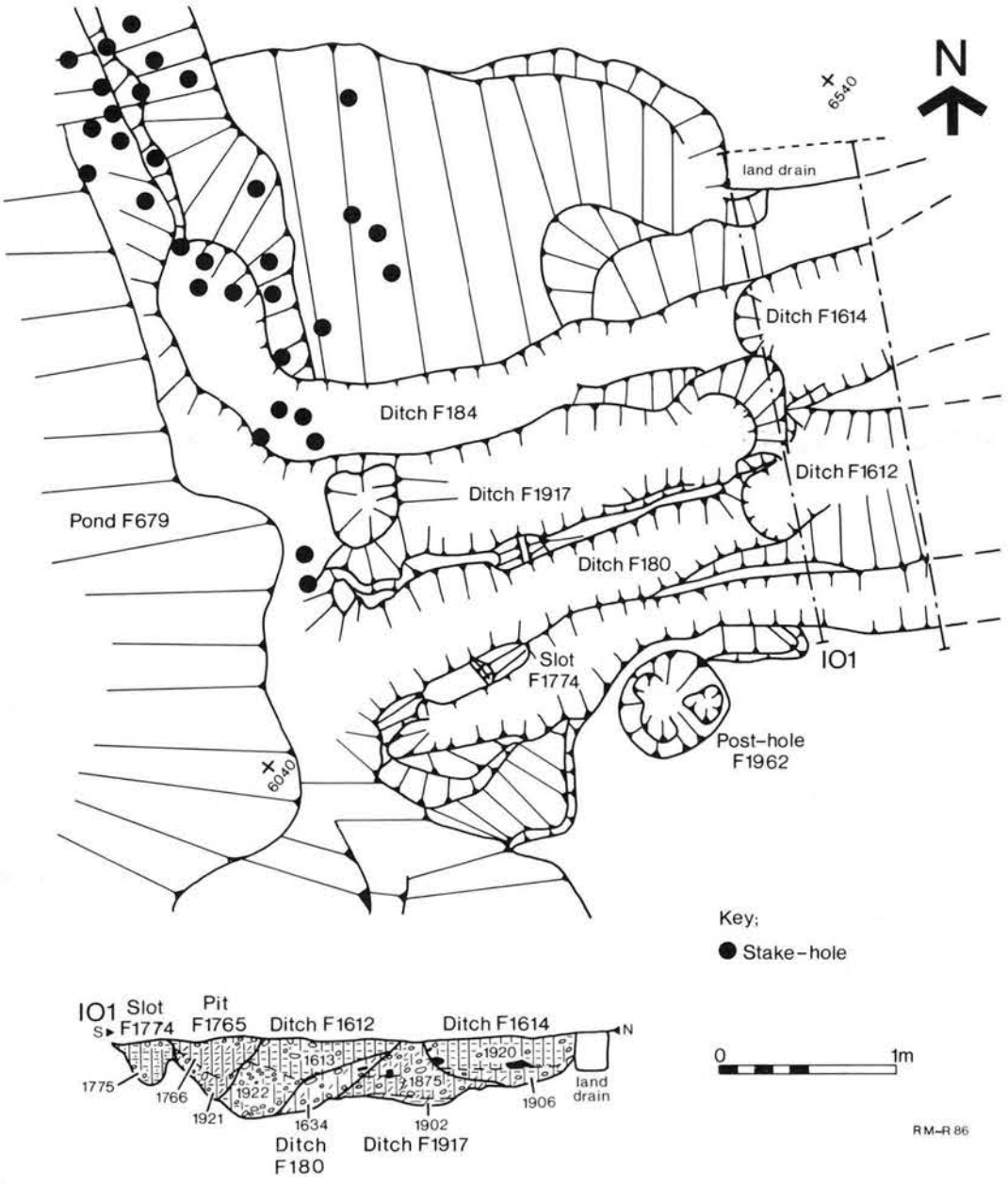


Figure 32 Pond outlet ditches plan and section. Scale 1:40

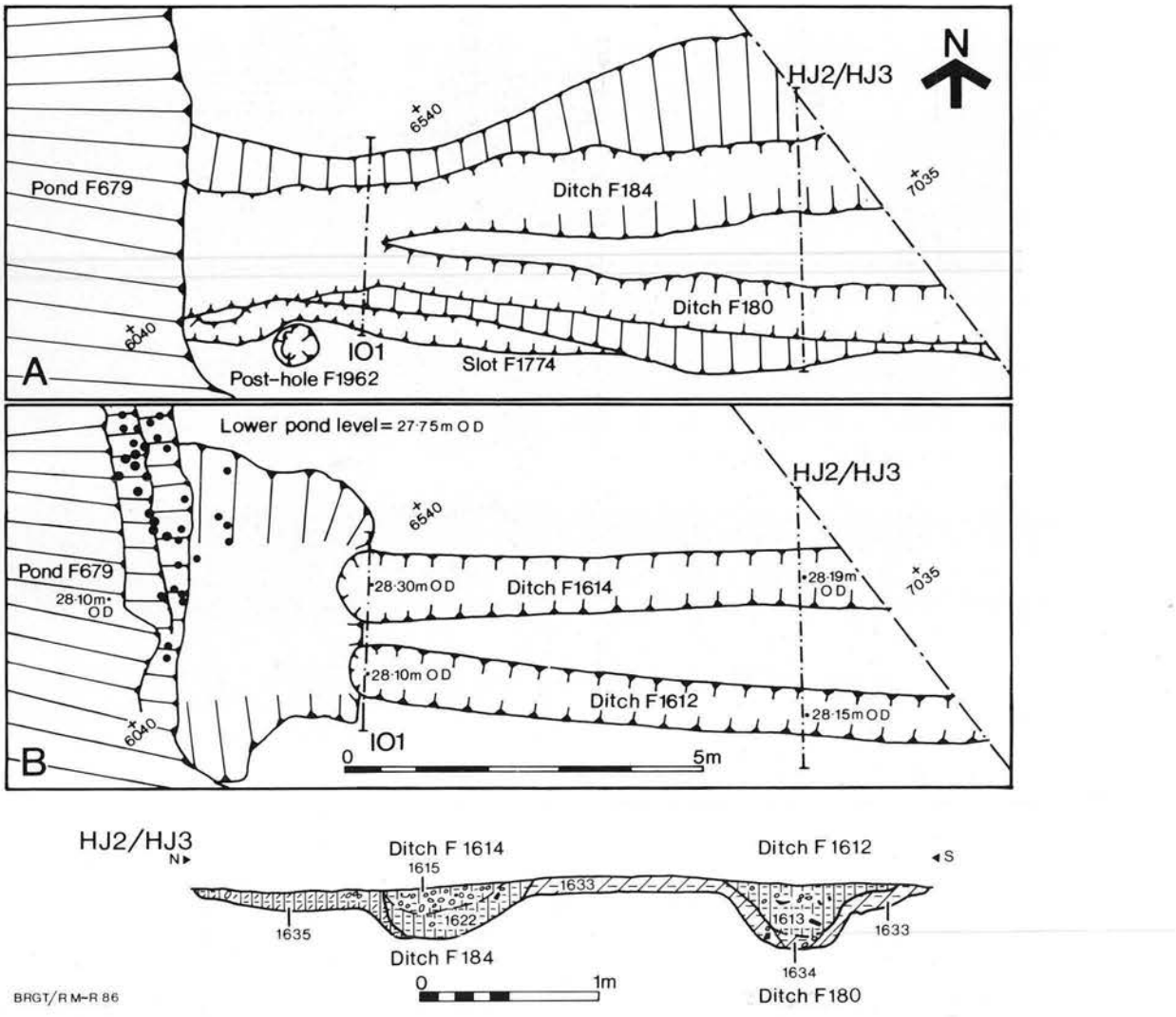


Figure 33 Pond outlet ditch sections and plans: A – Phase 4 or 5: B – Phase 6. Plans scale 1:100; section scale 1:40

Pond outlet ditches F180 and F184
(Figs 30, 32 and 33)
These two parallel ditches diverged beyond the pond. Both were severely re-cut when superseded by ditches *F1612* and *F1614* in Phase 6, but were generally *c.* 0.30m deep from the top of natural. The sequence of fills in each ditch was virtually identical, and fills *1633* and *1635* spread over the ditch edges and merged (Fig. 33, HJ2/3); the ditches were therefore contemporary. Both ditches contained later Roman pottery, yet were re-cut in Phase 6.

Ditch *F180* continued as *F3732* and *F5245* to the east. Segment *F3732* survived to only *c.* 0.15m deep, and was lost in places due to its shallowness. The ditch was sealed by Phase 5 gravel *3553* of depression *F3321*, and contained a copper-alloy brooch (Fig. 52.1) and a bone pin (Fig. 128.5) in the bottom. Further west, ditch *F5245* was up to *c.* 0.70m deep, with almost vertical sides and a flat bottom. Large-sized sand particles in the bottom fills suggest a considerable flow of water through the ditch, yet the edges were not eroded. The bottom and sides of the ditch must therefore have been lined, probably with wood.

The continuations of ditch *F184* to the east were numbered *F3691* and *F5248*. Very little of segment *F3691* survived within depression *F3321*, but ditch *F5248* remained to *c.* 0.60m deep. The Phase 6 re-cuts observed in both *F180* and *F184* were also present in their eastern extensions.

Finds from these features were generally later Roman, but stratigraphy, especially with depression *F3321*, suggests a date in Phase 4 or early in Phase 5.

Slot F1774 and ditch F1917
(Figs 32 and 33)
Slot *F1774* ran parallel to ditches *F180* and *F184*, along the south edge of ditch *F180*. The *c.* 0.30m deep slot had a fairly flat bottom and vertical sides, yet showed no signs of erosion despite being dug into powdered chalk natural. Water presumably drained through the slot, and it is therefore assumed to have been wood-lined. A small amount of septaria was found in the leached fills, and the slot appeared to have been contemporary with ditch *F180*, although it must be said that the opportunity to establish this relationship stratigraphically was missed.

Ditch fragment *F1917* was almost completely obliterated by ditches *F180* and *F184*. It may have been an early pond drainage ditch or sump, or may alternatively have been an elongated pit.

Immediately south of the junction between slot *F1774* and the pond, post-hole *F1962* was *c.* 0.55m deep yet held a post only 0.20m wide. This represents a sturdy post, perhaps associated with slot *F1774* — which appeared to deviate round the post-hole — and with the water regulation system.

Ditch F3559
(Fig. 31, T11)
This substantial, U-shaped profile feature was aligned north-south, and terminated to the north at the line of pond drainage ditch *F3732*. The *c.* 0.55m deep ditch sloped down towards the north, and was sealed by Phase 5 gravel *3553* of depression *F3321*. The ditch would have retained water, and may have served as a sump or drain.

Depressions F1925 and F1888
(Fig. 31, IW1)
Depression *F1925*, found to the south-west of the pond, was a rectangular feature, *c.* 6 by 8m on a north-west to south-east axis. The bottom of the *c.* 0.20m deep feature was cobbled (fills *1953* and *1954*), and, since the cobbles were set into natural, must have been dug down to a clean clay base. The upper fill of the depression, fill *1375*, was a layer of packed, crushed and broken tiles, mainly laid flat, which formed a surface. Some

Plate V Post settings of ?Romano-Celtic temple *F731*

of the tiles of this surface had been worn through use. The tile layer was ultimately cut by a slightly later depression (*F1888*) of unknown use.

Depression *F1925* was later Roman in date, and contained a barbarous radiate and a coin of Gallienus (260–68) in an intermediate fill, but nothing of especially late date was present. A pin ([797]; Microfiche Bronze Report) and a needle (Fig. 61.67), both of copper alloy, were found in lower fills. In addition, over sixty nails were found in the vicinity.

?Temple *F731*
(Fig. 34, Pl. V)
Possible temple *F731* consisted of the post-holes of two and a half sides of a rectangle *c.* 19m east-west by 22m north-south. Out of an estimated total of 38 post-settings (9 by 10), 18 definite and 4 possible examples were located. The post-settings for almost the entire north and east walls were identified, but only 2 out of 10 settings along the south wall and 5 out of 9 on the west side were observed. This was probably due partly to the slope in the south and partly to the fact that the west wall was built along the line of several ditches and gullies, causing very low contrast between the fills of cut features and their surrounds. It might also be suggested that the post-settings grouped as *F731* represent a partial re-building of an earlier structure which otherwise left no archaeological trace.

Assuming a complete plan, the structure was not a true rectangle since, doubtless because of the slope, the east wall was angled at *c.* 95° to the north wall.

North wall
The settings along the north wall were all located, though sometimes with difficulty when redeposited natural had been used in their packing (*e.g.* post-pit *F1335*). A pattern of increasing depth towards the east was evident, the pit and post diameters remaining fairly constant. The settings thus increased in strength as they proceeded down the slope (Fig. 34). This may have been designed as a revetment against the increasing force of an earthen podium.

The north wall posts were smaller and more closely spaced (*c.* 2.00–2.50m) than those of the east wall (*c.* 2.50m apart), and the north-west corner post *F634* lay only *c.* 1m from its eastern neighbour. Between post-pits *F179* and *F1335* of the north wall were the remains of *c.* 0.20m deep slot *F1309* which appeared to link the two post-settings. If such slots originally spanned between all of the posts, it is possible that they were used to house some form of walling — perhaps a revetting for the suggested earthen podium. Traces of similar slots were, however, probably ploughed-out elsewhere.

East wall
In the east wall, only one post-hole next to the southern corner was missing from the sequence. This may be explained using the symmetry of the wall: at the north-east corner, the penultimate east wall post-pit *F1307* was *c.* 0.20m shallower than that (*F1306*) at the corner. A similar situation at the south corner would explain the absence of a penultimate post-hole. The central post-pit (*F488*) in the east wall was shallower than its immediate neighbours and represents an axis of symmetry. The depth pattern — deep; shallow; deep; deep; and shallow holes — is reflected in those settings of the west wall which could be discerned (Fig. 34).

At either end of the east wall, posts (*F894* and *F1308*) appeared to extend the corners to the east. Both of these features were fairly deep (*c.* 0.30m), and may have been used as buttress posts to help revet the downwards and outwards thrust of a roof. However, in the case of post-pit *F894* where the nature of the post was able to be discerned at the south corner, the post appears to have been upright rather than angled towards the corner (Fig. 34, EK1).

The suggestion of a double eastern entrance is evinced by the pairs of deeper posts (*F1312, F1314; F508* and *F727*) on either side of central post *F488*. The artistic reconstruction (front cover) shows the posts of the ambulatory as visible wooden columns which did not support a door, but the extra size of these paired posts could suggest a solid ambulatory wall with large doors attached. Post-hole *F1310* might represent the hinge-post of such a door.

South wall
Other than the eastern corner post, only one post-hole (*F932*) of the south wall was located despite intensive searching, but the shallowness of the south-east corner post-hole might preclude the survival of others if the phenomenon of progressive depth reduction observed in the north wall was present.

West wall
The central post-pit (*F683*) of the west wall was slightly offset, but nevertheless appears to have formed part of the structure. The west wall post-holes were the least obvious, and were mainly observed before excavation through the mottling caused by the use of clay packing. The spacing and proportions of these post-holes and their apparent symmetry with the east wall helps support the idea that they belonged to structure *F731*.

Figure 34 ?Romano-Celtic temple structure *F731*: plan, and sections of selected post-settings. Plan and post-pit representations scale 1:100; sections scale 1:40

Post-setting fills

The fills were fairly varied, but were mainly slightly stony brown silt clays. In general, the fills of the pits were lighter than those of the post-pipes. As has been noted, the features along the west wall were the most difficult to define, being dug into remnant ditch fills of similar nature to the contents of the post-pits and post-pipes of structure *F731*. The fills of *F683* and *F967* were distinct enough to be excavated with some confidence. Post-pit *F677* was less convincing but was still able to be identified and sectioned, but post-pit *F694* was very difficult to define.

Post-pits *F1335* and *F179* contained mainly pure redeposited natural (fills *50* and *69*), but the post-pipes (*F1332* and *F1322*) were filled with easily distinguishable dark brown silt clay loam (fills *49* and *64*). Large amphora sherds used as packing in fill *50* (*F179*) joined similar sized sherds in fill *22* of post-pit *F1306*.

The fills of post-pit *F894* beyond the south-east corner were unusually distinct; a redeposited natural clay with large flint packing (fill *895*), and areas of brown silt loam mottles (*914*). The fill of the post-pipe (*F896*) was a mid-brown silt loam with small tile inclusions. The nature of the packing fills was unusual, and may suggest that this pit was constructed at a different time to the others of structure *F731*.

Dating and finds

The dating of this structure is based on a relatively small amount of pottery, and a major problem has emerged: the finds from the features along the north and west walls appear to be quite early, perhaps as early as the late 2nd century, while the much more abundant finds from the east wall are more likely to be late 3rd or even 4th century in date. This dual dating is confirmed by the presence of building rubble along the east wall but not elsewhere. Although it would be feasible to accept that the east wall was built and used later than the north and west, it is equally plausible and certainly more likely that all of the post-settings were dug at the same time, but that those of the east wall lay in an area where broadly contemporary rubbish deposits were more abundant. The north, and particularly the west wall lay in areas of earlier activity, and this may be reflected in the finds.

All of the six coins found in the features attributed to the structure came from post-pit *F727* and its post-pipe *F729*. Three of the coins were barbarous radiates, and the dating of the post-pit would appear to be late 3rd century at the earliest. None of the pottery from the east wall features need be particularly later than this time, and, in the absence of diagnostically 4th-century ceramics, a later 3rd-century date is proposed for the structure.

Apart from the six coins from *F727* and *F729*, the only potentially votive find from these features was a jet bead (Fig. 76.1) from fill *1024* of post-pit *F727*. This virtual lack of residual votive material, even in the post-pipes, is noteworthy, considering the amount of such material which might be expected to have been present in the vicinity were structure *F731* a temple. However, an earthen podium would have contained a large volume of soil which might, on disuse of the structure, have quickly sealed and masked the post-pipe voids and prevented votive material from entering the holes. The putative podium would also have been composed of soil containing relatively early material which, if this then filled the post-pipe voids, would give the impression of an erroneously early date.

Slots F1001 and F1020

(Figs 25 and 35)

Slot *F1001* ran north-south, parallel to slot *F2846* of Phase 3 structure *F181* (Fig. 25), and, because of its similar nature to the other two slots

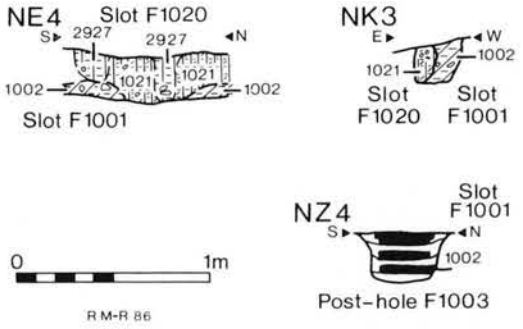


Figure 35 Sections of slot *F1001* and tile-packed feature *F1003*. Scale 1:40

of the structure, was originally thought to have been part of the structure. However, slot *F1001* may have been a little later in date, and is therefore considered here as a separate feature. The slot survived to *c.* 6m long, but had been truncated to the north. Within the *c.* 0.30m deep slot, especially along its eastern edge, was a second inner slot, *F1020* (Fig. 35, NK3), within which traces of stake-holes could be defined (Fig. 35, NE4).

The presence of wallplaster in fill *1002* of slot *F1001* strongly suggests a later Roman date, in contrast to the stratigraphically early date for structure *F181*. The slot has therefore been tentatively assigned to Phase 4.

The south end of the slot was cut by small ?post-hole *F1003*, which contained a group of four horizontal bricks (*pedales*) *c.* 280mm square (Fig. 35, NZ4; see Brick and Tile Report). The tiles were set in brown soil with unusual mottles of red clay. The clay did not occur naturally on the site, and may have been imported for the manufacture of daub or even pottery. The purpose of this arrangement of tiles is not clear, but it is unlikely to have been used as a pivot for a door or gate, since the tiles exhibit no signs of wear or cracking through stress.

Substantial post-settings

Post-pit F1977 and post-pipe F1988

(Fig. 36)

Pit *F1977* was rectangular, *c.* 1.50 by 1.20m and up to 0.95m deep, with a flat-bottomed, U-shaped profile. This large post-pit lay at the south-west corner of the pond, and cut through an early cobbled pond fill but was sealed by pond fills of Phase 6: the feature may have been extant in Phase 4 or 5. Post-pipe *F1988* was *c.* 0.30m in diameter. The post-pit was situated along the line of axis of ?temple *F731*.

Crushed pottery was found in the bottom primary fill *1997* of the post-pit, probably trampled-in during the construction of the feature. This was sealed by redeposited natural packing fill *1996* and silt loam *1978*. The post-pipe was filled with dark brown silt loam *1989*, which survived as a vertical soil-mark, showing no sign of the removal of the massive post. Later Roman pottery was present in the fills, and a bronze pin with a pine-cone shaped head (Fig. 56.35) was found in the top fill of the post-pit.

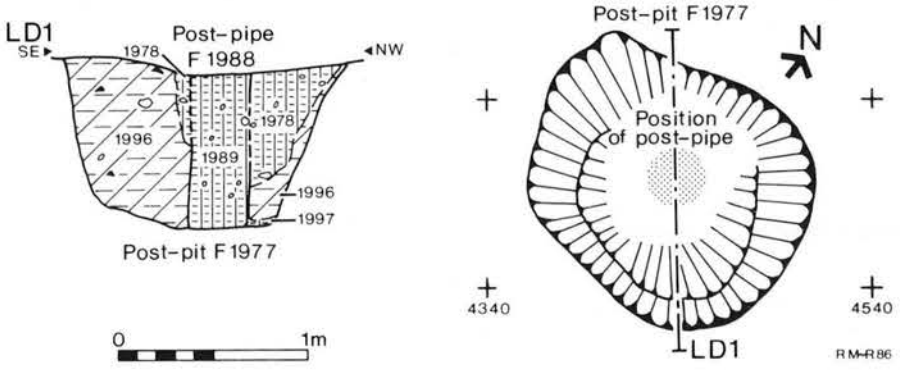


Figure 36 Substantial post-setting *F1977* plan and section. Scale 1:40

IX. Phase 5: Early 4th century

Introduction

(Fig. 149)

It is suggested that religious activity on the site continued into the early 4th century, and that the remains of a structure, characterized by an apsidal ditch (*F3203*), represent an unusual form of Romano-Celtic shrine. This structure was associated with an adjoining depression, *F3321*, and with an unusual deposit of animal bones (in ditch *F3323*). A single-flue updraught pottery kiln was also in operation during Phase 5.

Major ditches

Ditch F837 and associated features

(Fig. 22, IE2)

Ditch *F837* superseded Phase 3 ditch *F1594*, and was of almost identical nature. Ditch *F837* was *c.* 0.60m deep and ran north-south from an area of natural springs. The ditch was numbered *F240* to the north of the main excavation area, and joined with Phase 4 ditch *F823* at its south end. It is quite likely that the whole of ditch *F823* was operative at this time, and ditch *F316* (Phase 3) must also have been present as a substantial hollow. It is clear from the pre-1978 excavations that ditches *F837* and *F823* were at some stage contemporary, both features sharing the same layer of tiles in the middle fills.

Ditch fills of *F837* attributed to Phase 5 were very silty and generally quite sticky, doubtless the effect of fine silting from running water. The later upper fills were much darker and less silty. Later Roman pottery was present in the lower fills, and a coin of Constantine I (317–320) was found in fill *1601*. Upper fills of depression *F1749* (p. 29) were probably contemporary with the ditch during this phase, and contained a long-handled bronze object (Fig. 63.73).

Apsidal ditch *F3203* and associated features

It is quite likely that ditch *F3203* represents the position of an early 4th-century building, perhaps a temple, although the plan and constructional details of this structure are uncertain (Pl. VI). Apart from the ditch itself and a beam-slot (*F3644*) within it, two rows of post-holes along the north and south sides of the enclosed area and two or three roughly central post-holes may represent the last traces of a timber structure. A slot, *F3431*, was also associated with the structure, and other minor slots of this date may also be of relevance.

Ditch F3203

(Figs 37 and 38)

This feature, creating an east-west aligned enclosure, was originally interpreted as the beam-slot of a structure with a slight eastern apse. However, for a number of reasons discussed below, the feature may have been a simpler form of enclosure. The total circumference of the ditch was over 80m, consisting of a rectangle *c.* 24 by 12m, with rounded corners to the west and an eastern apse. In the portion with the best undisturbed profile (the north side), the ditch was *c.* 1.30m wide and up to *c.* 0.70m in depth. Within that length the fills varied considerably, and the ditch was therefore excavated in segments, each of which took the feature number assigned to the ditch in that particular area. The segments were located in the following positions (Fig. 37):

F3204 - Eastern: south side to the east of the modern field ditch;
F3204 - Western: south side to the west of the modern field ditch;
F1910 - The majority of the west end;
F4073 - North-west corner;
F3879 - North part of the west side;
F3635 - East side and part of north side;

The following features were also present:

F3431 - Internal division at the east end;
F3644 - Slot along north side of ditch *F3203*, especially in segments *F3635* and *F3879*;
F3618 - (Not illustrated) A ditch which was earlier than, but parallel to ditch *F3204*.

The segments varied greatly in the amount of disturbance present. Segment *F4073* was fairly undisturbed. Segments *F3879* and *F3635* were a little more disturbed round the east and south corner, while partition slot *F3431* was largely undisturbed. The west part of *F3204* exhibited significant mixing of a late date, especially in the upper fills, while segment *F1910* was very mixed indeed, and had clearly been radically altered from its original form.

Slot *F3644* was located in the north and parts of the east and west sides, and appeared to indicate the line of a timber beam. In places, the beam had been bedded on clay, sand or tiles, and a sandy layer was present as a primary fill in other segments where traces of the beam-slot had been removed.

In the northern and eastern parts, ditch *F3203* was U-shaped in profile and its bottom was, despite the surrounding natural slope, almost horizontal throughout. The ditch edges generally sloped at a steep angle of *c.* 60°. The depth of the ditch varied between *c.* 0.50 and 0.70m along the north side, to almost absent in the south-east corner. The width was generally between 1.00 and 1.30m where it survived. In contrast to ditch *F3203*, slot *F3431* (see below) followed the slope of the land.

Three fill horizons were represented: pre-ditch fills; lower ditch fills; and upper disturbed fills.

i) Pre-ditch fills: these were fills of ditch *F3618* (see below), and may thus be unrelated to the apsidal enclosure.

ii) Lower ditch fills: undisturbed fills of the apsidal ditch *F3203* were present in all but the western side, and included sandy fills which probably formed the base for beam-slot *F3644*.

iii) Upper disturbed fills: these occurred mainly in the western segments, and contained large amounts of demolition rubble, including large lumps of septaria, box tiles and mortar, presumably derived from building *F4044*: the western upper fills therefore probably indicate the nature of the late Roman masonry building (Phase 6). The upper fills along the eastern part of the south side probably belonged to the large depression *F3321*, although that depression was probably also contemporary with the apsidal ditch at one stage (see below). Segment *F3879* was observed to cut segment *F4073*, a relationship which confirms that re-cutting took place at the western end.

During a rainstorm in the 1980 season, a silt of almost 100mm formed on the bottom of ditch *F3203*, showing the susceptibility of the natural chalky boulder clay to erosion. The nature of the fills in all of the segments shows that the ditch had never been exposed to such conditions, and must have been backfilled to some extent shortly after it had been dug.

In the area of depression *F3321*, the bottom of the depression and of ditch *F3203* were both sealed by a gravel layer (*4328*) — an important relationship which indicates contemporaneity at some stage.

The west part of segment *F3635* began with fill *3760* — the continuation of fill *4112* from segment *F4073*. This sandy fill was sealed by blue-brown silt clay *3755* which was sealed by fill *3741* on the north side and by *3742* on the south (Fig. 39, I51). These two pale sandy silt clays were observed in plan, and defined the bottom of beam-slot *F3644* which was *c.* 0.10m wide in this area (Fig. 37). Above this, the fills appeared disturbed — perhaps the result of removing the beam. Elsewhere along the north side of enclosure ditch *F3203*, the beam-slot was less well defined, although the original packing was able to be separated from the backfilled slot material in most places.

The central and eastern portions of segment *F3635* were fairly similar to the west segment, being more mixed on the inside edge of the ditch than on the outside (Fig. 39, F52). This anomaly may suggest that the beam from slot *F3644* was extracted in a way which damaged most of the packing fills on the internal edge. Fills *3623* and *3743* (not illustr.) contained large tiles laid flat across their tops, probably stabilising the bedding for the beam. A layer of flat tiles also covered fill *3650* (Fig. 39, H41), and the tiles were themselves covered by the packing fills at the edges. The uppermost fill *3588* (not illustr.) contained much oyster shell and domestic debris, and was able to be followed for some distance along the north side of the ditch.

In the eastern part of segment *F3635* (Fig. 39, F83), the bedding for the beam was also present. The two mottled edge fills consisted of fill *3651*, which exhibited a clear junction with slot *F3644*, and fill *3654* which extended onto the central segment.

Wallplaster was absent from the undisturbed lowest fills of the segments, but was usually present in the upper fills. It is possible that this material was derived from some phase in the life of building *F4044*.

The finds from the less disturbed segments differ greatly from those which were entirely re-cut. The fills of the former segments were almost devoid of wallplaster, and produced fewer finds, particularly of building rubble. These less disturbed fills may be interpreted as 'primary' to the ditch, and are regarded as packing material for slot *F3644*.

A total of seventeen coins, probably all barbarous radiates, were found in packing fill *3588* of ditch *F3203* (Pl. VII), closely associated with the deposit of foetal bones *F3697* (see Bone Report). Two bronze scrap fragments and a bronze hook ([1141]; Bronze Report, tool (b)) were also found in that context. Other fills of the initial phase of ditch *F3203* contained few votive or possible votive finds: two bronze scrap fragments (fill *3830*); bronze bowl fragments (Figs 57.50 and 61.68); and a single 3rd or 4th-century coin (fill *3828*). In addition, ditch *F3618* contained a fragment of scrap bronze and a bone pin (Fig. 128.14).

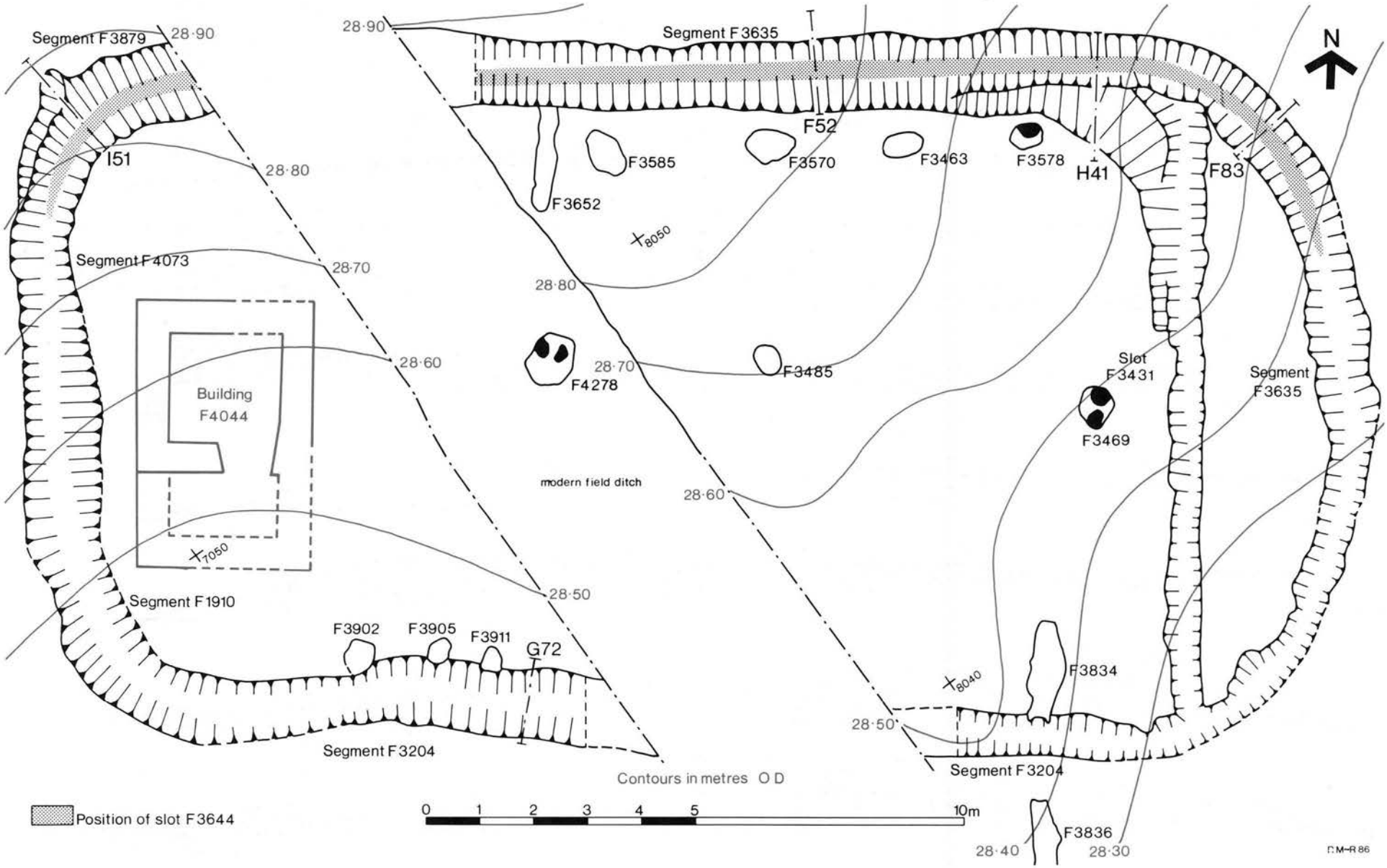


Figure 37 Apsidal ditch *F3203* plan, showing associated features. Scale 1:100

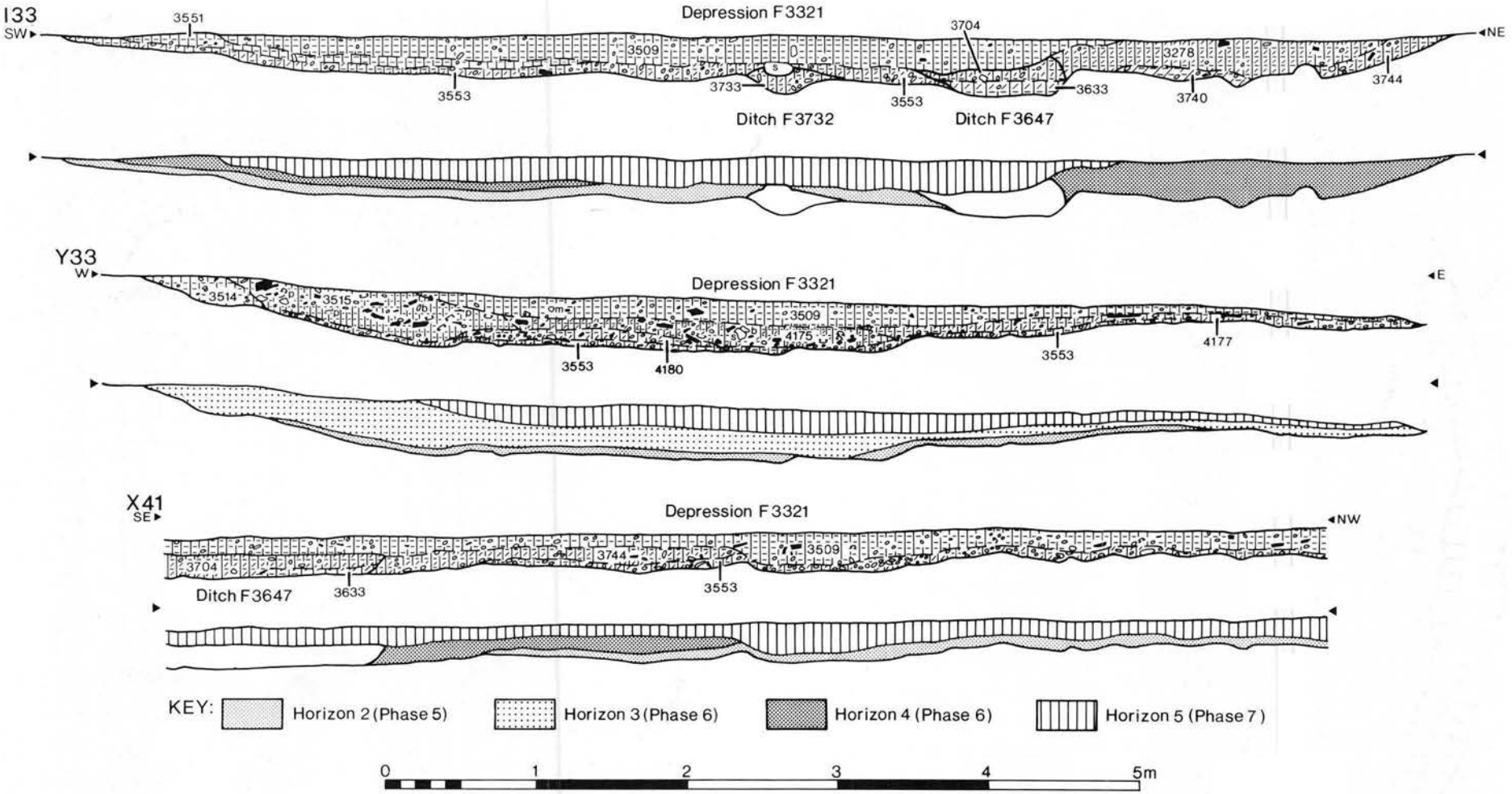


Figure 38 Sections across depression *F3321*. Scale 1:40

Plate VI Apsidal ditch *F3203* from the west, showing stone building *F4044*

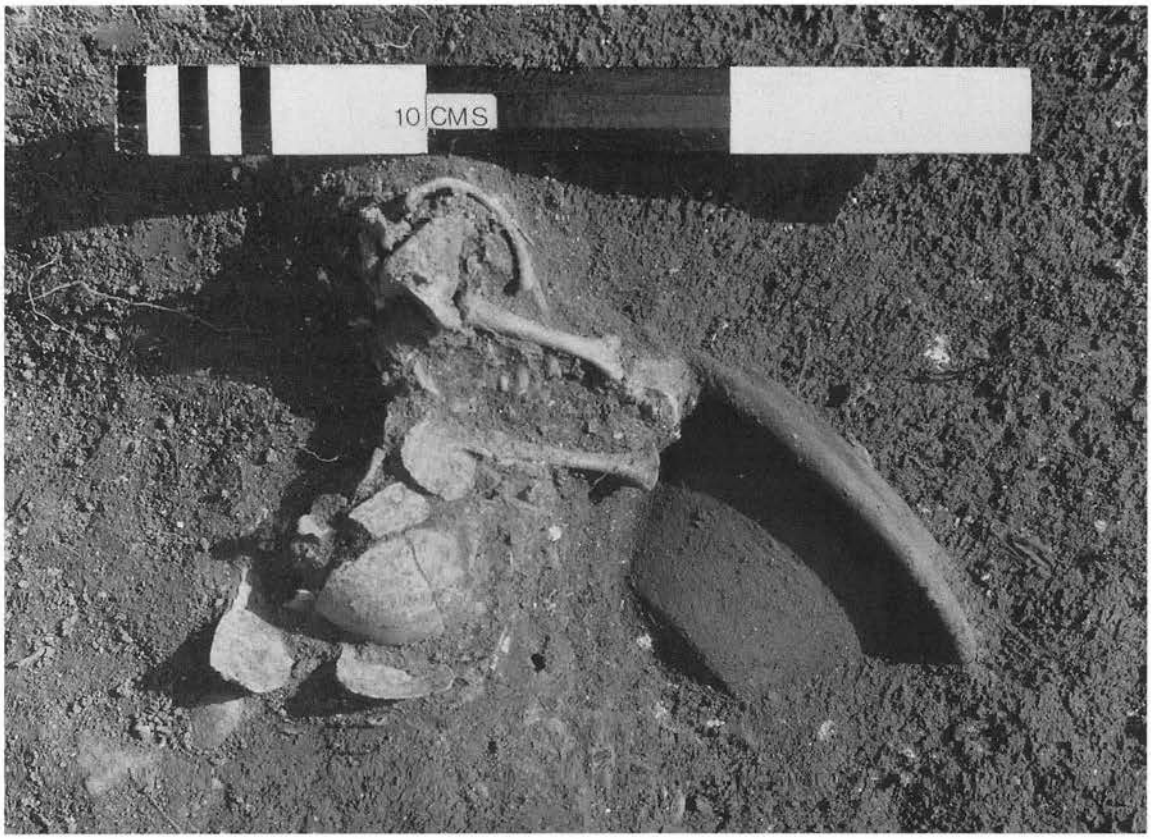


Plate VII Infant burial *F3697*

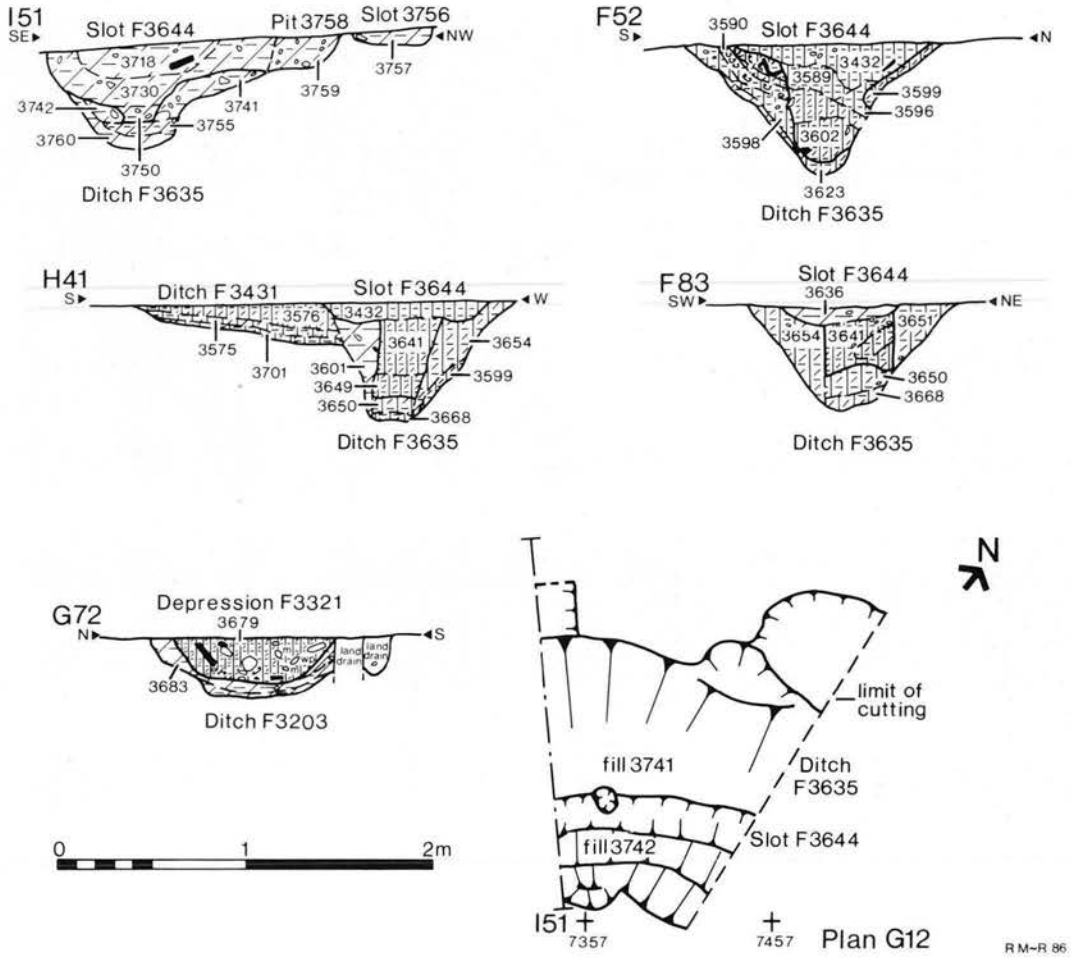


Figure 39 Sections of ditch *F3203* segments and plan of north-west corner showing position of slot *F3644*. Scale 1:40

This relatively small number of smallfinds suggests that little votive material was present at the time of the ditch filling. Slot *F3644* contained equally little material of possible votive nature, but the combined evidence would suggest some limited votive activity at this time.

Pottery from segment *F3204* of ditch *F3203* is of late 3rd or 4th-century date, and the glass and single 3rd or 4th-century coin from the fills agree with this dating. Stratigraphically, the upper fills of segment *F3204* were overlain by late depression fills, and a date within the range early to late 4th century is indicated. A date in the earlier part of that century is proposed for the construction of the ditch and for its fills, although a later 4th-century date for the upper fills is possible.

The relatively few pottery finds from the fills of segment *F3635* include some early Roman sherds, but the predominant dating evidence is late 3rd or 4th century. The mortar from the fills was probably derived from roofing, and some of the tiles exhibited traces of mortar. The small hoard of barbarous radiates found in fill *3588* provides a *terminus post quem* of AD 270–84 for that context.

Slot F3644

(Figs 37 and 39)

The beam-slot *F3644* was located along the whole of the north and some of the east and west sides, but had been disturbed or lacked contrast with the surrounding fills elsewhere. Section I51 (Fig. 39) suggests a *c.* 0.15m wide, 0.10m deep beam which followed the curve of the north-west corner (Fig. 39, plan G12). Further east, the slot became more difficult to discern, particularly since the beam may have been removed in this area causing disturbance: however, a *c.* 0.25m wide slot was suggested (*e.g.* Fig. 39, H41).

Slot *F3644* was investigated in four segments with broadly similar, often dark loamy fills. Most of the segments of *F3644* contained an upper sinkage fill *3432*. The slot itself was initially associated with ditch *F3203*, but the upper slot fills were later (Phase 5–6).

The majority of the finds from the slot suggest a late 3rd or 4th-century date. Only four small sherds of oxidised red-slipped Oxford colour-coated ware are at variance with this dating: they came from fill *3649* and may have been intrusive. Upper general fill *3432* contained Alice Holt grey ware, suggesting a late 4th-century date. A coin of Tetricus I (270–73; fill *3726*, not illustr.) and a decorated jet bead (fill *3718*) came from lower fills.

Ditch F3618

A possibly independent ditch, *F3618* (not illustrated), ran parallel to and on almost the same line as ditch *F3204*. This *c.* 0.30m deep ditch was stratigraphically earlier than the main ditch, but might have been the original line which was later re-cut.

Ditch *F3618* contained three recognisable fills. The lowest fill, *3208*, was a grey silt clay with mottles — a typical interface with natural. Above this, fill *3621* was less leached but with a similar density of mottles, while the top fill (*3616*) attributed to ditch *F3618* was much darker, with mortar inclusions — suggesting a secondary deposition.

The pottery from these fills is all later Roman, and they also contained much building rubble. These finds are therefore similar to those in segments of ditch *F3203* and an earlier date in the same phase (Phase 5) is suggested.

Slot F3431

(Figs 37 and 39)

Slot *F3431*, a possible internal partition to ditch *F3203*, was a shallow feature (*c.* 0.20m; Fig. 37) which was apparently cut by the ditch (Fig. 39, H41). Unlike the main ditch, the bottom of *F3431* followed the natural slope. This might suggest that the slot was independent of ditch *F3203*, perhaps associated with the two series of internal post-holes of the building (see below). However, the slot extended beyond the lines of these posts both north and south, and appeared to curve in the north to respect the line of the main ditch. The slot thus appears to have been integrated with ditch *F3203*, positioned at the spring of the eastern apse. It would appear that the rows of post-holes and the slot were present before ditch *F3203*, although this apparent stratigraphic relationship may have been due to re-cutting of the ditch. The posts and slot *F3431* may have been part of an internal arrangement to support the roof of a building in this area. Slot *F3431* may therefore have held a beam in which upright timbers were set.

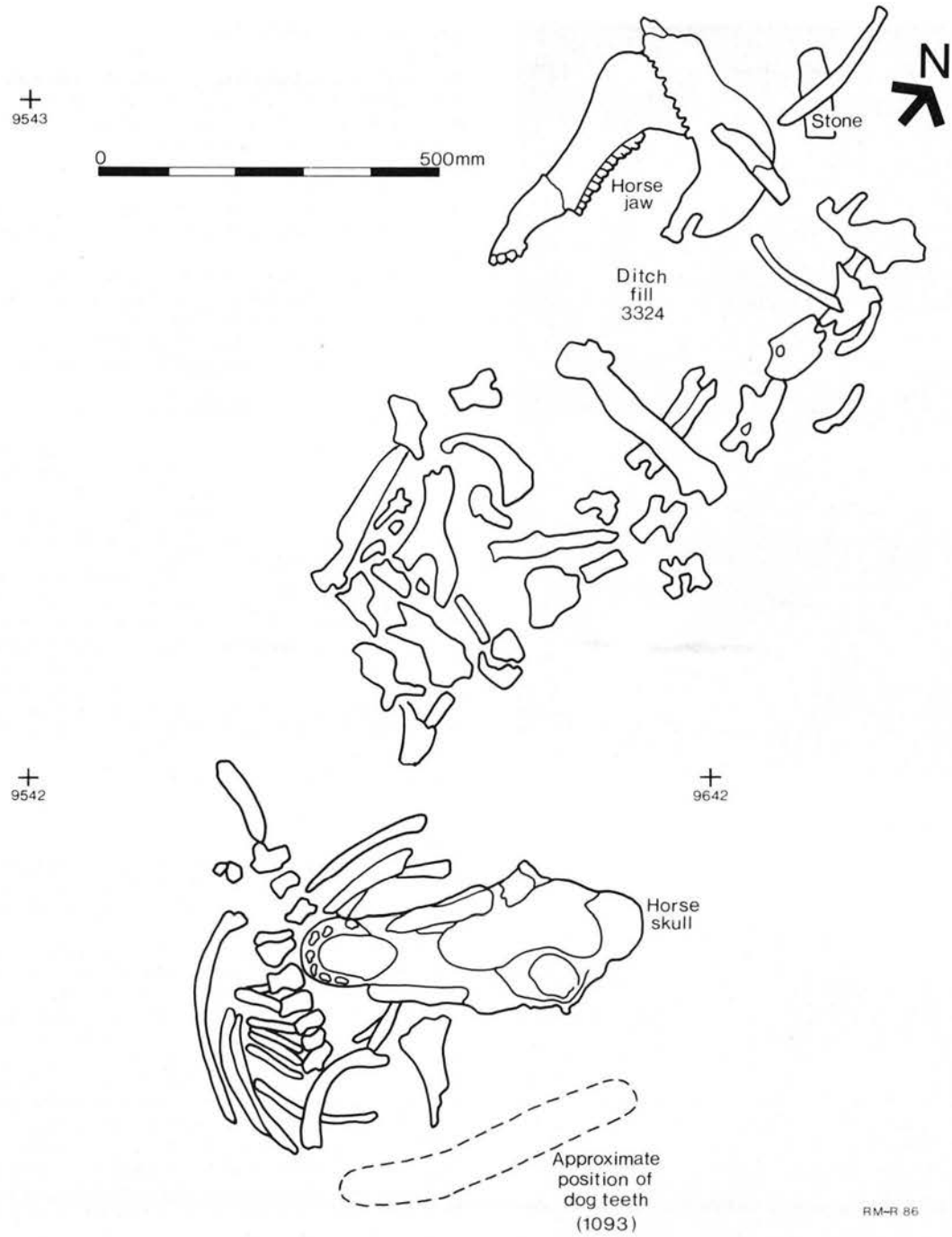


Figure 40 Plan of bone deposit *3587/3597* within ditch *F3323*. Scale 1:10

The finds from this feature indicate a 3rd-century date, and its relationship with ditch *F3203* confirms a date before or early in Phase 5. However, slot *F3431* cut lower fill *4177* of depression *F3321* which contained later Roman pottery and a coin of AD 293–6. Although there is a possibility that the later finds from the depression fill were trampled and that the slot was earlier, the apparent relationship between slot *F3431* and apsidal ditch *F3203* suggests some contemporaneity, and an early 4th-century date is suggested. Slot *F3431* was certainly cut by Phase 6 slot *F3325*.

Post-hole groups within the enclosed area
(Fig. 37)

Groups of post-holes ran along both sides of the area enclosed by ditch *F3203*, and two post-holes were also found roughly central to the long axis.

On the north side of the enclosed area, post-holes *F3463, F3570, F3578* (post-pipe *F3457*) and *F3585* ran *c.* 0.50m south of the ditch. The oval post-holes were between 0.10 and 0.25m deep, and the suggested post-pipes were usually difficult to discern. These features, set *c.* 2.50m apart, contained no closely datable finds.

In the east part of the south side of the enclosure, post-holes *F3902* and *F3911* were also *c.* 2.50m apart, and could represent a fragment of the southern line which had elsewhere been destroyed by later activity. Intermediate post-hole *F3905* was of similar nature, and may also have belonged to this group. The corner post of this series may have been obscured by a later pit in that position, and the same is true for the west corner of the northern line. The southern post-holes were cut by ditch *F3203* or a re-cut thereof.

Perhaps because of their lack of depth, few other internal post-holes survived. Possible post-pit *F3469* was *c.* 0.18m deep and contained ?post-pipe *F3591*. Possible post-pit *F4278* was less central, but would have been very substantial — up to 0.60m deep from the base of ploughsoil — had it not been cut by a large modern field ditch. Post-hole *F3485* was also present near the middle of the enclosed area. None of these central features could be closely dated within the Roman period.

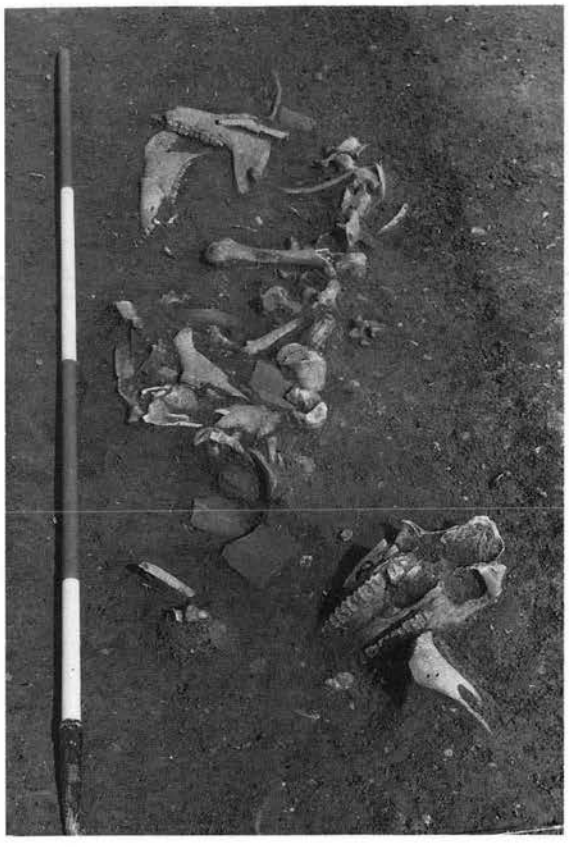


Plate VIII Animal bone deposit *3587*

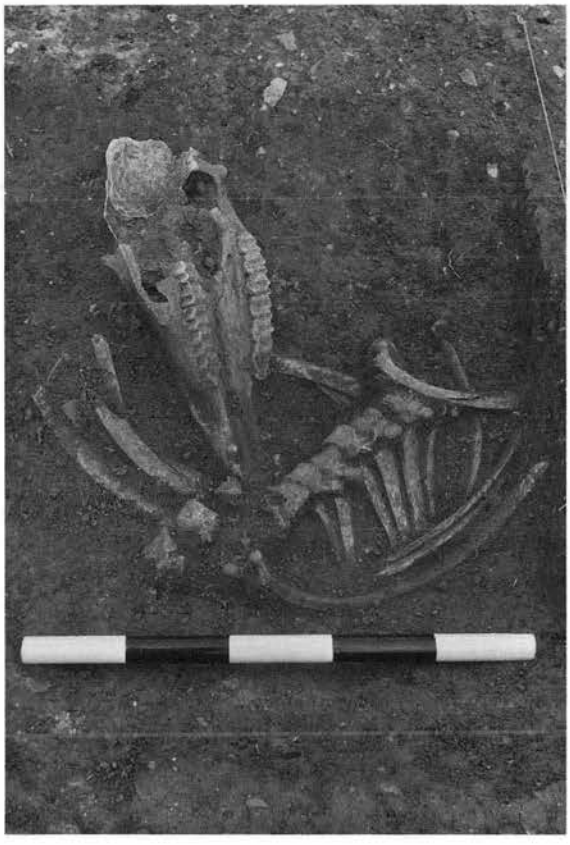


Plate IX Animal bone deposit *3587/3597*

Slots associated with ditch F3203
(Fig. 37)

Two short slots were found to run perpendicular to the main axis of the ditch and may represent structural details. Slot *F3834* had a U-shaped profile, and ran across the south side of the enclosure, probably continuing as slot *F3836*. There is little doubt that this slot was partly contemporary with the ditch, although it was stratigraphically earlier than the final ditch fills in this area. This provides useful dating evidence for ditch *F3203*, since the ditch cut slot fill *3835* which contained a coin of Allectus (293–6) and also fill *3873* in which a barbarous radiate coin was found.

A second perpendicular slot, in this case entirely within the enclosed area, was found at the north side. Slot *F3652* was c. 0.10m deep and appeared to have been cut by the ditch.

Little interpretation can be placed on these slots, except to suggest that they were probably associated with the structure represented by ditch *F3203*.

Ditch F3323

Parallel to early Roman ditch *F3245*, ditch *F3323* terminated to the south at almost the same point. The north-south aligned ditch was *c.* 0.30m deep, but became deeper towards the south, nearer depression *F3321* (see below). The ditch, which was stratigraphically later Roman, contained later Roman pottery and a bronze sheet fragment, and may have been contemporary with ditch *F3203*.

The ditch contained, within its upper fill *3324*, a deposit of animal bones (Fig. 40) which appears to have had some religious significance. The semi-articulated vertebrae of a horse were aligned with the ditch, with part of the lower jaw to the north, and the main part of the head to the south. A few other large horse bones were found in the vicinity in a largely disarticulated state (Pls VIII and IX). Partly within the mouth of the horse was the torso of a sheep, while *c.* 0.20m to the south was a string of dog teeth. The teeth were found in a line and about 20mm apart: although no signs of binding were identified, it is quite likely that the teeth had been joined with some organic material.

Kiln *F278* and structural features
(Fig. 41)

The single flue updraught kiln had three main components: stoke-hole *F282*; flue *F283*; and oven *F284* (Pls X and XI). The overall length of the kiln survived to *c.* 3.70m, the stoke-hole being to the east and the oven to the west.

The stoke-hole was a roughly oval feature, *c.* 1.90m long and 1.00m wide, and survived to a depth of *c.* 0.20m. The flue was *c.* 0.70m long and about 0.30m wide, and also survived to a depth of 0.20m. The oven was almost circular, with an internal diameter of about 1m, and had a central pedestal (*F704*) which survived to a height of *c.* 0.20m above the oven floor and began to taper, suggesting that this was close to its original height. The kiln floor was composed of two layers of fired clay (Fig. 41, BN1 and EN3, fills *281* and *1188*), indicating a secondary phase of use.

Within the oven was a series of six or eight stake-holes (collectively numbered *F2100*), which were probably designed to frame the dome of the oven during the first firing. The carbonised stakes survived (see plan on Fig. 41), and were roughly square in section, with sides of 25mm. These lay beneath the second kiln floor, embedded in the primary floor *1188*, and were paired — the north and south pairs *c.* 0.20m apart, the west pair *c.* 0.40m apart. The north stake of a possible eastern pair was not found.

Burnt clay lower walls and floors of the oven survived intact, but it was clear that much of the superstructure had been removed, probably largely through ploughing. Most of the burnt sides of the flue survived, although the flue roof was somewhat disturbed.

Pits were found beneath both the oven and stoke-hole (Fig. 41, BN1 and EN3): *F2561 c.* 0.20m deeper than the oven floor, and *F2410 c.* 0.20m deeper than the stoke-hole bottom. These appear to have been dug during the construction of the kiln. It is possible that the clay for the lining was derived from the pits below the kiln, although the surrounding natural would have suited equally well. The reasons for lining the kiln and for digging the pre-kiln pits are therefore unclear.

The fill (*2411*) of pit *F2410* beneath the stoke-hole was a grey-brown silt clay loam with a few flecks of charcoal. This was sealed by, and was certainly not contemporary with the lowest fill of the stoke-hole, fill *2388*, a *c.* 40mm thick layer of charcoal with a few mottles of yellow clay, which probably represents an accumulation during firing. The top stoke-hole fill (*279*) was also rich in charcoal, but the black fill also contained dense inclusions of pottery. Fill *279* thus represents a backfilling of the kiln with debris, including wasters, presumably derived from a nearby kiln dump.

The walls and floor of the flue were of locally derived natural chalky boulder clay, being fired hard near the flue-hole but less scorched away from the centre of the flue. The side fills of the flue extended beyond the

Plate X Kiln *F278* during excavation

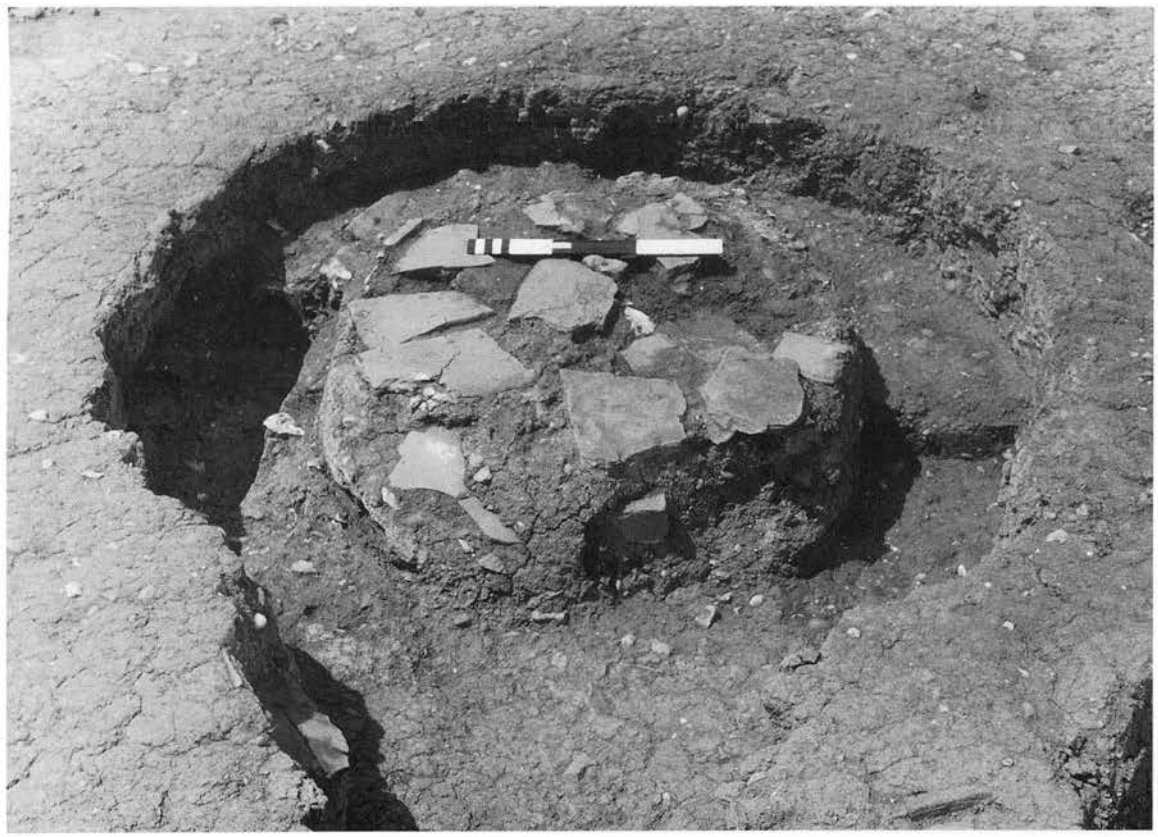


Plate XI Kiln oven *F284* showing construction of pedestal *F704*

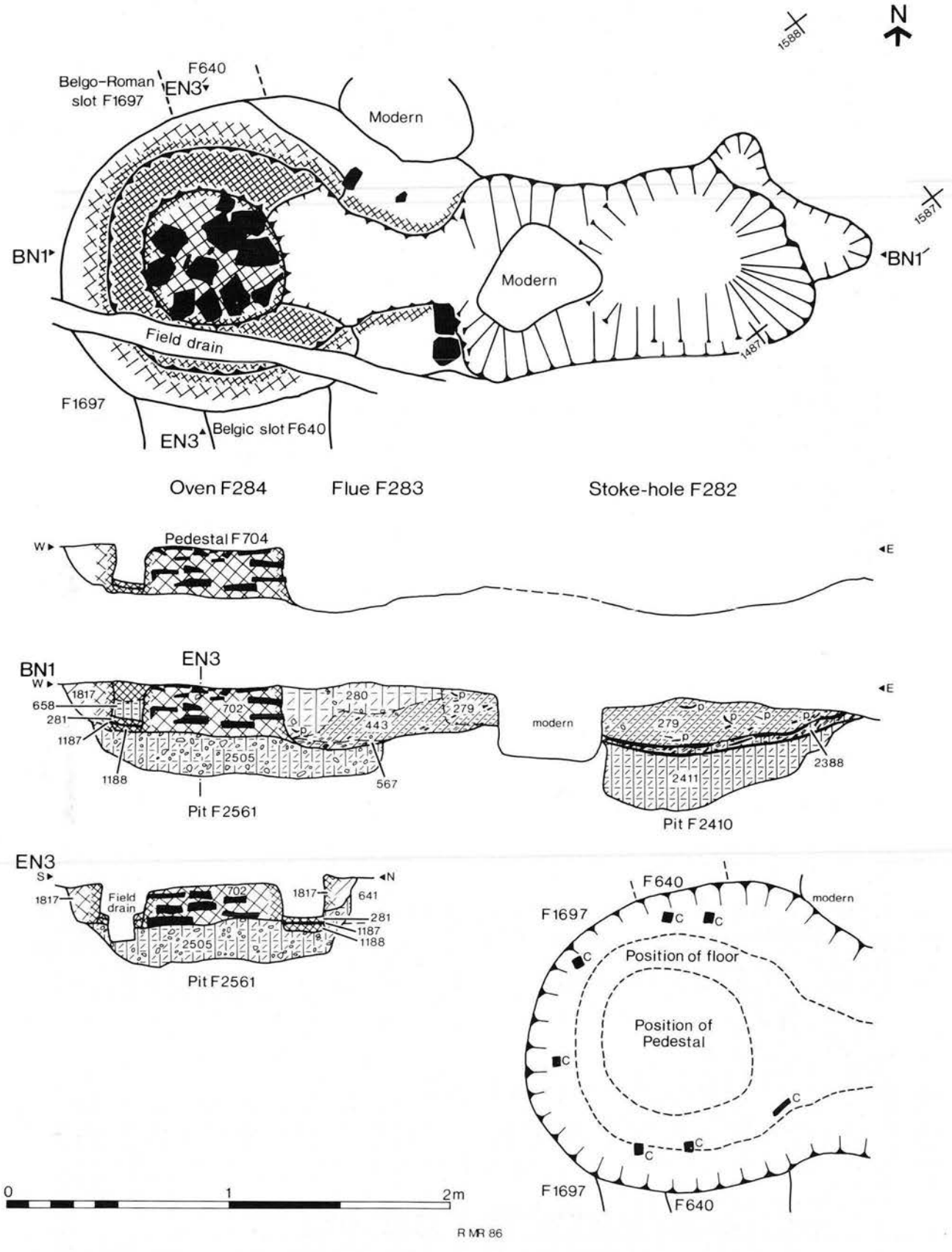


Figure 41 Kiln *F278* plan and sections, and plan of charred stakes *F2100* found in oven *F284*. Scale 1:25

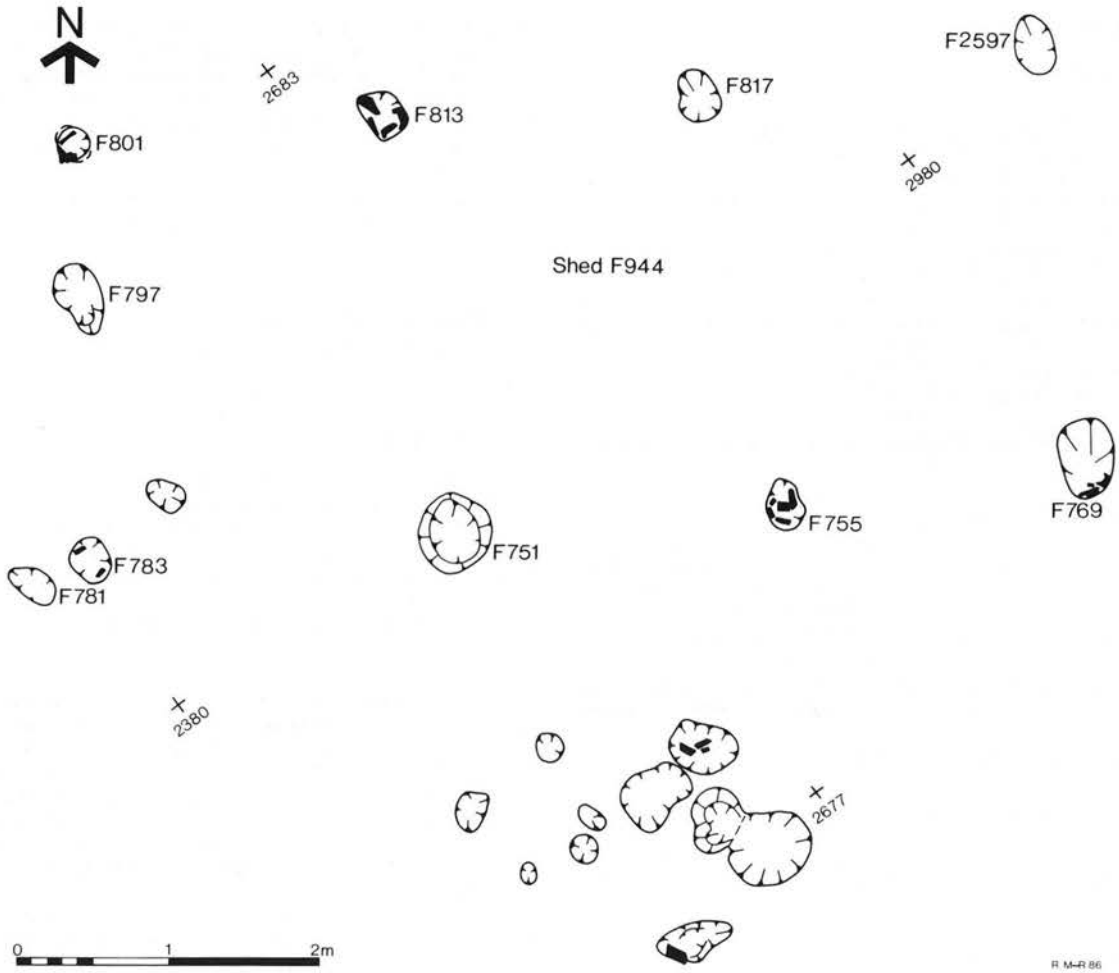


Figure 42 'Shed' *F944* and associated features to the south. Scale 1:50

flue hole proper, and it was clear that the hole constructed for the flue had originally been dug the same width as the stoke-hole and was then packed with dirty clay. On the south side of the hole, fill *2102* (not illustr.) was a light brown silt clay with tiles at a pitched angle behind the burnt edges, forming a key for the chalky boulder clay brought in to coat the edges. Inside the flue, fill *443* was dark brown or black silt clay with a few charcoal and daub inclusions. The flue was sealed by slumped fill *280*, possibly fallen from above.

Pit *F2561* below the oven contained brown silt clay loam *2505* with fairly dense pebbles. This was sealed by thin fill *1816* (not illustrated), a yellow natural chalky boulder clay lining on which the whole oven was based. A similar fill, *1817*, was used to line the oven edges. The first oven floor, *1188*, and the outer edges of the oven were the result of firing the lining fills, and the spectrum of scorching *in situ* was exhibited. Above the fired floor *1188* was an intervening thin layer of charcoal (*1187*) before the second oven floor *281*. Floor *281* was fired light grey on the upper surface, suggesting that extremely high temperatures had been achieved. The bottom fills of the flue extended into the oven, but elsewhere oven fills *658* and *427* filled the space between the pedestal and the oven walls. Fill *658* was a black-brown silt loam with a high density of pottery and charcoal inclusions. Top oven fill *427* (not illustrated) was a grey-brown silt loam with large lumps of burnt clay, but no identifiable pieces of kiln furniture.

The central pedestal was composed of chalky boulder clay which was given two layer numbers on the basis of marginal colour differences. Fill *703* (not differentiated on Fig. 41) was a scorched orange clay, while fill *702* above was scorched red. Both of these fills contained large horizontal tile fragments which stabilised the pedestal.

The pear-shaped kiln is paralleled by kilns 9 and 27 from Colchester (Hull 1963, 3 and 158) and included a sunken oven. Vivien Swan writes (pers. comm. 1979): 'It is very unlikely that the kiln pedestal ever supported a floor of firebars or even a floor of any kind. Kilns with raised oven floors and with non-supportive pedestals, such as this example, are particularly characteristic of Essex and Suffolk, and their distribution just spills over into north Kent. They run right through from the early to mid-2nd century to the late 4th, and were sometimes used simultaneously alongside the better known and more sophisticated types of kiln with proper raised oven floors.'

Pits *F2410* and *F2561* are assumed to have been constructional features of the kiln, and have been assigned to the same phase. The kiln was archaeomagnetically dated to around AD 300 (Pottery Report), and the ceramics present could support a late 3rd-century date. It is therefore unlikely that the kiln was contemporary with ?temple *F731* as shown in the artistic reconstruction (front cover). This dating is supported by Hull's dating of the comparable Colchester kilns (Hull 1963, 176–8): Hull put kilns 9 and 27 at *c.* AD 300, although this dating is at present in question (V. Swan, pers. comm.). The dating of the kiln products is dealt with in the Pottery Report (p. 170).

Shed F944
(Fig. 42)

A group of post-holes to the east of the kiln formed an east-west aligned rectangular structure, *c.* 6.50m long by 2.80m wide. The post-holes were particularly small, and between 0.10 and 0.20m deep. Several of the post-holes retained packing tiles, from which the dimensions of the original rectangular posts, *c.* 80 by 50mm, could be determined. A central post-hole was present at the west end, but a corresponding hole in the east was absent, perhaps being destroyed by later activity in the area. There was no indication of an entrance, but the two post-holes at the south-west corner might indicate a repair or replacement to the structure at that point.

The post-hole fills were all very similar; dark brown silt clays with a few small pebbles and mottles. Too little pottery was present for a reliable date, although sherds of later Roman wares were found. The proximity of the shed to the kiln, and their broad contemporaneity and similar alignment lead to the suggestion that they were associated. The shed may have been used in part of the pottery-making process, and a group of nebulous post-holes, some tile-packed, to the south of the shed is likely to have been associated with the structure.

Depressions

Depression F3321
(Fig. 39)
This depression, which originated in the early Roman phase, came into full use during Phase 5. At this time the depression was completely covered with a *c.* 100mm thick layer of gravel, fill *3553*. This layer (Horizon 2), which replaced and partly sealed earlier gravel *4097*, was variable in consistency, with scattered islands of mottled soil, but was generally composed of small to medium pebbles with occasional tile inclusions. It is more than likely that gravels *3553* and *4097* were confused during excavation. Gravel *3553* was found to fill irregularities in the bottom of the depression: these undulations were caused by the solution of the chalky natural and were not made by human agencies.

Like the earlier gravel *93* of depression *F2409*, gravel *3553* contained seven Palaeolithic hand-axes. Since some of the axes were found in areas where gravel *4097* was absent, it may be assumed with confidence that the hand-axes did not emanate from the earlier gravel. Thus the hand-axes in Phase 5 gravel *3553* represent a separate deposition from those in Phase 3 depression *F2409* fill *93*.

A large amount of later Roman pottery was present in gravel *3553*, although very late Roman pottery was almost entirely absent, with the exception of a single small intrusive sherd of late Oxfordshire colour-coated ware. Of the ten coins found in this horizon, half were closely datable: the latest of these were two coins of Allectus (293–6). The gravel is therefore dated to the early 4th century, as opposed to the 3rd-century date of gravel *93* in the other depression.

The function of the depression *F3321* at this time is not entirely clear. The gravel was presumably laid down in order to provide access to the pond drainage ditches, and is likely to have been used in association with apsidal ditch *F3203*, which was probably contemporary.

Pond F679 and depression F2409
Although no pond contexts have been specifically assigned to Phase 5, it is quite likely that it and its water regulatory ditches were in use at this time. Likewise depression *F2409* must have been extant, if not in use, in the early 4th century.

?Road surface *F4418* and ?roadside ditch *F4414*
Part of a gravelled surface survived ploughing through being protected by a post-Roman footpath. The surface may have belonged to a north-south aligned road or track leading towards depression *F3321* and apsidal ditch *F3203*, but its alignment and function are uncertain. The gravel, fill *4442*, comprised a *c.* 200mm thick layer of small to medium-sized pebbles with some Roman tile inclusions. None of the finds are closely datable.

Steep-sided ditch *F4414* was *c.* 0.65m deep and ran on a north-south alignment to the east side of the possible road surface. Although the upper fills of the ditch were later Roman, it is likely that the ditch and road were in use at an earlier date.

X. Phase 6: Mid-4th century

Introduction
(Fig. 150)
Three major features dominated the site at this time: a baptismal font (*F1348*) in depression *F2409*; a semi-masonry building (*F4044*); and the large artificial pond *F679*. There are few secure indications that the site was enclosed by ditches at this time, although a group of ditches to the south of the main area were broadly contemporary. It is possible that the main period of activity in the pond was slightly later than the other Phase 6 features, since it was the first context in which substantial amounts of Oxfordshire red-slipped colour-coated wares were found.

Major enclosing ditches
A group of three large ditches (Fig. 28, E71/2) were found to the south of the main site, and may have helped to enclose the religious area at this time. Ditch *F3158* was over 1m deep, with asymmetrical sides to its rounded bottom. The south side was angled at 60°, but the north side sloped less steeply and included a step along its length, giving rise to a depression-like feature. A similar east-west aligned ditch found during watching briefs to the west was numbered *F4424*. This *c.* 0.65m deep feature was probably a continuation of ditch *F3158*, as was an eastern extension, *F5221*, which contained late Roman shell-tempered ware.

Ditch *F3150* was stratigraphically 4th century, and was *c.* 0.50m deep, while ditch *F3154*, in the same area, was *c.* 2m wide and 0.40m deep, and contained late Roman shell-tempered pottery. The latter ditch may have extended to the east but would have been cut by Phase 7 depression *F5202*.

It is unlikely that these three ditches were open at the same time, and they should perhaps be considered as re-alignments of the same basic boundary.

Font *F1348*
(Figs 43 and 44; Pls XII and XIII)
The font was divided into three constructional phases:

A. Octagonal tile font with tile walls;
B. Octagonal font with wooden walls;
C. Square font with wooden walls.

The font was associated with a number of other features, the most significant of which are described individually below. On first examination of the excavated evidence, the font was thought to have been a pit-like feature, dug into the backfills of depression *F2409* (Fig. 43, AC1/GA1). This proved to be wrong since, although fills of the depression were stratigraphically later than Phase C of the font, the same layers were also found to seal font Phase B features.

Font Phase A
The basis of the font was the tile floor (*F190*) which was set in *opus signinum*. The ground had clearly been cleaned down to natural before the construction began, and it is likely that the whole of depression *F2409* was open at this time. Although the characteristic, laminated tiles of the octagonal wall of Phase A survived to only two courses in height, remains of mortar on the top surface of the upper course suggest that the wall may originally have been higher. This suggestion is supported by the presence of laminated wall tiles in font features of subsequent phases, probably indicating that tiles from the wall had been removed at the end of Phase A. Sump pit *F2513* may have been present in this original phase, but gully *F2437* was probably not used until some time after the sump had been dug.

During its initial phase, therefore, the font was a free-standing octagonal tile structure, probably *c.* 0.40m deep, about 1.35m wide internally and *c.* 1.90m externally: the sides of the octagon were *c.* 0.70m (Fig. 44, Phase A and isometric view). The floor was composed of two sizes of tile, *c.* 190 by 190mm (*pila*) and *c.* 425 by 290mm (*lydion*), set in a bedding of *opus signinum*-like crushed tile, while the walls were made from *pedales* of unusual laminated fabric — a type which was also used to floor building *F4044* (see below).

The tiles of the font wall were laid before the *c.* 20mm thick floor bedding was poured in, and the floor was then laid. Gully *F2244* (see below) ran round the outer edge of the font wall, and was probably a constructional feature.

Font Phase B
The tile walls of the font were reduced in height to just two courses in Phase B, and the wall was replaced by an octagonal timber lining (Fig. 44, Phase B) with a post-hole at each angle of the original tile octagon.

Phase B post-holes were re-cut in three cases: post-holes *F2715*, *F2719* and *F2584* were cut by post-holes *F2695*, *F2689* and *F2576* respectively (Fig. 43, plan). Although fills of some of the post-holes appeared to be covered by the font walls, the holes probably slightly undercut the wall tiles in order that the posts could be positioned immediately next to the wall. Where they coincided, the post-holes in Phase B positions were seen to be cut by the holes of the Phase C square.

Soakaway drain *F1349* appears to have belonged to this phase, fills of post-hole *F2229*, but not of its post-pit, being sealed by drain fill *2105* (Fig. 43, AC1/GA1). Sump pit *F2513* appeared to cut the top fills of Phase B post- pipes *F2586* and *F2515*, but was cut by post-hole *F2576* later in the same phase. The pit must therefore have been in use during Phase B.

The earlier post-holes of the octagonal phase were packed with large laminated tiles with pink mortar adhering, doubtless derived from the Phase A wall, set in a grey-green silt clay matrix. The post-pipes of these post-holes were filled with mid-grey silt clays, and were easily distinguishable from the packing. In most cases, a deep pointed post-pipe was clearly visible. Some of the post-hole fills were darker grey, and most contained mortar fragments. The re-cut post-holes and pipes were almost identical to the primary ones, and the fills were also similar, although the post-pipe fills tended to be a little darker.

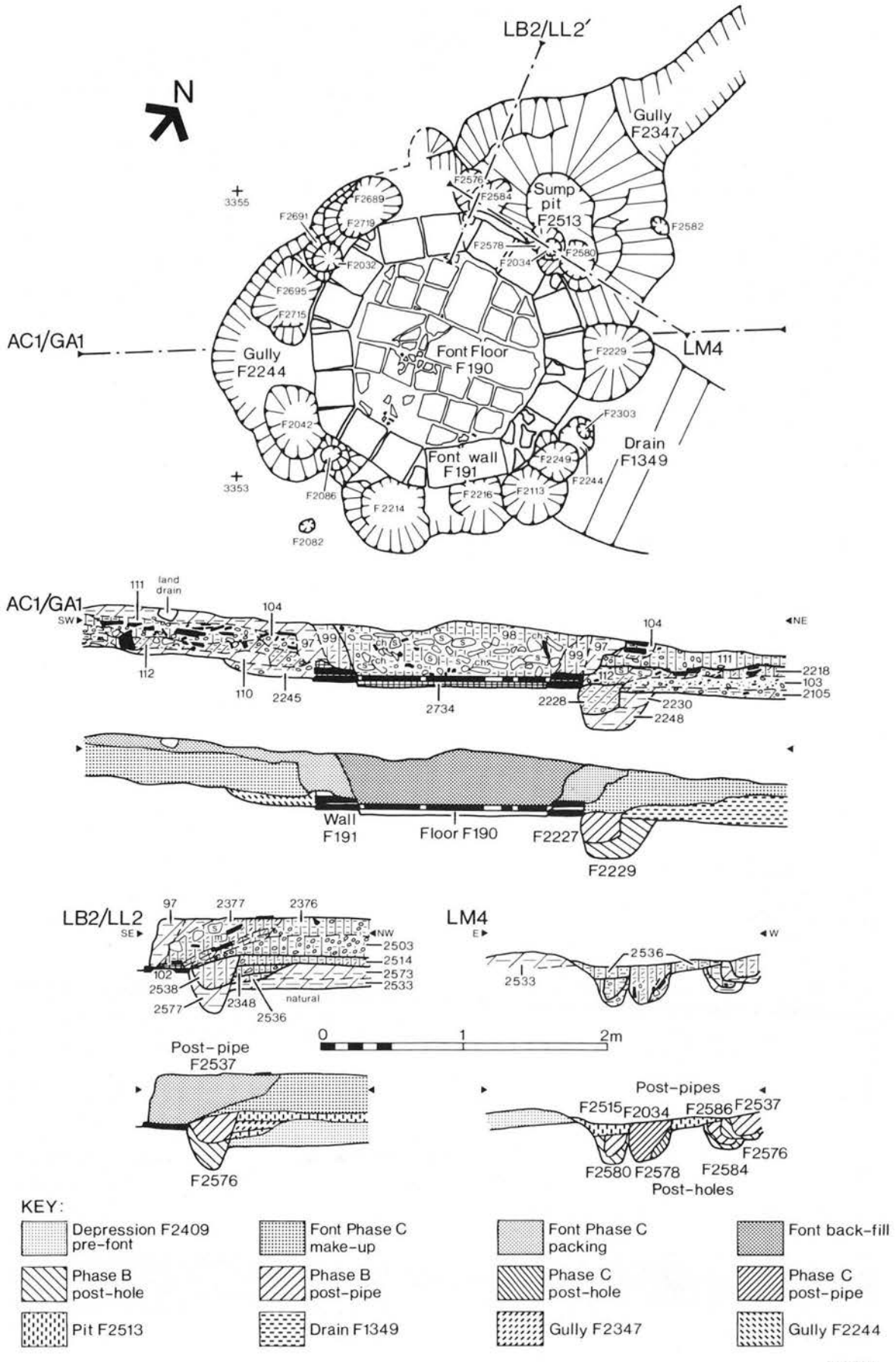


Figure 43 Font *F1348* plan and sections. Scale 1:40

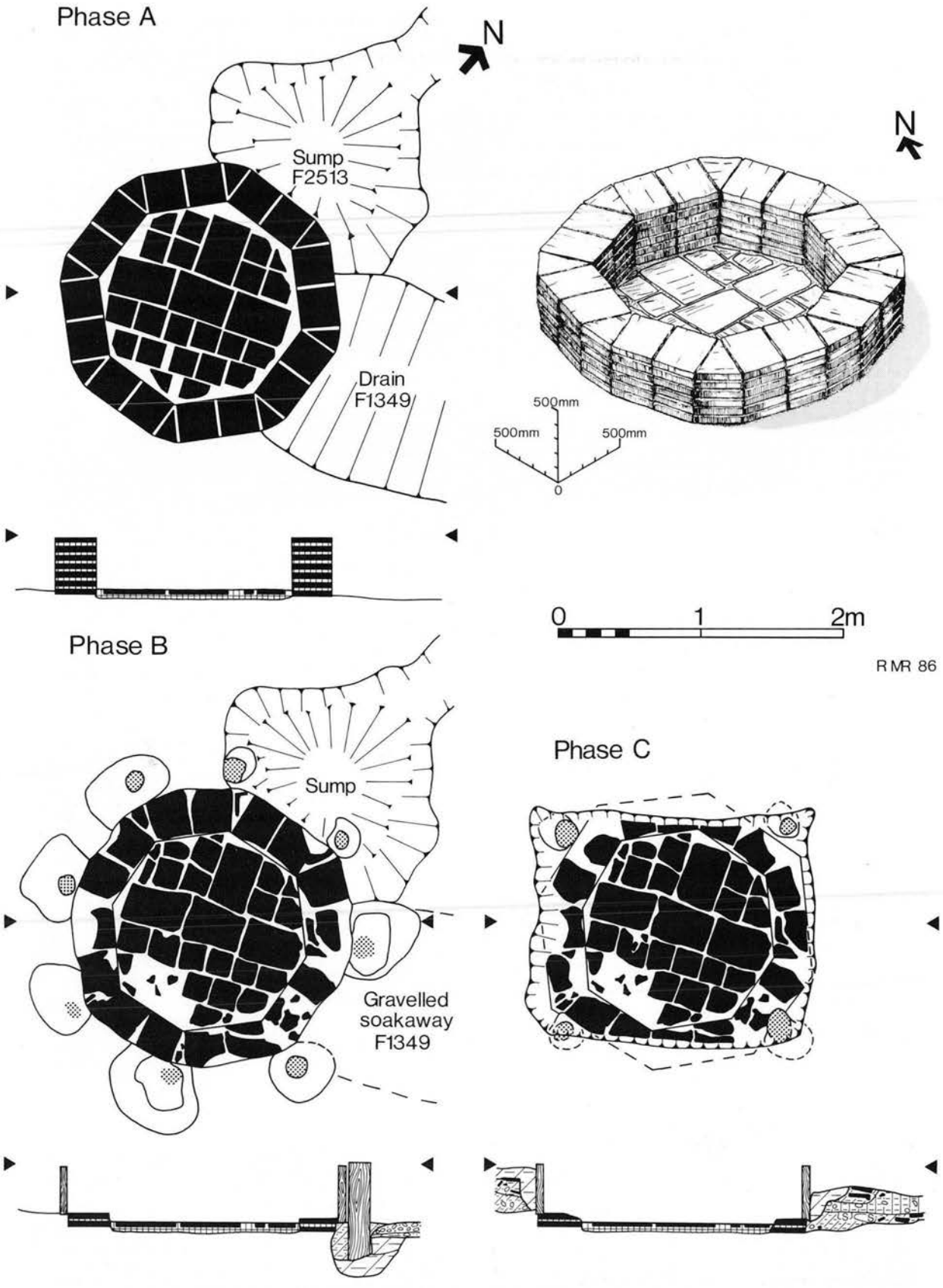


Figure 44 Font *F1348* phase plans and isometric view. Scale 1:40

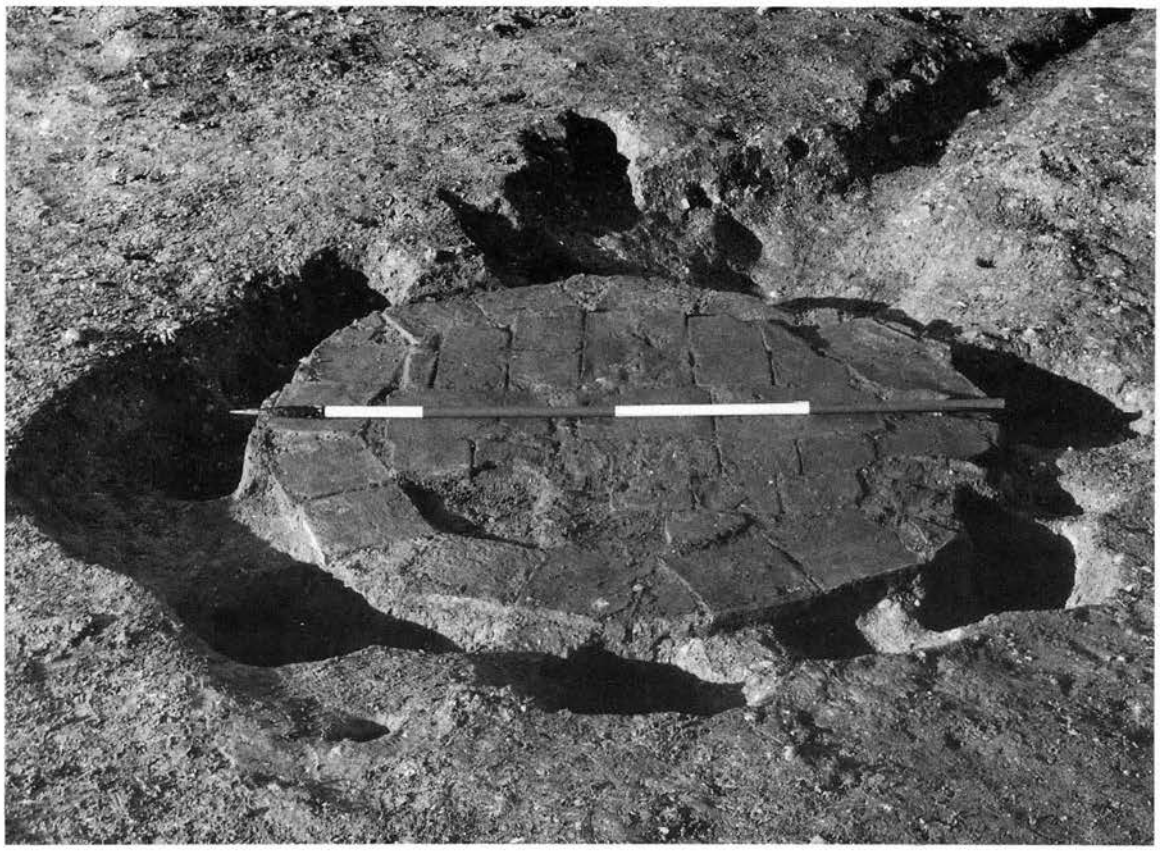


Plate XII Font *F1348* after excavation

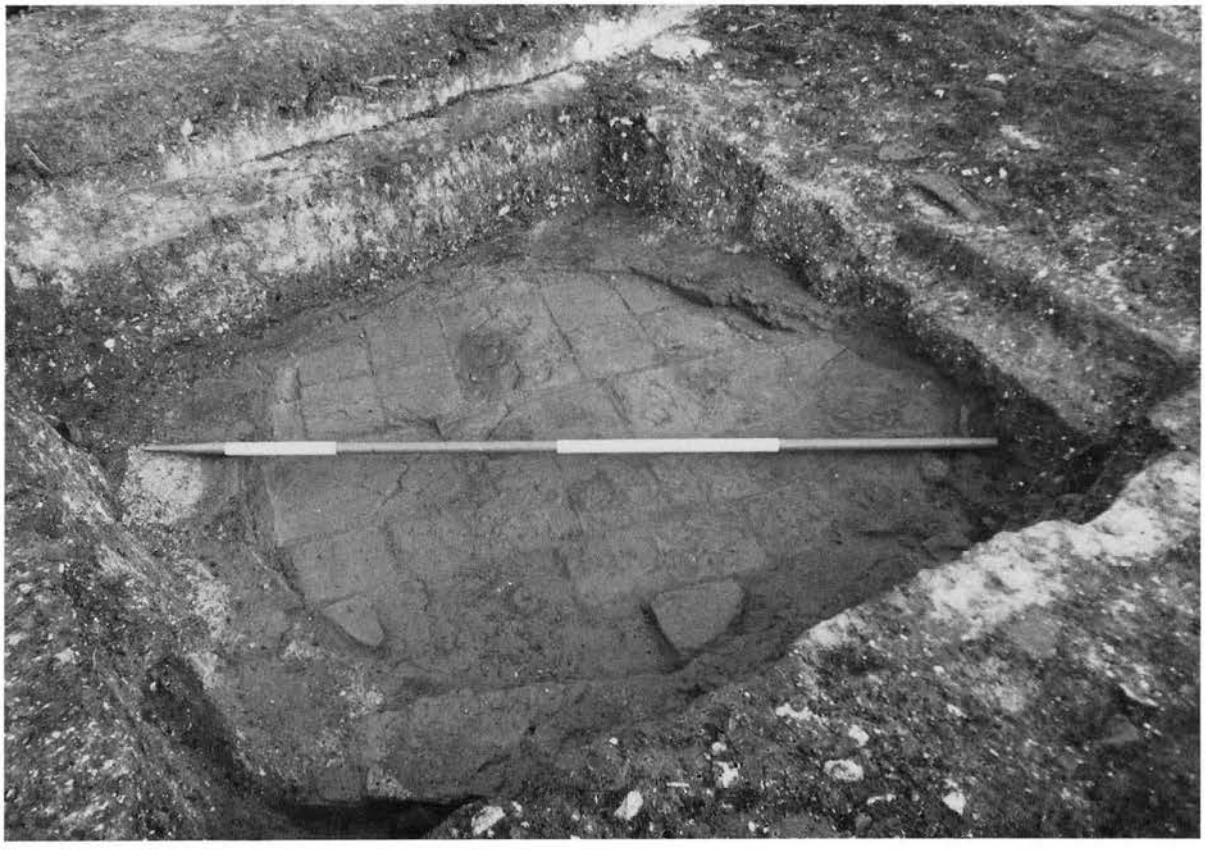


Plate XIII Font *F1348* Phase C (*F2540*)

The drain (*F1349*) of the font was dug during this phase, thus the east side of the structure cannot have been sealed by depression fills at this time, and the font would still have been free-standing. During Phase B, water was supplied to the font by means of gully *F2347*, terminating in pit *F2513* which may have served as a sump.

The following post-holes, ordered by position, comprised font Phase B (post-pipes in brackets):

2042, 2715 (2713), 2719 (2717), 2584 (2586), 2580 (2515), 2229 (2227), 2113 (2038), 2214 (2212), and re-cuts *2695 (2693), 2689 (2687), 2576 (2537)*

Font Phase C

(Pl. XIII)

The post-holes of Phase B were sealed by gravels *112* and *2503* of the font depression (Fig. 43, AC1/GA1), implying that the bulk of the backfilling of the depression took place in Phase C. This backfilling raised the level of the depression by about 0.35m, and gave the font the appearance of a pit (Fig. 44, Phase C). Tiles protruded from surrounding depression fills (*e.g.* Fig. 43, LB2/LL2, 2377) in order to stabilise the chalky packing material (fill *97*) of the Phase C pit. Since the bulk of the fills of depression *F2409* were thus relatively late in the sequence, great care must be taken with dating. It is quite possible that the depression was open for a long period before Phase C, and a good deal of contamination may have affected the earlier levels.

The final constructional phase of the font took the form of a simple *c.* 1.60 by 1.80m rectangular wood-lined box. Although the posts of the square represented the sides of the font, no attempt was made to retain the original octagonal shape. As in Phase B, the post-pipes were V-shaped and often very pointed, pipe *F2032* being especially deep (*c.* 0.50m) and only 0.15m wide. In two cases (*F2032* and *F2036*), the posts seem to have been driven into the bottom of the post-holes for added stability.

The following post-holes, ordered by position, composed font Phase C (post-pipes in brackets): *F2578 (F2034); F2691 (F2032); F2086 (F2036); F2249 (F2111)*.

The post-hole fills were quite varied, usually pale grey or grey-green silt clays, often with a few flecks of mortar and tile fragments. The post-pit fills were much more homogeneous dark grey silt clay loams with mortar, tile and some oyster shell inclusions.

Font dating and finds

Relatively few finds came from the post-holes of the font, and most dating evidence was based on the clear stratigraphic relationships with fills of depression *F2409*. Were the font features to be dated solely on their finds, a 4th-century date would have been possible, but the latest 4th-century pottery was rarely present. A 4th-century coin was found in fill *2033* of post-pipe *F2032*.

Soakaway drain F1349

(Fig. 45)

This shallow (*c.* 0.10m) hollow led downhill from the font to a low point about 4m to the east in depression *F2409*. Section AC1/GA1 (Fig. 43) shows that the drain was dug after the filling of Phase B post-hole *F2229*, but probably before the post was removed from post-pipe *F2227*. The drain was therefore constructed during Phase B, and presumably acted as a soakaway, water being drained away through the gravel fill which extended right up to the font walls.

Bottom fill *2105* was a grey sandy silt clay with a few tile and pebble inclusions. The sand fraction of this matrix may have been water borne, being laid down as water passed over, and it is possible that in its initial phase the drain was an open feature. The sand had been stained green, presumably due to the presence of organic debris — conceivably derived from urine. Fill *2105* was sealed by sandy gravel *103*, a pink-orange fill of small pebbles which filled a footprint-shaped hollow surrounded by bottom fill *2105*. The upper fill, *2218*, was a dark brown stony sandy clay loam through which water would have readily drained. Both fill *2218* and its variant fill *175* were similar to fill *112* attributed to the depression, and some mixing of finds may have occurred.

The finds were of late 3rd or 4th-century date, and the drain belonged stratigraphically within font Phase B. Two 3rd to 4th-century coins were found (fills *175* and *2218*), and fill *2218* also produced a bronze strap-end (Fig. 58.55).

Sump pit F2513 and drainage gully F2347

(Fig. 45)

This pit, at the north edge of the font, was associated with gully *F2347* which ran into it from the north. The pit cut Phase B post-holes *F2515* and *F2586* of the font, but was cut by secondary Phase B post-hole *F2576*.

The pit was shallow sided, and up to *c.* 0.30m deep, while gully *F2347* in the area of the font was only *c.* 80mm deep. The north-south orientated gully was followed for 8m uphill along the bottom of depression *F2409*, becoming shallower to the north. Although shallow, it is possible that the remains of the gully represent its original depth, and no evidence was found that the gully cut any depression fills. Gully *F2347* did, however, seem to cut the lower fills of pit *F2513*, perhaps suggesting re-cutting of the gully at this point, and the gully was sealed by later pit fill *2514* (Fig. 43, LB2/LL2).

Bottom pit fill *2550*, up to 80mm thick, was a grey and orange sand with fairly dense pebbles. This was sealed by stony brown sandy silt loam *2536*, which was slightly mottled, and was overlain by dark brown silt clay loam *2514*. The bottom gully fill, *2572*, was a green silt clay, and was sealed by black-grey silt loam *2348* which merged with pit fill *2514*.

Stratigraphically, both of these features belong to font Phase B, and the finds suggest a late 3rd or, more likely, a 4th-century date.

Post-pit F2216 and post-pipe F2211

(Fig. 43)

These substantial features lay to the south-east of the font. The *c.* 0.18m deep post-pipe was about 0.30m wide, while the pit was *c.* 0.25m in depth. The features did not relate to the major font phases, but are likely to have been of Phase B. The green-yellow fill of the pit, fill *2217*, contained a little pink mortar and some tile inclusions, and undercut the font wall. Dark grey silt clay *2210* of the post-pipe contained chips of mortar and tile.

Gully F2244

(Fig. 43)

This feature ran around the outer edge of the font wall. The gully was apparently dug into the lowest depression fills before the wall had been built, but all of the gully fills appeared almost contemporary with the wall. The gully therefore seems to have been a constructional feature, perhaps representing the edges of the original clearing in which the font was built. The gully was cut by all of the font post-holes.

The thin lowest fill, grey silt clay *2722*, was sealed by green-yellow silt clay *2245* which contained mortar fragments. Between these two fills, a mortar layer, *2721*, extended out of the font wall, showing that the gully was extant but partly filled when the wall was built.

Depression *F2409*

(Fig. 45)

Large depression *F2409* continued in use in the mid-late 4th century and provided a focus for the font. Since the depression was largely cleaned out at this time, no stratigraphic relationship with pond *F679* survived. However, it is likely that the font depression was contemporary with the bottom fills of the pond at this time. Later 4th-century fills were also present in depressions *F2747* and *F1749* to the north of *F2409*.

Fills

(Fig. 27)

Above the earlier Roman gravel fills of the depression (Horizon 1; p. 29), the *c.* 0.10m deep fills (Horizon 2) were grey silts, containing a quantity of early finds. Late finds were, however, present in the lowest fills, probably being the result of trample disturbance. Thus the date of these fills must tentatively be defined by the bulk of the finds, ignoring small quantities of later material. Font Phases A and B lay stratigraphically between Horizons 2 and 3. The thinness of Horizon 2 fills supports the suggestion that the depression was wholly cleared out to this level immediately before the font was constructed.

Horizon 3 included deep layers (up to 250mm) of backfilled debris (*e.g.* Fig. 43, AC1/GA1, fill *111*), laid down in preparation for the square phase of the font (Phase C). The black silt loams of this horizon contained fairly abundant shell, tile and pottery inclusions.

In places, the debris fills of Horizon 3 were sealed by up to 300mm of redeposited natural and gravels (Horizon 4), in order to consolidate the depression during font Phase C. These fills were found mainly on the north and west sides of the depression, and may indicate the direction of access to the font. During this horizon the west edge of the depression was defined by fence *F197* (Fig. 45: see below).

The lower of the Horizon 3 and 4 fills were found to the north-east of the font, and included dirty redeposited natural and clean redeposited natural. Above the redeposited natural, and elsewhere in the font depression, a series of localised build-up and consolidating layers was deposited during Phase C of the font. The key sequence was observed near the font, where three major fills were observed. These began with sandy silt clay *113* which ranged in colour from light orange to dark brown, and contained large tile and charcoal inclusions.

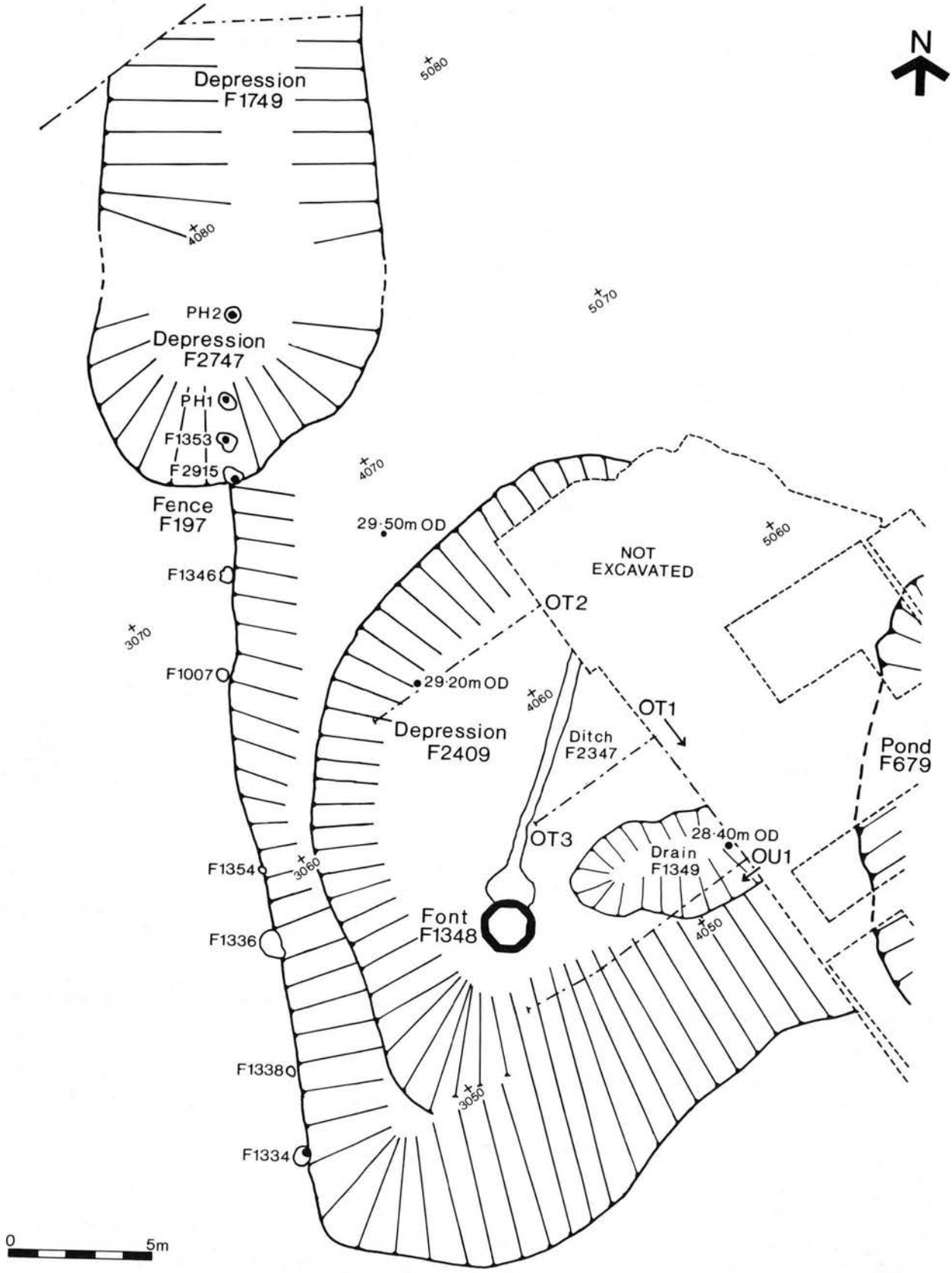


Figure 45 Depression *F2409* plan. Scale 1:200

This overlay grey lower depression fill *95* (Fig. 27), and was sealed by dark brown dense gravel *112* (Fig. 43, AC1/GA1). This was in turn covered by a further dense gravel *111*, in a siltier matrix, and the two gravels served to consolidate the area round the font.

The tiles in layer *2377* (Horizon 4; Fig. 43, LB2/LL2) were mainly of the laminated type used in the font wall, and had *opus signinum* adhering — confirming that they had probably been derived from the wall. These tiles protruded towards the font (Fig. 43, LB2/LL2), and were used to key-in the powdery yellow chalky silt clay *97* (and equivalent *101*) which was used to pack the font pit up to the wooden square.

Dating

The Horizon 2 fills were much disturbed, but the smaller pockets of material, where contamination was at its lowest such as fill *100* of hearth *F193* (see below), suggest a 4th-century date, and this horizon has been assigned to Phase 6. Votive finds were largely absent from Horizon 2, and the fills in general may be seen as disturbed layers formed by trample and other activity during the construction of the font.

The fills of Horizon 3 may be dated stratigraphically to Phase 6, although the pottery from the dark lower fills of this horizon could not be closely dated within the later Roman period. These fills were contemporary with font Phase C. Late Oxford ware and Alice Holt ware were present in fill *62* (Horizon 4; Fig. 27, OU1), and a quantity of potentially votive finds, including a hexagonal enamelled object (Fig. 60.61) came from fills contemporary with font Phase C.

From the summary of the evidence above it will be clear that, apart from a general later Roman date, the refinement of the dating of the font and associated depression *F2409* fills is difficult to achieve.

Hearth F193

This area of burning (not on phase plan) lay within fill *95* (Horizon 2) of depression *F2409*, but did not exhibit scorching *in situ*. A small, short-lived fire may be represented. The almost pure charcoal fill was apparently set in a septaria surround. Stratigraphically, the hearth was later 4th century.

Fence F197

(Fig. 45)

Part of a fence line along the west edge of depression *F2409* was represented by a series of fairly deep post-holes, with *c.* 0.20–0.30m diameter post-pipes. The post-holes, spaced 2.50–3.50m apart, consisted of the following contexts (post-pipes in brackets) in order of position: *XPH2, XPH1, F1353 (F1351), F2915 (F2923), F1346, F1007, F1345, F1336, F1338, F1334 (F1342)*. Traces of wooden posts were recorded as being found in the pre-1978 excavations (Fig. 45, XPH1 and XPH2). The fragmentary line of the fence coincided with that of Phase 4 slot *F1001*, but more significantly with the edge of the depression.

The post-holes were stratigraphically dated, cutting gravel *62* (Phase 6, font Phase C) of depression *F2409* but being sealed by the Phase 7 fills of the depression. Late Roman shell-tempered ware was found in fill *70* of post-hole *F1336*.

Building *F4044*

(Fig. 46)

This structure, situated in a purpose-made shallow hollow, sealed many other features, but was unfortunately not directly stratigraphically related to apsidal ditch *F3203*. The building was 5 by 3m externally, divided inside into a *c.* 2m square north room and a *c.* 2.00 by 1.50m south room.

Very few contexts of the building fabric and floors produced datable finds, but a later Roman date is indicated. The attribution to Phase 6 is based in part on the association with the font, and must be treated with due caution. A later 4th-century date is suggested by the relationship with slot *F4300* — a pre-building feature which contained late Roman shell-tempered ware. The stone foundations of the building were extensively robbed in Phase 7.

There is a strong possibility that the structure was built in two phases, the south room being secondary. Not only was there a difference in height between the initial level of the floors, but the constructional techniques of the floors and walls also differed, and the north walls were built within foundation trenches, whereas no trace of such features survived to the south. The larger north room seems to have been built before the south, and it would have been situated almost over the central axis of the apsidal ditch (Fig. 37) — quite likely deliberately.

Foundation trenches F4386 (east), F4387 (north) and F4388 (west)

Fills of foundation trenches survived along the east (Fig. 46, Y31) and west walls of the north room. The lower fills of the eastern foundation trench were pure redeposited natural chalky silt. A sandy fill (*4140*; not illustrated) was found beneath parts of the north wall. The wall appears to have been constructed in the trench before the gap between the outside of the wall and the side of the trench was packed with the clay and soil. The dating of these trenches rests largely on the association of the features with the walls, although a small amount of stratigraphy confirms a later Roman date.

Floor levels F4380 and F4381

(Fig. 46, XII)

Traces of floor levels were found in both the north and south rooms of the building. The north room had a tiled floor (*F4381*) and, although no tiles or tile-impressions survived, the south room was almost certainly also tiled: the surviving floor level in the south room was *c.* 50mm below that to the north — a height difference which would have been equalised by the presence of a layer of tiles.

The floor of the north room was raised by means of a number of layers of deposits. The lowest of these layers, fill *4261*, was a creamy-yellow silt clay with some mortar inclusions. This fill survived in patches (*4266*) where the floor had otherwise been robbed out. Above this were four bedding layers: fills *4251* and *4252* being pure mortar, and *4229* and *4265* which were sandy. These were covered by gravel layer *4217*, composed of small pebbles and chalk fragments in a soil matrix, and mortar layers *4041* and *4045* lay between fill *4217* and the tiles of the floor. The remains of only two tiles survived, but there is no doubt that these were *in situ*. The tiles were of the unusual laminar type found in the font (see above).

The floor of the south room (*F4380*) was bedded on a *c.* 20mm thick layer of small pebbles set in cream mortar (*4227*) which lay on top of flattened horizontal natural. Above this was layer *4131*, a hard dark red-grey matrix composed of crushed tile in mortar.

Walls

(Pls XIV and XV)

The fabric of the walls of the building was numbered according to position:

F4382: 4132 - East wall of north room;
F4383: 4133 - North wall of north room;
F4384: 4134 - West wall of south room;
F4385: 4135 - Dividing wall between rooms.

The walls of the north room, including the partition wall, were all of similar construction: tile and septaria set in pink mortar. Between partition wall *4135* and the east wall was the *c.* 1m wide gap for a doorway. This was an angled entrance which splayed towards the north, and the bottom tile jambs survived *in situ*. This may have been the original entrance, but was probably replaced by a threshold represented by gravel *F4268* (see below) when the south room was built.

The east wall of the north room survived to two layers high (Fig. 46, Y31), and it was clear that the septaria, which formed the bulk of the coarse components of the wall, was intentionally angled (Pl. XV). Fragments of re-used mortar were present in the fabric. Near the doorway, the bottom of wall *4382* was internally faced with mortar. Much of the mortar and wallplaster debris in the surrounding area may have been derived from this building, and the whole of the inside of the north room may have been faced in this way.

Only a small lump of fabric of the north wall remained *in situ*. This was similar in nature to the east wall in the north room and the central partition.

The fabric of the west wall of the south room was different from that of the walls of the north room, in that no mortar matrix was present. It is not certain whether this was because only one course of the wall survived, or whether there was indeed a constructional change. Since the walls of the north room were all similar, and the east and west walls of that room appeared to terminate on the line of the partition wall, it seems likely that the south room was a later addition.

Gravel F4268

In the middle of the west wall of the north room was an area of gravel, *F4268*, which extended out from the building (Fig. 46, Y31). This dense gravel with pink mortar inclusions filled a roughly rectangular area *c.* 1.60 by 1.10m, within a small pit-like feature (*F4068*), and covered foundation trench fill *4270*. There was little doubt that this gravel was associated with building *F4044*, probably as the threshold area of a western door.

Pit F4138 and foundation deposit

(not illustrated)

This feature lay directly beneath the foundation trench (*F4387*) of the north wall of building *F4044*. The pit was very small and survived to only *c.* 80mm deep, but contained within it a complete colour-coated beaker (Fig. 100.207) in which was found a single coin identified as a 2nd century *As*. The top of the beaker lay directly beneath the stone wall, while the vessel took up the whole depth of the feature.

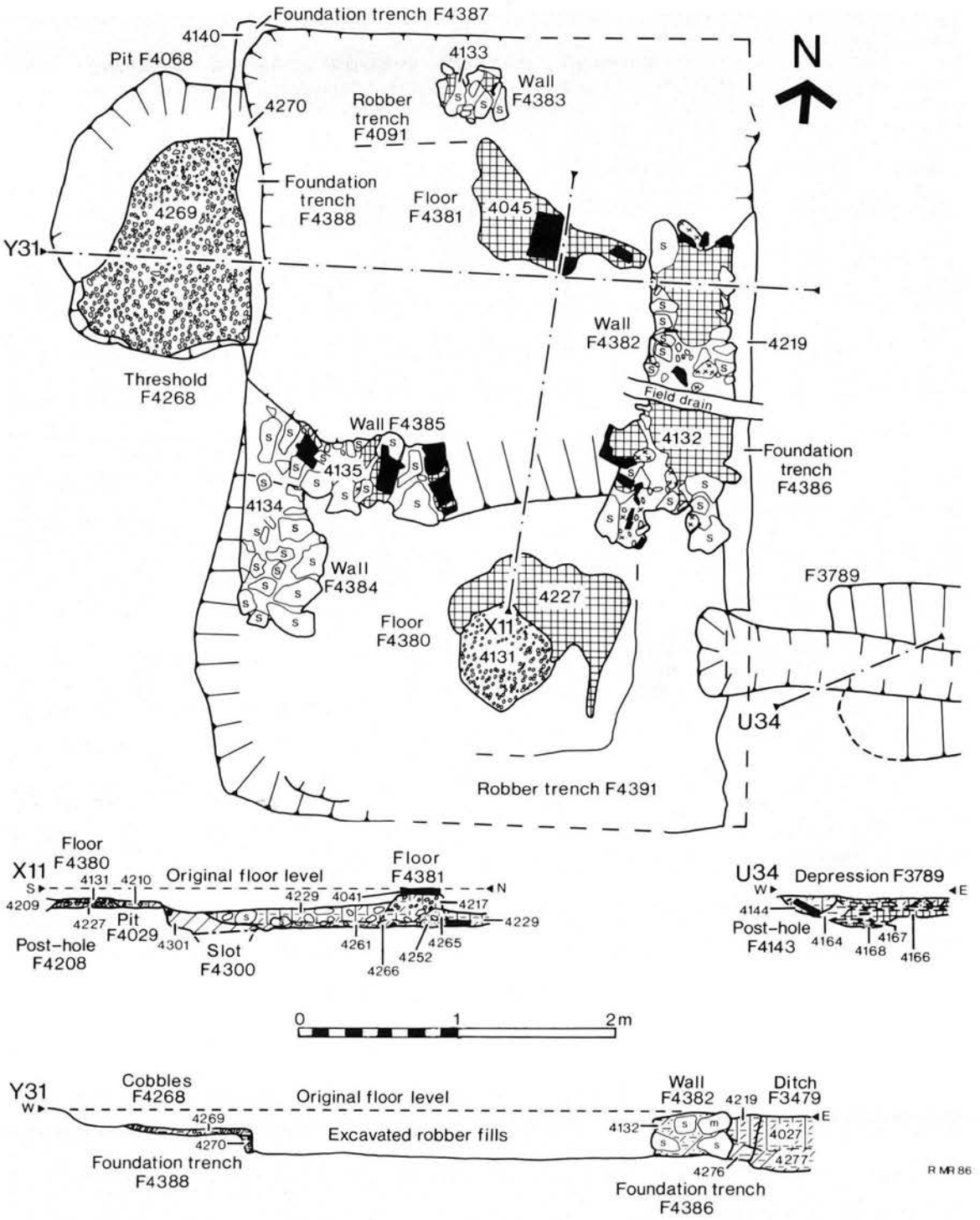


Figure 46 Stone building *F4044* plan and sections. Scale 1:40

The two finds would suggest a much earlier date than that of the building, but the position of the pit and the nature of its contents suggest that the pot was a foundation deposit of Phase 6, inserted during the construction of the building.

Clay layer L2091

An unusual layer of clay, *L2091* (not illustrated), was present in the area of the south room of building *F4044*. The layer was almost 100mm deep, and was composed of a pinkish-orange clay almost devoid of inclusions, of a type which does not occur naturally on the site or in the near vicinity. The clay was deposited before the south room was built, although it sealed other features in which wallplaster was present: it therefore seems to have been deposited after a certain amount of debris had been derived from the building. This layer appears to have been laid down in order to fill the undulations in the vicinity of the south room, and its occurrence in the area of the wall lines of that structure may indicate that the clay was to serve as a damp course.

Depression F3789

(Fig. 46, U34)

Ditch-like depression *F3789* lead from the east wall of building *F4044*. The shallow depression contained a noteworthy sequence of fills. Bottom fill *4168* was a light green sand which may have been discoloured by cess-like material. This was sealed by a firm layer (*4167*) of redeposited natural clay which acted as a bedding for mortar layer *4166*. Layer *4166* was the first in a series of discontinuous mortar layers which were bedded on sand or on black silts with traces of burning.

The depression may originally have been a soakaway for a latrine, but the upper mortar layers were presumably associated with building *F4044*, and the depression may have been used as a mixing pit during the construction of the south room, which would account for the localised and discontinuous nature of the mortar fills.

Plate XIV Stone building *F4044*

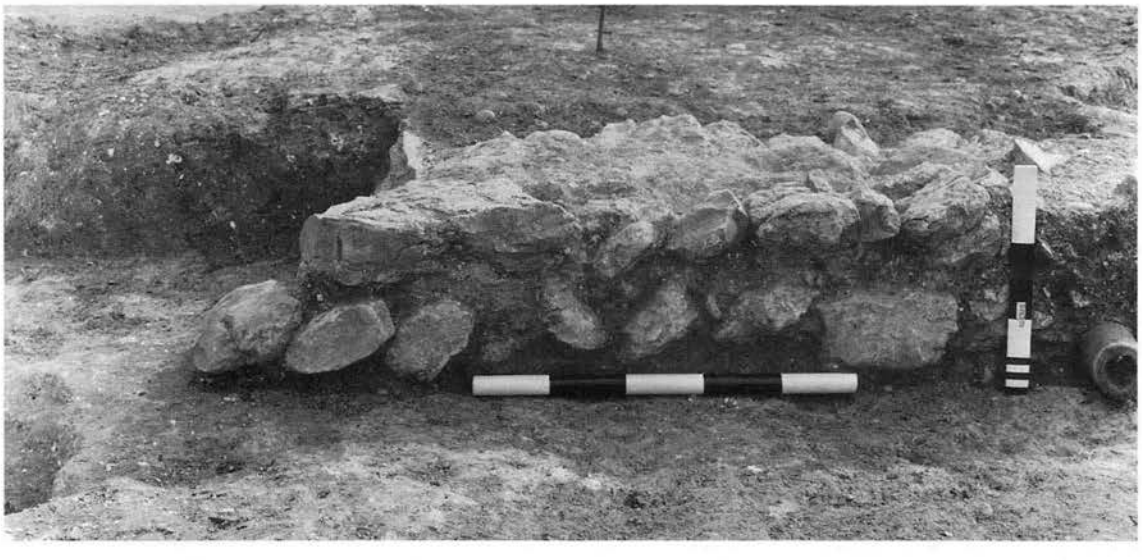


Plate XV Wall *F4382* of stone building *F4044*

Pond *F679*

(Figs 29 and 30; Pls XVI and XVII)

The pond, originated in Phase 4 or 5, was *c.* 21m long by 18m wide, aligned north-south. In the later 4th century the edges were protected by revetments, represented by stake-hole series *F2363*, and the bottom was to some extent protected by cobbling which was best preserved in the south-east corner. In that area, the cobbles appeared to stop at the line of the stake-holes. The original outlet ditches (*F180* and *F184*; Phase 4) were re-cut by two similar ditches (*F1612* and *F1614*; see below) on the same line, but no inlet ditches of this phase were identified.

The later pond fills fall into three categories: edge fills, lower and bottom fills, and upper fills (Fig. 29). Although some of the upper fills spread throughout the pond, the lower and edge fills were much more localised. Several sequences of these fills were therefore observed.

The edge fills were found between the pond edge and the inner lines of stake-holes (Fig. 30). Although it is possible that these fills were used as packing between the edge and the stakes, their appearance suggests that the edge fills had accumulated gradually.

A very thin layer of gravel cobbles was found in the bottom of all of the pond cuttings (Fig. 30; Pl. XVII), consisting of fairly dense medium to large pebbles, tiles, animal bones, and chalk lumps. This layer was so insubstantial that it would have been disturbed by even slight use. Since the cobbles were not particularly disturbed or eroded, it is unlikely that they were ever used to any large extent.

The lower fills were a mixture of fairly dark silt clay loams. The analysis of molluscan remains from snail-rich black-grey clay loam *2026* (Fig. 29, LU1) showed the soil to have developed at the water's edge. Fills *1791* and *2119* (Fig. 29, LU2) appear to indicate a small bank at the north-east edge of the pond; perhaps built to assist water retention. Traces of further banked material above (Fig. 29, LU1, *2385*) may indicate a second phase of bank construction.

The pond appears to have gone out of effective use at the end of Phase 6, since the latest fills attributable to this phase helped block the drainage ditches, and the pond could no longer have maintained a supply of fresh water.

The general bottom fills contained late Roman pottery which suggests a date of Phase 6 or even later, while the substantial upper fills contained very late coins and might perhaps have been deposited in the 5th century. A stud (Fig. 65.88), a pin (Fig. 63.74) and a bracelet fragment ([817]; Microfiche Bronze Report), all of bronze, were found in lower and bottom fills, but a larger amount of votive material was present in the major upper fills (Phase 7).

Stake-holes F2363

(Fig. 30, Pl. XVII)

A series of stake-holes was able to be followed round the edge of pond *F679*. The preservation of these features was varied, and many more stake-holes were probably too small or too disturbed to be recognised. In places, especially in the north-east corner of the pond, the stake-holes formed clear lines (Fig. 30), but these were mainly fragmentary lengths which could seldom be followed with confidence from one area to the next. The holes varied in depth between 50 and 250mm, and averaged 100–150mm in diameter. Considering the chalky nature of the subsoil in some parts of the pond, it is possible that some of these holes were natural solution hollows.

It is clear from the sections (*e.g.* Fig. 29, LU2; MU3, *F2793* and *F2795*) that the rows of stakes were present when the pond was in use, since they formed a noticeable barrier between different pond fills on either side. The fences thereby represented may have been used partly to prevent erosion of the pond edges, and also to prevent animal access to the water.

On the top edge of the north-east corner, the holes did not occur on the very edge of the pond, but were situated about halfway down the slope. This apparent position may have been the result of erosion subsequent to the stakes being inserted, and it seems likely that they originally formed part of a fence on the extreme top edge of the pond. The bottom row seemed to cut across the north-east corner of the pond, and may have been the remnant of an early revetment, the pond edge having subsequently eroded. Alternatively, the pond sides may have silted to such an extent that the line of stake-holes represents a later pond edge. Sections LU2 and LU3 (Fig. 29) may support the latter suggestion, since the pond fills exhibited a dramatic change in nature at exactly the line of the stake-holes (*i.e.* between fills *2381* and *2017*).

The stake-hole fills were generally leached pale to mid-grey silt clays, derived from the surrounding natural. The holes were generally recognisable only where sufficient contrast with the surrounding subsoil existed, and thus stratigraphic relationships with the pond fills were seldom apparent. Occasionally the upper fill of a stake-hole might have been darker grey.

The stake-holes were not a primary feature of the pond, since they clearly post-dated early pond fills. They were sealed by many fills containing late Oxford wares, and a Phase 6 date is reasonably certain.

Pond drains

(Figs 32 and 33; Pl. XVII)

Phase 4 or 5 pond drains *F180* and *F184* were re-cut by ditches *F1612* and *F1614* respectively. Ditch *F1612* continued to the east as *F5212*, while re-cut *F1614* continued as *F3647* and *F5210*.

Near the pond, the U-shaped profile re-cuts were 0.35m deep and splayed outwards immediately before the pond. In the vicinity of depression *F3321* there was no obvious trace of ditch *F1612* despite the fact that it re-appeared to the east as *F5212*: this ditch is shown as continuous on the phase plan. The apparent shallowness of the re-cut, and indeed the original ditches, in the vicinity of depression *F3321* must have led to a very inefficient drainage system liable to flooding unless the water was managed in a way which has left no obvious trace.

The upper fills of the re-cuts near the pond were quite stony (Fig. 33, HJ2/3) and may have been deposited in order to consolidate the hollows after the ditch went out of use. The presence of late Roman shell-tempered ware, Alice Holt ware and late Oxfordshire colour-coated ware in the re-cut fills suggests a very late 4th-century date, although the re-cuts were themselves sealed by the latest fills of the pond. In the area of depression *F3321*, shallow ditch *F3647* was probably contemporary with pond fill *3744* which was stratigraphically dated to Phase 6. There is some evidence to suggest that re-cut *F184* was a little later than *F180*.

Other major features

Depression F3321: upper fills (Horizons 3 and 4)

The depression, which originated in Phase 3, appears to have largely gone out of use at this time, and was gradually filled with localised layers of mixed soil (Fig. 38). Fills of *c.* 100mm deep Horizon 3 were dark brown or black and contained a relatively high proportion of roof tiles and mortar lumps. It is possible that a roof of the building associated with Phase 5 ditch *F3203* was demolished or collapsed during this horizon. The pond drainage ditch *F3647* (see above) was contemporary with these fills, as was associated four-post structure *F2979* (see below), and Horizon 3 overlay depression fills of the early 4th-century.

A more determined effort to backfill the depression is represented by extensive black silt loam fills of Horizon 4. These layers were up to 200mm thick, and included, in the vicinity of ditch *F3203*, tile-rich layers (*e.g.* fill 3829; Pl. XVIII) in which large fragments of tile lay horizontally, perhaps being derived from the roof of the postulated structure. Horizon 4 fills contained late Oxfordshire colour-coated ware and late Roman shell-tempered ware, although the latest coin was of Constantinopolis (330–35).

A fairly large amount of votive material came from these fills: twenty-one coins, five bronze objects, sixteen scrap bronze fragments, two bone pins and two antler fragments came from Horizon 3. Horizon 4 produced six coins, one bronze jewellery fragment, three bronze scrap fragments, two bone pins, and three pieces of antler.

Four-post structure F2979

A group of four post-holes (*F3698, F3751, F3806* and *F4298*), all with post-pipes (*F3678, F3745, F3802* and *F4289* respectively), was found to cut Phase 5 gravel 3553 of depression *F3321*. The post-holes were of similar size and shape, and were about 3m apart with the exception of *F3751* and *F4298* which were *c.* 4m apart, giving rise to a trapezoidal plan.

Although few finds were present, the structure was stratigraphically early or mid-4th century in date. The structure spanned the pond drainage ditches, and may have been associated with the pond outlet system, as a bridge or perhaps even as the basis of a water mill.

Slot F3325

The slot presumably once defined an enclosure, but only the north and west sides survived ploughing, largely because the bottom of the *c.* 0.25m deep slot was horizontal, whereas the surrounding land was sloped. The slot cut across ditch *F3203* and slots *F3644* and *F3431* (Phase 5–6), but was stratified between Phase 6 fills *3829* and *3523* of depression *F3321*. In view of its small size, it seems possible that the feature represents the beam slot or other constructional feature of a small timber building with rounded corners.

Depression F4695

(Fig. 12)

An irregular, elongate feature found to the north-east of the main site, depression *F4695* was found to cut earlier depression *F4502* in Area A.

Plate XVI Depression *F2409* during excavation and pond *F679* before excavation

Plate XVII Pond *F679* and outlet ditches

Plate XVIII Depression *F3321* tile layer *3829*

The feature was numbered *F4763* in 1983 Areas A and B. To the east, the depression began as a fairly narrow, *c.* 0.60m deep, ditch-like feature, but broadened to over 7m to the west. The depression contained fills characterised by inclusions of building rubble: mortar, tile, septaria, wallplaster, and some tufa of very localised origin. The source of the rubble is not known. Late Roman shell-tempered ware and late Oxfordshire colour-coated ware were present in the fills, indicating a later 4th-century date, perhaps even in Phase 7. A 1st to 2nd-century Langton Down type brooch (Brooch Report, brooch (c)), perhaps derived from earlier fills of the depression below, was found in fill *4713*.

XI. Phase 7: Late 4th to early 5th century

Introduction

(Fig. 150)

The end of the Christian period of occupation on the site saw a phase of demolition and of consolidating the major depressions and ditches. In particular, very large quantities of midden material containing spent votive finds were redeposited in the three main depressions: pond *F679*; depression *F2409*; and depression *F3321*. Although there was very little structural evidence, it is clear that the site was still in active use throughout this phase.

Major ditches

The uppermost fills of three of the major ditches were deposited in this phase. Ditch *F316*, initially dug and largely used in Phase 3, was finally backfilled with *c.* 250mm (to base of ploughsoil level) of dark soil in which barbarous radiate hoard *F734* (see barbarous radiate Coin Report) was found (Fig. 22 CU1, fill *611*; FD1, fill *317*). Upper fill *824* of ditch *F823* was of similar nature and date, and was probably contemporary with the top *c.* 1m of deposits in perpendicular ditch *F837* (Fig. 22, IE2, fills *1563* and above).

The midden debris fraction of these fills varied in density of inclusions: for example, fill *317* of ditch *F316* was a silt loam of ashy consistency with concentrations of tile and shell, while fill *1563* of ditch *F837* contained dense inclusions of oyster shell, tile, mortar and bone. Apart from the barbarous radiate hoard, little material of obvious votive potential was found in the upper fills of ditch *F316*, and only two coins were found in the latest fill of ditch *F823*, although only a small amount was investigated. However, seven coins and a bracelet fragment were found in the small volume of upper soil from ditch *F837*.

Structures

The most important event concerning the structures at this time was their demise. Building *F4044* was extensively robbed, and the west end of apsidal ditch *F3203* was greatly modified. Evidence of new structures of this time is limited to a small area of collapsed burnt daub debris in pit *F3681*.

Building F4044 robbing

The small stone structure was extensively robbed, with only 35% of the walls and just 5% of the floors surviving *in situ*. It is clear that the floors had been robbed first, and the walls, especially in the north room, thereafter. Amongst the finds in the robber trenches and pits were several sherds of late Roman shell-tempered ware, as well as a little late Oxfordshire colour-coated ware.

Although the robber trenches and pits contained a reasonably high density of finds, the overall amount of rubble present was not consistent with the amount expected from a fully masonry building. It may be that the building possessed a half, or even full timber superstructure, with masonry foundations. On the other hand, the rather small amount of rubble may simply be due to an efficient campaign of robbing. A number of very late features, including the font (Pl. XIII: Fig. 43, AC1/GA1, fill *98*) were filled with septaria and rubble almost certainly derived from building *F4044*. A late general fill, *L3788*, covered the area of the north room of the building, and this was cut by pit *F3681*.

Apsidal ditch F3203

This ditch, which was probably integral to a Phase 5 structure, was apparently re-cut at its west and south-west sides. The re-cut, which was total in most of these areas, was backfilled with a large quantity of building rubble, the size and density of which suggest that it was derived from a demolition or robbing phase of building *F4044* (see above). Very little secure late dating evidence was found, and it is possible that this episode occurred during the construction of the south room of the building, rather than at the very end of the life of the building. There was no evidence of the purpose of the re-cutting of the ditch, but the fact that it was limited to the area near building *F4044* may be significant.

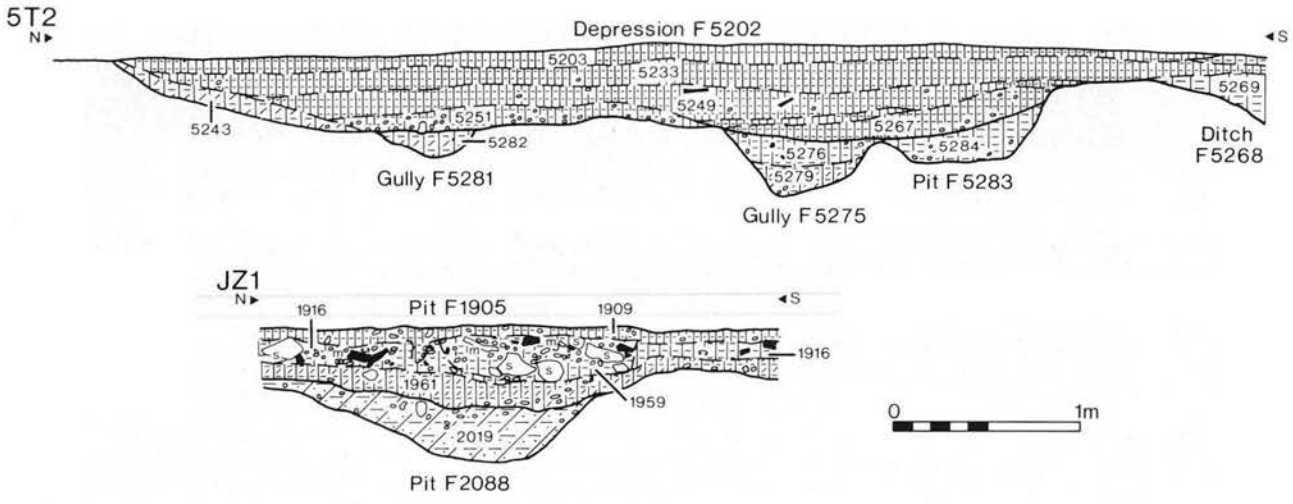


Figure 47 Sections: depression *F5202* and associated features, and pits *F1905* and *F2088*. Scale 1:40

Backfilling of major depressions

Most of the large and medium-sized depressions were still extant beyond Phase 6, but were subjected to a campaign of backfilling at the very end of the Roman period.

Depression F2409

The depression in which the font was situated was backfilled with up to *c.* 0.50m of black midden-type deposits, in particular fills *55, 59, 86, 92* and *94* (*e.g.* Fig. 27). These were very homogenous black or very dark brown silt loam fills, but the density of inclusions varied between fills. Fills *86* and *94* contained a large amount of oyster shell, as well as appreciable amounts of tile, septaria and bone; fill *92* was similar but stonier. Above these, fill *55* was unusual in that the tile inclusions were almost standardised small fragments, and the fill may therefore have been partly derived from ploughsoil. Upper fill *59* was fairly stony and contained dense inclusions of tile. An area of burnt daub debris was found within fill *86*, representing the re-deposition of a hearth or oven.

Apart from the occurrence of midden material in the lower of these fills, they were noteworthy because of the very large quantity of votive material which they contained. Although the volume of excavated soil represented is quite large, the number of coins (31) and fragments of bronze jewellery (14) and scrap (11) should be treated only as a sample of the whole. To this may be added an even greater amount of material from the pre-1978 excavations in this area, where layers C and C1 were of this date. For example, in addition to about 140 coins from layer C in the depression, a hoard of at least 232 barbarous radiate coins (see Coin Report) was also present. This relative lack of finds from the 1978–83 excavations can partly be attributed to the excavation technique (forking) necessitated by a lack of resources at the time. Despite the material which was inadvertently discarded, it is felt that the retained sample is sufficient for dating and interpretation, and that very little information was actually lost. In particular, a bronze letter 'V' (Fig. 70.69) is of particular significance, and the cult object (Fig. 78; Pl. XXIV) was also found in a Phase 7 midden-type layer of the depression.

Even after the backfilling episode described above had been completed, a *c.* 100mm thick layer of cobbles (fill *2*) was created over and within uppermost fill *59*. The very dense small gravel of fill *2* was found over an area of *c.* 25m^2 to the west of the font, and was presumably laid down to provide access across this part of the otherwise poorly consolidated depression. This layer was also found in the south-eastern part of Trench 9 (Fig. 3) of the pre-1978 excavations.

Pond F679

After its main period of use in Phase 6 the pond was filled with five major layers (Fig. 29, fills *1745, 1769, 1776, 1752* and *680*). The homogenous nature of each suggests that these were derived from gradual accumulations rather than deliberate backfills, although the thickness of the deposits is such that some deliberate action is indicated. These fills, which spread over the whole of the pond and totalled up to *c.* 0.60m deep (Fig. 29, LU1), were mainly dark brown or black, tile-rich, and fairly stony. The uppermost fill (*680*) was to some extent contaminated from the lower ploughsoil. As in depression *F2409* (see above), a large amount of potentially votive material was found, especially in fill *680*, where twenty-five coins, five items of jewellery and other significant finds, and ten fragments of scrap bronze were found. Most of the upper pond layers were excavated rapidly by hoe and spade and only a sample was investigated: the number of finds must therefore only be considered as a sample.

Even the bottom-most of these fills contained later 4th-century coins, and a date of deposition in the late 4th or 5th century is indicated.

Depression F3321

The main dark upper fill of the depression was *c.* 200–300mm thick black silt loam *3509* (Fig. 38, I33) which contained fairly dense inclusions and many votive finds. This was very similar to upper fill *86* of depression *F2409* (see above), and was probably a mixture of midden material and ploughsoil. Although this extensive fill was excavated by hoe, a large amount of potentially votive material was recovered: eighteen coins, twelve scrap bronze fragments and seven other items of votive nature.

Depression F5202

(Fig. 47, 5T2)

This *c.* 0.55m deep, irregular feature was found in a trial trench (Area BB) to the south-east of the main excavations. The depression was at least 5m wide, and was over 30m in length on an east-west alignment. The bulk of the depression fills were black, charcoal-rich silt loams. These fills contained noticeable amounts of slag, including smithing slag in fill *5249* and hearth slag in fills *5203, 5233* and *5251* (see Slag Report). When surveyed with a metal detector, the fills alone gave a ferrous reading. Further slag was found in surrounding features, and this, combined with the black charcoal fraction in the soils, may suggest that the area was used for iron smithing.

Unlike the depressions in the main area of excavation, no specifically votive items (apart from a complete antler pick) were found, although eleven coins were present in the small area sampled. The presence of late Oxfordshire colour-coated ware and Theodosian coins show that the depression was a very late feature.

Within the depression bottom were a number of pit-like undulations, perhaps associated with the semi-industrial processes suggested above.

Depressions F1905 and F1882

(Fig. 47, JZ1)

These two features may be combined to represent a single area of disturbance, *c.* 6 by 3m, to the north of pond *F679*. The depression thus defined had an irregular bottom and sides, and the lower *c.* 350mm was composed of disturbed, though not redeposited, natural. The nature of this disturbance is consistent with the removal of tree roots, and the depression may have been formed during the clearing of a mature tree in this area. The upper fills contained large amounts of building rubble, including large lumps of septaria, tile, and large fragments of mortar. This rubble is likely to have been derived from a demolition phase of nearby building *F4044*.

Sherds of late Oxfordshire colour-coated ware and late Roman shell-tempered ware were found in the fills, and the latest of the three coins from the feature is of Valentinian (364–78). The depression is therefore likely to have been very late Roman in date.

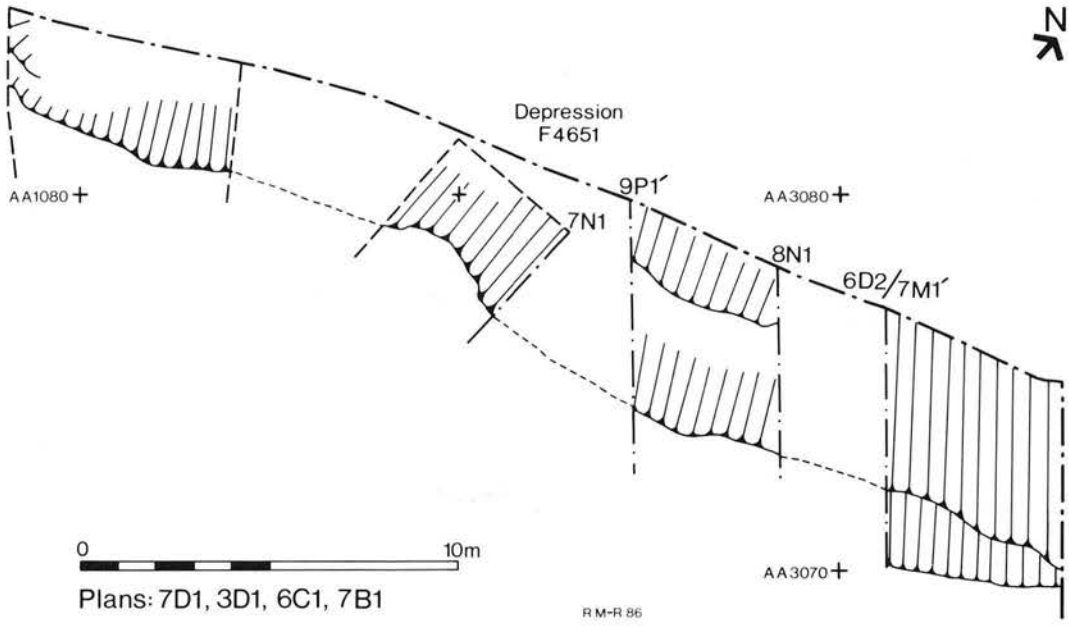


Figure 48 Depression *F4651* plan. Scale 1:200

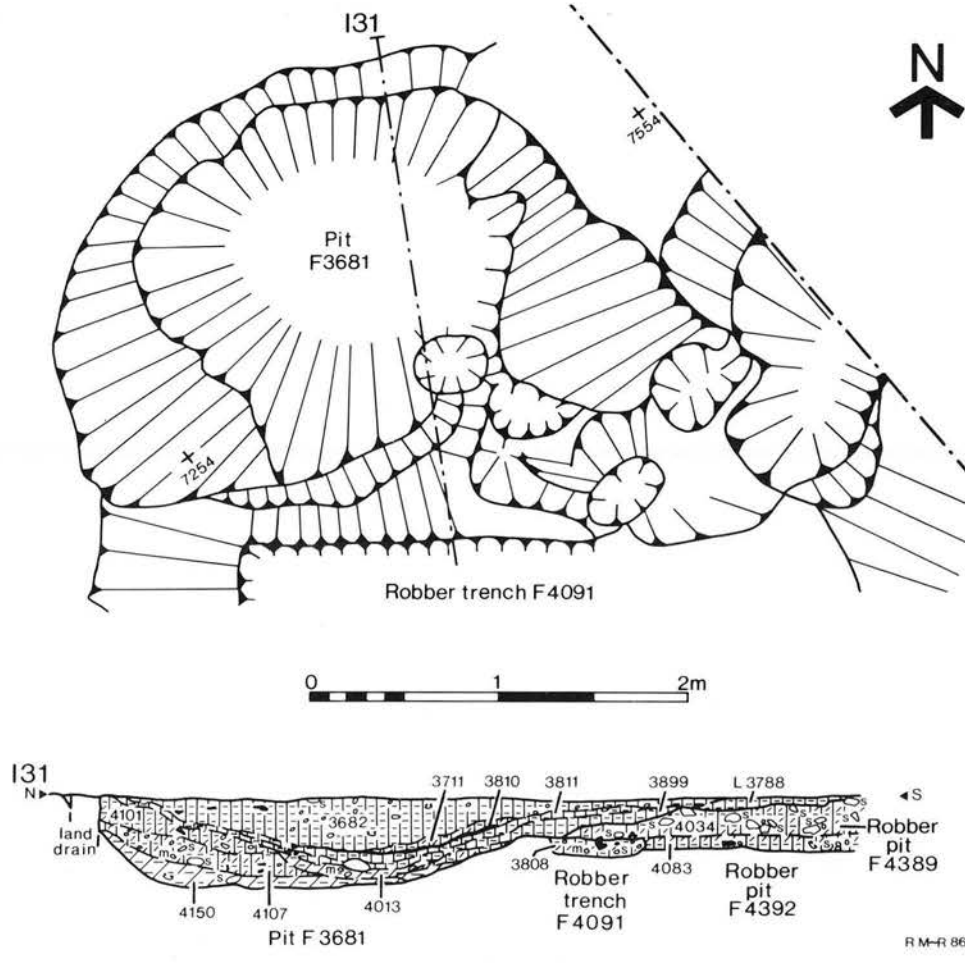


Figure 49 Pit *F3681* plan and section. Scale 1:40

Depression F4651
(Figs 12 and 48)

The south part of this depression was found to the north of depression *F4695*. The *c.* 0.70m deep feature had a regular south edge, and contained decalcified homogenous and homogenous grey-brown sandy silt loam fills. Late Roman shell-tempered ware and late Oxfordshire colour-coated ware were found, and the feature cut depression *F4695* described above. The upper fills of the depression contained medieval pottery, but the depression is unlikely to have been an entirely post-Roman feature: the lower fills contained very late Roman pottery, yet the feature did not apparently cut through any late Roman features from which this material might have been derived. The late Roman pottery is thus likely to have been broadly contemporary with the depression.

Depression *F4651* was thought at first to have been a re-cut of depression *F4502*, but the wide difference in date of the two features makes this unlikely. Depression *F4502* would have been completely backfilled by the time depression *F4651* was dug. Like depression *F4695*, depression *F4651* might have been dug in Phase 7.

Pit F3681
(Fig. 49)

One of the latest Roman features on the site, pit *F3681* was *c.* 0.50m deep and lay immediately to the north of building *F4044*. The original bottom of the pit was very irregular, but the feature appeared to have been re-cut at the level of fill *3899*.

Building rubble was present in some of the fills, and was especially dense in fill *4014* (not shown) at the south-east edge. Fill *3810* was rich in charcoal, and contained large fragments of charred wood, although this was not *in situ*. The lower part of fill *3711* was very ashy and almost white in places, and this was overlain by an extensive and dense layer of burnt daub, which appeared to have been derived from the fallen wall of a structure. Above this, fill *3682* was a thick layer, probably deliberately backfilled in order to level the feature.

Late Roman shell-tempered ware and late Oxfordshire colour-coated ware were common finds, and a very late date is confirmed by the fact that the re-cut of the pit cut through layer *L3788* which itself sealed robbing features of building *F4044* (Fig. 49, I31).

The purpose of the pit is unclear, but the subsoil in the area was unsuitable for use as a clay source. The amount of burnt material in the fills may hint towards a more utilitarian function.

Part 3. The Artefacts

I. Introduction

Phasing

The inclusion of a large proportion of accumulated deposits in the late Roman fills means that the analysis of finds from these contexts may be of diminished value, even in those instances where the context can be assigned with some degree of certainty to one of Phases 4–7. Thus the finds analysis can only reliably be carried out within the following broader phases:

1: Early and Middle Iron Age. Often relying on insufficient numbers of finds for dating to be reliable. Even reasonably secure contexts may have been contaminated where the layers were interfaced with later contexts or ploughsoil;
2: 'Belgic'. Based on contexts containing 'Belgic' pottery but with no fabrics or forms of 'romanised' character;
2.3: 'Belgo-Roman'. 1st-century AD contexts with 'romanised' fabrics or forms, and/or with 1st-century Roman ceramics;
3: Early Roman. Early 2nd to mid-3rd century AD;
4–7: Later Roman. Mid-3rd to 5th century, including all contexts assigned to a specific phase within this span.

Contexts which are thought to be pre-Roman but may be either 'Belgic' or earlier have been dated to Phase 1–2, and Roman contexts which are not more closely datable have been phased 3–7. Contexts which are simply Roman or earlier have been assigned to Phase 1–7. Other aspects of the site phasing are discussed in Section 2.II.

Context details

Context information is included at the end of each object description:

1. Smallfind number (if assigned). Contained within square brackets. The prefix 'X' indicates a pre-1978 smallfind.
2. Fill layer or context number, and nature of context. Where a fill number is quoted, the feature type and number are shown in brackets. In the case of pre-1978 contexts, only the feature type is given, since feature numbers were never assigned.
3. Phase. This is the phase of the context(s) in which the object(s) were found.

II. Coins: Official issues

by Robin Turner, with identifications by Richard Reece

Introduction

A total of 1149 British and Roman coins were found during the pre-1978 and 1978–83 excavations: no post-Roman coins were found. For several, often obvious reasons, this represents no more than a sample of the total coins originally present on the site. Perhaps the greatest recent loss of Roman coins was due to treasure hunters, who worked over a substantial volume of coin-rich deposits during the early 1970s. Other coins remain undiscovered since the site was by no means totally excavated, and yet more were lost through the vigorous excavation techniques applied to some areas during the 1978–83 excavations. The assemblage is nevertheless quite substantial, and highly relevant to the study of a Roman religious site. A fairly comprehensive consideration of the coins is therefore presented below, supplemented by several catalogues and summary tables in microfiche.

A large proportion of the Roman coins, including all three hoards found on the site, are barbarous radiates, and a separate paper on this interesting group is presented after the report on the official coins which also considers some aspects of the barbarous radiates.

The microfiche content of the coin reports, which contains essential information for the understanding of the coins and their analyses, incorporates the following information:

A. Catalogue of coins from the pre-1978 excavations; ordered by layer number and pre-1978 coin number;
B. Catalogue of a hoard of barbarous radiates from pre-1978 context S28/C (the 'pre-1978 hoard'), ordered by pre-1978 coin number;
C. Catalogue of coins from the 1978–83 excavations (including the '1980 hoard' from context *3588*), ordered by smallfind number;
D. Catalogue of barbarous radiate hoard *F734* (the '1979 hoard'), ordered by smallfind number;
E. List of coins from the pre-1978 excavations in order of contexts, layer and pre-1978 coin number;
F. List of coins from undisturbed contexts of the 1978–83 excavations, ordered by phase and context;
G. Catalogue numbers of illustrated barbarous radiates (Plates XIX–XX);
Table 5. Tabulated information from Catalogue F;
Table 6. Original data for Reece's (1987) Temple Group of coins.

Although there is some degree of duplication between the various catalogues, lists and tables, the information has been presented in different ways in order to support the various techniques of analysis contained in the reports.

Analysis of coins by coin 'Period'

Introduction

The following consideration of coin 'Periods' relates to the work of Richard Reece (*e.g.* 1980 and 1987), and from informal discussions with him. The overall coin lists are compared with those from ten Roman temple sites (the Temple Group) throughout Britain, and a number of anomalies are discussed. The total number of coins for each Period from all ten Temple Group sites is shown on Table 6 (microfiche), and this is expressed as a mean in terms of coins per thousand. The principle of the following analysis is that Periods which are represented by more than twice the mean (per thousand) of the Temple Group, that is Periods where coins are relatively abundant, merit some comment. Roman coins of uncertain date are not considered.

The coins from the two main campaigns of excavation are first considered separately, and the assemblage as a whole is then discussed. Figure 50 shows the Witham coin groups in relation to Reece's Temple Group.

It will be clear from Table 1 that, even counting hoards as one find, the very large number of barbarous radiates found in both the pre-1978 and 1978–83 seasons creates an unacceptable bias, and swamps the data of other Periods. In order to study the coins in relation to the other sites of the Temple Group, barbarous radiates have generally been excluded from the calculations. However, when the barbarous radiates are excluded the number of coins found is not inordinately large and the subsequent statistics are therefore not wholly reliable. It should also

be borne in mind that the background data of the Temple Group may itself contain anomalies, and might not be entirely suitable for comparison with the Witham coins: large assemblages such as those from Lydney and Uley, Gloucestershire, may give the data a late bias, just as the inclusion of over 800 barbarous radiates from Witham would. Any comparisons must therefore be taken as provisional, and might usefully be re-calculated at a later date when substantially more sites have been published.

1978–83 coins
(Table 1)
A total of 234 datable coins were found in the recent excavations (counting the two barbarous radiate hoards, of 329 and 17 coins, as single finds). The three British coins attest the pre-Roman and Belgo-Roman activity on the site. However, although it is to be expected, the number of coins of early Roman date (up to Period IXb) is so small that any conclusions should be treated with caution. This paucity signifies a lack of votive activity involving coins until the later 3rd century.

The time span AD 238–94 (Periods IXb to XI) is well represented in the 1978–83 coins, and is probably high enough to suggest, with due caution, the use of the coins as votives. From AD 294 to the later 4th century there is an under-representation of coins, but from Period XVb (378–88) the population increases with respect to the Temple Group.

Pre-1978 coins
(Table 1)
This group is a useful control, since virtually all of the coins came from later 4th-century contexts. A very late bias might therefore be expected. If a hoard of 254 barbarous radiates is treated as a single find, then the total number of datable coins counted is 205.

When barbarous radiates are excluded from the calculations there is, like the 1978–83 coins, a significant peak of late 3rd-century coins. However, contrary to what might be expected, the number of late 4th-century coins is relatively stable when compared with the Temple Group.

Combined coin totals
(Fig. 50 and Table 2)
The combined totals from the Witham excavations (excluding all barbarous radiates) confirm the very small number of Roman coins before Period X (259–75), in common with the Temple Group. The three British coins from the site contrast strongly with the large number of Celtic coins from Harlow, Essex (Fitzpatrick 1985). Harlow shows the use of coins as votives in the 1st centuries BC and AD, and the small number from Witham could be used to argue for a secular use of the site at this time. The large number of later 3rd-century coins lies outside twice the mean for the Temple Group, fewer coins of the early to mid-4th century are present, and Periods XVb (378–88) and XVI (388–402) are over-represented at Witham.

		1978-83 Coins			*Pre-1978 Coins*			*Temple*
Coin Period	*Date Range*	*Total*	*Total/ 1000*	*Total/1000 less BRs*	*Total*	*Total/ 1000*	*Total/1000 less BRs*	*Group Mean*
I	to 41	3	13	24	0	0	0	2
IIa	41–54	0	0	0	0	0	0	2
IIb	54–68	0	0	0	0	0	0	1
III	68–96	1	4	8	0	0	0	5
IV	96–117	0	0	0	1	5	11	3
V	117–138	1	4	8	0	0	0	4
VI	138–161	3	13	24	0	0	0	5
VIIa	161–180	2	9	16	1	5	11	5
VIIb	180–192	1	4	8	0	0	0	2
VIII	192–222	1	4	8	0	0	0	6
IXa	222 238	0	0	0	0	0	0	2
IXb	238–259	1	4	8	1	5	11	3
X	259–275	27	115	216	27	132	293	90
XI*	275–294	126	538	136	127	620	152	69
XII	294–317	1	4	8	0	0	0	29
XIIIa	317–330	4	17	32	7	34	76	43
XIIIb	330–348	24	103	192	25	122	272	285
XIV	348–364	8	34	64	4	20	43	164
XVa	364–378	16	68	128	7	34	76	217
XVb	378–388	2	9	16	0	0	0	4
XVI	388–402	13	56	104	5	24	54	58
		234 (incl. 109 BRs)			205 (incl. 113 BRs)			

Note: * Hoards of barbarous radiates counted as a single coin:
1978–83 BRs total =453 (incl. hoards of 329 and 17)
=453-329-17 =107 +2 (hoards)
Pre-1978 BRs total =366 (incl. 1 hoard of 254)
=366-254 =112 +1 (hoard)

Table 1 Witham Roman coins by coin Period (Reece 1980 and 1987) — 1978–83 and pre-1978

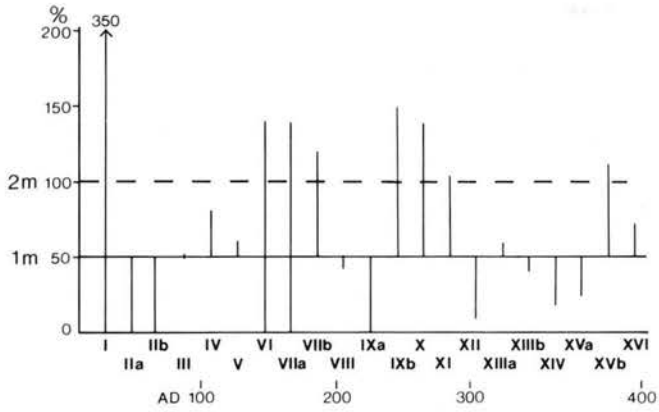


Figure 50 Coins: chronological distribution

Coin loss through the site phases

Method

The information for the 1978–83 coins described in Coin List F (microfiche) is condensed on Table 5 (microfiche), and further summarised on Table 3. The tables have been calculated by summing the mean date of coins from each site phase: for example, the mean of a Theodosian coin (388–402) is 394. When the mean dates are added together and divided by the number of coins present, an average for the context (Table 5 (microfiche)) or phase (Table 3) is produced. The average excluding barbarous radiates is also given. The object of this exercise is to study the average coin date for contexts throughout the site phases. Bearing in mind the irregularity of the coin supply, the averages for the phases should theoretically become later, by varying degrees, through time.

For the purposes of this particular analysis, coins from three disturbed contexts have been included, since they can roughly be equated with stratified context *3509* (a fill of depression *F3321*). A coin from context *3166* is not included, as it is considered to be an intrusion from the ploughsoil. Coins of uncertain date, *e.g.* '3rd–4th century', are also excluded from the detailed analysis, while the two known hoards or barbarous radiates from the 1978–83 excavations are each treated as an individual find.

Discussion

The number of coins from the 1978–83 excavations which satisfy the conditions described above is 159. Of these, seventy-six (48%) are barbarous radiates, the majority of which occurred in contexts dating well beyond the accepted currency of those coins (J. Davies, pers. comm.). As would be expected, the phase averages are substantially older than the phases themselves: for example, Phase 7, late 4th or early 5th century, averages an early to mid-4th century date because of the long circulation of some coins and the redeposition of others.

Table 4 shows that barbarous radiates are present throughout the later Roman phases, and not restricted to the votive activity of the late 3rd or late 4th century. The continuous spread of these coins through the phases would argue against a single source (*i.e.* a hoard), and would favour a functional interpretation of some kind.

Stratified groups of coins (1978–83)

Four very large, long-lived features contained useful stratified groups of coins: depressions *F2409, F3321* and *F5202*, and pond *F679*. The coins from these deposits are summarised, in stratigraphic order, on Table 4. Further details of individual contexts may be found in Coin List F (microfiche).

Coin Period	*Date Range*	** Temple Group **		*Witham*	*Total/*	*% Temple*
		Mean	*Mean x 2*	*Total*	*1000*	*Mean x 2*
I	to 41	2	4	3	14	350
IIa	41–54	2	4	0	0	0
IIb	54–68	1	2	0	0	0
III	68–96	5	10	1	5	50
IV	96–117	3	6	1	5	83
V	117–138	4	8	1	5	62
VI	138–161	5	10	3	14	140
VIIa	161–180	5	10	3	14	140
VIIb	180–192	2	4	1	5	125
VIII	192–222	6	12	1	5	42
IXa	222–238	2	4	0	0	0
IXb	238–259	3	6	2	9	150
X	259–275	90	180	54	249	138
XI	275–294	69	138	31	143	104
XII	294–317	29	58	1	5	9
XIIIa	317–330	43	86	11	51	59
XIIIb	330–348	285	570	49	226	40
XIV	348–364	164	328	12	55	17
XVa	364–378	217	434	23	106	24
XVb	378–388	4	8	2	9	112
XVI	388–402	58	116	18	83	72
				217		

Table 2 Witham coins — pre-1978 and 1978–83 combined (excluding barbarous radiates), with a comparison with expected results from temple sites in Britain (Reece 1987)

Phase	*Mean Total*	*No. of Coins*	*BRs*	*No. less BRs*	*Mean Total Less BRs*	*Phase Average*	*Average Less BRs*
2.3	40	2	0	2	40	20	20
4	1239	5	2	3	685	248	228
4–5	541	2	1	1	264	270	264
4–7	554	2	2	0	0	277	-
5	2435	9	4	5	1327	271	265
5–6	589	2	0	2	589	294	294
6	6028	22	17	5	1319	274	263
6–7	554	2	2	0	0	277	-
7	34019	113	48	65	20723	301	319
		159		83			

Note: Barbarous radiate hoards counted as one coin.

Table 3 Analysis of stratified 1978–83 coin averages by phase

			Coins		*Averages*		*Latest*	*Associated*
	Phase	*Total*	*Dated*	*BRs*	*Total*	*Non BRs*	*Coins*	*Votive Finds*
Depression *F2409*								
	7	36	32	12	291	300	388–40	223
	6	3	2	2	227	-	270–284	0
Depressions *F3321*								
	7	42	37	22	290	309	388–402	33
Upper	6	9	8	6	284	305	330–345	3
Lower	6	17	12	9	220	237	270–284	23
	5	10	5	1	262	258	293–296	12
Pond *F679*								
	7	26	18	8	310	336	388–402	16
Depression *F5202*								
	7	12	11	1	326	331	300–402	0

Table 4 Stratigraphic table of coins and associated votive finds from major depressions

Depression F2409

This feature began life in the early Roman period, when a large number of Palaeolithic hand-axes were deliberately placed in its gravelled bottom (Turner and Wymer 1987: microfiche). The depression was extensively cleaned out to make way for the font in the mid-4th century (Phase 6), destroying any evidence there may have been of later 3rd-century votive activity. After the font fell out of use, the depression was filled with a series of thick, black soil deposits, some of which contained large amounts of animal bone, oyster shell and votive material, and were almost certainly derived from middens. Only three coins were present in the layers preceding the disuse of the font, suggesting a lack of contemporary pagan votive activity. From the coin lists, two phases of deposition might be suggested for the upper (Phase 7) fills; one around or soon after AD 360 (contexts *86, 94* and *2809*), and another at the very end of the Roman period (contexts *55* and *59*).

Depression F3321

The coins from gravel *3553* (Phase 5), near the bottom of the depression, represent one of the few instances of late 3rd-century coins in a context contemporary with their circulation. Like fill *3553*, fills *3175* and *4180* also contained several coins as well as other material of votive nature. The presence of coins in gravel to the side of a shrine is also seen at Harlow (Gobel 1985, fig. 38). Feature *F3321* was the only depression extant during Phase 6 which does not appear to have been cleaned out at that time. This is reflected by a fairly high number of coins and votives in the earlier Phase 6 levels, probably derived from disturbed Phase 5 contexts. Very few coins were found in the subsequent mid-4th century contexts, but uppermost fill *3509* (Phase 7) and related contexts contained a large number of coins and votive objects, and may be equated with the top fills of depression *F2409*.

Pond F679

No coins were found in the bottom or lower pond fills, which are thought to have been contemporary with the Christian phase of the site (Phase 6). The upper fills, which accumulated gradually, contained late 4th-century coins, and uppermost fill 680 was equivalent to the top fills of depression *F2409* and *F3321*.

Depression F5202

This feature lay over 50m south-east of the areas of votive activity, and contained no finds of votive nature. A relatively high number of coins were present, but only a single barbarous radiate was found. The coins indicate a very late deposition, and provide a different range from other coin-rich deposits of the time, the coins being mainly 4th-century.

Discussion

The Witham coins do not relate particularly well to the Temple Group (Fig. 50), especially in the later 3rd century. This phenomenon cannot be attributed to the presence of hoards of later 3rd-century barbarous radiates (since they have been excluded from the calculations), but could be due to an upsurge of votive activity on the site at this time. This suggestion is appealing, but difficult to prove since undisturbed contexts of that time (Phase 4) are rare and insecurely dated (*e.g.* ?temple *F731*), and a large proportion of the coins in question found their way into substantially later deposits. However, the coins and associated material in early 4th-century fill *3553* (Table 4) of depression *F3321* do support the suggested peak of votive activity at about this time (Phase 5).

It is proposed that votive activity resumed in the later 4th century (Phase 7), after a period of Christianity, and the coins suggest a slightly higher rate of loss at this time than might be expected in comparison with the Temple Group. Although there is a good spread of coins of late 3rd-century date onwards, there is also an unduly high number of mid-late 4th-century examples, making an upsurge of votive activity after the Christian phase seem likely.

Context of the barbarous radiates

It has been demonstrated that barbarous radiates provide the greatest anomaly in the coin list, and that most of these coins were deposited in the middle or later 4th century when, being unofficial issues, they were not in normal use. This is in marked contrast to Harlow, where only four barbarous radiates are shown on the coin list (Gobel 1985, 68–70), yet votive activity is postulated throughout the 3rd and 4th centuries. Although hoards of barbarous radiates were present at Witham in later 4th-century contexts, it seems unlikely, considering the varied contexts and phases in which others were present, that all of the other barbarous radiates were derived from dispersed hoards.

An interesting feature of the barbarous radiate hoards is the almost total lack of official issues, despite the fact that they were deposited in the later 4th or early 5th century. This could suggest that the hoards were simply old collections which were accidentally dug up at the end of the Roman period, and then redeposited without being recognised for what they were. The fact of redeposition is apparent from the circumstances of the large hoards, both of which were dispersed over more than a cubic metre of soil.

An alternative explanation to dispersed hoards might tentatively be put forward. Since the majority of non-hoard barbarous radiates were found in Phase 7 deposits, it might be that these irregular issues, of no currency value at this time, may have had some token significance at a time of renewed votive activity. They could have been sold, for current currency, at a 'trinket seller's stall' at the periphery of the religious area. Some of the jewellery found on the site also appears to have had some token value: some was too small to have been worn, while other objects had been cut into smaller fragments. This jewellery may have been given as votive offerings in lieu of more valuable personal belongings. Similar evidence for stalls has been found at Uley, Gloucestershire (Ellison 1978, 33) and elsewhere.

This suggestion would demand a re-interpretation of the midden deposits in which so many of the barbarous radiates were found. Rather than representing gradual accumulations over a century which were backfilled into the large depression at a late date, these deposits might have been much younger, belonging to a phase of intense votive activity after the end of the Christian phase (Phase 6). In support of this hypothesis is the fact that the midden-type levels in depression *F2409* appear to have been deposited in at least two separate episodes (see above). These deposits could even have been *in situ*, the depression and the other large features acting as large rubbish pits.

An examination of the associated ceramic material in these deposits might be of assistance, although the large amount of residual pottery in all of the contexts, and the difficulties of close pottery dating at this time, could cloud the issue. However, most of the pottery in the black deposits in the depression can be identified as mid-late 4th century, and the suggestion that the barbarous radiates were used as token coins in votive depositions must be given some credence.

Conclusions

The analysis of coin supply, stratigraphy and contexts can be combined to present a reasonably coherent picture of the sequence of votive activity on the site.

There is a paucity of early Roman coins, and certainly insufficient to imply votive deposition, although this need not exclude the possibility of other forms of religious activity on the site at this time. The number of late 3rd-century coins, even excluding barbarous radiates, is enough to suggest votive activity, and this is supported by the coins and associated votive material from Phase 5 (early 4th century) fills of depression *F3321*. As expected, the supply of early to mid-4th-century coins was lower than the norm for temple sites, and the sequence in three large depressions confirms a lull in deposition at this time of possible Christian activity. Upper fills of these depressions were coin-rich, and a higher than usual number of very late coins seems to support the suggestion of a pagan revival.

III. The barbarous radiates

by John A. Davies

The barbarous radiates form a very substantial proportion of the Roman coins from Witham. These irregular *antoniniani*, all struck within a period of just one and a half decades, between the years AD 270 and *c.* AD 284, comprise 40% of all the Roman site finds. In addition to this exceptionally high proportion, three barbarous radiate hoards were found which together total 600 further examples. These coins are described and discussed here, beginning with the hoards (sections a and b). The site finds are then considered and a more general discussion is provided (section c). Two plates accompany the text, illustrating the more unusual and important coins present: catalogue numbers of the illustrated coins are indicated in Microfiche Coin Appendix G. Coins of this type have been given a separate series of barbarous radiate (BR) numbers, except for hoard *F734* which have separate hoard numbers.

This imitative coinage is now accepted to have been struck between the years *c.* AD 270–84. Production started slightly earlier in Gaul, by AD 263 (Giard 1969). The earliest imitations struck in Britain were in the casting

tradition, as evidenced at Whitchurch, Somerset (Boon and Rahtz 1966). Following this initial copying, subsequent imitations were mainly struck. Better imitations of near regular size were manufactured from AD 270–74, with a reduction in module occurring about AD 275 (Boon 1967). Minims (imitations of 13mm or below) were not struck before the reign of Probus, starting about AD 276 and continuing in production until AD 282–4. Use of these coins probably continued right up to the Carausian period, with small numbers used beyond this into the 4th century, although the concept of production at this late date has been discredited. It is in the last phase of barbarous radiate production that the Witham coins can be placed.

a. Barbarous radiate hoard *F734* (The '1979 hoard')

Introduction

This hoard consists of 329 barbarous radiates, predominantly of very small diameter, all imitations of *antoniniani* of the early 270s. Although the coins were found scattered, without a container, they form a cohesive group. The hoard may have been stored in an organic container which has since perished, although use of a ceramic vessel was more common.

The coins from hoard *F734* were all produced by striking. They are in good, clear, condition. The vast majority show no signs of wear and do not appear to have been used in circulation. The irregularities of flan shape exhibited are quite normal for this coin series and all measurements referred to have been taken across the widest part of the flan. The wide range of engraving styles present is typical of this highly variable coin series. However there are distinctive characteristics within the assemblage as a whole which suggest that the bulk of this hoard was engraved and struck within a single tradition.

Coin diameters (excluding a disintegrated example) are recorded in Figure 51, which shows that some 85% of the coins are below the size of the smallest regular Gallic Empire *antoniniani*, which would fall to about 15mm. The Witham coins include very small types of just 6mm and the proportion of flans below 10mm is greater than for the Goring-on-Sea and Hove minim hoards from Sussex (Mattingly 1939: Mattingly 1967). In addition to their small size, a further distinctive trait is the absence of legends. Engravers would normally attempt a legend, however humble, even on imitations of the smallest size. It is a feature of the 1979 hoard that over 60% show no lettering at all on either one or on both faces. These factors, together with some stylistic similarity, suggest that a large proportion of over half of the hoard — the smaller types — originated from the same source of manufacture. Whether this was a single mint or related adjacent mints is impossible to say, but the coin producers were applying a consistent method of manufacture, indicative of production in one area. Other, mainly larger, barbarous radiates were added to these coins before the hoard was deposited.

Types present

The absence of any official types indicates that this is a late barbarous radiate hoard, compiled when regular coins were very scarce (King 1981). The degraded and abstract types present are clearly the result of a process of copying from earlier imitations. The types are so far removed from official engravings that this observation, together with the very small coins present, confirms that they were produced toward the end of barbarous radiate production, in about AD 282–4. Despite this late date, none of the imitations are based on post-Tetrican issues.

The absence of legends, small size and indistinct types make any overall classification very subjective. The fundamental importance of illustration for reference and comparison is stressed. For this reason a selection, comprising some 19% of the coins, has been included in Plate XIX. A summary of types present is provided in Table 7. It is stressed that most of the Witham coins are derivative forms and only a small proportion can be clearly associated with a specific prototype. Imitations of smaller module have been listed separately from the larger copies, which may have originated independently.

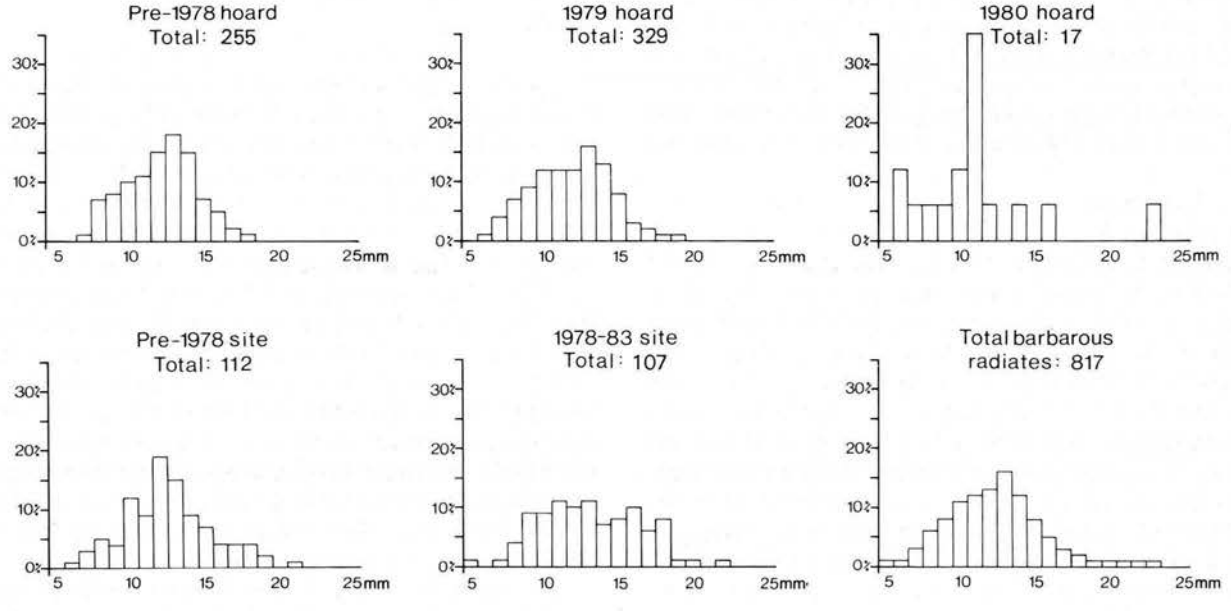


Figure 51 Coins: diameter size distribution of barbarous radiates

		Pre-1978 hoard	*1979 hoard*	*1980 hoard*	*Pre-1978 site*	*1978–83 site*
Gallienus		-	-	-	2	-
Claudius II		-	2	-	1	-
Divo Claudio,	altar	6	11	1	3	3
	eagle	1	-	-	1	2
Probus		2	-	-	-	-
Postumus		-	-	-	-	1
Victorinus,	*Invictus*	20	19	-	8	7
	Pax Aug	-	2	-	-	-
	Other	6	3	-	2	4
Tetricus I and II,	*Fides Militum*	5	3	-	3	3
	Hilaritas	8	3	-	3	3
	Laetitia	8	2	-	1	5
	Mars Victor	2	2	-	1	1
	Pax Aug	42	23	4	14	18
	Pietas - implements	13	17	2	5	9
	Princ Ivvent	-	-	-	-	1
	Salus Augg	20	14	2	10	5
	Spes	19	8	1	5	3
	Victoria/Comes	7	2	-	1	1
	Virtus Aug	5	3	-	3	6
Tetricus I, indistinct rev.		-	22	-	-	-
Tetricus II, indistinct rev.		-	14	-	-	-
Tetricus I/Tetricus II		-	1	-	-	-
Tetricus I/Victorinus		-	2	-	-	-
Mattingly's *Pax Aug* group		-	3	-	-	-
Mattingly's *Invictus*/Ewer group		-	1	-	-	-
Design rev.		-	16	-	-	1
Male figure rev.		6	27	-	2	3
Female figure rev.		3	37	-	1	3
Uncertain		81	85	7	46	28
Corroded flan		-	6	-	-	-
Other		1	1	-	-	-
GRAND TOTAL		255	329	17	112	107

Table 7 Witham barbarous radiates. Summary of coin types

Despite the derivative nature of the forms, the coins show a similar range of types to earlier barbarous radiate hoards and to site collections (see Davies 1982). The largest single categories are still the Tetrican varieties of *Pax Aug, Pietas, Salus Augg* and *Spes*, and the *Invictus* type of Victorinus. The prominence of these types reflects the original official coin types which formed the circulation pool during the main years of copying. Some of the more recognisable examples are illustrated in Plate XIX: numbers 19–21 are *Divo Claudio*, altar types; No. 23 is *Salus Avgg* Nos 26–8 are *Pietas*, showing sacrificial implements derivatives; Hoard No. 172 (not illustr.) is *Hilaritas*; two Victorinus copies are shown — Plate XIX.25 is *Invictus* and No. 29 is *Pax Aug*.

A feature of this series of imitations is that the obverse portrait and radiate crown are always identifiable, even if the reverse type is abstracted. A number of coins present possess reverses reduced to geometric shapes, too far removed from their prototypes to identify their origin. These include Plate XIX.9–11 and 22. Others have been classified under the generic term 'pin figures', whose reverse engraving depicts a simplified male figure, employing a childish drawing technique. Three such derivatives are illustrated (Pl. XIX.16–18). Some female figure types can be almost as indistinct, as shown in Nos 31–2.

In addition to the common traits identified among smaller coins present, a number of minims also exhibit similarity of style. Five examples (Pl. XIX.1–5) are illustrated which display the features in question. Their curved jaw, enlarged eye in its socket and dotted beard (in the case of Pl. XIX.1) are features which recur.

External linking

Three coins (Pl. XIX.6–8) are members of Mattingly's *Pax Aug* group, a die and style group which is known in greatest numbers from the Sussex minim hoards (Lewis and Mattingly 1964). There is also a single example of Mattingly's *Invictus*/Ewer type group, characterised by an angular portrait and V-shaped neck, as shown in Plate XIX.13 (Mattingly 1963; Lewis and Mattingly 1964). Examples of this group have been discovered on many English sites and regional sub-styles have been identified (Davies 1987 and 1988). The example from Witham closely resembles a form present at Richborough, Kent (Davies 1982, pl. 2, no. 14) and in the Meare Heath, Somerset, hoard (Davies 1986, pl. 2, no. 3).

One internal style group is comprised of three coins (Pl. XIX.9–11) which exhibit no legend. They were each struck from a die much larger than the flan and show only a small part of the head, centred on the ear. The hair is represented by short dashes. Reverses are all geometric shapes. These coins are nearly identical to die groups present in the Meare Heath hoard of barbarous radiate minims. They closely resemble twenty-six coins in die groups D and E from that hoard (Davies 1986).

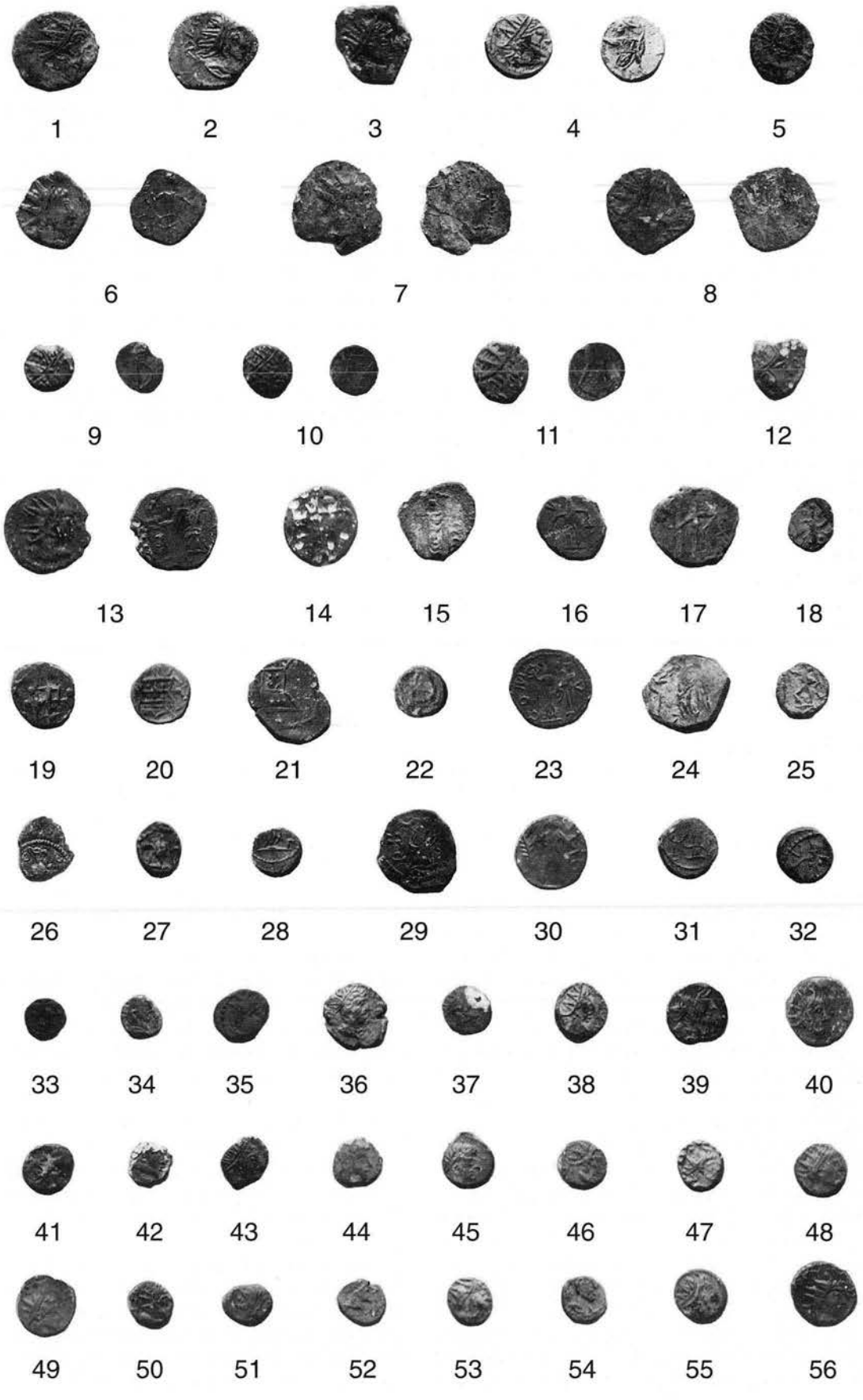


Plate XIX Barbarous radiates. Scale 1:1

One further example from the 1979 hoard (Pl. XIX.12) exhibits a treatment seen in Meare Heath groups B, D, and E. It is clear that some Witham coins were produced at the same West Country mint as that hoard. Two coins whose reverses are similar have been illustrated (Pl. XIX.14 and 15): they depict a stiff figure, right arm raised and resting a staff in the crook of the arm. This unusual type and style has been seen by the author in a coin from the site of Clausentum (Bitterne, Hampshire) whose obverse die-links with a coin from the Parvis, Notre Dame hoard, from Paris (Davies 1988, chapter 11).

The small size and general style of the small coins is closely comparable to one other minim hoard from the south-east of the Province. The Verulamium theatre hoard comprises some 800 very tiny minims and these are illustrated in full in the hoard report (Wheeler 1937). These Verulamium minims have not appeared comparable to specific hoards until now. Apart from their comparable size, these coins also lack legends and possess small simplified faces and reverse types — all difficult to classify. The Verulamium hoard does lack the component at Witham of the larger module coins, but does also contain two previously un-noted *Pax Aug* group types (Wheeler 1937, nos 340 and 655). The Verulamium hoard also lacks regular issues, and a close contemporaneity of the constituent coins with those from Witham is certain. Specific similarities between these two hoards include Plate XIX.33 with Verulamium no. 358; Plate XIX.34 with Verulamium nos 16--17; and Plate XIX.35 with Verulamium no. 45. Twenty-four Witham coins of this general type are illustrated in Plate XIX (Nos 33–56), for comparison with the Verulamium hoard illustrations.

Barbarous radiate hoards

Over 120 hoards containing barbarous radiates in varying proportions have been recorded from Roman Britain. The majority of these hoards have been found in the south and east of the Province. Such hoards have been found in Essex, such as the Olivers Orchard hoards of *antoniniani* (Davies 1983), but no other minim hoards have been recovered there. Apart from a small number of Carausian and 4th-century hoards which contain residual numbers of these coins, barbarous radiate hoards were deposited from the mid-270s to the mid-280s. They can basically be divided into two main groups. Those which do not contain minims and which have been dated to the mid-270s are almost completely restricted to the south and east of Britain. In contrast to this, hoards which contain a substantial proportion of minims are found all over the country, but with the majority clustered in Avon, Somerset, South Wales and Cornwall, with others located in the Midlands and north of England. Just six minim hoards have previously been found in the south-east. Of these, three were found near to each other on the Sussex coast and are clearly associated by die-linked groups (Lewis and Mattingly 1964; Mattingly 1967); two minim hoards are known from Verulamium (Wheeler 1937: Mattingly 1971) and one from Richborough (Mattingly and Stebbing 1938). In view of the overall distribution of Roman hoards in Britain, which show greater concentration in the south-east, it is apparent that minim hoards show a locational bias away from this part of the Province. It has further been argued that the main production area for these minims lay outside of the south-east. specifically in the West Country (Davies 1986).

The current evidence available for the production of these coins suggests that the bulk of minim production took place in the Avon-Somerset area, and in the Midlands (Mattingly 1963: Mattingly and Dolby 1982: Davies 1986). In view of the affinity of certain coins to known West Country products from Meare Heath it is suggested that at least part of the 1979 hoard originated in the West Country. The similarity to Verulamium theatre hoard coins suggests that those too may have originated in the same area, being subsequently introduced into the south-east.

The presence of West Country links in the 1979 hoard, alongside other well-known style groups associated with the Midlands, reinforces a picture of minim hoards being intrusive to the south-east. The dating of this hoard on established grounds would require its assembly between AD 282–4 and the usurpation of Carausius in AD 286. There is no numismatic evidence to suggest a later composition.

b. The other barbarous radiate hoards

Two other hoards of barbarous radiates have also been found on the site. A large deposit of 255 coins was discovered during the pre-1978 excavations. A much smaller hoard of just seventeen was found in 1980.

The 'pre-1978 hoard'

Two hundred and fifty-four barbarous radiates, plus a single regular *antoninianus*, were found as a dispersed hoard over an area approximately 4 by 1.5m, and within a depth of up to 200mm of soil (layers *S28/C* and *S28/C2*). There was no sign of a container. The composition of the hoard and the coins themselves both share similarities with the 1979 Witham hoard.

The coins are well engraved, with a similar degree of competence to that seen in the larger hoard. About half share the trait of no legend on one or both faces. Again, there is an absence of die-linking, which is disappointing within a hoard of this size. Neither were any die-links established between the two hoards. It appears that both deposits were assembled from more than one source and not from a single irregular mint, although many of the coins in question share similar traits of style, size and lack of legend.

The size distribution within this hoard (Fig. 51, excluding the official issue) is similar again to that of the 1979 hoard. Just thirty-four coins have a diameter of 15mm or above, comparable to regular *antoniniani*. 72% fall within the minim classification of 13mm and below, comparing closely with 74% in the 1979 hoard. The coin types present are summarised in Table 7.

The range of types is very similar to that of the 1979 hoard and, indeed, to the range encountered in 3rd-century hoards generally. A number of unusual coins are present, several of which are shown on Plate XX. Plate XX.1, with a diameter of just 9mm, appears at first glance to be a *Divo Claudio*, altar type. The reverse carries a double-bordered square but some unusual lettering is engraved within. No parallel regular issue could be found and this type is considered to be a derivative of the altar. An interesting hybrid is present (BR No. 223), which couples a clear Tetricus II portrait with the eagle reverse of the *Divo Claudio, Consecratio* issue. Barbarous radiate No. 355 depicts *Mars Victor*, as used by Tetricus I, but seldom copied. Plate XX.27 depicts *Salus*, in the highly unusual seated position. This seated version is very rare. Two Proban copies are present. Proban copies are known from a number of British hoards but are by no means common.

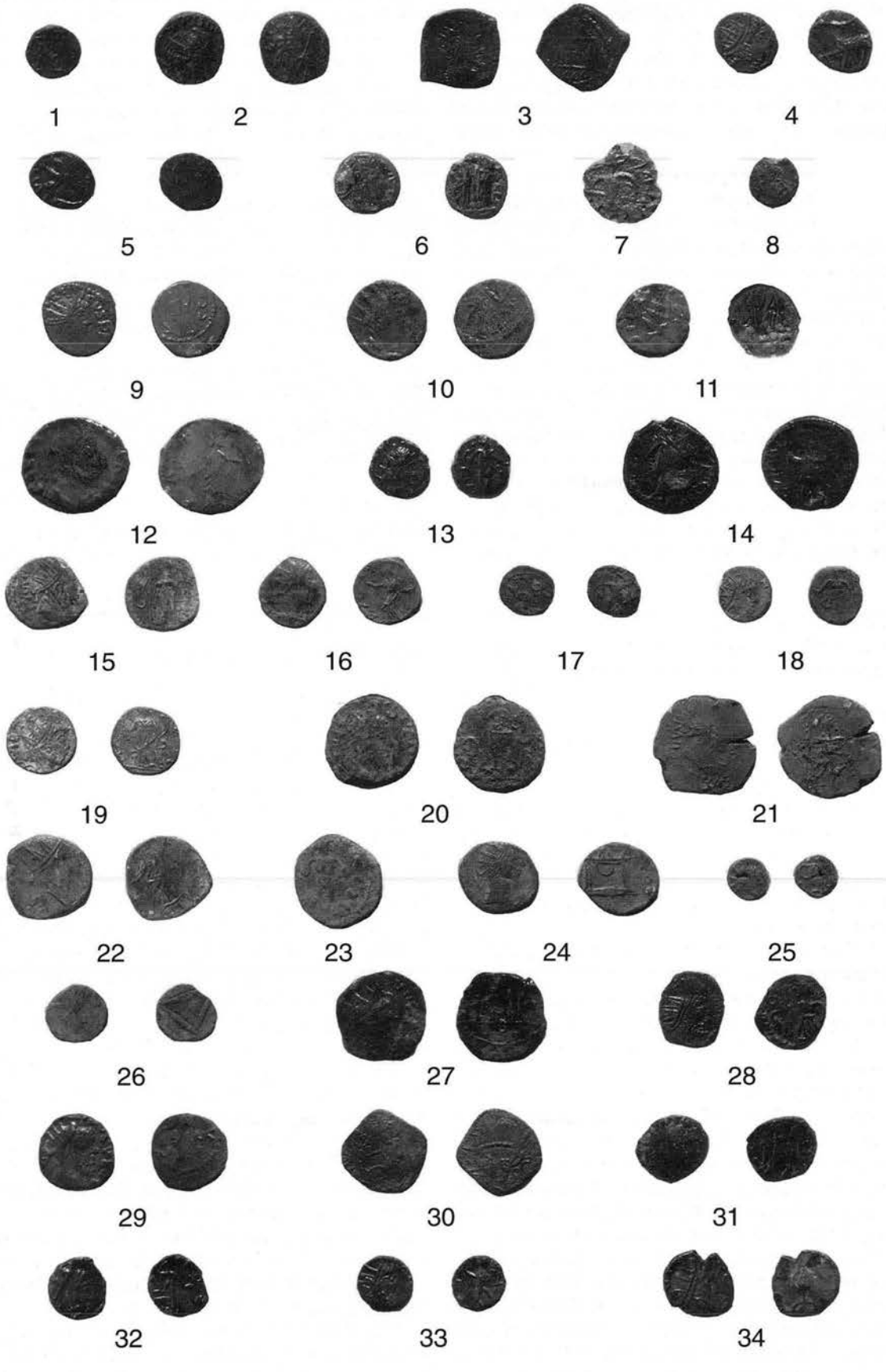


Plate XX Barbarous radiates. Scale 1:1

Most tend to possess the lettering PROB on the obverse, *e.g.* Plate XX.2 which here is coupled with the reverse *Pax Aug* (transverse sceptre). Plate XX.3 does not carry a legend but does have a Proban reverse — the temple, as used in the issue *Romae Aeter*, but with an incorrect mint mark. The presence of Proban imitations confirms the late dating of between *c.* AD 280–84 for the striking of the bulk of these coins. Probus was the latest emperor whose coinage was copied within the barbarous radiate series. Seven additional examples from this hoard have been illustrated in Plate XX (Nos 28–34). Plate XX.30 is an imitation of *Invictus*, on which the obverse has also been overstruck with a reverse die. Plate XX.31 again depicts *Invictus*, this time, incorrectly, reversed. Plate XX.33 carries a recognisable caricature of the emperor Victorinus.

Both large hoards from Witham can be considered typical of the latest barbarous radiate hoards buried during the late 270s and early 280s. The distribution of these hoards shows minim hoards to have been buried predominantly outside the south-east of Britain (Davies 1986: also 1979 hoard discussion). The Witham examples are therefore unusual in their situation. More unusual, though, is their recovery from contexts datable, on other grounds, to the 4th century. The presence of these hoards in this area, so many years after their manufacture, would suggest their importation to Witham at a later date, for a specific function (see p. 254).

The '1980 hoard'

Just seventeen coins comprise this third barbarous radiate hoard from Witham. These coins were found associated with the remains of a ceramic container and with infant bones. They are mainly small coins (Fig. 51). Fourteen are minims, falling to 6mm diameter. A single large example is 23mm. A tiny imitation of the *Pietas*, sacrificial implements, type, with a recognisable ewer visible on the reverse, is illustrated in Pl. XX.25.

These coins are again from the latest phase of barbarous radiate production of *c.* AD 280–84 (Table 7). It is possible that this hoard may represent a foundation deposit below the timber ?building represented by ditch *F3203* (see p. 245).

c. The site finds

The three Witham hoards described here total 600 barbarous radiates and one regular issue. In addition to this very substantial number of irregular coins from the hoards can be added 219 barbarous radiate site finds. The huge total of over 800 examples from the site requires explanation. Even without the hoards the large number of site finds is exceptional. Barbarous radiates comprise 40% of the 548 non-hoard Roman coins from Witham.

If barbarous radiates are omitted from the coin list the remaining coins exhibit a fairly normal pattern for a British temple site (Fig. 50). The main exception is the large number of official *antoniniani*, which fall within the percentage range recorded on other sites but which outnumber all other coin periods in a most unusual way. If the 219 barbarous radiates are to be added to the coin list, and allocated to Reece's period XI (AD 275–96) as is the usual practice (Reece 1972), the pattern of coin loss for the site becomes very abnormal indeed (Table 1). It is possible that the predominance of both regular and irregular *antoniniani* at Witham may be related.

The barbarous radiates from this site form a large and unusual assemblage, if regarded purely as site finds. The coins present will first be considered and then the reason for the number of coins will be discussed.

There are 112 barbarous radiate site finds from the pre-1978 excavations, and 107 examples from the 1978–83 excavations. The size distribution shown in Figure 51 includes larger coins than were present in the main hoards, with coins reaching 23mm diameter. A larger proportion of coins in each case exceeds 13mm, which is 37% of the barbarous radiates overall. However, there is still a very large proportion of minims, including the very small types which are usually only rarely recovered as site finds. The minims tend to share traits seen amongst the hoard coins, such as lack of legends. Unfortunately no die-links have yet been found to associate the site and hoard finds. A breakdown of types present is included in Table 7 (excluding a disintegrated example).

A number of examples are worthy of particular mention. From the pre-1978 site finds, Plate XX.4 is an imitation of Gallienus, with a stag on the reverse, from the late *Dianae Cons Aug* series of this emperor. This delightfully engraved coin is very clear but no attempt was made to represent a legend. An uncommon Tetrican copy of *Mars Victor* is present (Pl. XX.7). Plate XX.14 carries a left-facing bust. The emperor in question is uncertain; the portrait is bearded. Such busts were more commonly used in the coinage of Probus than in the Gallic Empire, but the style of bust is incompatible with that emperor. Other coins worthy of illustration are shown in Plate XX (Nos 5–22). Some very clear engravings are present, notably on Plate XX.8 (Claudius II), XX.9 (Tetricus I), and XX.16 (Tetricus II) despite very small flans in each case.

From the 1978–83 site finds the less common types include *Mars Victor* (BR No. 368) and *Aequitas* of Victorinus (BR No. 395). A single example of a reverse depicting Jupiter, as used by Postumus, is illustrated (Pl. XX.23). An example of the *Princ Ivvent* reverse, as used by Tetricus II, is recorded (BR No. 421). This reverse was rarely copied and this may reflect a scarcity of this regular issue in circulation. Two other coins are illustrated in Plate XX: No. 24 is a small, but otherwise excellent, *Divo Claudio*, altar, imitation; and, in contrast, No. 26 carries a very poor reverse engraving, showing merely a triangular design and no lettering.

Discussion

In addition to the problem posed by the abnormally high proportion of barbarous radiate site finds, it is apparent that most of these coins came from late 4th-century contexts, in common with the two large hoards, and not from late 3rd-century contexts. The recovery of barbarous radiates from 4th-century contexts is not in itself unusual. Examples are often recorded from later layers on sites and most hoards of mid-4th-century date contain a residual number of late 3rd-century *antoniniani*. It is the sheer quantity of these coins from later deposits at Witham that must be explained.

The types of Roman coin found in a site collection from Britain do not tend to vary greatly, beyond certain limits (Reece 1972). A more specific study of barbarous radiates from British sites has shown that the proportion of these coins similarly remains constant within certain limits (Davies 1988).

The size of the barbarous radiate component can best be expressed as a percentage of the coin minted during the period AD 259–94. Most British sites have approximately 15% to 35% of this total, although at Neatham (Hampshire) the figure reached 51%, and at Kingscote (Gloucestershire) it was 59%. However, the percentage tends to stay within the above limits, regardless of site location. In contrast, numbers of these coins are greater in the north of Gaul and the corresponding percentages are consistently in excess of 40%. By comparison with other British sites, the number of barbarous radiates expected to have been related to 3rd-century activity at Witham would have been approximately 110 to 180 coins. The 219 barbarous radiate site finds from Witham comprise over 70% of the coin present minted between AD 259–96. This total is in the region of twice that to be expected from the site.

The pattern of size distribution for these coins within British sites similarly tends to remain constant. Variation does occur but is regional and therefore predictable (Davies 1988). Diameters of site finds range between the extremes of 23mm and 6mm (Fig. 51). Values peak at between 18 mm and 13 mm, with a regular fall-off toward the extremes. Minims comprise about 20% to 40% of barbarous radiates on most sites. At Witham, coins of this module comprise 67% of pre-1978 examples and 58% of 1978–83 examples.

In conclusion, the proportion of barbarous radiates is far higher than for other British sites and the size range of these coins shows minims to be over-represented. The majority are from 4th-century contexts. The concept of a 4th-century date for the production of these coins has long since been discredited. It is also unlikely that this site would have been a production centre during the 3rd century in the absence of die-linking and of manufacturing debris. Evidence for the manufacture of these coins comes predominantly from the west of Britain (Davies 1986: also 1979 hoard discussion). It appears most likely that large numbers of barbarous radiates were introduced to this site during the 4th century.

It is possible that a large number of the minims, in particular, were introduced to the site as part of one, or both, of the large hoards. Many constituent coins possess similar features, although die-links are absent. Barbarous radiate hoards, such as the Meare Heath hoard (Davies 1986), frequently contain a number of regular *antoniniani*. It is possible that some of the apparently over-represented official radiate issues from Witham were introduced to the site together with the other late 3rd-century coins at a later date. Some of this regular coinage may originally have been part of the hoards.

Both large Witham hoards were discovered in contexts dated to the 4th century. Their introduction to the site for a votive purpose would help to explain both the presence of such a large number of these late 3rd-century coins in 4th-century layers, and also the incongruous presence of minim hoards in the east of Britain. Such hoards were rarely buried in the south and east during the late 3rd century. It is considered that a proportion of the site finds, also from 4th-century contexts, were brought to the site as part of one or both of the hoards. The more general re-use of these coins in large numbers in 4th-century contexts would be most exceptional if not connected with a votive function at the site, together with the hoards.

IV. The brooches

by Donald Mackreth (1995)
(Fig. 52)

Colchester Derivatives

1. The spring was held in a combination of the Harlow and the Polden Hill systems: an axis bar through the coils was seated in pierced plates at the end of the wings and through the lower of two holes in a plate projecting behind the head of the bow, the chord passing through the upper. Each wing has bead-and-reel mouldings made up with three beads which had probably been beaded. The bow is broad at the top, has a D-shaped section and a skeuomorph of the hook on the Colchester made by continuing the plate behind the head over the top for a short distance. The lower bow, with the catch-plate, is missing. *[1173]; 3734 (ditch F3732)*; Phase 4–5

The distinguishing feature here is the mixing of two different systems for holding a separately-made spring to the body of the brooch: the Polden Hill and the Harlow. The former, with its pierced plates at the end of the wings, is found chiefly in the west of England while the single plate with two holes belongs to eastern England, specifically to the homelands of the Colchester type. There is a very small group of brooches which betray eclectic features such as this. The other chief system for holding the spring, the rearhook, tends not to be mixed with the two represented here, but develops three hooks, the extra ones being at the ends of the wings (*e.g.* Baldock (Stead 1986, 112–3, fig. 44.82)). Such brooches should indicate a period of experiment when the four chief systems of holding the pin, the other is the hinged pin, had not become fully established. The hinged pin was a mark of brooches in the deep south-west before the Conquest and it is not surprising that that was to become the heartland of that system. The sprung pin belongs to the south-east and, when Colchester was being replaced, the problems of dealing with a separately-made pin were addressed in different ways. There is, for instance, a forward-facing hook (*e.g.* Hull 1961, 172, fig. 31.3), a single pierced plate with a notch (Waugh and Goodburn 1972, 114, fig. 29.7), a Polden Hill with a forward-facing hook (Wroxeter, G. Webster, in prep.), even a Colchester without an integral spring (from Canterbury) and another in which the end of the wire for the spring was inserted into the mould so that the brooch could be cast round it (from Eccles, Kent; A. Detsicas, in prep.). As might be expected, examples surviving from a brief period of experiment are excessively rare with the result that dating evidence is very much at a premium. However, the period should have been short and at the beginning of the main runs of Colchester Derivatives. One piece of evidence is a Colchester from Skeleton Green in which the hook points to the rear (Mackreth 1981a, 140, fig. 68.20). and which dates *c.* AD 30–40. In other words, right at the end of the production of that type. Apart from that sign, the specimen noted above from Baldock was dated AD 120–150 and the decoration alone shows that it must have been residual. The item from Bagendon (see above) was, however, dated to late Claudian times and it should be safe to assume that the whole of this disparate group should have been made before AD 50.

Not illustrated:

a. Only a small fragment survives whose taper and profile are better suited to a brooch than almost anything else. Down the raised centre is a flute which narrows as the brooch tapers; on each side is a ridge with diagonal cross-cuts giving a beaded appearance. The metal has a silvery finish and the alloy may have a high lead content. The only type to which this item is likely to belong is a Colchester Derivative. *[3145]; D3747 (=3509 of depression F3321)*; *Phase 7*

The likely date-range is from after *c.* AD 75 to the early 2nd century.

Late La Tène

2. The brooch was forged. The integral three-coil spring has an internal chord and is made from square-sectioned wire. The bow is too pitted by corrosion for its section to be determined or whether there had been any decoration, but it had been definitely rod-like as opposed to rectangular like the bow of brooch b (below). *[X3]; B1*

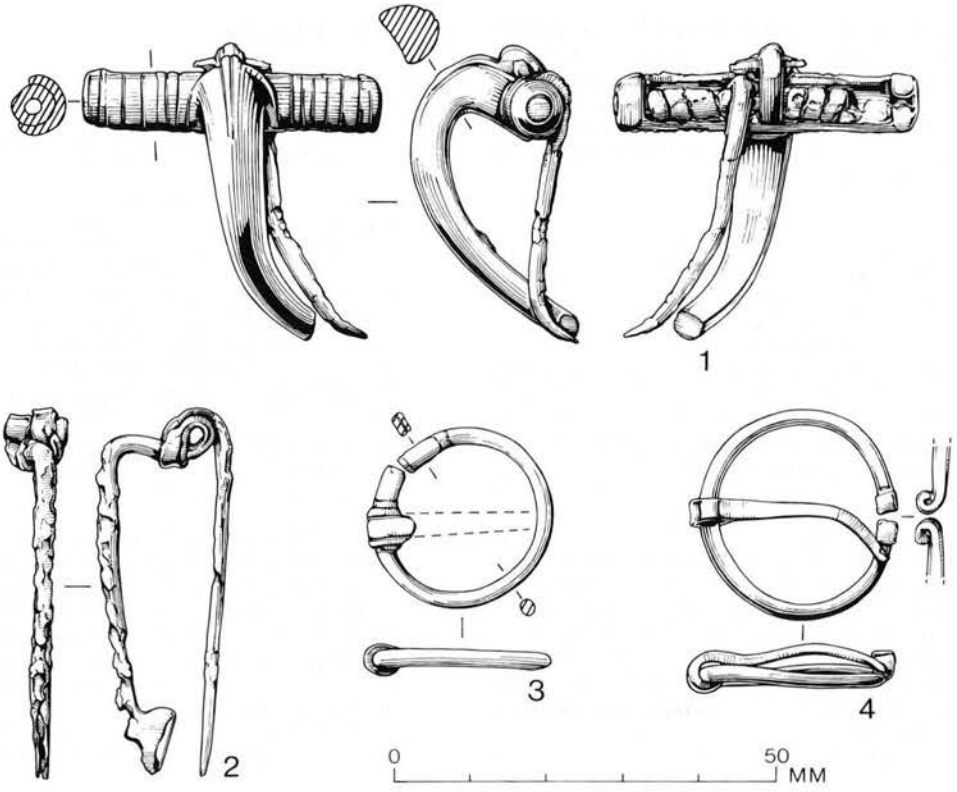


Figure 52 Brooches: Nos 1, 3 and 4 copper alloy; No. 2 iron. Scale 1:1

Three-coil springs in copper-alloy brooches of what could be described as *Drahtfibel* Derivatives are most common in the deep south-east, especially Kent. There is, however, a small group of iron brooches which is peripheral to these. Most have rectangular-sectioned bows like that of brooch b (below), a few have the sections in which the greater dimension of the rectangle runs from front to back, and even fewer have a lozenge section. One of the last from Bagendon was dated AD 50–60 (Hull 1961, 169, fig. 30.1). However, dating for those like the present specimen is practically non-existent: Skeleton Green, iron, *c.* 10 BC–AD 20 (Mackreth 1981a, 132, fig. 66.1). Even looking at those with other styles of section, the result is hardly encouraging (R =rectangular section): Skeleton Green, Herts, iron, R, *c.* 10 BC–AD 20, (Mackreth 1981a, 132, fig. 66.3); Maiden Castle, Dorset, iron, ?R, *c.* AD 25–50, (Wheeler 1943, 252, fig. 85.34); Puckeridge, Herts, iron, R, *c.* AD 25–Claudian, (Mackreth 1980, 35, fig. 6.3); Baldock, Herts, R, AD50–70, Stead 1986, 109, fig. 40.18; Chichester, Sussex, R, Flavian, (Mackreth 1978, 280, fig. 10.27, 25).

All whose date ranges began in the late 1st century have been omitted as they were almost certainly residual in their contexts. What is revealed is not surprising: iron brooches tend to be pre-Conquest, the copper-alloy ones run on into the later 1st century.

Not illustrated:

b. The spring has four coils and an internal chord. The bow is thin and probably lanceolate: the lower bow with the catch-plate is missing. The lower part is bent up and obscures the front of the bow which seems to have nicks down each side. *[5077]; 5280 (ditch F5268); Phase 3–7*

Decorated brooches in this group, generally termed Nauheim Derivatives, are not common and there is a temptation to see them as somehow bridging the gap between the true Nauheim, out of use by the end of the 1st century BC, and the common descendants, most of which are later than the Conquest. A general review of decorated brooches in this tradition has been long overdue and the opportunity is taken here to provide one. The dating for decorated examples is: Foxholes Farm, Little Amwell, Herts., 80–20 BC (Mackreth 1989b, 132, fig. 76.5); King Harry Lane cemetery, N, phase 1 (Stead and Rigby 1989, 354, fig. 154, G.317.4); Canterbury, AD 15–43 (Frere *et al.* 1987, 185, fig. 65.2); Baldock, N, AD 25–50 (Stead 1986, 109, fig. 40.15); Chichester, pre-Conquest (Mackreth 1989c, 186–8, not illustrated); Durrington Walls, N, probably pre-Conquest (Wainwright 1971, 324, fig. 105.2); Colchester, AD 43/44–48 (Hawkes and Hull 1947, 308, pl. 89.5); Chichester, Claudian (Mackreth 1978, 280, fig. 10.26, 17); Richborough, Claudian (Hull 1968, 78, pl. 27.10); Chichester, AD 44 — Flavian, two examples, one decorated as here (Mackreth 1989c, 186–8, not illustrated): Hod Hill, before AD 50, six examples (Brailsford 1962, 7, fig. 7, C21–5; Richmond 1968, 117–19; British Museum 1954, 16, fig. 8.2); Weekley, Northants., N, mid-late 1st century AD (Mould *et al.* 1987, fig. 22.6); Baldock, AD 50–90 (Stead 1986, 109, fig. 40.17); Silchester, before AD 60 (Boon 1969, 47, fig. 6.3); Chichester, pre-Flavian (Mackreth 1989c, 186–8, not illustrated); Verulamium, pre-Flavian, two examples (Stead and Rigby 1989, 14, fig. 10.1, 4); Richborough, pre-Flavian (Hull 1968, 78, pl. 26.4); Fishbourne, AD 43–*c.* 75, eight examples (Hull 1971, 100, fig. 36.4–6, 8, 9, 11–13); Chichester, Flavian, three examples, one N (Mackreth 1978, 280, fig. 10.27, 21; Mackreth and Butcher 1981, 256–7, fig. 10.1, 7; and not illustrated); The Lunt, Baginton, before AD 70/75 (Mackreth 1969, 111, fig. 19.11); Gussage All Saints, before AD 75, four examples (Wainwright 1979, 111, fig. 86.3014, 3032, 3046, 3055); Harlow, before AD 80 (France and Gobel 1985, 75, fig. 39.1); Fawkham, Kent, N, before AD 100 (Hull 1963b, 69, fig. 3.2). The relatively small number dating to the 2nd century or later have been omitted. Those marked N have designs which are recognisable like those on the parent type and, not only are most before AD 50, but at least two are pre-Conquest. The example from Foxholes Farm is particularly important as it could indicate that the first stage in the production of brooches without framed catch-plates began with omitting that feature from relatively small 'Nauheims', this removing the one feature which marks the parent. Otherwise, the dating is consistent: very few date after AD 75 and, allowing for the residual factor, almost all had passed out of use before then. The group from Hod Hill could easily have derived from the Iron Age occupation underlying the fort and those from Gussage All Saints also stand a good chance of being much earlier than the assessed terminal date of the site.

Langton Down

Not illustrated:

c. Very corroded, only the spring-case and the upper bow survive. The corrosion shows that the spring-case had been made from sheet metal which was then inserted into the mould so that the cast bow could fuse with it. Traces of relief decoration radiating from the head of the bow can be seen. The only decoration on the bow left is the beaded cross-moulding across the top. *[5024]; 4713 (depression F4763); Phase 6–7*

The spring-case and remains of the bow show that this was a Langton Down and the raised ornament shows that it belonged to the variety known as the Nertomarus. The British dating is: Bagendon, AD 43/45–47/52 (Hull 1961, 176, fig. 35.5); Fishbourne, AD 43–*c.* 75 (Hull 1971, 100, fig. 38.28). The general indications are that the Nertomarus belongs to the later stages of the Langton Down's floruit and should be passing out of use *c.* AD 50/55.

Penannular

3. Now conserved, much of the original surface has been lost. The ring had a circular section. Each terminal is folded back along the top of the ring and only a trace of a concave surface in the middle can be seen. *[114]; D1 (unstratified); Phase 9*

As the full form of the terminals is not preserved, only those with a similar hollow as part of their design are considered here. The dating is: Bagendon, AD 20/25–43/45 (Hull 1961, 184, fig. 36.10); Hod Hill, before AD 50, three examples (Brailsford 1962, 12, fig. 11.E11, E16, E17; Richmond 1968); North Cerney, Glos., Claudian-Neronian (Mackreth 1988, 51, fig. 24.26); Stoke Abbott, Dorset, before *c.* AD 60 (Mackreth 1981b, 62, fig. 25.11); Halstock, Dorset, before *c.* AD 60 or after *c.* AD 110/120 (Mackreth 1993, 79, fig. 14.21); Longthorpe, Cambs., before AD 60/65 (Goodburn 1974, 46, fig. 24.13); Prestatyn, AD 70s–160 (Mackreth 1989a, 98, fig. 40.27); Bancroft, late 1st century to late 3rd century AD (Mackreth 1994, 302, fig. 137.53); Camerton, not before AD 150, two examples (Wedlake 1958, 234, fig. 54.63–4); Whitton, Glam., before AD 160 (Webster 1981, 177, fig. 71.29). The one from Prestatyn may have derived from the pre-Roman site there, just as those at Hod Hill could have arrived on the site before the Romans did. Looking at the bias of the dating, the one from Halstock should date to the earlier period as it seems that the bulk had been consigned to the earth by AD 70 and that any after AD 100 should have been residual in its context.

4. The ring has a rectangular section whose corners are rounded. Each terminal is formed into a simple coil. *[X372]; S48/C1*

It is now certain that a distinction must be made between terminals which are properly coiled and those which merely curl over to touch the ring. The rings of the former may have rectangular sections, although circular ones are more common, the rings of the latter are usually rectangular sections. The latter are late Roman and the former are early Roman going back to before the Conquest. The present piece does not have much in the way of coiling, but it clearly is properly coiled, and therefore 1st or 2nd century in date.

V. Bronze (copper alloy), silver and gold

by Graham Webster, with contributions by Glenys Lloyd-Morgan, John P. Wild and Elisabeth Crowfoot

Introduction

In the past, bronze (copper alloy), silver and gold finds from temple excavations have been over-drastically selected for publication. The importance of the Witham group is in the poverty of the finds and the makeshift nature of the votive objects: such finds have been disregarded in past reports as they were not considered 'significant'. In order to rectify this situation, all of the finds of copper alloy, silver and gold from Witham are catalogued in this volume: illustrated examples and those of individual or collective merit are described in the following text, and other objects have been included in the Microfiche Bronze Appendix. Both the following catalogue and the Appendix are ordered in the same way: personal ornaments; domestic and household objects; and other material. General subdivisions have been made within these main categories, and objects have been ordered by smallfind number within each of these divisions. All objects are of copper alloy unless otherwise stated.

Personal ornaments

Rings and finger-rings

(Fig. 53)

Where measurable, the internal ring diameter is given. Four of the rings (Nos 6, 8, 9, and 10) have previously been published (Henig *et al.* 1973).

1. Small open band ring: decorated with a medial line of dots. Diam. 15–17mm. *[81]; 86 (depression F2409, horizon 5); Phase 7*
2. Ring or bracelet fragment: decorated with a line of punched dots on one edge and spaced out 'V's. Appears to have been bent to the size of a finger-ring, possibly as a votive offering. Diam. *c.* 14mm. *[536]; 680 (pond F679, upper fill); Phase 7*
3. Oval bezel: from a ring from which the loop has been removed. Decorated with three deeply cut grooves on each side, and contains a blue paste with a crude phallic intaglio, a common amuletic motif. *[1004]; D3200 (unstratified); Phase 9*
4. Piece of thick wire, bent into a D-shaped ring: either a poor-quality votive, a scale-beam terminal (see No. 75), or a piece of scrap. Diam. 8–13mm. *[3305]; 3509 (depression F3321, horizon 5); Phase 7*
5. What appears to be an open finger-ring: in thin metal; *kerbschnitt* type decoration, more often found on a bracelet. Precisely paralleled at Nettleton (Wedlake 1982, fig. 90, no. 14), which raised the possibility of it being formed from a broken open-ended child's bracelet. Diam. 19–22mm. *[5081]; D5201 (unstratified); Phase 9*
6. Short length of bracelet bent into a small circle to make a ring: broken near a terminal, since the hole to receive the hook fastener is present; dot-and-circle decoration. Lydney type E (Wheeler and Wheeler 1932, fig. 17): see also an example from Lowbury Hill, Berkshire (Atkinson 1916, 40, pl. xi no. 9). Diam. 15mm. *[X33]; B3*
7. Short length of a twisted wire bracelet, bent into a ring. *[X78]; T12/5/C*
8. Small ring: with expanded shoulders to mount a raised bezel which holds a rounded blue glass inset. *Cf.* Wheeler (1930, 100, fig. 30.11). Diam. 15mm. *[X107]; T12/7/C*
9. Man's silver ring: flattened rounded shoulders decorated with lines of small punched dots and a flat table supporting a bezel which contains decayed paste or enamel. *Cf.* Lydney (Wheeler and Wheeler 1932, 82, fig. 16.53–5). Max. diam. 24mm; bezel 14 by 12 by 4mm. *[X157]; B17/D*
10. Ring: of thin metal, badly corroded; expanded notched shoulders; slightly raised rectangular bezel, 4 by 3mm. For general pattern, *cf.* Nettleton (Wedlake 1982, fig. 92, no. 8) and Woodeaton, Oxfordshire (Kirk 1951, 22, no. 11 and fig. 15.9). Diam. 19mm. *[X199]; S22/C*

Not illustrated:

a. Thin plain finger-ring: traces of gilding. Diam. *c.* 18mm. *[8]; 55 (depression F2409, horizon 6); Phase 7*
b. Half a plain finger-ring or ear-ring. Diam. 16mm. *[908]; 2833 (depression F2409, horizon 2); Phase 6*
c. Small plain open ring, probably a finger-ring: in the form of a narrow band; incised line near one end. *[1012]; D3200 (unstratified); Phase 9*
d. Large plain broad-banded finger-ring. Diam. 18–23mm. *[3188]; 3509 (depression F3321, horizon 5); Phase 7*
e. Open finger-ring: tapers at each end; decorated with spaced out grooves in pairs. Diam. 16mm. *[3269]; 4228 (depression F3321); Phase 6*
f. Small open ring. Small rings are often found attached to religious objects for the suspension of bells (*cf.* for a standard tip from Felmingham Hall, Norfolk (British Museum 1951, pl. XXIV, no. IX), and from the beak of an eagle from Lydney (Wheeler and Wheeler 1932, fig. 21, no. 107), and London (Wheeler 1930, pl. XLVIII)). Diam. 11mm. *[X20]; B2*
g. Short length of plain wire, bent into a ring: probably not from a finger-ring, unless it was intended as a votive object. Diam. 9–13mm *[X141]; B17/C*

Bracelets

(Fig. 54)

11. Short length of bracelet: with decoration in the form of crenellation, *cf.* Nettleton (Wedlake 1982, fig. 91, no. 22). *[14]; 55 (depression F2409, horizon 6); Phase 7*
12. Bracelet frag. Lydney type D (Wheeler and Wheeler 1932, fig. 17). *[50]; 59 (depression F2409, horizon 6); Phase 7*
13. Plain open bracelet: with pointed terminals. *[62]; 86 (depression F2409, horizon 5); Phase 7*

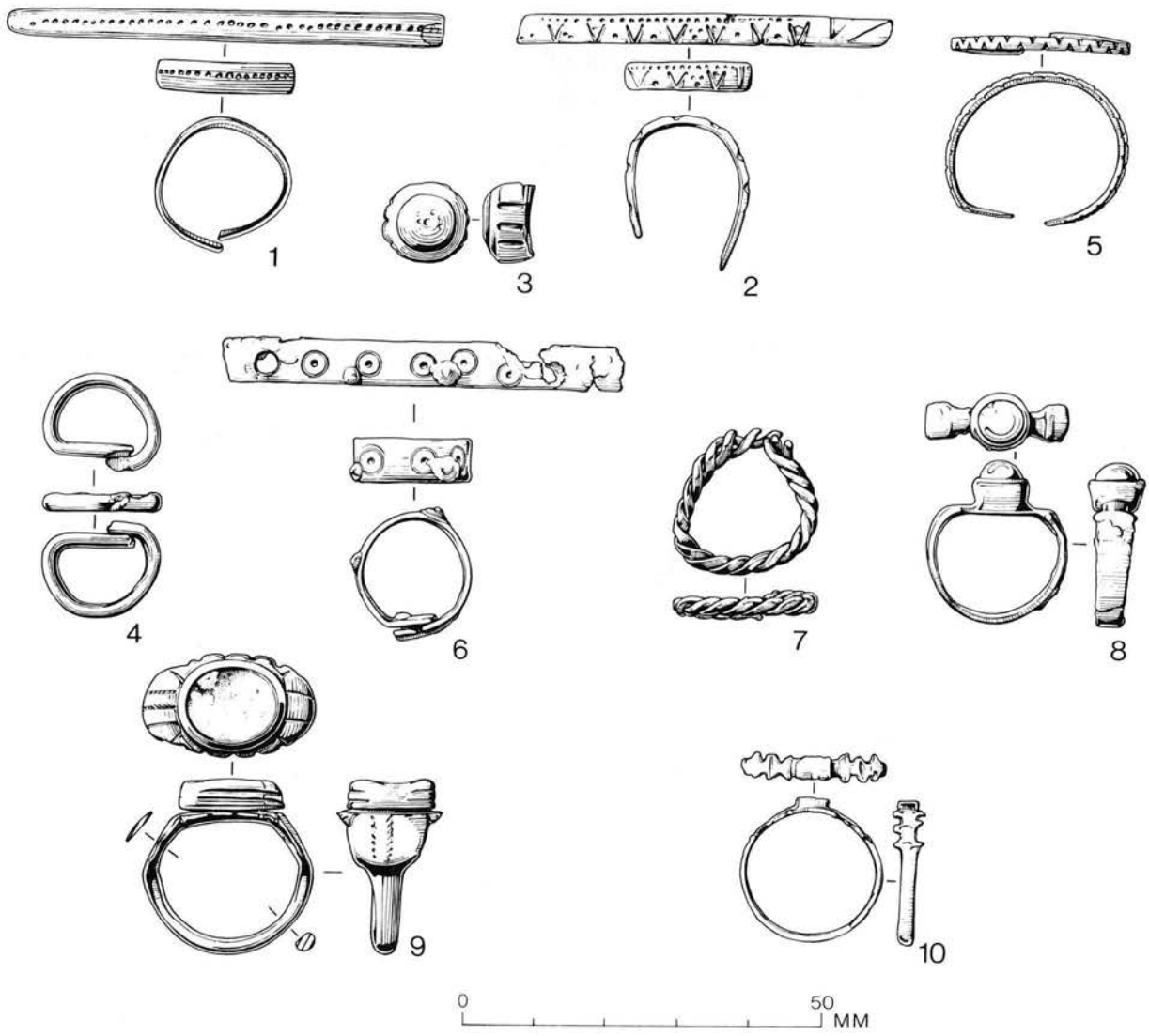


Figure 53 Copper alloy and silver: Nos 1–10 rings and finger-rings. Nos 1–8 and 10 copper alloy; No. 9 silver. Scale 1:1

14. Double strand twisted wire bracelet frag.: with a loop terminal, *cf.* Richborough (Henderson 1949, pl. XLIX, no. 11). *[75]; D1 (unstratified); Phase 9*

15. Slightly curved strip, probably part of a flat bracelet: decorated with a continuous punched pattern. Width 10mm. *Cf.* Nettleton (Wedlake 1982, fig. 91, no. 32). *[396]; 680 (pond F679, upper fill); Phase 7*

16. Two lengths of decorated bracelet: similar to No. 12. *[689]; 1574 (ditch F189); Phase 5–7*

17. Complete open-ended bracelet: decorated near the terminals. *[1007]; D3200 (unstratified); Phase 9*

18. Well-worn decorated bracelet frag.: with an unusual loop end, *cf.* Richborough (Bushe-Fox 1928, pl. XXII, no. 59). *[1010]; D3200 (unstratified); Phase 9*

19. Flat bracelet frag.: with notched decoration on one edge. *[1011]; D3200 (unstratified); Phase 9*

20. Slightly curved decorated strip, probably part of an open bracelet: decorated with linear moulding which ends before a slightly rounded terminal. Possibly from a strip of 'banding' and 'strip' similar to those from Nettleton (Wedlake 1982, fig. 85, nos 27 and 35). Width 9mm. *[3036]; D3747 (=3509 of depression F3321); Phase 7*

21. Well-made bracelet frag.: thick metal; hook terminal; decorated with lightly cut corrugations which show signs of wear. *[3136]; D3747 (=3509 of depression F3321); Phase 7*

22. Bracelet frag.: decorated in a feather or leaf pattern, similar to No. 27. *[3162]; D3878 (disturbed); Phase 5–6*

(Fig. 55)

23. Plain armlet with overlapping terminals to allow for adjustment; oval cross-section (3 by 2mm). An attached ring may have carried a key, as in one from Coldham Common, Cambridgeshire (British Museum 1922, fig. 86). *[X2]; B2*

24. Small, thin, child's bracelet: with a wavy outer edge, tapering towards the fastener. *[X71i]; T13/1/C*

25. Twisted wire bracelet frag. *[X264]; S21*

26. Bracelet frag.: with decoration of a complicated design which includes circles and triangles, *cf.* Lydney type D for the general pattern (Wheeler and Wheeler 1932, fig. 17). Thickness 1mm. *[X266]; S20/C2*

27. Thin strip bracelet frag.: decorated with a leaf pattern; terminal has a central hole. *[X353]; unstratified*

Not illustrated:

a. Double strand thin wire bracelet frag.: possibly for a child, or could be a votive object. *[X161]; B17/D*

Parts of chatelaine

(Fig. 55)

28. Instrument, often identified as an ear-pick from a chatelaine. *Cf.* Richborough (Henderson 1949, pl. XXXVI, no. 127). *[799]; D2018 (disturbed); Phase 7*

29. Pair of plain tweezers, probably from a chatelaine. *[1182]; 3553 (depression F3321, horizon 2); Phase 5*

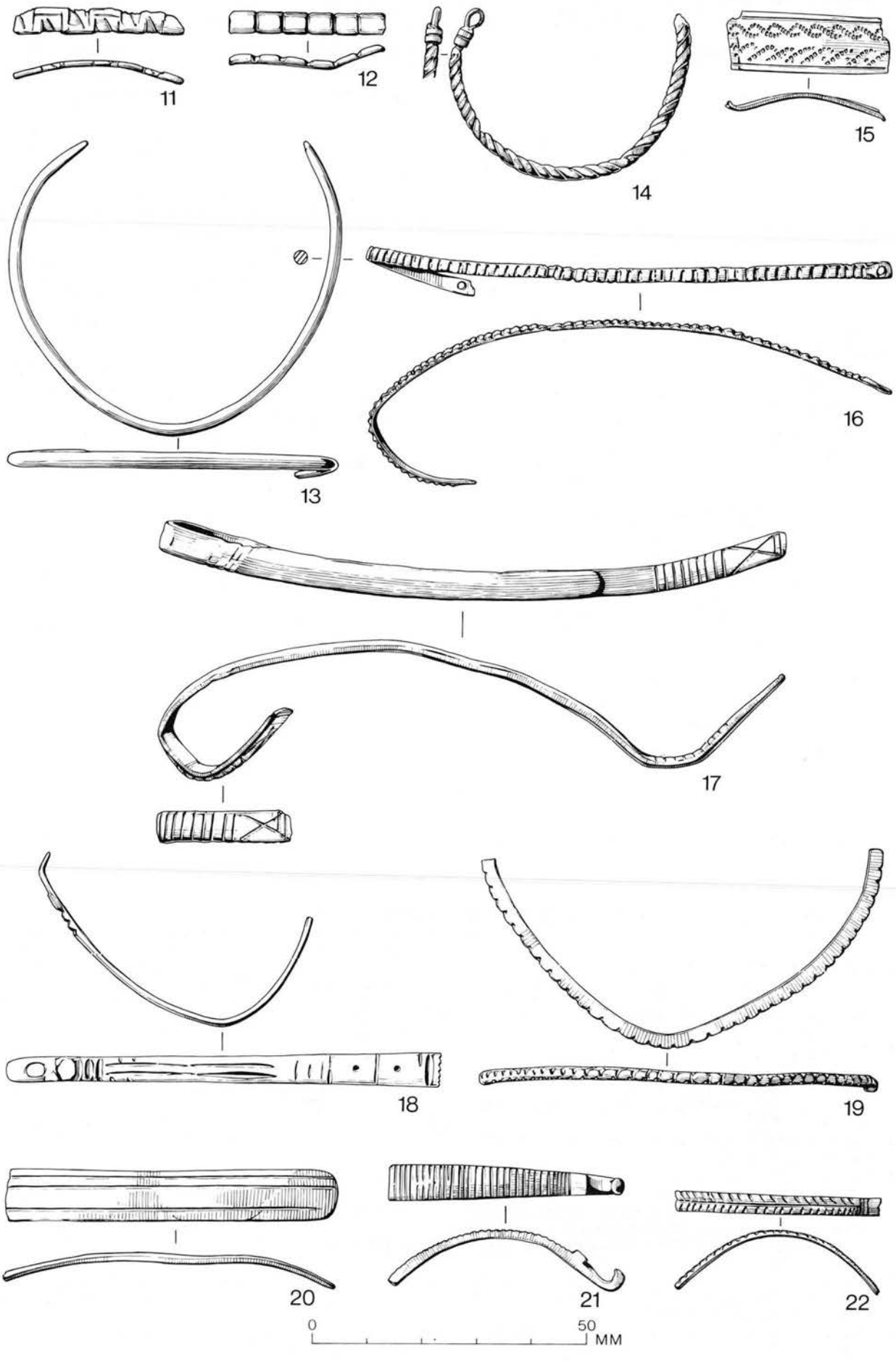


Figure 54 Copper alloy: Nos 11–22 bracelets. Scale 1:1

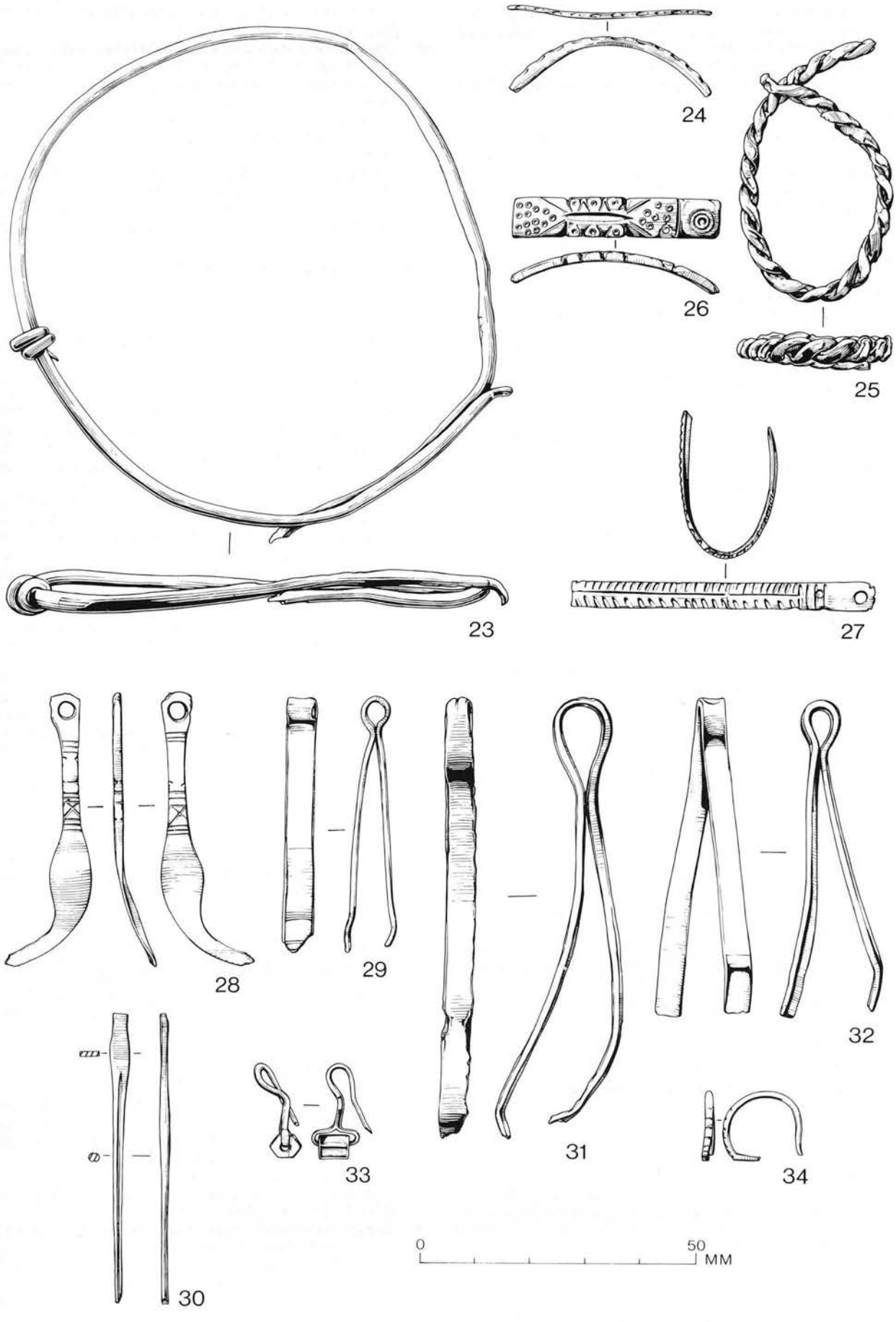


Figure 55 Copper alloy and gold: Nos 23–7 copper-alloy bracelets; Nos 28–32 copper-alloy parts of chatelaine; No. 33 gold ear-ring; No. 34 copper-alloy ear-ring. Scale 1:1

30. Delicate nail cleaner from a chatelaine: the forked end has broken away. *Cf.* London (Wheeler 1930, pl. XXXIX). *[3180]; 3515 (depression F3321, horizon 2); Phase 6*

31. Large pair of tweezers. *[X48]; B2B*

32. Pair of plain tweezers, probably from a chatelaine. *[X154]; B17/D*

Not illustrated:

a. Part of object, possibly a pair of tweezers from a chatelaine: consists of two thin strips hammered together. *[588]; D1071 (disturbed); Phase 7*

b. Pair of tweezers from a chatelaine. *[X56]; B2B*

c. Pair of plain tweezers from a chatelaine. *Cf.* London (Wheeler 1930, pl. XXXIX). *[X255]; S21*

Ear-rings

(Fig. 55)

33. Gold ear-ring: with a cylindrical hexagonal green glass bead, threaded through a looped strip to hang horizontally rather than in the more normal vertical manner. *[1195]; 3614 (ditch F3204); Phase 6–7*

34. Part of an ear-ring: in thin metal; slight notched decoration; hook end and suspension loop missing. For the type, *cf.* Marshall (1911, pls LIII and LIV). *[X129]; B17/C*

Not illustrated:

a. Bent length of wire, possibly part of an ear-ring: one end tapering. *[94]; 95 (depression F2409, horizon 2); Phase 6*

b. Plain ear-ring frag: very similar to No. 34. *[898]; 2812 (depression F2409, horizon 5); Phase 7*

c. Part of a plain ear-ring. *[X373]; S44/C2*

Hair and dress pins

(Fig. 56)

35. Pin: flattened pine-cone shaped head. *[789]; 1978 (post-pit F1977); Phase 4–5*

36. Pin: with rounded or pyramidal head. *[913]; 2823 (depression F2409, horizon 2); Phase 6*

37. Pin: with a rounded pointed top which may have been intended to be a pine-cone above a moulded collar; there appear to be traces of gilding. *[3278]; 3553 (depression F3321, horizon 2); Phase 5*

Not illustrated:

a. Pin: bent into a curve; one end appears to have been pointed, the other has a loop for attachment; very corroded. *[3177]; 3509 (depression F3321, horizon 5); Phase 7*

Decorated boxes

(Fig. 56)

38. Thick tenon: for joining two timber members of a box or a piece of furniture; has the typical cup and cup-hole terminals. *[105]; 95 (depression F2409, horizon 2); Phase 6*

39. Square-sectioned handle: bent; with flattened round terminals with round nail holes (diam. 5mm). As there is no indication of wear, the handle must have been fixed rigidly into position unlike a bucket handle. Although now bent, it appears to have been square shaped with rounded angles, and was presumably for a large work-box, a piece of furniture, or from a door. *Cf.* Pompeii (Ward-Perkins and Claridge 1979, no. 173); also a small and poor example from Verulamium (Waugh and Goodburn 1972, fig. 38, no. 115). *[X47]; B2B*

40. Possible decorative inlay: a thin triangular sheet with apparently original edges. Such decorative inlays are more normally in bone, *cf.* Richborough (Wilson 1968, pl. LXI). *[X91]; B3*

41. Thin repoussé decorated box mount: with traces of scrolls. These are common on religious sites, *cf.* Lydney (Wheeler and Wheeler 1932, pl. XXIX). *[X105]; B2*

Not illustrated:

a. Possible key escutcheon for a box: the corner of a plate, with a purpose-made triangular opening. *[1014]; D3200 (unstratified); Phase 9*

b. Two fragments of a diamond-shaped box mount: similar geometric shapes are more common in bone, *cf.* Richborough (Henderson 1949, pl. LVII). *[X139]; B17/C*

Miscellaneous personal ornaments

(Fig. 56)

42. Long ribbed bead. *[61]; 86 (depression F2409, horizon 5); Phase 7*

43. Hollow round bead. Diam. 10mm, hole diam. 7mm. *[641]; 1220 (depression F2409, horizon 1); Phase 3*

44. Wire coil. Similar coils were used by Greek women for threading hairs prior to coiling into decorative patterns. For earlier examples, *cf.* Marshall (1911, pl. XXVI, nos 1584, 1585, 1587 and 1590). *[704]; 1355 (ditch F1354); Phase 3*

45. Thin pin frag., possibly from a penannular brooch: with a flattened terminal. *Cf.* British Museum (1951, fig. 12, nos 59–61). D. Mackreth writes: 'A length of, apparently, a pin made from rolled sheet-metal. One end is broken and the other has been hammered so that two faces taper to form a narrow edge at the end. There is a trace of a step at the top of this section. In general, the use of sheet-metal to make small items appears to be a 1st-century trait and in this respect it should not matter whether the piece came from a brooch or some other object. The curious flattening at the end is not to be expected on brooches and, therefore, this should have come from some other object.' *[721]; D1721 (disturbed); Phase 7*

Domestic and household objects

Vessels

(Fig. 57)

46. Probably part of a vessel, possibly in base silver: consists of a complete short stub which may have been for inserting into a wooden handle, and from which there are two projections at a 45° angle. Dr Glenys Lloyd-Morgan has suggested that it may be part of a small vessel, such as an oval dish (den Boesterd 1956, no. 199), and writes: 'the slight recess on the underside would have taken the hammered out flange projecting from the raised side. The slight lip on the handle would have made the transition from side to edge smoother and stronger.' *[92]; D1 (unstratified); Phase 9*

47. Heavy triangular-shaped escutcheon mount: of a type which fitted onto a straight-sided vessel like a pail or bucket, *cf.* the Mount Sorrell bucket (Todd 1973, fig. 35). Has an inner ledge to fit into the rim; top missing, but from surviving traces it is evident that there were two holes for the rings of a handle. A more elaborate example with a mask is seen on a fluted bowl from Nijmegen (den Boesterd 1956, no. 196). *[555]; D566 (ploughsoil); Phase 9*

48. Possible rim of a wide-mouthed bowl. *Cf.* den Boesterd (1956, pl. VII). Diam. probably *c.* 300mm. *[760]; D1811 (disturbed); Phase 7*

49. Colander base frag.: in very thin metal. *Cf.* den Boesterd (1956, pl. III, no. 59). *[862]; 2377 (depression F2409, horizon 4); Phase 6*

50. Flat rim and body frag. of a small bowl: with a cotter pin threaded into a crudely punched hole. Cotter pins were often used to fasten drop-handles to metal bowls, *cf.* Richborough (Bushe-Fox 1928, pl. XXXI, no. 45), and this is the probable association in this example. *[1144]; 3743 (ditch F3635); Phase 5*

51. Possible rim of a bowl: consists of a thin strip to which another strip has been close-riveted as a repair or strengthening piece. Rim diam. *c.* 120mm. *[X127]; T14/2/C*

52. Lid frag.: with neat concentric circles in relief on the upper surface. It belongs either to a round box or an ink pot, *cf.* London (Wheeler 1930, fig. 11, no. 2), although the break line gives no indication of a central hole. *[X325]; S27/C3*

Not illustrated:

a. Probable rim frag. of a small vessel: curved, with a finished top edge and a carefully grooved line. *Cf.* den Boesterd (1956, nos 66 and 313). *[X31i]; B2A*

b. Flat moulded rim frag. from a small vessel. Diam. 18mm. *Cf.* den Boesterd (1956, no. 109) for a small bowl of the same size. *[X74]; T13/1/C*

Strap-ends and pendants

(Fig. 58)

53. Small decorative strap terminal: a pelta design; two studs on the back for attachment to leather. A common military type of the mid-2nd century (Oldenstein 1977, taf. 53), but this type probably had a general use. *[733]; 1724 (pond F679, upper fill); Phase 7*

54. Copper-alloy chain: in flat strip with figure-of-eight links, associated with a split ring within which corroded iron was found. *[776]; 1881 (slot F1880); Phase 7*

55. Strap-end: in the form of a circular mount, with a rectangular projection with its edge folded over. It is doubtful if the central hole is purpose made; *cf.* a harness strap mount of the same form from Chichester (Down 1978, fig. 10.35, no. 82). *[854]; 2218 (font drain F1349); Phase 6*

56. Small, slightly tapering mount of baluster shape: with an attachment rivet at the back. *[1049]; D3200 (unstratified); Phase 9*

Not illustrated:

a. Corner of a square belt-plate: with a moulded edge. *[60]; 93 (depression F2409, horizon 1); Phase 3*

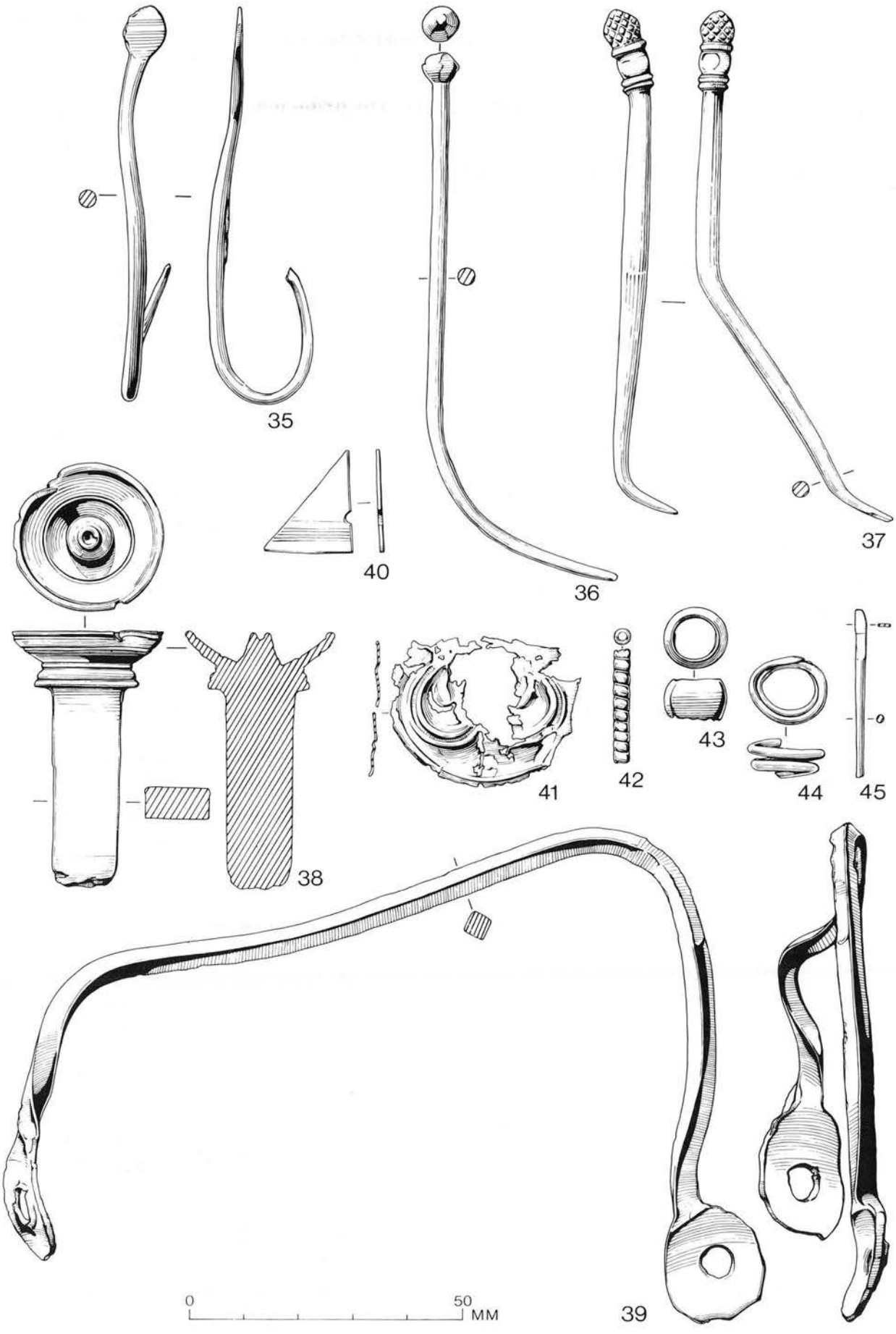


Figure 56 Copper alloy: Nos 35–7 hair and dress pins; Nos 38–41 parts of decorated boxes; Nos 42–5 miscellaneous personal ornaments. Scale 1:1

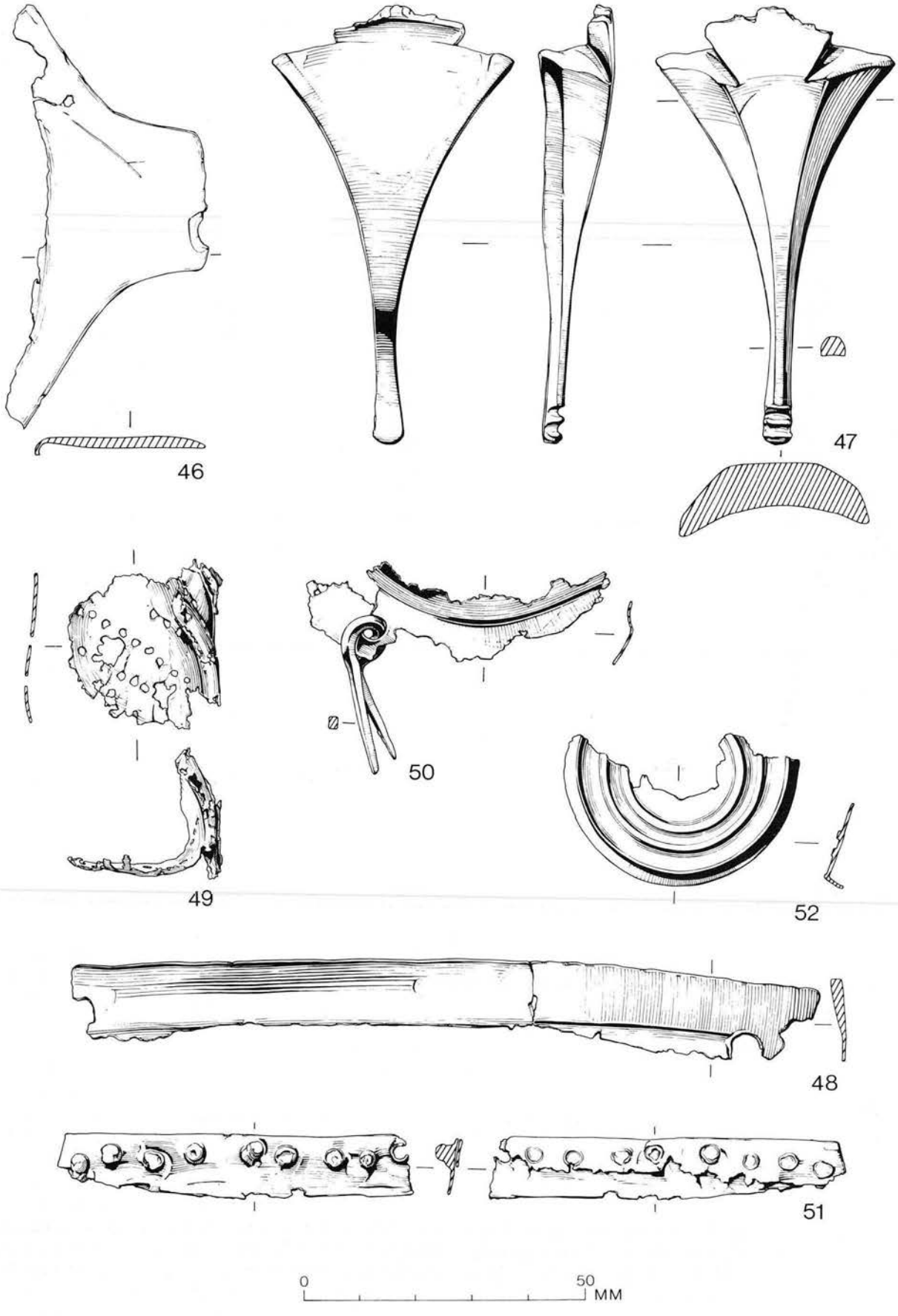


Figure 57 Copper alloy: Nos 46–52 parts of vessels. Scale 1:1

Figure 58 Copper alloy: Nos 53–6 strap ends and pendants. Scale 1:1

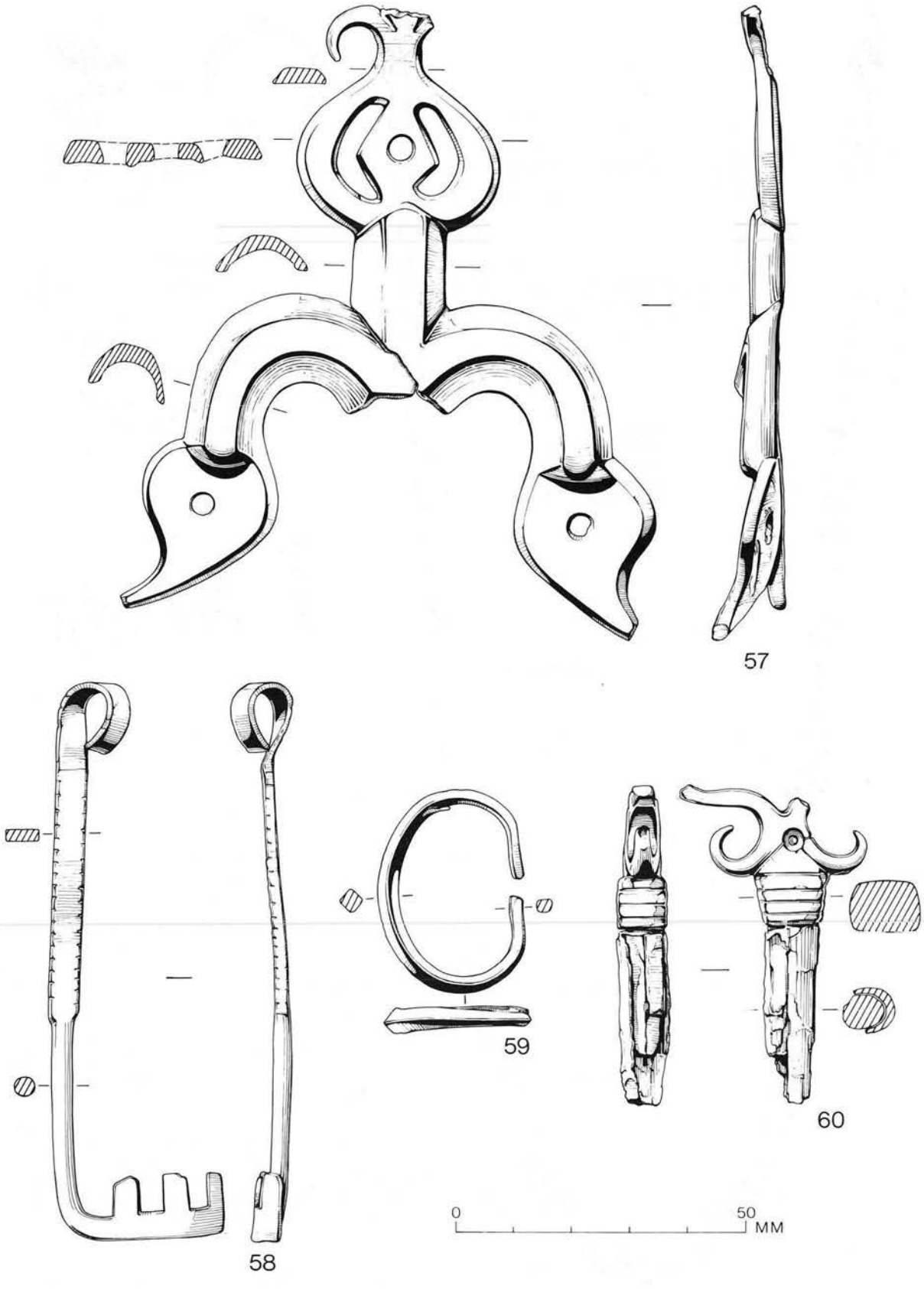


Figure 59 Copper alloy: Nos 57–60 door furnishings. Scale 1:1

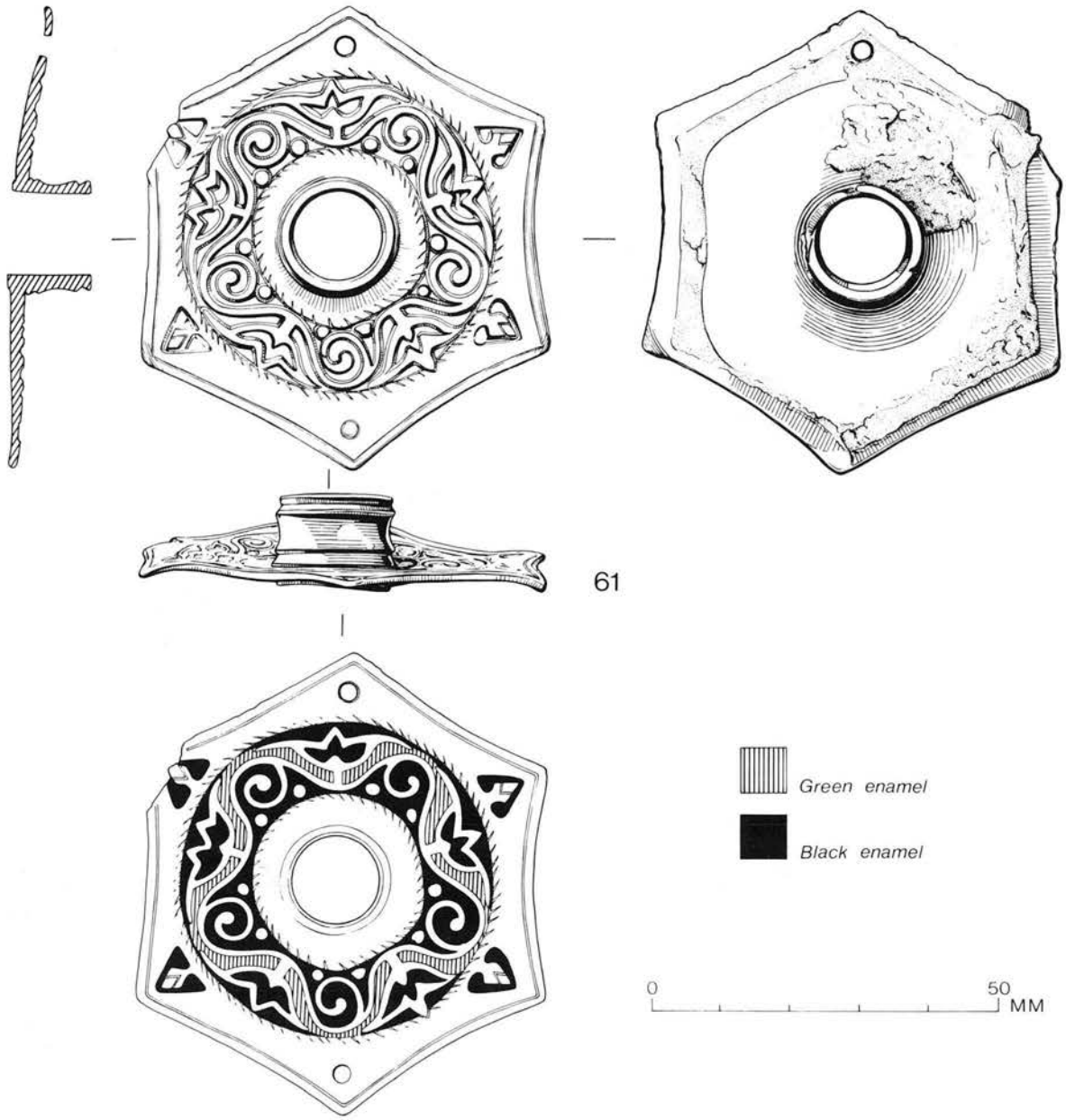


Figure 60 Copper alloy: No. 61 enamelled fitting. Scale 1:1

Door furnishings

(Fig. 59)

57. Fitting: which was fastened to a flat surface with three rivet holes (diam. 4 mm). Probably for a door or large piece of furniture, *cf.* Pompeii (Ward-Perkins and Claridge 1979, no. 173). *[84] and [85]; 94 (depression F2409, horizon 5); Phase 7*

58. Small, well-made slide key: with a hook for suspension, *cf.* London (Wheeler 1930, pl. XXX, no. 5). *[3035]; D3747 (=3509 of depression F3321); Phase 7*

59. Well-made hinge-loop, possibly for a hasp-lock, *cf.* Verulamium (Waugh and Goodburn 1972, fig. 33, no. 54). *[X18]; T3*

60. Part of an elaborate key head: with part of iron tang still in socket. *[X35]; B2A*

Miscellaneous domestic and household objects

(Fig. 60)

61. Hexagonal plate with enamel decoration: with concave edges and a central hole from which projects a lathe-turned socket (Pl. XXII). The face with the projecting socket is decorated with a cast circular scroll and trefoil leaf pattern inlay in green and blue enamel. There is a leaf decoration in a triangle in four angles; in the other two angles are small holes, one of which has been plugged. On the plain side are traces of corrosion which show that the object was once attached to something of similar hexagonal shape. The carefully formed socket suggests a candle holder on a stand (*cf.* British Museum 1929, fig. 107). The small hole in one corner could have been for a wick trimmer held on a chain. Another possibility is that this is the top of a *pyxis*: an enamelled copper-alloy box, *cf.* Butcher 1976, 47, pl. 43: Forsyth 1950, fig. 1.4 — late 2nd to early 3rd century. This interpretation does not account for the central hole, unless the object was part of an elaborate lid. Such a box may have been used as a lady's jewel box, which would fit well with the other female domestic accoutrements found on the site. *[20]; 62 (depression F2409, horizon 4); Phase 6*

(Fig. 61)

62. Strip of cast decoration of conjoined leaf, possibly from a knife handle or similar object: the two edges are original, but the ends are broken. *Cf.* Nettleton (Wedlake 1982, fig. 85, no. 6); Wroxeter (Bushe-Fox 1916, pl. XVI, no. 17); and Richborough (Henderson 1949, pl. XL, no. 152). *[66]; 86 (depression F2409, horizon 5); Phase 7*

63. Small silver pin: with slightly domed head; point missing. *[83]; 62 (depression F2409, horizon 4); Phase 6*

64. Small tapering leg: with a slight outward curve. Probably from a model stand, which are often in two tiers and decorated with enamel. These are enigmatic objects often associated with shrines (Green 1976b, 59, fig. 4, nos 42–4). *[563]; D566 (ploughsoil); Phase 9*

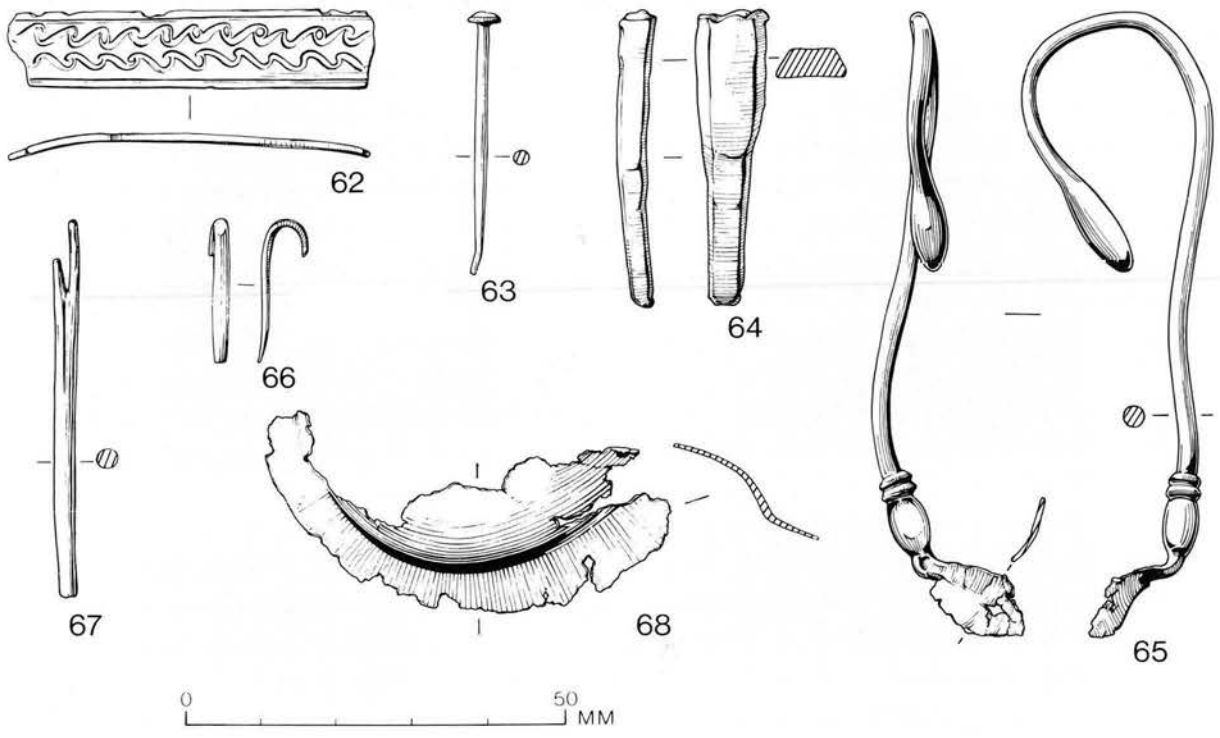


Figure 61 Copper alloy and silver: Nos 62–8 miscellaneous domestic and household objects. Nos 62 and 64–8 copper alloy; No. 63 silver. Scale 1:1

65. Spatula: with the usual club-shaped swelling at one end for stirring and mixing, and a long spoon at the other end for removing ointment from a long-necked bottle; badly bent. *[678]; D1530 (disturbed); Phase 7*

66. Small, delicately shaped hook, possibly used in clothing. Reminiscent of a medieval garter-hook. *[753]; 1807 (ditch F1866); Phase 2*

67. Part of a needle. [783]; 1954 (depression F1888); Phase 4–5

68. Small bowl frag., possibly from a ladle: flat rim (diam. *c.* 80 mm). *Cf.* den Boesterd (1956, pl. IV, nos 100–109). *[1145]; 3601 (ditch F3635); Phase 5*

Not illustrated:

a. Short length of a pen. An implement which was much less common than the *stylus*. *Cf.* London (Wheeler 1930, fig. 11, no. 1). *[11]; 59 (depression F2409, horizon 6); Phase 7*

b. Length of silver pin: slightly tapering. *[580]; D1071 (disturbed); Phase 9*

c. Iron knife with silver band, decorated with two lines of dots. See Iron Report and Fig. 68.1. *[775]; 1881 (slot F1880); Phase 7*

d. Handle fragment: consists of a square iron tang (5mm) with a copper-alloy sheath. *[948]; 86 (depression F2409, horizon 5); Phase 7*

e. Three mirror frags: Dr Glenys Lloyd-Morgan writes: 'Although the three fragments are small, the preservation of the metal is sufficient to recognise them as pieces of a mirror and, most likely, the only surviving portions of a mirror disc. Two pieces, the largest and the smallest, are from the edge, slightly curved, and with a neatly rounded profile. The largest is sufficiently great to retain part of the turned circle(s) which would have marked off a plain border of about 8.3mm width. The third piece of mirror, finished on both sides, is an internal portion of the disc. The border noted above is characteristic of a group of mirrors which would have had a handle running across the back, on the non-reflecting side of the mirror, rather than as the better-known hand mirrors with the upper part of the handle soldered on to the edge of the disc. These mirrors of group X (Lloyd-Morgan 1981a) are found with engraved compass-drawn decoration, groups of dot-and-circle patterns, a mixture of the two, or are plain apart from having one or more circles turned to make a neat border.

A number of examples have been noted from this country and abroad (Lloyd-Morgan 1977). Recent excavations at Canterbury have produced two further examples: one (MT 82 [958], P. Garrard, pers. comm.) has traces of decoration, though only a fragment survives; the other (WCF 82 [4], P. Garrard, pers. comm.) is a plain example with part of the handle still *in situ*, and can be compared with the complete mirror, also found in a burial group, from St Albans (Stead 1969, 46). Few have been found in closely dated contexts, though a date in the 2nd or early 3rd century would seem most likely (Lloyd-Morgan 1981b). Some 47% have been found in the province of Lower Germany, with 23% of the total in Nijmegen and district. It would seem highly probable that mirrors of this type were made within that region, some coming to Britain by trade or through family contacts.

This is the first example of a group X mirror to have been found in Essex, to the writer's knowledge. Although over forty examples of mirrors have been discovered at Colchester, they all belong to the main series types and varieties popular in the 1st century AD. The same applies to those pieces found elsewhere in the county, *e.g.* at Billericay (Ancient Monuments Lab. No. 733892, S. Weller, pers. comm.); Chelmsford (CHL 71 Z/196, P.J. Drury, pers. comm.); and Cressing (Hope 1976). The new mirror therefore provides not only a new record for the county, but also bears witness to the later import of mirrors in those years following the first heavy influx of these continental luxuries.' *[3323]; 3509 (depression F3321, horizon 5); Phase 7*

Other objects

Religious ornaments

(Fig. 62)

69. Well-made letter 'V' from an inscription: no rivet holes, though traces of solder were visible on the back before conservation — one mark at the top of each arm, and a third at the base. It was customary for copper-alloy letters to be made and sold at temple sites to allow those making a request from deities to make up their own lettering which was then fixed to a wooden panel, *cf.* the same letter from Colchester (Collingwood and Wright 1965, no. 198); a collection from Lydney (Collingwood and Wright 1965, no. 508); and a group of four (not seven as published in Wilson 1972, 333) letters from Kelvedon, Essex, which were found with several attachment rods and a Palaeolithic hand-axe, and could be grouped to spell parts of the word *CANONIVM*, the Roman name for Kelvedon (Rodwell 1988). *[485]; D737 (disturbed); Phase 3–7*

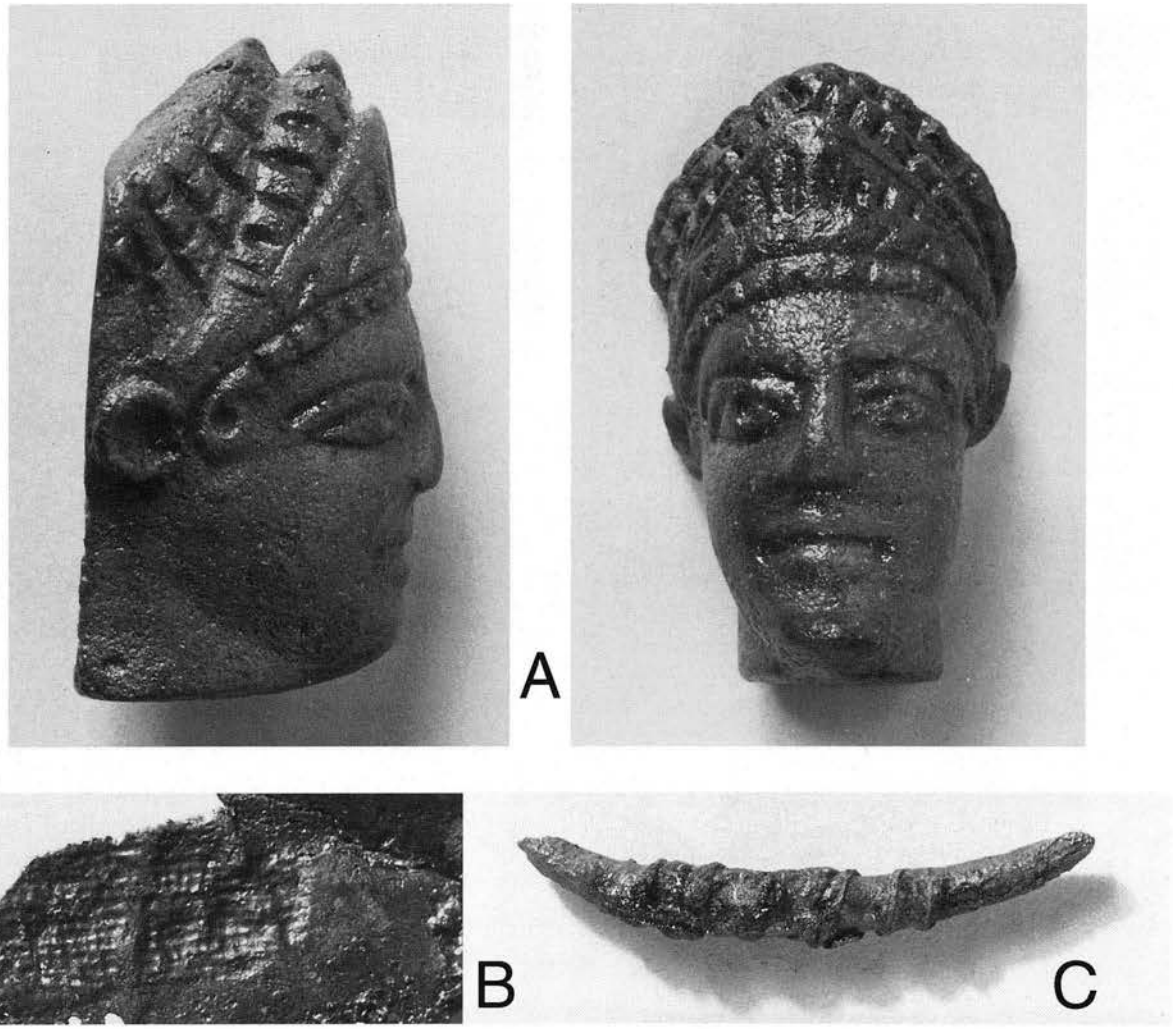


Plate XXI A: copper-alloy priest's head; B: textile pattern on copper-alloy sheet: C: iron bulls horns with gilt copper alloy. Scale 2:1

70. Small, well-moulded head: hollowed at the back with lead infill for attachment to a round metal tenon (6 mm diam. from its impression) (Pl. XXI.A). The male head has a high peaked crown of a type normally worn by priests — an actual diadem with a decorated front was found at Hockwold-cum-Wilton, Norfolk (Layard 1925, 261, fig. 4: Toynbee 1962, 178, pl. 140, no. 128). The object is a decorative projection from a piece of temple equipment or furnishing. The function is seen in some large vehicle fittings in the Trier Museum (Menzel 1966, taf. 83), and one at Nijmegen (Zadoks-Josephus Jitta *et al.* 1973, no. 105). *[3303]; 3509 (depression F3321, horizon 5); Phase 7*

71. Thick strip with moulded decoration: tightly coiled into a ring (internal diam. 18mm), which has been made smooth by long use. The original function of this piece was probably a decorative binding on a staff or wand of office. *[X223]; S20/C*

72. Votive model of an iron pair of bull's horns with copper-alloy 'corkscrew' fluting to hold a gold binding, traces of which survive (Pl. XXI.C). *[X273]; S21/C3*

Not illustrated:

a. Part of the binding round a staff or wand of office. The *sceptrum* was from earliest times considered to be a symbol of power and authority. Those carried by Roman emperors and consuls were often shown among their other attributes such as the *sella curalis* (Salmonson 1955). Wands of office had the same symbolic meaning at a lower level, and were carried by those in a position of authority in religious ritual, as well as in the army, from which there is an excellent example on the tombstone of an *optio* at Chester (Wright and Richmond 1955, pl. XII, no. 38). *[X367]; S48/C3*

Commercial objects and tools

(Fig. 63)

73. Long-handled object with a small bowl: at one end is a flattened expansion with five rivet holes, at the other end is a suspension hole to which is attached a loop of thin wire. The object is finely made, and the thin handle has a rectangular section with notched decoration on two edges. *[742]; 1762 (depression F1749); Phase 5–6*

74. Well-made point, possibly from a tool such as a leather worker's punch or a large pin: point changes to a square shank (4mm) near the break. *[844]; 1821 (pond F679, lower fill); Phase 6*

75. Possible scale-beam terminal: consists of a round bar bent into a ring, with the end flattened into an eyelet. Possibly for the suspension of a pan, *cf.* Richborough (Bushe-Fox 1928, pl. XXI, no. 56). *[1063]; D3339 (=3509 of depression F3321); Phase 7*

76. Comb-like object: a well-made tapering piece of copper-alloy with six pointed teeth projecting from the longer end; both flat surfaces exhibit score marks in a random pattern (Pl. XXII.B). The object seems to have been intended for slotting into a handle. Dr J.P. Wild reports: 'This type of object has a widespread distribution; examples have been found in Britain at Silchester, Hampshire (Boon 1957, 195), Chalton, Hampshire (Frere 1957, 219, pl. xxvia; apparently in a 4th-century context), Verulamium (Frere 1984b, 56, fig. 23.219), and Chedworth, Gloucestershire (in site museum); in Germany at Saalburg (Jacobi 1897, fig. 71) where it has a socket for a handle; and in Spain at Conimbriga (Alarcão and Da Ponte 1982, 163–7, est. II) where there are several sets. It is argued in the Conimbriga report that they are the metal terminals of wooden spacer-bars to keep cloth at a regular width on a horizontal loom, but this is not possible. Both the Spanish and Chalton pieces appear to be in sets, and this may be significant. They were presumably mounted in a wooden frame or handle. They were not used for carding, and are unlikely to have been used for beating up the weft during

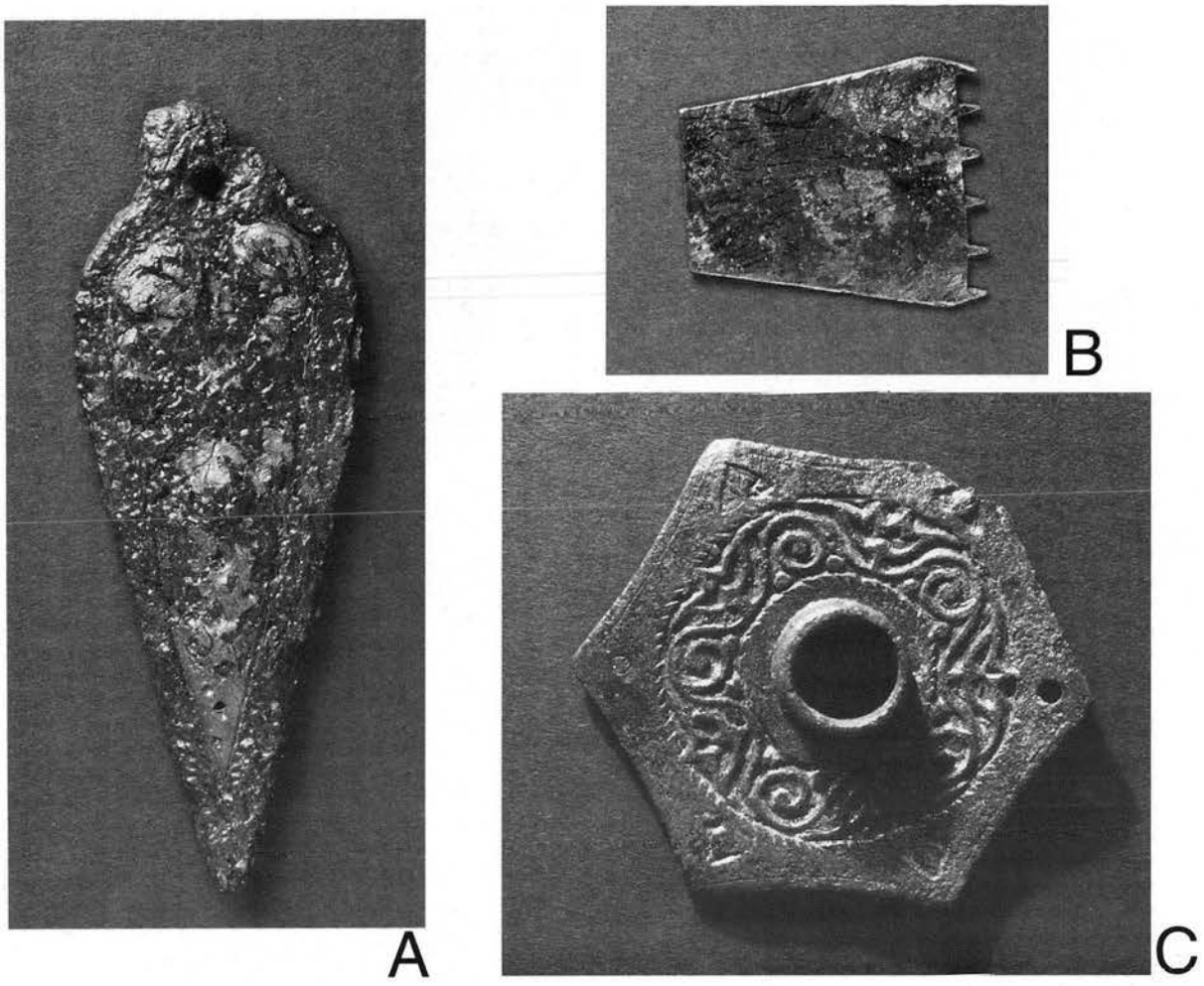


Plate XXII A: iron pendant with copper-alloy inlay; B: copper-alloy ?tile comb; C: enamelled hexagonal copper-alloy object. Scale 1:1

weaving. (In either case they would not then have been required to be in sets.) The real solution to the problem is yet to be found.' Another possibility is that this object was a tile comb for scoring box tiles. The imprint of a wooden tile comb was found at Beauport Park, East Sussex (Brodribb 1979, 149, fig. 4), but the Witham example is much finer. The spacing of the teeth is correct for such a purpose, although the shape of the groove would have been more angular than on the majority of the box tiles from the Witham site. *[3333]; 3515 (depression F3321, horizon 3); Phase 6*

77. Small, well-made slide from a steelyard: with an iron pin inserted at the bottom to carry the weight, and a broken loop at the top for suspension — this is a very sophisticated feature, since even the finest steelyards have only wire loops to suspend the weight, *cf.* example from Smyrna (British Museum 1929, fig. 171). A slide of a different type is illustrated by Cagnat and Chapot (1920, fig. 495). *[X111]; T14/2/C*

Not illustrated:

a. End of an implement, probably the erasing part of a stylus. *[472]; D940 (disturbed); Phase 9*

b. Part of a hook, possibly from a steelyard. *Cf.* London (Wheeler 1930, fig. 22). *[1141]; 3588 (ditch F3635); Phase 5*

Sheets, strips and scrap

Over 150 scraps of copper-alloy sheet, edging and scrap were recovered. Some have been crushed and folded, some have rivets and rivet holes, but none offer the possibility of positive identification. The majority of the copper-alloy scrap is listed in the Microfiche Bronze Appendix.

(Fig. 63)

78. Small triangular piece, perhaps part of a decorative inlay. *[48]; 59 (depression F2409, horizon 6); Phase 7*

79. Two plain plate frags: with moulded edges; partly folded; thin holes crudely punched through. *[109]; D1 (unstratified); Phase 9*

(Fig. 64)

80. Rectangular frag. of sheet: broken at each end, but with finished edges bent as if originally folded round an angle. Two rivet holes on one edge, and four in an irregular pattern near one end. *[1191]; 4047 (depression F3321, horizon 3); Phase 6*

81. Triangular plain flat sheet: with all original edges. *[3229]; 3515 (depression F3321, horizon 3); Phase 6*

82. Scrap sheet frag.: with textile impression derived from the casting mould (Pl. XXI.B). Elisabeth Crowfoot writes: 'The impression on a fragment of copper-alloy strip, area *c.* 2.2 x 1.0cm, is of a fine tabby (plain) weave, count *c.* 12/11–12 threads per cm. The marks are not deep enough for a cast to show the spinning direction, but the appearance of the weave suggests a medium quality flax, which in a Roman context would have been Z-spun. This sort of fabric has been used for shrouds, *e.g.* from Cambridge and Malton, and wrapped round hoards of metal scrap as at Radley, Berkshire. *Cf.* Wild 1970, 91 and 93, nos 12, 19 and 21.' *[3253]; 4184 (ditch F3647); Phase 6–7*

83. Two sheet frags, riveted together, possibly a metal reinforcement for the sole of a shoe: in the shape of a foot, with the rivet holes in the pattern of a shoe. *[X232]; S27*

84. Strip, probably a box fitting: folded over at one end with rivet holes. *[X245]; S27/C2*

85. Thin strip, probably part of a box mount: with a circular expansion at one end, and a central rivet hole. *[X350]; S28/C2*

Tacks, rivets and nails

(Fig. 65)

86. Large dome-headed stud: for masking a nail. It would have had a lead infilling. *[46]; 86 (depression F2409, horizon 5); Phase 7*

87. Half of a flat-headed stud. Diam. 26.5mm. *[787]; D1 (unstratified); Phase 7*

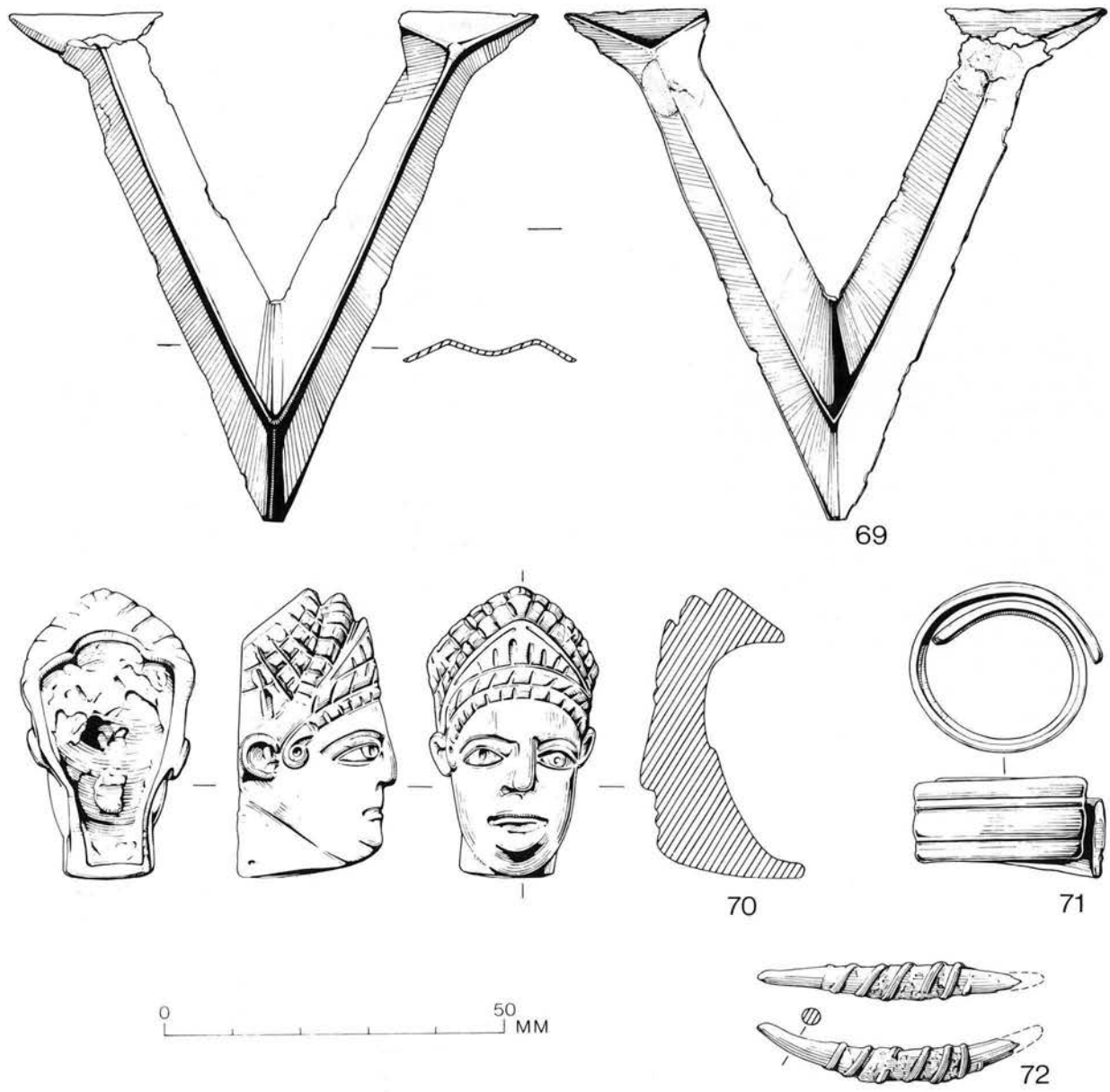


Figure 62 Copper alloy: Nos 69–72 religious ornaments. No. 72 iron with copper-alloy binding and gold leaf. Scale 1:1

88. Large flat-headed stud: with a stout tang. Length 20mm, head diam. 26mm. *[843]; 2327 (pond F679, lower fill); Phase 6*

89. Spherical knobbed head for the top of an iron pin. Found in a context securely dated to the Iron Age. *[1002]; 3022 (slot F3021); Phase 1*

90. Heavy circular nail-head mask, from a box or piece of furniture: with lead infilling. *Cf.* Lydney (Wheeler and Wheeler 1932, fig. 20, no. 102). *[1074]; D3534 (disturbed); Phase 9*

Discussion

In an analysis of 347 copper-alloy, silver and gold objects and fragments from the site, it was found that no less than 188 consist of scrap metal and waste; this represents 54.2% of the whole (Table 8). It is probable that even some of the recognisable objects, such as parts of box mounts, small fragments of utensils, *etc.*, were also scrap, and if these are included the percentage of the whole would be 65.1%. The large amount of scrap offers clear evidence of metalworking on the site; it is even possible that this involved a re-cycling of the metal votive objects which it is usual to find on temple sites.

The objects singled out as having particular 'religious' associations are normally those which depict figures on metal or stone, and also the range of objects known as 'votive'. The latter often taken the form of small model wheels, axes, ploughs, tools, *etc.*, all symbolising some human need, or, in the case of the axe, merely, perhaps, offering a token sacrifice. Ivy Chimneys has produced only one item in this category, and that is a highly unusual one in the form of a pair of bull's horns with a gold wire binding between the horns (No. 72), doubtless symbolising the need for strength or virility. The great majority are objects of a personal nature, normally worn by or closely associated with an individual. By the laws of primitive contact magic, there was a strong belief that all jewellery and other objects actually worn or constantly used by a person, such as combs, mirrors, and boxes for holding personal items in daily use, all contained their owners' *persona*. It follows that it would have been inimical for anyone else to use them; for that reason, items of this nature were normally buried with their owner and often deliberately distorted or broken, *i.e.* 'killed', before deposition.

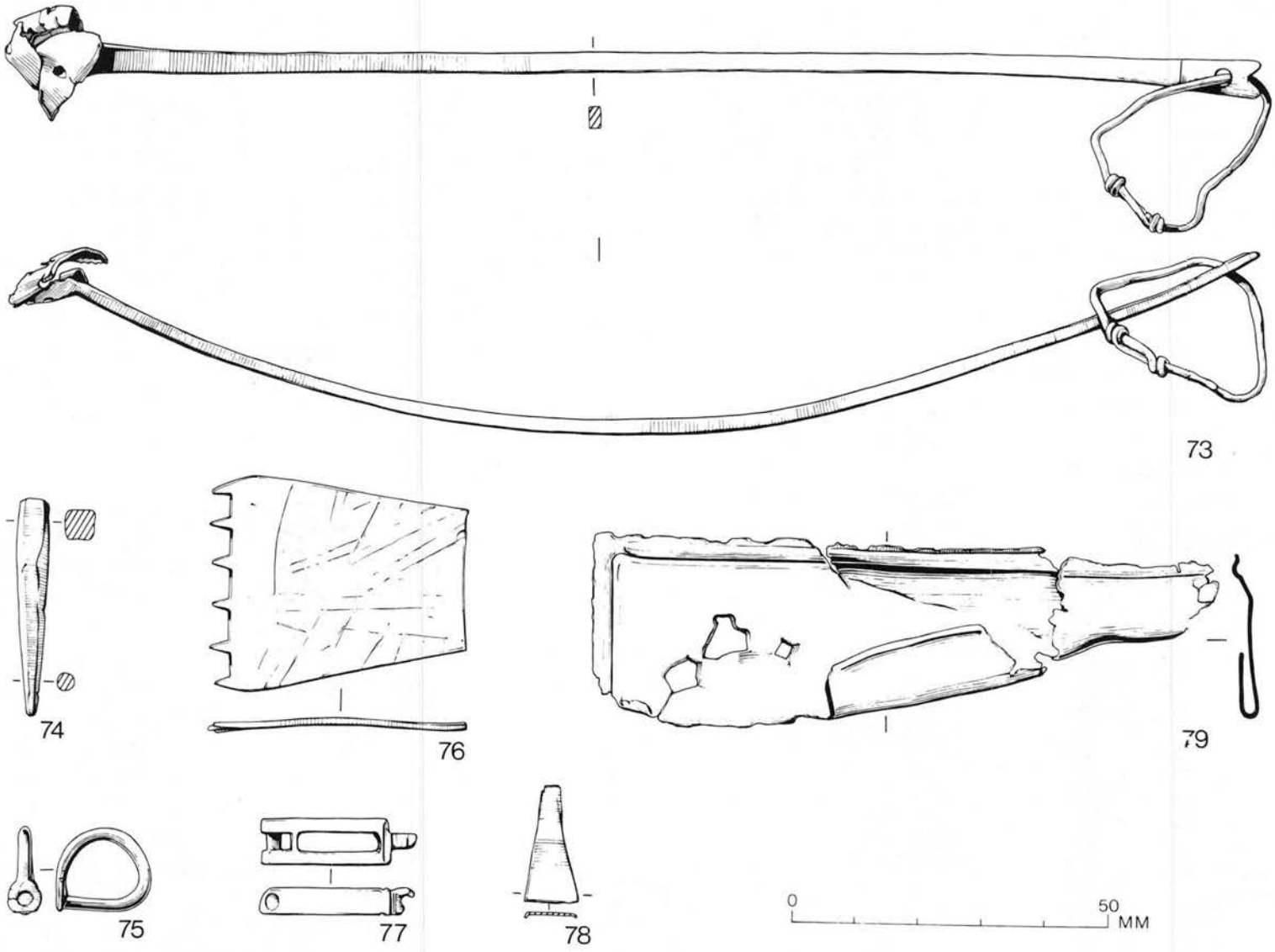


Figure 63 Copper alloy: Nos 73-7 commercial objects and tools; Nos 78 and 79 scrap. Scale 1:1

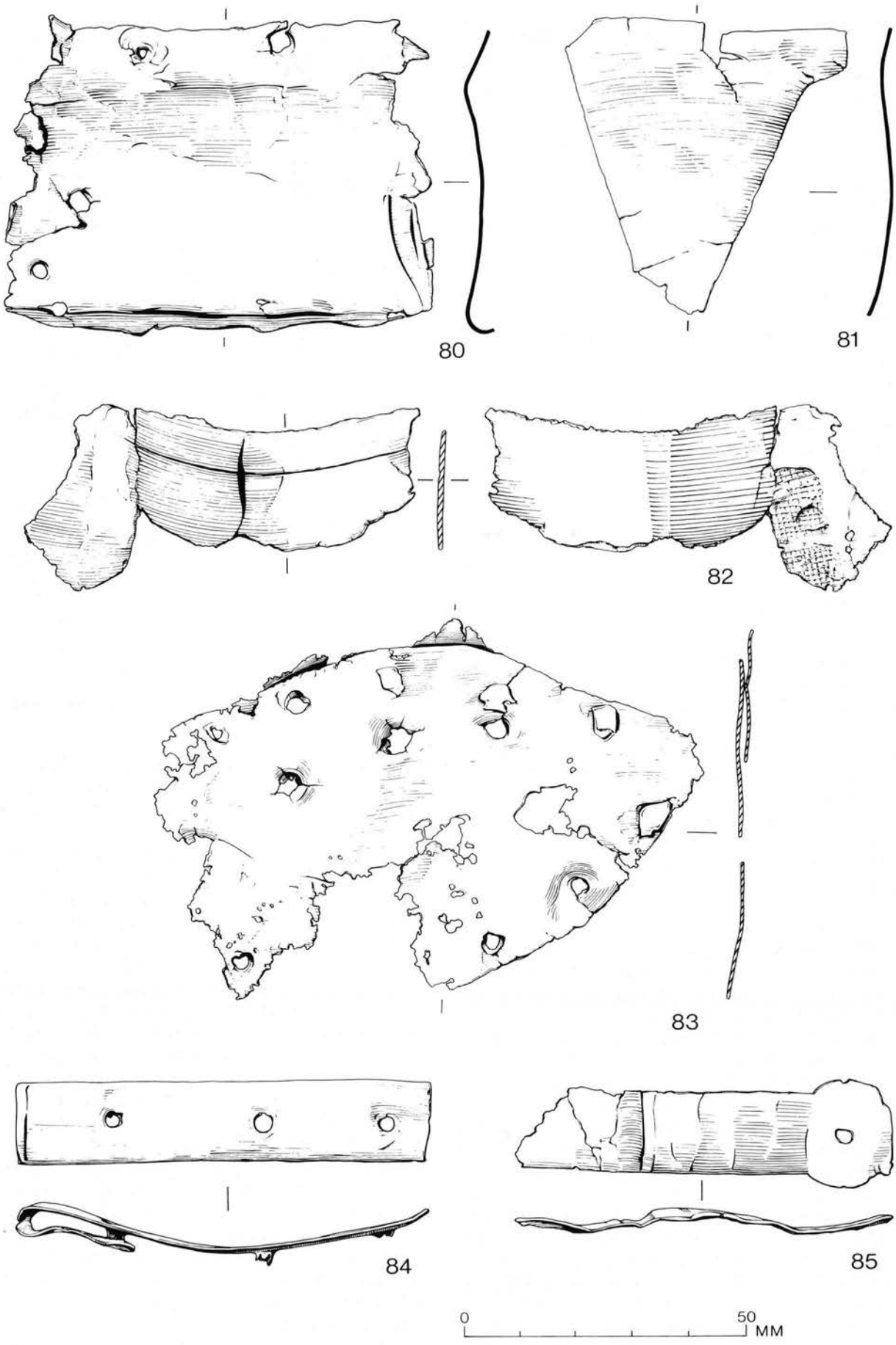


Figure 64 Copper alloy: Nos 80–85 sheets and strips. Scale 1:1

	No.	*% of total*	*% excl. scrap*
Personal ornaments			
Rings and parts of rings	25	7.2	15.8
Bracelets and parts of bracelets	44	12.7	27.8
Brooches (see separate report)	6	1.7	3.8
Parts of chatelaine	8	2.3	5.1
Ear-rings	5	1.4	3.2
Hair and dress pins	9	2.6	5.7
Decorated boxes	10	2.9	6.3
Various	4	1.2	2.5
	111	32.0	70.3
Domestic and household			
Fragments of copper-alloy vessels	9	2.6	5.7
Strap-ends and pendants	7	2.0	4.4
Door furnishing	4	1.2	2.5
Various	13	3.7	8.2
	33	9.5	20.9
Other material			
Commercial objects and tools	7	2.0	4.4
Religious objects	5	1.4	3.2
Scrap, incl. rivets, tacks, *etc.*	189	54.5	-
Function unknown	2	0.6	1.3
	203	58.5	8.9
TOTAL	347		

Table 8 Types of copper alloy, silver and gold objects

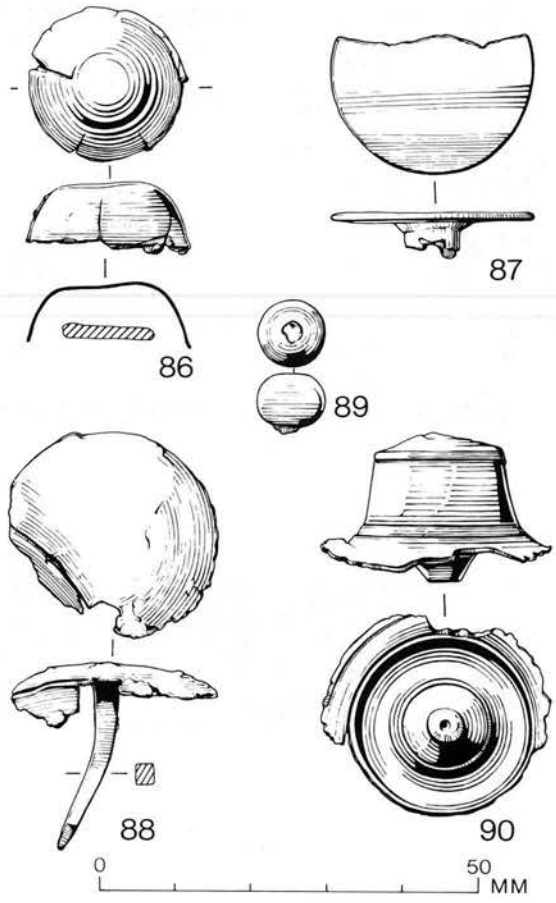


Figure 65 Copper alloy: Nos 86–90 tacks and nail-head masks. Scale 1:1

This is especially true of mirrors, which were thought to hold a captive image of their owner. In a burial at Chester, twelve broken pieces of a mirror were found carefully placed in a small vessel (Newstead 1914, 141, pl. XXXIV, fig. 2). Deliberate breakage is also a feature of votive offerings: in Celtic examples, swords and spears have been ritually bent (Fox 1946, 69, pl. III, no. 92). By this action, the gifts are made holy and become acceptable to the gods: the word 'sacrifice' is derived from the Latin words *sacer* and *facere*, *i.e.* to make holy (James 1962, 13). The use of votive jewellery in the form of brooches, rings, bracelets, pins, jewel caskets, and even drinking vessels and basins used for washing, used only by a particular individual, had the effect of giving part of oneself to the spirit and thus giving extra potency to the offering.

Although only six complete bracelets or armlets were found, there were no less than thirty-eight fragments, and most of them had been deliberately chopped into pieces. The rings are also of interest, many being very small, virtually unwearable ones, some having been formed by bending pieces of bracelet into this shape. It could be argued that some of those seeking help at this shrine had no jewellery of their own to offer and were only able to buy token imitations or pieces.

Other items of jewellery include one complete (gold) ear-ring and four pieces; nine complete and fragmentary copper-alloy hair-pins; and seven pieces from chatelaines, mainly tweezers. This list is typical of the finds from temple sites. Lydney Park, for example, produced 270 bracelets, which caused one of the early excavators to comment that 'it may be that they were deposited in the Temple as votive offerings of the poor' (Wheeler and Wheeler 1932, 82). There were also large numbers of pins and other personal objects. Much the same is true of the Temple of Apollo at Nettleton, Wiltshire, where thirty-five fragmentary bracelets were recovered (Wedlake 1982, 212, figs 90 and 91). It was also noted that a number of pieces of scrap copper alloy were found, many folded and hammered flat to form small parcels (Wedlake 1982, 218), and there was ample evidence of considerable industrial activity which developed into a pewter factory after the temple had been wrecked.

Woodeaton, Oxfordshire, is another Iron Age and Roman temple site which has produced a large collection of smallfinds (VCH 1939, 299–301: Kirk 1951). The great majority (*c.* 220) were brooches, pins, rings, and bracelets, but many were too small to wear and very crudely made. One example (Kirk 1951, fig. 5, no. 14) is obviously a short length of bracelet roughly bent into an oval shape, very similar to some from Ivy Chimneys. It has been considered likely that bronze-working was carried out at Woodeaton, although no direct evidence is offered in the report on the finds (Taylor 1971, 99). The votive objects of the sacred spring at Bath tend to be of a much higher quality, although most of the early finds have been dispersed without any adequate list ever being made (Cunliffe 1969, 65).

Sacred places all had peculiar properties: some became more popular than others; others acquired notoriety for cures of certain ailments or diseases; a few specialised in curse magic. They attracted custom from all ranks of wealth and society. At one end of the scale, Bath was probably very expensive, but there were many rural shrines more suitable for the impoverished peasants and slaves. If one draws any conclusions from the type and quality of the finds from Ivy Chimneys, one would have to place it in the last category, purely on the basis of the sheer poverty of the material so far recovered, with one or two notable exceptions which were probably from items of temple furnishing or equipment.

In evaluating the finds, one must take into account the particular human needs brought to the attention of the spirits. Obviously some of the deities were thought capable of healing and even specialised in types of disease or physical disorder. The concentration at Ivy Chimneys of personal jewellery may therefore have some significance when considered in an aspect of sympathetic magic. Pins and rings have always been closely associated with the male and female *genitalia* (see baked clay phallus [X132], Fig. 125), and these offerings may have been made by men and women needing children or sexual fulfillment, or a satisfactory union of lasting quality. In Britain, maidens have, up to recent times, cast their pins into wells on May Day, with these hopes in mind. This was sometimes for luck and sometimes for a curse, but at St Madron's Well in Cornwall, two pieces of straw were attached to the pin in the form of a crown, obviously an early Christian addition, and the number of bubbles rising to the surface denoted the number of years or weeks the suppliant was to wait for the happy day (R. Merrifield pers. comm.; see also Longman and Lock 1911). The rings and bracelets from Ivy Chimneys could obviously have had the same symbolism for men, and some of the examples have been very crudely bent into a circle. The broken fragments could conversely indicate a wish for a partnership to be broken. The strong needs for sex and children and for the severing of unsatisfactory relationships are those which remain paramount in peoples the world over, and in all ages, as one can easily judge by the agony columns of today's newspapers and magazines.

VI. Lead objects

by Hilary Major

Objects

(Fig. 66)

1. Two rings with overlapped ends: formed from strips *c.* 88 by 9 by 5mm. Found around an iron split-spike loop (see Iron Report). *[118]; 226 (ditch F230); Phase 3–7*
2. Flattened tube: slightly bent, with file or rasp marks along sides. Poss. modern. *[615]; D1 (unstratified); Phase 9*
3. Saucer-shaped ingot: with rough upper surface. *[834]; 1789 (pond F679, bottom fill); Phase 6*
4. Ingot: with marks on side probably made by saw or knife. *[1200]; 4111 (slot F4110); Phase 6–7*
5. Part of a decorative mount: with remains of an iron pin or nail in a notch on one side. The decoration is indistinct and consists of a central moulding, possibly an animal head, within a moulded frame. Possibly not Roman. *[5078]; 5203 (depression F5202); Phase 7*
6. Incomplete small lead weight (21g) or plumb bob, broken at the narrow end. The central perforation may have contained an iron suspension rod. *[X49]; B2A*

Not illustrated:

- **a.** Curved bar: with flattened terminals folded inwards. The bar has a roughly hexagonal section and has three small cuts along one edge in the centre. *[811]; D2048 (disturbed); Phase 7*
- **b.** Lead-filled bronze nail-head mask (see Bronze Report, Fig. 65.90). *[1074]; D3534 (disturbed); Phase 9*
- **c.** Lead-filled bronze stud head. *[3228]; 3509 (depression F3321, horizon 5); Phase 7*
- **d.** Lead-filled bronze head (see Bronze Report, Fig. 62.70). *[3303]; 3509 (depression F3321, horizon 5); Phase 7*
- **e.** Ring with lapped ends, formed from a strip of lead *c.* 670 by 4.5 by 1.5mm. *[X247]; B4*
- **f.** Tongue-shaped object: variable thickness. *[X380]; S44/C3*

Sheet and scrap

(Fig. 67)

7. Three pieces of sheet fused onto a pot sherd. One side has been shaped as though to emulate the base of a pot. The pottery is a greyware sherd (Fabric GZ1), apparently a bodysherd, roughly circular in shape.

Robin Turner writes: 'Twelve similar pieces came from a deep well at Rudston Roman Villa, North Humberside (Stead 1980, 107, fig. 70), from contexts dated to the 4th century. Stead describes these as 'plugs' used to repair holes in pottery, and this function seems likely for a later 3rd-century example from Braintree (Pratt 1977, 21, fig. 12.23). Considering the large size and regular shape of the holes which would have been filled, and the abundance osf the objects in a special context at Rudston, this explanation may in some cases be called into question. Rather than for repair, the objects could have been used in the normal course of events, perhaps to form a permanent seal to the vessels.

'If the Rudston well is considered to have had a religious significance, as many Roman wells undoubtedly had, then the sealing of pottery vessels containing votive offerings is a possibility. The Witham example is from a late 4th to early 5th-century context and may have been a residual of votive activity. However, since the 'plugs' do not appear to have surrounded rim sherds, this alternative explanation is also uncertain.' *[763]; 1885 (post-hole F1884); Phase 7*

8. Rectangular sheet: looped over at one end and broken at the other. *[778]; 1914 (depression F1925); Phase 6*
9. Folded thick sheet: with tooling marks and slashed edge. Probably waste. *[3140]; D3747 (=3509 of depression F3321); Phase 7*
10. Semi-circular object: cut from sheet metal. Diam. 49mm, thickness 3mm. *[X4]; B1*
11. Object: a piece of lead which solidified inside the base of a vessel with 36mm internal diameter. *[X185]; T14/2/C*
12. Curved sheet frag.: of variable thickness. It is probably part of a decorative cast sheet with wavy edges, and was broken along two sides in antiquity. The surface is irregular, possibly a deliberate moulding. A rough grid has been scratched on the surface. *[X259]; S21*

Not illustrated:

- **a.** Probable off-cut frag.: with four oblique cuts along one edge. *[764]; 1821 (pond F679, lower fill); Phase 6*
- **b.** Strip frag.: possibly from vessel with irregular ovulos along one edge. *[882]; 2702 (depression F2409, horizon 2); Phase 6*
- **c.** Moulded sheet, probably part of a decorative plaque: cut along one side; back rather irregular. *[1094]; D3532 (=3509 of depression F3321); Phase 7*
- **d.** Bent sheet frag.: with cut edges. *[1112]; D3532 (=3509 of depression F3321); Phase 7*
- **e.** Frag.: probably off-cut waste. Dimensions *c.* 118 by 24 by 18mm. *[1222]; 4323 (depression F3321, horizon 2); Phase 5*
- **f.** Small strip frag.: with part of iron nail corroded on; *c.* 28 by 8 by 5mm. *[1364]; 4179 (ditch F3647); Phase 6–7*
- **g.** Two curved frags: L-shaped section and broken edges. Possibly part of a vessel, from the edge of the base. *[1365]; 93 (depression F2409, horizon 1); Phase 3*
- **h.** Irregular tongue-shaped frag.: possibly waste off-cut. *[2151]; 4031 (pit F4029); Phase 7*
- **i.** Irregular saucer-shaped frag.: formed by solidification of molten lead in a shallow irregular hollow. Dimensions *c.* 105 by 85mm, up to 12mm thick. *[3231]; 4172 (depression F3321, horizon 4); Phase 6*
- **j.** Small sheet frag. *[5019]; 4683 (depression F4695); Phase 6–7*
- **k.** Bent strip frag.: triangular sections; *c.* 50 by 6 by 1.5mm. The thick edge has traces of shallow notches across it. *[5033]; 4546 (depression F4763); Phase 6–7*

Slag and waste

Not illustrated:

- **a.** Slag or working waste frag. *[9]; 59 (depression F2409, horizon 6); Phase 7*
- **b.** Slag or working waste frag. *[17]; 55 (depression F2409, horizon 6); Phase 7*
- **c.** Slag or working waste frag. *[18]; 55 (depression F2409, horizon 6); Phase 7*
- **d.** Slag or working waste frag. *[91]; 99 (depression F2409, horizon 5); Phase 7*
- **e.** Slag or working waste frag. *[387]; 836 (ditch F837); Phase 7*
- **f.** Slag or working waste frag. *[1006]; D3200 (unstratified); Phase 9*
- **g.** Twisted frag.: probably slag or working waste. *[3160]; D3747 (=3509 of depression F3321); Phase 7*
- **h.** Slag or working waste frag. *[3284]; 4180 (depression F3321); Phase 6*
- **i.** Twisted frag.: probably waste. *[5036]; 4546 (depression F4763); Phase 6–7*
- **j.** Solidified waste lead puddle. *[X194]; S22*
- **k.** Slag or waste frags (9); with charcoal and pottery inclusions. *[X279]; T9/C*

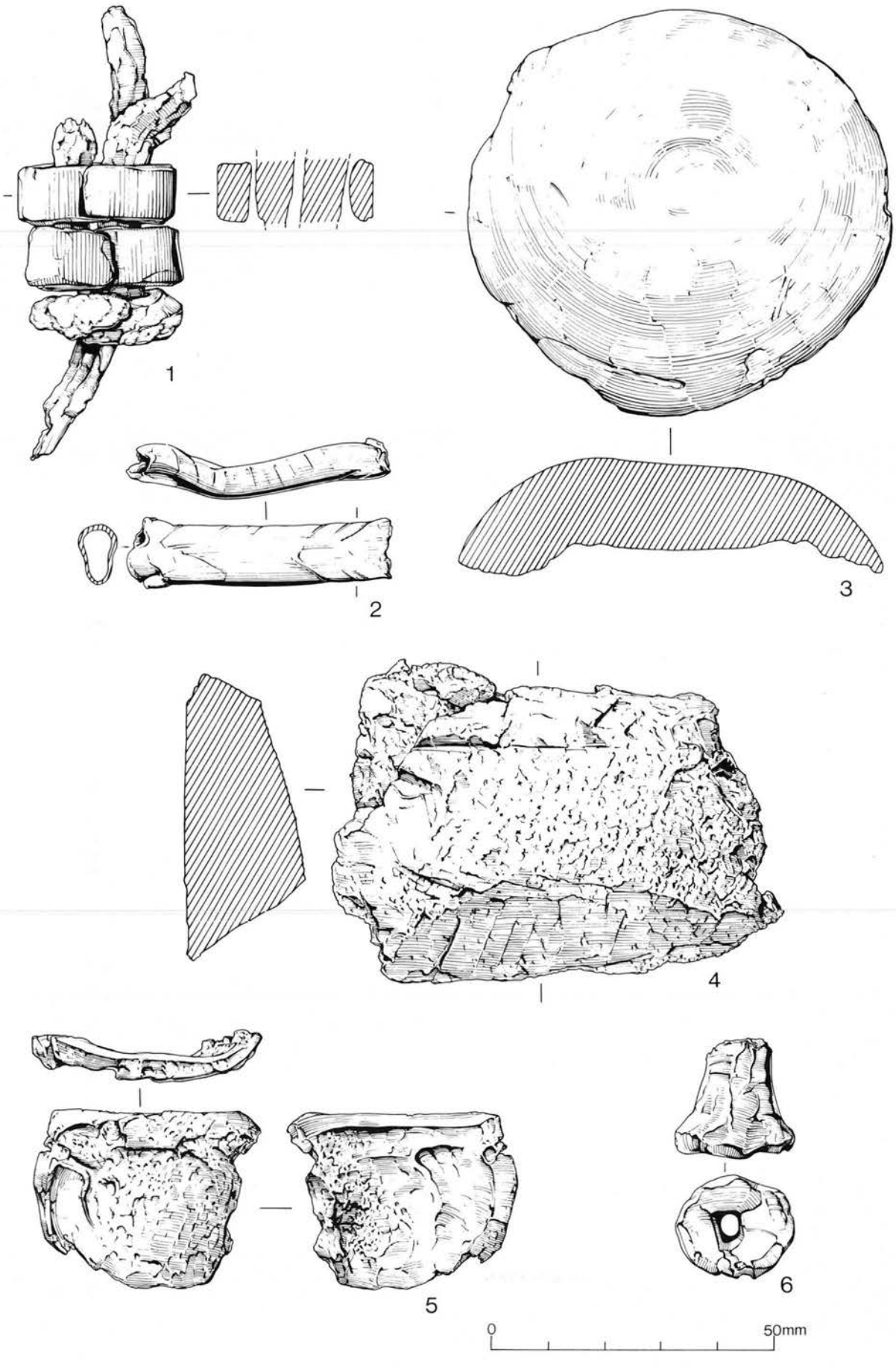


Figure 66 Lead: Nos 1–6 objects. Scale 1:1

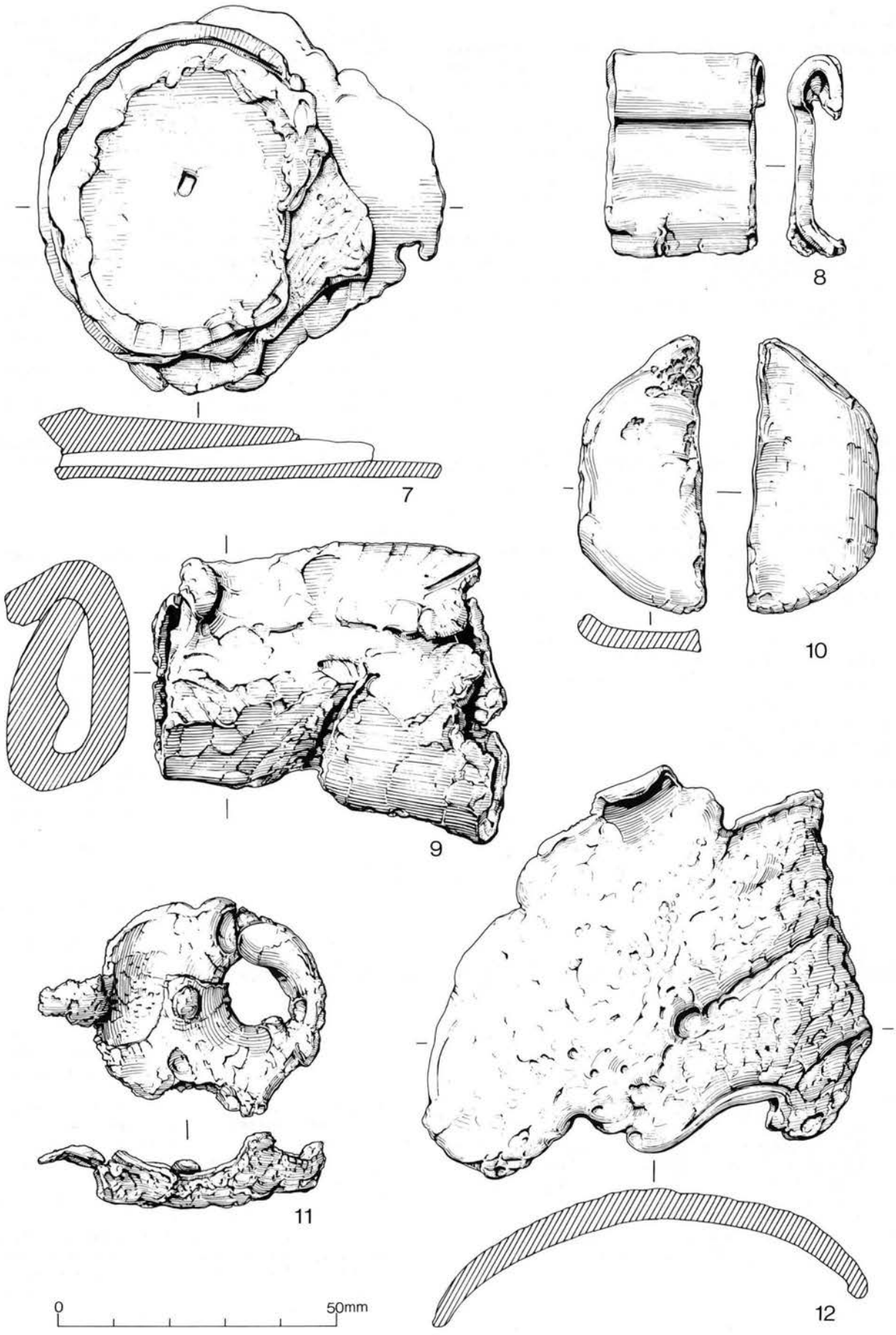


Figure 67 Lead: Nos 7–12 sheet and scrap. Scale 1:1

Discussion

In common with many other sites, the lead from Witham consists predominantly of scraps of indeterminate use and waste fragments. The material was not examined by a metallurgist, and the present writer would like to note that the identifications of slag are tentative. However, the presence of rough, bowl-shaped ingots and waste fragments certainly indicates lead working on the site, possibly for the production of structural elements for the buildings.

Some of the objects may have votive significance, such as lead sheets associated with pottery (Nos 7 and 11); a cut-out semi-circle (No. 10) reminiscent of some of the bronze fragments; and fragments of decorated lead (Nos 5 and 12).

VII. Iron objects

by Hilary Major, with a contribution by Graham Webster

Introduction

Over 600 pieces of iron were recovered, as well as more than 1100 nails (see Iron Nails Report, microfiche, including Tables 9–10 and Figs 73–4). Adverse soil conditions and deterioration during storage meant that many objects had partly disintegrated before examination. Excluding nails, nearly 40% of the assemblage comprises plate and bar fragments and unidentifiable lumps.

Objects are listed under main headings, within which they are ordered by smallfind number. Un-smallfinded objects are described after the smallfinds, and finds from the more recent excavations are described before those from previous seasons. Objects not described in the main part of the report are listed, using the same system of ordering, in microfiche.

Knives and other blades

(Fig. 68)

1. Tanged knife blade frag.: ?wood traces on tang; decorated white metal (?silver) band at blade end of tang. *[775]; 1881 (slot F1880); Phase 7*
2. Socketed blade: socket open, with a single perforation; blade broken. Socket length *c.* 130mm; overall length 195mm. *[815]; 1974 (pond F679, upper fill); Phase 6*
3. Knife: blade broken; twisted tang with ring terminal. Length 96mm. *[3218]; 4120 (depression F3321); Phase 6*
4. Socketed pruning hook: open socket. Rees type 1b (Rees 1979, 462). *cf.* [597] (Fiche). Length 114mm. *[5070]; 5243 (depression F5202); Phase 7*
5. Tanged knife. *[X24]; B3*
6. Small knife: with suspension ring at end of tang. *[X51]; B2B*
7. Small tanged knife blade: tang formed by making a cut in the hammered-out knife blade and rolling it up. *[X116]; T13/2/C*
8. Socketed spearhead. *[X140]; B17/C*

Not illustrated:

- **a.** Iron clasp knife: carved bone handle; very little of blade survives. Blade pivots on a bronze-capped iron rivet. *cf.* Richborough, Kent (Bushe-Fox 1928, 46, pl. XX, no. 36); and Wroxeter, Shropshire (Bushe-Fox 1913, pl. X). See Bone Objects Report, Fig. 129.25. *[1218]; 3553 (depression F3321, horizon 2); Phase 5*
- **b.** Tanged knife with bone handle. See Bone Objects Report, Fig. 130.26. Total length 225mm. *[X39]; B2B*

Keys and locks

(Fig. 69)

Three types of key were found. The simple latch-lifter is represented by two examples, one (No. 10) from an early Roman context. There are five examples of tumbler-lock lift keys of varying sizes, and three definite barb-and-spring padlock keys, together with the barb from a padlock.

9. Tumbler-lock lift key: with four teeth; handle terminal looped. *[542]; 680 (pond F679, upper fill); Phase 7*
10. Latch lifter: broken hook on handle; blade broken. *cf.* Shakenoak, Oxfordshire (Brodribb *et al.* 1968, 104.34) for a complete example. *[1355]; 2807 (depression F2409, horizon 1); Phase 3*
11. Tumbler-lock key: three teeth; suspension loop on handle. *[X1]; B1*
12. Barb-and-spring padlock key. Similar to key (d). *cf.* Silchester, Hampshire (Boon 1974, 204, fig. 32, no.8). *[X296]; unstratified*
13. Padlock barb: in poor state of preservation. *cf.* Silchester, Hampshire (Boon 1974, 204, fig. 32, no.8). *[X349]; S28/C2*

Not illustrated:

- **a.** Probable latch lifter: broken hook on handle; blade broken and distorted. Similar to No. 10. Length of handle 105mm; width 18mm. *[568]; D566 (ploughsoil); Phase 9*
- **b.** Fragmentary small key: plain bit and looped handle, the loop being broken, *e.g.* Verulamium (Manning 1972, 184, fig. 68, no. 79). Length *c.* 45mm. *[806]; 680 (pond F679, upper fill); Phase 7*
- **c.** Barb and spring padlock key: broken across the perforation; rectangular section (18 by 3mm). Length 160mm. *[1201]; 3621 (ditch F3618); Phase 5*
- **d.** Barb and spring padlock key: bit has two holes, one rectangular and the other oval. Length 150mm. *[X34]; B3*
- **e.** Bronze key with part of iron tang. See Bronze Report, Fig. 59.60. *[X35]; B2A*
- **f.** Tumbler-lock lift key frag.: handle probably ended in a suspension loop; bit had either two or three teeth; handle probably round in cross-section. Length 62mm. *[X357]; S29/C3*

Buckles

(Fig. 69)

Identification of buckles was difficult due to corrosion, and some ring fragments may belong to this category.

14. Buckle: circular; flat with holes of unequal size on either side of the bar. Diam. 40mm; 2mm thick. *[1306]; 3509 (depression F3321, horizon 5); Phase 7*

Vessels

Three small fragments possibly from iron vessels were found, along with a possible lamp-holder. The context of the latter (vessel (a)) must, however, cast doubt on its Roman origin.

Not illustrated:

- **a.** Shaped plate frag., possibly part of an iron pan or lamp holder: curved, with a right-angled bend at the bottom. Similar to, but rather more buckled than a lamp-holder from Braintree (Manning 1977, 26, fig. 15.1). Pre-1978, *unstratified*

Handles

(Fig. 69)

No complete handles were found, and identification of the fragments is tentative.

15. Wire, probably part of a handle: with turned over terminal. *[1131]; 3588 (ditch F3635); Phase 5*
16. Object, possibly a handle. *[X47]; B2B*

Tools

(Fig. 70)

The poor condition of the ironwork posed problems of identification with some of the smaller tools: small punches and engravers in particular resemble nails or spikes.

17. Socketed object: short curved blade, possibly broken at the end. *cf.* No. 20. *[779]; 1914 (depression F1925); Phase 4–5*
18. Hand saw: point and tang broken; tang has an incomplete plate riveted onto the top, with two rivets present. Length 105mm. *[837]; 59 (depression F2409, horizon 6); Phase 7*
19. Socketed shell auger: mineralised wood in socket. Length 278mm. *[1333]; 86 (depression F2409, horizon 5); Phase 7*
20. Socketed object, possibly a tool for scoring: short, wide blade bent at right angles to the socket which contains preserved wood. The incomplete blade terminates in small teeth 2mm apart and *c.* 1mm long (these were damaged by corrosion before conservation and are not now evident). *cf.* No. 17. Length 60mm. *[1349]; D1 (unstratified); Phase 9*
21. Tool, possibly a punch: rectangular section, becoming round towards the point. *cf.* Gadebridge Park, Hertfordshire (Manning 1974, 163, fig. 70, no. 368). Length 69mm. *[X150]; B17/D*
22. Trowel frag.: point missing. *cf.* Winterton, Lincolnshire (Stead 1976, 223, no. 185). *[X244]; S19/C3*

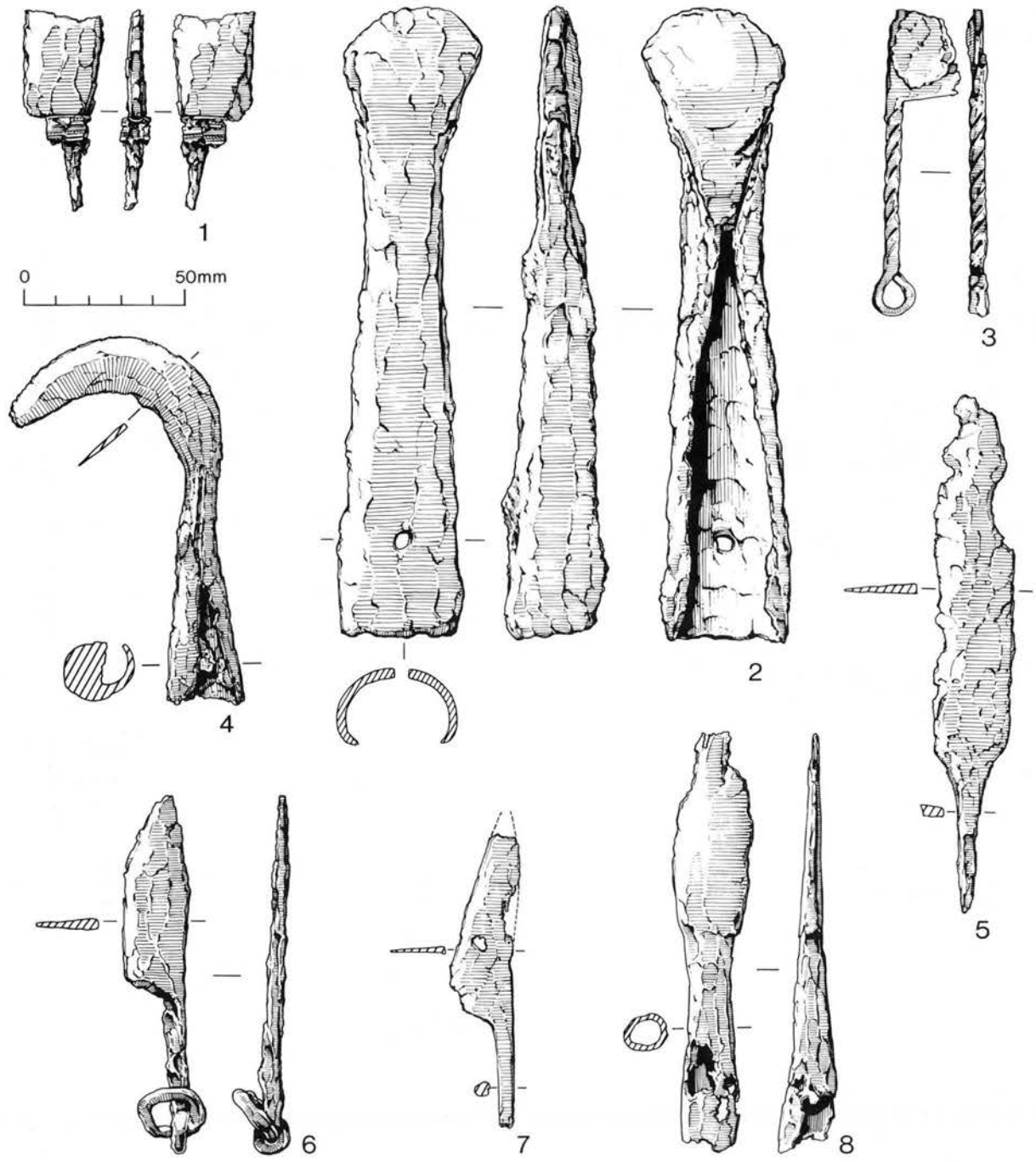


Figure 68 Iron: Nos 1–8 knives and other blades. Scale 1:2

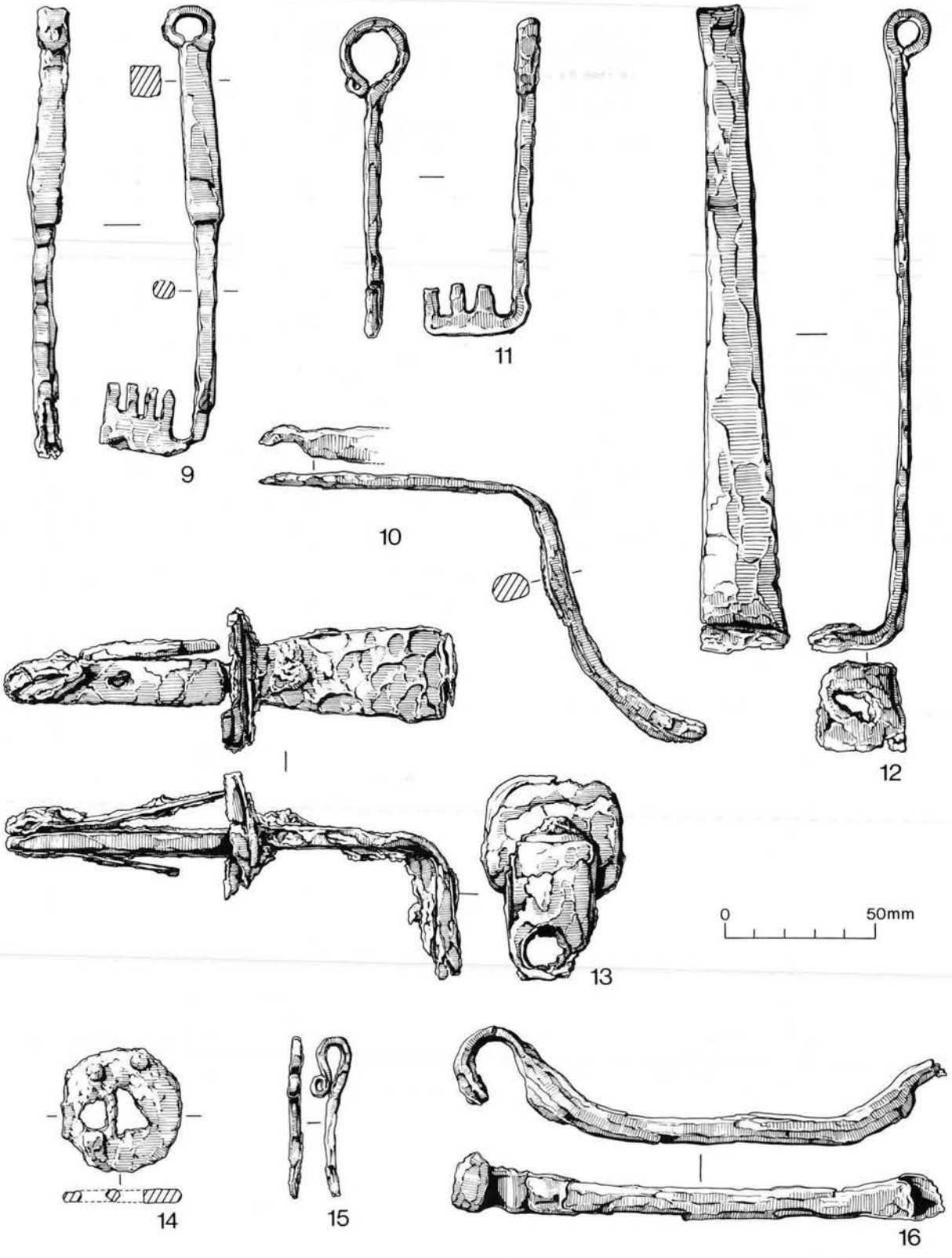


Figure 69 Iron: Nos 9–13 keys and locks; No. 14 buckle; Nos 15 and 16 handles. Scale 1:2

Not illustrated:

a. Possible stake or set: similar to tool (b), but with un-rebated point. Length 130mm, max. cross-section 21 by 14mm. *[501]; D566 (ploughsoil); Phase 9*

b. Possible gouge or chisel: rectangular section; rebated point. *cf.* Silchester, Hampshire (Boon 1974, 283, fig. 41, no. 6). Length 158mm, max. cross-section 18 by 12mm. *[570]; D566 (ploughsoil); Phase 9*

c. Small punch: rectangular cross-section; point in poor condition. Length 73mm, max. cross-section 14 by 11mm. *[699]; 1367 (ditch F1354); Phase 3*

d. Possible saw blade frag.: trace of teeth set *c.* 3mm apart. Length 68mm; width 21mm. *[830]; 1789 (pond F679, bottom fill); Phase 6*

e. Tanged trowel: bent and incomplete oval blade. Manning (1976, 27) notes that this type was probably used for plastering. Blade *c.* 110 by 70mm; tang length 88mm. *[1332]; 86 (depression F2409, horizon 5); Phase 7*

f. Half a pair of shears: blade broken. Length 165mm; max. blade width 27mm. *[1340]; 86 (depression F2409, horizon 5); Phase 7*

g. Awl: tip broken. *cf.* Bradley Hill, Somerset (Leech and Besly 1981, 214). Length 125mm. *[5076]; 5251 (depression F5202); Phase 7*

h. Possible punch: rectangular section (12 x 9mm). Length 65mm. *[X55]; B2B*

i. Possible small punch or wedge: rectangular section, 10 by 8mm. Length 36mm (point broken). *[X173]; T13/2/C*

Joiner's and carpenter's dogs

Nine fragmentary joiner's dogs were found. These are angular U- or Z-shaped staples used to hold together two pieces of wood.

Wedges

Twenty-one wedge-shaped objects were found. Some are broken and may be the points of chisels or other tools. Complete examples may have been used for splitting wood, but none of the wedges is very large, varying from *c.* 40 to 70mm in length.

Ox goads

Five fragmentary ox goads were found, three of them identified as belonging to Rees (1979, 76) type 1.

Ferrules

Three fragmentary possible ferrules were recovered.

Hipposandals

The eleven hipposandals comprise five heels, three wings and two wings with hooks. One is Aubert (1929) type 2, while another is type 2 or 3.

Miscellaneous

(Fig. 70)

23. Incomplete object of unknown use: an oval plate with upturned edges; one end narrows to a bar, possibly a tang, at right angles; other end has similar projection, but this may be a separate bar corroded on. Angle obscured by heavy corrosion. *[99]; 86 (depression F2409, horizon 5); Phase 7*

24. Steelyard: lower loop broken; bar very corroded, but there is a possible division halfway between the suspension loop and the terminal knob. Terminal knob probably tri-lobed; section of the bar uncertain. Length 227mm.

Roman steelyards of this size were normally of bronze (*cf.* Richborough, Kent: Henderson 1949, 131, pl. XXXVIII, no. 113), and this example is of the same form as bronze ones (*cf.* Crummy 1983, 99, fig. 164, no. 2508). A rare iron steelyard from Appleford, Berkshire (Brown 1974, 195, fig. 6, no. 26) is much larger (length 440mm). *[676]; D1530 (disturbed); Phase 7*

25. Iron pendant (Pl. XXII.A). Graham Webster writes: 'Long pointed iron pendant with bronze decoration: with a rectangular projection at the top, crudely pierced with a hole (diam. 3mm) for suspension. One face is decorated with a broad, well-marked border, within which the surface has been sheeted with bronze. Unfortunately, the corrosion has seriously damaged the decoration, and made it impossible to reconstruct the design in its original form. Length 105mm, width 37mm.

'This type of pendant belongs to the late Roman period, when the so-called Germanic military equipment was being introduced into and copied in Britain. This type is well illustrated by Hawkes and Dunning in their seminal paper (1964, abb. 25; also 1962), with seven examples from Britain. One of these examples (no. 8 from Croydon) is the same size as the object under discussion, but wider and less elegantly shaped: also it is decorated with four bosses and stamped on incised circles. The method of suspension of this bronze pendant is for the open projection of trapezoidal shape to be split for the insertion of the leather belt, and thus these objects can hardly be regarded as pendants, but are clearly belt terminals.

'It is most probable that the Ivy Chimneys example is a local copy of this type in iron, but made for suspension. The bronze sheeting copies the original form, as does the decoration. It would have been rather large and heavy to be worn; it is suggested that it could have been used for a horse trapping or possibly for a temple banner. Temple banners could be very elaborate, as seen with two continental examples from Austria and Belgium (Fleischer 1967, taf. 63–7, no. 119 from Mauer an der Url: and Mariën 1980, 219–20, no. 135 from Flobecq). It is worth noting in this connection that two smaller examples of this type were found at Lydney, Gloucestershire (Wheeler and Wheeler 1932, pl. XXVIII, nos 128 and 129).' *[784]; 1960 (depression F1905); Phase 7*

26. Bar frag., possibly flesh hook: possibly twisted; terminating in twisted double prongs in the same plane as the bar. *cf.* Brough-on-Humber, Humberside (Wacher 1969, 99, fig. 41, no. 19). *[803]; 2017 (soil L183); Phase 4–7*

(Fig. 71)

27. Woolcomb: double-ended; incomplete. The base-plate measures 105 by 56mm. The teeth are incomplete, but would originally have been *c.* 100mm long. Some, if not all, of the teeth were individually welded into the base-plate. The wider side-teeth were also often welded on such objects, but in this case three side-teeth were part of the original blank (see X-ray Pl. XXIII). The missing side-tooth appears to have been welded on, perhaps as a replacement after breakage. This feature also appears on a woolcomb from Great Dunmow, Essex, excavated in 1993 (Major forthcoming).

Woolcombs are rather rare finds in Britain, but the distribution shows a concentration in East Anglia (Wild 1982, 117, fig. 4). Some are double-ended; others have one row of teeth and two prongs at the other end, apparently a regional variation. A woolcomb similar to the Witham example was found during excavations at Kelvedon, Essex in 1979 (H. Major, in prep.). *[1334]; 59 (depression F2409, horizon 6); Phase 7*

28. Unidentified object: consists of a roughly rectangular plate (40 by 31 by 12mm) with a short rod at one end bent back in a semi-circle towards the other end of the rectangle. *[1344]; 86 (depression F2409, horizon 5); Phase 7*

29. Possible window grille or rowel frags: in the form of a four-pointed star with a central rivet; ends of the arms broken. This may be a spur rowel, although Roman rowel spurs are extremely rare (Cleere 1958, 69). However, rowels usually have five or more points, which suggests that this object may be something else. It could possibly be part of a star-shaped window grille with a central rivet. A rather larger example comes from Chesters, Northumberland (Manning 1976, 40, no. 154). Such grilles were sometimes, though not always, used with window glass, which has been found extensively at Ivy Chimneys. The loose fragments of the object suggest that the arms were originally not much longer, so use as a rowel, albeit in an unusual form, may be the most likely option. *[X41]; B2A*

30. Cauldron chain: consisting of about twelve figure-of-eight links and a suspension hook. *[X44]; B2A*

31. S-shaped object, possibly frag. of decorative iron scroll work: a lump at the flat end could be a rivet, but there are no other rivets obvious. *[X84]; T12/8/C*

32. Fire shovel or poker handle: possibly part of the same object as No. 33. The twisted shaft is typical of Roman tools connected with the hearth, *e.g.* Shakenoak, Oxfordshire (Brodribb *et al.* 1973, 133, fig. 65, no. 514). A fire shovel from the Carrawburgh Mithraeum, Northumberland is illustrated by Manning (1976, 39, no. 149, fig. 23), and it is noted that the excavator suggested that it was an altar shovel: a similar use may be conjectured for the Ivy Chimneys example. *[X316]; S27/C3*

33. Fragments, probably a fire shovel blade and the end of a handle: in very poor condition. *[X326]; S28/C1*

Not illustrated:

a. Iron pendant found within copper-alloy split-ring on a chain: see Bronze Report, Fig. 58.54. *[776]; 1881 (slot F1880); Phase 7*

b. Fragment of bone handle with iron tang: see Bone Objects Report, Fig. 129.20. *[1025]; D3200 (unstratified); Phase 9*

c. Small antler handle pierced by large iron ?nail: see Bone Objects Report, Fig. 129.23. *[3288]; 3733 (ditch F3732); Phase 4–5*

d. Fragmentary rod, possibly a stylus: round section (diam. 4mm); flattened spatulate end. Length indeterminate. *L224 (soil layer); Phase 4–7*

e. Object: consisting of a rod (length 62mm, diam. 4mm), bent at approximately 160 degrees into a thin arrow-shaped blade, 55m long, 14mm at its widest, and 5mm thick. Large lump on the side may be just corrosion. *3704 (ditch F3647); Phase 6–7*

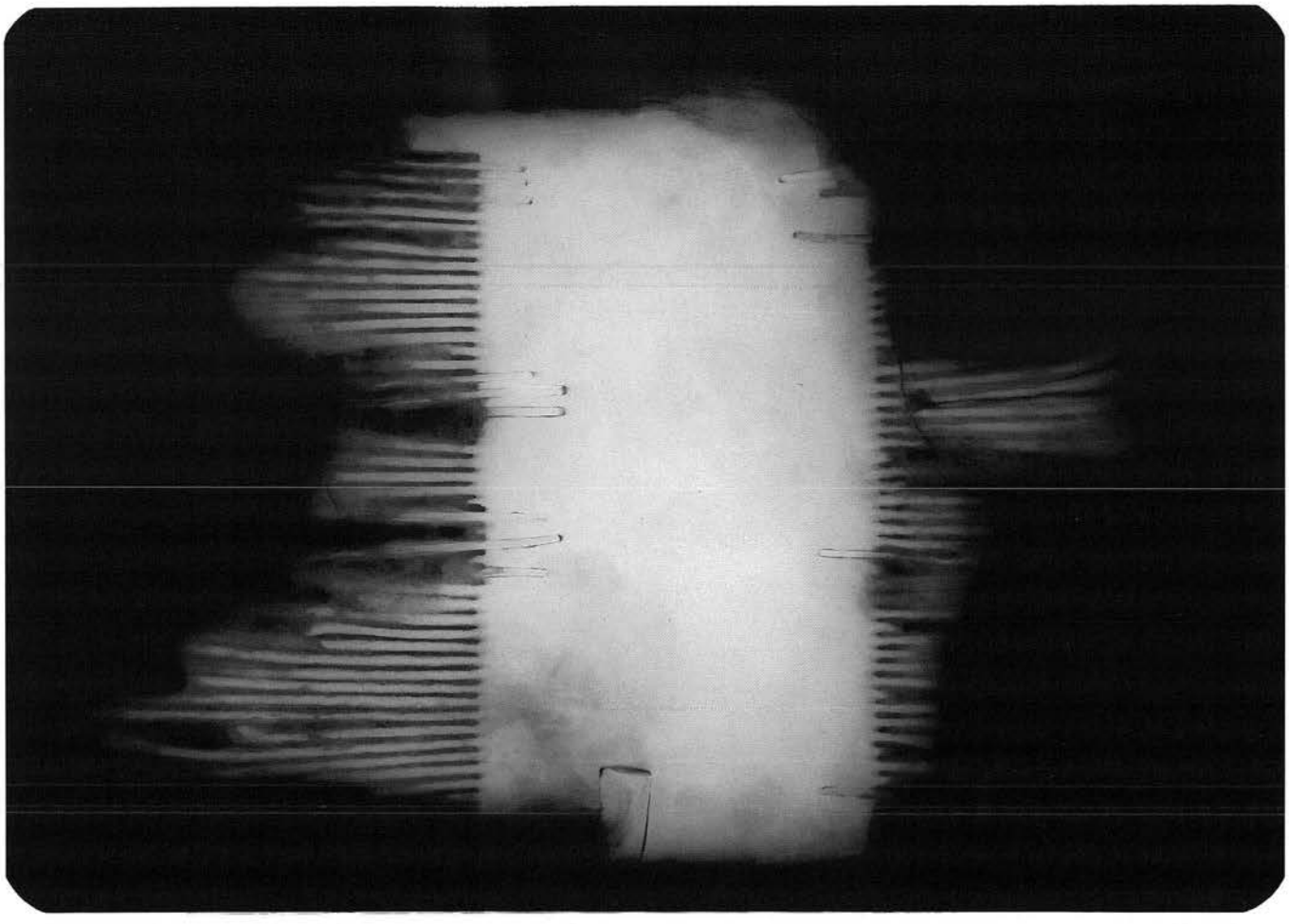


Plate XXIII Iron carding comb

f. Nauheim Derivative brooch: see Brooch Report, Fig. 52.2. *[X3]; B1*
g. Needle: broken at the base of the eye. Length 63mm. *[X42]; B2A*
h. Bronze and iron votive bulls horns with gold leaf decoration: see Bronze Report, Fig. 62.72. *[X273]; S21/C3*
i. Double prongs, possibly the hooks from a 'flesh hook': set in the plane of a very corroded bar. *cf.* No. 26. *S28/C1*

Rings
(Fig. 71)
Iron rings had a variety of uses, such as chain links, harness components, or harnesses. The original use can only rarely be deduced.
34. Ring, probably a handle: with broken split-spike loop attached. *[567]; D566 (ploughsoil); Phase 9*

Collars
Five fragments of cylindrical collars were found, and some of the plate fragments may have derived from similar objects. One example (No. [705]; Fiche) is similar to flanged water pipe collars found at Fishbourne, West Sussex (Cunliffe 1971, 128, fig. 55, nos 4 and 5).

Bindings, fittings, *etc.*
(Fig. 71)
This category includes box fittings, straps with rivet holes, and edge bindings. Some fragments may be from hinges. Parts of eleven box corner brackets similar to No. 36 were found.
35. Flattened U-shaped bracket: rivet hole at either end. *[X28]; B2A*
36. Corner bracket, possibly from a large wooden chest: made from a bar with a semi-circular section, and flattened at both ends. *[X53]; B2B*

Hinges
Of the fifteen hinge fragments, two are modern and two are L-shaped hinge pins. Fragments of both strap and linked-loop hinges are present.

Hooks
All of the seven possible hooks are fragmentary, and identification is therefore tentative.

Split-spike loops
(Fig. 72)
Split-spike loops may have had a variety of uses, some as attachments for rings (see No. 34), while others with turned-up points could have been attached to chains or ropes and used as hooks.
37. Large split-spike loop. Length 135mm, head width 32mm. *[X25]; B3*

Not illustrated:
a. Split-spike loop: found with two lead rings (?weights) around the shanks. See Lead Report, Fig. 66.1. *[118]; 226 (ditch F230); Phase 3–7*

Wallhooks
(Fig. 72)
38. Wallhook: *cf.* Verulamium (Manning 1972, 184, fig. 68, no. 87). *[X63]; T9/P/C*

Linch pins
(Fig. 72)
39. Spatulate-headed linch pin: with 'turned over' loop on the top of the head, *e.g.* Verulamium (Manning 1972, 174, fig. 64, no. 34). *[X230]; S20/C*

Swivel loop
(Fig. 72)
40. Swivel loop with a double hook, similar to one from Chichester (Down 1989, 208, no. 51). This was probably part of a chain assembly for a cauldron or similar vessel. *[59]; 93 (depression F2409, horizon 1); Phase 3*

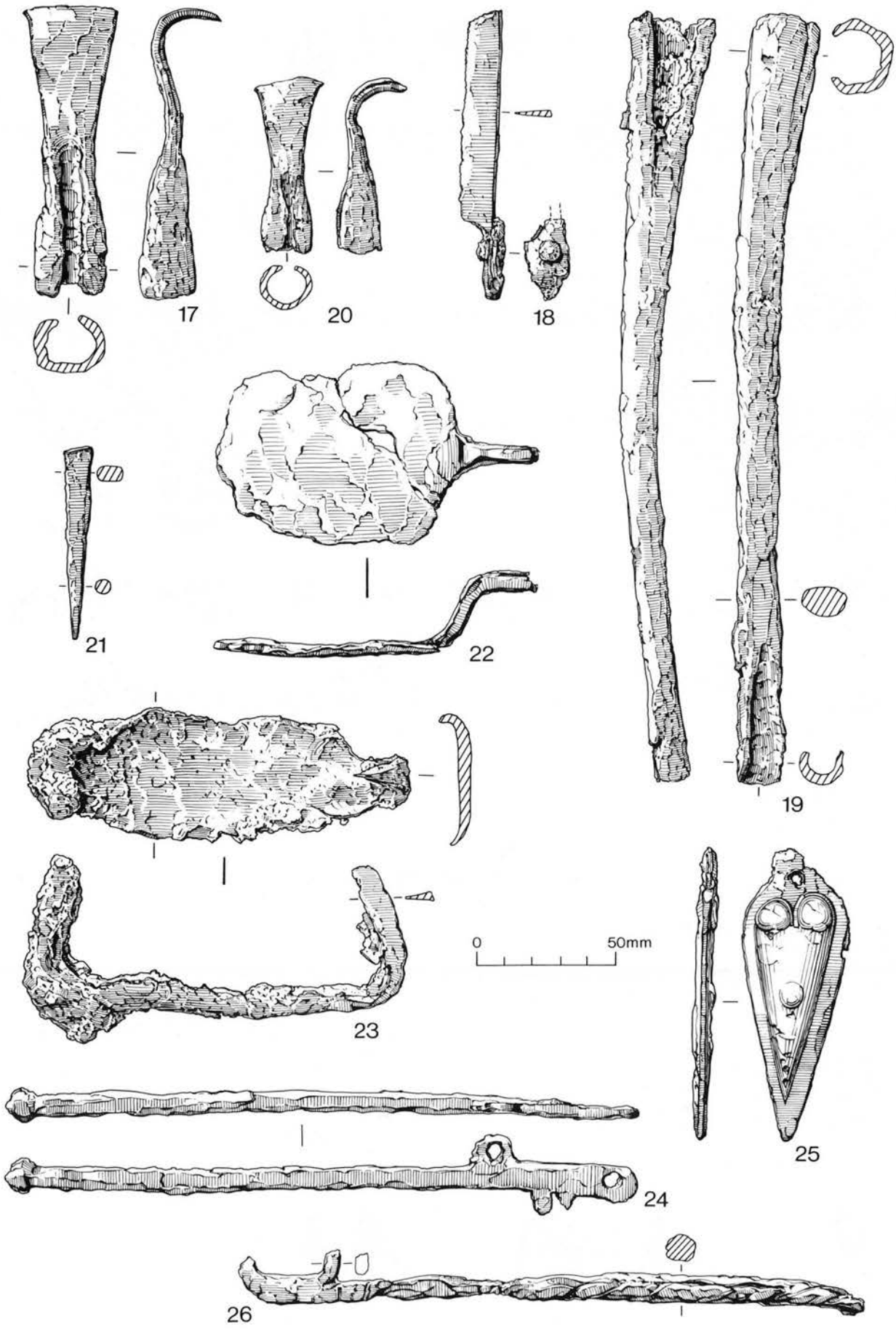


Figure 70 Iron: Nos 17–22 tools; Nos 23–26 miscellaneous objects. Scale 1:2

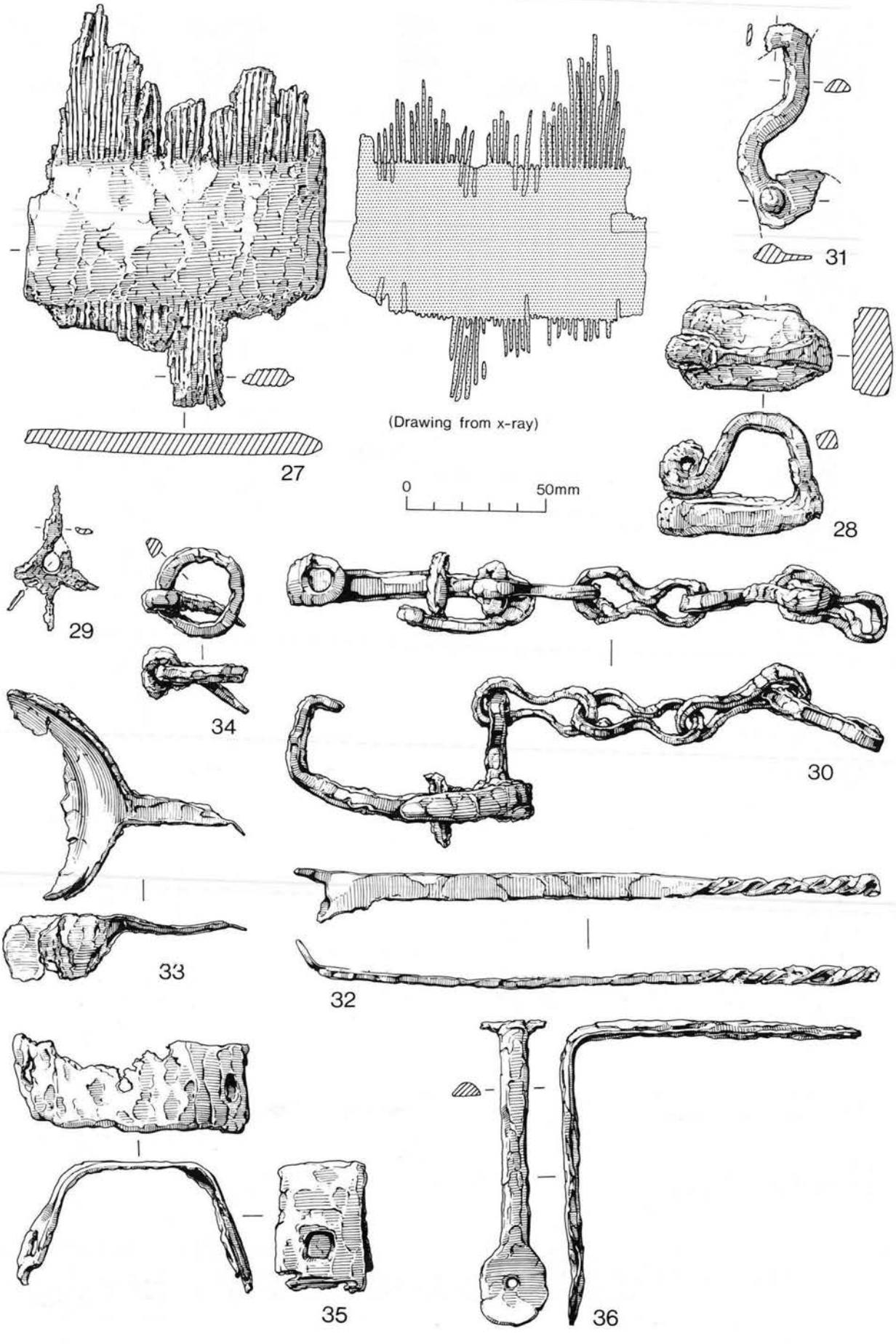


Figure 71 Iron: Nos 27–33 miscellaneous objects; No. 34 ring; Nos 35 and 36 brackets. Scale 1:2

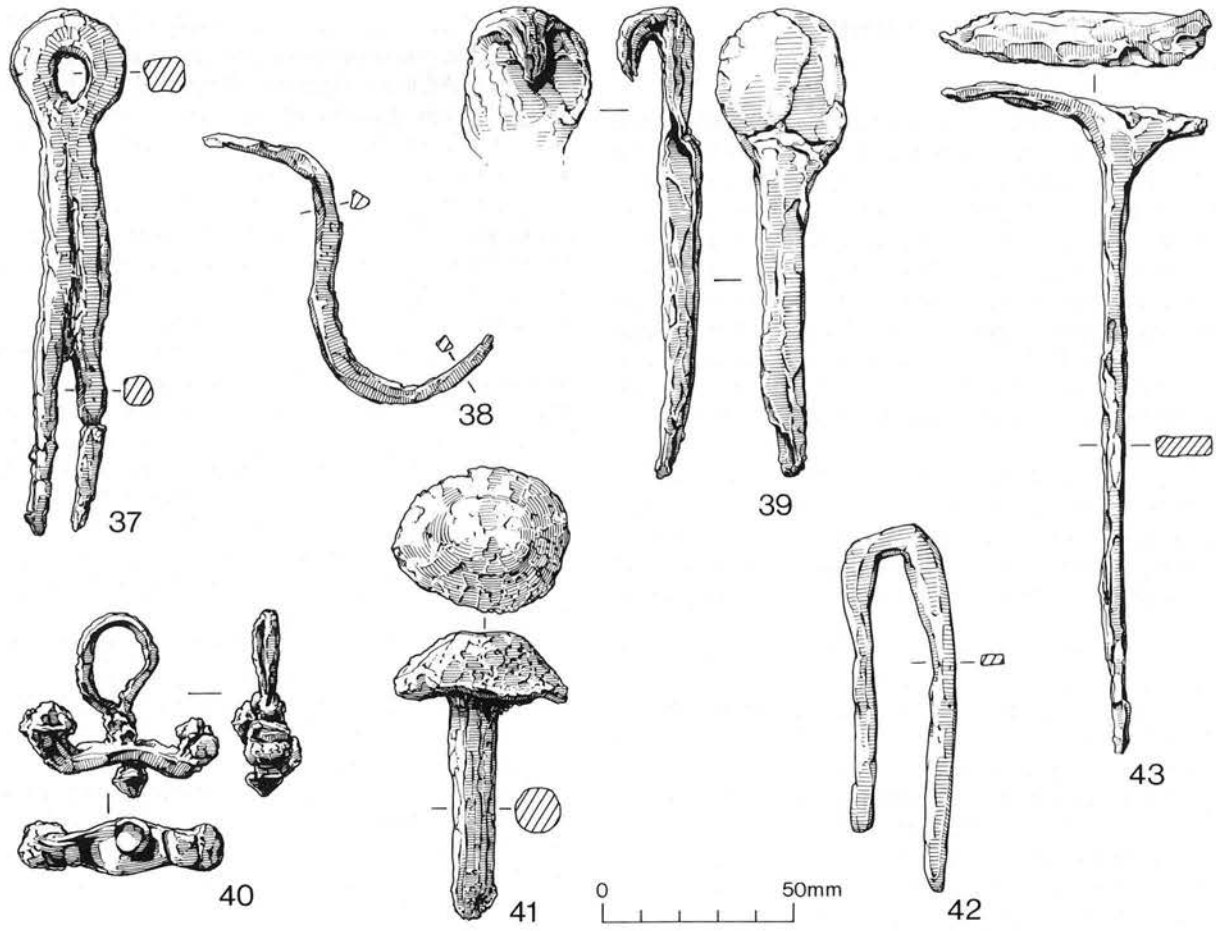


Figure 72 Iron: No. 37 split-spike loop; No. 38 wallhook; No. 39 linch pin; No. 40 ring attachment; No. 41 mushroom-headed bolt; Nos 42 and 43 staples. Scale 1:2

Bolts, studs, *etc.*
(Fig. 72)

41. Mushroom-headed bolt: ?circular sectioned shaft, broken at lower end. Length 68mm, head diam. 45mm. *[X128]; T12/2/C*

Spikes
Of the twenty-six spikes found, eighteen have measurable lengths which average 107mm, but with a fairly evenly-spread range from 60 to 195mm.

Staples
(Fig. 72)

Both U-and T-shaped staples are included in this category. Some of the latter have also been included in the Iron Nails Report, and there are a total of ten definite and seven probable examples from the site. U-shaped staples would have had several different uses, as wood fasteners (*cf.* joiner's dogs) or as attachments similar to split-spike loops.

42. Large narrow staple: part of one arm missing. Length 97mm, width 28mm. *[X166]; B17/F*

43. T-staple: one arm broken. Length 169mm, width 68mm. *[X197]; S22/C*

Discussion

The largest single class of objects is knives and other blades, including fragments of plate which appear to have cutting edges. Due to corrosion it is not certain that all of the latter were knives, but there were nevertheless over fifty certain knives in the assemblage. The majority are small, with blade lengths of less than 100mm. Besides casual losses, the large number of knives suggests that some may have been votive offerings: in particular the more decorative examples such as No. 1 with its silver-banded handle, and a bone-handled clasp knife (knife (a)): see Bone Objects Report, Fig. 129.25. Other blades could have had specialised uses: one, for example (from context *3205*: see Fiche) resembles a modern putty knife and could have been used for plastering.

Much of the remainder of the ironwork was associated with the construction, upkeep and furnishing of the buildings on or near the site. Many of the tools found would have been used for woodworking, such as the large auger No. 19, small chisels, saw fragments and joiner's dogs. Two trowels were probably also used for plastering, and some of the small chisels and engravers may have been used in metalworking.

Furniture and building fitments include large numbers of strap fragments, hinges, keys, wallhooks and angle brackets from boxes and chests. Some items more directly concerned with the religious functions of the site are the possible altar fire shovel (Nos 32 and 33) and fragments of flesh hooks. Iron styli for record keeping might have been expected, but appear rare at this site, despite the recovery of a number of copper-alloy writing instruments. Activities outside the buildings are represented by only a small number of objects, such as ox goads, hipposandals, linch pins and horse bits (see Fiche).

On the whole, the range of ironwork present reflects the presence of well-appointed buildings with extensive use of iron fittings. Only a small number of objects can be interpreted as possible votive offerings, and the ironwork predominately reflects utilitarian use.

VIII. Slag, fuel ash and clinker

by John Evans

Slag is usually heterogeneous and consequently small pieces may not be representative of the bulk of the material. It is produced by the fluxing of the silicate phases of metallic ores during the extraction process. It can, however, be produced accidentally by the fluxing of clays, *etc.*, with vegetable ashes. Such slags will be referred to as fuel ash slags. Their presence on the site need not have any technological significance, although if they contain fragments of fuel (charcoal, coal, *etc.*) and/or metal fragments (such as hammer scale), it can be inferred that they were associated with a metalworking process such as smithing.

Eighty-six samples were submitted for examination. None of the eighty-one slags present are associated with metal extraction processes or with copper or bronze working. Twenty-four slags are fuel ash systems and consequently not necessarily of technological significance.

Thirteen of the slags are probably associated with smithing hearth bottoms. Four large samples of this type, all of Phase 7, came from within or near depression *F5202*, where the blackness of the upper fill supports the suggestion of metalworking in the area in late 4th-century times. A very large bowl fragment came from fill *4982* of Belgic well *F5058*. Of the remaining samples, three are attached to furnace or kiln linings, five are of clinker, and the rest of the slags are associated with iron working, most probably smithing. Table 11 shows the incidence of slags on the site, and appears to indicate that smithing was practised on a small scale from the 1st century AD onwards. In addition, a crucible fragment from a Belgo-Roman fill of depression *F4502* indicates the working of leaded bronze (see Baked Clay Report).

Phase range	*1*	*2*	*2.3*	*3*	*4–7*
Furnace/kiln lining	-	-	-	-	3
Hearth slag	-	1	3	-	7
Smithing slag	-	-	5	6	20
Clinker	-	-	1	-	1
Fuel ash slag	3	2	5	-	9

Table 11 Types of slag, *etc.*, through the main site periods (excluding disturbed and pre-1978 contexts)

IX. The Palaeolithic flint artefacts

by Robin Turner and John Wymer

A total of forty-one certain and three possible Palaeolithic hand-axes were found on the site. In view of the wider importance of this occurrence, a full report on the assemblage and its significance has been published elsewhere (Turner and Wymer 1987). However, for the sake of completeness and ease of use, that report has been reproduced in microfiche. The main points are summarised below.

The Ivy Chimneys site lies on the 30m (100ft) contour, at the edge of a postulated Palaeolithic lake. Only six other hand-axes of this date had previously been found in the vicinity, and no major sources of Palaeolithic material are known.

The Witham hand-axes are mainly of Wymer (1968) Type E, and proportionately few finely-made axes were recovered. All show signs of rolling, and may have been derived from gravels in the Grays/Orsett area of Thames-side Essex, from the Essex-Suffolk border, or from an undiscovered site in the Witham/Kelvedon area. Many of the axes were found in cobbled layers in two large depressions: fill *93* (Phase 3) of depression *F2409*, and fill *3553* (Phase 5) of depression *F3321*. These layers were not only of different character, the gravel in fill *93* being larger than in *3553*, but the gravels were of different dates.

For a number of reasons it is considered that the hand-axes were selected by the occupants of the site in Roman times for their size and shape, and did not occur by chance. They may have been casual finds made by labourers or field-walkers looking for hard core, or they may have been recognised as hand-made by Roman stone masons experienced in the properties of flint. The best axes may have been kept for special ceremonies, while more ordinary Type E axes were deposited in the depressions.

Of seven other Roman temple sites on which prehistoric axes have been found, only the Lancing Down (Sussex), Springhead (Kent) and Kelvedon finds are possibly ritual. In contrast at least twenty-six continental temple sites have produced such finds.

Objects of this size and shape were probably thought to be 'thunderbolts' associated with the worship of Jupiter or a native equivalent, and a single large, isolated post-pit (*F1977*) may represent evidence for a *c.* 0.30 m diameter timber Jupiter column (see also p. 244).

X. The post-Palaeolithic flint artefacts

by Elizabeth Healey (March 1986)

The post-Palaeolithic material has been separated from the Palaeolithic artefacts on the basis of condition, staining, patina and technology. The assemblage thus separated (a total of 234 pieces) comprises:

Natural flakes	5
Cores, *etc.*	6
Flakes and blades	178
Scrapers	4
Notched pieces	2
Piercers	7
Arrowhead	1
Axe	1
Misc. edge retouch	30

The artefacts were all found in residual contexts, and no concentrations were noted vertically or horizontally. Much of the flintwork has been damaged by post-depositional movement, probably ploughing, of Roman or earlier date.

Raw material

A number of different coloured flints were used, varying from dark grey-brown to light orange-brown. Cortex varies in thickness and is often slightly weathered. Although no direct comparisons were made, it is likely that the flint was obtained from the local boulder clays.

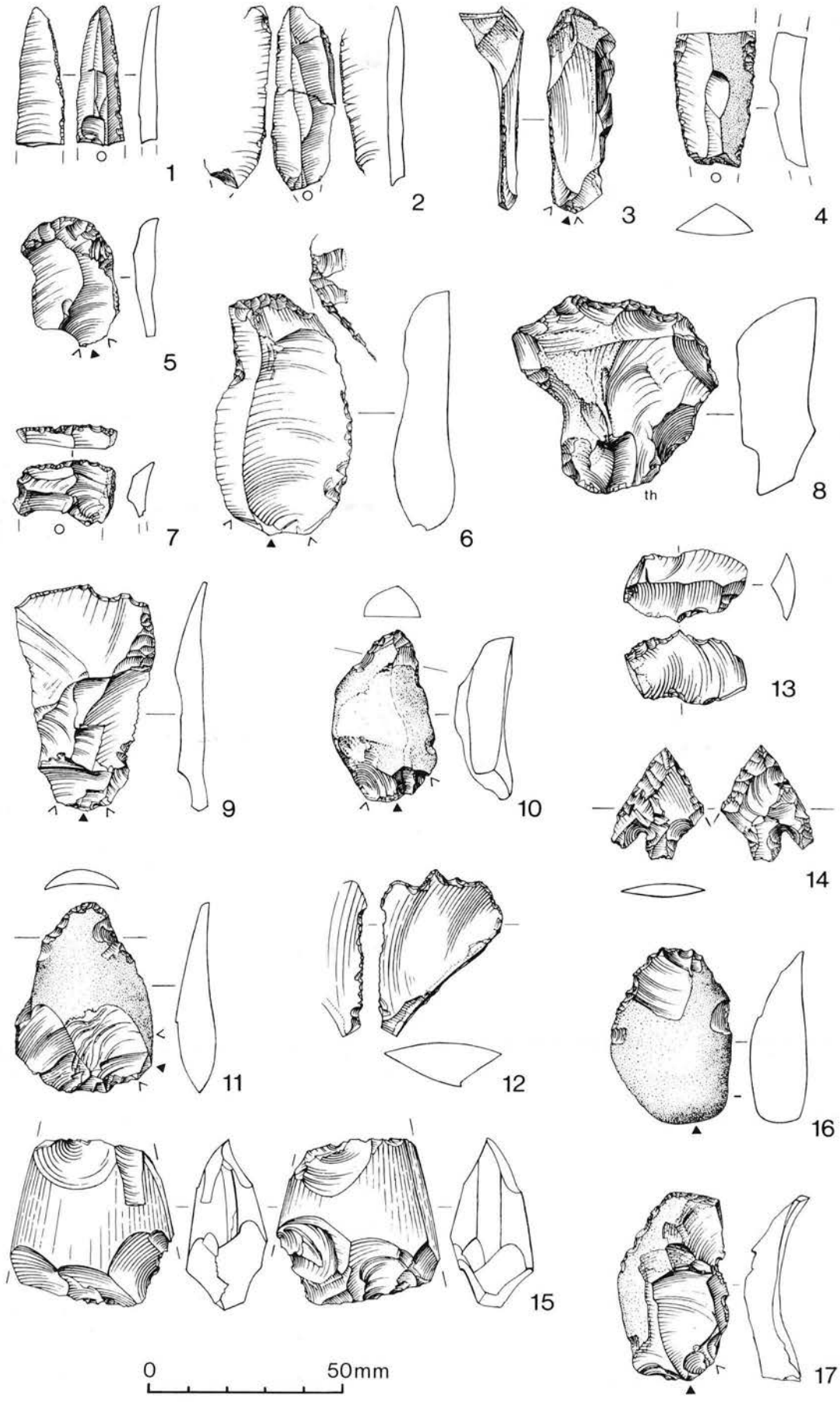


Figure 75 Post-Palaeolithic flints. Scale 2:3

Technology

(Fig. 75)

Various elements of the core-reduction process are present, though it is by no means certain whether they belong to a single industry.

Cores and struck nodules

None of these are very convincing as deliberate cores. They are mainly nodules with a number of more or less regular flake-scars, but which do not conform to a standard core typology (*e.g.* Clark *et al.* 1960, 216). The probable cores include a large nodule (84 by 65 by 58 mm), struck around its perimeter from an irregular thermal scar, and a globular, randomly-flaked, battered nodule. The rest are fragmentary.

Removals

1. Blade with edge retouch: brown flint with traces of cortex. Inverse marginal retouch on left side and semi-abrupt marginal retouch on right. *[1100]; 3611 (depression F3321, horizon 4); Phase 6*
2. Blade-like piece with edge retouch: nibbling inverse retouch on parts of both edges. *[634]; 1204 (depression F2409, horizon 5); Phase 7*
3. Plunging flake with edge retouch: dark grey flint with fresh cortex. Abrupt marginal retouch on left edge. Striking platform remnant plain; bulb of percussion diffuse. *3128 (pit F3127); Phase 1*
4. Blade with edge retouch: dark grey-brown flint; thin cortex. Marginal retouch on left edge and retouch through cortex on right becoming more invasive away from butt; broken. *3278 (depression F3321, horizon 4); Phase 6*

The removals comprise mainly flakes and spalls, preparation, trimming and rejuvenation flakes, and a few (*c.* 15%) blade-like pieces (see Nos 1–4 and Table 12 for details). The dimensions of the complete unretouched flakes and blades and their length/breadth ratios (summarised in Table 13) confirm the impression of a predominantly squat flake industry, even when the smaller flakes are disregarded (*cf.* Saville 1980, 18). Striking-platforms are overwhelmingly plain or cortical (over 70%); a few linear platforms are present (*c.* 10%), mainly associated with the blade-like pieces; and other types including removals with faceted or dihedral butts are present in small quantities.

	Complete	*Broken*	*Retouched*	*Total*
Flakes	107	39	18	164
Blade-like flakes	8	9	16	33
Preparation flakes	5	-	-	5
Trimming flakes	11	-	1	12
Uncertain	-	-	4	4
Thermal	5	-	3	8

Table 12 Flint: Removal types

Scrapers

5. Scraper: mid orange-brown flint; fresh cortex. Semi-abrupt retouch on distal end of flake forming a rounded contour. Striking platform remnant plain; bulb diffuse. *3531 (depression F3321, horizon 1); Phase 4–5*
6. ?Scraper: dark grey flint; thin cortex. Abrupt retouch on distal end of flake; contour slightly rounded; retouch continues along side of flake with some spalling on ventral face. Striking platform remnant conical; bulb diffuse. *4791 (depression F4502, lower fill); Phase 2.3*
7. ?Scraper: dark brown flint; fresh cortex. Semi-abrupt marginal retouch across distal end of blank (broken). *3134 (pit F3133); Phase 1*
8. ?Scraper: mid grey-brown flint; cortex rolled. Abrupt flaking, partly inverse, around perimeter of thermal flake forming denticulate edge. *4184 (ditch F3647); Phase 6–7*

Notched pieces

9. Notched piece: dark brown flint. Abrupt marginal retouch on distal end of blade-like flake, forming small angular concave area with smaller adjacent notch; retouch continues, partly semi-invasive, along right side with irregular chipping on other side. Striking platform small; bulb fairly prominent. *[5006]; 4659 (depression F4695); Phase 6–7*

There are two flakes which appear to have been deliberately notched: one has an inversely retouched concave area on the side of a large flake, whereas the other (No. 9) is a blade-like piece with abrupt retouch forming an angular notch towards the distal end.

Piercers and pointed flakes

10. Point on flake: dark grey flint; rolled cortex. Abrupt retouch on pointed end of relatively thick flake. Narrow striking platform remnant. *288 (sinkage F196); Phase 6–7*
11. Flake: dark grey flint; thin cortex. Abrupt marginal retouch on convergent sides. Striking platform remnant cortex; bulb diffuse. *3726 (slot F3644); Phase 5–6*
12. ?Piercer: dark brown flint; fresh cortex. Point on side of flake off-set by two concave areas with inverse retouch; abrupt marginal retouch on distal end; butt broken. *4102 (ditch F3479); Phase 3*
13. Piercer on flake: dark brown flint; fresh cortex on butt. Point on side of flake off-set by two notches retouched from alternate faces; bulb diffuse. *3553 (depression F3321, horizon 1); Phase 5*

This type is difficult to isolate in an assemblage with a high incidence of damage, as tips are very vulnerable, and, equally, fortuitous points seem to occur relatively easily in these circumstances. The seven pieces described as piercers include two flakes with abrupt retouch on the sides which converge to form a thickish, blunt point (Nos 10 and 11); three flakes with a point off-set by notches (*e.g.* Nos 12 and 13); and two naturally pointed flakes enhanced by retouch.

Dimensions of complete unretouched flakes

		Length		*Breadth*		*Breadth of flakes over 20mm length*	
		Total	*%*	*Total*	*%*	*Total*	*%*
mm	0–10	1	0.9	2	1.7	1	1.2
	11–20	32	27.8	44	38.3	25	30.5
	21–30	59	51.3	46	40.0	35	42.7
	31–40	15	13.0	21	18.3	19	23.2
	41–50	8	7.0	2	1.7	2	2.4
		115	100.0	115	100.0	82	100.0

Breadth Length ratio values

	All Flakes		*Flakes over 20mm*		
	Total	*%*	*Total*	*%*	
0.0–0.5	-	-	-	-	
0.6–1.0	52	45.2	29	35.4	Broad
1.1–1.5	43	37.4	34	41.5	
1.6–2.0	13	11.3	12	14.6	Medium
2.1–2.5	6	5.2	6	7.3	
2.6–	1	0.9	1	1.2	Narrow

Table 13 Flint: Dimensions of complete unretouched flakes and breadth:length ratio values

Position of retouch	*Type of retouch*			*Shape of edge*				Total
	Crushed	*Marginal*	*Scale*	*Straight*	*Convex*	*Concave*	*Irreg.*	
One side	9	5	3	5	6	2	4	17
Both sides	4	1	-	4	-	-	1	5
Distal end	1	-	3	2	1	1	-	4
End and side	1	1	1	1	-	1	1	3
Butt end	-	1	-	-	-	1	-	1

Table 14 Flint: Edge-retouched pieces

Arrowhead

14. Barbed and tanged arrowhead: corticated. Invasive bifacial flaking all over; one barb broken and tip of other damaged; tang may also be damaged. Green's (1984, 29) Sutton type. *[5012]; 4673 (depression F4695); Phase 6–7*

Polished Axe

15. Polished axe fragment: pale brown-yellow flint. Fragment from towards butt-end; one side pointed, other with flattened facet; coarse striations from grinding. Original form not reconstructable, but axe tapers towards butt. This object does not appear to have been associated with the assemblage of Palaeolithic hand-axes (Turner and Wymer 1987, reproduced in microfiche). *[1056]; 3038 (ditch F3037); Phase 3–7*

Miscellaneous edge-retouched pieces

16. Flake with edge retouch: dark grey flint; thin cortex. Irregular semi-abrupt retouch on side and distal end. Striking platform cortical; bulb diffuse. *288 (sinkage F196); Phase 6–7*

17. Flake with edge retouch: dark brown-grey flint; cortex fairly fresh. Abrupt edge retouch partly through cortex on left side and distal end (angular junction between sides and end). *86 (depression F2409, horizon 5); Phase 7*

In an assemblage which has suffered post-depositional damage it is always difficult to separate edge-damage resulting from deliberate retouch or use, from edge-damage occasioned accidentally. The usual criterion for distinguishing deliberate retouch is a straight or otherwise regular edge at least 20mm in length (*cf.* Moss 1983). On this basis thirty flakes have been elected as having been deliberately retouched or utilized; however, it is virtually inevitable that this will include some pieces which are not the result of deliberate retouch or usage, and it may also be that others have been omitted which should have been included. The position and shape of the retouched edge is summarised in Table 14 (see also Nos 1–4 and 16–17).

Discussion

Typologically, the artefacts are undiagnostic; even the axe fragment and the barbed and tanged arrowhead are only loosely attributable to the Neolithic and Early Bronze Age respectively (*cf.* Green 1984, table 1).

The technological features, especially the high proportion of squat flakes, are consistent with Late Neolithic or later flint working, although the blade-like element, together with the notched blade and the denticulated scraper, may be earlier (Healy 1984, 109–111: Jacobi and Tebbutt 1981, 13).

In the absence of stratigraphic and other associated evidence, it can only be assumed that the assemblage results from a series of occupations and is all that remains of a palimpsest of activities. Its main interest is that, in line with many other sites in Essex, this activity is now identifiable only in the lithic record.

XI. Jet and shale

by Hilary Major

Recent research has demonstrated that many of the objects previously identified as jet are made from other materials, such as cannel coal, which are very difficult to distinguish from jet macroscopically. The jet from this site was identified by eye only, and any reference to 'jet' should be taken to mean 'jet, or a jet-like material'.

Beads

(Fig. 76)

1. Jet bead: sub-oval with double longitudinal perforation. Similar bead from Verulamium (Wheeler and Wheeler 1936, 214, no. 68) dated 3rd to 4th century. *[522]; 1024 (post-pit F727, ?temple F731); Phase 4*

2. Shale bead: circular with lateral double perforation; edges of both faces slightly faceted with chuck points; two concentric grooves on one face. Similar bead in jet from Silchester (Lawson 1976, 244, no. 8d); and in shale from Caerleon (Fox 1940, 132, fig. 7.25) which is 4th century. *[1075]; 3159 (ditch F3158); Phase 5–7*

3. Jet bead: tubular with plain convex central segment flanked by transverse grooves. *[2121]; 3718 (slot F3644); Phase 5–6*

4. Jet bead: semi-circular; tapering section with two perforations and decorated edge. Part of a segmented bracelet. The decoration consists of ovals with notches between, along both edges. Type generally 3rd to 4th century. *[XM2]; B1/C*

Armlets

(Fig. 77)

5. Shale armlet frags.: incised hatching on outer face. Internal diam. 70mm. Similar example from Verulamium (Wheeler and Wheeler 1936, 210, no. 45) dated AD 300 or before. *[937]; 93 (depression F2409, horizon 1); Phase 3 and [K3]; B2A*

6. Jet armlet frag.: top edges deeply notched creating bold diamond pattern on outer surface; bottom of sides bear small carved diamonds; inner face rather rough; ends cut rather than broken; sub-rectangular section. Internal diam. *c.* 60mm. Identical design to armlet No. a., probably from same armlet. *[1067]; D3532 (=3509 of depression F3321); Phase 7*

7. Shale armlet frag.: plain; D-shaped section. Internal diam. 60mm. *[1068]; D3532 (=3509 of depression F3321); Phase 7*

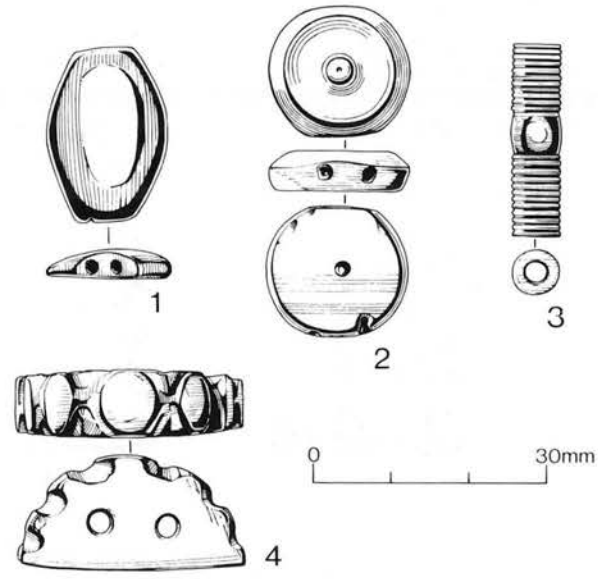


Figure 76 Jet and shale: Nos 1–4 beads. Nos 1, 3 and 4 jet; No. 2 shale. Scale 1:1

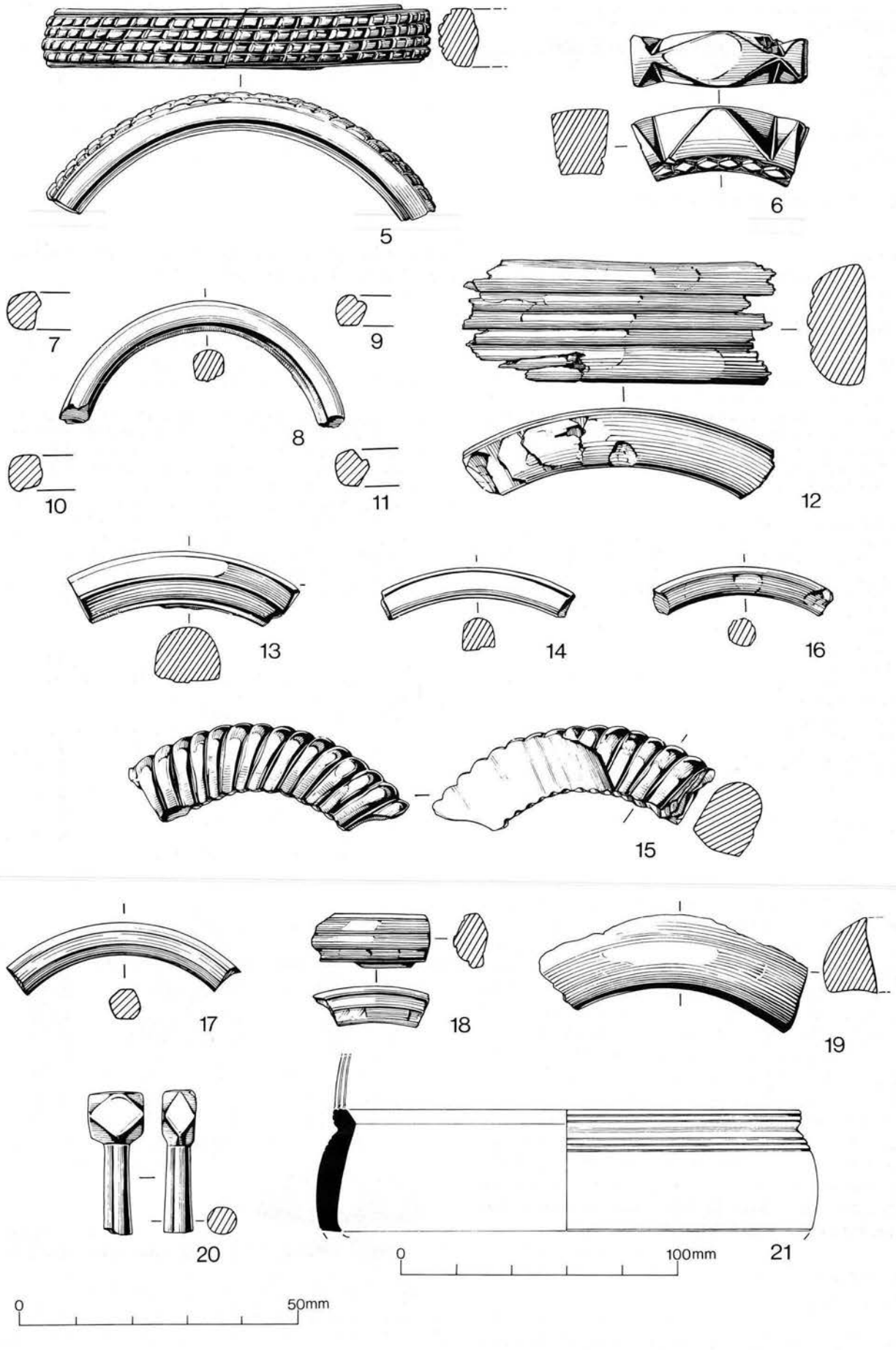


Figure 77 Jet and shale: Nos 5–19 armlets; No. 20 pin; No. 21 bowl. Nos 5, 7–19 and 21 shale; Nos 6 and 20 jet. Scale 1:1

8. Shale armlet frag.: plain; sub-circular section. Internal diam. 42mm. *[1138]; 3695 (ditch F3204); Phase 6–7*
9. Shale armlet frag.: plain; sub-circular section. Internal diam. 48mm. *[1226]; 3702 (ditch F3204); Phase 5*
10. Shale armlet frag.: plain; sub-circular section. Internal diam. 52mm. *[3187]; 3509 (depression F3321, horizon 5); Phase 7*
11. Shale armlet frag.: plain; faceted inner surface; sub-oval section. Internal diam. *c.* 50mm. *[3224]; 3509 (depression F3321, horizon 5); Phase 7*
12. Shale armlet frag.: four circumferential grooves on exterior; interior face bears several low ridges which are the smoothed remains of the turning process; D-shaped section. Internal diam. *c.* 100mm. *[5049]; 4850 (depression F4502, upper fill); Phase 2.3*
13. Shale armlet frag.: plain; D-shaped section. Internal diam. 64mm. *[K2]; B1*
14. Shale armlet frag.: plain with D-section. Internal diam. 60mm. *[X210]; S21*
15. Shale armlet frag.: carved cable pattern on all faces; sub-rectangular section. Internal diam. *c.* 40mm. *[X215]; S22/C*
16. Shale armlet frag.: plain; sub-circular section. Internal diam. 60mm. *[X4004]; B2B*
17. Shale armlet frag.: plain; sub-circular section. Internal diam. 44mm. *[X4005]; B2*
18. Shale armlet frag.: four circumferential grooves on outer face; D-shaped section. Diam. indeterminate. *[X4008]; S45*
19. Shale armlet frag.: plain; probably D-section, but only part of profile survives. Internal diam. 40mm. *S27/C2*

Not illustrated:

a. Jet armlet frag.: identical to No. 6, probably part of same armlet, though not conjoining and slightly narrower (8mm). *[XM12]; B2A*
b. Jet or shale armlet frag. Pre-1978 find, not located. *[X226]; S21/C*

The above artefacts have been termed armlets although, with the exception of No. 12, their diameters suggest that they are more likely to have been used as bracelets or anklets. Some of the smaller examples may have been armlets for children or might have been hair decoration. Seven of the fourteen measurable examples have an internal diameter of 52mm or less, but otherwise the group is too small for any meaningful assessment of dimensions.

The single jet armlet comprises two non-joining fragments bearing a well-executed carved pattern (Nos 6 and a.). The ends of these fragments had been deliberately cut in antiquity, perhaps for re-use as beads.

Pins

(Fig. 77)

20. Jet pin frag.: faceted cuboid head and part of shaft. Comparison with bone pin design (Crummy 1983, 27–8) dates the type as late 3rd to 4th century. *[781]; D989 (disturbed); Phase 7*

Not illustrated:

a. Jet or shale pin. Pre-1978 find, not located. *[XM17]; B2B*
b. Jet pin shafts: three plain frags. *[X368]; S48/C3*

Vessel

(Fig. 77)

21. Shale bowl frags: *c.* 168mm diam.; circumferential grooving on rim and three grooves below rim; broken at start of base; external break at basal angle. *[848]; 2386 (depression F2409, horizon 5); Phase 6 and [938]; 94 (depression F2409, horizon 5); Phase 7*

XII. The cult figure

by Graham Webster

(Pl. XXIV, Fig. 78)

The figure has already been briefly described and illustrated by Professor S.S. Frere (1970, pl. XXIX) who identified it as a votive object (see also Huskinson 1994, 17, no. 31, pl. 14). It has been carved from a soft, grey (possibly burnt) arenacious limestone and is quite small (105mm high, 78mm wide, and 33mm thick), but the base has broken away. The stone is shaped to a pointed gable which has provided niches on both sides for carved figures in relief, the heads of which project slightly and the gabled surround is slightly wedge-shape. The two figures are crudely carved, with round heads, wide, flat bodies, and straight, stick-like legs. Both are wearing tunics with a fringed edge at the bottom; in one case the garments reaches the knees and in the other half-way down the thighs. The faces are simplified with rectangular noses and slit mouths, but the eyes have been carefully hollowed out and filled with a white paste inlay, a fairly common practice in both Celtic and classical work.

At the break at the bottom of the stone there are two holes cut through the width. One of these still has iron stains, indicating that iron bars were originally in position for attaching the stone in some manner; Professor Frere (1970, 267) suggests to a shelf. The effect of drilling these holes undoubtedly weakened the stone and caused it to break at this point. The purpose of these bars is not clear, since, for attachment to a shelf a short vertical bar would have been adequate for such a small object. It has been suggested (R. Turner, pers. comm.) that the horizontal bars may have been to facilitate turning, on the assumption that the figures were reversed for particular occasions. This is an attractive idea although one would assume that it would have been easier to rotate the stand to which the stone had been fixed. The simplest solution is that the bars were actually brackets for fixing to a vertical wall face, or against a small window which would at least have enabled an external view of the figure at the back if the stone was fixed to the rear wall of the shrine. However, this is speculation based on too many assumptions. Unfortunately, there is no information about the internal arrangements of temples and shrines at this period, except that the cult figure was displayed at particular times and under special conditions of lighting. This stone would appear far too small and insignificant for such a role, and may not have been the main cult figure. Unfortunately, the evidence for a temple on this site is tentative, although votive activity undoubtedly took place.

Apart from its size and crudity, the object is highly unusual in having figures on its two opposite faces. This is not a janiform type in which the heads and bodies are conjoined, a form found in both Celtic and classical deities, but it may embody the idea of looking both ways, such as to the past and the future, or it may represent two distinct aspects of the same deity. There is very little difference between the two figures, except the tunics; one reaching the knees and the other half-way down the thighs. They could be male and female aspects of the deity, or perhaps represent summer and winter, and they may have been clearly distinguished by different coloured tunics which would have placed the matter beyond doubt; there is no trace of any pigment. If the figures represent two contrasting aspects of the deity, it is possible that the iron bars discussed above were part of an arrangement by which the figure was turned round.

The appearance of an unknown local deity need not occasion any surprise, since the country abounded with such spirits, inhabiting all natural places such as springs, pools, rivers, hills and woods. Nor did they disappear with the Roman conquest; the newcomers respected them, recognising their power to harm them if they were not properly acknowledged. Classical deities were imported, but often paired with Celtic gods with similar functions (Webster 1986). A large number of representations of Celtic deities have survived in the form of stone figures and reliefs, in pottery, metalwork, chalk (*cf.* from Deal, Kent; *Curr. Archaeol.* 1986, 167–8), and even more, originally in wood (*cf.* Ross 1967; Toynbee 1962 and 1964), examples of which have almost certainly perished (Deyts 1983).

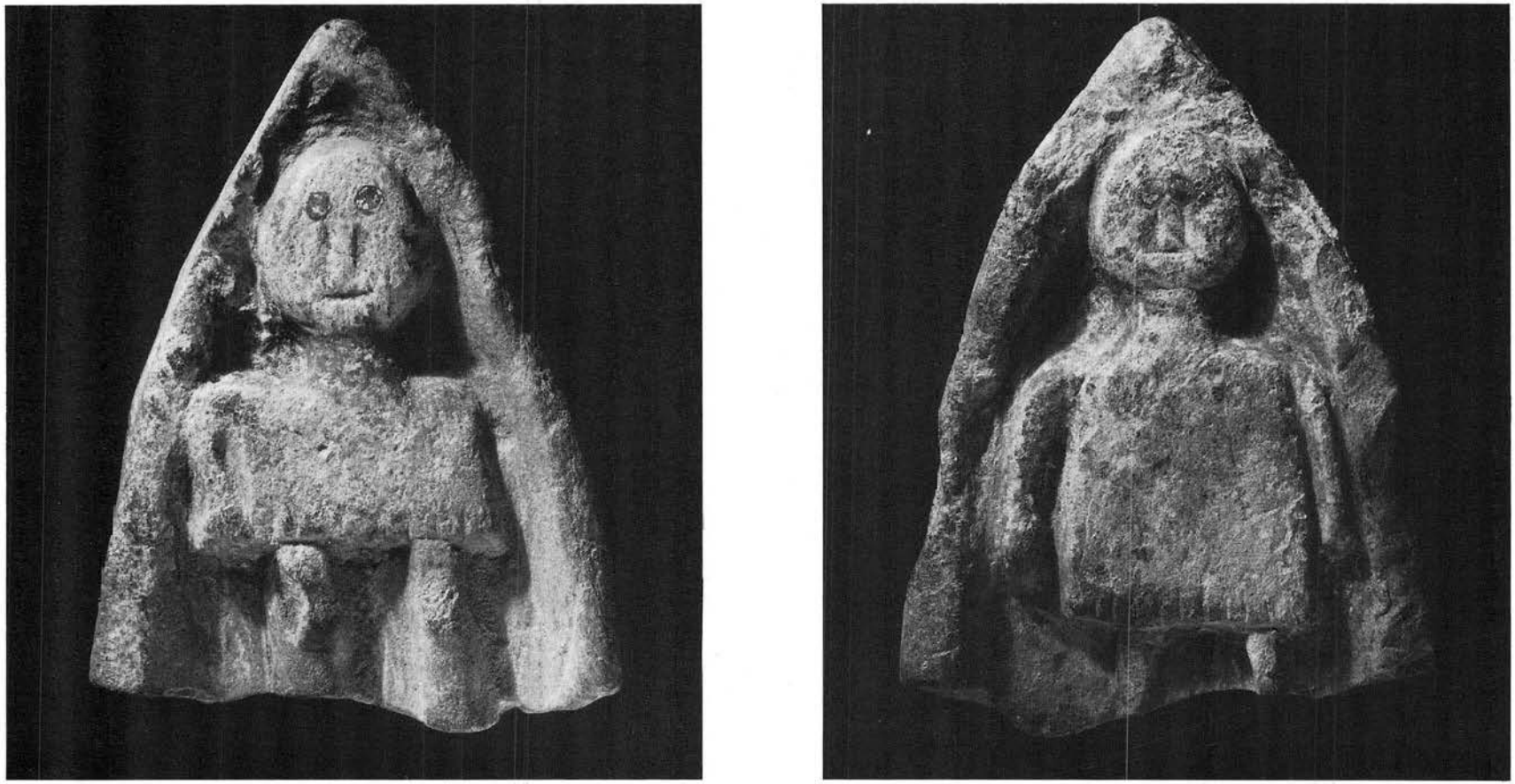


Plate XXIV Carved limestone cult objec:

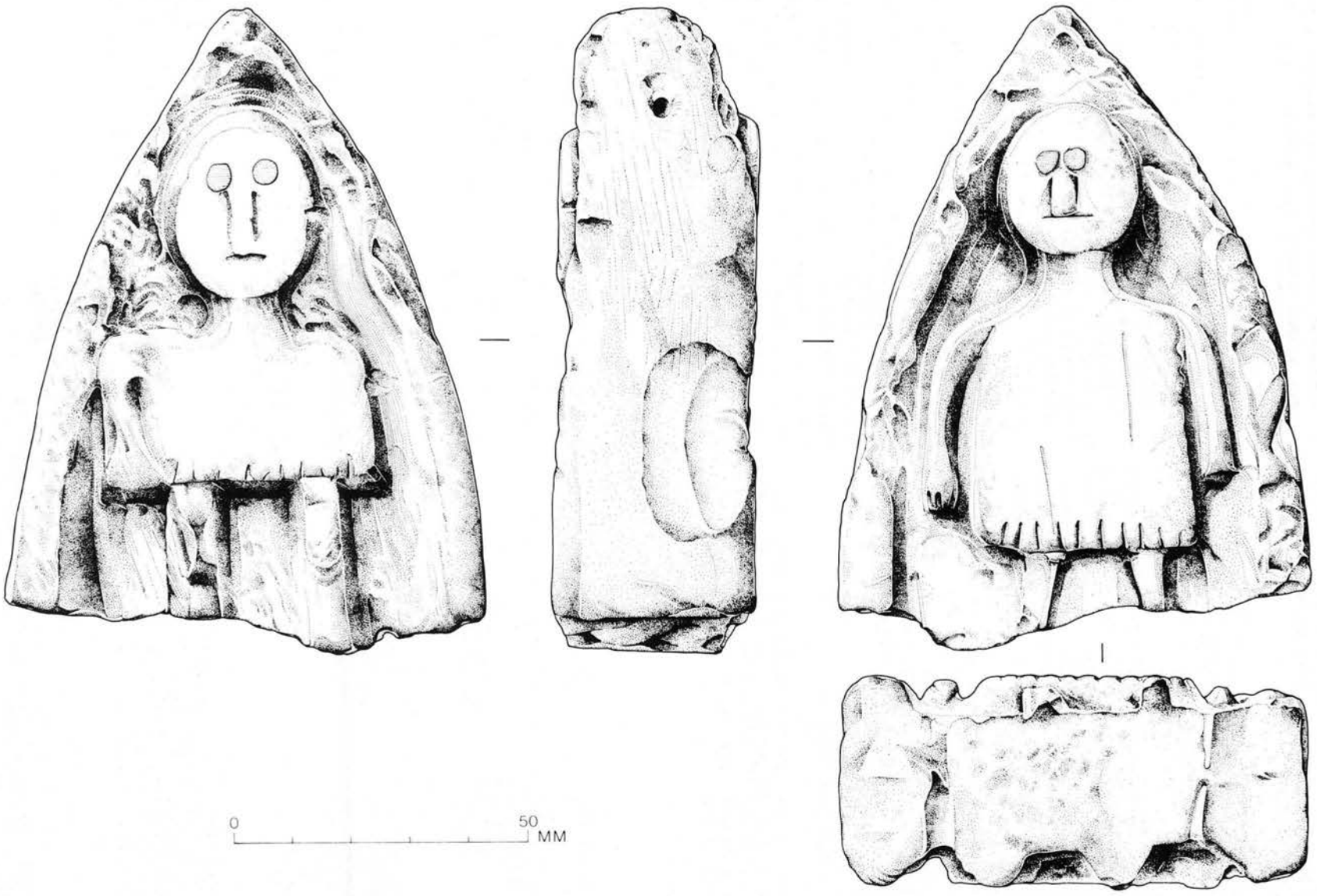


Figure 78 Cult object. Scale 1:1

The object was found, during the pre-1978 excavations, within a depression *F2409*, in a layer probably related to the upper black soil deposits of late 4th or early 5th-century AD date. *B2/C (depression F2409, horizon 3 equivalent); Phase 7*

XIII. Querns and millstones

by David G. Buckley and Hilary Major

Introduction

The site at Ivy Chimneys, Witham, has produced evidence of extensive settlement from the Early Iron Age to the end of the Roman period. A single Iron Age context produced a Greensand rotary quern, while a large number of Roman contexts produced fragments of rotary quern in a range of stones which includes puddingstone, lava, and Millstone Grit. The Millstone Grit fragments include a few fragments from mechanically-turned millstones. Because of the large size of this assemblage, and its possible interest to quern studies and in the context of Romano-Celtic temples, brief descriptions of all the quern fragments were thought to be appropriate. These can be found in the microfiche.

Illustrated querns and millstones

(Fig. 79)

1. Puddingstone quern upper stone frag.: diam. *c.* 280mm; max. thickness 115mm. Damaged around the edge; possible slight groove for a handle band. *[792]; 1745 (pond F679, upper fill); Phase 7*
2. Puddingstone quern upper stone frag.: diam. *c.* 744mm; max. thickness *c.* 114mm. The central hole narrows from *c.* 56mm to *c.* 22mm diam. Slight groove for handle band. *[756]; D1811 (disturbed); Phase 7*
3. Millstone Grit quern upper stone frag.: max. thickness at rim 85mm. Moulding on outside edge. *[944]; 95 (depression F2409, horizon 2); Phase 6*
4. Millstone Grit quern lower stone frag.: max. thickness at rim 41mm; max. thickness at centre 45mm. Radial grooving on grinding surface. *[798]; D2018 (disturbed); Phase 7*
5. Millstone Grit millstone lower stone frag.: diam. 660mm; max. thickness at rim 66mm; max. thickness at centre over 73mm. The grinding surface is scored, indicating possible re-use as a sharpening stone. *[876]; 2388 (kiln stoke-hole F282); Phase 5*
6. Millstone Grit quern upper stone frag.: diam. 442mm; max. thickness at rim 40mm. Smooth grinding surface. *[1154]; 3553 (depression F3321, horizon 2); Phase 7*
7. Millstone Grit quern upper stone frag. Very worn along the edge. *[1159]; D3820 (disturbed); Phase 5–7*
8. Greensand quern upper stone frag.: diam. 440mm; max. thickness at rim 80mm. Large hopper taking up much of the top of the stone. Grinding surface damaged. The bottom of the outer edge is worn very smooth and flat. *[749]; 1796 (ditch F1199); Phase 1*

Discussion

The typology, distribution, and economic and social implications of British querns have attracted little detailed study since the pioneering articles of Curwen (1937 and 1941). This arises in part from a lack of adequate information. Although museums contain large numbers of querns, the majority are unprovenanced, excavated examples rarely come from well-stratified contexts, and poor recording and publication hampers interpretation. The querns from Ivy Chimneys, Witham, are in the main very fragmentary and in themselves afford little opportunity for testing the validity of accepted theories about querns, but they are a useful addition to the corpus of published information.

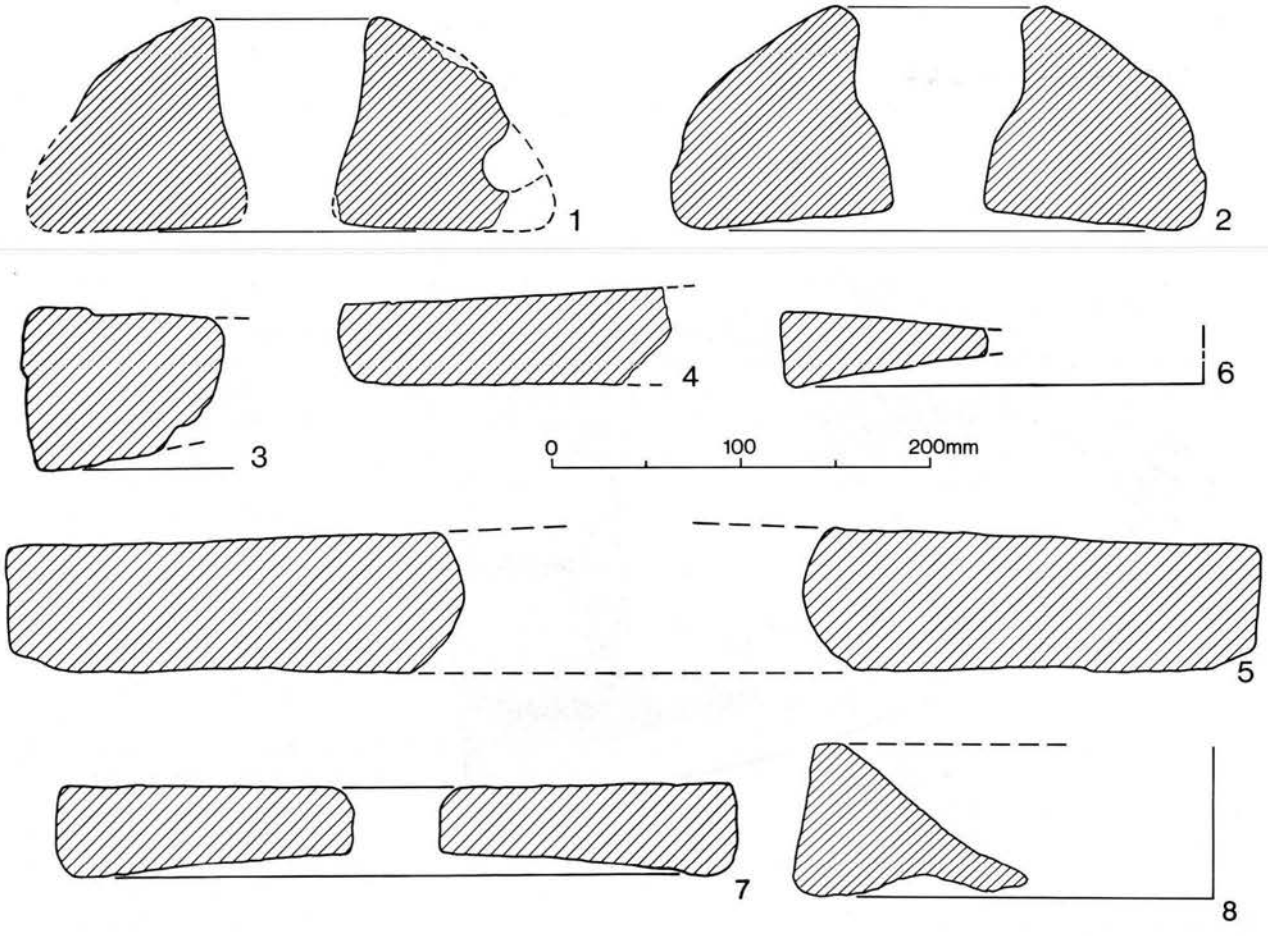


Figure 79 Querns: Nos 1 and 2 puddingstone; Nos 3–7 Millstone Grit; No. 8 greensand. Scale 1:4

Prehistoric contexts

The single fragment of Greensand rotary quern upper stone from enclosure ditch *F1199* (No. 8) is of interest in that it is the first rotary quern from Essex recorded from a Middle Iron Age context. It is therefore the earliest dated rotary quern from Essex.

There are very few other rotary querns in the county from certain pre-Roman contexts. This fragment can be compared to an unprovenanced specimen in the Colchester Museum which is also of Greensand and has a large hopper. In this respect they can be compared to those querns identified as a Wessex class of early quern by Curwen (1937, 142), although both have flat rather than concave grinding surfaces. Their presence in Essex suggests a possible trading connection to the south. Early Midland querns tend to be of Curwen's Hunsbury class (1941, 16–20) in Millstone Grit and other Midland sandstones, of which only one example is known from Essex (in the Saffron Walden museum collections).

Roman contexts

Roman contexts, primarily of 3rd and 4th-century date, produced rotary quern fragments of puddingstone, lava and Millstone Grit. In addition there are four fragments of Millstone Grit derived from large mechanically driven millstones.

i. Puddingstone querns

Puddingstone querns are of a fairly standard form and the eight fragments identifiably from querns from Ivy Chimneys provide no evidence of variation. The only specimen from which full dimensions can be obtained (No. 1) conforms to the smaller size range. There are traces of a slight band around the stone: this is common to many puddingstone querns and enabled an iron band with a projecting handle to be securely fixed to the stone (for the appearance of these see Beloe (1893)). Handle holes also occur, and in some instances the band is also present. It is possible that on some stones the band is a later addition following the wearing down of the grinding surface to an existing handle slot.

A provisional gazetteer of puddingstone querns has been published (Rudge 1965) showing a distribution primarily confined to East Anglia. Research by the authors has confirmed many more from Essex. A puddingstone quern has been securely dated to the pre-Boudiccan destruction levels at Colchester (Buckley and Major 1983, 76): where datable associations are available they have always been Roman (Curwen 1941, 20). Rudge (1963, 28) believed that there was strong evidence that production had ceased within 100 years of the Roman occupation. However, well-stratified puddingstone querns are rare and the fragmentary nature of those from Ivy Chimneys from 3rd and 4th-century contexts suggests that they are residual.

ii. Lava querns

Lava came from a number of contexts, but all pieces are small and fragmentary, retaining no distinguishing characteristics. However, it is likely that all pieces were originally derived from rotary hand querns.

The majority of lava hand querns in Britain are generally believed to be from the Mayen region of the Eifel Hills of Germany, and the background to these quarries has been discussed (Crawford and Röder 1955). The possibility of a trade in querns of Volvic lava from the Auvergne region of France has also been considered (Röder 1953: Peacock 1980). During the Roman period there was a considerable trade with Britain and other provinces. It has been suggested by Peacock (1980, 50) that the trade was most common in the first two centuries AD, as only three examples have been securely dated to the later Roman period. It is not possible to say at this time to what extent Essex lava querns from late 2nd/4th-century contexts represent a continuation of this trade into the later Roman period rather than residual or re-used stones incorporated into later contexts.

iii. Millstone Grit querns

Millstone Grit rotary quern fragments came from a number of contexts, but most are too fragmentary to permit comment on form. Millstone Grit querns have been found on Roman sites throughout Britain, including a number of Essex sites. Unfortunately no detailed study has yet been made. This material was used for beehive querns traded south to the hillfort at Hunsbury (Northants) during the Iron Age (Whitwell 1982), but it is not known at what point flat Millstone Grit querns started to be produced. A specimen came from Period V (*c.* AD 120) at the Chelmsford *mansio* site, suggesting early exploitation by the army after Agricola's conquest of the Pennines area in AD 79–80 (Wickenden 1988, 116). However, the majority of Essex specimens occur in later Roman contexts as at Ivy Chimneys. These may be residual or re-used pieces in later contexts, although there is no reason why the trade should not have continued during the later Roman period. If the hypothesis about the decline in both the puddingstone and lava quern trade during the 2nd century, referred to above, is correct, it is possible that this reflects the growth of competition from the favoured and more readily available and workable Millstone Grit.

iv. Millstone Grit millstones

Six contexts produced fragments of Millstone Grit with diameters and/or thickness indicating stones too large for hand-turned rotary querns, and therefore attributed to mechanically-turned millstones. Unfortunately they are too fragmentary to permit comment on form.

Millstone Grit millstones deriving from the Pennines were traded as far to the south-west as Wanborough, Wiltshire (Anderson and Wacher 1980, 119) and have been recorded from two other Essex sites; an upper and a lower stone from Harlow, Staffords site (unpublished, deposited in Harlow Museum) and an upper and a lower stone from Bedwell Common excavated in advance of the M11 (unpublished, deposited in the Passmore Edwards Museum).

Little work has been carried out on millstones from British sites. Rahtz (1981) mentioned the existence of several larger stones up to *c.* 800mm in diameter which may be from mills powered by animals or other means. The other likely power is water, and the problem of early watermills was discussed by Curwen (1944). However, it has been pointed out that stones of large diameter have been found on sites whose geographical position and scarcity of water preclude their use as a watermill (H. Chapman pers. comm.). The option of water power may have been available at Ivy Chimneys, given the system of ponds and associated inflow and outflow ditches.

XIV. Roman vessel glass

by Denise Allen (May 1985)

Cast

Cast and ground: colourless

(Fig. 80)

1. Two joining fragments of a shallow bowl: colourless glass; surfaces dulled with some pitting. Cast and rotary polished. Wide flaring lip, edge missing; shallow body curves into flat base with moulded base ring. On the underside of the lip are wheel-cut lines and facets forming a design of which only a small part now remains: possibly a row of stylised flowers or a wreath. Diam. of base ring 60mm.

The fragments comprising No. 1 represent one of the earliest glass vessels found on the site, coming from a form of bowl or plate which was popular during the later 1st and earlier 2nd centuries. These vessels were made by casting in a mould, and finished by rotary polishing. They occur in coloured glass during the 1st century (*cf.* Wheeler 1930, 122–3, no. 4, fig. 42 from King William Street, London: Charlesworth 1959, 38–40, fig. 3,3 from Kirkby Thore), being replaced by a colourless version some time during the Flavian period, when that metal began to be widely adopted for finer tablewares. Characteristics include the wide flaring lip, which usually had an overhanging tip, although that feature is now missing from the fragments catalogued here. Fragments occur quite frequently in Britain: recently published examples come from Gloucester (Charlesworth 1975a, nos 4–5, fig. 29; Price 1980, 111, no. 1, fig. 17, period I context, 1st to 2nd century); Maryport, Cumbria (Price 1976, 49–51, no. 1, fig. 9); and St Thomas Street, Southwark (Townend and Hinton 1978, 388–9, no. 101, fig. 176).

A few of these vessels were given cut decoration, usually consisting of a 'tongue and groove' or 'egg and dart' frieze on the overhanging part of the rim, and abstract facet cutting on the body. This falls into two main styles: the first is characterised by a row of circular or oval facets, often separated by pairs of broadcut lines, on the underside of the lip, and this design is repeated around the inside of the base ring. The best example is a complete plate from the 'Cave of Letters' on the west coast of the Dead Sea (Yadin 1963, 106–9, no. 12–66.1, fig. 40), and fragmentary British finds come from Richborough (Yadin 1963, 109, fig. 40a); London (Museum of London accn no. 19719); Verulamium (Verulamium Museum, accn no. 81.360); and York (Minster excavations, nos PH1–6 and PG). The other main decorative group consists of bowls and plates with interlocking rows of thin oval facets almost entirely covering the outer surface. A fragmentary example was found in a context dated *c.* AD 60–125 at Wroxeter and others have been discussed in the publication of this find (Charlesworth 1975b, fig. 4). In addition, a small number of vessels were given cut decoration of a more realistic nature, the best preserved being a plate from a Trajanic-Antonine grave at Girton College, Cambridge, which has oval facets under the lip and a duckling on a lotus flower on the underside of the base (Liversidge 1977, 17–18, pl. IV; Jaffe 1978, 45–6, no. 86). None of these pieces, however, bears decoration exactly similar to that on the Ivy Chimneys fragments. The best parallel is provided by a small rim fragment from Salona in Yugoslavia, which has an apparently identical design on the underside of the lip, identified as stylised flowers or possibly a wreath of some sort (Auth 1975, 155–6, no. 39, pl. 29). It resembles the first of the abstract designs described above in the apparent repetition of simple shapes in a single row under the lip. A fragment from Chester with a cut wreath or possibly a palm branch inside the base ring may have come from a similar vessel (described but not illustrated by Newstead (1914, 167)). Unfortunately the small part of the base extant on the Ivy Chimneys fragment is too chipped to determine whether the pattern was repeated there.

This group of colourless cast and ground vessels was for a long time thought to have been imported from Alexandria, where there was a thriving glass cutting industry, and indeed identical vessels have been found on Egyptian sites such as Karanis (Harden 1936, 60–1, no. 73, 166–8, pls XI–XII). Some of the cut designs, such as the Girton College duckling and a fish on a fragment from Caerwent, also show Egyptian influence (Harden 1936, 66; Boon 1973, 116, no. 20; Jaffe 1978, 46, no. 87). However, the quantity of these bowls and plates found in Italy and other western provinces suggests that some, and probably most found in this part of the Empire, were made in Italy, the Alexandrian influence perhaps being provided by migrant craftsmen from that glass-making centre. *59 and 62 (depression F2409, horizons 4 and 6); Phase 7*

Blown

Facet cut and engraved: colourless

(Fig. 80)

2. Body fragment, probably of a bowl: colourless glass; clear; a few pinhead bubbles. Outer surface wheel-cut and rotary polished: design of intersecting and interlocking narrow facets and broad cut lines.

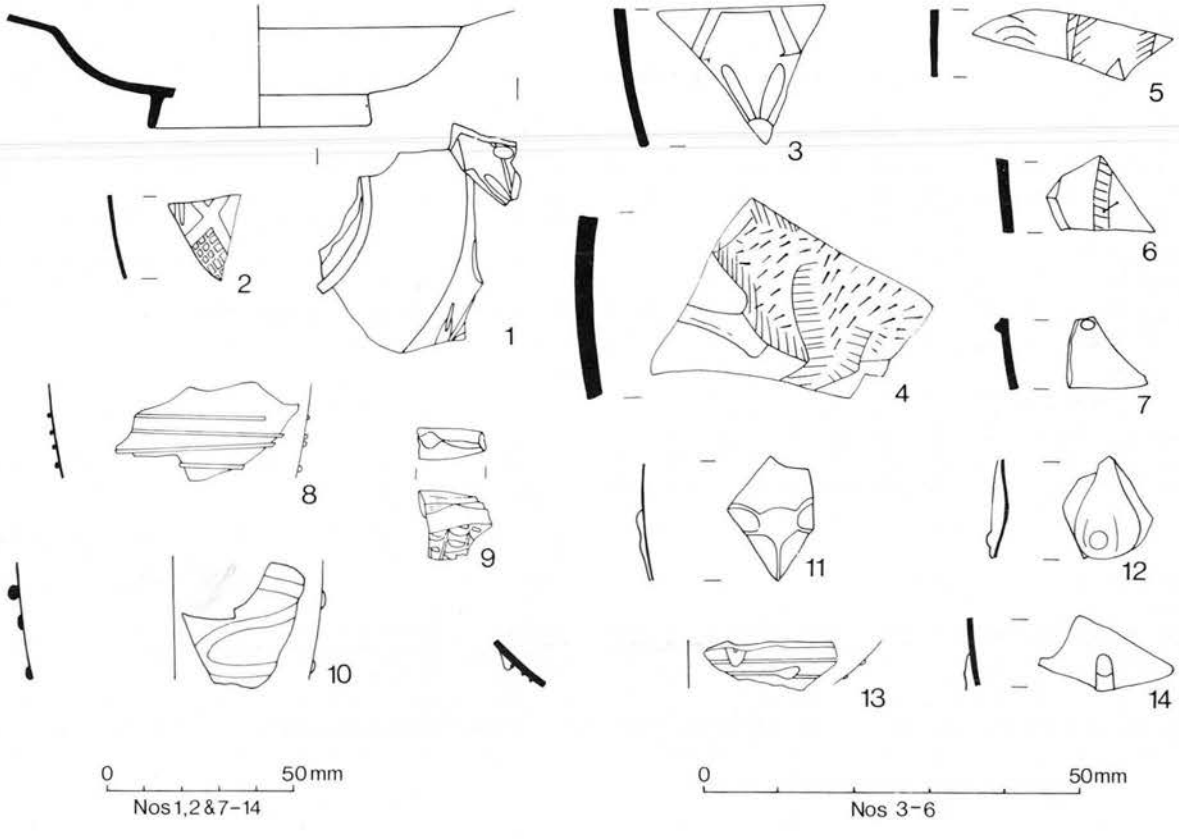


Figure 80 Vessel glass: Nos 1–14 fine vessels. Nos 1–2 and 7–14 scale 1:2; Nos 3–6 scale 1:1

This fragment represents a later group of vessels with cut decoration than No. 1 above, being a typical product of glass-houses in the Rhineland during the 3rd century. It probably comes from a hemispherical or cylindrical bowl: examples with similar decoration have been found at British sites such as York (Harden 1962, 137, fig. 88, nos HG210–211), Verulamium (Charlesworth 1972, 207–8, fig. 78, nos 48–53), Silchester (Boon 1974, 230–1, fig. 36, no. 4) and London (Wheeler 1930, 121–3, nos 1–3, fig. 42). Complete vessels come from Cologne (Fremersdorf 1967). *T13/3/L*

3. Body fragment of a bowl: colourless glass with a very slight greenish tinge; a few pinhead bubbles. Outer surfaces engraved: lower part of a serifed letter 'A' extant, with two narrow ovals attached to a small circle beneath. *[1076]; 3159 (ditch F3158); Phase 5–7*
4. Body fragment of a bowl: greenish-colourless glass; a few pinhead bubbles. Outer surface engraved: chest, cheek, and upper part of two front legs of an animal extant, outlines emphasised by cross-hatching; fur depicted by short engraved lines. *[1362]; 1769 (pond F679, upper fill); Phase 7*
5. Smaller body fragment of a bowl: colourless glass with a very slight greenish tinge; surfaces dulled. Outer surfaces engraved, technique as No. 4 above, subject not recognisable. *[16]; 55 (depression F2409, horizon 6); Phase 7*
6. Tiny body fragment of a bowl: greenish colourless glass; a few pinhead bubbles. Outer surface engraved, technique as No. 4 above, subject not recognisable. *59; (depression F2409, horizon 6); Phase 7*

Numbers 3–6 all have engraved decoration characteristic of a close-knit group of bowls made at a Cologne workshop during the first half of the 4th century. These are usually curved, shallow vessels, and are decorated with hunting, mythological or Christian scenes, often with inscriptions, all engraved freehand with a flint burin. They are easily recognised from small fragments by the use of cross-hatching to emphasise the outlines of figures, trees and other parts of the design. The group as a whole has been very fully discussed by Harden, with reference to the best preserved British find, an almost complete bowl found at Wint Hill, near Banwell, Somerset (Harden 1960). Other examples from Britain are rare and scattered, and represented only by small fragments. These come from Chesters in Northumberland, Great Staughton in Cambridgeshire (Harden 1960, 64–7, nos 22–3, figs 28–9); Shakenoak Roman villa, Oxfordshire (Harden 1973, 102–3, no. 213, fig. 52); Gloucester (Charlesworth 1975a, no. 16, fig. 29); and Caister-by-Yarmouth, Norfolk (Norwich Castle Museum accn no. 193.961). This relatively low number of British finds makes it likely that all four fragments from Ivy Chimneys came originally from one vessel. However, they were found in different seasons, do not join, and there are slight differences of colour between the fragments: Nos 4 and 6 have a slightly stronger greenish tinge than Nos 3 and 5. The latter may be a result of different conditions of burial, but it is just possible that more than one bowl is represented.

The fragments are too small to be certain of the original scene depicted, but the largest fragment, No. 4, undoubtedly shows the front part of an animal — possibly a horse, dog, stag or boar. This suggests a hunting scene, but animals do occasionally appear in mythological scenes.

Pinched-out 'nipples': colourless

(Fig. 80)

7. Body fragment of a bowl or flask: thick colourless glass; clear; a few pinhead bubbles. Outer surface has one 'nipple' extant, pinched-out whilst the glass was still warm and pliable.

The decoration on this fragment is, like No. 2 above, a feature typical of later 2nd and 3rd-century products of Rhenish glass-houses. There are several flasks and hemispherical bowls decorated in this way from Cologne, some of them from 3rd-century graves (Fremersdorf 1962, 31, pls 34–5; Doppelfeld 1966, 50–2, pls 94–5), and a fine goblet was found in a later 2nd-century deposit at Verulamium (Wheeler and Wheeler 1936, 186–7, fig. 29, no. 26). *B17/D*

Applied trails: coloured and colourless

(Fig. 80)

8. Body fragment of a beaker or flask: very thin, very clear blue glass. Applied self-coloured spiral thread; part of four threads extant. Diam. of vessel *c.* 70mm.

Although brightly coloured glass is most typical of the 1st century, it was occasionally used at later dates; a small ovoid jug of dark blue glass for example, was found in a 4th-century burial at York (Harden 1962, 140–1, pl. 67, no. H12). The date of fragment No. 8 is therefore uncertain, as is the original vessel form. It may, however, have been a biconical vessel with spiral trails around the two ends, such as occurs on a beaker from a later 2nd-century context at Verulamium (Wheeler and Wheeler 1936, 186–7, fig. 29, no. 27) and, sometimes with a small handle, at Cologne (Fremersdorf 1959, 67–8, pl. 8, 94–5). A similar body shape was used horizontally, with small legs and a top opening, as a barrel-shaped flask: examples again come from Cologne (Fremersdorf 1959, 67–9, pl. 91, 96–9); 'Germany' (Harden *et al.* 1968, 84–5, no. 113); and there is a fragmentary piece from a grave at Litlington, Cambridge (Jaffe 1978, 40, no. 78), the latter two with opaque yellow trails. If this tentative identification is correct, the piece probably belongs to the later 2nd or earlier 3rd century. *[917]; 2908 (post-pipe F2900); Phase 3*

9. Fragment: opaque white glass; very streaky; surfaces slightly pitted. One rounded edge, possibly a rim, extant, with a fairly thick, semi-opaque turquoise trail running along each side of it. These have apparently been moulded around a circular rod or similar object, leaving a rounded impression between them. On the ?side of the vessel itself are the remains of four horizontal festooned trails, the colours from the top downward being opaque red, opaque yellow, opaque red and turquoise. Traces of two vertical yellow trails remain, running along the lines of the festooning.

This piece is extremely curious, and I know of no parallels amongst Roman glasses. However, it came from a stratified context of this period, and it is therefore quite possible that it represents a rare and elaborately decorated vessel of Roman date. *[852]; 2375 (depression F2409, horizon 3); Phase 6*

10. Body fragment: greenish-colourless glass; many pinhead bubbles. Fairly thick curving applied trail of self-coloured glass. Diam. of body *c.* 80mm. *[X322]; S27/C1*
11. Body fragment: thin greenish-colourless glass; pinhead bubbles; streaky surfaces. Thin applied self-coloured trail ending in a blob, with curving trails on each side. *[606]; 1204 (depression F2409, horizon 5); Phase 7*
12. Body fragment: pale green glass; pinhead bubbles. Applied self-coloured trail ending in a blob, which appears to have been stamped leaving a small raised dot. *[82]; 92 (depression F2409, horizon 6); Phase 7*
13. Fragment from near the base of a bowl or flask: yellow-green glass; some brownish staining. Fine applied spiral trail, self-coloured; also part of a V-shaped trail overlapping vertically. *680 (pond F679, upper fill); Phase 7*
14. Body fragment: yellow-green glass; streaky; pinhead bubbles. Applied self-coloured trail, chipped at one end. *S26/C2*

Not illustrated:

a. Body fragment: greenish-colourless glass; many pinhead bubbles; decorated with self-coloured horizontal and curving trails. *S21/C*
b. Body fragment: greenish-colourless glass; pinhead bubbles. Decorated with fine self-coloured spiral trail. *[5075]; 5267 (depression F5202); Phase 7*

The colour, bubbly metal, and style of the trailing on Nos 9–14 all suggest a late, probably 4th-century date. A variety of vessel types were decorated in this way at this period, and identification of these fragments is therefore not possible. Examples are common on German sites such as Cologne (Fremersdorf 1959, pls 115–129) and Trier (Goethert-Polaschek 1977, nos 321, 323, 340, 369) and also occur in Britain, for example at the Lankhills Cemetery, Winchester (Harden 1979, 211–2, fig. 27, nos 365, 51 and 633) and at Gloucester (Price 1980, 113, no. 6, fig. 17).

Bowls and beakers, plain and white, wheel-incised lines

(Fig. 81)

15. Fragment of a bowl: blue-green glass. Side folded outward, downward and inward forming a hollow tube. Diam. 130mm.

This fragment probably comes from a vessel of Isings form 69 (1957, 89–90): 'bowl with cut out ridge', paralleled in pottery by Dragendorff form 38. The type was extremely long-lived, early fragments having been found at the Magdalensburg in Austria, a site abandoned *c.* AD 45 (Czurda-Ruth 1979, 62–5, nos 510–527, pl. 3) and at Velsen in Holland, in contexts dated AD 40–55 (van Lith 1977, 55, no. 338, pl. 5), and a late bowl coming from an early 4th-century grave at Trier (Goethert-Polascheck 1977, 37–8, form 26, no. 102, pl. 16.176e). British examples are not common, but there is a complete bowl from Felixstowe, Suffolk, in the British Museum (accn no. 53 8–15 24) and a fragmentary example from Silchester (Boon 1974, 230–1, fig. 36, no. 7). *[107]; 1 (unstratified); Phase 9*

16. Rim fragment of a beaker: yellow-green glass; many pinhead bubbles. Rim outflared slightly, broken off and roughly ground; bands of faint horizontal wheel-incised lines around body. Diam. of rim 70mm. *59 (depression F2409, horizon 6); Phase 7*
17. Four joining rim fragments of a beaker: blue-green glass; many pinhead and larger bubbles; very streaky. Rim outflared, broken off and very roughly ground; band of horizontal wheel-incised lines beneath. Diam. of rim 80mm. *B3*

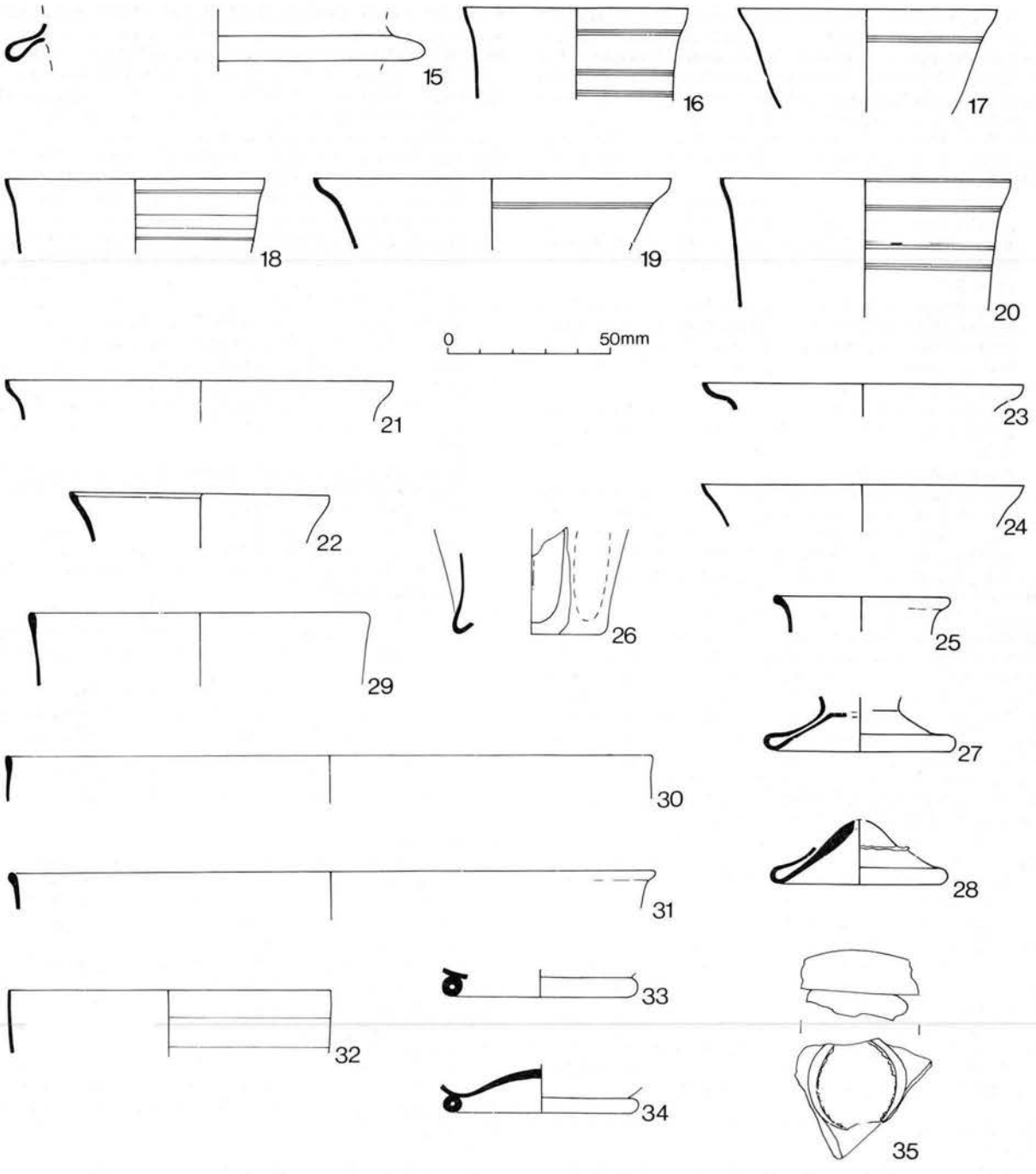


Figure 81 Vessel glass: Nos 15–35 bowls and beakers. Scale 1:2

18. Rim fragment: similar to No. 17, but of colourless glass; bands of horizontal wheel-incised lines around body. Diam. of rim 80mm. *B3*

19. Rim fragment: similar to No. 17, but of yellow-green glass; rim more outflared; horizontal wheel-incised lines beneath. Diam. of rim 110mm. *262 (unstratified); Phase 9*

20. Rim fragment: similar to No. 17, but of greenish-colourless glass; bands of horizontal wheel-incised lines beneath. Diam. of rim 90mm. *B3*

21. Rim fragment of a beaker: yellow-green glass; pinhead bubbles; streaky surfaces. Rim outflared and broken off flat. Diam. of rim 110mm. *S22*

22. Rim fragment: similar to No. 21. Diam. of rim 80mm. *[816]; 680 (pond F679, upper fill); Phase 7*

23. Rim fragment: similar to No. 21. Diam. of rim 100mm. *C1/C*

24. Rim fragment: similar to No. 21; greenish-colourless glass. Diam. of rim 100mm. *94 (depression F2409, horizon 5); Phase 7*

Not illustrated:

a. Rim fragment: similar to No. 21; greenish-colourless glass; band of horizontal wheel-incised lines beneath. Diam. of rim *c.* 100mm. *S21/C2*

b. Rim fragment: similar to No. 21; greenish-colourless, very bubbly. Diam. *c.* 80mm. *S21/C*

c. Rim fragment: similar to No. 21; yellow-green glass; horizontal wheel-incised lines beneath rim and around body. Diam. of rim *c.* 90mm. *S21/C*

d. Rim fragment: similar to No. 21; yellow-green glass. Diam. *c.* 160mm. *S21/C*

e. Rim fragment of a beaker: greenish-colourless glass; mainly pinhead bubbles. Rim almost vertically broken off and roughly ground. Diam. *c.* 70mm. *[5015]; 4684 (ditch F4540); Phase 4–5*

(Fig. 81)

25. Rim fragment: similar to No. 21; yellow-green glass, but rim fire-rounded. Diam. 55mm. *86 (depression F2409, horizon 5); Phase 7*

26. Base fragment of a beaker: greenish-colourless glass; many pinhead bubbles. Part of one elongated oval indent extant on lower body; concave base. Base diam. *c.* 50mm. *S21/C*

27. Three base fragments, probably of a beaker: yellow-green glass; many pinhead bubbles; streaky surfaces. Conical foot, formed by blowing a second bulb beneath the body and pushing it up inside the base, leaving a tubular edge. Diam. of base 60mm. *59 (depression F2409, horizon 6); Phase 7*

28. Base fragment of beaker: yellow-green glass, similar to No. 27. Base diam. 55mm. *[859]; 1902 (ditch F1917); Phase 4–5*

Numbers 16–28 are again all made of the bubbly and streaky greenish or yellow-green glass characteristic of the late 3rd and 4th centuries. The outflared, roughly polished or unworked rims are also typical of this late period, and most fragments probably represent the conical beakers of Isings form 106c (1957, 129–31). Finds are common on British sites of late Roman date: beakers with flat or concave bases come from Wint Hill, Somerset (Harden 1960, 51–2, figs 8–9); Silchester (Boon 1974, 230–1, fig. 36, no. 8); and the Lankhills Cemetery, Winchester (Harden 1979, 212–214, type IIA, fig. 27): beakers with pushed in base rings come from York (Harden 1962, 141, no. HG144, pl. 66) and Glaston, Rutland (Webster 1950, no. 2, figs 1–5). Occasionally these beakers were decorated with a number of elongated oval indents around the body, as represented here by No. 26. An example decorated with applied spiral trails came from a grave dated AD 370–390 at Lankhills (Harden 1979, 215, no. 51, fig. 27). Beakers of this general type with fire-rounded rims, as on No. 25, belong to the very end of the Roman and the post-Roman periods.

The stemmed conical feet of Nos 27–8 also occur on beakers and goblets of the late 3rd and 4th centuries. Examples are listed by Isings as form 109 (1957, 137) and there are two almost complete vessels from Colchester (Pollexfen Collection, British Museum accn no. 70 4–2 2; Colchester and Essex Museum accn no. 347.28).

29. Rim fragment of a bowl: blue-green glass; surfaces streaky. Rim fire-rounded and thickened; sides taper very slightly downwards. Diam. of rim 105mm. *93 (depression F2409, horizon 1); Phase 3*

30. Rim fragment of a bowl: blue-green glass; bubbly. Rim fire-rounded and thickened, signs of rotary polishing on outer surface. Diam. of rim 200mm. *[X320]; S27*

31. Rim fragment: very similar to No. 30. Diam. 200mm. *[559]; 680 (pond F679, upper fill); Phase 7*

32. Three joining rim fragments of a bowl: colourless glass. Rim broken off and ground smooth; two faint horizontal wheel-incised lines beneath. Diam. of rim 100mm. *[123]; 174 (post-pit F508, ?temple F731); Phase 4*

33. Base fragment; blue-green glass. Applied coil base-ring. Base diam. 60mm. *[785]; 1914 (depression F1925); Phase 4–5*

34. Joining base fragments: blue-green glass. Domed base with pontil mark; applied coil base-ring. Base diam. 60mm. *[3318]; 3515 and [3251]; 4180 (depression F3321, horizon 3); Phase 6*

35. Base fragment: colourless glass. Base thickens towards centre; applied knob of glass on underside would originally have been attached to a stem or foot, now missing. *D3339 (=3509 of depression F3321); Phase 7*

Numbers 29–35 are all fragments whose original vessel forms cannot be identified. Most must represent bowls or beakers of some sort.

Bottles

(Fig. 82)

36. Base fragment of a square bottle: blue-green glass. Blown into a square-sectioned body mould; design in relief on base: two concentric circles. Base rises and thickens towards centre; circular scar slightly off-centre inside. Width of sides 72mm. *[98]; 95 (depression F2409, horizon 2); Phase 6*

37. Base fragment as No. 36. Part of raised square with central dot extant on base, partly obscured by pontil mark. *[836]; 59 (depression F2409, horizon 6); Phase 7*

38. Base fragment as No. 36, square or hexagonal bottle. Part of raised ?square with attached ?diamond extant on base. *113 (depression F2409, horizon 3); Phase 6*

39. Side and base fragment of a square bottle, as No. 36. Part of one circle extant on base. Width of sides 85mm. *S21/C*

40. Two joining fragments of a prismatic bottle, as No. 36 Part of straight line with attached feature extant on base. *[616]; 1204 (depression F2409, horizon 5); Phase 7*

41. Base fragment of a prismatic bottle, as No. 36. Part of two concentric circles extant on base, which is highly concave. *[3296]; 3553 (depression F3321, horizon 2); Phase 5*

42. Handle of a bottle: blue-green glass; flat-sectioned; angular; reeded on lower part only. Fragment of neck still adhering. *[128]; 669 (ditch F316); Phase 4–7*

43. Neck, rim and part of handle of a bottle: blue-green glass. Rim folded outward, upward and inward and flattened; cylindrical neck; flat-sectioned handle folded over beneath rim. Diam. of rim 50mm. *[216]; 736 (post-hole F735); Phase 4–5*

44. Lower part of reeded bottle handle; blue-green glass. *[2138]; 1987 (ditch F1990); Phase 3*

45. Rim fragment of a bottle: blue-green glass. Folded outward, upward and inward. Diam. 60mm. *[X383]; S46/C3*

Numbers 36–45 are all fragments of prismatic or cylindrical bottles, types which are extremely common on 1st and 2nd-century sites throughout the Empire. Many more body fragments were also found at Ivy Chimneys (see microfiche). These vessels were primarily used as containers for a variety of liquids. Most were made between the years AD 70–130, but they first appeared by at least the mid-1st century, and manufacture probably continued well into the 2nd century, with bottles remaining in circulation even longer. Many examples are listed by Isings (1957, 63–9, forms 50–51) and Charlesworth (1966). Two pieces, *([2145]; 4124 and [2147]; 4206 (gully F4204); Phase 7)*, although originally bottle fragments, appear to have been grozed (trimmed with pincers) for re-use, possibly as window glass. There are not published parallels for this. Re-use of other types of broken vessel fragments, such as bowls, is well-known.

Bottle-flasks

(Fig. 83)

46. Body fragment of a large cylindrical bottle-flask: greenish-colourless glass. Horizontal wheel-incised lines around body. Diam. *c.* 170mm. *[XM16]; B2B*

47. Base fragment of a ?flask: greenish-colourless glass; pinhead bubbles. Lower part of two of originally four indents extant; slightly concave base. Diam. of base 44mm. *[3276]; 3159 (ditch F3158); Phase 5–7*

48. Base fragments of a flask: greenish-colourless glass; many pinhead bubbles; streaky surfaces. Sides taper downwards; slightly concave base. Diam. of base *c.* 40mm. *[867]; D2018 (disturbed); Phase 7*

49. Base fragment of a flask: greenish-colourless glass; pinhead bubbles; streaky surfaces. Sides taper slightly downwards; band of faint horizontal wheel-incised lines above a slightly concave base. Diam. of base *c.* 45mm. *[3335]; 3515 (depression F3321, horizon 3); Phase 6*

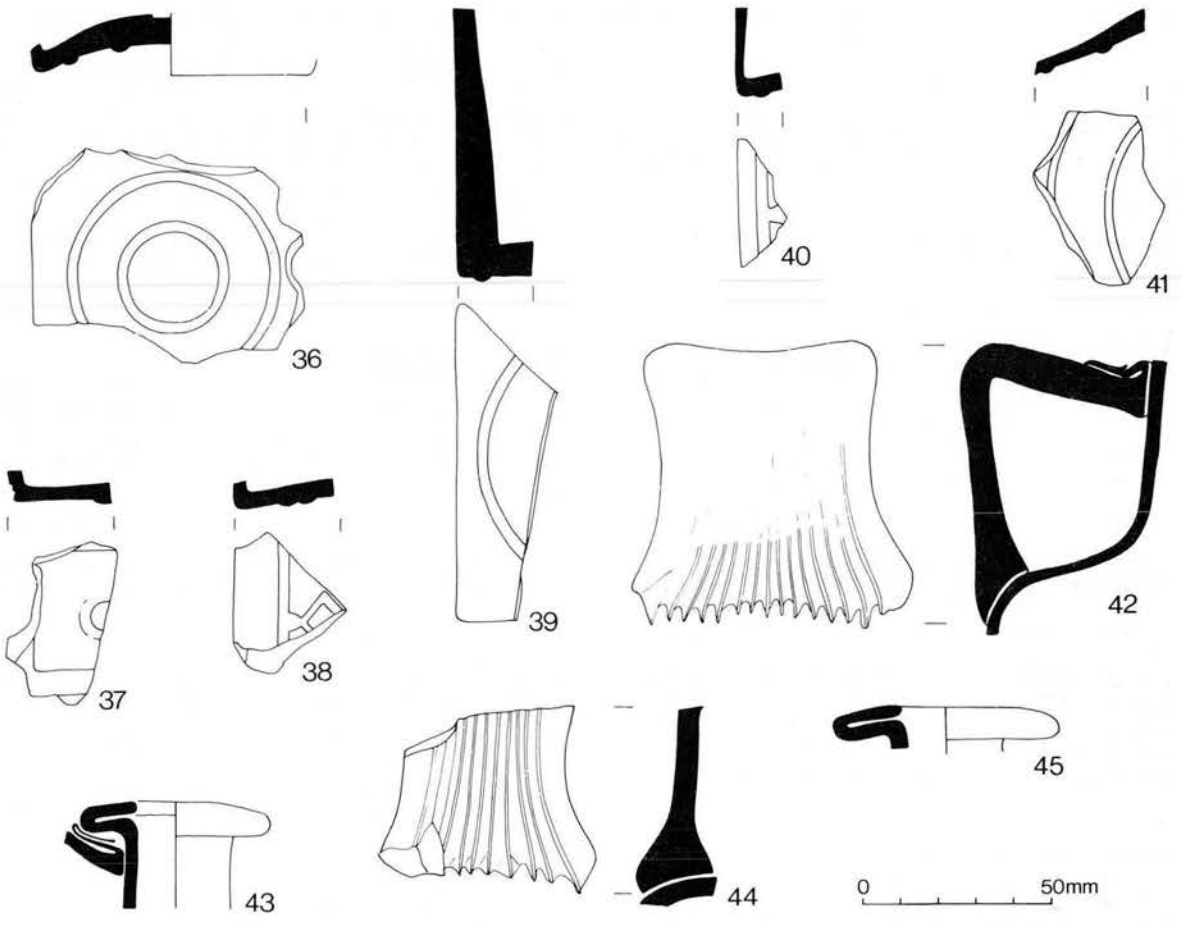


Figure 82 Vessel glass: Nos 36–45 bottles. Scale 1:2

50. Base fragment of a flask: very clear colourless glass. Sides taper slightly downwards; base pushed-in to low point. Diam. of base 25mm. *[818]; 1799 (depression F1798); Phase 7*

51. Fragment from near the base of a ?flask: colourless glass; bubbly and impure. Cylindrical body; constriction just above base; band of horizontal wheel-incised above this. Diam. of base 60mm. *S26*

52. Base fragment of a flask: greenish-colourless glass; pinhead bubbles; streaky surfaces. Sides taper slightly downwards, base pushed in to pointed kick. Diam. of base *c.* 30mm. *[814]; 1799 (depression F1798); Phase 7*

Numbers 46–52, like Nos 36–45 above, represent common glass containers but of the later rather than the earlier Roman period. Cylindrical flasks were made during the 3rd and 4th centuries with a variety of neck and handle shapes: the larger vessel, No. 46, may have had one or two angular reeded handles (Isings 1957, 156–7, forms 126–7) or dolphin handles (Isings 1957, 119, form 100). The smaller flasks may have similarly had dolphin handles, or a simple funnel-shaped neck with coil beneath the rim (Isings 1957, 120–1, form 102) or no neck at all (Isings 1957, 159–60, form 130). Examples of these types come from a 4th-century grave at Gravel Hill Farm, Cambridge (Liversidge 1977, 16, pl. 2: Jaffe 1978, 41–2, no. 80a); from late graves at York (Harden 1962, 140, fig. 89, HG182 and H13, and fig. 90); and Lankhills, Winchester (Harden 1979, 212–220, types VIII and IX, fig. 27).

Miscellaneous flasks, jugs, *etc.*

(Fig. 83)

53. Rim fragment of a flask: blue-green glass. Folded outward, upward and inward. Diam. 90mm. *3509 (depression F3321, horizon 5); Phase 7*

54. Fragment from near the base of a ?flask: greenish-colourless glass; brown stains on surface; incipient iridescence; pinhead bubbles. Curved sides; horizontal wheel-incised lines. *[3154]; D3747 (=3509 of depression F3321); Phase 7*

55. Fragment of a handle: yellow-green glass. Two ribs extant. *S21/C*

56. Small fragment of a handle: blue-green glass. Rounded D-shaped cross-section. *[1147]; 3772 (pit F3435); Phase 3*

57. Rim and neck fragment of a ?jug or ?flagon: yellow-green glass; bubbly; surfaces dulled and streaky. Rim folded outward, upward and inward; cylindrical neck. Two opposing scars on neck from ?handle attachment. Diam. of rim *c.* 30 mm. *[80]; 92 (depression F2409, horizon 6); Phase 7*

58. Rim and neck fragment of an unguent bottle: yellowish-colourless glass; very streaky and bubbly. Rim folded outward, upward and inward; cylindrical neck. Diam. of rim *c.* 19mm. *[3329]; 3200 (unstratified); Phase 9*

Numbers 53–8 are all fragments of flasks, jugs or flagons whose original forms are uncertain. No. 54 may be a globular bath-flask, a form occasionally made in colourless glass and decorated with horizontal wheel-cut lines during the 3rd century (Isings 1957, 78–81, form 60).

Opaque glass

(Fig. 83)

59. Three body fragments: very dark green glass, appearing black. Probably blown; all surfaces rotary polished. Apparently bulbous body; part of a pushed-in open base-ring extant. Diam. at widest part of body *c.* 150mm. *S21/C*

'Black' glass was used for both cast and ground and blown vessels in Roman times, but was never particularly common. It belongs mainly to the 1st century, and examples include cast and ground fragments from Camulodunum (Harden 1947, 298, nos 38–9), and blown *carchesia* from a Flavian barrow at Blehen, and from Lavacherie and Tongres, all in Belgium (Isings 1957, 51–2, form 36), and from Cologne (Fremersdorf 1958, 37, pl. 51). The pushed-in open base-ring on No. 59 suggests that it was blown, although it is impossible to be certain when all clues as to manufacturing technique have been removed by all-over rotary-polishing. Insufficient remains of the vessel to identify the original shape.

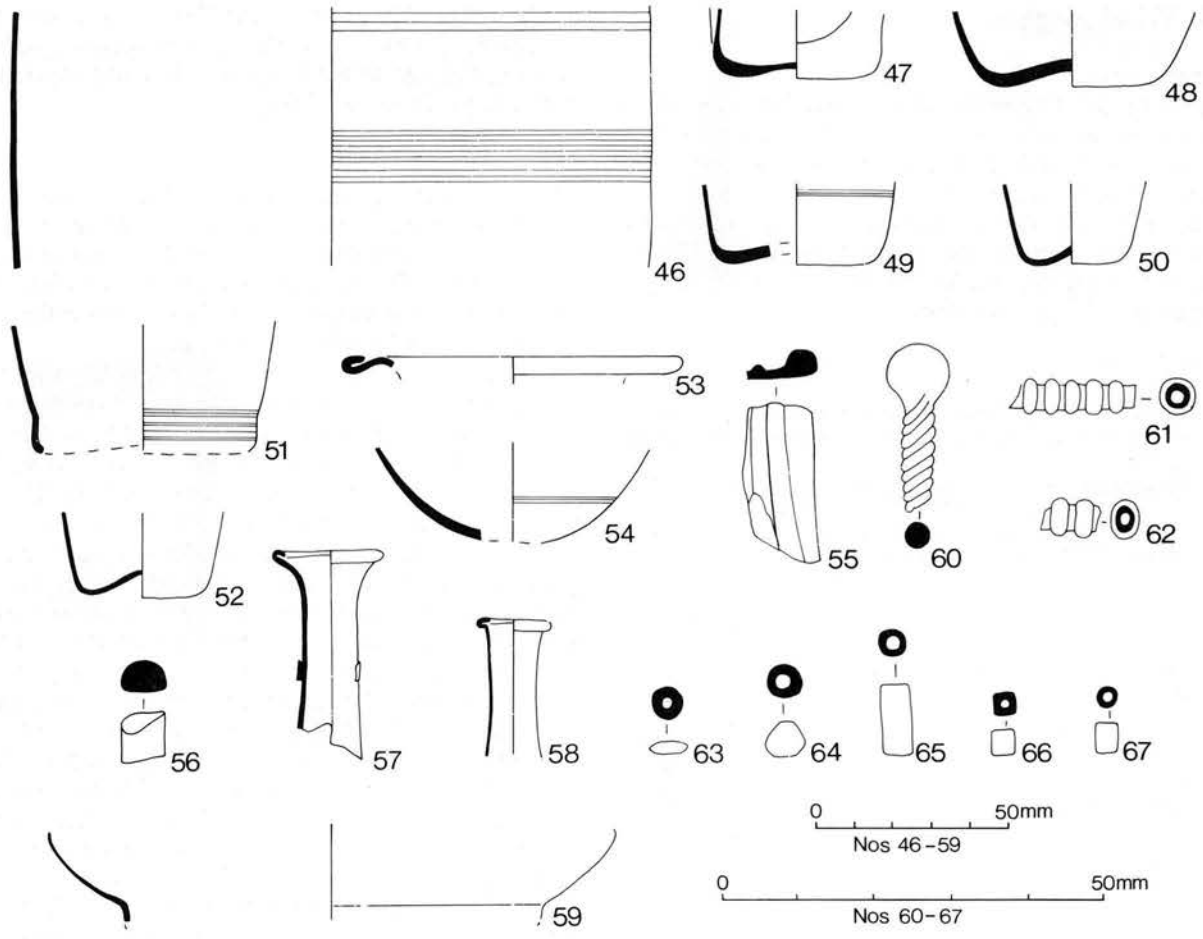


Figure 83 Vessel glass: Nos 46–59 flasks, jugs, *etc.*; Nos 60–67 objects and bowls. Nos 46–59 scale 1:2; Nos 60–67 scale 1:1

Objects and beads

(Fig. 83)

60. Fragment of a pin: bubbly blue-green glass. Rounded head, twisted shank, end broken. Glass pins of this type are fairly common finds and cannot be closely dated. They may have been used in clothing, but are most likely to have been hair ornaments. An example similar to this was found in an unstratified context at Verulamium (Charlesworth 1972, 215, no 3, fig. 79, no. 76). *[68]; 86 (depression F2409, horizon 5); Phase 7*

60a. Half of a melon bead: blue faience. Patches of turquoise surface glaze surviving in score marks. D-section body, divided into segments by deep vertical lines. Height 16 mm; diam. 19mm. Melon beads are common on 1st-century sites in Britain and elsewhere, becoming much rarer in 2nd-century contexts. Not illustrated. *[XM6]; B1*

61. Segmented bead: blue-green glass, surfaces rough and pitted. Five segments extant; one end roughly broken. Length extant 13mm. *[3306]; 3515 (depression F3321, horizon 3); Phase 6*

62. Fragment of a segmented bead: blue-green glass. Two segments extant. *[2083]; D3613 (disturbed); Phase 7*

63. Small circular bead: green glass. Flattened biconical section. Diam. 4.5mm. *[102]; 94 (depression F2409, horizon 5); Phase 7*

64. Small rounded-conical bead: blue-green glass. Diam. 5mm. *[X237]; S19*

65. Cylindrical bead: turquoise glass. Length 10 mm, diam. 4mm. *[1019]; D3200 (unstratified); Phase 9*

66. Small rounded cube-shaped bead: turquoise glass. Sides 3 by 3 by 3mm. *[X121]; T14/1/LC*

67. Small cylindrical bead: blue-green glass. Thin piece of wire still running through centre. Length 4mm. *[115]; 1 (unstratified); Phase 9*

All these beads are likely to be late Roman in date. Similar assemblages occur, for example, at Shakenoak Farm, Oxfordshire (Harden 1968, 79–80, fig. 26, nos 18–26; Harden 1973, 105–6, nos 246–60, fig. 52).

Miscellaneous glass

A catalogue of miscellaneous glass, including blue-green broken fragments, indeterminate fragments, and post-medieval fragments, is contained in the Microfiche.

Discussion

The glass found at Ivy Chimneys is in very fragmentary condition, and relatively few pieces have sufficient characteristics to enable the precise identification of vessel forms. It is, however, possible to obtain a broad picture of the type of glass in use at the site.

The majority of the glass belongs to the 3rd and 4th centuries, and includes several fine pieces of tableware, notably the cut and engraved bowl fragments (Nos 2–6). Several late Roman drinking glasses of more common types are also represented, (Nos 15–27), and trailed fragments (Nos 8–14) are also probably from quite fine drinking or serving vessels. Late Roman containers of a more utilitarian nature are present (Nos 46–52), and many of the indeterminate body fragments not catalogued are also of the bubbly and streaky yellow-green metal typical of the late 3rd and 4th centuries.

Glass vessels characteristic of the later 1st and 2nd centuries were also found. Most comprise common blue-green cylindrical or prismatic bottles, but a decorated colourless cast and ground bowl (No. 1) and fragments of 'black' glass show (No. 59) that some luxury tableware was reaching the site at this earlier date.

XV. Window glass

Introduction

A total of 287 fragments (233 in stratified contexts) of Roman window glass was recovered from the 1978–83 excavations; all of the matt/glossy type (identified with the assistance of Denise Allen), frosted on one side and clear on the other. The matt/glossy type is generally thought to have been in use during the 1st and 2nd centuries AD, and was eventually superseded by the double-glossy type around AD 300 (Boon 1966).

Illustrated glass

(Fig. 84)

1. ?Complete pane of blue-green matt/glossy window glass. Grozed on two sides; broken to a straight edge at each end. Dimensions 115 by 70mm.
   A fragmentary pane from Garden Hill, Sussex measured 140 by 80mm, but the other reconstructable pieces from that site were all considerably longer and most were also wider (N. Wickenden, pers. comm.). *S21/C; equivalent to Phase 7*

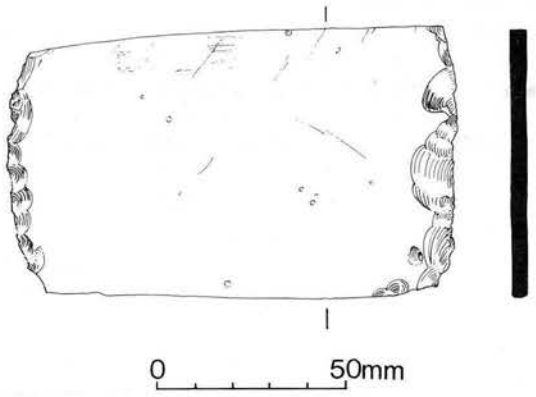


Figure 84 Window glass: complete pane. Scale 1:2

Description of the window glass

The glass is of varying quality and thickness: the undersides are flat with impressions of a rough surface on which the glass had lain during its manufacture. In most cases the roughness seems to have been caused by a hard surface, such as sandstone, although fairly fine sand may have been used. However, not a single grain of loose sand was observed embedded in the rough surfaces of the samples examined. If, as is commonly accepted (Boon 1966, 41–5), this glass was cast in sheets, then it seems unlikely that loose sand would have been used in the process. Harden (1959, 11–14; 1961, 45–8) concluded that all window glass may in fact have been prepared by the cylinder method, and this technique might, in some circumstances, have lead to a matt/glossy product. This would be particularly likely if the glass were reheated, after the cylinder was blown, in order to assist the flattening process. Such arguments have been strongly countered by Boon and others, and it is true that the characteristic long bubbles expected from the cylinder technique are largely absent from the Witham examples — perhaps lost during heating.

A variety of tool-impressions survive on the glass, where the surface was smoothed or handled with a flat instrument while the glass was still soft. These marks are particularly prevalent at the smoothed edges of the sheets from which the panes were made.

A number of the fragments had been grozed (trimmed with pincers) in order to straighten the edges and prepare panes to the size of the windows. Only one apparently complete pane was found (Fig. 84.1).

Dating

The dating of this glass to the 1st and 2nd centuries AD is called into question by the Witham material. A large proportion of the Witham glass came from contexts with secure dates in the later 4th century, and the glass was distributed around stone building *F4044* from which it is assumed to have been largely derived.

Of the 233 stratified fragments, only 13 (6%) came from early Roman (Phase 3) contexts; of these, nine fragments came from context 93 which was much disturbed by intrusive material. Later Roman contexts (Phases 4–7) account for 218 fragments (94%), the majority (192 fragments; 82%) from contexts of later 4th- century date (Phases 6–7).

Thus, although a small amount of matt/glossy window glass was apparently present during the earlier Roman phase of the site, it was, for the most part, deposited in the later 4th century, mainly in the vicinity of building *F4044*.

If this glass was used in the stone building, as the distribution would suggest, then it must have been available around the mid-4th century. The possibility remains that the window glass and other demolition debris around the building was unconnected with that structure and had been derived from elsewhere, but there would appear to be no good reason for such a course of action, and it seems more likely that the material was indeed derived from the building. Nevertheless, it should be noted that a large amount of early Roman bottle glass was also found in late contexts near the stone building.

XVI. The Iron Age and Roman Pottery

by Catriona Turner-Walker and Colin Wallace
with contributions by Anthony Clark, Brenda Dickinson and Kay Hartley
(Compiled 1991, revised 1993)

Introduction

The major contribution the pottery has made to the study of the site has naturally been the provision of dating evidence. In this report details are given of the fabric and form-series worked out from this central Essex site, along with a selection of good stratified groups which span all the phases (2.3 to 7) of Late Iron Age and Roman activity. Of intrinsic interest are a number of other assemblages, *e.g.* the Phase 5 pottery kiln. The illustrated pottery (Figs 85–118) is grouped first by *report section* (pre-Roman; Roman fabrics; Roman forms; kiln products; pottery of intrinsic interest) and then follows the internal order of each section.

As to any contribution to the understanding of site function, this is not so clear. However, further comparative work on assemblages from sites of widely differing status, classified and quantified to a compatible standard, may isolate key attributes of local cult centres like Ivy Chimneys. Brenda Dickinson (below, p. 173) felt that the proportion of mortaria to other vessel forms amongst the samian was unduly high here (at 3.4% of all samian EVEs, 7.2% of the Central Gaulish alone), and there are other avenues of research that might be investigated.

From the whole site came some one and a half tonnes of pottery, of which an assemblage of about 438 EVEs was

sufficiently well-stratified to be worthy of detailed analysis.

The bulk of the work — the establishment of form and fabric type-series, the quantification of the pottery, its computerisation, the commissioning of specialist reports and the provision of dating evidence — was carried out by Catriona Turner-Walker from 1983 to 1986. The writing and compilation of the eventual report was the job of Colin Wallace, who bears responsibility for any errors or omissions that may have crept in during transcription.

Detailed study of the pottery was guided by the current trend for full quantification, recommended in the SCORP Report (Young 1980). Approximately 450kg, 34,000 sherds were dealt with on a context by context basis, quantified by rim %, sherd count and weight. Computerisation of this Level II pottery archive allowed access to the accumulated data for report-writing purposes.

The fabric and form type-series set out here were developed from those used earlier to deal with the pottery from excavations at Chignall Roman Villa (Clarke 1998) and the small town of Kelvedon (Eddy with Turner 1982).

The quantified data has been useful to a SERC-funded project on the statistical analysis of ceramic assemblages (see Orton and Tyers 1992). In addition, pottery from two late Roman contexts was studied by M.G. Pomel for his 1984 M.Phil. thesis on later Roman pottery groups in southern Britain.

Pottery from previous excavations

As stated at the beginning of this publication, we are mainly concerned with reporting on the discoveries from the 1978 and later seasons. However, the Level II pottery report archive contains pottery summary sheets for the material from the 1963–73 work by the Witham Archaeological Research Group, compiled by Catriona Turner-Walker (but only for the amphoras, samian and mortaria shown to specialists).

In Appendix II, Warwick Rodwell illustrates some Early Iron Age pottery and a Late Roman Argonne ware bowl from the 1970 excavations on the Witham Lodge earthwork (Figs 157 and 158). The pottery from the 1972 excavations, largely late Roman, has been published by Wilkinson (in Brooks *et al.* 1976, 115–120).

Samian Stamp 5 (below) was one of the finds made in 1937 (see Part 1.III). The other samian from 1937, reported on in archive by Brenda Dickinson, comprises later 2nd-century Central and East Gaulish pieces. Kay Hartley identified a heavily worn Verulamium Region mortarium sherd of *c.* AD40–140.

As to the 1849 cremation 'urns' (Part 1.III above), Colin Wallace examined the three surviving in the collections of the Chelmsford and Essex Museum. They were as follows:

Fig. 118.1 Most (in profile) of a small *flask* with a high narrow neck, rim missing. Romanising ware, single cordon at the base of the neck (CHMER 1978: 139:1).

Fig. 118.2 Top part of a small *bead-rimmed jar*, fine romanising ware. High-shouldered, with a zone of acute-angled lattice above and below burnishing (CHMER).

Fig. 118.3 Body, plus detached rim sherd not illustrated, of a small *ring-necked flagon*, Colchester buff ware. Rim mouldings not well marked (CHMER 1978: 139:2).

No. 3 fits into the late end of the typological progression noted amongst ring-necked flagons (Going 1987, 32). The bead-rimmed jar, resembling *Col* 328 rather than the taller Southwark class IIA17 (Marsh and Tyers 1978, 557–558), also suggests a Hadrianic-Antonine date. A very similar vessel (except that its surface is not burnished) is published by Hull (1929, 19) from a grave in Colchester's West Cemetery where it was associated with a stamped samian bowl of AD130–155 (B. Dickinson, pers. comm.). The flask No. 1, however, is most probably 1st century as it compares well with examples of Thompson's form E3–6 (1982, 406), with its romanised fabric and flattened angular shoulder.

No details of any of the pots are given in the original note on the discovery, so that nothing can be said here about those now lost. However, another vessel in the Museum, which like those above came from the Chelmsford Philosophical Society, had its provenance altered in 1971 to Ivy Chimneys 1849. Today it sports a very old but still legible label to this effect. As the catalogue of the Philosophical Society's material gives it no provenance, while linking Nos 1, 2 and 3 (above) to Ivy Chimneys and each other, it is described here with the proviso that there is no firm evidence to link it with the others:

Fig. 118.4 Virtually-complete (minus handle) small *ring-necked flagon*, cream-slipped red ware. Wide, flaring rim and barely-noticeable mouldings (CHMER 1978: 139:3). Dating as for No. 3.

Late Roman pottery

Part 2.II (above) has set out the dating evidence assumptions that were made from the presence of five late Roman wares (Rettendon-type, Late shell-tempered, Alice Holt, Oxfordshire red colour-coat and Hadham red wares). The contentions, that GR can be dated later 3rd century+, HS2 early 4th century+ and GE/CN1/DC mid-4th century+, are unremarkable — with one exception.

Readers are referred to the standard works (*e.g.* Going 1987, 73–90; Lyne and Jefferies 1979, 58; Young 1977, 239; Pomel 1984, 47/97) for discussions of most of these dates. The exception alluded to earlier is Late shell-tempered ware, usually thought to first occur in this region around AD360/370 (*e.g.* Going 1987, 118).

A contrary view was first suggested by the excavator of the villa-site at Chignall St James, by Chelmsford. This has been developed in the pottery report from that site (Wallace and Turner-Walker 1998) and need only be briefly re-stated here: it is certain that Late shell-tempered ware is present on Essex sites in quantity in the AD360s and later, it is probable that its inception-date is earlier than this and it is possible that this date may be some thirty years earlier than previously suggested.

Pre-Roman pottery: Iron Age and Belgic

As well as the enclosure ditches and features of a Roman-period religious site, the excavations examined part of an Iron Age settlement of roughly 200 BC to the Roman conquest. This section serves to summarise the wares made at or traded to Ivy Chimneys in site Phases 1, 2 and 2.3, by means of a fabric series and illustrations of vessel forms (Figs 85–90). Groups 1 and 2 (in Stratified Groups, p. 162–70 below) belong to the latest pre-Roman phases of the site.

Fabric descriptions are by Catriona Turner-Walker. References in the site report to 'sand-tempered' pottery relate to sherds in Fabrics HE1, 2 and 5 below.

Pottery of Phase 1
(Figs 85–86; Table 15)

Organic/vegetable-tempered wares

HC1
Description: a black fabric, fairly hard, with abundant medium sand and abundant very coarse vegetable inclusions. Unlike GZ2 (below), these latter inclusions always predominate.
(present only as residual sherds in Phases 2.3 and 3 contexts)

HC2
Description: black fabric, surfaces are characteristically smoothed: only the external surface is pale brown. Contains abundant, very coarse vegetable inclusions (which are 'grass-like', often vesiculated) and ill-sorted, coarse to very coarse cream inclusions, not always evident except at x20 magnification.
Forms: small everted-rim, wide-mouthed jar/bowl (Fig. 86.14)
(present only as residual sherds in Phase 3 contexts)

Glauconite-tempered wares
In general, the glauconite inclusions in these wares are often only visible at x20 magnification, unless the surface area surviving is sufficiently large and has paler surfaces than the inclusions themselves. At x20, inclusions are normally only visible on the surfaces and *not* in fracture, if the fracture is fresh or black.

HE1
Description: the fabrics are dark brown-black or black, with brown or pale brown external surfaces (or red-brown surfaces). Inclusions are moderate-abundant fine black glauconite, sparse-abundant fine to very coarse sand/quartz and sparse-moderate coarse to very coarse flint. Glauconite inclusions may appear as black grains in black fabrics, pale red-brown in red-brown fabrics or, less commonly, grey in brown fabrics.
Forms: None recognised (*i.e.* represented only by sherds of indistinct form)

Organic/vegetable tempered wares		
HC1 (present only in later phases)		
HC2 (present only in later phases)		
Glauconite-tempered wares		
HE1	8 sherds	139g
HE2	1	5
HE5 (present only in later phases)		
Flint-tempered wares		
HF1	263	3,391
HF4	6	130
HF5	34	241
HF6	173	1,191
HF0	7	138
Unclassified coarse wares		
GZ2	152	1,483
GZ3 (present only in later phases)		
GZ4	461	5,571
GZ0	17	71
Unclassified heavy gritted/coarse-tempered wares		
HZ	24	503
Unclassified		
ZZ1	4	114

Table 15 Fabric incidence by number of sherds and weight, Phase 1

HE2
Description: a dark brown-black fabric, this is HE1 with additional red iron ore (sparse-moderate, coarse to very coarse).
Forms: None recognised

HE5
Description: black fabric, with abundant fine glauconite and moderate-abundant fine to very coarse flint.
(present only as residual sherds in Phase 2.3 and later contexts)

Flint-tempered wares

HF1
Description: contains moderate-abundant, ill-sorted, fine to coarse flint. Sand, not always present, occurs in equal or smaller proportions to the flint (Fabric HF6, below, is always sandy).
Forms: plain-rimmed jars (Fig. 85.1–4) and wide-mouthed jars/bowls (Fig. 86.13)

HF4
Description: a comparatively smooth flint-tempered ware, with a black or brownish black fabric. Sparse-moderate, coarse to very coarse flint and moderate, very coarse red (?iron ore) inclusions.
Forms: None recognised

HF5
Description: fabric dark brown-black or red-brown, with dark red-brown surfaces. Inclusions are moderate, coarse to very coarse flint, moderate-abundant medium sand and moderate, medium to coarse red iron ore. As HF4, with additional sand.
Forms: None recognised

HF6
Description: fabric rough, black (or brown-black, or oxidised) with red-brown margins. Surfaces red-brown. Some oxidised examples have a darker, grey-black surface. Inclusions sparse-moderate, coarse to very coarse flint and moderate-abundant, fine-coarse, ill-sorted sand.
Forms: plain-rimmed jar; plain-rimmed, wide-mouthed jar/bowl (Fig. 85.9)

(HF0 is a miscellaneous category for unclassified flint-tempered wares, some of which occur in Phase 1 contexts)

Other coarse wares

GZ2
Description: a hand-made black fabric, with red-brown or brown surfaces and external oxidised patches. Inclusions are sparse-abundant, fine to coarse sand and sparse, coarse to very coarse vegetable inclusions (not always present, when they are they often appear 'straw-like'). ?Compare to Little Waltham fabric G (Drury 1978, 58)
Forms: plain-rimmed jars (Fig. 85.5–7; everted-rim, wide-mouthed bowl/jars (Fig. 86.16–17, 19–21); lid (Fig. 86.22).

GZ3
Description: similar to GZ2, with additional white (?chalk) inclusions.
(present only as residual sherds in Phase 2, 2.3 and later contexts)

GZ4
Description: black fabric, with brown or red-brown external surface. Inclusions sparse-abundant, fine to coarse sand, sparse, coarse to very coarse vegetable inclusions and sparse-moderate, very coarse flint (*i.e.* as GZ2, with additional flint inclusions).
Forms: jar (Fig. 85.8); wide-mouthed bowls (Fig. 85.10–11); everted-rim, wide-mouthed jars/bowls (Fig. 85.12/86.15, 18)

(GZ0 is a miscellaneous category for unclassified grey wares, some of which occur in Phase 1 contexts)
(HZ is a miscellaneous category for unclassified heavy gritted or coarse-tempered wares, some of which occur in Phase 1 contexts)
(ZZ1 is a miscellaneous category for unclassified sherds, fabric unrecognised or date uncertain)

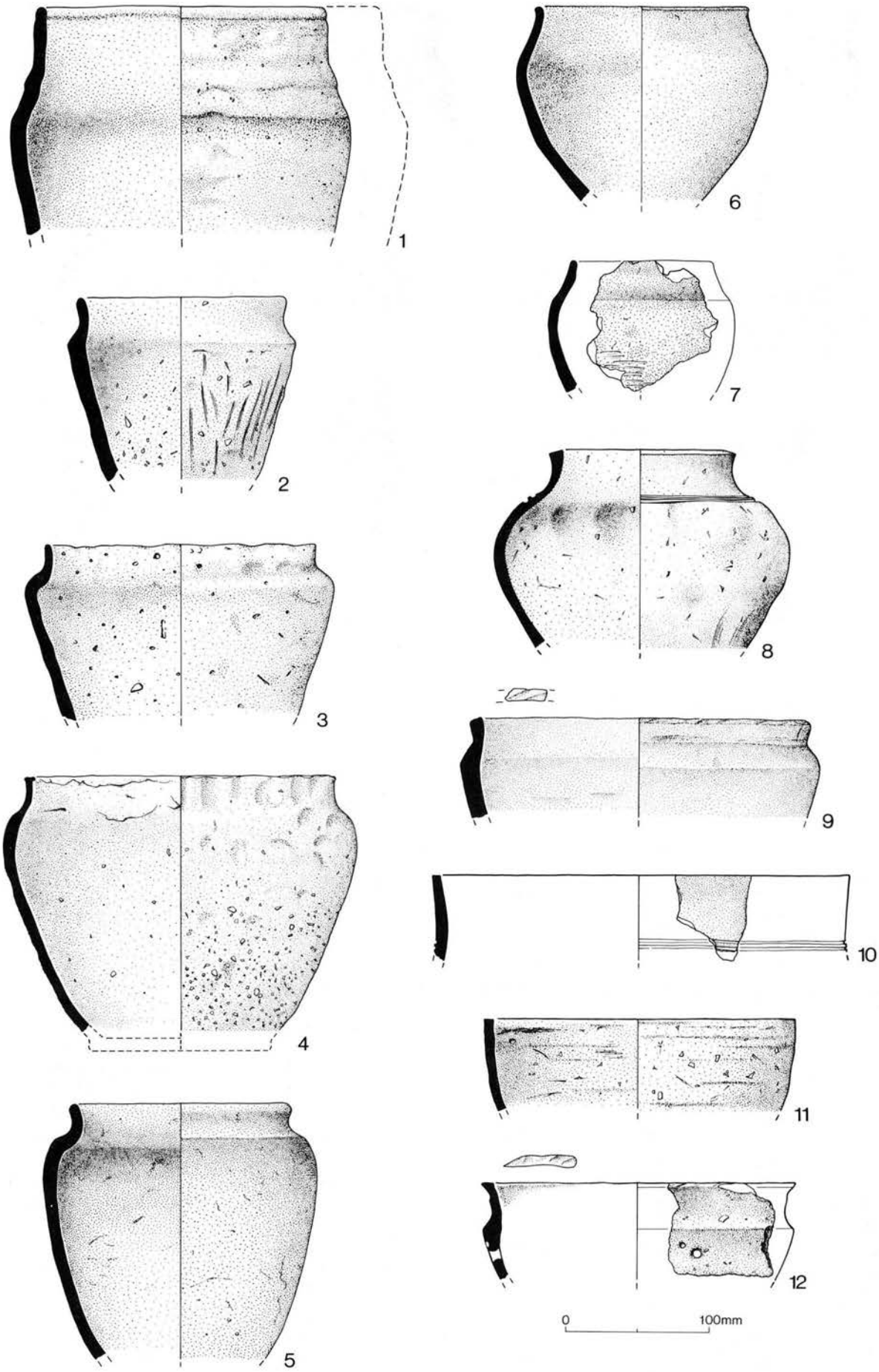


Figure 85 Pottery: Nos 1–12, Middle Iron Age. Scale 1:4

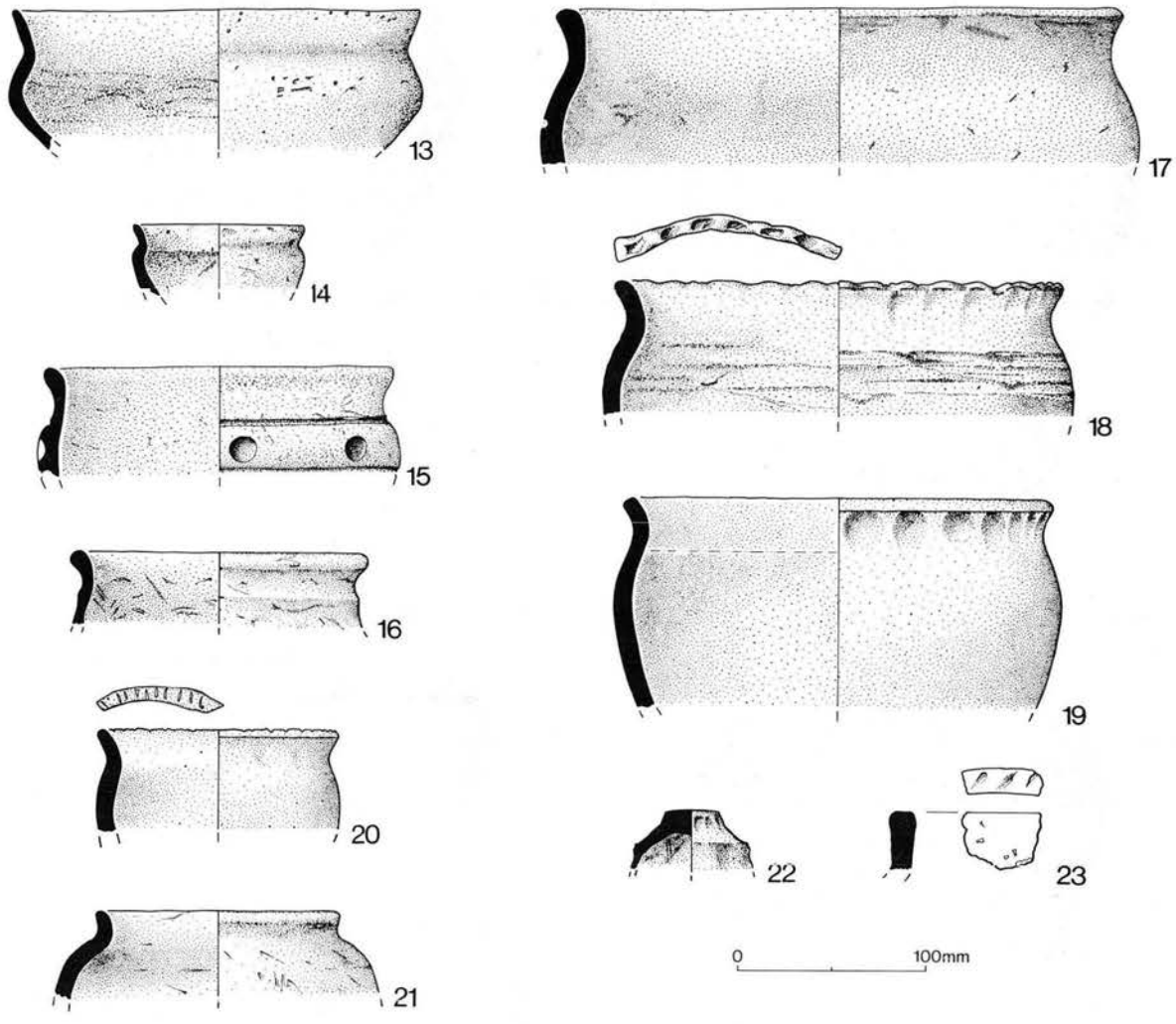


Figure 86 Pottery: Nos 13–23, Middle Iron Age. Scale 1:4

No. on figures	*Fab*	*Cont*	*of*	*Phase*	*Archive Drawing*	*Description*
1	HF1	*1148*	*F1147*	1	[D140]	plain-rimmed jar
2	HF1	*629*	*F460*	1	[D181]	plain-rimmed jar
3	HF1	*1449*	*F1448*	1	[D245]	plain-rimmed jar
4	HF1	*351*	*F350*	1	[D173]	plain-rimmed jar
5	GZ2	*2310*	*F2309*	2.3	[D266]	plain-rimmed jar
6	GZ2	*924*	*F775*	2.3	[D199]	plain-rimmed jar
7	GZ2	*2310*	*F2309*	2.3	[D267]	plain-rimmed jar
8	GZ4	*1150*	*F1149*	1	[D102]	plain-rimmed jar
9	HF6	*3626*	*F3625*	1	[D293]	plain-rimmed jar/bowl
10	GZ4	*1150*	*F1149*	1	[D208]	plain-rimmed bowl
11	GZ4	*1150*	*F1149*	1	[D206]	plain-rimmed bowl
12	GZ4	*1150*	*F1149*	1	[D205]	plain-rimmed jar/bowl
13	HF1	*1449*	*F1448*	1	[D244]	wide-mouthed jar/bowl
14	HC2	*1248*	*F1247*	3	[D239]	everted-rim small jar/bowl
15	GZ4	*2310*	*F2309*	2.3	[D268]	plain-rim, wide-mouthed bowl
16	GZ2	*D262*		9	[D161]	everted-rim jar
17	GZ2	*3134*	*F3133*	1	[D278]	everted-rim jar/bowl
18	GZ4	*901*	*F900*	1	[D196]	everted-rim jar/bowl
19	GZ2	*917*	*F775*	2.3	[D197]	everted-rim jar/bowl
20	GZ2	*712*	*F549*	1	[D193]	everted-rim jar
21	GZ2	*D262*		9	[D162]	plain-rimmed jar
22	GZ2	*1150*	*F1149*	1	[D204]	knobbed lid
23	HS0	*920*	*F775*	6.7	[D198]	jar rim *

* The form is unknown in early Roman shell-tempered fabrics in Essex, but the stabbing on the upper rim is reminiscent of Iron Age decorative techniques [CT–W].

Pottery of Phases 2 and 2.3
(Figs 87–90; Table 16)

Mediterranean imports

AA Italian-type amphoras
Description: Peacock and Williams (1986, 87–88).
From Phase 2.3 (sinkage fill *F196* in the main settlement ditch *F1124*) came a bodysherd from an Italian wine-amphora in the 'black sand' fabric held to be characteristic of an origin in the Pompeii region. However, Dr Paul Sealey informs me that recent scientific analysis has shown that this fabric includes pottery from *another* source as well (Hesnard *et al.* 1989, 38–49). Another sherd was unstratified.
Form: F6 (probably Dressel 2–4/Peacock and Williams Class 10)
Phases: 2.3

BC South Gaulish samian
(see Pottery of Intrinsic Interest, below, No. 2 and Stamp 2)
Forms: f18, f24, f27, f29 and Déchelette 67
Phases: 2.3

Gaulish imports

DA Terra Rubra
Valery Rigby identified a beaker base in Terra Rubra 2 or 3 from Phase 2.3 (one of the fills of entrance slot *F664*).
Form: C1c (butt- or girth-beaker)
Phases: 2.3

GA Terra Nigra
Valery Rigby identified a rim-sherd from a late Augustan *Cam* 54 cup (Phase 4–5 context — the only TN from the site).

FA North Gaulish White Fine Sand
Valery Rigby identified Fig. 98.55 as a post-conquest butt-beaker, *cf.* King Harry Lane form 2E2 (Stead and Rigby 1989, fig. 56).
Form: C1a
Phases: 2, 2.3

Other fine wares

DB Terra Rubra imitations
Valery Rigby identified these as butt-beaker bodysherds in 'TR4' (Hawkes and Hull 1947, 204).
Phases: 2.3

(DZ is a miscellaneous category for unclassified unslipped red wares, some of which occur in Phase 2.3 contexts. Fig. 90.52 is included here by Catriona Turner-Walker)
(FZ is a miscellaneous category for unclassified unslipped white wares, flagon sherds of which occur in Phase 2.3 contexts)

Local products

HA1 lime/chalk-tempered ware
Description: a black fabric, with abundant, very fine to fine calcareous inclusions (spherical particles: ?shell or chalk).
Forms: None recognised
Phases: 2 (HA1), 2.3 (HA0)

HG4 Belgic grog-tempered wares
Description: *cf.* Thompson (1982, 20)
Forms: platters; jars (Fig. 87.24–88.37)
Phases: 2; 2.3

HG5 'romanising' grog-tempered wares
Description: *cf.* the classic grog-tempered ware, HG4, but the grog is always comparatively finer in appearance and better-sorted and this fabric generally occurs in comparatively thinner-walled vessels.
Forms: jars (Figs 89.42, 44–46; 90.56, 59, 64)
Phases: 2; 2.3

HG6 (unclassified Belgic/1st AD)
This category may include unrecognised HG4 and HG5 types.
Forms: platters; bowls (Fig. 89.43; 90.53–54); jars (Fig. 89.40–41, 49); other forms (Fig. 90.60–61)
Phases: 2; 2.3

Mediterranean imports		
AA	1 sherd	10g
BC	43	244
Gaulish imports		
DA	4	34
GA (present only in later phases)		
FA	24	153
Other fine wares		
DB	37	77
DZ	12	43
FZ	161	542
Local products		
HA	3	21
HG4	1,092	18,098
HG5	565	4,433
HG6	1,279	16,043
HG1	32	1,800
HG2	2	234
HG7	9	610
HG8	2	68
HG0	25	299
HS1	70	643
HS5 (present only in later phases)		
HS6 (present only in later phases)		
GG1	7	57
GZ1	678	5,799
HZ	22	264
Unclassified		
ZZ1	11	22
Residual		
Phase 1 fabrics	1,399	10,035

Table 16 Fabric incidence by number of sherds and weight, Phases 2 and 2.3

HG1 large storage jar fabrics
Description: grey fabric, with moderate-abundant, coarse to very coarse grog (usually grey as the fabric, but sometimes darker).
Forms: D9 (see the Form Series, below)
Phases: 2.3

HG2 large storage jar fabrics
Description: grey fabric, with grog and sand inclusions.
Forms: D9 (see the Form Series, below)
Phases: 2.3

HG7 large storage jar fabrics
Description: grey fabric, with red margins. Inclusions comprise: grog; sparse-moderate, coarse to very coarse white flint (>3mm); moderate, medium sand and sparse, medium to coarse red iron ore.
Forms: D9
Phases: 2.3

HG8
Description: grey fabric, with red margins, *or* oxidised throughout. Inclusions comprise: grog; sparse-moderate, coarse sand and sparse-moderate cream particles.
Forms: D9
Phases: 2.3

(HG0 is a miscellaneous category for unclassified grog-tempered wares, some of which occurs in Phase 2 and 2.3 contexts)

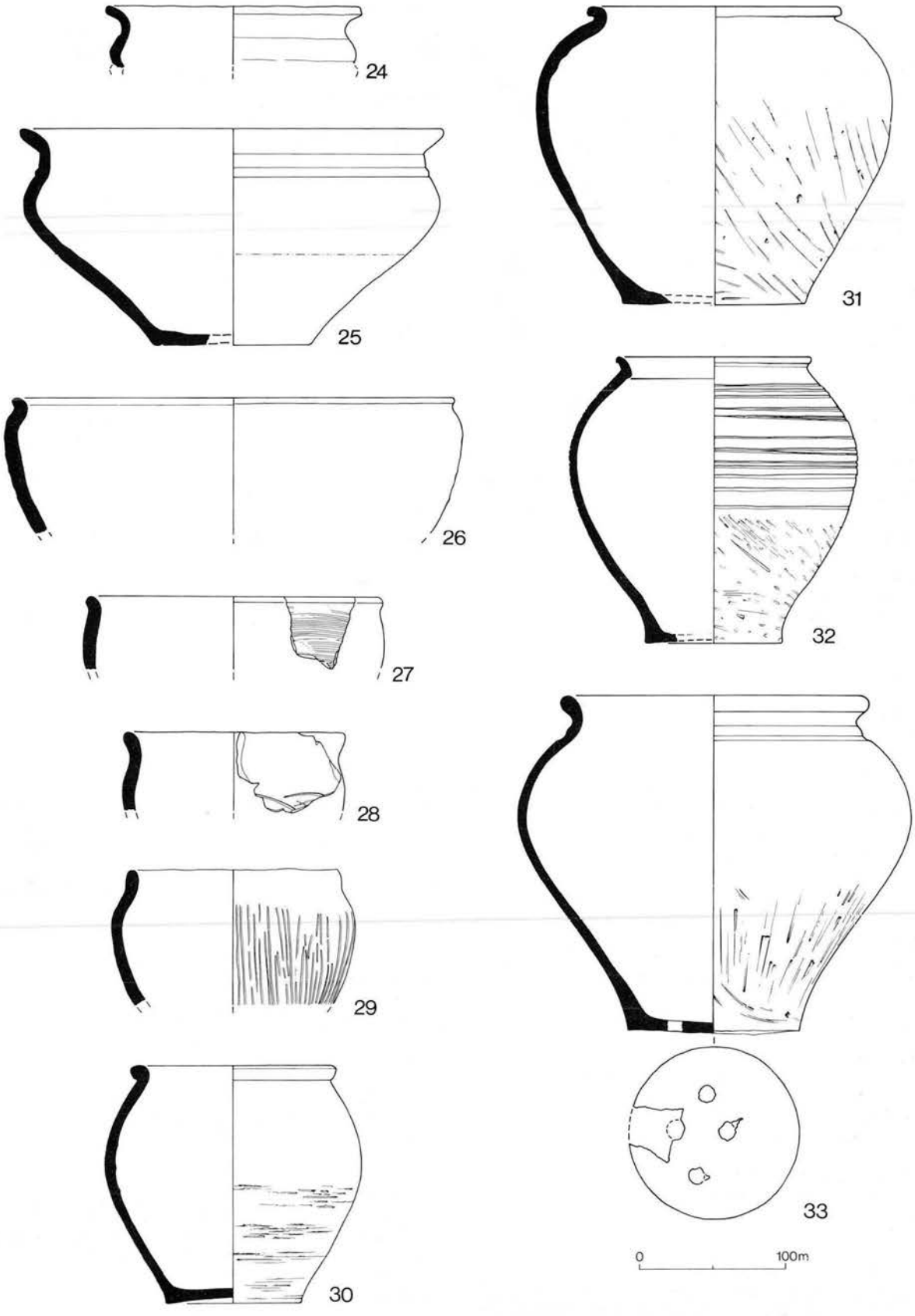


Figure 87 Pottery: Nos 24–33, Late Pre-Roman Iron Age. Scale 1:4

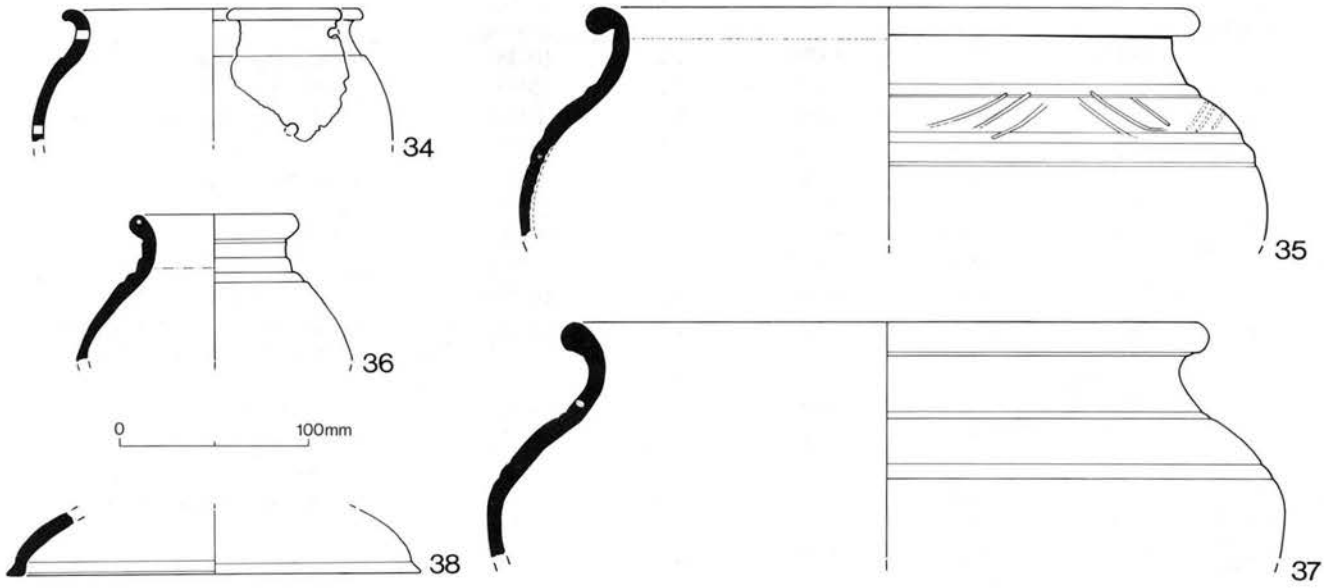


Figure 88 Pottery: Nos 34–38, Late Pre-Roman Iron Age. Scale 1:4

HS1 early shell-tempered ware
(=Chelmsford fabric 50)
Forms: Ledge-rim jars (Fig. 90.39)
Phases: 2, 2.3

HS5
Description: *cf.* HS1, with additional sand
(present only in a Phase 3 context)

HS6
Description: *cf.* HS1, with additional red iron ore and (but not always) sand.
(Present only as residual sherds in Phase 3 and 4–5 contexts)
(Aside from Late Roman shell-tempered ware, fabric HS2, the only other shell-tempered fabric is HS3, which contained abundant coarse sand and is only represented by a single sherd in a Phase 3 context.)

GG1 sandy grey wares/GZ1 unclassified grey wares
Fabrics GG1 and GZ1 are present here (see Table 16) because Phase 2.3 is not wholly pre-conquest.
Forms: B6 dish; D3 jar (GG1); A platter (A2a); C1 beaker (C1e); D2 bowl-jar; D3 jars (D3h, D3k); D5 jars(D5c); misc. form C3; lid L1 and (intrusive) dish B5 (all GZ1). See the Form Series below

'Belgic' forms in these 'Roman' fabrics are contemporary with Roman (*i.e.* purely Roman) material in the 1st century AD, conquest period to late 1st century (Phase 2.3), *e.g.* Fig. 89.47–8, 50; Fig. 90.51, 57–8, 62–3. [CT–W]

(HZ is a miscellaneous category for unclassified heavy-gritted or coarse-tempered sherds, some of which occur in Phase 2.3 contexts)
(ZZ1 is a miscellaneous category for unclassified sherds, fabric unrecognised or date uncertain)
(Residual Phase 1 pottery comprises Fabrics HC1, HE1, HE5, HF1/4/5/6/0, GZ2/3/4/0)

No. on figures	*Fab*	*Cont*	*of*	*Phase*	*Archive Drawing*	*Description*
24	HG4	*4774*	*F4796*	2.3	[D225]	everted-rim jar/bowl
25	HG4	*665*	*F664*	2.3	[D143]	*Cam* 230-type bowl
26	HG4	*690*	*F196*	2.3	[D189]	bead-rimmed, wide-mouthed jar/bowl
27	HG4	*4814*	*F4502*	2.3	[D226]	plain-rimmed bowl
28	HG4	*5028*	*F5034*	2.3	[D234]	plain/everted-rim jar
29	HG4	*5116*	*F5115*	2	[D557]	plain-rimmed jar
30	HG4	*D1621*	*	1	[D101]	bead-rimmed jar
31	HG4	*4748*	*F4796*	2.3	[D224]	bead-rimmed jar
32	HG4	*665*	*F664*	2.3	[D139]	bead-rimmed jar
33	HG4	*139*	*F196*	5-7	[D158]	bead-rim, cordon-shouldered jar, with four post-firing holes in the base
		288		6-7		
34	HG4	*665*	*F664*	2.3	[D185]	bead-rimmed jar
35	HG4	*139*	*F196*	5-7	[D157]	bead-rimmed jar
36	HG4	*1465*	*F1464*	2.3	[D246]	bead-rim, cordon-shouldered jar
37	HG4	*5046*	*F5045*	2.3	[D235]	bead-rim, cordon-shouldered jar
38	HG4	*1061*	*F1060*	4-5	[D258]	lid
39	HS1	*778*	*F775*	2.3	[D194]	ledge-rimmed jar
		936	*F969*	2.3		
40	HG6	*4896*	*F4823*	2.3	[D230]	ledge-rimmed jar
41	HG6	*705*	*F196*	2.3	[D190]	bead-rim jar
42	HG5	*4728*	*F5081*	2	[D221]	bead-rim, cordon-shouldered jar
43	HG6	*1291*	*F1290*	2.3	[D242]	everted-rim, cordon-shouldered jar
44	HG5	*1293*	*F1292*	2.3	[D243]	bead-rim, cordon-shouldered jar
45	HG5	*4728*	*F5081*	2	[D220]	bead-rim, cordon-shouldered jar
46	HG5	*1620*	*F1501*	2	[D252]	ledge-rim, cordon-shouldered jar with (at least) 8 post-firing holes in the base
47	GG1	*4849*	*F4502*	2.3	[D228]	everted-rim, cordon-shouldered jar, with irregular-shaped post-firing holes in base
48	GZ1	*681*	*F316*	3	[D188]	bead-rim jar, *cf. Cam* 218
49	HG6	*689*	*F196*	2.3	[D192]	bead-rim jar
		690 & 705				
50	GZ1	*4428*	*F4420*	4-7	[D313]	bead-rim jar
51	GZ1	*D262*		9	[D163]	*Cam* 28-type platter
52	DZ	*3531*	*F3323*	4-5	[D315]	rim, vessel form uncertain
53	HG6	*432*	*F664*	2.3	[D175]	bead-rim, wide-mouthed bowl
54	HG6	*4826*	*F4502*	2.3	[D227]	bead-rim, wide-mouthed bowl
55	FA	*4962*	*F4961*	2	[D233]	*Cam* 113 butt-beaker
56	HG5	*D262*		9	[D164]	ledge-rim, cordon-shouldered jar/beaker
57	GZ1	*288*	*F196*	6 7	[D171]	bead-rim beaker
58	GG1	*4366*	*F4365*	3	[D312]	plain-rimmed beaker
59	HG5	*4625*	*F4571*	2.3	[D214]	bead-rim beaker or jar
60	HG6	*4899*	*F4898*	2	[D232]	bead-rim pedestal beaker/urn
61	HG6	*1291*	*F1290*	2.3	[D241]	'flask' (rim only, form uncertain)
62	GG1	*5125*	*F5123*	3	[D553]	small bead-rim jar
63	GZ1	*4863*	*F4502*	2.3	[D229]	*Cam* 108-type beaker
64	HG5	*705*	*F196*	2.3	[D191]	ledge-rim beaker/jar

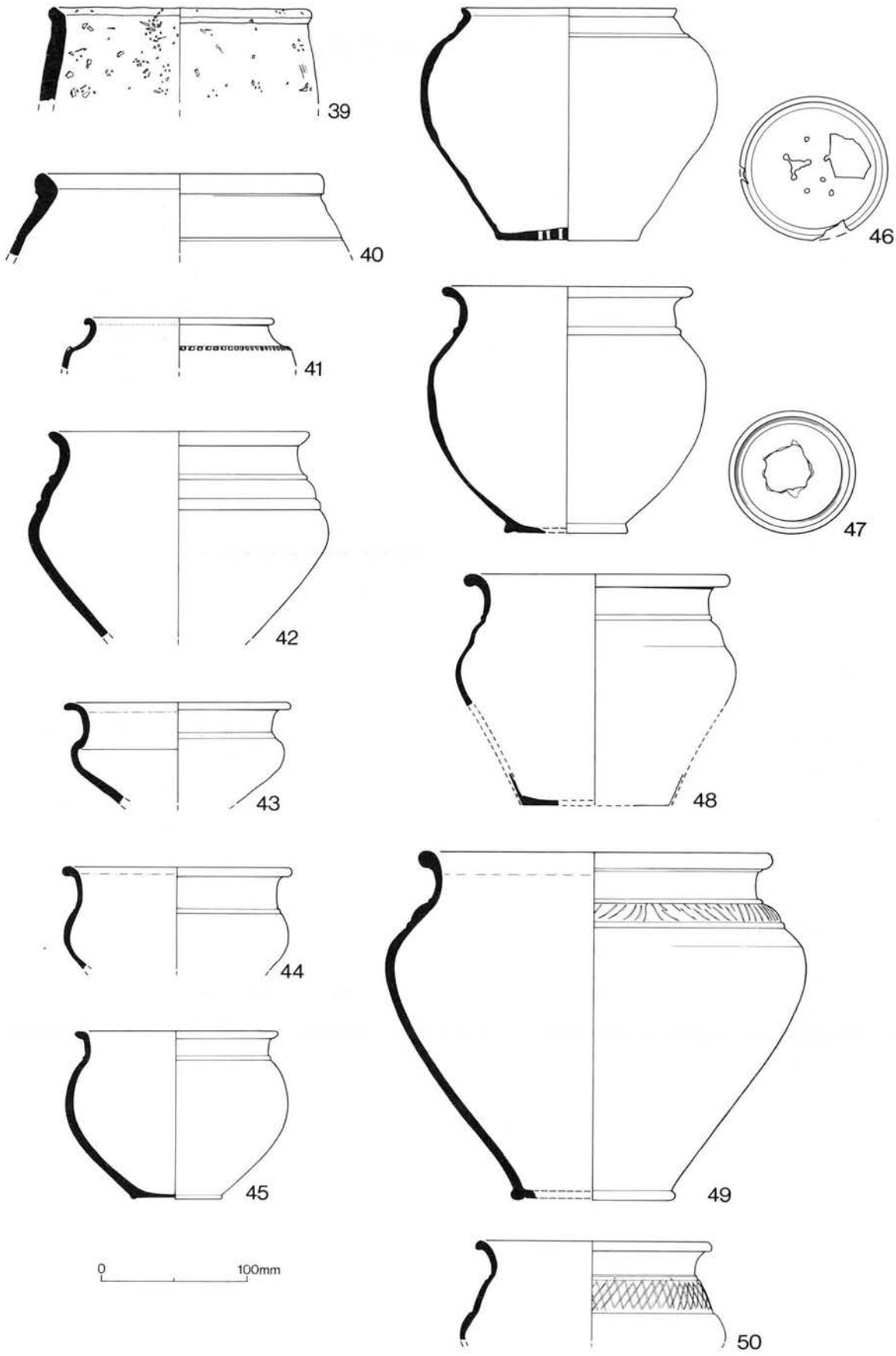


Figure 89 Pottery: Nos 39–50, Late Pre-Roman Iron Age. Scale 1:4

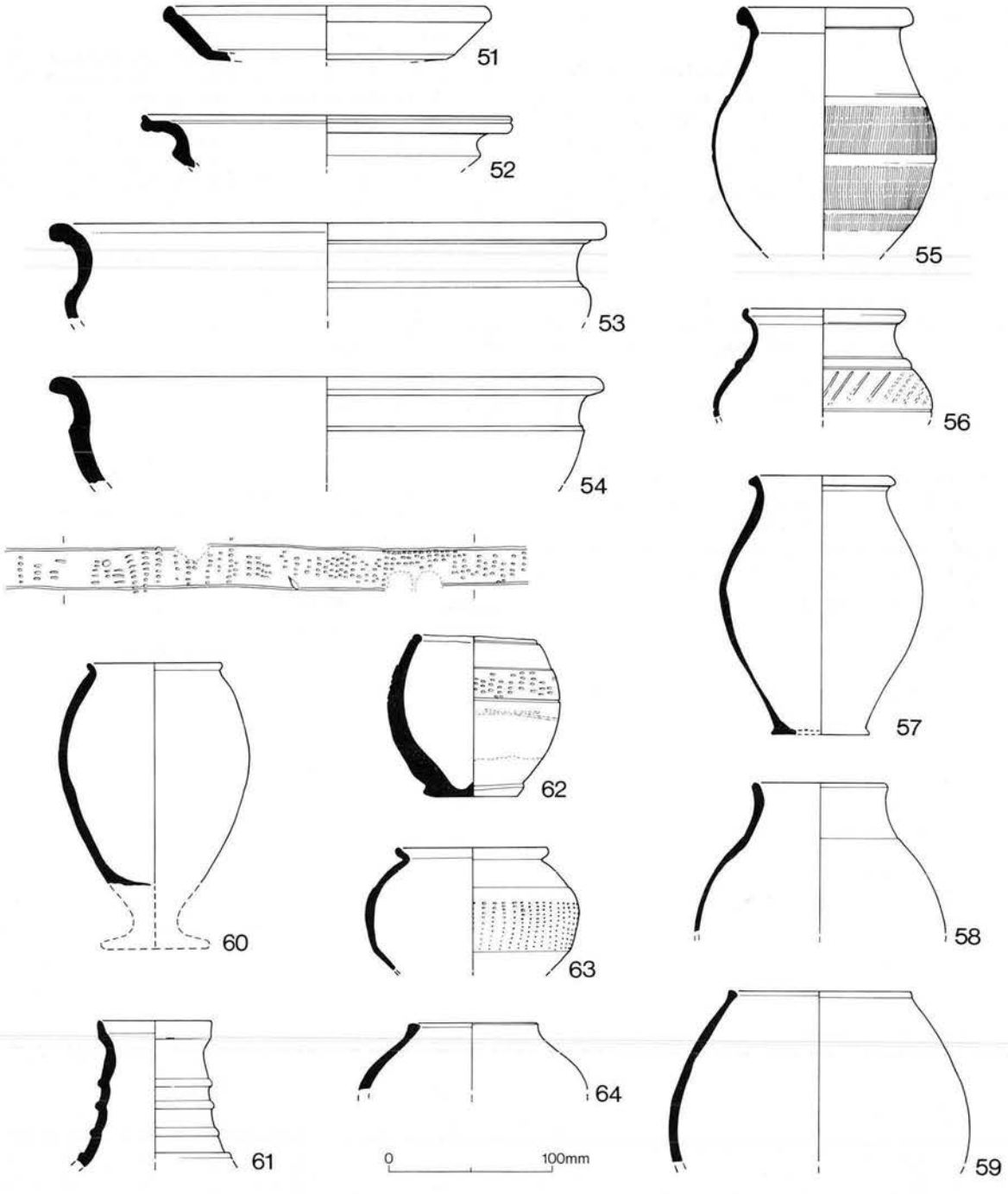


Figure 90 Pottery: Nos 51–64, Late Pre-Roman Iron Age. Scale 1:4

The Roman fabrics

A detailed classification was worked out for the Roman pottery, based on microscopic examination of the sherds themselves and not involving scientific analysis. The codings are a developed version of similar schemes evolved for other ECC sites and are presented here in an order compatible with that recently published from Chelmsford (Going 1987, 3–11). With the existence of so many published fabric descriptions for Roman pottery in Essex and surrounding areas, detail here is kept to a sensible minimum. The pottery report archive contains full descriptions and incidence records for each fabric.

Table 17 summarises the total incidence of each fabric and sets out the broad groupings into which the seventy-plus fabrics are arranged.

The mortaria fabric descriptions (Fabrics CN1, DC, CN2, DM, FK, FF, FM, FZ and GM) were provided by Mrs K.F. Hartley. Her full identifications (report of March 1985) are available in the pottery report archive.

While Colin Wallace inherited no information on the date-ranges assigned to the fabrics described in this section (something that must have been worked out at the time in order to assign dates to each context's pottery), some idea of the approximate currencies of the major imported and regional wares listed in Table 17 would be helpful. Therefore Table 18 shows the date-ranges currently assigned to twenty-five such wares in the present scheme used for Essex sites, with the important *caveat* that these do not relate directly to the 1980s work on the Ivy Chimneys material.

Internal dating evidence for each Ivy Chimneys fabric is confined to an indication of the phases in which it occurs. Where phasing terms like '3–7' appear below, this means that a context (or contexts) could only be given a broad date-range. These terms are only used in this section where they can *augment* the firm phasing provided by large-sized, stratified contexts: phases appearing below in *brackets* indicate cases where there would otherwise be gaps in a fabric's occurrence if these broad date-ranges were not taken into account.

'Colour-coated' fabrics: Romano-British

CJ Colchester colour-coat
(=Chelmsford fabric 1)
Forms: C1 beakers (C1h; C1j; C1m)
Phases: 3; 4; (5); 6; 7

CT Nene Valley colour-coat
(=Chelmsford fabric 2)
excludes late white wares (see EE below)
Forms: B1 dishes (B1e); B2 bowls (B2d); C1 beakers (C1j; C1m); E4 flagons
Phases: 3; (4); 5; 6; 7

EE Nene Valley colour-coat
(=Chelmsford fabric 2)
late Roman, thick, white types
Forms: B1 dishes (B1e); B2 bowls (B2g; B2j; B2m; B2n; B2p); B5 dishes (B5n); C1 beakers (C1g; C1j; C1m); D3 jars; D4 jars (D4a); E3 flagons; L5 lids (L5a; L5b; L5c)
Phases: 3; 4; 5; 6; 7

(CN0 is a miscellaneous category for unclassified Oxfordshire oxidised wares, covering abraded sherds of CN1 and CN2 where the original surface is missing.
Phases: 6; 7. Thirty-two sherds, 519 grammes).

CN1 Oxfordshire red and brown colour-coat
(=Chelmsford fabric 3)
Forms: B2 bowls (B2e; B2f; B2g; B2h; B2m; B2n); B3 mortaria (B3n; B3v); B4 dishes (B4d); C1 beakers; D2 jars (D2h); E6 flagons
Phases: 6; 7

DC Hadham oxidised wares
(=Chelmsford fabric 4)
Forms: B1 dishes; B2 bowls (B2c; B2g); B3 mortaria (B3g; B3q; B3u); B4 dishes (B4c); B5 dishes (B5f); D2 jars (D2g; D2h); D3 jars; D4 jars; E7 flagons; K1 strainers; L6 lids
Phases: 6; 7

Fig. 91 shows the range of Hadham ware forms from Ivy Chimneys, (No. 92 is Hadham grey ware) clearly demonstrating the absence of any vessel forms characteristic of the period before the later 3rd-century expansion of its distribution.

'Colour-coated' fabrics: Imported

CG Central Gaulish 'Rhenish' ware
(=Chelmsford fabric 8)
Forms: C1 beakers
Phases: (3); 4; (5); 6; 7

CH 'Moselkeramik'
(=Chelmsford fabric 9)
Forms: C1 beakers (C1m)
Phases: 3; 4; 5; 6; 7

(unclassified slipped white wares: EZ)
Forms: B0 dish or bowl; C1 beakers (C1j); B3 mortaria (B3q)
Phases: 3; 4; 5; 6; 7

Mica-gilt ware

CR
(=Chelmsford fabric 12)
Forms: none recognised
Phases: 6 (residual)

White-slipped red wares

CN2 Oxfordshire white-slipped red ware
(=Chelmsford fabric 13)
Forms: B2 bowls (B2k); B3 mortaria (B31; B3m; B3q)
Phases: 6; 7

CS cream-slipped sandy red wares
(may =Chelmsford fabric 15)
Forms: E0 flagon
Phases: 3–7; 4–7; 7

Miscellaneous slipped red wares

CZ unclassified other slipped red wares
(=Chelmsford fabric 17)
Forms: B1 dishes; B2 bowls (B2e; B2m); D3 jars; D8 jars (D8a); C1 beakers (C1h; C1j; C1m)
Phases: 3; 4; 5; 6; 7

Red wares

DD sandy buff, pink and red wares
(may =Chelmsford fabric 21)
Forms: B1 dishes (B1b); B2 bowls (B2h); B5 dishes; D3 jars; D5 jars; C1 beakers; E flagons (E1)
Phases: 3; 4; 5; 6; 7

DE smooth buff, pink and red wares
(may =Chelmsford fabric 21)
Forms: E flagons (E1; E5)
Phases: 3; 4; 5; 6; 7

DM1 East Anglian mortaria
Description: a fine-textured, orange-brown fabric (sometimes with a grey core or a sandwich core) with some ill-sorted quartz and flint inclusions and some sand filler. Trituration consists of flint and quartz.
Forms: B3 mortaria (B3f; B3l)
Phases: 6; 7

DM2 East Anglian mortaria
Description: very fine-textured fabric (probably red-brown originally) with a thick charcoal-coloured core to near the surface, which is a muddy brown. Traces of a (possibly) cream slip on one example, though a red-brown slip may have been used with this fabric. Trituration consists of flint and quartz.

	No. of sherds	*Weight (g)*
'Colour-coated' fabrics		
A Romano-British		
CJ Colchester colour-coat	93	333
CT/EE Nene Valley colour-coat	449	8,762
CN1 Oxfordshire red colour-coat	221	4,564
DC0 Hadham oxidised wares	327	3,564
B Imported		
CG Central Gaulish Rhenish ware	4	32
CH East Gaulish Rhenish ware	58	178
EZ Unclassified slipped white wares	26	167
Mica-gilt ware		
CR	3	102
White-slipped red wares		
CN2 Oxfordshire white-slipped ware	51	1,778
CS Cream-slipped sandy red wares	3	51
Miscellaneous slipped red wares		
CZ Unclassified slipped red wares	183	1,192
Red wares		
DD Sandy buff, pink and red wares	102	1,075
DE Smooth buff, pink and red wares	247	2,051
DM1 East Anglian mortaria fabric	12	558
DM2 East Anglian mortaria fabric	1	28
DZ Unclassified unslipped red wares	154	1,566
White wares		
FK1 Nene Valley mortaria	18	1,464
FK2 Nene Valley mortaria	2	42
FF Oxfordshire white ware	45	2,947
FB Brockley Hill wares	1	117
FR Rhenish mortaria	(present)	
FZ Unclassified unslipped white wares	57	1,423
Buff wares		
FM1 East Anglian mortaria	3	271
FM2 East Anglian mortaria	9	590
FM3 East Anglian mortaria	34	2,779
FM4 East Anglian mortaria	1	152
FM5 East Anglian mortaria	1	248
EF Oxfordshire 'parchment' ware	1	28
FP Portchester 'D' ware	9	116
Grey wares		
GD North Kent grey wares	76	523
GF Fine grey wares	215	1,000
GB2 Black-Burnished 2	87	2,188
GE Alice Holt ware	22	1,188
HG1 Storage jar fabric	621	44,593
HG2 Storage jar fabric	135	10,485
HG3 Storage jar fabric	23	499
HG7 Storage jar fabric	30	3,033
HG8 Storage jar fabric	5	167
GG1 Sandy grey wares	5,582	69,217
GG2 Sandy grey wares	18	215
GG3 Sandy grey wares	1,504	18,387
GG6 (kiln fabric)	870	4,336
GG0	95	933
GR Rettendon wares	331	8,963
HF2 Rettendon wares	2,040	24,958
GM1 East Anglian mortaria	3	71
GM2 East Anglian mortaria	1	93
GM3 East Anglian mortaria	1	210
GM4 East Anglian mortaria	2	98
GM5 East Anglian mortaria	1	11
GZ1 Unclassified grey wares	9,760	105,126
GZ6 (kiln fabric)	297	5,648
GZ0	144	844
Shell-tempered fabrics		
HS2 Late shell-tempered ware	278	4,700
HS0 Unclassified shell-tempered wares	4	37
Miscellaneous tempered fabrics		
HG5/6 Grog-tempered wares	832	7,099
HG9 ?Late Roman grog-tempered	3	71
HG0 Unclassified grog-tempered wares	130	4,323
HM Mayen ware	3	473
HZ Unclassified heavy gritted or coarse tempered wares	75	504
Amphora fabrics		
AE South Spanish	136	19,604
AP South Gaulish	2	322
AS *Salazon*	1	74
AK Late Roman 'hollow-foot'	(present)	
FB Brockley Hill	1	73
AZ Unclassified amphoras	6	350
Samian		
BC South Gaulish	31	169
BD Central Gaulish	108	1,174
BE East Gaulish	71	1,424
BM Unprovenanced samian	9	97
Unclassified		
ZZ1	34	108
Residual		
Phase 1 fabrics	968	5,949
Phases 2/2.3 fabrics	858	11,879

Table 17 Fabric incidence by number of sherds and weight (Phases 3 to 7)

No. on figures	*Form*	*Context*	*of*	*Phase*	*Archive Drawing*
65	B1f	*D989*	-	7	[D125]
66	B1k	*1487*	*F837*	7	[D247]
67	B4c	*1204 & 1205*	*F2409*	7 & 6	[D202]
68	B5f	*59*	*F2409*	7	[D126]
69	B2l	*D566*	-	9	[D1]
70	B2c	*317*	*F316*	7	[D132]
71	D2g	*86*	*F2409*	7	[D128]
72	H1	*D3532*	-	7	[D88]
73	E	*D262*	-	9	[D165]
74	E7	*1563*	*F837*	7	[D250]
75	B2g	*86*	*F2409*	7	[D85]
76	B2h	*5233*	*F5202*	7	[D237]
77	B3g	*86*	*F2409*	7	[D63]
78	B3u	*Unstratified*	-	9	[D552]
79	K1	*86*	*F2409*	7	[D82]
80	D2h	*2026*	*F679*	6	[D261]
81	D2h	*317*	*F316*	7	[D134]
82	D3	*317*	*F316*	7	[D133]
83	D3	*86*	*F2409*	7	[D129]
84	D4	*86*	*F2409*	7	[D130]
85	-	*614*	*F316*	4.7	[D136]
86	D8a	*L224*	-	4.7	[D97]
87	E0	*66*	*F2409*	6	[D81]
88	B2	*680*	*F679*	7	[D135]
89	Q	*95*	*F2409*	6	[D39]
90	B2f	*119*	*F457*	9	[D156]
91	L6	*86*	*F2409*	7	[D127]
92	C5	*86*	*F2409*	7	[D148]

Common Name	*Date-range in Essex*	*cf. IC fabric*
Colchester colour-coat	early/mid C2-mid C3	CJ
Nene Valley colour-coat	?early C3-later C4+	CT/EE
Oxfordshire red colour-coat	mid/late C4+	CN1
Hadham oxidised wares	later C3+	DC
Central Gaulish Rhenish ware	mid C2-early C3	CG
East Gaulish Rhenish ware	later C2-mid C3	CH
Romano-British mica-gilt ware	later C1-mid C2	CR
Oxfordshire white-slipped wares	mid/late C4+	CN2
Nene Valley mortaria	later C3+	FK
Oxfordshire white mortaria	mid/late C3+	FF
Verulamium region mortaria	mid C1-mid/late C2	FB
Oxfordshire 'parchment' ware	mid C4+	EF
Portchester 'D' ware	mid C4+	FP
North Kent grey wares	later C1-later C2	GD
Black Burnished 2	later C2-mid C4	GB2
Alice Holt ware	mid/late C4+	GE
Rettendon-type ware	later C3+	GR/HF2
Late shell-tempered ware	later C4+	HS2
Eifelkeramik	C4+	HM
South Spanish amphoras (Dr 20)	mid C1-early C3	AE
South Gaulish amphoras	mid/late C1-C3	AP
Salazon amphoras	early C1-early C2	AS
South Gaulish samian	mid C1-early C2	BC
Central Gaulish samian	early C2-early C3	BD
East Gaulish samian	early C2-mid C3	BE

Table 18 Date ranges currently assigned to selected fabrics from Essex sites. Sources: Going 1987; Peacock and Williams 1986; Webster with Dannell 1987

Forms: B3 mortaria
Phases: 7

Mrs Hartley comments as follows on these and other mortaria fabrics (below, FM 1–5 and GM 1–5) attributable to East Anglia: Most of these will be from workshops in Essex though some of the reduced fabrics might have come from Suffolk; it is unlikely that any of these fabrics are from Norfolk, when there were so many nearer sources available, but there *are* Norfolk fabrics which could not easily be distinguished from those made in Suffolk and Essex.

DZ unclassified unslipped red wares
(=Chelmsford fabric 21)
Forms: B1 dishes (B1b; B1k); B5 dishes; B2 bowls; D3 jars (D3g); C1 beakers (C1a)
Phases: 3; 4; 5; 6; 7

White wares

FK1 Nene Valley white mortaria
(=Chelmsford fabric 24)
Description: a hard, quite fine-textured, off-white fabric occasionally with a pink or grey core (and occasionally reversed: pink surface with white core). Tiny red-brown and quartz inclusions. Trituration consists entirely of iron slag fragments with, very rarely, the odd haematite fragment. There is often a brownish-buff slip.
Forms: B3 mortaria (B3j; B3r)
Phases: 5; 6; 7

FK2 Nene Valley white mortaria
Description: this fabric seems to be just a finer version of FK1, with fewer, tinier inclusions and, in the few examples from this site (which could all belong to one vessel), the off-white fabric fired to a brownish-pink at the surface. Trituration consists of finely fragmented black iron slag packed closely together in just the same manner as in the painted mortaria produced at Crambeck in the second half of the 4th century. There are traces of a red-brown slip.
Forms: B3 mortaria (B3w)
Phases: 7

(FK0, one sherd/27g, is a miscellaneous category for unclassified Nene Valley white mortaria).

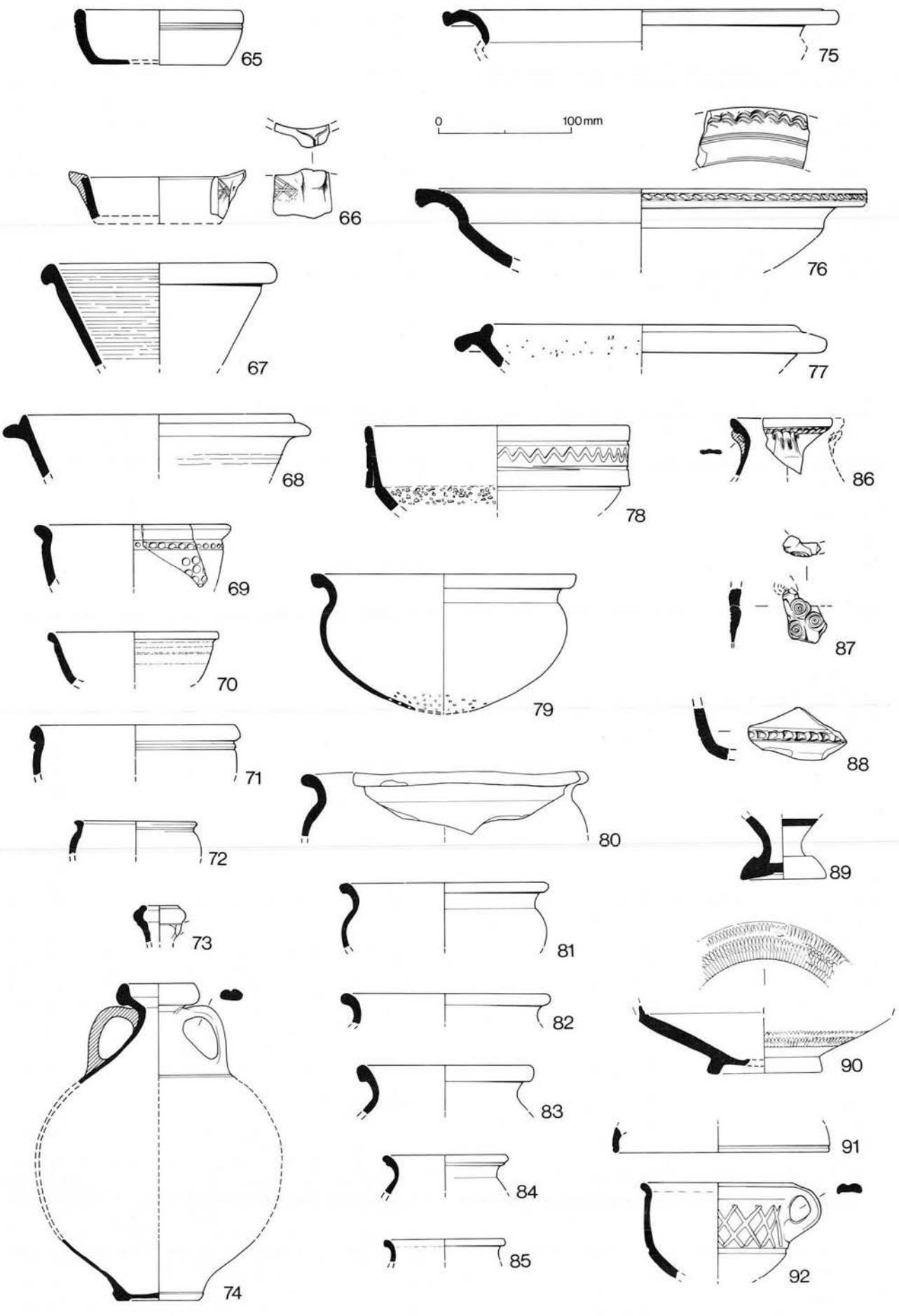


Figure 91 Pottery: Nos 65–92, Hadham products. Scale 1:4

FF Oxfordshire white mortaria
(=Chelmsford fabric 25)
Description: off-white fabric, occasionally with a pink core or even pink throughout, with some tiny quartz (as the trituration) and opaque red-brown inclusions. The very distinctive trituration consists entirely of mixed pink, brown and transparent quartz. The texture of the fabric varies with the amount of temper added, but it is usually like the finest sandpaper to the touch.
Forms: B3 mortaria (B3g; B3h; B3j; B3k; B3l; B3q; B3r)
Phases: 5; 6; 7

FB Brockley Hill white ware
(=Chelmsford fabric 26)
(K.F. Hartley only recorded examples of this fabric among the 1937 discoveries (above, Introduction) and the 1963–73 work. In Table 17 is a single mortarium bodysherd (previously misidentified as amphora) and, separately listed towards the end, an amphora handle (below, p.173)).

FR Rhenish mortaria
(K.F. Hartley identified a burnt and worn bodysherd from modern disturbance 1071 as a Rhineland piece, of probably AD150–250).

(FZ is a miscellaneous category for unclassified unslipped white wares (forms B3, E; P1/Phases 3: (4); 5; 6; 7) which includes a *mortarium fabric* of unknown origin (East Anglia or Rhineland) described by Mrs Hartley as follows: a cream fabric, slightly sandy to the touch, with tiny quartz inclusions and brown stains in the fabric. May have a pink core in some parts. No trituration survives. Phase 6).

Buff wares

FM1 East Anglian mortaria
Description: a softish, greenish-cream fabric with some fine quartz, a little flint and occasional black or brown (iron-rich) and chalk inclusions. Trituration consists of flint with occasional quartz. The fabric can be powdery.
Form: B3 mortaria (B3c; B3f)
Phases: 3; 6

FM2 East Anglian mortaria
Description: a greyish-cream fabric, harder than FM1 and with some ill-sorted quartz, flint, iron-rich particles and some unusual, large soft pink-brown, clay inclusions. Trituration consists of flint with occasional quartz and brown or black iron-rich particles.
Forms: B3 mortaria (B3f; B3q)
Phases: 3; (4); 5; 6; 7

FM3 East Anglian mortaria
Description: a fine-textured fabric ranging from the palest brownish-cream to a quite distinctly brownish colour (which is, however, always lighter than Fabric FM4): there can be a pink core. Few, mostly minute, quartz, flint and red-brown inclusions. Trituration is mainly flint with occasional quartz, red-brown and very rare chalky particles.
Forms: B3 mortaria (B3a; B3b; B3c; B3e; B3f; B3g; B3q; B3s; B3t)
Phases: 3; (4); 5; 6; 7

FM4 East Anglian mortaria
Description: fine-textured, ochre-brown fabric with very little fine temper consisting of quartz, flint, red-brown material and occasional chalk. Trituration consists mostly of flint, with occasional quartz, red-brown and chalky material.
Forms: B3 mortaria
Phases: 3

FM5 East Anglian mortaria
Description: a very hard, very fine-textured, pink-brown fabric with browner surfaces. Fine, near invisible temper with very occasional larger quartz and chalk inclusions. The single vessel represented has no normal trituration but has three flint and chalk particles, which perhaps should be considered as inclusions.
Forms: B3 mortaria (B3d)
Phases: 3

(FM0, two sherds/469g, is a miscellaneous category for unclassified East Anglian mortaria)

EF Oxfordshire 'parchment' ware
(=Chelmsford fabric 30)
Forms: B2 bowl (B2k)
Phases: 7

FP Portchester D ware
(Fulford 1975, 299: Millett 1979, 125)
Forms: D3 jars
Phases: 6; 7

Grey wares

GD North Kent Marshes
(=Chelmsford fabric 32)
Forms: C1 beakers (C1k; C1n); C6 bowl/jar (C6a)
Phases: 3; 4; 5; 6; 7

GF Fine grey wares
(=Chelmsford fabric 39)
Forms: B4 dishes (B4d); B5 dishes (B5p); B2 bowls (B2g); D3 jars (D3e); C1 beakers (C1e; C1m; C1p)
Phases: 3; 4; 5; 6; 7

GB2 Black-burnished 2
(=Chelmsford fabric 41)
Forms: B1 dishes (B1a); B4 dishes; B5 dishes (B5b; B5h); D5 jars
Phases: 3; (4); 5; 6; 7

GE Alice Holt/Farnham ware
(=Chelmsford fabric 43)
Forms: B2 bowls (*cf.* Lyne and Jefferies (1979) Class 5C); B5 dishes (Lyne and Jefferies Class 5B); D9 large storage jars (Lyne and Jefferies Class 4)
Phases: 6; 7

HG1 Grog-tempered large storage-jar fabrics
(=Chelmsford fabric 44)
Forms: D9 storage jars (D9a; D9b)
Phases: 3; 4; 5; 6; 7

HG2 Grog-tempered large storage jar fabrics
(=Chelmsford fabric 44)
Forms: D9 storage jars (D9c; D9e)
Phases: 3; 4; 5; 6; 7

HG3 Grog-tempered large storage jar fabrics
(=Chelmsford fabric 44)
Forms: D9 storage jars
Phases: 3; 4; 5; 6; (7)

HG7 Grog-tempered large storage jar fabrics
(=Chelmsford fabric 44)
Forms: D9 storage jars
Phases: (3); (4); 5; 6; 7

HG8 Grog-tempered wares
(=Chelmsford fabric 44)
Forms: D9 storage jars
Phases: 3; 6

GG1 Sandy grey wares
(=Chelmsford fabric 47)
Forms: A2 platter; B1 dishes (B1b; B1c; B1d; B1e; B1h); B4 dishes (B4a; B4c; B4d; B4e); B5 dishes (B5c; B5d; B5h); B2 bowls; C1 beakers (C1d); D1 jars (D1e); D2 jars (D2a; D2c; D2d; D2e; D2g; D2h); D3 jars (D3e; D3h; D3j; D3k); D5 jars (D5a; D5b; D5c); D6 jars (D6e); D7 jars (D7a; D7b); G narrow necked jars (G2; G3; G4); L1 lids
Phases: 3; 4; 5; 6; 7

GG2 Sandy grey wares
Description: grey-brown fabric, blue-grey surfaces. Abundant, clear coarse sand — clearly visible on the surfaces, less so in fracture. ?Late Roman.
Forms: D3 jars
Phases: 6; 7

GG3 Sandy grey wares
Description: a range of fabric colours from grey to black, sometimes with oxidised margins. Inclusions are abundant, medium to very coarse sand, sparse-moderate coarse flint, sparse coarse red iron ore and white quartz. *Cf.* Fabric HG2, below, but with more sand visible than flint. ?Late Roman.
Forms: B1 dishes (B1b; B1c; B1e); B4 dishes; B5 dishes; B3 mortaria (B3y); D3 jars (D3f; D3h; D3j; D3k); D4 jars; D5 jars; D6 jars (D6c; D6f); G6 narrow-necked jars; L1 lids
Phases: 3; 4; 5; 6; 7

GG6 Ivy Chimneys kiln fabric
(see Kiln *F278*, p. 170–2 below)
(GG0 is a miscellaneous category for all unclassified sandy grey wares)

GR Rettendon-type wares
(=Chelmsford fabric 48)
Forms: B1 dishes (B1b; B1c); B4 dishes; B5 dishes (B5e; B5h), B3 mortaria (B3x); D3 jars (D3f; D3h; D3j; D3k); D5 jars; H small jars/bowls
Phases: 4; 5; 6; 7

HF2 Rettendon-type wares
Description: generally finer than GR, to the eye.
Forms: B1 dishes; B5 dishes (B5c); B3 mortaria (B3x); D2 jars (D2h); D3 jars (D3f; D3h; D3j; D3k); D4; D5
Phases: 4; 5; 6; 7

(The Rettendon-type ware mortaria, in Phases 6 and 7 contexts, were not examined by Mrs Hartley. The same applies to the GG3 mortarium).
(HF0, twelve sherds/66g, is a miscellaneous category for unclassified flint-tempered wares).

GM1 East Anglian mortaria
Description: a rather coarse, grey fabric, usually with a drab brown core and some, ill-sorted, quartz inclusions, perhaps some flint and certainly some chalky inclusions. Trituration consists of flint, quartz and occasional chalk fragments.
Forms: B3 mortaria
Phases: (5); (6); (7)

GM2 East Anglian mortaria
Description: a grey fabric with paler core and ill-sorted quartz, flint and iron-rich inclusions. Trituration consists of flint and occasional quartz.
Forms: B3 mortaria (B3q)
Phases: 6

GM3 East Anglian mortaria
Description: hard, blackish fabric with a good amount of fairly well-sorted quartz and flint inclusions and occasional chalk. Trituration consists of flint, probably with some quartz.
Forms: B3 mortaria (B3r)
Phases: 6

GM4 East Anglian mortaria
Description: fine-textured, muddy grey matrix made coarse by the addition of a good amount of ill-sorted quartz and flint inclusions. Trituration consists of flint with some quartz. Some fissures in the fabric.
Forms: B3 mortaria
Phases: 5

GM5 East Anglian mortaria
Description: a hard, fine-textured grey fabric, usually with red-brown and blackish sandwich core. Not as fine-textured as DM2 but with a very small amount of ill-sorted quartz inclusions. Trituration consists of flint and quartz.
Forms: B3 mortaria
Phases: (5); (6); (7)

GZ1 Unclassified grey wares
Forms: most classes represented
Phases: present in all phases

GZ6 Ivy Chimneys kiln fabric
(see Kiln *F278*, p. 170–2 below)

(GZ0 is a miscellaneous category for unclassified grey wares)

Shell-tempered fabrics

HS2 Late Roman shell-tempered wares
(=Chelmsford fabric 51)
Forms: B1 dishes (B1b; B1d); B5 dishes (B5f; B5g), D3 jars; D5 jars
Phases: 6; 7

(HS0 is a miscellaneous category for unclassified shell-tempered wares).

Miscellaneous tempered fabrics

HG5/6 Grog-tempered wares
(=Chelmsford fabric 53)
Description: see Pre-Roman Pottery, above.
Forms: A2 platters (A2a); C1 beaker (C1r); D1 jar; D3 jars; D5 jars; D6 jar; D9 storage jars
Phases: 3; 4; 5; 6; 7

HG9 ?Late Roman grog-tempered wares
Description: brownish-grey fabric, with abundant, medium to coarse sand, common, coarse to very coarse rounded 'pellets' of grey grog and sparse, coarse to very coarse flint inclusions. With only three sherds from three contexts and no recognisable forms, the relationship of this fabric to the known late Roman grog-tempered ware of Kent (Pollard 1988, 129; 149; fig. 53) remains to be established. Pollard noted the latter on two Essex sites, Mucking and Old Ford (1988, 222).
Forms: none recognised
Phases: 6

(HG0 is a miscellaneous category for unclassified grog-tempered wares).

HM Mayen ware
(=Chelmsford fabric 54)
Forms: D6 ledge-rimmed jar (D6a). The classic Mayen ware form (Fulford and Bird 1975, form 3), from the final backfills of the font depression, F2409
Phases: 7

(HZ is a miscellaneous category for unclassified heavy gritted/coarse-tempered wares).

Amphora fabrics
(see also Pre-Roman Pottery and Pottery of intrinsic interest)

AE South Spanish amphoras
(=Chelmsford fabric 55)
Form: F3 (Dressel 20/Peacock and Williams Class 25)
Phases: 3; 4; 5; 6; 7

AP South Gaulish amphoras
(=Chelmsford fabric 56)
Form: F4 (Pélichet 47/Peacock and Williams Class 27)
Phases: 5; 6

AS Salazon amphoras (S Spanish)
(Sealey 1985, 77–85)
Form: F2 (*Cam* 186/Peacock and Williams Classes 17 and 18)
Phases: 6

AK Late Roman 'hollow-foot' amphoras
(=Chelmsford fabric 59)
Form: F5 (Kapitän II/Peacock and Williams Class 47)
Phases: (unstratified)

FB Brockley Hill amphoras
(=Chelmsford fabric 26)
Form: See the Form Series, below
Phases: 6
(AZ, unclassified amphoras).

Samian

BC South Gaulish samian
(=Chelmsford fabric 60)
(see the Form Series, below, No. 1 and Stamp 3)
Forms: f29; f37; f15/17; f18; f24; f27; f36; Ritt 9
Phases: 3; (4); (5); 6; 7

BD Central Gaulish samian
(=Chelmsford fabric 60)
(see the Form Series, below, Nos 3–4 and Stamps 1, 3–4, 6–8)
Forms: f30; f37; f18/31; f31; f33; f38; f45; f79
Phases: 3; 4; 5; 6; 7

BE East Gaulish samian
(=Chelmsford fabric 60)
(see the Form Series, below, No. 5)
Forms: f30 or 37; f18/31; f31; f32; f33; f36; f38; f45; f46
Phases: 3; (4); 5; 6; 7

(BM, unprovenanced samian)
(ZZ1 is a miscellaneous category for unclassified sherds, fabric unrecognised or date uncertain)
(Residual Phase 1 pottery comprises Fabrics HC1/2, HE1/5, HF1/4/5/6, GZ2/3/4)
(Residual Phases 2 and 2.3 pottery comprises Fabrics GA, FA, DB, HG4, HS1/5/6)

The Roman form series

Figures 92 to 112 illustrate the form series devised for the Ivy Chimneys Roman pottery. The order adopted below varies slightly from the original for ease of comparison with other Essex sites. No details have been changed, so that this section is fully compatible with the archive whilst clearly setting out the range of vessel forms present on this Central Essex site.

The classes are (in the order illustrated): dishes; bowls; mortaria; beakers; cups/bowls; jars; storage jars; flagons; flasks; miscellaneous forms; lids; miniature vessels and unguentaria.

Dating evidence for each form is confined to an indication of the phases it occurs in. The phases are as follows: 2.3, conquest to late 1st century AD; 3, 2nd-mid 3rd centuries; 4, late 3rd century; 5, early 4th century; 6, mid-4th century and 7, late 4th-early 5th centuries. The prior existence of published Central Essex chronologies (and the fact that no work had been done on this aspect of the report by Catriona Turner-Walker) renders any further detail unnecessary.

Some contexts could only be dated within the range of two or more phases, *e.g.* '5–6' indicates that the context can belong to Phase 5 or Phase 6. *However*, Phase 2.3 is a phase in its own right. Context numbers with the prefix 'D' were considered to be disturbed, while those prefixed by an 'L' were independent layers as opposed to the fills of features.

A vessel from one of the Stratified Groups (p. 162–170 below) is indicated by underlining. In the final column, the collective references are as follows: *Cam* (Hawkes and Hull 1947, 215–273); Chelmsford (Going 1987, 13–54); *Col* (Hull 1963, 178–191); NV (Howe *et al.* 1980); Oxford (Young 1977). Table 17 provides a quick-reference key to the fabrics listed.

The estimated vessel equivalent (EVE) is quoted to give some impression of the relative incidence of each vessel form.

Platters (A)

Insufficient surviving for illustration. The relatively small numbers of this class of vessel point-up the overwhelmingly late Roman nature of the Ivy Chimneys assemblage.

Fabrics: sandy grey wares, grog-tempered wares

Dishes (B1, B4, B5)

(Figs 92–95)

Fabrics: Nene Valley colour-coat; Oxfordshire red colour- coat; Hadham oxidised wares; CZ; DD; DZ; fine grey wares; Black Burnished 2; Alice Holt ware; sandy grey wares; kiln fabrics; Rettendon wares; Late shell-tempered ware; grog-tempered ware

B1, straight-sided dishes

Fabrics: Nene Valley colour-coat; Hadham oxidised wares; CZ; DD; DZ; Black-Burnished 2; sandy grey wares; Rettendon wares; kiln fabric (GZ6); Late shell-tempered ware

Phases: 3, 4, 5, 6, 7;

Unclassified B1s account for 18.28 EVEs

In the lists below the information is given in the following order: Form; Description; Figures; Comparisons/comments; Fabrics; Phases; EVEs

B1a shallow with plain rim and sagging base; Fig. 92.93–94; *cf.* Chelmsford B1.4; (GB2); 3, 7; 0.35 EVEs

B1b shallow (or deep), plain rim, flat base; Fig. 92.95–99; Chelmsford B1; (DD, DZ, GG1, GG3, GR, GZ1, HS2); 3, 5, 6, 7; 5.98 EVEs

B1c as B1b with external rim groove(s); Fig. 92.101–107; Chelmsford B3; (GG1, GG3, GR, GZ1, GZ6); 3, 5, 6, 7; 2.02 EVEs

B1d shallow, plain-rimmed; Fig. 93.114; rim demarcated by faint external groove; (GG1, GZ1, GZ6, HS2); 3, 5, 7; 0.63 EVEs

B1e shallow, plain-rimmed; Fig. 92.109–110; NV 87/Chelmsford B1.2; (CT, EE, GG1, GG3, GZ1); 6, 7; 2.89 EVEs

B1f small dish with slightly curving wall; Fig. 92.111; Single example; DC; disturbed

B1g plain-rimmed with curving wall; Fig. 93.112; (GZ1, GZ6); 5, 6; 0.13 EVEs

B1h almost bead-rimmed; Fig. 93.113; Single example; GG1; 7; 0.08 EVEs

B1j almost bead-rimmed; Fig. 93.115; Single example; GZ1; 7; 0.08 EVEs

B1k handled forms; Fig. 93.116; Single example; DZ; 7; 0.11 EVEs

B4, bead-rimmed dishes

Fabrics: Oxfordshire red colour-coat; Hadham oxidised wares; fine grey wares; Black-Burnished 2; sandy grey wares; Rettendon wares; kiln fabric (GZ6)

Phases: 3, 4, 5, 6, 7

Unclassified B4s account for 15.36 EVEs

B4a shallow; Fig. 93.117–18; *Col* 38/Chelmsford B2; (GG1, GZ1, GZ6); 3, 4, 5, 6; 1.91 EVEs

B4b small version; Fig. 93.119; Single example; GZ1; modern

B4c miscellaneous forms; Fig. 93.122–126; some, *cf.* Chelmsford B4; (DC, GG1, GZ1, GZ6); 3, 5, 6, 7; 1.1 EVEs

B4d dishes with curved walls; Fig. 93.120–21; (CN1, GG1, GF); 6, 7; 0.27 EVEs

B4e coarse, thick-walled form; Fig. 93.128; Single example; GG1; 7; 0.21 EVEs

B5, flange-rimmed dishes

Fabrics: Nene Valley colour-coat; Hadham oxidised wares; DD; DZ; fine grey wares; Black-Burnished 2; Alice Holt ware; sandy grey wares; Rettendon wares; kiln fabric (GZ6); Late shell-tempered ware

Phases: 4, 5, 6, 7

Unclassified B5s account for 38.95 EVEs

NB: Dishes like Fig. 94.131–6 are not represented in the Chelmsford form series. Their internally concave walls mark them out as different from Chelmsford B6. [CT–W]

B5a 'incipient flange' type; Fig. 94.129; Chelmsford B5; (GZ1); 7; 0.26 EVEs

B5b as B5a; Fig. 94.130; *Col* 304/cf. Chelmsford B5.2. One example; GB2; 7; 0.13 EVEs

B5c deep forms, with internally concave walls; Fig. 94.131–33; (GG1, HF2, GZ1); 4, 5, 6, 7; 0.88 EVEs

B5d a more sinuous profile than B5c; Fig. 94.134–36; (GG1, GZ1); 6, 7; 1.02 EVEs

B5e unclassified; B5c/B5d type; Single example; GR; 7; 0.17 EVEs

B5f Late shell-tempered ware types; Fig. 95.148; (*different* from Chelmsford B5.3; (HS2); 6, 7; 0.20 EVEs

B5g Late shell-tempered ware types; Fig. 95.149; with neck constriction. Single example; HS2; 7; 0.17 EVEs

B5h miscellaneous forms; Fig. 94.138–143; some, *cf.* *Col* 305A/Chelmsford B6. Internal wavy line on No. 138a. Hadham feature; (GB2, GG1, GR, GZ1); 5, 6, 7; 5.95 EVEs

B5j curved wall forms; Fig. 94.144; Single example; GZ1; 7; 0.09 EVEs

B5k/l/m B5 variants; Fig. 94.145–6/Fig. 103.147

B5k single example; GZ1; 7; 0.16 EVEs

B5l single example; GZ1; 7; 0.11 EVEs

B5m single example

B5n flange-rimmed dish/bowl; NV 79; (EE); 6, 7; 1.54 EVEs

B5p dish with curved flanged rim; Chelmsford C2. Single example; GF; 3; 0.05 EVEs

Bowls (B2)

(Figs 95–96)

Fabrics: Nene Valley colour-coat; Oxfordshire red colour-coat; Hadham oxidised wares; Oxfordshire white-slipped red ware; CZ; DD; DZ; Oxfordshire 'parchment' ware; fine grey wares; Alice Holt ware; sandy grey wares; grog-tempered wares.

Phases: 3, 4, 5, 6, 7

Unclassified B2s account for 2.82 EVEs

Among the unclassified bowls in Fig. 95, No. 156 shows the grooves and dimples of 'Romano-Saxon' decoration while No. 154 is an example in Alice Holt ware.

B2a grooved, flat-topped rim; Fig. 95.150; Chelmsford C16. Single example; GZ1; 3; 0.22 EVEs

B2b wide-mouthed with flat-topped rim; Fig. 95.151; Narrows towards base. Single example; GZ1; 6; 0.21 EVEs

B2c wide-mouthed with beaded rim; Fig. 95.152; Single example; DC; 7; 0.1 EVEs

B2d small bowl with beaded rim; Fig. 95.153; *cf.* NV 85. Single example; CT; 6–7; 0.17 EVEs

B2e necked bowl with out-turned rim; Fig. 95.157; Oxford C75–79/Chelmsford E4.2; (CN1); 6, 7; 0.61 EVEs

B2f wall-sided carinated bowl; Fig. 95.158–160; Oxford C84/Chelmsford C25; (CN1); 7; 0.35 EVEs

B2g shallow bowl with out-turned rim; Fig. 96.163; Oxford C49–50/NV 81 & 98/Chelmsford B10; (EE, CN1, GF); 6, 7; 1.16 EVEs
B2h shallow bowl with outcurved rim; Fig. 96.164; *cf.* Oxford C48/Chelmsford B10; (CN1); 6, 7; 0.3 EVEs
B2j wide-mouthed dish/bowl with bifid rim; Fig. 96.165; Single example; EE; 7; 0.13 EVEs
B2k wall-sided bowl moulded at rim; Fig. 95.162; Oxford P24; (CN2, EF); 7; 0.21 EVEs
B2l wide-mouthed dish/bowl, short everted rim; Fig. 95.155; Single example; DC; u/s
B2m hemispherical bowl imitating f.38; Oxford C51–52/NV 83/Chelmsford C8; (EE, CN1, CZ); 5, 6, 7; 2.09 EVEs
B2n wall-sided, carinated bowl; Oxford C81–83/Chelmsford C25; (EE, CN1); 7; 0.22 EVEs
B2p 'Castor box'; NV 89/*Col* 308/Chelmsford C18. (see also L5); (EE); 5, 6, 7; 0.81 EVEs

Mortaria (B3)
(Figs 97–99)
Fabrics: Oxfordshire red colour-coat; Hadham oxidised wares; EZ; Oxfordshire white-slipped red ware; East Anglian mortaria fabrics (DM, FM, GM); Nene Valley mortaria; Oxfordshire white ware; FZ; sandy grey ware; Rettendon ware
Phases: 3, (4), 5, 6, 7
B3a collared; Fig. 97.166; (FM3); 3; 0.05 EVEs
B3b collared, with grooved upper rim surface; Fig. 97.167–69; *Col* 499; (FM3, FZ); 4–5, 4–7; 0.39 EVEs
B3c collared, with grooved internal rim surface; Fig. 97.170–171; *Col* 498/Chelmsford D11.1; (FM1, FM3); 4–5, 6; 0.15 EVEs
B3d collared, with inbent bead rim; Fig. 97.172; (FM5); 3; 0.27 EVEs
B3e collared; Fig. 97.173; *cf. Col* 504; (FM3); 3; 0.09 EVEs
(B3f) covers unclassified collared types; (DM1, FM1, FM2, FM3); 0.75 EVEs
B3g flange-rimmed; Fig. 98.176, 178, 180; *cf.* Oxford M22; (DC, FF, FM3); 7; 0.78 EVEs
B3h flange-rimmed; Fig. 98.177; Oxford M18/Chelmsford D5.1; (FF); 6, 7
B3j flange-rimmed; Fig. 98.174, 179, 181; Oxford M22/cf. Chelmsford D7; (FK1, FF); 5, 6, 7; 0.83 EVEs
B3k flange-rimmed; Fig. 98.182; Oxford M23; (FF); 7; 0.05 EVEs
B3l flange-rimmed; Fig. 98.183–184; Oxford WC7; (CN2, DM1, FF); 6, 7; 1.8 EVEs
B3m flange-rimmed; Oxford WC5; (CN2); 6, 7; 0.86 EVEs
B3n flange-rimmed; Oxford C100.2/Chelmsford D6; (CN1); 6; 0.24 EVEs
B3p flange-rimmed; Fig. 99.185; Single example; GM5; u/s
(B3q) covers unclassified flange-rimmed types; (DC, EZ, CN2, FF, FZ, FM2, FM3, GM2); 1.03 EVEs
B3r reeded-rimmed; Fig. 99.188–190; NV 102/Chelmsford D14; (FK1, FF, GM3, GM5); 5, 6, 7; 1.44 EVEs
Fig. 99.186–187, 193; Non-NV variant
B3s wall-sided, externally concave wall; Fig. 99.192; Hull 1963, fig. 94.50/*cf.* Chelmsford D13; (FM3); 6; 0.13 EVEs
B3t wall-sided, straight 'wall'; Fig. 99.191, 193; *Col* 501/Chelmsford D13; (FM3); 4–5, 6; 0.21 EVEs
B3u wall-sided, straight wall; Fig. 99.194; Hadham form; (DC); 7; 0.18 EVEs
B3v wall-sided; Oxford C97–98/Chelmsford D12.2; (CN1); 6, 7; 0.23 EVEs
(B3w) covers unclassified wall-sided types(FK2)–0.05 EVEs
B3x ?mortaria — flanged; Fig. 99.195–97; *cf.* B3g/B3k/B3l; (GR, HF2, GZ1); 6, 7; 0.46 EVEs
B3y ?mortaria — reeded; Fig. 99.198–99; *cf.* B3r; (GG3, GZ1); 6, 7; 0.21 EVEs

Beakers (C1)
(Fig. 100)
Fabrics: Colchester colour-coat; Nene Valley colour-coat; Oxfordshire red colour-coat; Central Gaulish Rhenish ware; East Gaulish Rhenish ware; EZ; CZ; DD; DZ; North Kent grey wares; fine grey wares; sandy grey wares; kiln fabric (GZ6); grog-tempered ware
Phases: 3, 4, 5, 6, 7
(forms C1a to C1e were created for early forms, *i.e.* Phase 2.3, butt-beakers and the like)
C1f plain everted-rim beaker; Fig. 100.200; *cf.* Chelmsford H1; (GZ1); 7; 0.29 EVEs
C1g cornice-rimmed, bag-shaped; Fig. 100.207; single miniature example, see Pottery of Intrinsic Interest below; 1.00 EVEs
C1h cornice-rimmed, unclassified; Fig. 100.205); *cf.* Chelmsford H20–22; (CJ, CZ, GZ1); 3, 4, 5, 6; 0.98 EVEs
C1j plain-rimmed, unclassified; Fig. 100.204; (CJ, CT/EE, EZ, CZ, GZ1, GZ6); 3, 4, 5, 6, (7); 2.06 EVEs
C1k bead-rimmed; Fig. 100.202; (GD); 5; 0.13 EVEs
C1l bead-rimmed, necked forms; Fig. 100.206; (GZ1); 5, 7; 0.09 EVEs
(C1m) covers unclassified bead-rimmed types; (CJ, CT/EE, CH, CZ, GF, GZ1); 3.35 EVEs
C1n high-shouldered, everted-rim beaker; Fig. 100.201; (GD); 3; 0.29 EVEs
C1p 'poppy head' beakers; Chelmsford H6; (GF); (3), 4, 6; 0.00 EVEs
C1q everted-rim beakers; (GZ1); 7; 0.18 EVEs
C1r ledge-rim beakers; (HG6); 6, 7; 0.20 EVEs

Cups (C5)
(Fig. 101.208)
Single example of a handled cup; cf. Chelmsford N1 (funnel: Going 1987, fig. 18).
Fabric: GZ1
Phase: 7; 0.16 EVEs

Cups/Bowls (C6)
(Fig. 101.209–10; 0.58 EVEs)
Two examples (GD/Phase 7 and GZ1/5.7) of C6a, with no neck Fig. 101.210. One example, in GZ6 from Phase 5, of C6b, the necked variant Fig. 101.209

Bowl-jars (D2)
(Fig. 102)
Fabrics: Oxfordshire red colour-coat; Hadham oxidised wares; sandy grey wares; kiln fabric (GG6); Rettendon wares; grog-tempered wares
Phases: 3, (4), 5, 6, 7
D2a bead-rimmed with decorated neck; Fig. 102.213–14; Chelmsford E5.4; (GG1, GZ1); 3, (6), 7; 0.45 EVEs
D2b bead-rimmed and necked; Fig. 102.215; carination below. *Cf.* Chelmsford E5; (GZ1); 7; 0.18 EVEs
D2c bead-rimmed, sinuous profile; Fig. 102.216–18; without a neck. *Cf.* Chelmsford E5; (GG1, GZ1); 6, 7; 0.5 EVEs
D2d *cf.* D2c; Fig. 102.219; *cf.* Chelmsford E5.4. Single example; GG1; 7; 0.11 EVEs
D2e ledge-rimmed; Fig. 102.211; Chelmsford E2; (GG1, GZ1); 3; 0.75 EVEs
D2f *cf.* D2e with horizontal ledge-rim; Fig. 102.212; Single example; GZ1; 4–5; 0.21 EVEs
D2g rounded profile and no neck; Fig. 102.220–22; (DC, GG1, GZ1); 3, 6, 7; 0.29 EVEs
D2h rounded profile, necked, beaded rim; Fig. 102.223–27; Chelmsford E6; (CN1, DC, GG1, HF2, GZ1); 3–5, 4–5, 5, 6, 7; 3.01 EVEs

Jars (D3–D9)
(Figs 103–107)
Fabrics: Nene Valley colour-coat; Oxfordshire red colour-coat; Hadham oxidised wares; CZ; DD; DZ; Portchester D ware; fine grey wares; Black-burnished 2; Alice Holt ware; storage jar fabrics; sandy grey wares; kiln fabrics; Rettendon wares; Late shell-tempered ware; grog-tempered wares; Mayen ware; HZ
(form D1 was created for early Roman forms, *i.e.* Phase 2.3)

D3, bead-rimmed jars
Fabrics: Nene Valley colour-coat; Oxfordshire red colour-coat; Hadham oxidised wares; CZ; DD; DZ; Portchester D ware; fine grey wares; sandy grey wares; kiln fabrics (GG6, GZ6); Rettendon wares; Late shell-tempered ware; grog-tempered wares
Phases: 3, 4, 5, 6, 7
Unclassified D3s account for 111.66 EVEs.
D3a cordoned neck and carinated profile; Single example; GZ1; 6; 0.1 EVEs
D3b cordoned neck; Fig. 103.229–31; *cf.* Chelmsford G19; (GZ1, GZ6); 3, 5, 6; 1.04 EVEs
D3c carinated form; Fig.103.232; maximum girth greater than rim. Single example; GZ1; 5; 0.07 EVEs
D3d not carinated but otherwise as D3c; Fig. 103.233; Single example; GZ1; 5–7; 0.25 EVEs
D3e S-shaped profile; Fig. 103.234–35; (GF, GG1, GZ1); 2.3, 6–7, 7; 0.49 EVEs
D3f S-shaped profile and high shoulder; Fig. 103.236–37; *cf.* Chelmsford G24; (GG3, GR, HF2); 7; 0.67 EVEs
D3g *cf.* D3f; Fig. 103.238; more ?barrel-shaped profile. Single example; DZ; 7; 0.15 EVEs
D3h high shouldered with almost no neck; Fig. 103.239–41, 243/Fig. 104.244–6, 258; Chelmsford G24; (GG1, GG3, GG6, GR, HF2, GZ1); 3, 5, 6, 7; 3.81 EVEs

D3j short-necked forms; Fig. 104.247–53; *cf.* Chelmsford G24; (GG1, GG3, GR, HF2, GZ1); 3, 4, 5, 6, 7; 2.67 EVEs
D3k necked forms; Fig. 103.242/Fig. 104.254–7, 259–62; mainly *cf.* Chelmsford G24; (GG1, GG3, GG6, GR, HF2, GZ1); 3, (4), 5, 6, 7; 7.56 EVEs
D4 bifid-rimmed jars; Fig. 105.263–64; Chelmsford G28/NV 70 and 90; (EE, DC, HG1, GG3, GG6, HF2, GZ1); 3, 5, 6, 7; 1.95 EVEs

D5, everted-rimmed jars
Fabrics: DD; DZ; Black-burnished 2; storage jar fabrics; sandy grey wares; kiln fabrics (GG6/GZ6); Rettendon wares; Late shell-tempered ware; grog-tempered wares
Phases: 3, 4, 5, 6, 7
Unclassified D5s account for 15.45 EVEs.
D5a Fig. 105.265–267; *Col* 278/Chelmsford G9; (GG1, GZ1, GZ6); 3, 5, 7; 0.67 EVEs
D5b *cf.* D5a with short everted rim; Fig. 105.268; *cf.* Chelmsford G8; (GG1, GZ1); 3; 0.3 EVEs
D5c *cf.* D5a with neck; Fig. 105.269–70; (HG2, GG1, GZ1); 4–5, 6, 7; 0.6 EVEs

D6, ledge-rimmed jars
Fabrics: sandy grey wares; kiln fabric (GG6); grog-tempered wares; Mayen ware
Phases: 3, 4, 5, 6, 7
Unclassified D6s account for 8.15 EVEs
D6a Fig. 105.271; (HM); 7; 0.57 EVEs
D6b no neck and inbent rim; Fig. 105.272; *cf.* Chelmsford G5.2. Single example; GG1; 6; 0.11 EVEs
D6c wide-mouthed; Fig. 105.273–75; (200mm or more in diameter); (GG3, GZ1); 3, 6, 7; 0.92 EVEs
D6d round-shouldered profile; Fig. 105.276–79; Chelmsford G5.5; (GG6, GZ1); 5, 6, 7; 1.71 EVEs
D6e Fig. 105.280–282; these show a rather more straight-sided profile than D6d; *cf.* Chelmsford G7; (GG1, GZ1); 3, 6, 7; 0.98 EVEs

D7, jars with inbent rims
Fabrics: sandy grey wares; grog-tempered wares
Phases: 3, 5, 6, 7
Unclassified D7s account for 0.33 EVEs
D7a with stab-decorated shoulder; Fig. 105.283–84; Chelmsford G42; (GG1, GZ1); 3, 6, 7; 0.94 EVEs
D7b forms other than D7a; Fig. 105.285; compares with Chelmsford G42.1/2 (Going 1987, fig. 12); (GG1); 5; 0.08 EVEs

D8, jars with frilled rims
Sole representative Fig. 106.286 a *Col* 290 face-pot.
Fabrics: (CZ), GZ1
Phases: 6, 7; 0.34 EVEs
The rest of Fig. 106 is given over to other jar forms, some in fabrics not otherwise represented above (*e.g.* Portchester D ware, Nos 296–297) and others sometimes unclassifiable in detail (*e.g.* No. 298, with its 'Romano-Saxon' decoration, *cf.* Chelmsford G31).

D9, large storage jars
(Fig. 107 *cf.* Chelmsford G44/45, except Fig. 107.306)
Fabrics: Alice Holt ware; storage jar fabrics (HG1, HG2, HG3, HG7, HG8 GZ1, HG6, HZ)
Phases: 3, 4, 5, 6, 7; 7.85 EVEs

Flagons (E)
(Fig. 108)
Fabrics: Nene Valley colour-coat; Oxfordshire red colour-coat; Hadham oxidised wares; cream-slipped sandy red wares; red wares; buff wares; white wares; grey wares
Phases: 2.3, 3, (4), 5, 6, 7
E1 ring-necked flagons; *cf. Cam* 154 and 155/Chelmsford J3; (DD, DE, GZ1); 3, 6, 7; 0.68 EVEs
E2 plain-rimmed flagons; [no examples]
E3 bead-rimmed flagons; Fig. 108.312; *cf. Col* 377/NV 67; (EE); 7; 1.00 EVEs
E4 flange-rimmed flagons; Fig. 108.308; (CT); 4–5; 1.00 EVEs
E5 hollow-rimmed flagons; Fig.108.307; *cf. Col* 384; (DE); 2.3; 0.17 EVEs
E6 late Oxfordshire flagon; Fig. 107.309; *cf.* Oxford C13.2; (CN1); 7; 0.19 EVEs
E7 two-handled flagons, Hadham form; Fig. 108.310; (DC); 7; 1.00 EVEs
E8 late Nene Valley spouted flagons; Fig. 108.311; (EE); unstratified

Narrow-necked jars (G)
(Fig. 109)
Fabrics: grey wares; kiln fabric (GG6)
Phases: 3, (4), 5, 6, 7
G1 narrow-necked jars; *Col* 281-type or similar [no examples]
G2 narrow-necked jars; Fig. 109.313; *Col* 281B-type or similar/Chelmsford G38; (GG1); 3; 1.00 EVEs
G3 narrow-necked jar; Fig. 109.315; *cf.* Chelmsford G40; (GG1); 3; 1.00 EVEs
G4 flask type; Fig. 109.316; (GG1); 6; 0.7 EVEs
G5 narrow-necked jars; Fig. 109.314; frilled rim (distinguishable from other jars by the presence of a neck cordon); (GG1); 6; 0.35 EVEs

Miscellaneous forms (C2, C3, H, K)
C2 beakers/bowls; Fig. 110.321; Single example; GZ6; 5; 0.11 EVEs
C3 beakers/jars; Fig. 110.320; Single example; GZ1; 2.3; 0.18 EVEs
H small jars/bowls; Fig. 110.318–319; Single example. (No. 318 not from a quantified context); GR; 5–7; 0.14 EVEs
K strainer bowls; *cf.* Oxford C118. Single example; DC; 7; 0.11 EVEs

Lids (L)
(Fig. 111)
Fabrics: Nene Valley colour-coat; Hadham oxidised wares; grey wares
Phases: (4), 5, 6, 7
L1 plain-rimmed forms; (GG1, GG3, GZ1); 5, 6, 7; 0.34 EVEs
L2 bifid-rimmed form; Fig. 111.323; (GZ1); 7; 0.11 EVEs
L3 bead-rimmed form; (GZ1); 4–5; 0.07 EVEs
L4 'domed' bead-rimmed form; (GZ1); 6; 0.08 EVEs
L5 'Castor box' types; Fig. 111.325; *cf.* NV 73 and 89/Chelmsford K7; (EE); 7; 1.04 EVEs
(L6) a ?lid possibly a bowl form; Fig. 111.324; represented by a single example; DC; 7

Miniature jars (M)
(Fig. 112)
Fabrics: grey wares
Phases: (too few examples for this to be relevant)

Unguentaria (P)
(Fig. 112)
Also known as unguent pots/jars. Single examples only of both the common forms occurred at Ivy Chimneys, in a lower fill of font depression *F2409* and the top fill of depression *F3321*. See also Pottery of Intrinsic Interest, below.
P1 flask type; Fig. 112.331; Chelmsford Q1 & Q3/*Col* 389; (FZ); 6; 0.00 EVEs
P2 jar type; Fig. 112.330; Southwark form II.J; (GZ1); 7; 0.18 EVEs

The Pottery Report Archive contains full details of the illustrated pottery — surface treatment, decoration, modifications and traces of use — written by Catriona Turner-Walker.

Form Series
(Figs 92–112)

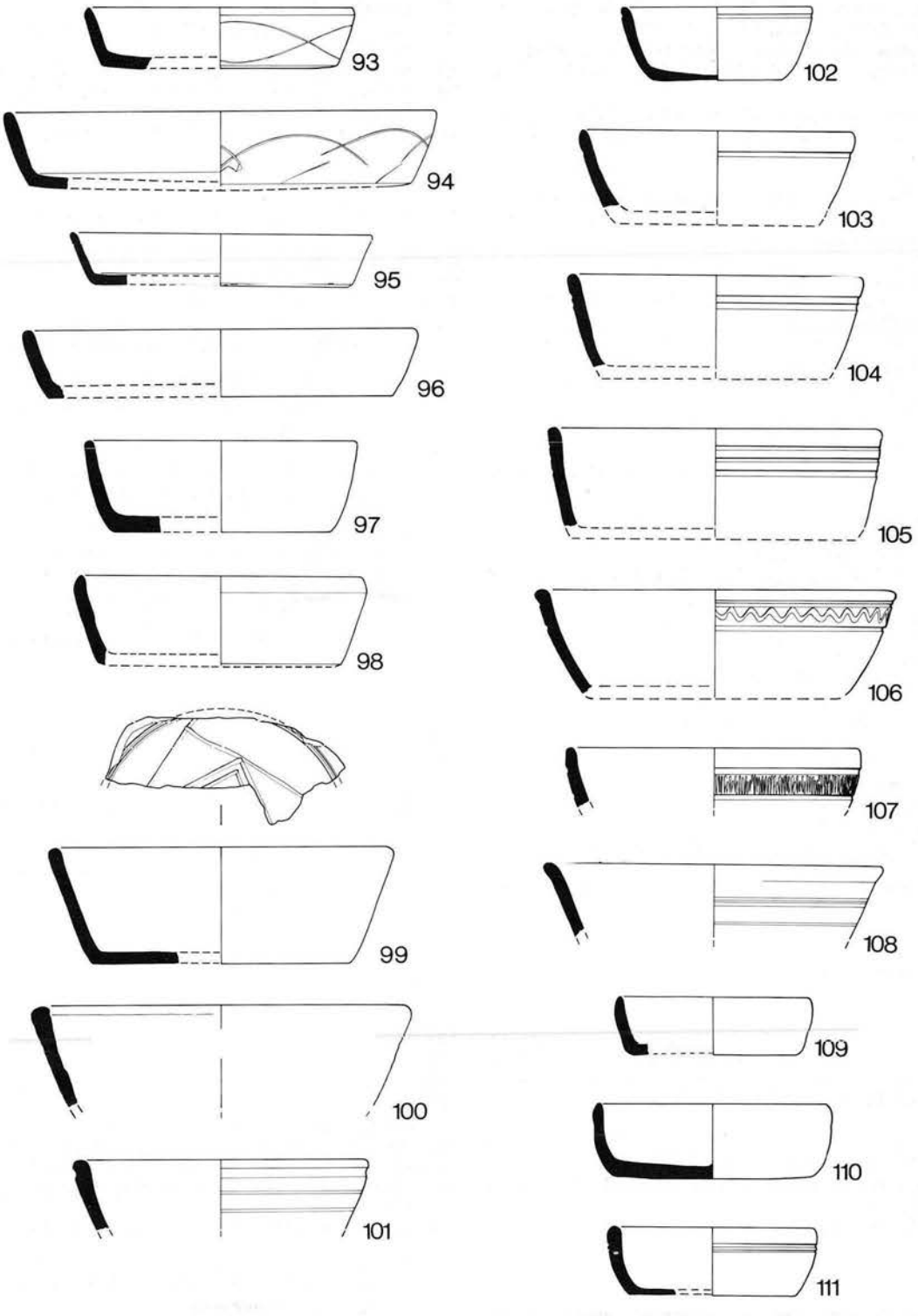


Figure 92 Pottery: Nos 93–111, Dishes (B1). Scale 1:4

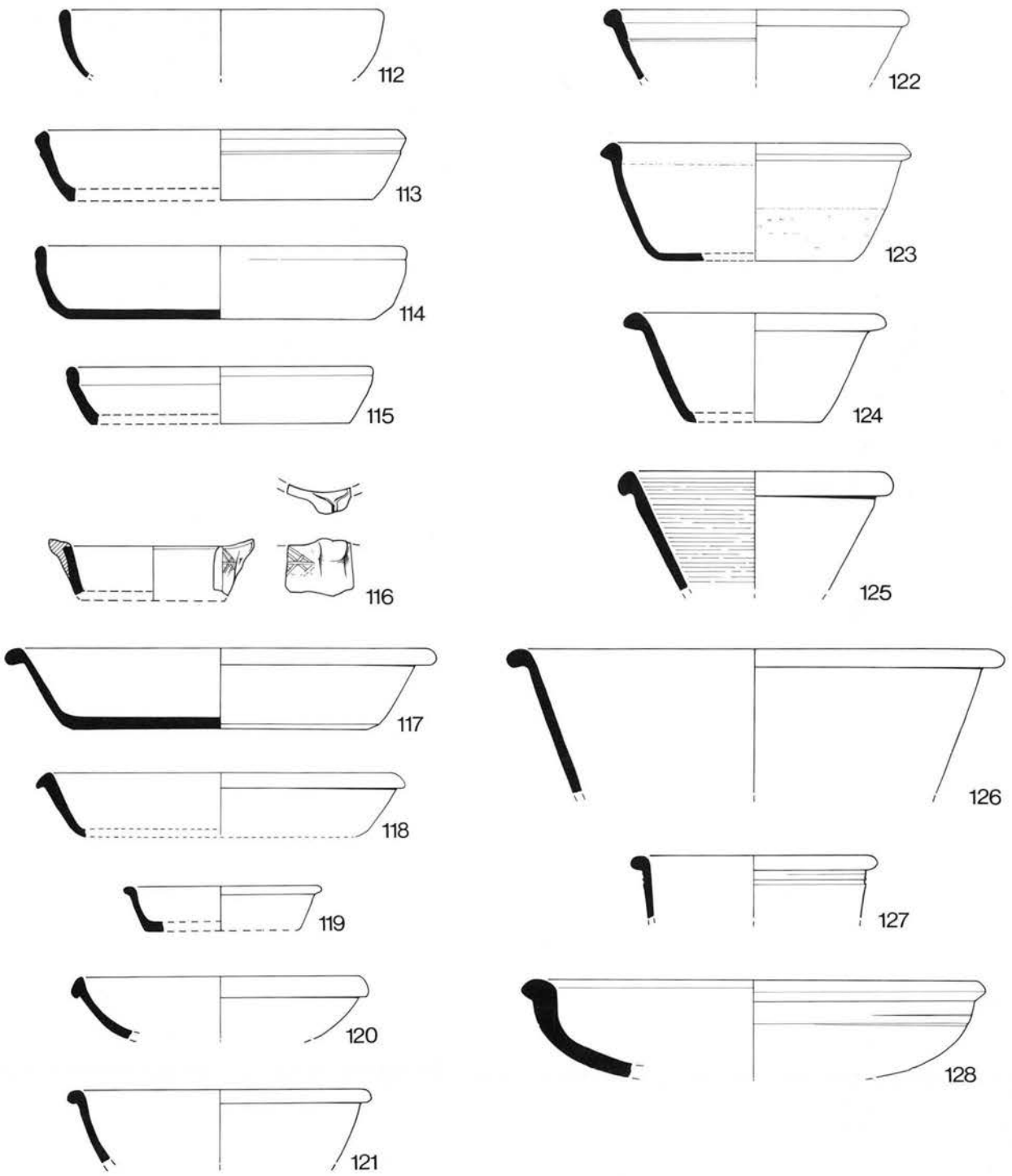


Figure 93 Pottery: Nos 112–128, Dishes (B1; B4). Scale 1:4

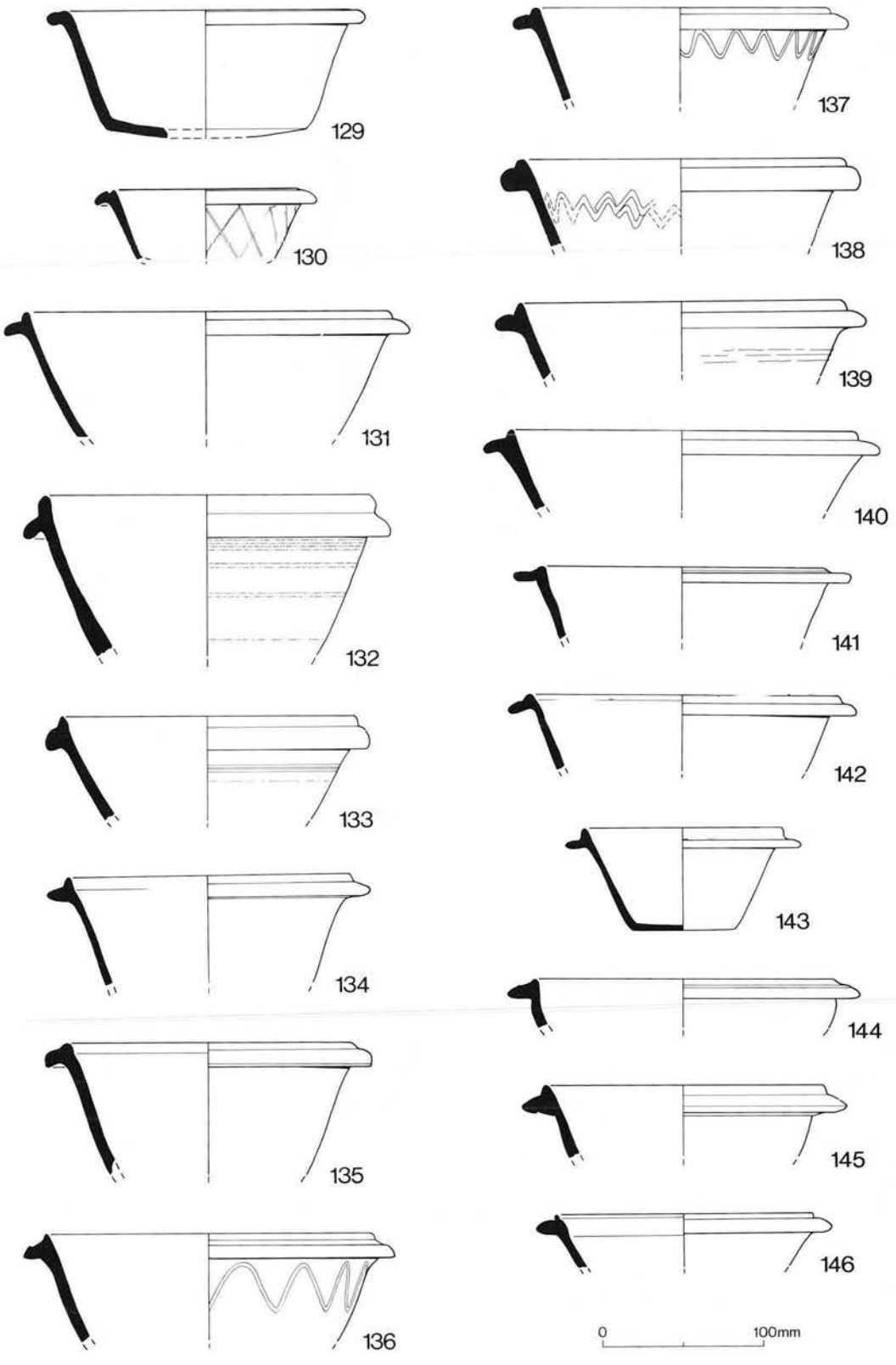


Figure 94 Pottery: Nos 129–146, Dishes (B5). Scale 1:4

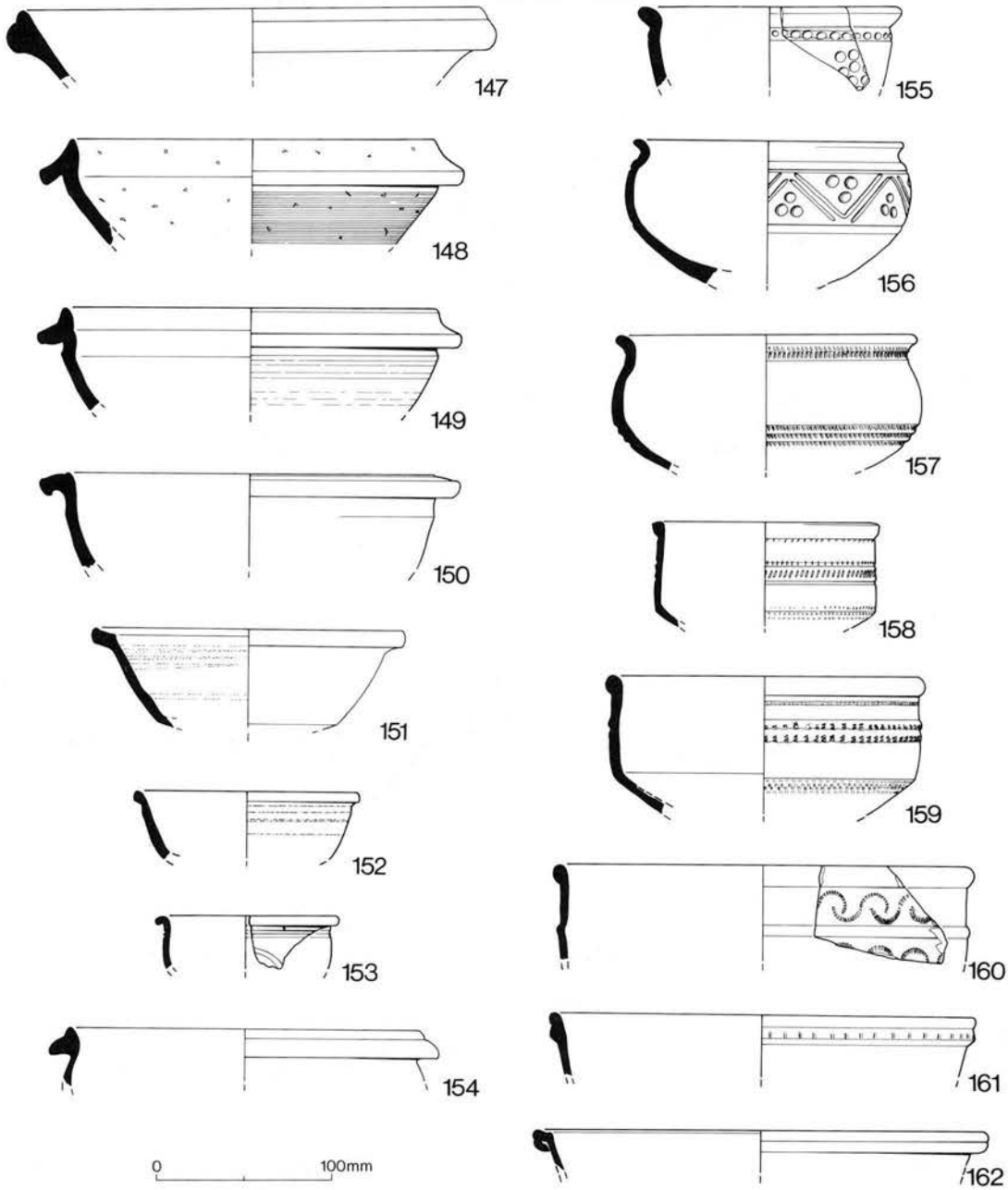


Figure 95 Pottery: Nos 147–162, Dishes (B5), Bowls (B2). Scale 1:4

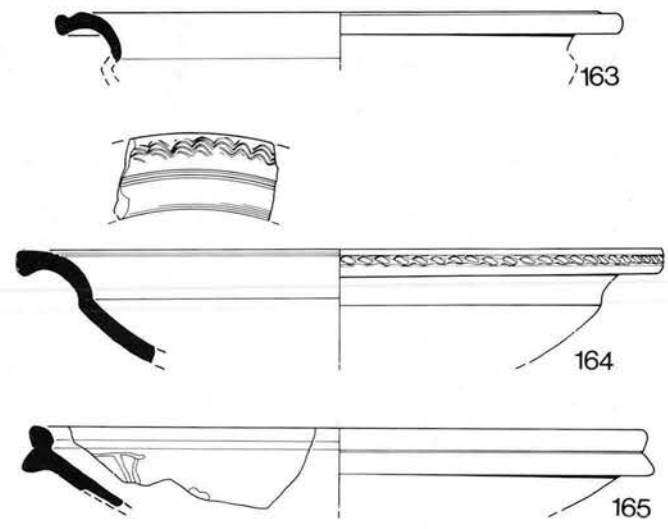


Figure 96 Pottery: Nos 163–165, Bowls (B2). Scale 1:4

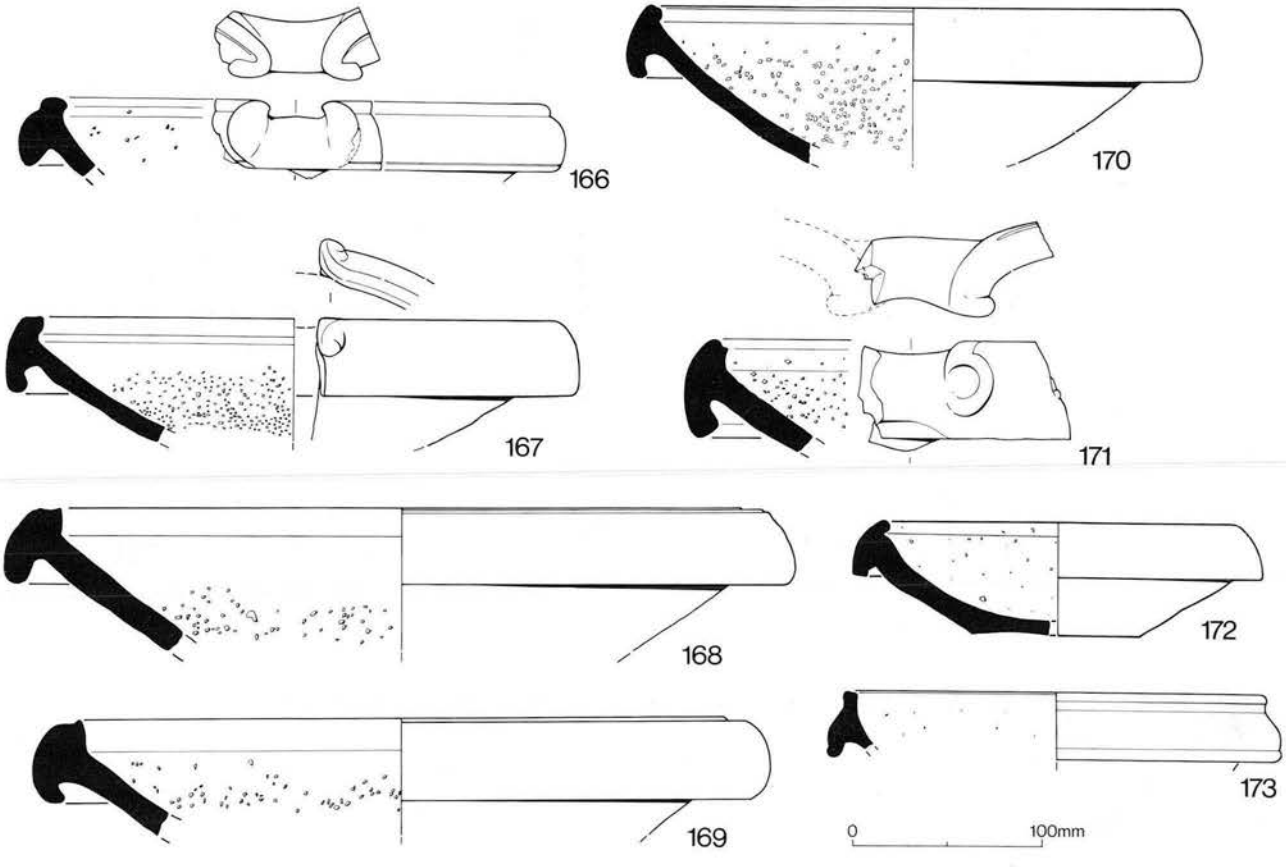


Figure 97 Pottery: Nos 166–173, Mortaria (B3). Scale 1:4

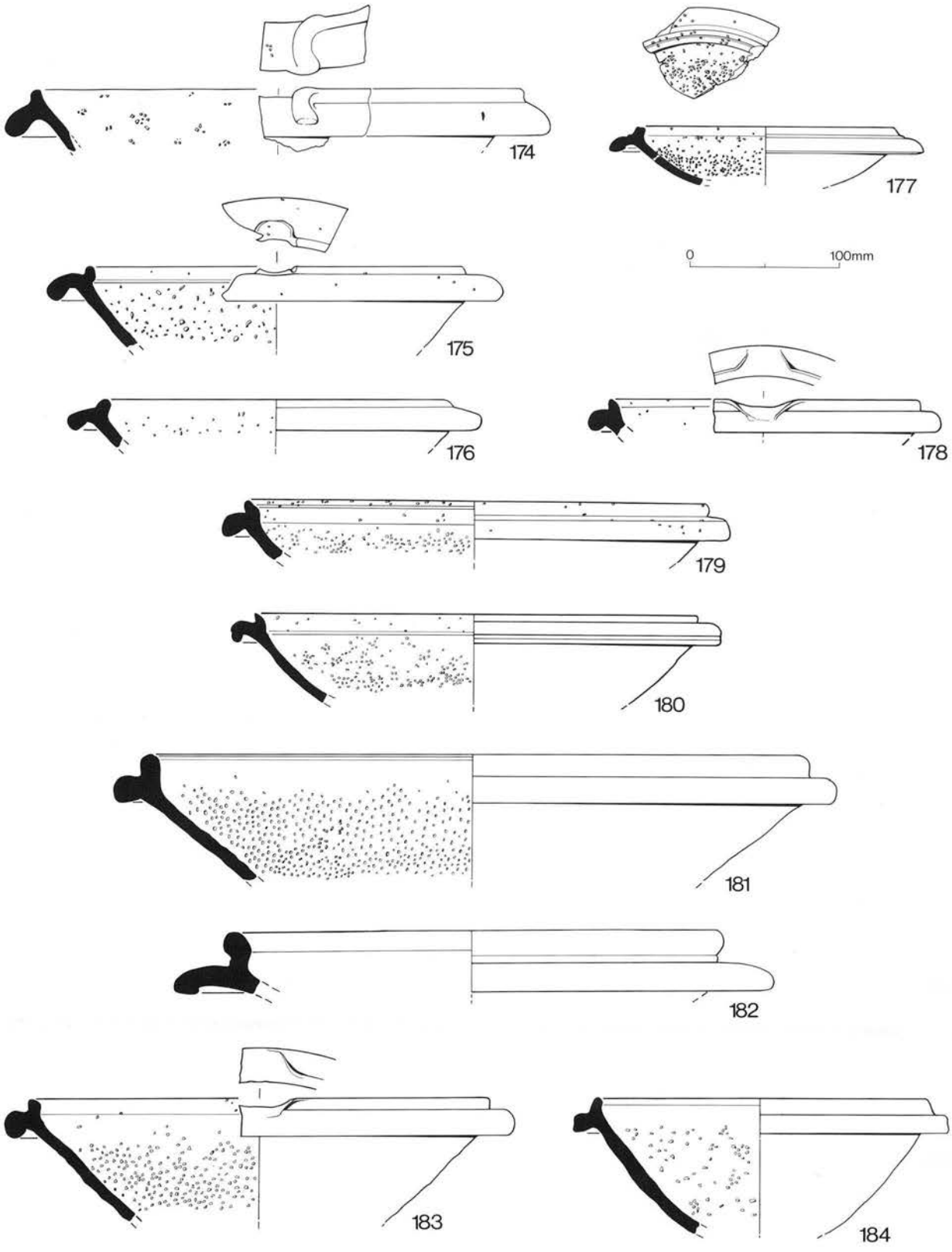


Figure 98 Pottery: Nos 174–184, Mortaria (B3). Scale 1:4

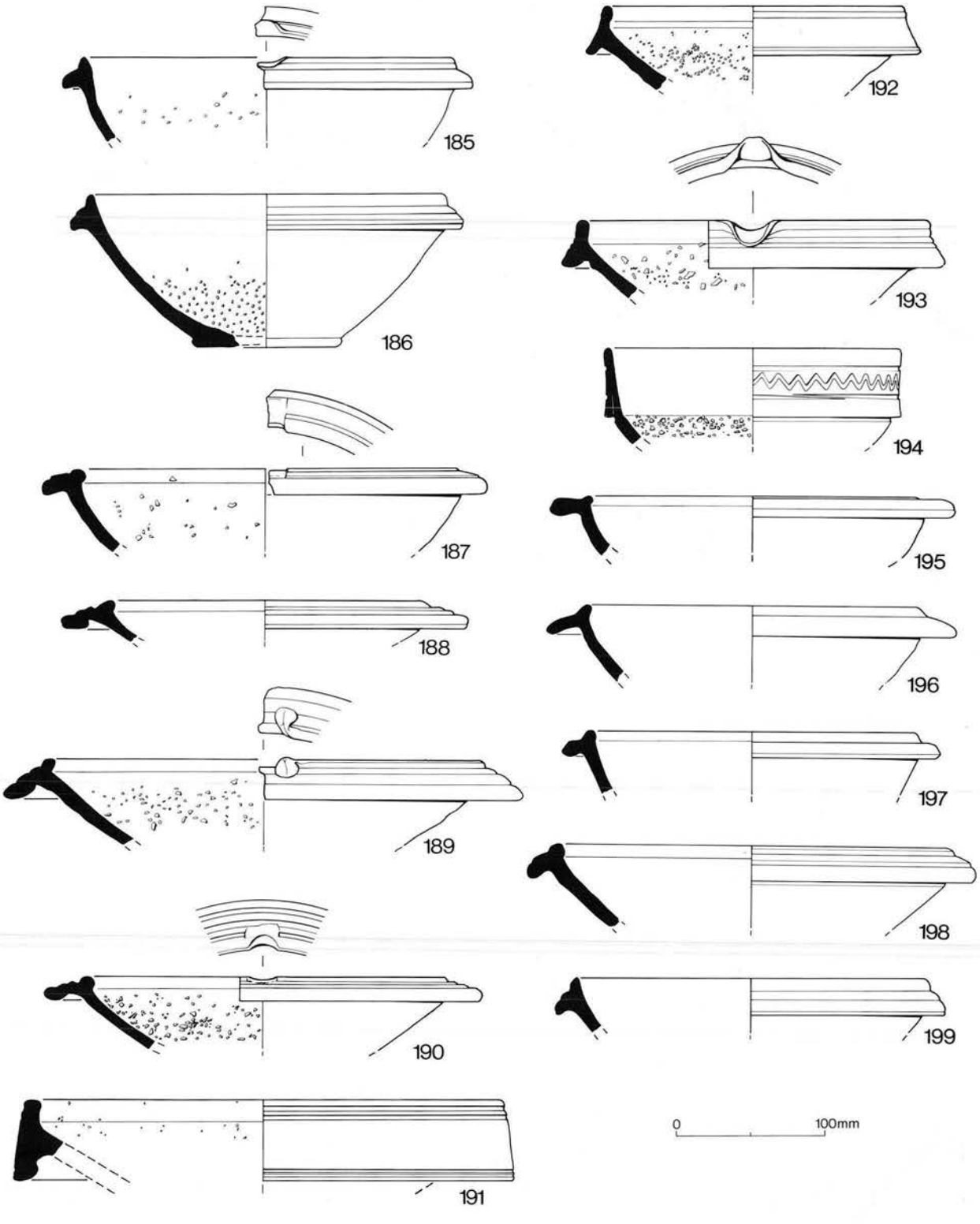


Figure 99 Pottery: Nos 185–199, Mortaria (B3). Scale 1:4

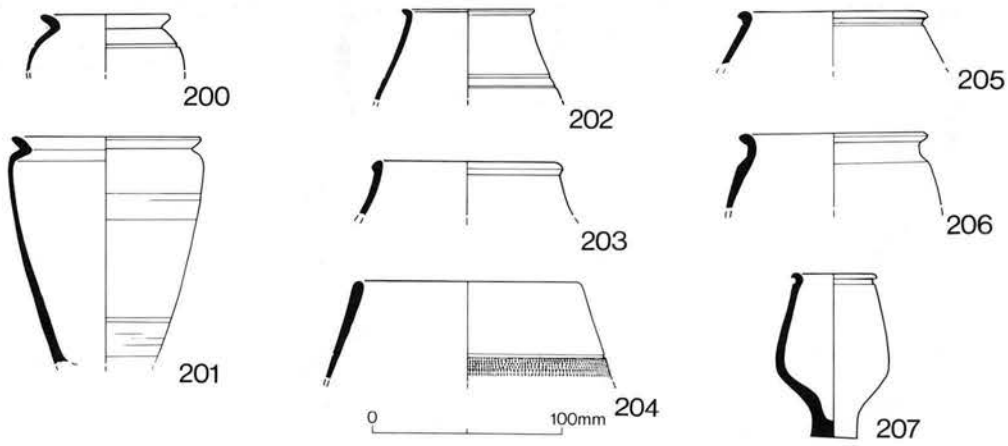


Figure 100 Pottery: Nos 200–207, Beakers (C1). Scale 1:4

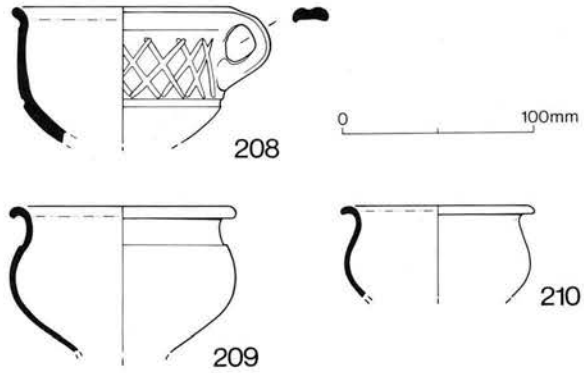


Figure 101 Pottery: Nos 208–210, Cups/Bowls (C5; C6). Scale 1:4

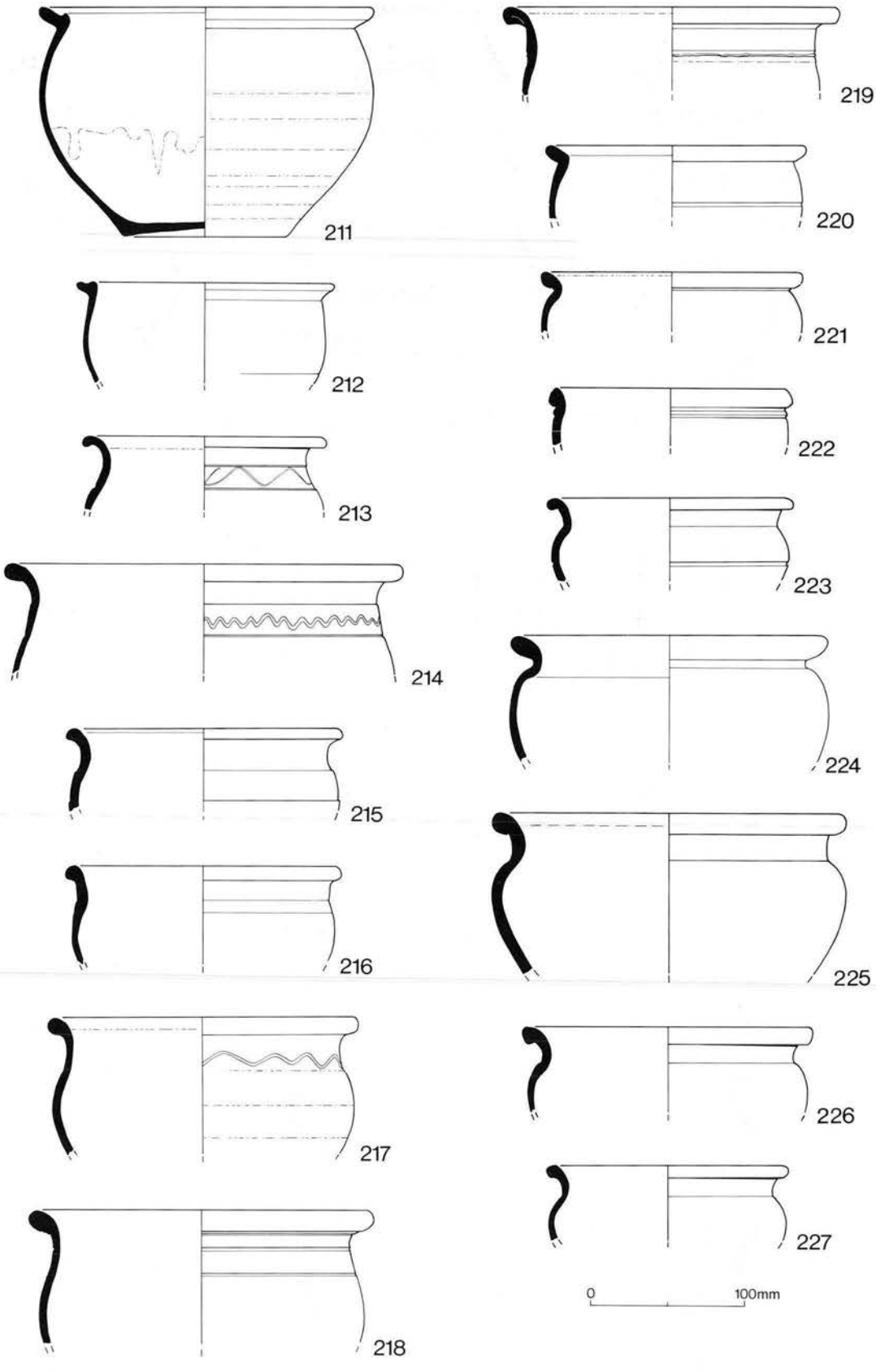


Figure 102 Pottery: Nos 211–227, Jars (D2). Scale 1:4

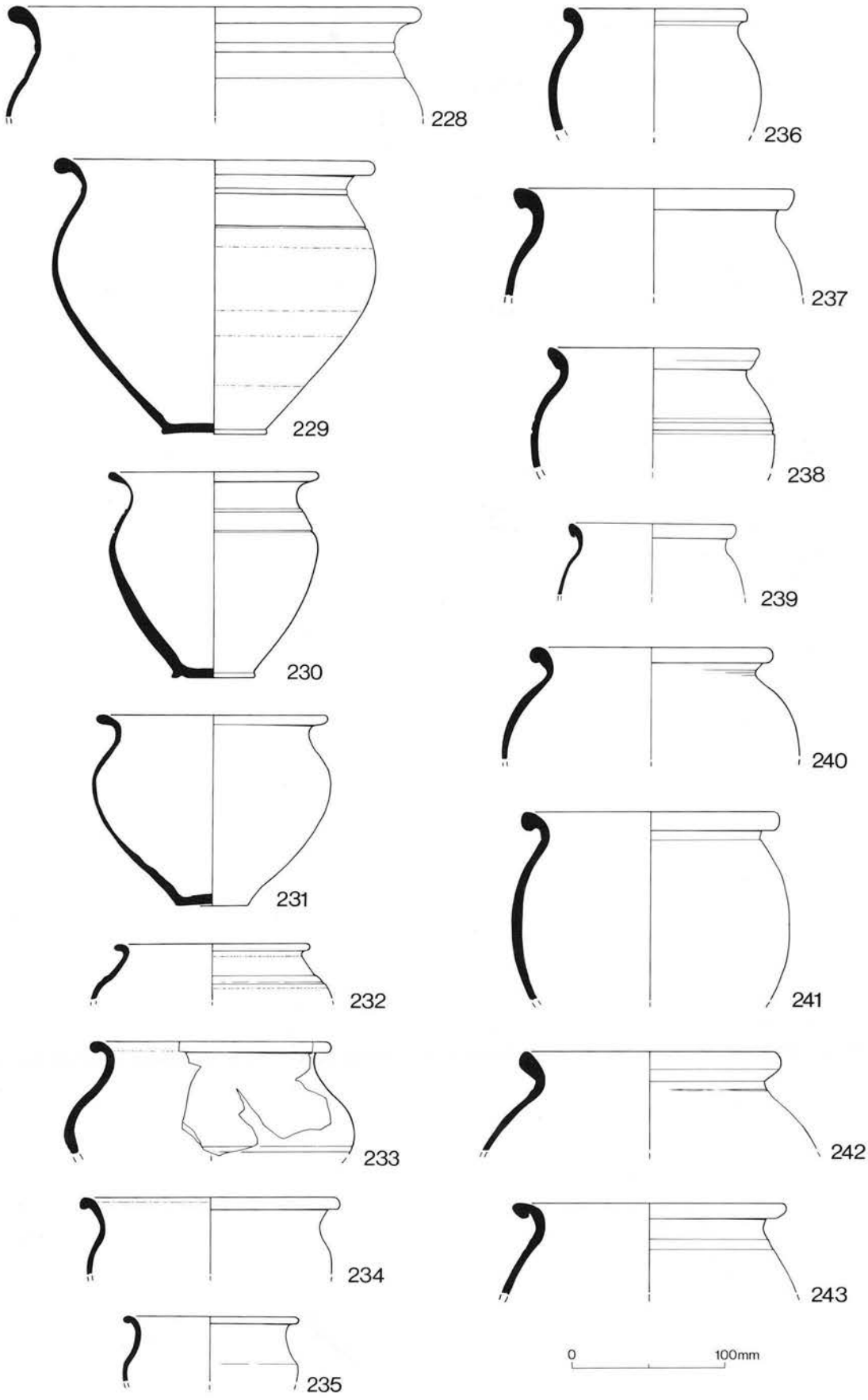


Figure 103 Pottery: Nos 228–243, Jars (D3). Scale 1:4

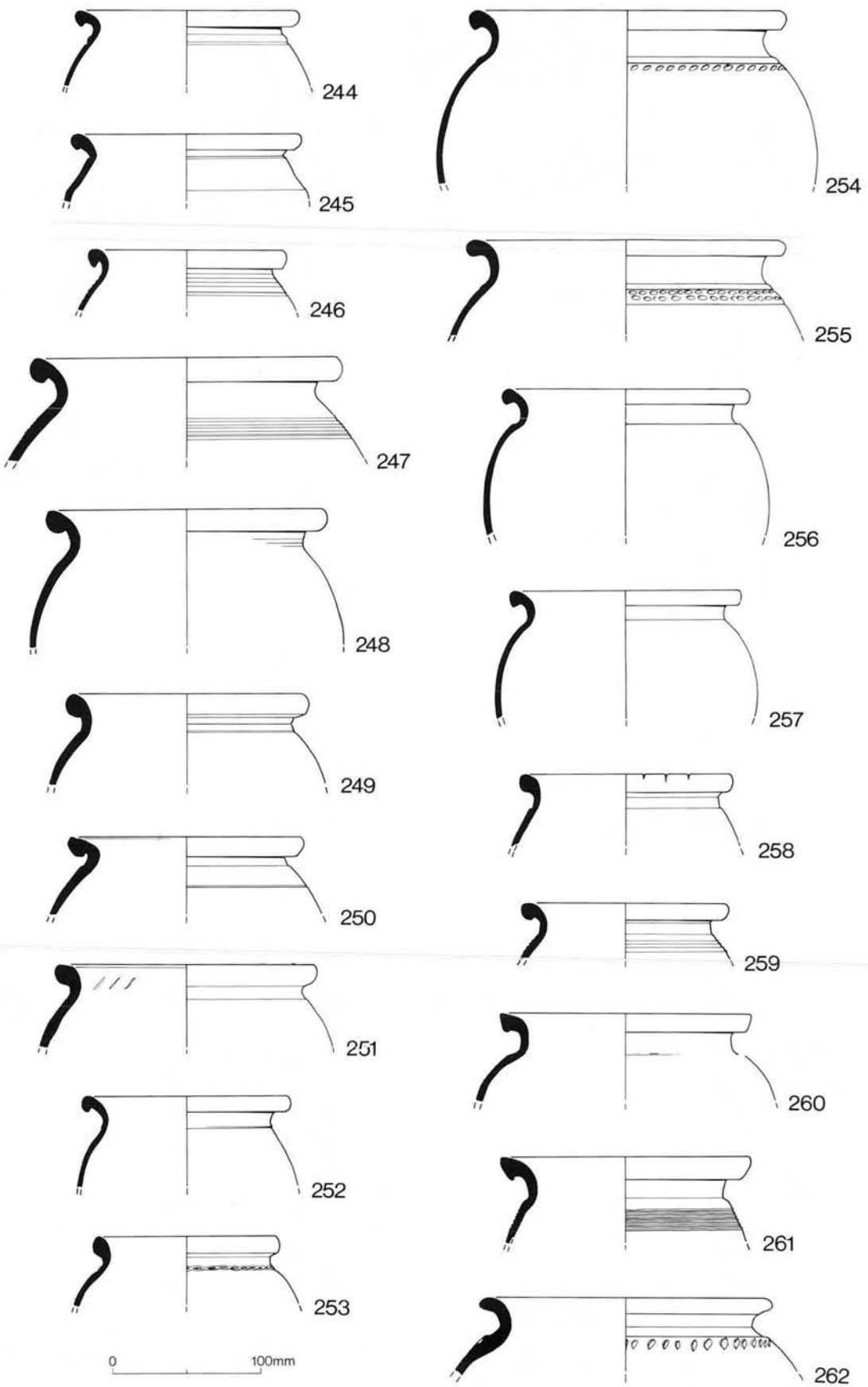


Figure 104 Pottery: Nos 244–262, Jars (D3). Scale 1:4

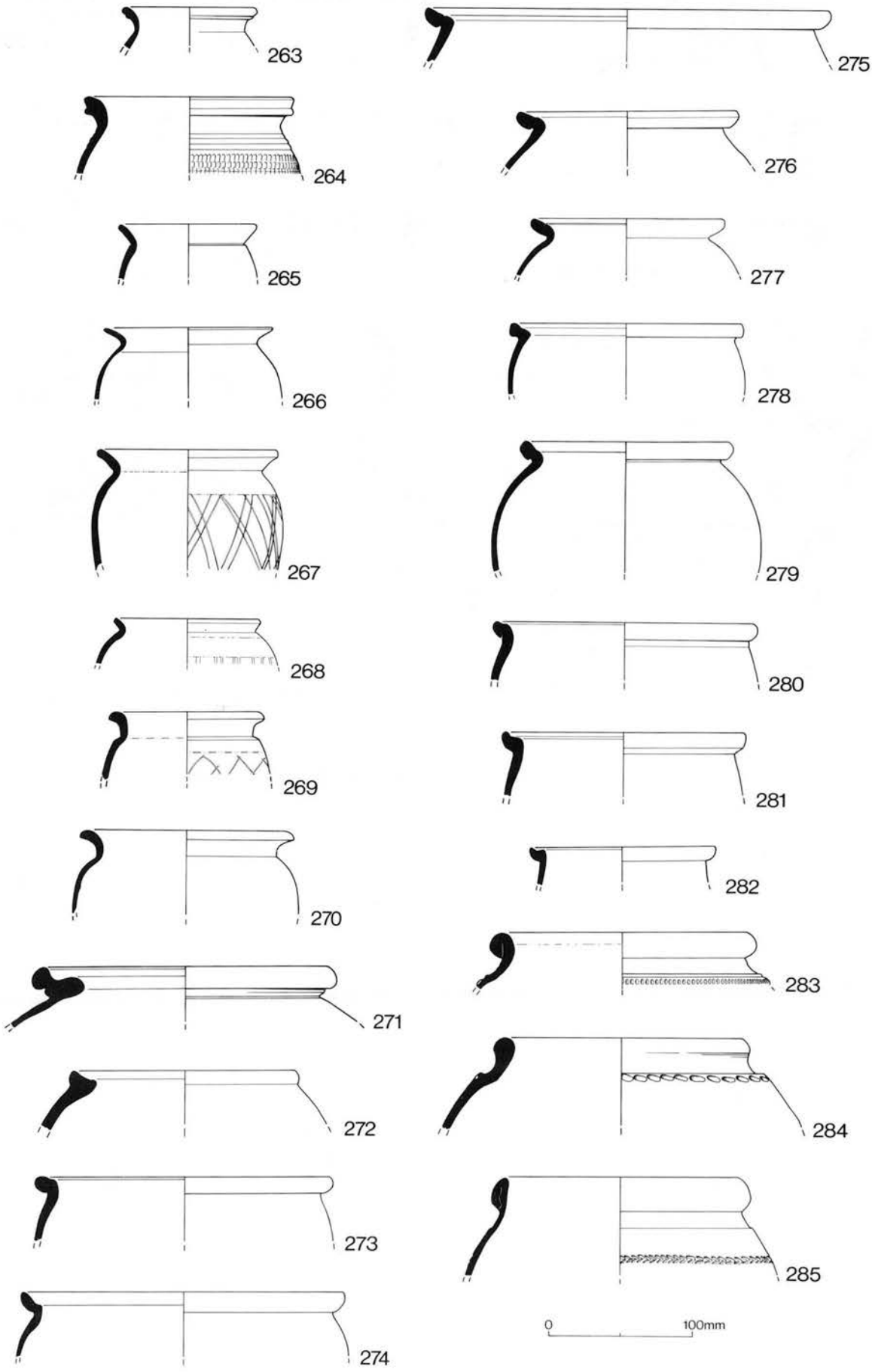


Figure 105 Pottery: Nos 263–285, Jars (D4–7). Scale 1:4

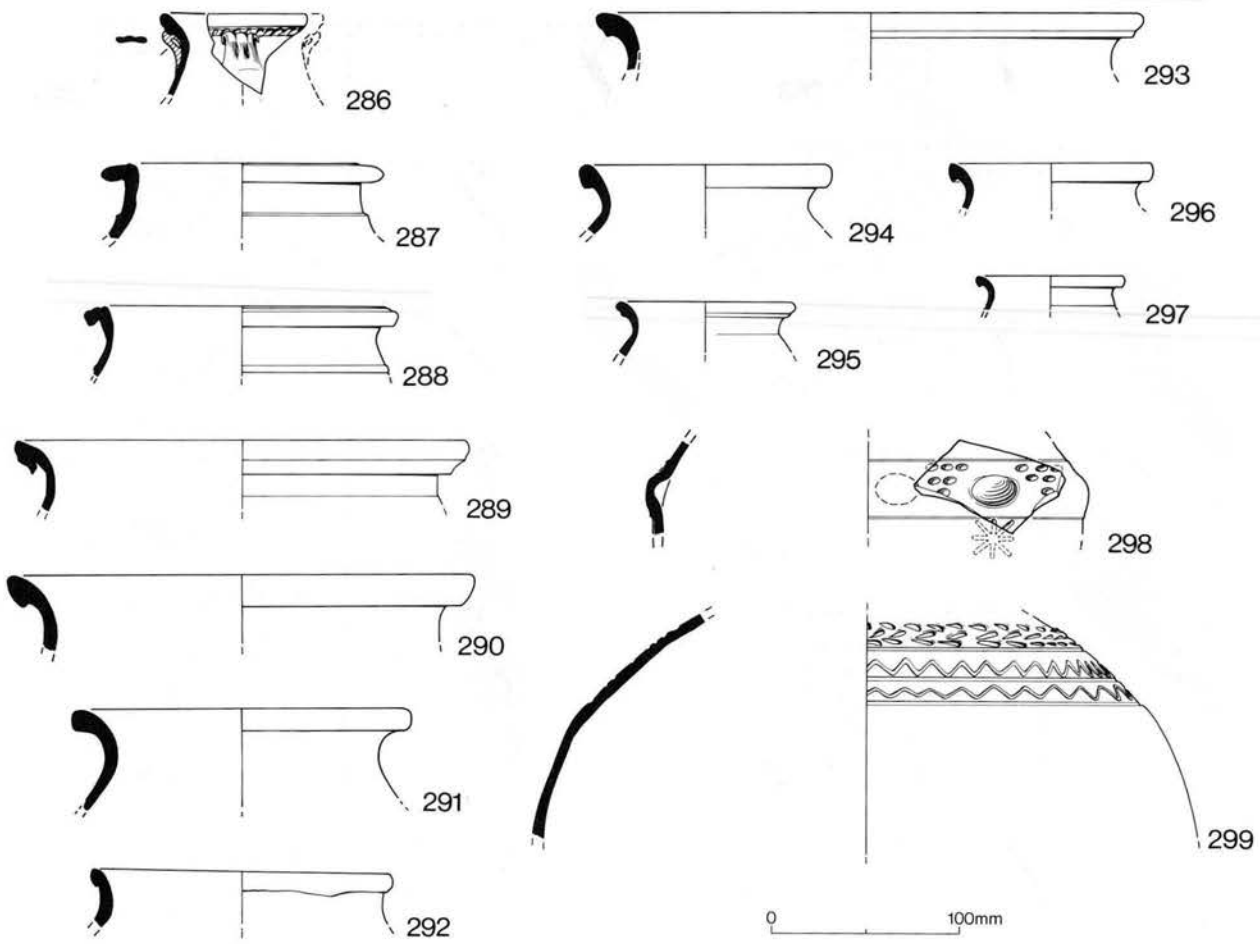


Figure 106 Pottery: Nos 286–299, Jars (D8, *etc.*). Scale 1:4

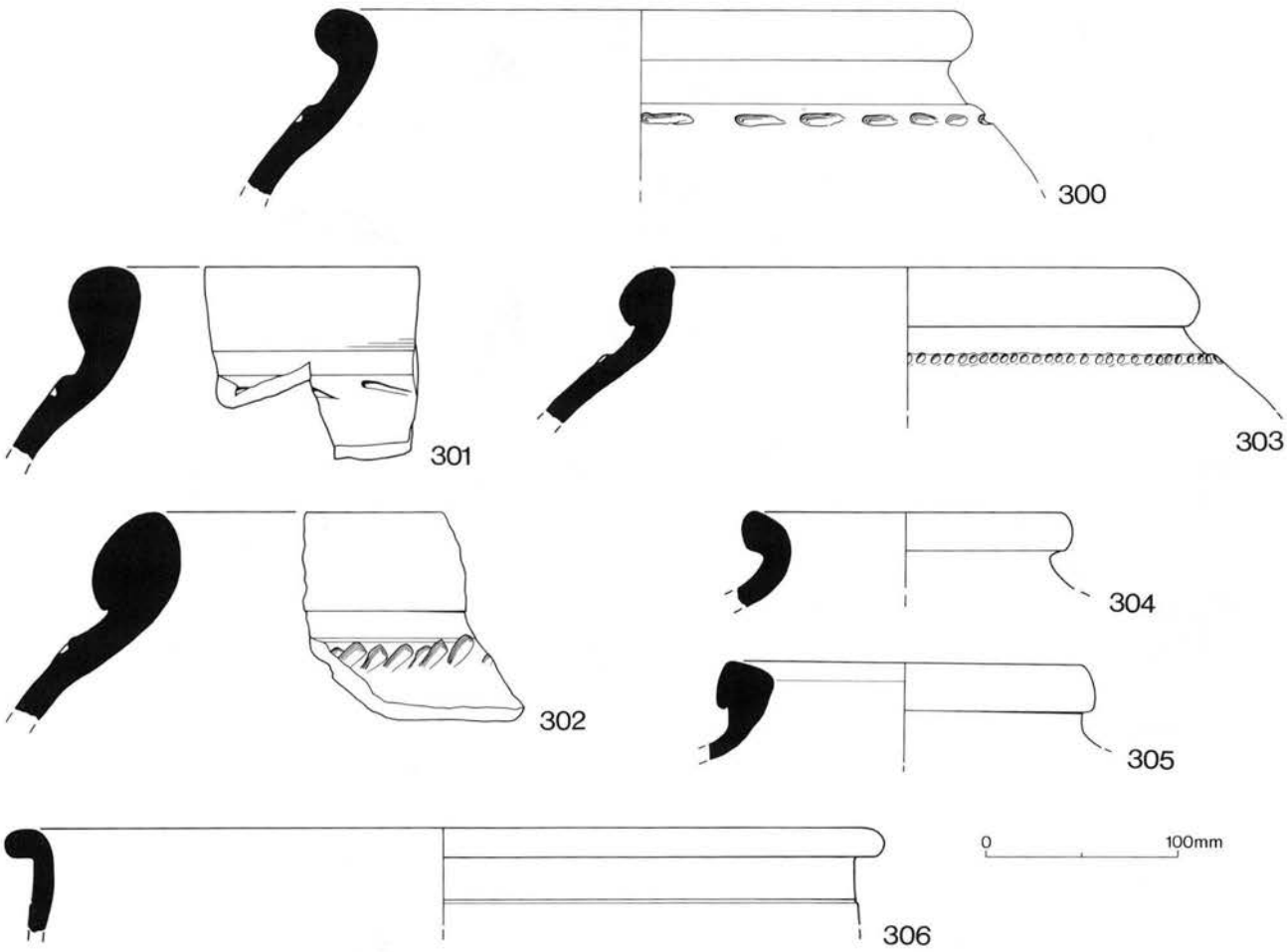


Figure 107 Pottery: Nos 300–306, Storage jars (D9). Scale 1:4

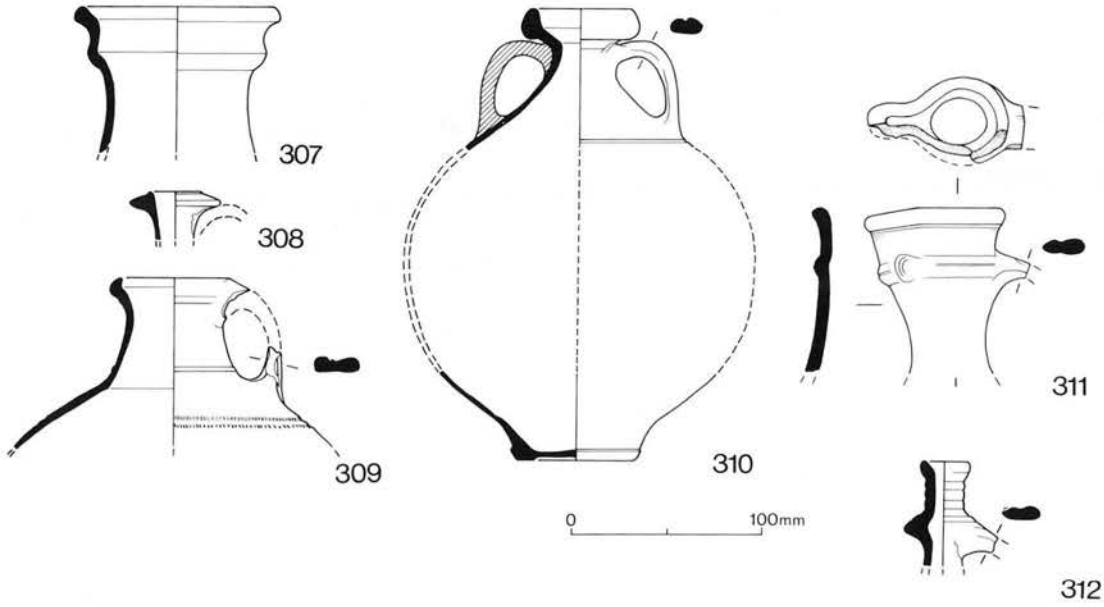


Figure 108 Pottery: Nos 307–312, Flagons (E). Scale 1:4

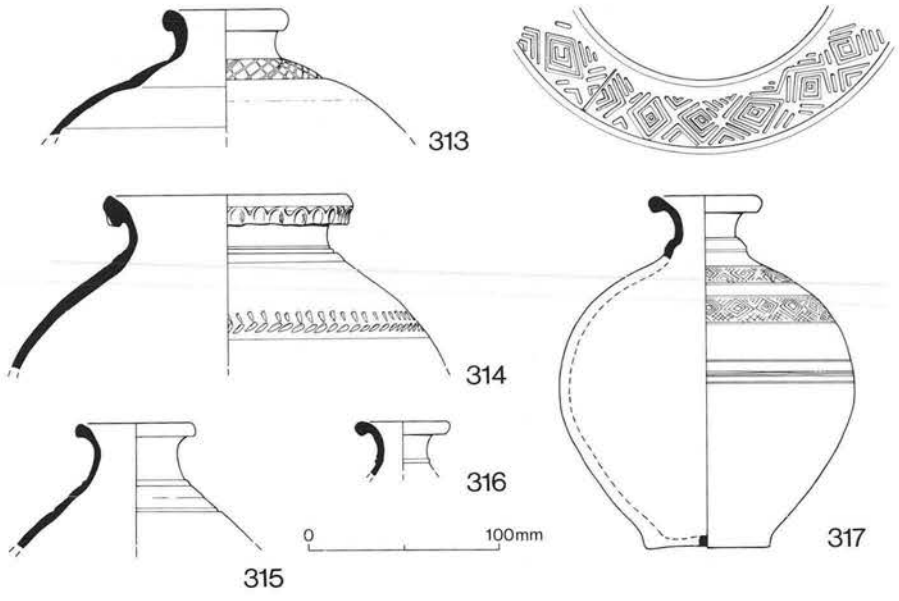


Figure 109 Pottery: Nos 313–317, Narrow-necked jars (G). Scale 1:4

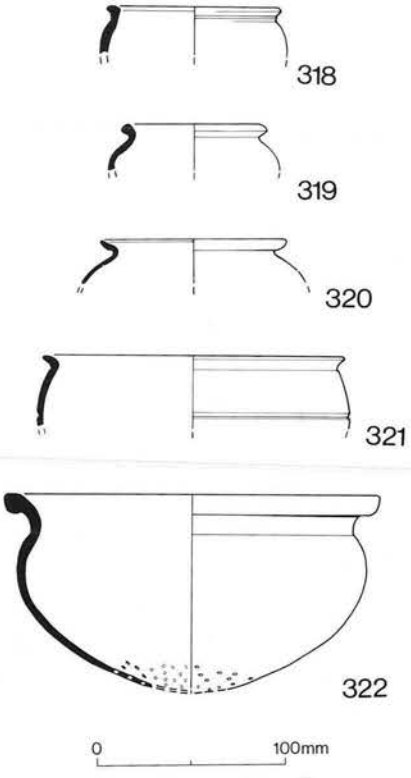


Figure 110 Pottery: Nos 318–322, Miscellaneous. Scale 1:4

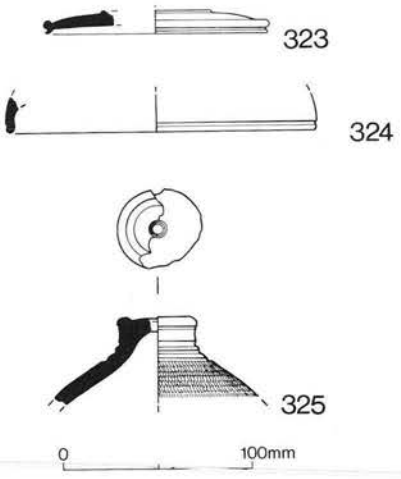


Figure 111 Pottery: Nos 323–325, Lids (L). Scale 1:4

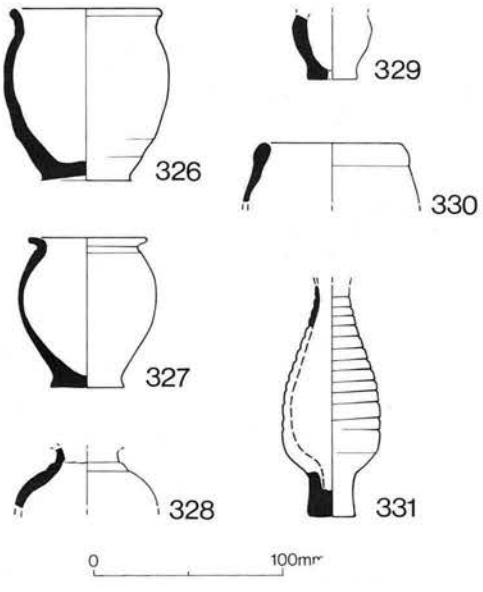


Figure 112 Pottery: Nos 326–331, Miscellaneous. Scale 1:4

No. on figures	*Form*	*Fabric*	*Context*	*of*	*Phase*	*Archive Drawing*
93	B1a	GB2	*86*	*F2409*	7	[D316]
94	B1a	GB2	*4127*	*F4126*	9	[D304]
95	B1b	GG1	*4306*	*F4300*	3	[D309]
96	B1b	GG1	*86*	*F2409*	7	[D317]
97	B1b	GZ1	*86*	*F2409*	7	[D328]
98	B1b	GG3	*1881*	*F1880*	7	[D333]
99	B1b	GR	*86*	*F2409*	7	[D325]
100	B1d	HS2	*680*	*F679*	7	[D186]
101	B1c	GG3	*1556*	*F1555*	2.3	[D332]
102	B1c	GG1	*1750*	*F1749*	7	[D254]
103	B1c	GZ1	*86*	*F2409*	7	[D329]
104	B1c	GR	*86*	*F2409*	7	[D323]
105	B1c	GR	*86*	*F2409*	7	[D324]
106	B1c	DZ	*D1040*	-	7	[D200]
107	B1c	GZ1	*86*	*F2409*	7	[D327]
108	B1b	GZ1	*1439*	*F837*	5–6	[D331]
109	B1e	EE	*D1*	-	9	[D6]
110	B1e	EE	*(pre-1978)*	-	-	[D76]
111	B1f	DC	*D989*	-	7	[D125]
112	B1g	GZ6	*242*	*F240*	5–6	[D159]
113	B1h	GG1	*86*	*F2409*	7	[D318]
114	B1d	GG1	*1208*	*F1669*	3	[D211]
115	B1j	GZ1	*86*	*F2409*	7	[D326]
116	B1k	DZ	*1487*	*F837*	7	[D247]
117	B4a	GZ6	*427*	*F284*	5	[D3]
118	B4a	GZ1	*95*	*F2409*	6	[D347]
119	B4b	GZ1	*4608*	*F4607*	9	[D216]
120	B4d	GF	*4310*	*F2697*	6–7	[D310]
121	B4d	GG1	*75*	*F2409*	6	[D336]
122	B4c	GZ1	*113*	*F2409*	6	[D349]
123	B4c	GG1	*1987 & 4098*	*F1990*	3	[D259]
124	B4c	GZ1	*86*	*F2409*	7	[D335]
125	B4c	DC	*1204 & 1205*	*F2409*	7 & 6	[D202]
126	B4c	GZ6	*427*	*F284*	5	[D13]
127	B4	GR	*1205*	*F2409*	6	[D212]
128	B4e	GG1	*3509*	*F3321*	7	[D289]
129	B5a	GG1	*93*	*F2409*	3	[D398]
130	B5b	GB2	*1204*	*F2409*	7	[D357]
131	B5c	HF2	*59*	*F2409*	7	[D551]
132	B5c	HF2	*59*	*F2409*	7	[D526]
133	B5c	GZ1	*1724*	*F679*	7	[D387]
134	B5d	GZ1	*1204*	*F2409*	7	[D380]
135	B5d	GZ1	*86*	*F2409*	7	[D402]
136	B5d	GZ1	*1204*	*F2409*	7	[D381]
137	B2	DC	*680*	*F679*	7	[D135]
138	B5h	GZ1	*94*	*F2409*	7	[D370]
139	B5f	DC	*59*	*F2409*	7	[D126]
140	B5h	GB2	*3509*	*F3321*	7	[D360]
141	B5h	GG1	*2105*	*F1349*	6	[D389]
142	B5h	GZ1	*86*	*F2409*	7	[D401]
143	B5h	GG1	*3616 & 3826*	*F3618 & F3204*	5	[D298]
144	B5j	GZ1	*86*	*F2409*	7	[D379]
145	B5k	GZ1	*3509*	*F3321*	7	[D395]
146	B5l	GZ1	*86*	*F2409*	7	[D403]
147	B5m	GG1	*D1720/D1812*	-	7	[D386]
148	B5f	HS2	*D1071*	-	9	[D201]
149	B5g	HS2	*1204*	*F2409*	7	[D209]
150	B2a	GZ1	*612*	*F833*	3	[D179]
			613	*F316*	4–7	
151	B2b	GZ1	*70*	*F1336*	6	[D152]
152	B2c	DC	*317*	*F316*	7	[D132]
153	B2d	CT	*4546*	*F4763*	6–7	[D215]
154	B2	GE	*100*	*F193*	4–6	[D411]

No. on figures	*Form*	*Fabric*	*Context*	*of*	*Phase*	*Archive Drawing*
155	B2l	DC	*D566*	-	9	[D1]
156	B2	GZ1	*(pre-1978)*	-	-	[D142]
157	B2e	CN1	*98*	*F2409*	7	[D94]
158	B2f	CN1	*86*	*F2409*	7	[D83]
159	B2f	CN1	*D3747*	-	7	[D123]
160	B2f	CN1	*3649*	*F3644*	5–6	[D120]
161	B2	GG1	*1634*	*F180*	4–5	[D253]
162	B2k	EF	*86*	*F2409*	7	[D141]
163	B2g	DC	*86*	*F2409*	7	[D85]
164	B2h	DC	*5233*	*F5202*	7	[D237]
165	B2j	EE	*680*	*F679*	7	[D124]
166	B3a	FM3	*2845*	*F2409*	3	[D68]
167	B3b	FZ	*668*	*F316*	4–7	[D42]
168	B3b	FM	*2202*	*F679*	4–5	[D59]
169	B3b	FM3	*2150*	*F679*	4–5	[D61]
170	B3c	FM1	*2699*	*F2409*	6	[D43]
171	B3c	FM3	*1913*	*F1925*	4–5	[D66]
172	B3d	FM5	*1987*	*F1990*	3	[D41]
173	B3e	FM3	*2845*	*F2409*	3	[D555]
174	B3j	FF	*2026*	*F679*	6	[D67]
175	B3	FM4	*(pre-1978)*	-		[D556]
176	B3g	DC	*86*	*F2409*	7	[D63]
177	B3f	FF	*(pre-1978)*	-	-	[D74]
178	B3g	FF	*86*	*F2409*	7	[D54]
179	B3j	FK1	*1799*	*F1798*	7	[D52]
180	B3g	FF	*86*	*F2409*	7	[D53]
181	B3j	FF	*1204*	*F2409*	7	[D62]
182	B3k	FF	*2812*	*F2409*	7	[D50]
183	B3l	FF	*94 & 95*	*F2409*	7 & 6	[D51]
184	B3l	DM1	*680 & 1892*	*F679 & F1882*	7	[D56]
185	B3p	GM5	*D566*	-	9	[D55]
186	B3r	GM5	*(U/S)*	-	9	[D57]
187	B3r	FK1	*4180*	*F3321*	6	[D75]
188	B3r	FK1	*317*	*F316*	7	[D48]
189	B3r	FK1	*95*	*F2409*	6	[D47]
190	B3r	FK1	*4177 & 4180*	*F3321*	5 & 6	[D73]
191	B3t	FM3	*2699*	*F2409*	6	[D46]
192	B3s	FM3	*1369*	*F2409*	6	[D45]
193	B3t	FK1	*611*	*F316*	7	[D44]
194	B3u	DC	*(U/S)*	-	9	[D552]
195	B3x	HF2	*4644*	*F4651*	6–7	[D532]
196	B3x	GR	*2503*	*F2409*	6	[D413]
197	B3x	GZ1	*92*	*F2409*	7	[D412]
198	B3y	GG3	*4047*	*F3321*	6	[D300]
199	B3y	GZ1	*86*	*F2409*	7	[D404]
200	C1f	GZ1	*86*	*F2409*	7	[D514]
201	C1n	GD	*2895 & 2908*	*F2900*	3	[D273]
202	C1k	GD	*281*	*F284*	5	[D166]
203	C1m	GZ1	*1750*	*F1749*	7	[D537]
204	C1j	GZ6	*279*	*F278*	5	[D32]
205	C1h	GZ1	*279*	*F278*	5	[D170]
206	C1l	GZ1	*3189*	*F3154*	5–7	[D283]
207	C1g	EE	*4139*	*F4138*	6	[D121]
208	C5	GZ1	*86*	*F2409*	7	[D148]
209	C6b	GZ6	*658*	*F284*	5	[D187]
210	C6a	GD	*86*	*F2409*	7	[D540]
211	D2e	GZ1	*1690*	*F1354*	3	[D100]
212	D2f	GZ1	*1606*	*F738*	4–5	[D251]
213	D2a	GG1	*3509*	*F3321*	7	[D506]
214	D2a	GZ1	*1890*	*F1354*	3	[D257]
215	D2b	GZ1	*317*	*F316*	7	[D172]
216	D2c	GZ1	*D3200*	-	9	[D284]
217	D2c	GZ1	*3205*	*F3321*	7	[D286]

No. on figures	*Form*	*Fabric*	*Context*	*of*	*Phase*	*Archive Drawing*
218	D2c	GG1	*4220*	*F3321*	6	[D308]
219	D2d	GG1	*3682*	*F3681*	7	[D512]
220	D2g	GG1	*4180*	*F3321*	6	[D467]
221	D2g	GZ1	*93*	*F2409*	3	[D496]
222	D2g	DC	*86*	*F2409*	7	[D128]
223	D2h	GZ1	*86*	*F2409*	7	[D488]
224	D2h	GZ1	*2498*	*F679*	4–5	[D272]
225	D2h	HF2	*86*	*F2409*	7	[D7]
226	D2h	CN1	*86*	*F2409*	7	[D84]
227	D2h	DC	*317*	*F316*	7	[D134]
228	D3	GG6	*279*	*F278*	5	[D18]
229	D3b	GZ6	*279 & 427*	*F278 & F284*	5	[D2]
230	D3b	GZ1	*2895*	*F2900*	3	[D99]
231	D3b	GZ1	*D2590*	-	7	[D112]
232	D3c	GZ1	*427*	*F284*	5	[D174]
233	D3d	GZ1	*139*	*F196*	5–7	[D177]
234	D3e	GG1	*3695*	*F3204*	6–7	[D440]
235	D3e	GF	*4809*	*F4502*	2.3	[D541]
236	D3f	GG3	*1114*	*F1113*	4–7	[D203]
237	D3f	GR	*86*	*F2409*	7	[D417]
238	D3g	DZ	*611*	*F316*	7	[D178]
239	D3h	GG3	*1439*	*F837*	5–6	[D443]
240	D3h	GZ1	*4724,*	*F4796*	2.3	[D219]
			4723 & 4734	*F4502*	3	
241	D3h	GG1	*2908*	*F2900*	3	[D275]
242	D3k	HF2	*3509*	*F3321*	7	[D469]
243	D3h	GR	*86*	*F2409*	7	[D419]
244	G0	GG6	*279*	*F278*	5	[D30]
245	D3h	GG1	*2106*	*F1990*	3	[D264]
246	D3h	GG1	*4180*	*F3321*	6	[D307]
247	D3j	HF2	*3588*	*F3635*	5	[D291]
248	D3j	GG1	*3695*	*F3204*	6–7	[D513]
249	D3j	HF2	*3167*	*F3158*	5–7	[D282]
250	D3j	GG1	*33*	*F1313*	4	[D503]
251	D3j	GG3	*3205*	*F3321*	7	[D287]
252	D3j	GR	*86*	*F2409*	7	[D420]
253	D3j	GG3	*1799*	*F1798*	7	[D256]
254	D3k	GG6	*427*	*F284*	5	[D14]
255	D3k	GG6	*427*	*F284*	5	[D12]
255	D3k	GG6	*427*	*F284*	5	[D12]
256	D3k	GG6	*427*	*F284*	5	[D8]
257	D3k	GG6	*427*	*F284*	5	[D20]
258	D3h	GR	*86*	*F2409*	7	[D416]
259	D3k	GZ1	*86*	*F2409*	7	[D429]
260	D3k	HF2	*L4438*	-	6–7	[D471]
261	D3k	HF2	*2026*	*F679*	6	[D262]
262	D3k	GG1	*2090*	*F2089*	3	[D263]
263	D4	DC	*86*	*F2409*	7	[D130]
264	D4a	EE	*86*	*F2409*	7	[D89]
265	D5a	GZ1	*86*	*F2409*	7	[D447]
266	D5a	GZ6	*658*	*F284*	5	[D184]
267	D5a	GG1	*2908*	*F2900*	3	[D274]
268	D5b	GG1	*4121*	*F1990*	3	[D302]
269	D5c	GZ1	*86*	*F2409*	7	[D450]
270	D5c	GZ1	*4767*	*F4502*	3	[D519]
271	D6a	HM	*86 & 1204*	*F2409*	7	[D147]
272	D6b	GG1	*2327*	*F679*	6	[D269]
273	D6c	GZ1	*2699*	*F2409*	6	[D462]
274	D6c	GZ1	*2845*	*F2409*	3	[D463]
275	D6c	GG3	*2375*	*F2409*	6	[D542]
276	D6d	GZ1	*75*	*F2409*	6	[D456]
277	D6d	GG6	*427*	*F284*	5	[D16]
278	D6d	GZ1	*4120*	*F3321*	6	[D303]

No. on figures	*Form*	*Fabric*	*Context*	*of*	*Phase*	*Archive Drawing*
279	D6d	GG6	*427*	*F284*	5	[D4]
280	D6e	GG1	*1821*	*F679*	6	[D460]
281	D6e	GG1	*2002*	*F183*	3	[D260]
282	D6e	GZ1	*66*	*F2409*	6	[D455]
283	D7a	GG1	*4047*	*F3321*	6	[D441]
284	D7a	GZ1	*86 & 92*	*F2409*	7	[D494]
285	D7b	GG1	*3702*	*F3204*	5	[D296]
286	D8a	CZ	*L224*	-	4–7	[D97]
287	D3	GZ1	*1205*	*F2409*	6	[D213]
288	D0	GG1	*1799*	*F1798*	7	[D255]
289	D0	GG2	*86*	*F2409*	7	[D475]
290	D3	HS2	*86*	*F2409*	7	[D520]
291	D3	HS2	*1204*	*F2409*	7	[D210]
292	D3*	HS7	*D1236*	-	7	[D238]
293	D2	DC	*95*	*F2409*	6	[D131]
294	D3	DC	*86*	*F2409*	7	[D129]
295	D4	DC	*86*	*F2409*	7	[D130]
296	D3	FP	*59*	*F2409*	7	[D149]
297	D3	FP	*3509*	*F3321*	7	[D87]
298	D0	GZ1	*2809*	*F2409*	7	[D106]
299	D0	HF2	*3695*	*F3204*	6–7	[D295]
300	D9a	HG1	*4635*	*F4651*	6–7	[D549]
301	D9b	HG1	*86*	*F2409*	7	[D545]
302	D9b	HG1	*86*	*F2409*	7	[D544]
303	D9c	HG2	*86*	*F2409*	7	[D543]
304	D9d	HG1	*62*	*F2409*	6	[D547]
305	D9	HG2	*2375*	*F2409*	6	[D270]
306	D9e	HG2	*86*	*F2409*	7	[D550]
307	E5	DE	*4871*	*F4502*	2.3	[D231]
308	E4	CT	*2498*	*F679*	4–5	[D80]
309	E6	CN1	*98*	*F2409*	7	[D96]
310	E7	DC	*1563*	*F837*	7	[D250]
311	E8	EE	*U/S*	-	9	[D79]
312	E3	EE	*1204*	*F2409*	7	[D137]
313	G2	GG1	*2895*	*F2900*	3	[D276]
314	G5	GG1	*4172*	*F3321*	6	[D305]
315	G3	GG1	*3231*	*F3230*	3	[D288]
316	G4	GG1	*4180*	*F3321*	6	[D301]
317	-	-	*L5128/L5114*	-	4–7 & 7	[D554]
318	H1	DC	*D3532*	-	7	[D88]
319	H0	GR	*3159*	*F3158*	5–7	[D280]
320	C3	GZ1	*4804*	*F4502*	2.3	[D458]
321	C2	GZ6	*443*	*F283*	5	[D176]
322	K1	DC	*86*	*F2409*	7	[D82]
323	L2	GZ1	*59*	*F2409*	7	[D150]
324	L6	DC	*86*	*F2409*	7	[D127]
325	L5c	EE	*94*	*F2409*	7	[D93]
326	M1	GZ1	*2016*	*F1919*	1–2	[D98]
327	M2	GG1	*D3820*	-	5–7	[D107]
328	-	FZ	*4180*	*F3321*	6	[D306]
329	M0	GZ1	*4331*	*F4329*	4–5	[D311]
330	P2	GZ1	*3509*	*F3321*	7	[D539]
331	P1	FZ	*95*	*F2409*	6	[D86]

* =Unusual form for this fabric

Stratified Groups

The concluding discussion section (p. 177–9 below) relies upon not *all* the pottery recovered from the site, but on fourteen groups which Catriona Turner-Walker felt would illustrate the sequence of wares and forms from Phase 2.3 through to 7.

Each group is summarised below, as Table 19, using the fabric and form codes detailed above. Where contexts are listed, they are *only* those containing pottery. Most of the groups lent themselves to quantification by estimated vessel equivalent as well as by sherd count and weight. To ensure comparability with other Essex Roman assemblages, EVEs and weights are used here. References to Matrix pages relate to the stratigraphic matrices to be found in microfiche.

Table 20 (p.170) extracts information on the incidence of vessel forms in the fourteen groups, quantified as a percentage of each group by EVEs. The equivalents in the Form Series of the twelve classes are as follows:

Platters	Form	A
Dishes		B1; B4–B6; some B8
Bowls		B2; some B8
Bowl-jars		D2; C6
Mortaria		B3; some B8
Cups		C4
Beakers		C1
Jars		D1; D3–D8
Narrow-necked jars		G
Storage jars		D9
Flagons		E
Lids		L

Other forms could be classed as 'Misc. open' (Forms K, C5, C2, C3 and H) or 'Misc. closed' (Forms M and P), but none of them made any showing in the stratifed groups. Note that an additional 0.1% of Group 10 was accounted for by amphora Form F3; as amphoras did not feature in the other thirteen groups no separate line was created for them.

Samian forms have been quantified separately where they occur (see Groups 4, 5, 9, 10 and 14 — the *italicised* totals).

The figures from Groups 3 and 7 especially should be treated with caution as the group totals in each case are less than 1 EVE. If the foundation deposit pottery in Group 12 (1 EVE of Nene Valley colour-coat beaker) is ignored, then this group comes into the same category. Groups 1 and 8 are also quite small, at under 2 EVEs.

Groups		*Phase*
GROUP 14		
	GROUP 13	PHASE 7 late C4-early C5
GROUP 12		
GROUP 11		
	GROUP 10	PHASE 6 mid C4
GROUP 9	GROUP 6	
	GROUP 8	PHASE 5 early C4
GROUP 7		
	GROUP 6	PHASE 4 later C3
GROUP 5		
GROUP 4		
	GROUP 3	PHASE 3 C2-mid C3
GROUP 2		
	GROUP 1	PHASE 2.3 LPRIA/C1 AD

Groups 3 to 14 contain the following examples from the Form Series (Figs 92–112)

Group 3	212
Group 4	211, 214
Group 5	123, 172, 245, 268
Group 6	168, 169, 224, 308
Group 7	161
Group 8	108, 239, plus Fig. 118.5
Group 9	143, 160, 247, 285, plus Fig.118.8
Group 10	118, 121, 122, 125, 127, 154, 170, 183, 189, 191, 192, 196, 273, 275, 276, 282, 287, 293, 304, 305, 331, plus: Fig. 91.87, 89; Fig. 115.1; and Fig. 117.7
Group 11	154, 187, 190, 198, 218, 220, 246, 278, 314, 316, 328, plus Fig. 118.17
Group 12	-
Group 13	164
Group 14	219

GROUP 1: *F1124* (Phase 2.3)

This group (Matrix page 40) mainly consists of material from the sinkage fills grouped as *F196* (contexts *620, 621, 622, 628, 659, 688, 689, 690, 691, 692, 705, 975, 977, 979, 980, 986* and *1670*). The rest consists of the upper fills (contexts *717, 971, 973, 721* and *978*, plus *1119*, the only middle fill with any pottery) of this major pre-Roman enclosure ditch.

		Wt(g)	*% Wt*	*EVE*	*% EVE*
Italian-type amphoras	(AA)	10	0.13	-	-
buff, pink and red wares	(DE)	341	4.5	-	-
(Unclassified unslipped red wares)	(DZ)	15	0.2	-	-
Grog-tempered	(HG4)	2499	32.9	0.44	16.1
Grog-tempered	(HG5)	33	0.4	-	-
Grog-tempered	(HG6)	3161	41.6	1.82	66.6
storage jar fabric	(HG1)	58	0.8	-	-
storage jar fabric	(HG2)	199	2.6	-	-
storage jar fabric	(HG7)	271	3.6	-	-
Early shell tempered ware	(HS1)	16	0.2	-	-
sandy grey wares	(GG1)	16	0.2	-	-
(unclassified grey wares)	(GZ1)	183	2.4	0.05	1.8
(unclassified heavy gritted)	(HZ)	190	2.5	-	-
Residual Phase 1	-	612	8.0	0.42	15.4
TOTALS		7604		2.73	

Forms: DE, E; HG4, A2a, B2, B3 and D9; HG6, D3, D5, D7; HG1/2/7, D9. Figs 86.20; 87.26; 89.41, 49; and 90.64.

GROUP 2: *F662* and *664* (Phase 2.3)

Another good Phase 2.3 group (Matrix page 100) is formed by two of the three slots outside the entrance gap in ditch *F1124* (above). *F664* (contexts *432, 665* and *651*) cut *F662* (contexts *710, 707, 698, 716, 1015, 699, 682* and *663*).

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Terra Rubra	(DA)	34	0.3	-	-
North Gaulish	(FA)	2	0.02	-	-
Grog-tempered	(HG4)	5956	60.4	3.28	57.7
Grog-tempered	(HG5)	696	7.0	0.67	11.8
Grog-tempered	(HG6)	1510	15.3	1.47	25.9
storage jar fabric	(HG1)	926	9.4		-
Early shell-tempered ware	(HS1)	34	0.3	0.05	0.9
(unclassified grey wares)	(GZ1)	160	1.6	0.21	3.7
(unclassified heavy gritted)	(HZ)	5	0.05	-	-
(unclassified)	(ZZ1)	2	0.02	-	-
Residual Phase 1	-	539	5.5	-	-
TOTALS		9864		5.68	

Forms: HG4, A3, D2, D3, D5, D9: HG5, D3, HG6, D2, D3, D5 and D9; HG1, D9; HS1, D1a; GZ1, D5. Figs 95.25, 32; 96.34; and 98.53.

GROUP 3: *F738* and *1594* (Phase 3)

These two boundary ditches, along with others in Groups 4 and 5 (below), formed part of the enclosure established in Phase 3 (Matrix pages 52 and 57). *F738* (contexts *1606* and *1605*) and *F1594* (contexts *1693* and *1647*).

		Wt (g)	*% Wt*	*EVE*	*% EVE*
buff, pink and red wares	(DE)	8	1.0	-	-
(unclassified unslipped red wares)	(DZ)	8	1.0	-	-
fine grey wares	(GF)	2	0.2	-	-
storage jar fabric	(HG1)	270	33.0	-	-
sandy grey wares	(GG1)	28	3.4	0.11	23.4
sandy grey wares	(GG3)	39	4.8	-	-
(unclassified grey wares)	(GZ1)	319	39.0	0.36	76.6
(unclassified grog-tempered)	(HG0)	146	18.0	-	-
TOTALS		820		0.47	

Forms: DE, E; HG1, D9; GG1, D3; GZ1, B4 and D2f; HG0, D9.

GROUP 4: *F1354* (Phase 3)

This boundary ditch formed the southern side of the early Roman enclosure, considered to have been defined in a piecemeal fashion. Its fill (contexts *1690, 1696, 1763, 1890, 1876, 1649, 1877, 1870, 1868, 1355, 1872, 1808, 1367* and *1370*) form another Phase 3 group (Matrix page 156).

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Colchester colour-coat	(CJ)	29	0.7	-	-
Nene Valley colour-coat	(EE)	6	0.1	-	-
Hadham oxidised wares	(DC)	4	0.09	-	-
East Gaulish Rhenish	(CH)	5	0.1	-	-
(unclassified slipped red wares)	(CZ)	3	0.07	-	-
buff, pink and red wares	(DE)	16	0.4	0.17	5.2
(unclassified unslipped red wares)	(DZ)	8	0.2	-	-
(unclassified unslipped white wares)	(FZ)	20	0.5	-	-
East Anglian mortaria	(FM3)	8	0.2	-	-
North Kent grey wares	(GD)	3	0.07	-	-
Black-Burnished 2	(GB2)	4	0.09	-	-
storage jar fabric	(HG1)	392	9.7	-	-
storage jar fabric	(HG3)	71	1.8	-	-
storage jar fabric	(HG8)	45	1.1	-	-
sandy grey wares	(GG1)	270	6.7	0.20	6.1
sandy grey wares	(GG0)	20	0.5	-	-
(unclassified grey wares)	(GZ1)	2256	55.9	2.14	65.4
(unclassified grey wares)	(GZ0)	117	2.9	-	-
grog-tempered wares	(HG5/6)	685	16.9	0.66	20.2
(unclassified grog-tempered)	(HG0)	49	1.2	0.05	1.5
Central Gaulish samian	(BD)	3	0.07	0.05	1.5
(unclassified)	(ZZ1)	22	0.5	-	-
TOTALS		4036		3.27	

Forms: CJ, C1; CH, C1; DE, E1; FZ, E; HG1, D9; HG8, D9; GG1, A2 and D3; GZ1, A, B4c, D2a, D2e, D3 and D7a; HG5/6, D3; HGO, D3; BD, form 38 or 44.

GROUP 5: *F1990* (Phase 3)

Sealed by the mineralised silts *F183* are the fills (Matrix page 181) of this boundary ditch, twelve contexts (*2001, 2110, 2106, 1998, 1992, 1987, 4121, 4098, 4019, 1970, 1973* and *1976*).

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Colchester colour-coat	(CJ)	10	0.1	-	-
(unclassified slipped red wares)	(CZ)	17	0.2	0.05	1.0
buff, pink and red wares	(DE)	8	0.1	-	-
(unclassified unslipped red wares)	(DZ)	9	0.1	-	-
(unclassified unslipped white wares)	(FZ)	56	0.8	0.05	1.0
East Anglian mortaria	(FM3)	15	0.2	-	-
East Anglian mortaria	(FM5)	248	4.1	0.27	5.7
fine grey wares	(GF)	147	2.2	0.51	10.8
storage jar fabric	(HG1)	3214	47.6	0.66	13.9
storage jar fabric	(HG2)	466	6.9	-	-
sandy grey wares	(GG1)	1723	25.5	1.99	42.0
sandy grey wares	(GG3)	128	1.9	0.16	3.4
(unclassified grey wares)	(GZ1)	416	6.2	0.27	5.7
(unclassified grey wares)	(GZ0)	4	0.06	-	-
South Spanish amphoras	(AE)	72	1.0	-	-
Central Gaulish samian	(BD)	3	0.04	-	-
East Gaulish samian	(BE)	222	3.3	0.78	16.4
TOTALS		6758		4.74	

Forms: CJ, C1; CZ, C1h, FZ, B3q; FM5, B3d; GF, B5p and D3; HG1/2, D9; GG1, B4c, D3h, D3j and D5b; GG3, D4; GZ1, D3, BD, form 18/31; BE, form 33.

GROUP 6: *F679* (Phase 4–5)

Phase 4 sees the first recognisable Roman-period votive activity on the site and pond *F679* (Matrix page 68) is thus the first 'religious' feature among these groups. The bottom and lower fills belong to Phase 6, after cleaning out, so that the only surviving pond fills from this time were from the edges (contexts *2498, 2149, 2150, 2202, 2369, 2367* and *2504*).

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Nene Valley colour-coat	(CT)	27	0.5	1.0	23.0
Hadham oxidised ware	(DC)	25	0.5	-	-
Oxf. white slipped red ware	(CN2)	11	0.2	0.07	1.6
(unclassified unslipped red wares)	(DZ)	2	0.04	-	-
(unclassified unslipped white wares)	(FZ)	165	3.2	0.27	6.2
East Anglian mortaria	(FM3)	312	6.0	0.15	3.5
East Anglian mortaria	(FM0)	463	8.9	0.13	3.0
fine grey wares	(GF)	5	0.09	-	-
storage jar fabric	(HG1)	910	17.6	0.05	1.2
storage jar fabric	(HG7)	560	10.8	-	-
(sandy grey wares)	(GG1)	754	14.6	1.56	36.0
(sandy grey wares)	(GG2)	11	0.2	-	-
(sandy grey wares)	(GG3)	123	2.4	0.40	9.2
Rettendon wares	(HF2)	59	1.1	0.07	1.6
(unclassified grey wares)	(GZ1)	701	13.6	0.63	14.5
(unclassified grog-tempered)	(HG0)	123	2.4	-	-
South Spanish amphoras	(AE)	889	17.2	-	-
East Gaulish samian	(BE)	29	0.6	-	-
(unprovenanced samian)	(BM)	2	0.04	-	-
TOTALS		5171		4.33	

Forms: CT, E4; DC, B2; CN2, B2k; FZ, B3q and E; FM3, B3b and B3t; FM0, B3b; HG1/7, D9; GG1, B4, B5, D3, D5 and C1; GG3, D3c and D6; HF2, B1; GZ1, B4, B5c, D2h, D3 and D9; BE form 33.

GROUP 7: *F180* and *F184* (Phase 4–5)

The water management system for pond *F679* comprised this pair of parallel outlet ditches which continued as *F3732/5245* and *F3691/5248* respectively, along with slot *F1774* (no pottery) and ditch *F1917* (Matrix pages 62, 213, 214 and 366). Surviving the Phase 6 recuts, ten contexts produced Roman pottery: *1634, 3657, 3734, 5266, 1635, 3692, 5231, 5237, 1875* and *1898*.

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Nene Valley colour-coat	(CT/EE)	35	4.0	-	-
Hadham oxidised wares	(DC)	6	0.7	-	-
buff, pink and red wares	(DD)	21	2.4	0.10	16.1
(unclassified unslipped red wares)	(DZ)	8	0.9	-	-
(unclassified unslipped white wares)	(FZ)	4	0.5	-	-
storage jar fabrics	(HG1)	393	45.2	-	-
sandy grey wares	(GG1)	107	12.3	0.25	40.3
sandy grey wares	(GG3)	22	2.5	-	-
sandy grey wares	(GG0)	26	3.0	-	-
Rettendon wares	(HF2)	111	12.8	0.17	27.4
(unclassified grey wares)	(GZ1)	109	12.5	-	-
(unclassified grey wares)	(GZ0)	3	0.3	-	-
grog-tempered wares	(HG6)	18	2.0	0.10	16.1
(unclassified)	(ZZ1)	5	0.6	-	-
TOTALS		868		0.62	

Forms: DD, B2; HG1, D9; GG1, B1, B2; HF2, D3; HG6, D5.

GROUP 8: *F837* (Phase 5–6)

This ditch (Matrix page 57) is considered to have superseded the Phase 3 boundary ditch *F1594* (Group 3). Excluding the distinctive top fills (Phase 7), three contexts (*1601, 1439* and *1573*) produced late Roman pottery and a coin of Constantine I, AD 317–320.

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Nene Valley colour-coat	(EE)	33	2.4	-	-
Hadham oxidised wares	(DC)	8	0.6	0.5	30.1
Black-Burnished 2	(GB2)	10	0.7	0.05	3.0
storage jar fabric	(HG1)	81	5.8	-	-
sandy grey wares	(GG1)	181	12.9	0.3	18.0
sandy grey wares	(GG3)	192	13.7	0.18	10.8
Rettendon wares	(HF2)	400	28.6	0.19	11.4
East Anglian mortaria	(GM1)	28	2.0	-	-
(unclassified grey wares)	(GZ1)	462	33.0	0.44	26.5
Late shell tempered ware	(HS2)	6	0.4	-	-
TOTALS		1401		1.66	

Forms: DC, E; GB2, D5; HG1, D9; GG1, B1 and B5h; GG3, D3h; HF2, D3k; GM1, B3; GZ1, B1b, B1g and D3.

GROUP 9: *F3203* (Phase 5)

'Apsidal' ditch *F3203* (Matrix pages 22 and 25) is thought to represent part of a religious structure of this phase. Excluding the upper, disturbed fills (but including slot *F3644* which is given a more general Phase 5–6 date range), there were some forty contexts with pottery (contexts *3620, 3866, 3833, 3684, 3617, 3832, 3830, 3828, 3827, 3700, 3683, 3826, 3615, 3702, 3601, 3599, 3650, 3668, 3623, 3743, 3755, 3842, 3598, 3741, 3742, 3654, 3632, 3651, 3588, 3596, 3432, 3602, 3636, 3641, 3649, 3689, 3696, 3714, 3718, 3726* and *3730*). Most of the coins were radiate copies, of AD 270–284.

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Nene Valley colour-coat	(CT/EE)	15	0.2	-	-
Oxfordshire red colour-coat	(CN1)	29	0.3	0.05	0.5
(unclassifed slipped red wares)	(CZ)	85	1.0	-	-
buff, pink and red wares	(DD)	56	0.6	0.05	0.5
buff, pink and red wares	(DE)	3	0.03	-	-
(unclassified unslipped red wares)	(DZ)	6	0.07	0.24	2.4
East Anglian mortaria	(FM2)	80	0.9	0.05	0.5
North Kent grey wares	(GD)	6	0.07	-	-
fine grey wares	(GF)	3	0.03	0.05	0.5
storage jar fabric	(HG1)	582	6.6	0.32	3.2
storage jar fabric	(HG2)	70	0.8	-	-
storage jar fabric	(HG3)	10	0.1	-	-
storage jar fabric	(HG7)	471	5.4	0.10	1.0
Sandy grey wares	(GG1)	5308	60.6	7.03	69.3
Sandy grey wares	(GG3)	195	2.2	0.18	1.8
Sandy grey wares	(GG0)	17	0.2	-	-
Rettendon wares	(GR)	12	0.1	0.05	0.5
Rettendon wares	(HF2)	785	8.6	0.67	6.6
East Anglian mortaria	(GM4)	98	1.1	-	-
(unclassified grey wares)	(GZ1)	708	8.0	1.2	11.8
grog-tempered wares	(HG5/6)	58	0.6	0.11	1.1
(unclassified grog-tempered)	(HG0)	137	1.6	-	-
Central Gaulish samian	(BD)	2	0.02	0.05	0.5
East Gaulish samian	(BE)	8	0.09	-	-
(unclassified)	(ZZ1)	10	0.1	-	-
TOTALS		8754		10.15	

Forms: CT, C1; CN1, B2f; CZ, C1; DZ, C1; FM2, B3f; HG1/2/7, D9; GG1, B1b, B1c, B4, B5h, D2, D3h, D5, D7b and L1; HF2, D3j and D3k; GZ1, B1d, B4a, D2h and D5.

GROUP 10: *F2409* (Phase 6)

This is the depression in which font *F1348* was situated (Matrix page 78). The earliest fills (the excavator's Horizon 1) are thought to pre-date the construction of the font. Above them are Horizons 2 (contexts *77, 95, 100, 1205, 1369, 2506, 2573, 2699, 2702* and *2813*), 3 (contexts *66, 76, 78, 113, 2373, 2375, 2379, 2407, 2408, 2503* and *2827*) and 4 (*56, 62, 71, 75, 79, 97, 111, 112, 2371, 2372, 2376, 2377, 2378, 2386, 2684, 2685* and *2686*), then the backfilling episodes of Phase 7 (Horizons 5 to 7). There was a radiate copy, AD270–274, in Horizon 4 (*2686*).

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Colchester colour-coat	(CJ)	100	0.3	0.59	1.2
Nene Valley colour-coat	(CT/EE)	775	2.0	1.97	4.1
Oxfordshire red colour-coat	(CN1)	116*	0.3	0.26	0.5
Hadham oxidised wares	(DC)	438	1.2	0.56	1.2
Central Gaulish Rhenish ware	(CG)	28	0.07	-	-
East Gaulish Rhenish ware	(CH)	23	0.06	0.09	0.2
(unclassified slipped white wares)	(EZ)	29	0.08	-	-
Mica-gilt ware	(CR)	102	0.3	-	-
Oxfordshire white-slipped	(CN2)	37	0.1	-	-
(unclassified slipped red wares)	(CZ)	195	0.5	0.38	0.8
buff, pink and red wares	(DD)	57	0.2	0.25	0.5
buff, pink and red wares	(DE)	155	0.4	-	-
(unclassified unslipped red wares)	(DZ)	9	0.02	-	-
Nene Valley mortaria	(FK1)	183	0.5	0.15	0.3
Oxfordshire white ware	(FF)	365	1.0	0.17	0.4
(unclassified unslipped white wares)	(FZ)	348	0.9	-	-
East Anglian mortaria	(FM1)	187	0.5	0.10	0.2
East Anglian mortaria	(FM2)	160	0.4	0.09	0.2
East Anglian mortaria	(FM3)	860	2.3	0.51	1.1
North Kent grey wares	(GD)	22	0.06	-	-
fine grey wares	(GF)	13	0.03	0.05	0.1
Black-Burnished 2	(GB2)	157	0.4	0.29	0.6
Alice Holt ware	(GE)	76	0.2	0.13	0.3
storage jar fabric	(HG1)	4,081	10.9	0.49	1.0
storage jar fabric	(HG2)	456	1.2	0.27	0.6
storage jar fabric	(HG7)	462	1.2	-	-
storage jar fabric	(HG8)	91	0.2	-	-
sandy grey wares	(GG1)	6,216	16.6	10.10	21.2
sandy grey wares	(GG2)	190	0.5	0.16	0.3
sandy grey wares	(GG3)	980	2.6	1.20	2.5
Rettendon wares	(GR)	538	1.4	1.36	2.8
Rettendon wares	(HF2)	647	1.7	1.27	2.6
East Anglian mortaria	(GM2)	93	0.2	0.13	0.3
(unclassified grey wares)	(GZ1)	13,426	35.8	24.44	51.3
Late shell-tempered ware	(HS2)	507	1.4	0.44	0.9
grog-tempered wares	(HG5/6)	142	0.4	0.43	0.9
?Late Roman grog-tempered	(HG9)	24	0.06	-	-
(unclassified grog-tempered)	(HG0)	2,007	5.4	0.25	0.5
(unclassified heavy gritted)	(HZ)	26	0.07	0.05	0.1
South Spanish amphoras	(AE)	2,407	6.4	0.05	0.1
(unclassified amphoras)	(AZ)	192	0.5	-	-
Central Gaulish samian	(BD)	313	0.8	0.50	1.0
East Gaulish samian	(BE)	212	0.6	0.88	1.8
TOTALS (* Includes 2 grammes of CN0)		37,445		47.61	

Forms: CJ, C1h and C1m; CT, C1j and C1m; EE, B1e, B5n, B2, C1j, C1m and D3; CN1, B2; DC, B1, B4c, D2 and D3; CG, C1; CH, C1m; EZ, B3q; CN2, B3; CZ, C1j, and C1m; DD, E; DE, E; FK1, B3r; FF, B31; FZ, B3 and P1; FM1, B3c; FM2, B3f and B3q; FM3, B3f, B3q, B3s and B3t; GD, C1; GF, C1m and C1p; GB2, B1, B4 and B5; GE, B2 and D9; HG1, D9d; HG2/7/8, D9; GG1, B1c, B4a, B4d, B5, D3 and L1; GG2, D3; GG3, D3, D6c and G6; GR, B4, B5, B3x and D3; HF2, D3k; GM2, B3q; GZ1, B1b, B1c, B4a, B4c, B5, C1j, C1m, D3a, D3k, D5, D6c, D6d, D6e, D8, E1 and L4; HS2, D3; HG5/6, D3; HG0, D9; HZ, D9; BD, forms 31, 33, 37, 38, 45 and 79; BE, forms 31, 33, ?37, mortarium and Curle 32.

GROUP 11: *F3321* (Phase 6)

This depression, having begun in Phase 3, was finally filled in Phase 7 (Matrix page 85). The upper fills (the excavator's Horizons 3 and 4, contexts *4053, 4055, 4170, 4175, 4180, 4196, 4228, 3206, 3278, 3383, 3515, 3516, 3523, 3551, 3611, 3622, 3624, 3627, 3634, 3674, 3705, 3829, 3882, 4004, 4005, 4047, 4052, 4120, 4123, 4141, 4142, 4172, 4201, 4220, 4267* and *4318*) are what concern us here, below the black fills of Phase 7 (Horizon 5). The latest coin was a Constantinopolis copy, AD330–345 (*3622*), most of the rest were radiate copies (AD270–284).

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Nene Valley colour-coat	(CT/EE)	165	0.6	0.18	0.6
Oxfordshire red colour-coat	(CN1)*	93	0.4	-	-
Hadham oxidised wares	(DC)	46	0.2	-	-
East Gaulish Rhenish ware	(CH)	19	0.07	-	-
Oxfordshire white-slipped	(CN2)	37	0.1	0.09	0.3
(unclassified slipped red wares)	(CZ)	10	0.04	-	-
buff, pink and red wares	(DD)	114	0.4	-	-
buff, pink and red wares	(DE)	3	0.01	-	-
East Anglian mortaria	(DM1)	63	0.2	-	-
(unclassified unslipped red wares)	(DZ)	102	0.4	0.10	0.3
Nene Valley mortaria	(FK1)	270	1.0	0.25	0.8
Oxfordshire white ware	(FF)	77	0.3	0.08	0.3
(unclassified unslipped white wares)	(FZ)	16	0.06	-	-
Portchester 'D' ware	(FP)	2	-	-	-
Black-Burnished 2	(GB2)	294	1.1	0.32	1.0
storage jar fabric	(HG1)	2,131	8.3	0.10	0.3
storage jar fabric	(HG2)	1,285	5.0	0.10	0.3
storage jar fabric	(HG3)	36	0.1	-	-
storage jar fabric	(HG7)	254	1.0	0.05	0.2
sandy grey wares	(GG1)	11,080	43.0	18.31	63.0
sandy grey wares	(GG2)	9	0.03	-	-
sandy grey wares	(GG3)	1,788	6.9	1.74	6.0
sandy grey wares	(GG0)	8	0.03	-	-
Rettendon wares	(GR)	15	0.06	-	-
Rettendon wares	(HF2)	4,752	18.4	5.00	17.2
East Anglian mortaria	(GM3)	210	0.8	0.19	0.6
(unclassified grey wares)	(GZ1)	1,748	6.8	2.54	8.7
Late shell-tempered ware	(HS2)	90	0.3	0.10	0.3
grog-tempered wares	(HG6)	70	0.3	-	-
(unclassified grog-tempered)	(HG0)	161	0.6	-	-
South Spanish amphoras	(AE)	516	2.0	-	-
South Gaulish amphoras	(AP)	303	1.2	-	-
East Gaulish samian	(BE)	23	0.09	-	-
TOTALS (* Includes 67g of CN0)		25,790		29.15	

Forms: CT, C1j; CN1, B2m; DC, B2; CH, C1; CN2, B31; DZ, B2; FK1, B3r; FF, B3h and B3j; GB2, B1 and B5; HG1/2/7, D9; GG1, B1b, B1e, B4, B5c, B5d, B5h, D2c, D2g, D3h, C1, G4 and G5; GG3, B3y and D3; HF2, D3k and D4; GM3, B3r; GZ1, B1b, B4, B5 and D6d; HS2, D3; HG0, D9; BE, form 45.

GROUP 12: *F4044* (Phases 6–7)

The contexts belonging to the ?chapel of Phase 6 (Matrix page 34) are here treated as one group (C. Turner-Walker, pers. comm.), incorporating foundation trench fills (contexts *4219, 4297, 4270* and *4139*), walls (contexts *4132* and *4135*), floor fill (context *4217*) and the fills of robber trenches/pits (contexts *4031, 4083, 4072, 4054, 4056, 3808, 4149, 2058, 2029, 2107* and *4034*). The miniature beaker from the foundation deposit in pit *F4138* is discussed on p.172 below.

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Nene Valley colour-coat	(EE)	(foundation deposit)			
Oxfordshire red colour-coat	(CN1)	67	5.9	0.15	11.6
Hadham oxidised wares	(DC)	8	0.7	-	-
(unclassified unslipped red wares)	(DZ)	3	0.3	-	-
fine grey wares	(GF)	7	0.6	-	-
storage jar fabric	(HG1)	223	19.7	-	-
sandy grey wares	(GG1)	361	31.8	0.61	47.3
sandy grey wares	(GG3)	170	15.0	0.3	23.2
Rettendon wares	(GR)	15	1.3	-	-
Rettendon wares	(HF2)	135	11.9	0.15	11.6
(unclassified grey wares)	(GZ1)	74	6.5	-	-
Late shell-tempered ware	(HS2)	43	3.8	0.08	6.2
grog-tempered ware	(HG6)	13	1.1	-	-
(unclassified grog-tempered)	(HG0)	15	1.3	-	-
TOTALS		1134		1.29	

Forms: CN1, B2 and B3; HG1, D9: GG1, B1c and L1; GG3, B1b; HS2, D3.

GROUP 13: *F5202* (Phase 7)

The fills of this depression (contexts *5243, 5251, 5267, 5261, 5250, 5249, 5233* and *5203*) were part of the campaign of backfilling over the whole site that characterised Phase 7 (Matrix page 361). The latest coins are of Arcadius and House of Theodosius, both 388–402 (*5203* and *5250* respectively), with others of the 330s to 350s and earlier radiates.

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Nene Valley colour-coat	(CT/EE)	558	8.7	0.71	10.1
Oxfordshire red colour-coat	(CN1)	647	10.0	0.47	6.7
Hadham oxidised wares	(DC)	233	3.6	0.56	7.9
(unclassified slipped white wares)	(EZ)	14	0.2	-	-
Oxfordshire white-slipped	(CN2)	15	0.2	-	-
(unclassified slipped red wares)	(CZ)	63	1.0	-	-
buff, pink and red wares	(DD)	45	0.7	0.14	2.0
(unclassified unslipped red wares)	(DZ)	243	3.8	0.96	13.6
Nene Valley mortaria	(FK1)	79	1.2	-	-
Nene Valley mortaria	(FK0)	27	0.4	-	-
Oxfordshire white ware	(FF)	184	2.8	-	-
(unclassified unslipped white wares)	(FZ)	10	0.2	-	-
fine grey wares	(GF)	49	0.8	-	-
Alice Holt ware	(GE)	7	0.1	-	-
storage jar fabric	(HG1)	362	5.6	0.05	0.7
sandy grey wares	(GG3)	391	6.0	0.33	4.7
Rettendon wares	(HF2)	701	10.9	0.31	4.4
(unclassified grey wares)	(GZ1)	2570	39.9	3.03	43.1
(unclassified grey wares)	(GZ0)	118	1.8	0.16	2.3
Late shell-tempered ware	(HS2)	119	1.8	0.31	4.4
TOTALS		6435		7.03	

Forms: CT, B1e; EE, B1, B2g, B2m, C1 and L5; CN1, B2h, B2m and D3; DC, B1, B2g and B3u; EZ, C1; CN2, B3; CZ, C1; DD, B2h; DZ, B1b, B5 and D3; GF, C1; HG1, D9; GG3, B1, B4 and D3; HF2, D3; GZ1, B1b, B5, D3 and D5; GZ0, D3; HS2, D3.

GROUP 14: *F3681* (Phase 7)

Perhaps the very latest activity on the site was the backfilling of this pit (contexts *3682, 3710, 3811, 3712, 3851, 3899, 4009, 4014, 4043, 4013, 4023, 4011, 4101, 4107, 4216, 4017* and *4150*; Matrix page 190).

		Wt (g)	*% Wt*	*EVE*	*% EVE*
Nene Valley colour-coat	(CT/EE)	14	0.5	-	-
Oxfordshire red colour-coat	(CN1)	191	6.8	0.26	5.3
East Gaulish Rhenish ware	(CH)	2	0.07	-	-
(unclassified slipped red wares)	(CZ)	2	0.07	-	-
buff, pink and red wares	(DD)	28	1.0	-	-
buff, pink and red wares	(DE)	4	0.1	-	-
(unclassified unslipped red wares)	(DZ)	2	0.07	-	-
North Kent grey wares	(GD)	4	0.1	-	-
fine grey wares	(GF)	3	0.1	-	-
Black-burnished 2	(GB2)	4	0.1	-	-
storage jar fabric	(HG1)	147	5.2	-	-
sandy grey wares	(GG1)	1064	38.0	1.65	33.8
sandy grey wares	(GG3)	127	4.5	0.43	8.8
Rettendon wares	(GR)	40	1.4	0.22	4.5
Rettendon wares	(HF2)	624	22.3	1.10	22.5
(unclassified grey wares)	(GZ1)	317	11.3	0.65	13.3
Late shell-tempered ware	(HS2)	105	3.8	0.32	6.6
grog-tempered wares	(HG5/6)	45	1.6	0.05	1.0
(unclassified grog-tempered wares)	(HG0)	58	2.0	0.05	1.0
Central Gaulish samian	(BD)	17	0.6	0.15	3.0
TOTALS		2798		4.88	

Forms: CT, C1; CN1, B2e and B2g; CH, C1; HG1, D9; GG1, B1, B4, B5, D2d and D3; GG3, B5 and D3; GR, D3; HF2, B5 and D3; GZ1, B1 and D5; HS2, D3 and D5; BD, form 33.

Table 19 The selected groups

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Platters	2.9	1.3	-	3.5	18.2	-	-	-	-	-	-	-	-	-
Dishes	-	-	23.8	10.6	6.5	14.2	15.4	34.3	49.0	32.4	49.8	25.6	38.1	41.0
Bowls	2.9	-	-	1.8	-	1.6	32.7	-	0.7	0.8	0.7	8.7	16.2	8.2
Bowl-jars	-	28.3	50.0	23.9	-	4.0	-	-	11.4	0.2	2.8	-	-	3.5
Mortaria	-	-	-	-	7.5	7.7	-	-	0.7	3.0	3.9	-	2.2	-
Cups	-	-	-	-	-	-	-	-	-	0.4	-	-	-	4.7
Beakers	-	-	-	-	1.2	-	-	-	3.4	6.1	0.5	58.0	-	-
Jars	91.4	67.0	26.2	48.6	51.3	26.3	51.9	35.5	26.6	49.4	34.0	4.6	39.6	42.6
Narrow-necked jars	-	-	-	-	-	-	-	-	-	0.8	7.0	-	-	-
Storage jars	2.9	3.3	-	5.6	15.4	17.7	-	-	6.0	2.7	1.4	-	0.9	-
Flagons	-	-	-	5.9	-	28.4	-	30.1	-	0.7	-	-	-	-
Lids	-	-	-	-	-	-	-	-	0.7	0.4	-	2.9	2.9	-

Table 20 Incidence of vessel classes in stratified groups

Kiln *F278*

(with a note by A.J. Clark)

A detailed description and discussion of the Phase 5, early 4th-century updraught pottery kiln has been provided in Part 2 (p. 47–50) and Fig. 41; Part 5 (p. 246); Plates IX and X. This supersedes earlier accounts (Swan 1984, gazetteer page 303; Turner 1982, 12). It only remains here to describe the kiln products and discuss the various strands of dating evidence.

Kiln contexts (not only the fills of the oven, flue and stokehole) produced a total of 1732 sherds, 14.3kg of pottery, of which 1165 sherds, 9.9kg were identified as kiln products. The other sherds were mainly greyware fabric GZ1, with some HG1, GG1, CZ, GD, GF, HS and residual Iron Age sherds.

The fabrics

There were two coarse ware fabrics produced on the site, GG6 and GZ6, each with a variant used according to the class or type of vessel being made. Wasters or 'seconds' were found in both fabrics.

GG6 (7.02 EVEs)

Description: a hard, sandy, grey ware with abundant, well-sorted, rounded sand inclusions. In many cases the sherds had a characteristically gritty appearance where the original surfaces had been worn, or lost through soil conditions, to leave the sand particles exposed. Grey or red core (Munsell 5YR4/6-7.5YRN3 or N6), dark grey or black surfaces (10YR5/1-7.5YRN3), frequently paler (5YR3/4).

The variant was a well-finished, though slightly rough to the touch because of the tempering, very dark grey or black ware. The original surfaces were never abraded, compared with the main fabric.

Forms: (the classifiable forms were jars only, context 279 producing some dish sherds of uncertain form also) D2; D3k; D3h; D4; D5; D6d; D6f; G0

GZ6 (6.42 EVEs)

Description: a hard light grey-brown, sand and ?grog-tempered ware with a very smooth finish and moderate well-sorted, rounded sand and very fine red or dull brown inclusions in a micaceous clay. Some vessels may have been burnished but, like those in GG6, many sherds had lost their original surfaces. Pale to reddish-brown core, pale grey to dark brown surfaces.

A coarser variant was used for pie-dish forms and a finer one for other vessels.

Forms: dishes, beakers, wide-mouthed bowls and jars B1c; B1d; B1g; B4a; B4c; B5; C1j; C2; D3b; D5

Both fabrics were used for making decorated vessels: typically, the shoulders of jars in GG6 were decorated with bands of leaf-shaped motifs (*e.g.* Fig. 113.14 and 15) while beakers in GZ6 were rouletted (*e.g.* Fig. 114.25).

A small amount of Fabric GZ6 was recognised outside the kiln, in ?buried soil *224* and a fill of ditch *F240* (an extension of major ditch *F837*).

Magnetic dating

by A.J. Clark

(1982)

Samples for thermoremanent directional measurement were taken by the disc method (Clark 1980) and orientated by means of a theodolite with which the direction of north was found by a timed sun observation. Three samples were taken from the south side of the pedestal, and nine from various positions around the circuit of the floor where it seemed most stable. The samples were measured in a Digico fluxgate spinner magnetometer.

Two of the pedestal samples proved to have steeper inclinations than all the floor samples, as well as relatively westerly declinations, probably caused by magnetic distortion and refraction in the structure itself; therefore the final calculations were based only on the floor samples, in which such effects are more easily allowed for. Partial demagnetisation of a pilot sample in alternating fields up to 300 oersteds showed that no appreciable changes in direction of magnetisation had occurred subsequently to firing, so that the measurements could be used without modification.

The mean direction of the floor samples was Dec. 7.9° W, Inc. 61.2°, alpha 95 =3.8. Normalised to Meriden as the centre of the country, this becomes Dec. 8.5+/–4.2° W, Inc. 61.8°. Also 2.4° was added to the inclination to compensate for magnetic refraction, bringing it to 64.2°. The declination value is too far west to fit sensibly on to the late Roman part of the calibration curve; however, inspection of the kiln sections suggested that some subsidence in an easterly direction into the pit underlying the kiln could have occurred. Using the bedding error correction program of the magnetometer computer, it was found that a tilt of 5° would bring the direction back on to the curve with a final value of Dec. 0.8+/–4.2° E, Inc. 62.1°. This, in our present state of knowledge of the curve, is equivalent to a date span of AD280–380 at the 68% confidence level, the most probable value being about AD300.

Discussion

The date-range for the last use of the kiln, which may not have been long after its original firing, has been given above as AD280–380, whereas the pottery (Figs 113–114) would not seem to be much later than the mid-3rd century. The latest piece is the B5 dish, No. 7, which could be as late as the early 4th. The other dishes, and the jars and beakers, are solidly earlier. This difference requires explanation.

To Colin Wallace the answer would seem to lie in the fact that what is published here is *not* a failed kiln-load: while sherds of GG6 and GZ6 occur in the fills of the stokehole, flue and oven, there are also examples from the pedestal (context *703*: GG6) and the second oven floor (*281*: both fabrics), showing that the magnetic dating does not directly apply to the pottery (which may derive entirely from a nearby kiln-dump as suggested by the excavator (Part 2 above)). There was no good dating evidence from the immediately pre-kiln pits *F2410* and *F2561*. The fifteen kiln contexts with pottery had appreciable amounts of other fabrics, often heavily residual, as well as GG6 and

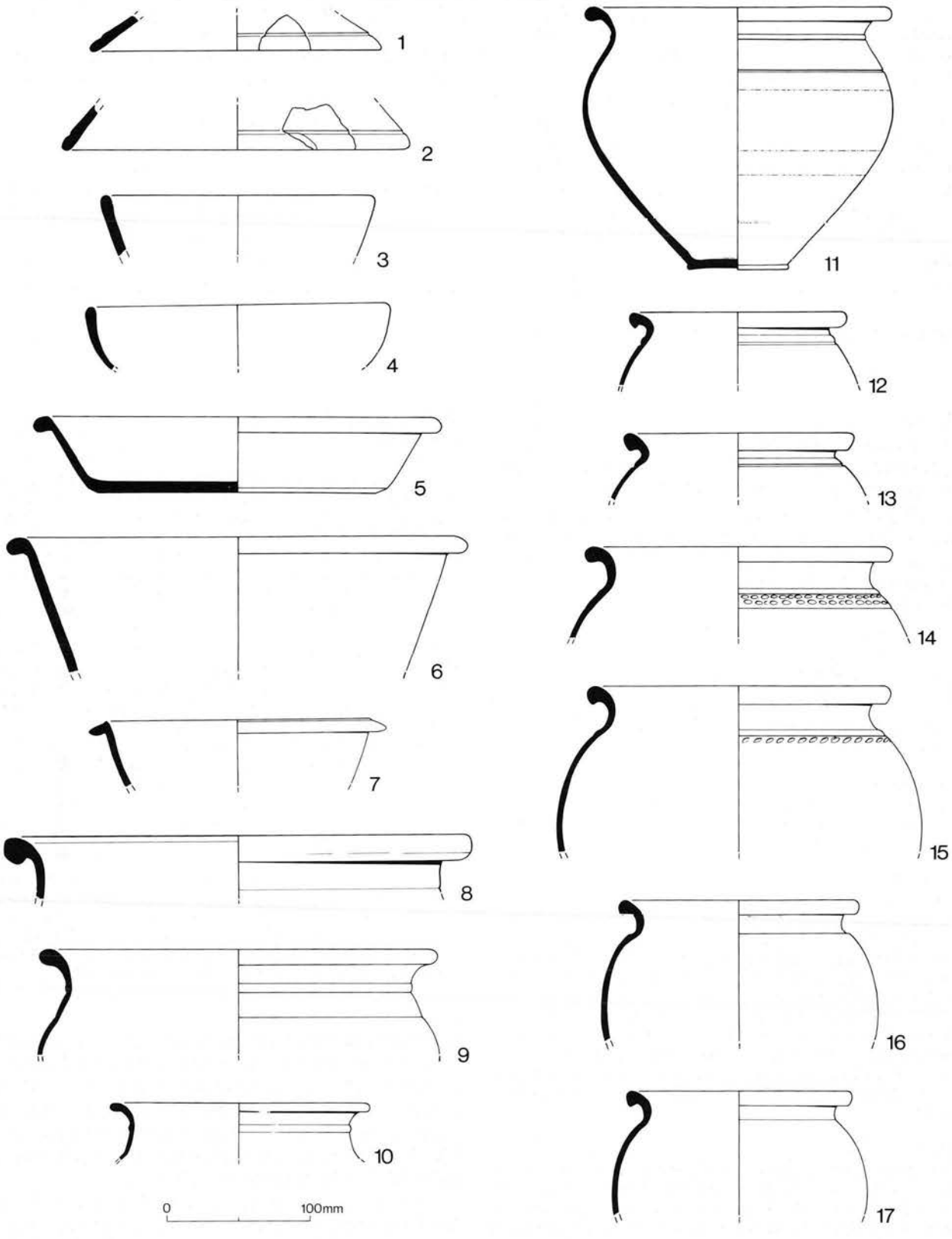


Figure 113 Pottery: Kiln products. Scale 1:4

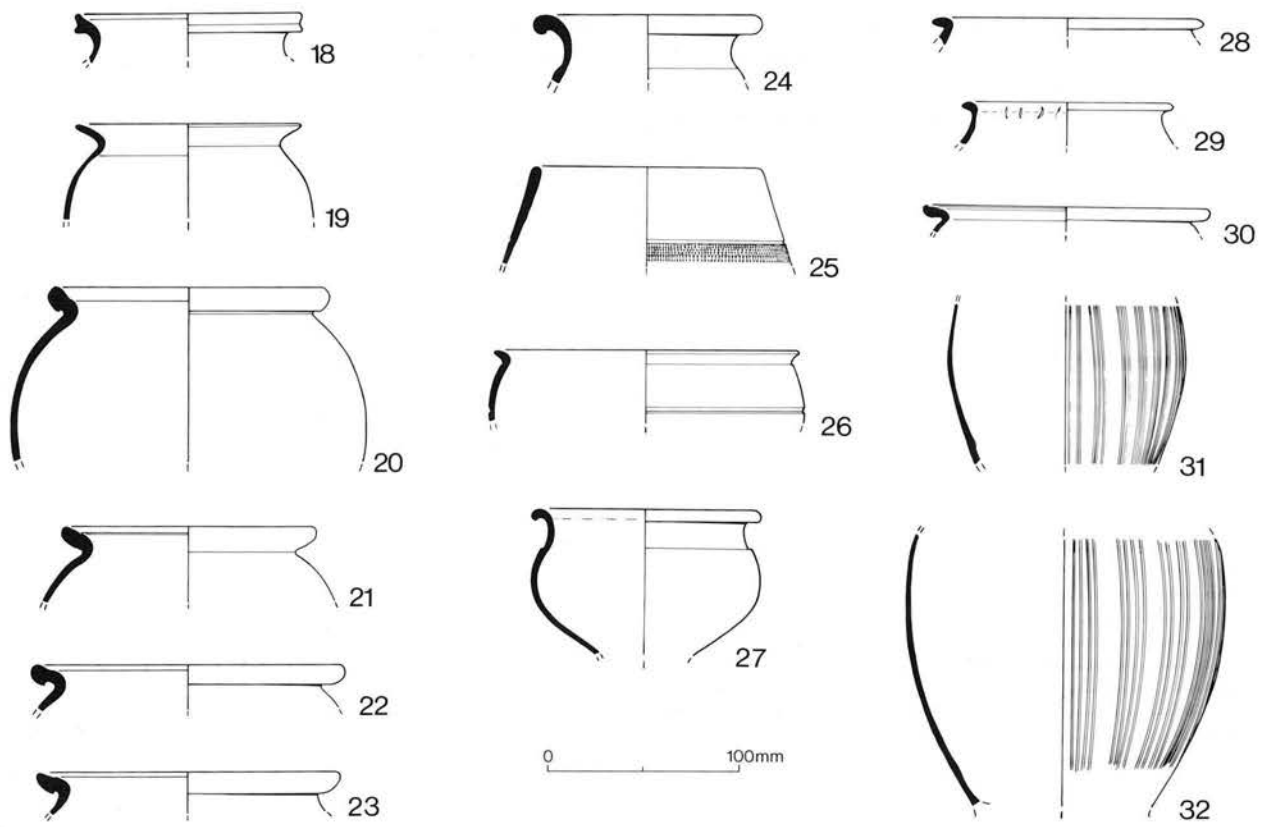


Figure 114 Pottery: Kiln products. Scale 1:4

No. on figures	*Form*	*Fabric*	*Context*		
1	L	GZ6	279	(disuse)	[D35]
2	L	GZ6	279	"	[D558]
3	B1d	GZ6	279	"	[D29]
4	B1g	GZ6	242*	Phase 5–6	[D159]
5	B4a	GZ6	427	(oven)	[D3]
6	B4c	GZ6	427	"	[D13]
7	B5	GZ6	427	"	[D15]
8	D2	GG6	279	(disuse)	[D28]
9	D3	GG6	279	"	[D18]
10	D3	GZ6	279	"	[D33]
11	D3b	GZ6	279	"	[D2]
			427	(oven)	
12	G	GG6	279	(disuse)	[D30]
13	D3h	GG6	658	(oven)	[D182]
14	D3k	GG6	427	(oven)	[D12]
15	D3k	GG6	427	"	[D14]
16	D3k	GG6	427	"	[D8]
17	D3k	GG6	427	"	[D20]
18	D4	GG6	658	(oven)	[D183]
19	D5a	GZ6	658	"	[D184]
20	D6b	GG6	427	(oven)	[D4]
21	D6d	GG6	427	"	[D16]
22	D6d	GG6	279	(disuse)	[D19]
23	D6f	GG6	279	"	[D34]
24*	G	GG6	279	"	[D31]
25	C1j	GZ6	279	"	[D32]
26	C2	GZ6	443	(flue)	[D176]
27	C6b	GZ6	658	(oven)	[D187]
28	-	GG6	279	(disuse)	[D37]
29	-	GZ6	279	(disuse)	[D169]
30	D6	GG6	279	(disuse)	[D168]
31	D	GZ6	427	(oven)	[D27]
32	D	GZ6	427	(oven)	[D25]

* =Ditch *F240*, Phase 5–6

GZ6, which only reinforces the looser association between this kiln and the kiln products envisaged above.

Catriona Turner-Walker is confident that she would have been able to isolate Fabrics GG6 and GZ6 away from the kiln if they had been present: their absence is unfurtunate as there is a dearth of known Roman pottery production sites in Central Essex between the early 2nd-century coarse ware production at Chelmsford (Going 1992, 97–8) and the later 3rd-4th Rettendon-type wares (Inworth *etc.*: Going 1987, 73–90). Only Heybridge has provided (indirect) evidence for greyware manufacture, *c.* mid-3rd century (Wickenden 1987, 46–50), of a similar range of forms to that at Witham.

Pottery of intrinsic interest

Aside from the ceramic sequence provided by the stratified groups (discussed below, p. 177–9), the fabric classification and the form series (above), some of the Ivy Chimneys pottery has been the subject of specialist reports, which are summarised here. A selection of other pottery of intrinsic interest is also presented below.

Votive pottery

The foundation deposit underlying the north wall of the Phase 6 ?chapel *F4044* has been described and discussed above (Part 2, X; Part 3, VII). The vessel itself, in Nene Valley colour-coat (Fabric EE), is No. 207 in the form catalogue earlier in this report (above, the Form Series Fig. 100). At only 86mm high, it is a *miniature* version of a bag-shaped beaker with a cornice rim (proportionally, the vertical dimension, especially towards the base, has been exaggerated). Its prototypes have a date-range spanning the 2nd century AD and this example contained a 2nd-century

As. However, the context leaves little doubt that this was a foundation deposit for the mid-4th century building.

Single examples of the class of vessel known as unguent jars (Fig. 112.330–331) also occurred. While these are known from temple sites, *e.g.* Verulamium (Henig 1984, pl. 72), they do turn up amongst ordinary site assemblages and in use as crucibles (*e.g.* Wilson 1972, 264), so that a single function cannot be assumed. The sieve or strainer-bowl (Fig. 110.322) from a final backfill of the font depression *F2409* is a much rarer pottery form but neither can it be more confidently associated with the religious aspects of this site.

Amphoras
(Fig. 115)

Identifications of all sherds recognised as coming from amphoras were kindly provided by Dr Paul Sealey of the Colchester and Essex Museum. A glance at Table 17 (the Fabrics, above) shows that, unsurprisngly, South Spanish olive-oil amphoras dominate, with only a small showing by other producers and products. Given that the robust Dressel 20 amphoras were among those best fitted for *re-use*, by virtue of their construction and contents, this may not reflect accurately patterns of supply to the site.

Amongst the South Spanish amphoras was a single sherd probably from a Dressel 23/Peacock and Williams Class 26 (Phase 7, *F2409*), a smaller, thinner-walled type which had evolved from the Dressel 20 by the 3rd century. There were sherds from at least two amphoras which can be labelled 'Dressel 20/23', *i.e.* late in the evolutionary sequence, judging from their relatively thin walls: they first occurred in Phase 3.

Also of interest were two stamped Dressel 20 handles. One (from Group 10, context 62; Fig. 115.1) was too worn to read, despite the deep impression. Adjacent to the stamp three notches had been cut. The other (Fig. 115.2) shows a variant on a *tria nomina* stamp (here QIM), reading QIWⱭN (Callender 1965, 1464d — *cf.* fig. 15.8). It came from the fills of two of the post-holes of the Phase 4 ?temple *F731*.

From Phase 2.3 (sinkage fill *F196* in ditch *F1124*) came a bodysherd from an Italian amphora (Pre-Roman pottery, above). Alas unstratified were sherds of a Late Roman hollow-foot amphora (Peacock and Williams Class 47: known regionally from London, Chelmsford, Colchester and Brancaster). Finally, a handle in Verulamium Region fabric from a Phase 6 context almost certainly belonged to a Romano-British Dressel 28/Pélichet 47 *copy* (Corder 1941, 291–292: it had the deep thumb-depression at the base of the handle, which distinguishes the amphoras from other flagons).

Samian
by Brenda Dickinson
(June 1984, revised 1990)

The evidence of the samian ware from this site shows that there was occupation, probably on a rather limited scale, in the 1st century AD, starting in the pre-Flavian period. There is a fair quantity of South Gaulish ware of the period *c.* AD70–110, with a few Trajanic and Hadrianic pieces which may also belong to the first period of occupation.

There is no samian which can be clearly distinguished as early- or mid-Antonine, but there is a great deal of Lezoux ware from the last third of the 2nd century and an uncommonly high proportion of East Gaulish ware. This suggests that the site saw intense activity in the late 2nd and early 3rd centuries, after little or none in the middle of the 2nd century.

The relative quantity of samian mortaria (from both Lezoux and East Gaul) is unusually high, which one might have expected to be related to the nature of the site (*cf.* the Carrawburgh *mithraeum* (Richmond and Gillam 1951, fig. 10.26)). However, this may not be the case, as most of the vessels from Ivy Chimneys are worn internally.

Most of the East Gaulish ware comes from Rheinzabern, but the proportion of vessels thought, on the evidence of the fabrics, to be from Trier is rather higher than usual. There is practically no Argonne ware, and no certain examples of Colchester ware have been noted.

In the catalogue below, Stanfield and Simpson 1958 is abbreviated to 'S & S'. References to figure-types in Déchelette (1904) and Oswald (1936–7) are prefixed by 'D' and 'O' respectively, while 'Rogers' refers to motifs in Rogers 1974.

A detailed listing, context by context, of all the samian ware from the 1963–73 and 1978–83 excavations can be found in the archive pottery report.

The decorated ware
(Fig. 116)

1. Form 37, South Gaulish, with a scroll over a zone of S-shaped gadroons. Both Mercato(r) i and M.Crestio used the gadroons, and the layout is reminiscent of the latter's work. Cf. Bushe-Fox 1926, pl. XIX, 2, from Richborough. The leaf is Mercat(o)r's, however. The dog is 0.2035A. The trident-tongued ovolo, here very blurred, seems not to have been recorded on signed or stamped bowls. The bowl cannot be attributed to a particular potter, but falls within the range *c.* AD80–110. *[927]; 2104 (pond F183); Phase 3*
2. Fragments of a South Gaulish jar of Déchelette form 67. The probable sequence of panels is: 1A) Plant, between birds (Hermet 1934, pl.28, 67); 1B) Dog (approximately 0.1922); 2) Pan (0.722); 3A) Approximately =1a; 3B) Hare (not in Déchelette, Oswald or Hermet); 4) Satyr (0.646). The plant varies in size, and the smaller version is probably to be explained by inaccurate laying out of the panels. The figure-types were all used at La Graufesenque in the Flavian-Trajanic period and the Pan and satyr are on several bowls in a group of that date from the Bregenz Cellar (Jacobs 1913, nos 8, 12, 14, 21). *c.* AD80–110. *[5034], [5039], [5044]; 4747 (depression F4502, upper middle fill); Phase 2.3*
3. Form 37, Central Gaulish, with scroll decoration and Cinnamus ii's ovolo 2 (Rogers B231). The leaf (Rogers H13) and astragalus scroll-tie are on one of his stamped bowls from London (Stanfield and Simpson 1958, pl. 161, 53). *c.* AD150–180. *[3016]; 3324 (ditch F3323); Phase 4–5*
4. Form 37, Central Gaulish. The small, straight-tongued ovolo (Rogers B183) and coarse, zig-zag border were used by Servus iv of Lezoux. *C.* AD160–190. *1914 (depression F1925); Phase 4–5*
5. This form 37 is in the style of Iulius viii of Rheinzabern, with a Venus (Ricken and Fischer 1963, M51) in a double arcade supported by an ornament (Ricken and Fischer 1963, 0161, incompletely impressed). Cf. Ricken (1948) Taf.208.22 for the Venus and Taf. 207.1. for the arcades and support. Late 2nd or early 3rd century *1 (Unstratified)*

The stamps
(Fig. 117)

1. ?Atvicianus, Central Gaulish. Form 31, stamped ΛTVICIΛИ. This stamp has been ascribed to Atvicianus (die 1a), though it is just possible that the potter may be illiterate. The fabric of this piece suggests origin at Lezoux. The footring is vertical and the kick is unusually high. The site record for this stamp is entirely British, apart from one example from Brigetio. Mid-late Antonine. *[5023]; 4711 (depression F4695); Phase 6–7*
2. Cosius Rufinus of La Graufesenque. Form 27, stamped COSRVF (die 12a). There are several examples of this stamp from Flavian foundations, including Watercrook, York and the Nijmegen fortress and Ulpia Noviomagus sites. The potter's output includes early-Flavian decorated bowls, though this particular stamp is known only on form 27. *c.* AD70–90. *[5035]; 4747 (depression F4502, upper middle fill); Phase 2.3*

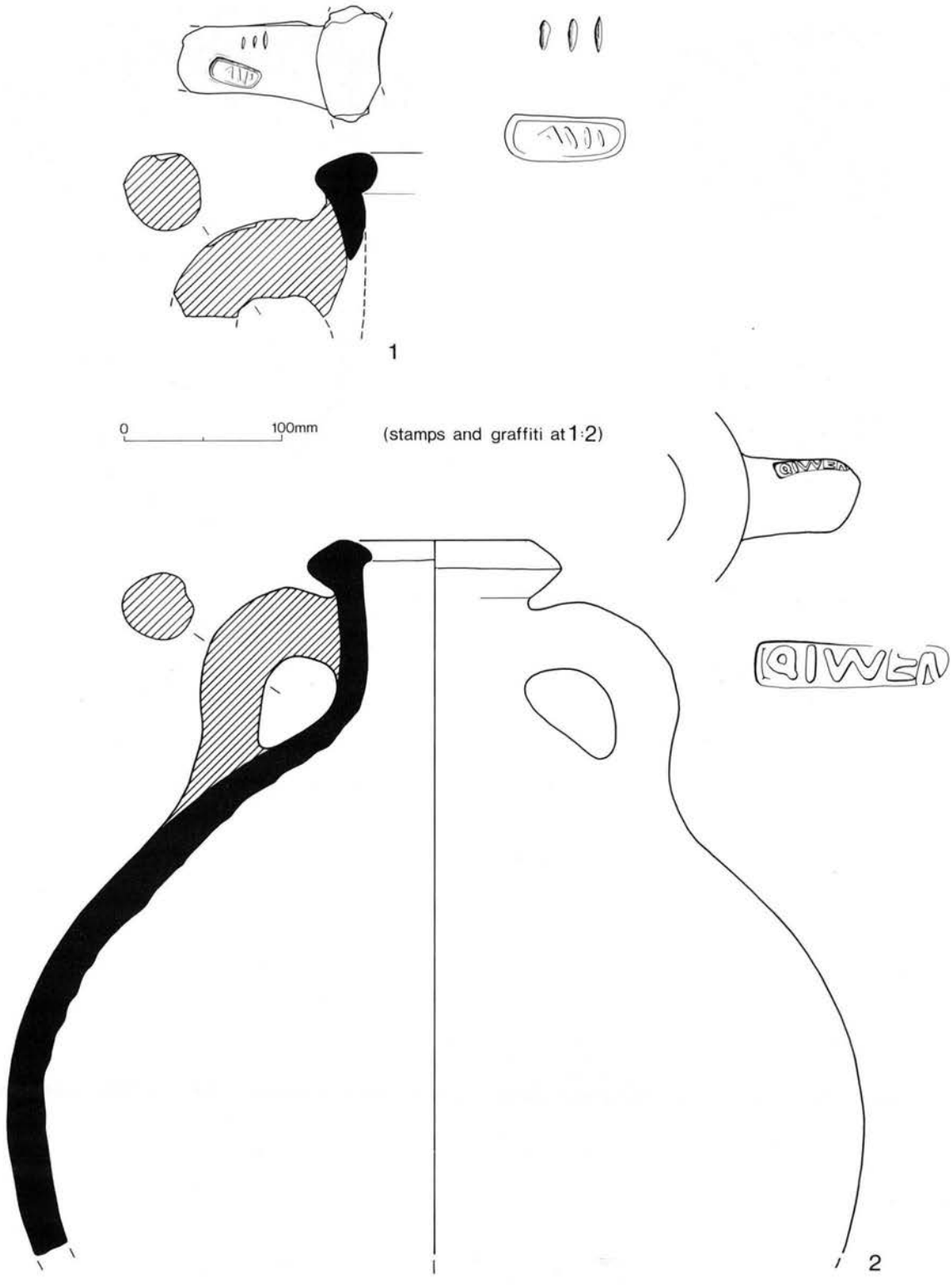


Figure 115 Pottery: Amphoras. Scale 1:4; stamps 1:2

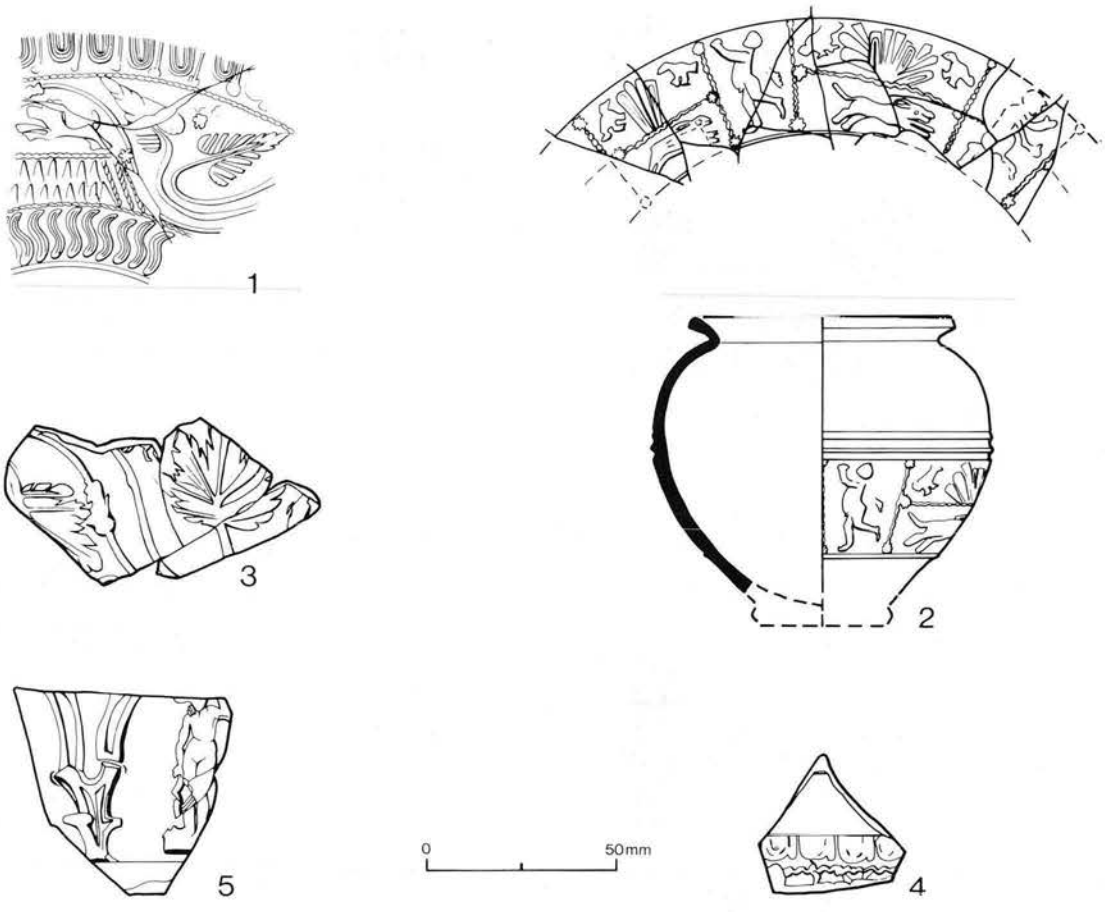


Figure 116 Pottery: Decorated samian. Scale 1:2

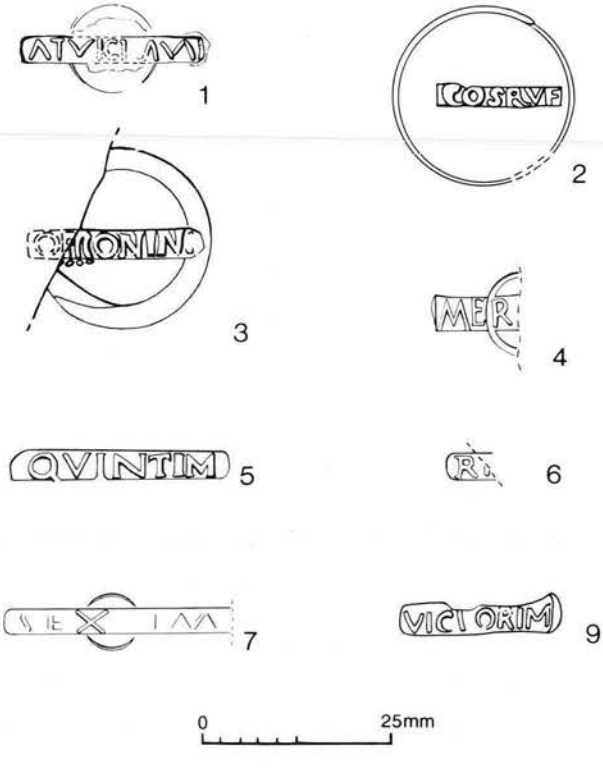


Figure 117 Pottery: Stamped samian. Scale 1:1

3. Frontinus of La Graufesenque. Form 27g, stamped [OF]RONTINI (die 1a, known to have been used there). This stamp has been noted several times on early-Flavian form 29s, including one from Camelon. *c.* AD70–90. *[5004]; 4632 (ditch re-cut F5080); Phase 4–7*
4. Mercussa of Lezoux. Form 33 base, stamped MERC[VSSIM] (die 4b). Mercussa's forms include 18/31R and 27, but also 79 and 80. One of his stamps comes from Chester-le-Street and others are in a mid- to late-Antonine kiln at Lezoux. *c.* AD150–180. *[925]; 48 (post-hole F1321); Phase 3*
5. Quintus v of Lezoux. Form 33 base, stamped QVINTIM (die 5a, known from there). A stamp recorded from Pudding Pan Rock and from sites in the north of Britain reoccupied *c.* AD160. It occurs on form 31R and 79. *c.* AD165–200. *[1273]; (unstratified 1937)*
6. Regulianus of Lezoux. Form 33, stamped R[EGV(IANI] (die 2a, known to have been used there). A stamp recorded from the Wroxeter gutter and on forms 33, 38, 79 and, probably, 80. *c.* AD160–190. *[926]; 2845 (depression F2409, horizon 1); Phase 3*
7. Sextus v of Lezoux. Form 33, stamped SEXTIMVM (die 2b). Sextus' stamps occur at Pudding Pan Rock and at sites in the north of Britain reoccupied *c.* AD160. This particular stamp has been noted from Bainbridge. It was used on forms 31, 33 and 79. *c.* AD165–200. *[928]; 76 (depression F2409, horizon 3); Phase 6*
8. Too incomplete to illustrate. Silvius ii of Lezoux. Form 18/31, stamped S[ILVI·OF] (die 1d). A stamp occurring mainly on forms 18/31 and 27, which constitute the bulk of his output. Both this and his other stamps occur in the Rhineland, suggesting activity in the first half of the 2nd century. *c.* AD125–150. *[1278]; 4331 (gully F4329); Phase 4–5*
9. Victor iv of Lezoux. Form 33, stamped VICTORIM (die 1c, known from there). This stamp is usually on form 33, but has also been recorded on forms 31R and 79. One of his other stamps is in a grave at Sompting, Sussex, with stamps of Lezoux and Rheinzabern potters and a scarcely-worn coin of Geta as Caesar (Ainsworth and Ratcliffe-Densham 1974, 312). *c.* AD160–200. *[1270]*; (unstratified pre-1978)

Stamped pottery

Amphoras
see above (Fig. 115)

Mortaria
The overwhelmingly late Roman nature of the site's pottery is pointed-up by there being only a single piece of stamped mortarium — the practice of stamping mortaria died out towards the end of the 2nd century AD. A flange fragment from the pre-1978 excavations (unillustrated, archive catalogue No. 44) in East Anglian mortaria Fabric FM3 is described by Mrs Hartley as 'a fragmentary potter's stamp, too faint for identification. 2nd century rather than 1st'.

Samian
see above (Fig. 117)

Decorative stamps
See Fig. 95.160 for a pattern of demi-rosettes on an Oxfordshire colour-coat bowl and Fig. 109.317 for a complete roller-stamped flask.

Other pottery of intrinsic interest

Aside from the surviving vessels of the 1849 discoveries (Introduction, above), Fig. 118 gathers together examples of graffiti on pottery, three pieces of interest not used in the form-series (above) and five spindle-whorls and pottery counters, selected as representative of others not drawn.

Graffiti
(Fig. 118)
Non-literate marks are shown on Fig. 118.6, 8 and 9: No. 8 *[1252]* is a simple 'X' on the rim of a sandy grey ware dish; No. 6 *[1240]* is an example of an 'X' within a rectangle on the underside of the base of a grey ware ?jar; and No. 9 *[1219]* is a roughly incised triangle-shaped mark on a sandy greyware body sherd. Nos 5 and 7, however, are fragmentary pieces of post-firing *literate* graffiti, reading ..]ESE[.. (No. 5, *[5115]*) and ..]LAN[.. (No. 7, *[1274]*) on greyware sherds.

The other ceramics
(Fig. 118.10–17)
The handled vessel, No. 10, in fine grey ware with vertical rows of circles stamped on the handles is alas not complete enough to be assigned a place in the form-series and the same goes for the fragment of a greyware spouted vessel, No. 11. The plain-rimmed dish in Late shell-tempered ware, No. 12, is a form only recently recognised as present in Essex alongside the B5f dishes and D3 jars and unfortunately ommitted from the form series.

Of the spindle-whorls, No. 14 is of most interest as it is the re-used base of a Middle Iron Age vessel (found in a Phase 2.3 context). Recent work on ceramic counters has found no clear evidence for the use to which they were put: 'domestic', as reckoning counters or as pieces for board games (Crummy 1983, 93–95). All the Ivy Chimneys examples were in grey wares and from late Roman contexts.

No. on figures	*Form*	*Fabric*	*Context*	*of*	*Phase*	*Archive Drawing*	*Description*
1	-	-	1849 discoveries		-	-	[17a, above]
2	D	-	1849 discoveries				[17a, above]
3	E1	-	1849 discoveries				[17a, above]
4	E1	-	?1849 discovery				[17a, above]
5	-	GG1	*1601*	*F837*	5.6	[D559]	graffiti
6	-	GZ1	*3159*	*F3158*	5.7	[D117]	graffiti
7	-	GZ1	*D3747*	-	7	[D91]	graffiti
8	-	GG1	*3826*	*F3204*	5	[D118]	graffiti
9	-	GG1	*4179*	*F3647*	6.7	[D108]	graffiti
10	-	GF	*86*	*F2409*	7	[D90]	handled vessel
11	-	GZ1	*1271*	*F1270*	3	[D119]	spout
12	B1b	HS2	*2148*	*F679*	6	[D265]	dish
13	-	GG2	*86*	*F2409*	7	[D113]	spindle-whorl
14	-	GZ2	*1293*	*F1292*	2.3	[D110]	spindle-whorl
15	-	GG1	*D3532*	-	7	[D114]	spindle-whorl
16	-	GG1	*3533*	*F3421*	3.7	[D115]	spindle-whorl
17	-	GG1	*3829*	*F3321*	6	[D116]	spindle-whorl

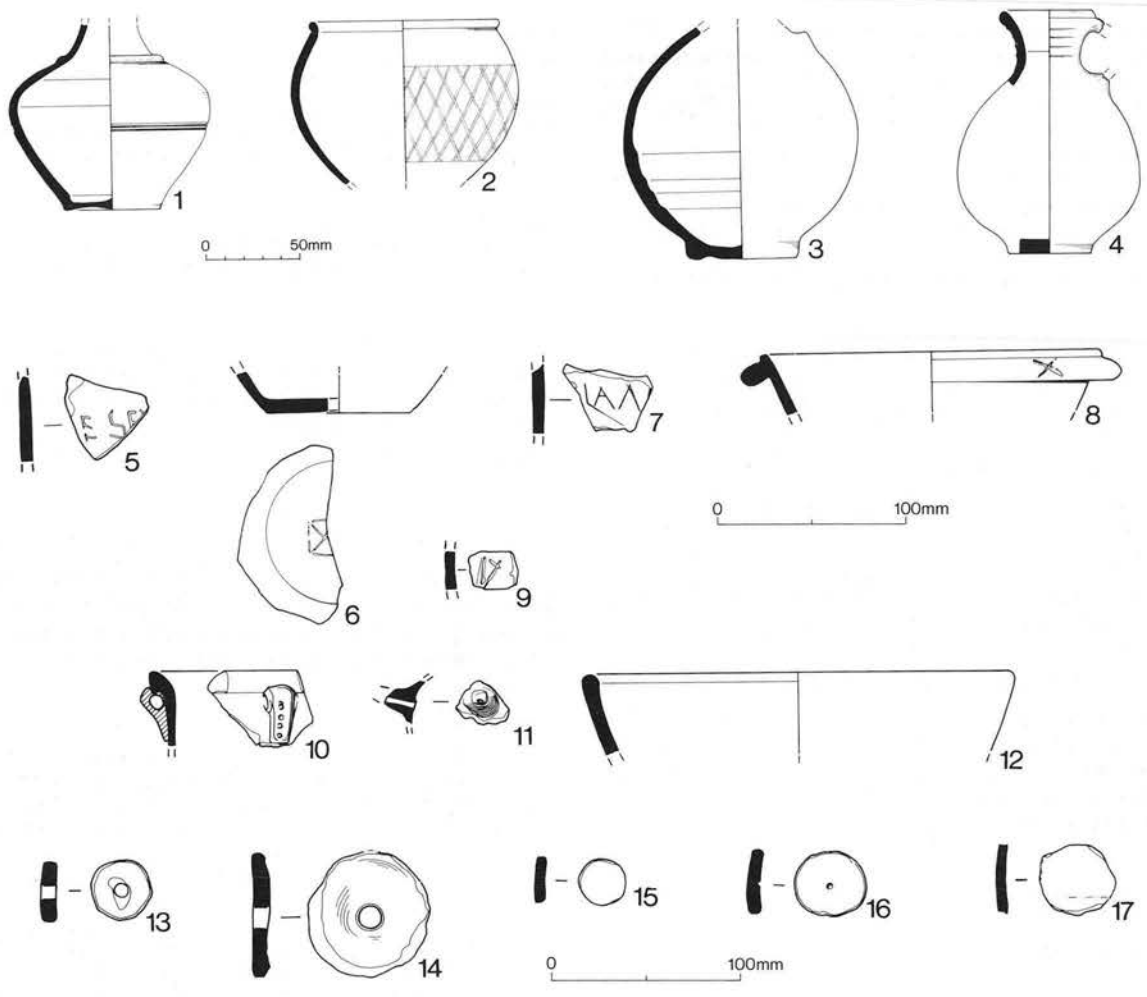


Figure 118 Pottery: Other pottery. Scale 1:4

Discussion

Phase 1 Pottery, Dating and Affinities

From Table 15 (above) it can be seen that the Phase 1 pottery encompasses two distinct fabric groupings: one mainly *flint tempered*, with variants defined according to the presence or absence of other types of filler (Fabrics HF1 and HF4–6), and the other mainly *vegetable tempered* (GZ fabrics) with a small amount of glauconite-tempered wares (HE fabrics).

The flint-tempered Early Iron Age forms (Figs 85.1–4, 9; 86.13) fall mainly into Barrett's (1980, 302–3) jar class I (at 1.12 EVEs overall, calculated on rim percentage) with only a small showing for bowls, class III (Fig. 86.13: 0.11 EVEs). The diagnostic sherds belong to the Darmsden-Linton group of the 8th–5th centuries BC (Cunliffe 1991, 76, 565) and can be compared with recently published Essex assemblages like Lofts Farm (Brown 1988, 271–2) and Beacon Green, Maldon (Brown 1992). As the Ivy Chimneys material was classified by rim form alone, the use of the occurrence (or lack of it) of pedestal bases to help distinguish later from earlier assemblages within this broad date range (*cf.* Barrett 1978, 286–7; Brown 1992, 18) has not been possible.

The illustrated Middle Iron Age forms (Figs 85.5–8, 10–12; 86.14–22) can be compared with the jar and bowl-jar forms at Drury's Little Waltham site of the mid-3rd to later 1st centuries BC (Drury 1978a, 51–85). The small bowl No. 14 can be directly parallelled among the Middle Iron Age pottery from Kelvedon (Gurney, in Clarke 1988, fig. 16.1). At Ivy Chimneys, the jars (Nos 5–8 and 10–11) account for 2.10 EVEs while the bowl-jars (Nos 12 and 14–21) make up 1.32 EVEs. Vertical and random scoring does not seem to feature at Ivy Chimneys (it is one of the six distinctive elements of Drury's (1978a, 127) Waltham pottery style): here decoration includes finger-tip decoration of the rim (Fig. 85.12), more emphatic finger-tip impressions (No. 18 rim; No. 19 neck) and distinctive dimpling (No. 15).

Pottery supply and use at Ivy Chimneys in the Roman period

From the fourteen stratified groups selected for special attention and described above (p. 162–70), some discussion can proceed. For most of the period concerned (Phases 3–7), comparison can be made with the overview created for Roman Chelmsford (Going 1987, 106–119), some 14km away on the road to London. *Quantified* material is not yet available for the *colonia* at Colchester, while the assemblages from roadside settlements like Braintree, Coggeshall and Kelvedon do not include quantified groups. In this respect, Stratified Groups (above) provides data from a central Essex site below the rank of 'small town' to set beside the available (and forthcoming) evidence from sites of higher status.

Refer to Table 19 for the relationship of the Groups to the site phases.

Phase 2.3: post-conquest, second half 1st century AD
The site is within Thompson's 'pottery zone' 1 for the Late Iron Age/Early Roman period. where grog-tempered wares (here the HG fabrics) are the dominant pottery type (there is little shell-tempered and that post-conquest: Thompson 1982, 8–9). The 'Belgic' grog-tempered fabric, HG4, is much more frequent in Groups 1 and 2 than the romanising variety, HG5, but the picture is clouded by the amounts assigned only to the very general category HG6 (see pre-Roman pottery). Non-local and imported wares in these groups are quite fragmentary — no EVEs measurable, no forms recognised. Compared with Chelmsford Ceramic Phase 1 (of *c.* AD 60–80), examples of fine wares/white wares/buff wares are distinctly few here.

Hand-in-hand with the overall dominance of the local wares goes the fact that jars are the most common form. There was nothing exclusively early amongst the grog-tempered wares illustrated in Figure 87.24–38, but there were some long-lived forms (*e.g.* Nos 27 and 28, *cf.* Thompson C1, C2–3).

Phase 3: early Roman, 2nd to mid-3rd century AD
Only with the last group here (Group 5) do we get a reasonable EVEs count. Grey wares and jar forms dominate, as they do *throughout* the Roman phases (jars account for between 25% and 50% of EVEs between Phases 3 and 7: Table 20 above, and the Fabrics, above).

Among the fine wares, Colchester products naturally make the strongest showing in Groups 3–5 as Phase 3 covers the period of the industry's rise to prominence. Apart from the grey wares, mortaria fabrics are quite common in Group 5. The first appearance of BB2 (Fabric GB2), here in Group 4, accords with the horizon noted elsewhere in the region (*e.g.* Going 1987, 8). There is not a great amount of samian from the groups of this phase, so the 16.4% EVEs of East Gaulish in Group 5 is notable. Group 4 has some Hadham oxidised ware (Fabric DC), which does occasionally occur in this region in contexts earlier than the date at which it became *widely* traded (roughly, Phase 4). Overall, no surprises when compared with Chelmsford Ceramic Phases 3 and 4 (*c.* AD 120/125–200/210).

Phase 4: late 3rd century AD
Compared with the Phase 3 groups, in the groups of this phase Nene Valley fine wares have now totally eclipsed those from Colchester and Oxfordshire mortaria (Fabric CN2) appear to compete with East Anglian products. Flint-tempered Rettendon-type wares (HF2: Group 6) now join the (local) grey wares. BB2 is absent (reappearing later on, ?residually) but most interesting is the *absence* of BB1, both here (in Groups 6 and 7) and from the site as a whole (*v.* Table 17). The ware is never very common in the region, but it is present at Chelmsford in the comparable Ceramic Phase 6 (*c.* AD 260/275–300/310) and these Ivy Chimneys groups are not short of other kitchen wares (or forms).

Phase 5: early 4th century AD
Concentrating on the larger Group 9 (not contradicted by Group 8), there is an absence of the expected Nene Valley mortaria (FK1) against a background of a generally poor representation of mortarium fabrics. There is a strong showing for Hadham oxidised wares (Fabric DC) and a poor one for Nene Valley colour-coat (Fabric CT/EE), the latter point in contrast to Chelmsford Ceramic Phase 7 (*c.* AD 300/310–360/370). The tiny amount of Late shell-tempered ware (Fabric HS2) in Group 8 may be intrusive from the Phase 7 fills of the feature in question.

Phase 6: mid-4th century AD
Some of the picture provided by Groups 10 and 11 is distorted by *residual* pottery, some of which shows up clearly (*e.g.* the grog-tempered wares, the Colchester colour-coat, Rhenish wares and samian) while some remains to be guessed at, among the grey wares.

Nene Valley products (Fabrics CT/EE and mortaria FK1) and Oxfordshire mortaria (CN2 and FF) are back in evidence after the Phase 5 'gap'. Other Late Roman wares now appear in Phase 6 groups: Late shell-tempered (Fabric HS2), Alice Holt (GE) and Portchester D (FP), so that this phase compares best with the late end of Chelmsford Ceramic Phase 7. Narrow-necked jars, first occurring in this phase, are confirmed as a Late Roman type. The tenuous evidence for a late Roman grog-tempered ware (Fabric HG9, Group 10) has already been briefly set out (see the Fabrics, above).

Phase 7: later 4th century and early 5th century
Both the Hadham revival and the strong showing of Late shell-tempered ware and Oxfordshire red colour-coat, seen in the relevant Chelmsford Ceramic Phase (phase 8, of *c.* AD 360/370– 400+), are reflected here in Groups 12–14, although late shell-tempered ware appears in much smaller proportions than at Chelmsford and there is no Hadham oxidised ware in the latest group (14). The small amounts of Oxfordshire red colour-coat in Phases 5 and 6 (Groups 9–11) may be intrusive from Phase 7 levels in the features concerned. There is now no sign of the possible Late Roman grog-tempered ware noted in Phase 6 (not as much of a problem with residual pottery here either) and only a very small amount (no EVEs) of Alice Holt ware. Unlike Chelmsford, there is no late rise in the occurrence of storage jars.

The Pottery from a Local Shrine Site
Rodwell, in a recent volume on the material evidence for religion in Roman Britain (1980, 234–5), noted that 'patterns of activity on temple sites are far from consistent. They have a great deal to tell us about both the cults and their devotees', stressing the urgency of the large-scale investigation of temples in use. The only work to date on comparing temple finds assemblages has shown that temples cannot be considered a special class of coin-losing site and, in detail, found the temple site at Uley to have been 'virtually a normal site showing no more surprising peaks or depressions in its coin use and coin loss that a regularly occupied villa, or a regularly visited small town' (Reece 1980, 124).

Temple sites have, in the past, produced specialised ?votive pottery, for example the range of miniature grey ware jars and beakers from Lamyatt Beacon — vessel forms which Leech did not find on contemporary settlement sites (1986, 289). Ivy Chimneys is notably deficient in this class of pottery (see Pottery of Intrinsic Interest, above) and the excavator discusses further, above, the general paucity of 2nd/3rd-century votives.

The foundation deposit from the Phase 6 ?Christian structure can be parallelled on a wide range of religious

sites, from a humble rural shrine like Brigstock, to a representative of a highly specialised class of temple like the Carrowburgh *mithraeum*, but certainly in Essex there are at least as many foundation pots (not counting buried but open 'votive' pots) from domestic as from religious sites — so that what we are seeing at Ivy Chimneys is a manifestation of a relatively widespread ritual practice rather than site-specific behaviour.

Could the pottery represent the debris of activities, especially feasting, rather than the offerings given to the god(s)? Further light on this aspect can only come with the comparison of Groups 3–14 (p. 163–9) with contemporary deposits from a variety of sites. Comparison with the sequence from the southern part of *Caesaromagus* (Going 1987, table 10) shows that the general trends — the rise of the dishes, prominent at Ivy Chimneys by Phase 5, and the relative decline, though continued dominance, of the jars — are the same at both places. The gross observable differences between the two, using the data gathered in Table 20, include the rather lower showing for bowls (until Phase 7 at Ivy Chimneys), flagons (except for two late groups), beakers and cups at the rural shrine site. The occurrences of mortaria is similar at the two places and lids are uncommon at both, although they are present at *Caesaromagus* in earlier groups than at Ivy Chimneys.

In attempting to consider what pottery assemblages can say about the status of the sites from which they are recovered, a recent paper by Paul Booth has included the temple site at Coleshill, Warwickshire. Booth (1991, 7) noted that 'there is nothing unusual about the range of forms in the [Coleshill] assemblage [save for a group of miniature vessels] and had the temple structures themselves not been excavated there would have been no suggestion of their existence apart from the presence of the miniature vessels'. Another feature of the Coleshill assemblage was the proportion of white ware and mortaria by comparison with the other sites, but this could be explained just as much by Coleshill's relative proximity to the production area of Mancetter-Hartshill compared to the rest, as by its special status (Booth 1991, 9).

While, in dealing with other aspects of a site's finds assemblage, it may be possible to isolate attributes which refer directly to that site's particular function or character (for example, one notes that assemblages of animal bones from temple sites seem more amenable to interpretation as votive deposits), this has not been the case with the Ivy Chimneys pottery. On the simplest level, only one vessel with a straightforwardly votive purpose has been recognised. This is perhaps not surprising, as the phase of site activity most heavily represented amongst the pottery was Phase 7, a time of demolition and backfilling. On a higher level, recognition of any patterning amongst the quantified assemblages from temples or rural shrine sites must await the publication of more comparative data from similar (and contrasting) sites — just because firmer conclusions about this particular site type cannot yet be drawn does not mean that the work of sorting and quantification was somehow not worthwhile.

General Remarks

Much effort has been expended on the Late Iron Age and Roman pottery from this site, reflected in the substantial Level III archive to be deposited in the Chelmsford and Essex Museum. For all this work, the sort of wider-ranging conclusions that can nowadays be aimed for are rather thin on the ground. In part this is because comparable quantified assemblages from other sites in the region are in many cases still in the course of post-excavation analysis and final publication; such comparisons as can be essayed at the time of writing have been made earlier in this section.

Early on, there is a distinct lack of romanised pottery (by which is meant fine wares and oxidised wares, those exhibiting a knowledge of standardised clay preparation and finishing and firing techniques) compared with ?higher status sites like Chelmsford and Kelvedon. Amongst the late pottery, the noted absence of BB1 must be worth investigating in the context of a study of the occurrence of the ware outside the Northern Frontier, which may point to contrasts between eastern and midland/western Britain, or throw up distributional differences according to site status.

In perhaps five years time, the opportunities for synthesising the evidence for pottery supply in this heavily romanised part of the province will be considerably greater. In the meantime, the level of detail in this report should not be criticised as excessive in view of the tentative conclusions drawn above. Rather, it can be argued that the full value of the Level III and Level IV components will only become apparent when more sites have been published for researchers to draw upon.

XVII. Building Stone

Septaria

Septaria appears to have been the only type of stone to be imported to the site for use in buildings. This material was the most popular building stone in Essex during the Roman period, and is thought to have been dredged from beds along the North Essex coast, especially around Harwich. Septaria splits easily along natural irregular faults and is thus unsuitable for dressing: as a rule it can only be used as a rubble, but occurs in larger lumps than the local alternative of flint pebbles.

Septaria was recorded on a presence/absence basis by context and was found in 176 contexts (it was not collected or noted in the pre-1978 excavations). The overall total volume of septaria could have been derived from a single small source the size of building *F4044* (Phase 6), but some from apparently earlier contexts must have had another source.

The foundations of building *F4044* (Fig. 46) were composed of medium to large blocks of septaria, supplemented by smaller rubble: tile, flint pebbles, and even fragments of re-used mortar. These foundations were set in mortar in the north room of the building, but appear to have been without a matrix in the south room. The blocks of septaria in the south room were larger than in the north, and were noted to be angled, sloping downwards towards the south.

Apart from the stone foundations of building *F4044*, a number of contexts had a high density of septaria rubble, including one post-hole (*F728*) of ?temple *F731* where the stone was used as packing. Two Phase 7 features contained significant amounts of septaria debris, probably derived from the robbing of building *F4044*: backfill layer *98* of font *F1348* (Fig. 43), and depression *F1905/F1882* (p. 63) to the north of the pond.

Phasing

Of the 156 undisturbed contexts found to contain septaria, 116 are dated to Phase 6 (the time of building *F4044*) or later. It is a measure of the poor reliability of dating on the site that many of the remaining forty occurrences could be attributed to intrusions or incorrect dating. As an exercise, it could be maintained that septaria was only present on site during Phase 6 or later. Were such a case to be tested, there is no compelling evidence to dictate that some of the forty 'earlier' incidences could not be intrusive, and there is nothing to prevent the remainder from being re-phased to the later 4th century. This would have the effect of bringing ?temple *F731* (5 contexts) and apsidal ditch *F3203* (5 contexts) into the mid-late 4th century, and would demand a complete reconsideration of the site dating. It is to be hoped that the current site phasing, derived from datable finds and stratigraphy, is sound, but the above possibility is real and should be recognised.

Tufa

Several lumps of decomposed calcareous tufa were found in well-stratified contexts. This material was, however, naturally produced on the site — especially in the vicinity of depression *F4502* in an area of natural springs. The tufa was not of building quality and is unlikely to have been used in construction.

XVIII. Roman brick and tile

Introduction

The excavation of a Romano-British site in the south-east of England is virtually certain to produce a large assemblage of brick and tile, yet, with few exceptions, little more than a paragraph is usually written on the subject in the final report. There are a variety of reasons for this:

1. Manpower: Any moderately large excavation in the area under scrutiny is likely to produce quantities of tile measurable in tonnes. This material must undergo several processes during post-excavation: washing; drying; marking; separation; and quantification. A great deal of time can therefore be spent on each of these processes with comparatively little return, and with added pressure on another valuable resource — storage space.

2. Lack of comparative material: Since extremely few detailed studies have been carried out on the less specialised types of brick and tile, there is little chance of gleaning useful information from a site assemblage without very detailed analysis and original research.

3. Lack of characteristics for study: The bulk of the debris of Roman brick and tile can never be closely categorised beyond the basic types; *tegulae*, *imbrices*, 'brick', *tesserae* and box tile. Dimensions can occasionally be calculated, and some preliminary (generally abortive) attempts have been made to consider common features such as *tegula* flanges (Drury 1988). Of the major types, the incised patterns on box tiles (*tubuli*) appear to offer more potential for study than any other common attribute, but a major study has yet to be published.

4. Dating problems: Even if the date of manufacture of a tile could be accurately assigned, the eventual time and place of deposition on a site is likely to be far removed from the date and origin of the tile's primary use. A tile may be deposited before being used in a structure; during construction, alterations, or demolition; after subsequent re-use; or may undergo other more complex processes before finally coming to rest. Thus, unless *in situ*, at the very best any tile can only be expected to provide a *terminus post quem*.

These problems have often appeared to be insurmountable, but without at least a basic database valuable information concerning the production, distribution, use and dating of Roman tiles can never be forthcoming. The collection of tiles from the Ivy Chimneys site is substantial and varied, particularly the range of box tiles. It is hoped, therefore, that the publication of the following report will prove to be a useful starting point for a more considered approach towards the study of Roman tiles in the area.

Methodology

Although present in large quantities, a number of factors dictated that the Roman tile analysis should be both simple and brief:

a. The tile had been processed briefly on site after being cleaned but not washed, and usually discarded once identified because of lack of storage space;

b. All tile was collected and quantified from small and medium sized contexts, but tile was only selectively saved from large tile-rich layers, or from those which were excavated quickly, thus providing a sample rather than a total population. In addition, large parts of the most substantial ditches and depressions were not excavated;

c. Restricted post-excavation funds permitted only essential tile analyses to be carried out.

For these and other reasons the amount of available data was restricted. With these limitations in mind, the following method was used in the analysis of the Roman tile;

1. All collected tiles were brushed clean and sorted into the main types: *tegulae*; *imbrices*; bricks (floor/bonding tiles); and miscellaneous, including box tiles, ?*tesserae*, flat tiles, and unidentifiable fragments.

2. The main types were quantified separately in the following way: The tiles were divided into fabrics (see below), and into small (<*c.* 100mm^2) and large fragments. It was noted, by fabric, if mortar adhered to the tiles, and distinctive marks, such as footprints, nail or peg holes, and signatures, were recorded. All box tiles were kept and analysed separately. The many small, unidentifiable fragments were quantified only if less than five fragments were present, otherwise their presence was noted; this was done in order to help identify potentially Roman contexts where no other dating evidence was available.

3. Examples of tiles with measurable dimensions, good signatures, unusual footprints, or other features of interest, were kept for further study.

The overall quantification of the main types of tile is presented in Table 21. The percentage figures of the second part of the table give an idea of the proportion of each type, although some types, being easier to identify, are doubtless over-represented. All of the tiles described are from the 1978–83 excavations, with the exception of box tiles and possible *tesserae* where pre-1978 examples were also examined.

	Fragments						*Fabrics*			
	Total	*Small*	*Large*	*Mortar*	*Signatures*	*Prints*	*1*	*2*	*3*	*4*
Box tiles	674	*	*	186: 28%	*	*	*	*	*	*
Tegulae	3127	2155: 69%	972: 31%	183: 6%	361: 12%	20: 0.6%	1018: 33%	1830: 59%	279: 9%	0: 0%
Imbrices	2935	2242: 76%	693: 24%	141: 5%	0: 0%	3: 0.1%	987: 34%	1948: 66%	0: 0%	0: 0%
Brick	1317	839: 64%	478: 36%	314: 24%	42: 3%	2: 0.2%	296: 22%	790: 60%	152: 12%	79: 6%
Flat tiles	5733	4997: 87%	736: 13%	*	*	*	*	*	*	*
?*Tesserae*	25	25:100%	0: 0%	*	*	*	*	*	*	*

Notes: Total identifiable tiles: 13811. * Attribute not counted

Table 21 Basic quantification data for Roman tiles, expressed in terms of fragments and as percentages of each tile group

The following analysis of certain aspects of the tile assemblage is exploratory, the raw data being available in the Archive for future study.

Little attempt has been made to establish a chronology of the tile types or signatures, since almost all of the tiles were residual in the contexts in which they were found, and may have been in existence for many years before finally being deposited; some tiles were also re-used.

Fabrics

Because of the general lack of variation in the fabrics, no attempt was made to closely define each of the fabrics present. The tiles were separated into four main fabric groups on macroscopic examination.

Fabric 1: Soft, light orange fabric with few visible inclusions.

Fabric 2: Hard, medium to dark red sandy fabric.

Fabric 3: Very hard, over-fired variant of Fabric 2, often in the form of wasters.

Fabric 4: Medium orange-brown sandy fabric; characteristic laminar matrix; very prone to flaking.

Minimum numbers

A variety of means are available by which to decide the minimum number of tiles represented, but the most reliable way is to count the number of corners. This does not reflect the total numbers present, but is useful in the study of the proportion of tiles of particular types or with particular traits.

Corners were only counted for box tiles, but any future study would be wise to include a corner count for all types of tile. For *tegulae, imbrices* and bricks, no meaningful estimation of minimum numbers could be calculated for the Ivy Chimneys assemblage.

A. Box tiles

Introduction

A reasonably useful group of box tile (*tubuli*) fragments was recovered from the 1978–83 excavations at Witham. All were residual, and the structural features from which they were derived were never located. However, this assemblage could form the start of a database which might eventually help solve some of the questions which these tiles are surely capable of answering. Thus the tiles were subjected to a reasonably stringent study. Since the results have little bearing on the understanding of the site from which they were excavated, this study would normally be archived and, perhaps, forgotten. However, the data presented below are of intrinsic interest to the study of this common yet poorly understood category of Roman tiles, and details of the collection merit wider circulation in the hope of stimulating future interest.

A total of 674 box tile fragments were recovered from the site. Of these, 244 have patterns which can be categorised into twenty-nine different styles, including graffiti and relief-patterned examples (Table 23). Details of these tiles are recorded on summary sheets, and have been input onto a database management computer package. Various print-outs are available in the Archive.

Although some slightly unusual forms were observed, the tiles appear to be from the flues of a hypocaust system(s). Their origin is uncertain, but the reasonably large quantity suggests that they were derived from a major building either on or near the site.

Distribution and chronology

The general discussion of box tile combed patterns is almost impossible, not only because of the lack of published examples, but, worse still, because this type of find has often been discarded and is no longer available for study. Comments must, of necessity, be largely restricted to the Witham site.

Decorative styles

(Figs 119 and 120)

Combed lines on box tiles are considered to have been executed in order to assist the keying of the tile to mortar. It is reasonable to assume that the twenty-nine distinguishable combed and otherwise decorated styles found at Witham were devised in order to differentiate tiles of one pattern from those of another. The patterns may represent a number of things: the type or batch of tile; the tiler; the tilery; the region in which the tile was manufactured; a chronological variation; or even simply a change in fashion. A detailed analysis of the patterns may shed some light on the purpose of these designs, and could perhaps help indicate the relative chronology of the styles on a particular site. Furthermore, future studies of the less common styles may lead to a better understanding of trading links and of the general working of the Roman tile industry.

In the following descriptions, numbers in brackets refer to definite, as opposed to probable, examples. Full details of measurable box tile dimensions are shown on Table 23.

(Fig. 119)

Style 1: 14 (13) examples

The illustrated design is not completely identifiable on all of the examples, since a diagnostic feature of the style is the use of a broad, crude comb. The design is a simple combed border within which is a crudely formed saltire (St Andrew's cross). The comb usually had four teeth, and the pattern was generally deeply incised. The teeth of the comb were much broader, coarser, and more widely spaced than in any other design. The illustrated example is measurable: it is longer than usual (*c.* 175mm), and quite broad (*c.* 224mm externally). *D989 and D2000 (disturbed); Phase 7*

Style 2: 63 (52) examples

This is the most commonly found style on the site, and is similar to several other designs. Style 2 consists of two conjoining saltires with a vertical central line. An unusually high proportion (24%) are in very hard-fired Fabric 3. Mortar adheres to twenty-eight examples, including in four cases the adhesion of a possibly naturally-occurring slurry to the inside with no trace of external mortar. The combs commonly had six, seven or eight teeth, but there are no examples with deep incisions. Eight examples have vertical, and four have horizontal rectangular holes, but no round holes were found. Dimensions are measurable on seven tiles, all of which belong to the smaller, narrower Type A (see below). *3885 (ditch F3879); Phase 6–7*

Style 3: 21 (14) examples

This design appears to some extent to copy Style 2, but contains several smaller saltires, probably with two vertical lines spaced equidistant from each other and the sides. *1613 (ditch F1612); Phase 6*

Style 4: 21 (14) examples

The basic saltire design is here supplemented by vertical bands, one in the centre and one at each side. A seven-toothed comb was used in most cases. Of the three measurable examples, two are unusually long (222 and 223 mm — Type C). *4047 (depression F332l, horizon 3); Phase 6*

Style 5: 29 (26) examples

The second most numerous design from the site consists of a saltire in which the blank triangles have been infilled with short wavy lines. A high proportion (15 examples) have mortar adhering to the outer surface. The seven-toothed comb was mostly used, although examples with six and eight teeth are present. Two examples have round holes, and both of these exhibit angled ends. Dimensions are measurable in six cases. Four have lengths of Type B and one of Type C, while breadths of Type B are present on three examples. The single width measurement is of Type B. *3889 (ditch F3879); Phase 6–7*

Style 6: 9 (5) examples

This 'Union Jack' motif is composed of a combined ordinary (St George's) cross and saltire. Only one of these tiles retains traces of mortar, even though the six or seven-toothed comb-marks are often deeply impressed. *4180 (depression F3321, horizon 3); Phase 6*

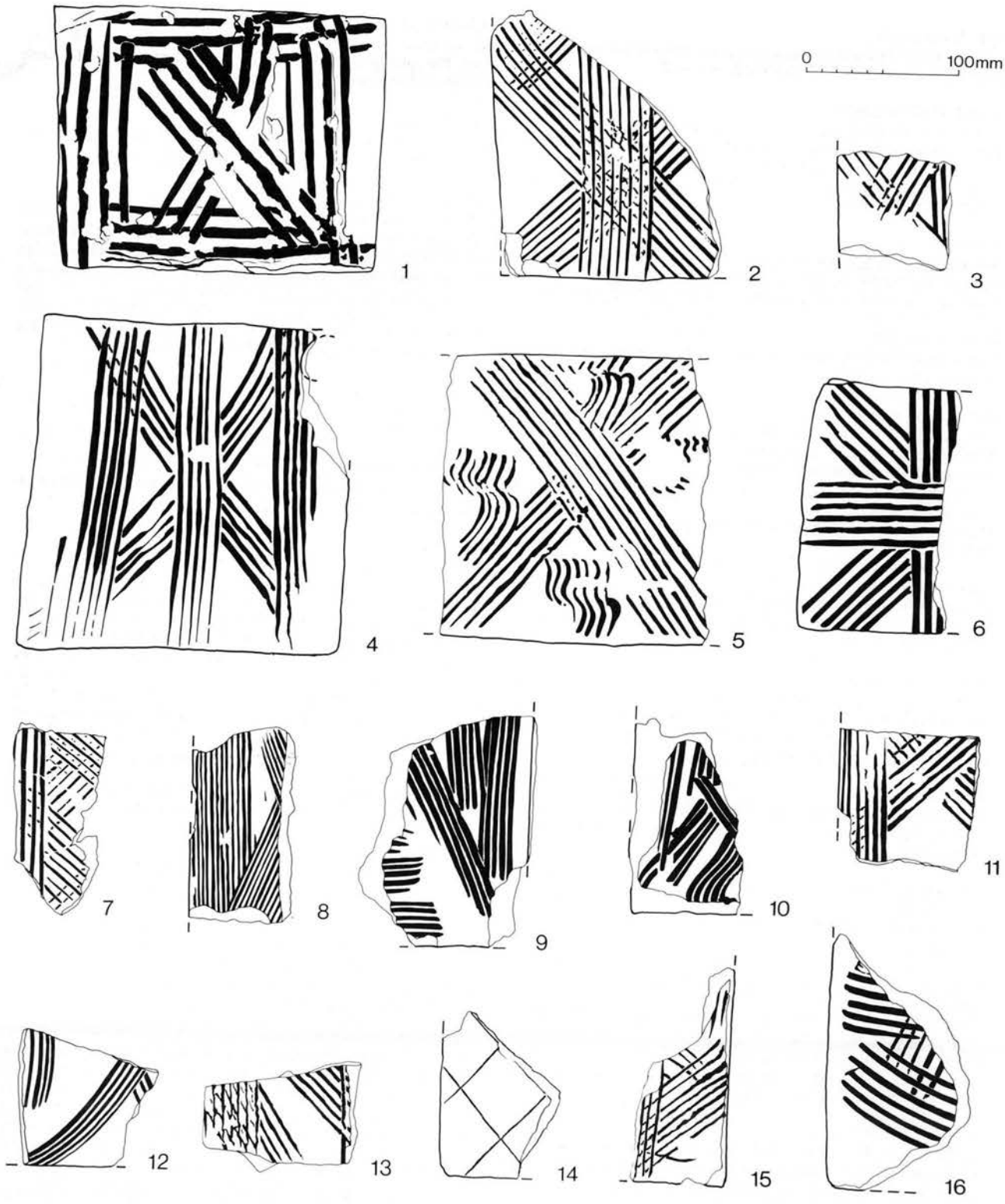


Figure 119 Brick and tile: box tiles Styles 1–16. Scale 1:4

Style 7: 1 example
A variant of Styles 2 and 3, with a horizontal border to the small lattice design. *92 (depression F2409, horizon 6); Phase 7*

Style 8: 11 (11) examples
Like Style 1, this classification is based partly on comb characteristics. The pattern contains a vertical border with a lattice inside, but the style is identified by the mainly shallow impressions of a close-set, many-toothed comb. Mortar is absent from all examples. *59 (depression F2409, horizon 6); Phase 7*

Style 9: 2 (2) examples
Very little of either fragment survives, and the designs may not have been identical. A saltire lies within a border, and within each triangle thus created is a short vertical or horizontal line. *1916 (depression F1905); Phase 7*

Style 10: 1 example
This pattern is broadly similar to Style 9, but too little survives to understand the complete design. *1971 (slot F1880); Phase 7*

Style 11: 1 example
The single small fragment may have contained a design similar to Style 7, but with less overlap between the oblique lines at the border. *4006 (depression F3321, horizon 5); Phase 7*

Style 12: 1 example
The corner of this design survives, but gives no real clue as to its make-up. *T13/2/C*

Style 13: 1 example
This design appears to be formed by three vertical combed lines, one central and one at each edge, infilled by a series of parallel oblique lines. *4127 (disturbed): Phase 9*

Style 14: 2 (2) examples
A simple lattice pattern incised by a single-toothed instrument. The incised lines are shallow in both examples. Other than graffiti (Style 29), this design is the only one from Ivy Chimneys in which a comb or roller was not used. *Pre-1978, unstratified*

Style 15: 1 example
Too little of this design survives to properly understand its composition. The pattern is similar to Style 11, but probably contained more vertical lines. *S43/C1*

Style 16: 1 example
An unusually crude design of apparently haphazard comb strokes covering most of the available surface area. *3882 (depression F3321, horizon 3); Phase 6*

(Fig. 120)
Style 17: 5 (5) examples
This easily recognisable pattern consists of a central vertical line flanked by wavy lines. A high proportion (4 examples) still have mortar adhering to the outer surface. Both the five and eight-toothed combs appear to have been used. Width Type B is measurable on one example. *3509 (depression F3321, horizon 5); Phase 7*

Style 18: 2 (1) examples
In this design, Style 17 is copied on the lower half and separated by a horizontal line from a similar pattern with a wavy rather than straight centre line. *3811 (depression F3681); Phase 7*

Style 19: 6 (4) examples
Like Style 17, this pattern has a vertical central line and wavy line at the edge, but the side line has more pronounced crests and overlaps with the vertical line. None of the examples retains mortar. *836 (ditch F837); Phase 7*

Style 20: 33 (30) examples
The third most common design consists of a vertical border followed by a vertical, low frequency wavy line. It is likely that a central vertical line completed one half of the pattern. An unusually broad range of tooth numbers is present, ranging from six to ten, and including two examples apparently with both eight and ten-toothed combing. Six and seven teeth are, however, most common. Six examples with rectangular holes are present. *3682 (depression F3681); Phase 7*

Style 21: 6 (5) examples
This design is composed of a series of usually shallow vertical wavy lines. The spacing of the lines varies, partly depending on the comb breadth. *D3200 (unstratified); Phase 9*

Style 22: 1 example
This variant of Style 17 is composed of a central vertical line flanked by intermittent vertical wavy lines. *D3200 (unstratified); Phase 9*

Style 23: 3 (3) examples
Other than graffiti, this appears to be the only style to occur on the same side as the central hole. The design is a simple slightly waved diagonal line passing across the central hole. In the top corner opposite the design is a short straight or slightly curved line. In two cases other decoration is present on the adjacent face, and the ends of all three examples are angled and exhibit round holes. Measurements of length Type B/C and width Type B are present in one instance. Style 5 is present on both faces of the illustrated example. *1955 (ditch F1910); Phase 6–7*

Style 24: 1 example
Too little of the pattern survives to understand its composition, but this tile does exhibit an angled end. *D3731 (disturbed); Phase 7*

Style 25: 1 example
Only one corner of the design survives, and comprises a rough arc in the corner, from which at least two diagonal lines radiate. *1614 (ditch F1613); Phase 6*

Style 26: 1 example
Relief-patterned decoration of Lowther (1948, 7, 11, fig. 8) Group 1, die 5a, in a soft, powdery, orange fabric (Fabric 1) with rare small sand inclusions and rare small to medium ?clay pellets. The same pattern has been found at a number of sites (Black 1985, table 2), including Hartfield, East Sussex, where tiles decorated by the die were manufactured (Foster 1986, 209–211). Lowther suggested a late 1st-century AD date for this die, although an early to middle 2nd century date now seem plausible; the Hartfield kiln was archaeomagnetically dated to AD 100–130. The Witham example came from a context securely dated to the very late 4th or 5th century. *[924]; 59 (depression F2409, horizon 6); Phase 7*

Style 27: 1 example
Part of a pattern consisting of a saltire with a central vertical line, and a wavy vertical line at the edge. *4546 (depression F4763); Phase 6–7*

Style 28: 1 example
Similar to Style 23, consisting of two diagonal vertical lines, slightly bowed. *4888 (depression F4695); Phase 6–7*

(Fig. 121)
Style 29 (graffiti): 4 (4) examples
1 *[941]; 1976 (ditch F1990); Phase 3*
2 *[827]; 2026 (pond F679, lower fill); Phase 6*
3 *[942]; 2119 (pond F679, lower fill); Phase 6*
4 *[1153]; D3722 (disturbed); Phase 7*

Graffiti appears mainly to have been added to the (normally undecorated) sides of the tiles, with standard designs on the faces. It is possible that these pre-firing marks were simply an aid for keying mortar, but the standardisation, and apparent significance to their manufacturers or users, of other box tile marks suggests that the graffiti do represent script, albeit illegible. Two of the examples (Fig. 121.2 and 4) have already been published (Hassall and Tomlin 1982, 412, fig. 36.2 and 3).

The styles form an extensive and varied assemblage in which there is little obvious grouping. Although no evolutionary sequence can be postulated, certain of the styles seem, to some extent, related. Styles 2, 3, 7, 11 and 13, for example, are quite similar and are all executed in the same straight, firm strokes of the comb. The fabrics also tend to be harder fired than the norm, with very few (2%) soft examples. Styles 17 and 18 are probably also associated.

The comb type and use can be a major feature of the decoration, to such an extent that the combing technique is an integral part of Styles 1 and 8. Some of the styles seem to have used a very standardised comb (*e.g.* the mainly eight-toothed comb for Style 2), while others, such as Style 20, had a wide array of tooth numbers in their combs.

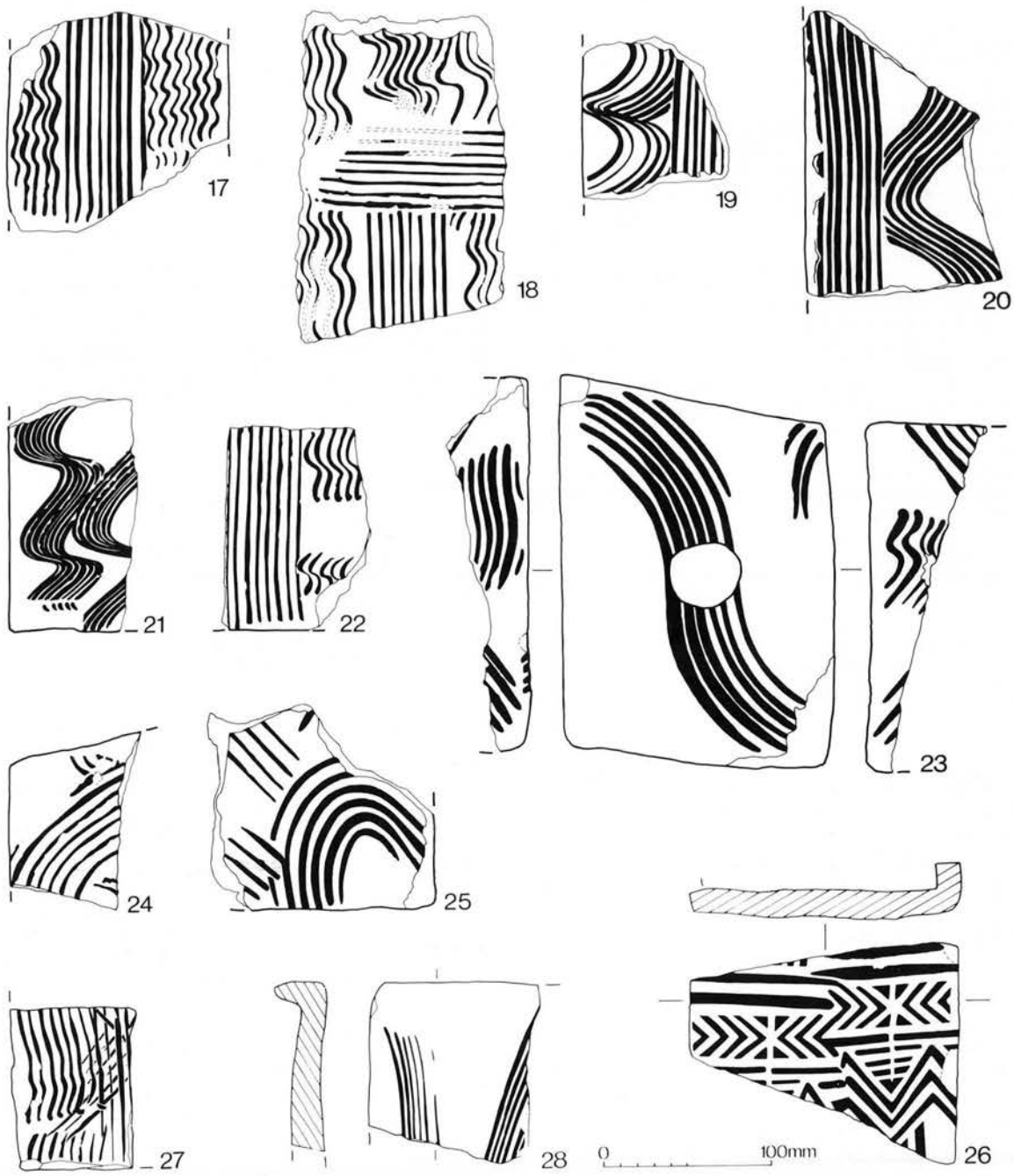


Figure 120 Brick and tile: box tile Styles 17–28. Scale 1:4

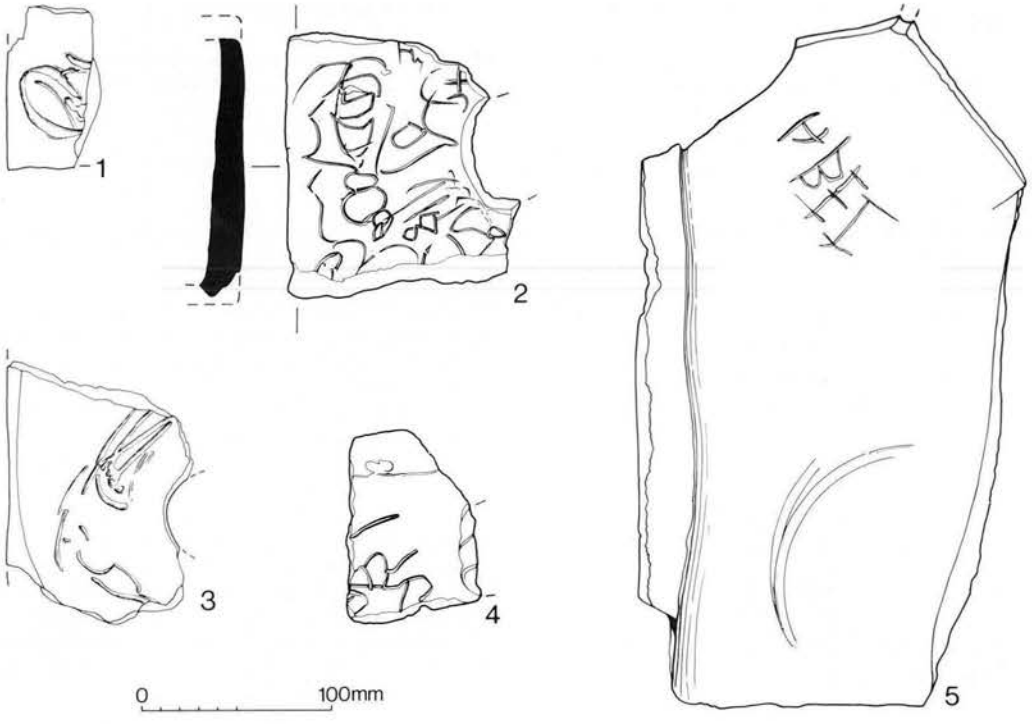


Figure 121 Brick and tile: graffiti. Nos 1–4 box tile; No. 5 *tegula*. Scale 1:4

A bronze object which may well be a tile comb was found on the site (Fig. 63.76; see Bronze Report).

The tiles may be assumed to come from one or two rooms of a nearby building, and are likely to have been fitted at a very few separate building phases. Most of the tiles of each build might be expected to have come from a single source, and would thus exhibit any characteristic 'trade mark' of that tilery. This is not the case here, where many different patterns must surely have been present at each building phase. This could imply that the pattern 'signatures' were not the mark of the tilery, although they could still represent the individual maker. Alternatively, the variety of designs could be attributed to stockpiling by a tile merchant, who might select the tiles for each job more or less at random.

Chronologically, the sample of tiles with identified patterns is too small for any but general conclusions. Only three styles (2, 5 and 8) and one graffito could be recognised on box tiles of Phase 3 (early Roman). The combed styles are all fairly simple and linear, and a similar trend is seen on most tiles pre-dating Phase 6. Patterns in which wavy lines occur are limited to mid/late 4th-century contexts. In addition, it is possible that the thin, many-toothed comb of Style 8 is an early device, with four out of eleven occurrences in relatively early contexts.

Non-decorative features
(Tables 22 and 23)

Dimensions

Five basic measurements were taken where available, in order to establish variations in tile size (Table 23). These are: length, breadth (internal and external) and width (internal and external). Breadth relates to the broadest side (the face) which is normally decorated, and width refers to the narrow side, which invariably contains a hole and is usually undecorated. Thickness, almost uniformly in the region of 17mm, was not measured, but is implicit in the difference between the internal and external measurements. As only thirty-three examples are measurable, the value of quantitative analysis is very limited.

Length, measured on ten examples, is variable, but four main groups have been defined: Type A (163–175mm); Type B (192–204mm); Type C (222–223mm); and Type B/C angle-ended tiles with both short (Type B) and long (Type C) faces.

The sixteen measures of internal breadth appear to group well into two types: Type A range between 105 and 135mm, and Type B between 185 and 194mm. The Type A example from fill 1805 (Table 23; 105mm) deviates by 18mm from the mean of the type, but its external breadth is much nearer the norm.

Two groups were also discerned from the width measurements: Type A, varying between 75 and 102mm, and Type B, from 120 to 128mm.

It is clear that there is sufficient standardisation to postulate three sizes. If an average thickness of 17mm is assumed, then the following average external dimensions (mm) would apply:

Type	*Length*	*Breadth*	*Width*
A (small)	169	158	119
B (large)	198	213	157
B/C (angled)	198–221	213	157

A fifth size, probably separated chronologically from the other types, is present on a tile of Style 1 (Fig. 119.1; Table 23, context *2000*), and is a mixture of length Type A and breadth Type B. It is unlikely that tiles of this size would have fitted any of the others, and they may have been in use at separate times or in separate structures.

The tile size seems to correlate quite closely with the decorative style: all eight measurable tiles of Style 2 are of Type A, and eight out of nine of Styles 1 and 5 are Type B or B/C. Despite the small sample size, it is becoming clear that the patterns on the tiles are related to their dimensions. It seems unlikely that this was a means to separate tiles of different sizes, since this would surely have been obvious, and some other reasons for the markings must therefore be sought.

Fabric

The box tiles with classifiable decorations were divided into the three basic fabrics. Most of the tiles (80%) are moderately well-fired (Fabric 2), and 14% hard-fired (Fabric 3), although none are wasters. Thus, an unusually low proportion for the site (7%) are of the soft Fabric 1 (22–34% for other major tile types), which perhaps proved unsuitable for this type of tile. There is no apparent correlation between fabric and decorative style.

Total number of tiles recorded: 674

Fabrics: only recorded on identifiable tiles - total 244

Fabric	1 - Soft-fired, sandy	- 16 examples =	7%
	2 - Hard-fired, sandy	- 194 examples =	80%
	3 - Overfired/wasters	- 34 examples =	14%

Soot: Recorded for all tiles. Present on 210 examples =31%

Mortar: Recorded for all tiles:

Outside only	- 148 examples =	22%
Inside only	- 7 examples =	1%
Re-used	- 32 examples =	5%
No mortar	- 487 examples =	72%

Combing: Tooth numbers counted on 157 examples

1	- 2 examples =	1%
4	- 5 examples =	3%
5	- 5 examples =	3%
6	- 23 examples =	15%
7	- 44 examples =	28%
8	- 68 examples =	43%
10+8	- 2 examples =	1%
9	- 2 examples =	1%
10	- 1 example =	1%
11	- 2 examples =	1%
12	- 1 example =	1%
14	- 1 example =	1%
16	- 1 example =	1%

Tooth depth - counted on 244 examples

Shallow	- 50 examples =	20%
Medium	- 166 examples =	68%
Deep	- 28 examples =	11%

Holes: Visible on 83 examples

Horizontal rectangular holes	- 13 examples =16%
Vertical rectangular holes	- 38 examples =46%
Angled rectangular holes	- 1 example = 1%
Round holes	- 31 examples =37%

Corner notches:	2 examples
Angled ends:	16 examples
Graffiti:	4 examples
Relief patterns:	1 example

Total number of half corners: 275
(=min. number 275/16 =18)

Table 22 Box tile details

Soot

Evidence of smoke, in the form of sooty deposits on the inside of the tiles, confirms that many (about 30% of fragments) were box-flue tiles used in hypocaust systems. Tiles without soot may also have had this function, but may have been situated beyond the range of the worst soot deposits. Soot deposits do not appear to have been leached out by soil action on this site. Even tiles from early Roman (Phase 3) contexts exhibit soot, indicating that box tiles from the site were used in flues from an early date.

Mortar

The need for patterns on box tiles is exemplified by the lack of traces of mortar on 72% of those from Witham. Even on those with mortar adhering, only small fragments of mortar have been retained, and only on one example does enough mortar survive to obscure the comb pattern. It is nevertheless likely that all of these tiles had been designed for setting in mortar, and that the combed decorations were meant to aid keying.

Where mortar can be observed it is mainly found on the external surface only. In seven cases, however, 'mortar' is present on the inside only. This internal 'mortar' is like a slurry with no coarse inclusions, and it may in fact be a natural concretion caused by the deposition of calcareous minerals from mortar in the walls. About 5% of the tile fragments show traces of re-use, with mortar adhering to broken edges. As might be expected, none of the earliest tiles show signs of re-use.

Holes

Holes at or near the centre of the normally undecorated narrow side of the tiles are present on eighty-four examples. Brodribb (1983, 175) found 83% of complete box tiles to have 'vents'. Of the holes on the Witham tiles, 46% are vertical rectangles, 16% are horizontal rectangles, 37% are round, and 1% are rectangles at an angle ('diamonds'). In the cases where the decorative style can be definitely identified there is usually no mixing of the hole shape within each style.

All of the holes were made before firing and none show any particular signs of wear. It is likely that the holes were used as a means of fixing the tiles in position before, and perhaps during use. Two examples with notches in the top corner were also found (*e.g.* Fig. 119.4), and these may also have been used to stabilise the tiles.

There is an association between angled ends and round holes, and round holes were the only type to occur in contexts pre-dating Phase 5; five examples (16%) were found in such contexts. However, there was no obvious association between hole type and tile size.

Four examples of *imbrices* with holes, which might otherwise have been confused with box tiles, were identified by their rounded surfaces and very coarse, sandy internal surfaces.

Angled ends

On sixteen examples, the top end of the narrow side is angled, so that one face is up to *c.* 20mm longer than the other (*e.g.* Fig. 120.23): such tiles have been termed 'springers' by Brodribb (1983, 193), and appear to be quite distinct from voussoirs.

At Canterbury, Kent (Brodribb 1983, 193, fig. 98), where similar tiles were found, the upper tile was inverted and the shorter end was placed over the longer end of the tile below, the path of the tiles remaining vertical. This technique was used to create a *pila*, but other arrangements are possible:

i. If the second tile was placed on its level edge, then an angle equal to that on the top end of the lower tile would be attained.

ii. If the upper tile was inverted and the two shorter ends of the tiles were matched, then an angle equal to the sum of the angled ends would be achieved.

iii. If only the top tile in each stack was angled, then an angle similar to the pitch of the roof would result.

Since the angle of the tile ends is *c.* 20–30°, then a combination involving just three or four of the tiles could turn a corner of 90°. However, options (i) and (ii) seem unlikely, since an angle of 45° would have been far more efficient for turning corners. Option (iii) is much more plausible, although unlikely to survive *in situ* on a British site.

No tiles of size Type A have angled ends, and the length difference between Type B and Type C dimensions (see below) could arise from the sort of variations in angle-ended box tiles: measurable examples of angled sides exhibit both dimensions (Table 23, contexts *1955* and *3532*). Six examples with angled ends also exhibit soot deposits, showing that the angled end was a feature of flue tiles, and the data also suggest an association with round holes.

Internal surface marks

The internal surfaces of the box tiles are generally quite rough, with slight folds of clay, rather than the gritty, sandy surface common in other types of tile. A noticeable feature on almost all of the tiles is a relatively smooth vertical band roughly in the centre of each side. The band can be 50–100 mm wide, and seems to be the result of the manufacturing process using a split-piece former: nine square lengths of wood were arranged as a solid box to form the tile mould. When the tile was leather hard, the central peg would have been withdrawn, thus enabling the other pegs to be removed without imposing a strain on the fairly fragile tile itself. Had a single block of wood been used, shrinkage would have made extraction considerably more difficult, although this technique was apparently used at Hartfield, East Sussex (Foster 1986, 204) and was described by Lowther (1948, 4).

The top and bottom edges of the tiles occasionally have marks caused by a broad-bladed implement which had been inserted between the fabric and the mould in order to ease extraction.

			Breadth			Width					
Context	*Length*	*Type*	*Internal*	*External*	*Type*	*Internal*	*External*	*Type*	*End*	*Hole*	*Signature*
59	-		135	(169)	A	-	-				26
59	-		126	(160)	A	-	-				2
66	-		126	(160)	A	-	-				2
78	-		-	-		90	(124)	A		=	?
1720	-		-	-		83	113	A		0	?
1745	-		120	162	A	-	-			=	2
1745	195	B	165	(199)	B	-	-				4
1745	-		125	155	A	-	-			0	?
1805	-		105	144	A	-	-			=	2
1805	-		-	-		95	125	A			?
1955	208–220	B/C	-	-		125	148–158	B	/	0	5 +23
1976	-		134	165	A	-	-				2
2000	175	A	192	224	B	-	-				1
2093	-		124	(158)	A	-	-				2
2498	-		-	-		125	(159)	B	/	0	?
3509	-		115	157	A	-	-				17
3509	-		-	-		85	120	A		=	?
3532	198–220	B/C	-	-		120	(154)	B	/	=	?
3553	-		120	150	A	-	-				3
3648	-		-	-		75	(109)	A		=	2
3650	-		-	-		102	123	A			5
3682	-		-	-		128	164	B		0	?
3704	223	C	-	-		-	-				4
3710	-		-	-		82	115	A			?
3722	-		-	-		120	(154)	B		0	27
3883			-	-		88	125	A			?2
3885	192	B	180	204	B	-	-				5
3889	192	B	-	-		-	-				5
3889	222	C	190	(224)	B	-	-				5
3889	204	B	175	(209)	B	-	-				5
4047	222	C	186	218	B	-	-				4
4124	-		-	-		120	(154)	B	/	0	?
4180	163	A	-	-		-	-				6

	Length	*Breadth*		*Width*	
Type					
A:	163–175	105–135	144–169	75–102	109–125
B:	192–208	165–192	199–224	120–128	154–164
C:	222–223				

Notes: All measurements in mm.
Bracketed figures assume +34mm wall thickness.
Ends: '/' =angled end.
Holes: '=' =horizontal rectangular hole; '0' =round hole.

Table 23 Box tile dimensions

Minimum numbers

The presence of corners was noted for all box tile fragments. Each box tile has eight corners which tend to split in half when broken; half corners were therefore noted, and a count of these (275) produces a minimum of eighteen tiles. By a combination of corner and fabric count, minimum numbers can be obtained for each represented style. This leads to a *minimum* estimate of only twenty-four tiles. Analysis by weight would probably have produced an even smaller number, but in reality it seems more likely that closer to fifty tiles were originally present in the excavated sample. This number is small, and could have been used in a single room.

B. Tegulae

Introduction

A total of 3127 fragments of identifiable *tegulae* were recorded (Table 21), of which 361 had traces of signatures, twenty-four had nail holes, eighteen had animal prints, and one had a graffito. No examples of tally marks (Brodribb 1979, 152–5) or *tegulae mamatae* (Brodribb 1979, 146–7) were identified. Since not all tiles were washed, it is likely that many more faint signatures and animal prints were present than were observed. All but measurable and unusual *tegulae* were discarded on site.

Signatures

Out of the 361 *tegula* fragments which exhibited traces of signatures, only thirty-two were kept. These are either fairly complete signatures or are unusual in some way. The majority of those discarded were either fragmentary, or were composed of the simple oval signature Types A, B and C. Any quantitative discussions must therefore be limited to Types D, E and F, for which there were very few examples. For each signature type, the number of examples retained for study is indicated.

Illustrated tegula signatures

(Fig. 122)

Signatures A, B and C are broadly related, and could conceivably represent attempts to produce similar designs. All appear at the base of the tile and are roughly oval in shape.

Signature A (12 examples)

Often a simple circle, although, as in the illustrated example, the finger marks sometimes converge at the bottom and the edge forms a tangent. *59 (depression F2409, horizon 6); Phase 7*

Signature B (1 example)

This signature ends close to the base of the tile, and there is a slight cross-over of the finger impressions, forming a 'Q' shape. *241 (ditch F240); Phase 5–6*

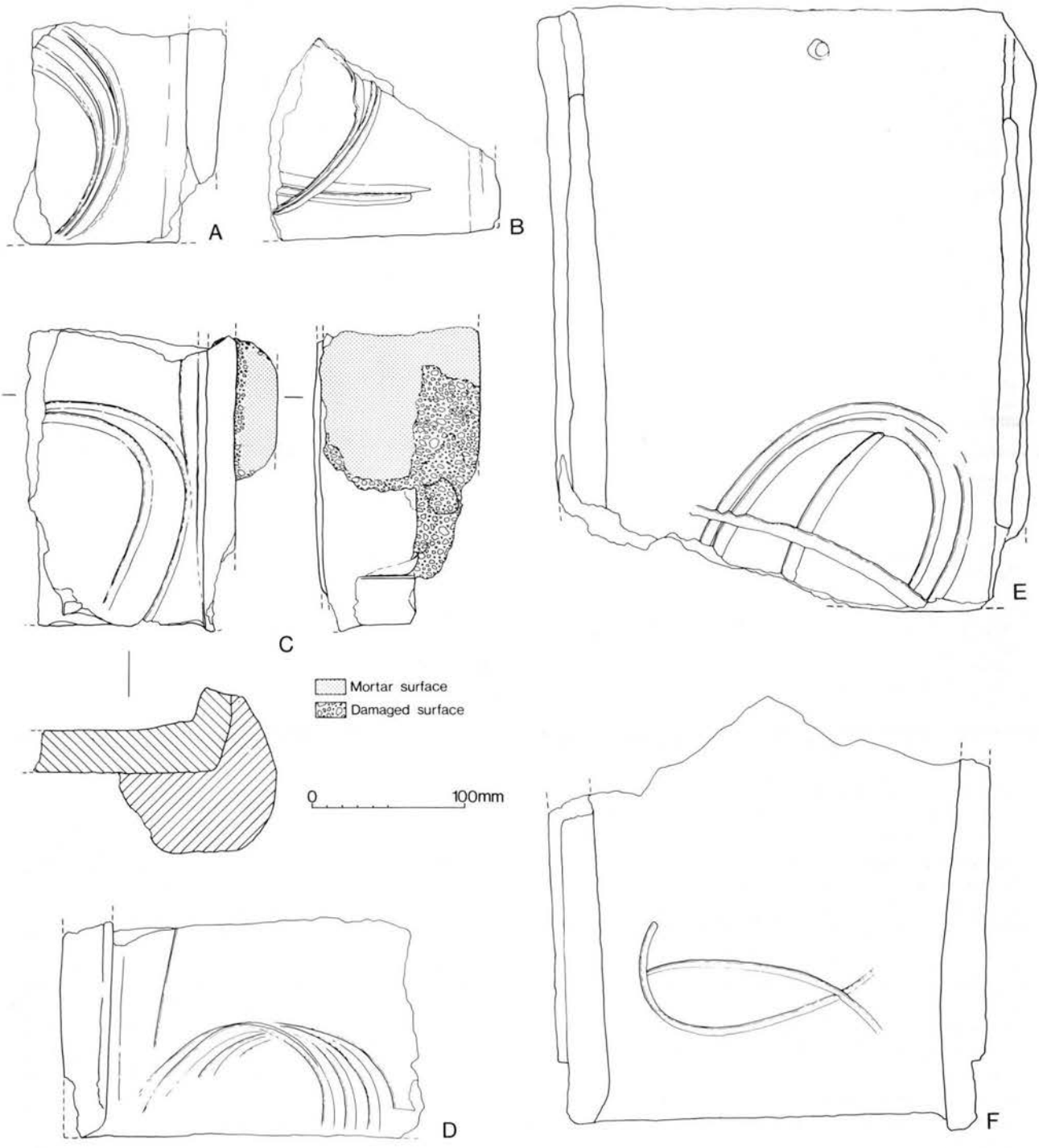


Figure 122 Brick and tile: *tegula* signatures. Scale 1:4

Signature C (12 examples)
In this design, the oval shape is truncated at the base. *1911 (ditch F1910); Phase 6–7*

Signature D (1 example)
This arc design is located at the bottom edge. The three finger lines in the illustrated example cross over each other and create a flat top to the design. *62 (depression F2409, horizon 4); Phase 6*

Signature E (5 examples)
One of the most characteristic patterns is created by the oval element encircling a single cross. A similar signature was found at Hartfield, East Sussex (Foster 1986). *4180 (depression F3321, horizon 3); Phase 6*

Signature F (1 example)
This signature was executed by the use of two simple strokes to form an eye or fish shape near the base of the tile. *680 (pond F679, upper fill); Phase 7*

All of the twelve *tegulae* which were complete enough for measurement have signatures, and it is likely that most of the *tegulae* from the site were marked in this way. Brodribb (1983, 231) found 60% of complete *tegulae* to exhibit signatures. Despite the large number of examples of signatures, only a few variants were noticed — in contrast with the box tiles described above. No conclusions about the Roman tile industry can be drawn from the *tegula* signatures present on one site, and the subject awaits a comprehensive study.

Graffito
(Fig. 121.5)
Only one *tegula* exhibits a graffito. This takes the form of four letters, inscribed before firing, which may represent HBEI or, more likely, ABEL. This could even be ABES meaning 'you are absent' (Hassall and Tomlin 1982, 412, fig. 36.1). *[1156]; 3205 (depression F3321, horizon 5); Phase 7*

Non-decorative features

Dimensions
Only twelve *tegulae* are measurable for length or breadth, but the measurements suggest a broad similarity in size (Table 24). Overall length varies between 375 and 415mm, but averages 393mm. Since the tiles tend to taper towards the top, two breadth measurements were taken where possible. The top breadth varies between 280 and 320mm (average 299mm), while the bottom breadth is between 295 and 330mm (average 317mm). Thus the average *tegula* from the site would have been about 395mm long, and from 300 to 315mm broad. These figures compare well with Beauport Park, East Sussex (Brodribb 1979, 143), where the *tegulae* measured *c.* 397 by 310mm.

Thickness
The undistorted tiles vary in thickness from *c.* 10 to 35mm, and were divided on visual inspection on site into those greater than and less than 20mm thick. Within the groups, the ratio of fabrics was very similar, and it is unlikely that variations in thickness were significant. The following percentage fabric ratios (Fabrics 1: 2: 3) were observed:

Thick:	33%:	58%:	9%
Thin:	30%:	64%:	6%

Fabric
Fabrics 1, 2 and 3 were present in proportions 33%: 59%: 9%. Although some of the tiles in the highly-fired Fabric 3 may have been usable as *tegulae*, many were extremely deformed wasters which could only have been used as rubble or in wall bonding. Although quantitative tests have not been carried out, there does not appear to be a chronological difference between the use of softer Fabric 1 and harder Fabric 2.

Mortar
About 6% of the fragments had traces of mortar adhering, and a few in which mortar covered old breaks had clearly been reused. This lack of mortar probably reflects poor adhesion (*cf.* box tiles), and it is likely that the majority of the *tegulae* were at one stage bonded with mortar in tile roofs. One example (Fig. 122.C) has mortar adhering to its underside as though an *imbrex* had been attached underneath rather than on top. The purpose of this arrangement is unknown.

Nail or peg holes
Only twenty-four examples of nail or peg holes were found (the majority being kept), and such holes were definitely absent from some of the complete *tegulae*. Only one of the holes is square (*c.* 18mm on both surfaces), the rest being circular. These holes, which taper towards the lower surface, are situated in a central position near the top of the tile, and measure between 7 and 16mm in diameter on the upper surface. In two examples the hole does not completely perforate the tile, and on others the lack of wear indicates that the holes had never been penetrated by nails or pegs. Judging by the small number of nail holes and the lack of traces of use, it seems likely that few, if any, of the Witham *tegulae* were fixed with nails. It could be that fixing was only required in some positions on the roof, such as the eaves row.

Of the complete *tegulae* he examined, Brodribb (1983, 23) found 19% to have nail holes: this proportion varied from site to site. These holes were round or square, averaging 7mm across. They were usually central to the tile, and never more than 50mm from the top edge.

Animal prints
Animal footprints were recognised on only twenty examples, although on many others such marks may have been obscured by dirt. Most of the prints were of dog or cat, but a few less usual types have been kept (see Animal Bone Report, p. 000). In addition, two tiles have hobnail impressions, and five fingerprints are visible on another example.

Flanges and cutaways
The large amount of material and lack of available funds precluded the measurement of flange thickness and height, or of cutaway characteristics. The often considerable variation of flange size and shape, even within the same tile, means that any analysis of this feature would be unrewarding, as was found in a study carried out by Drury (1988).

Weight
Due to their substantial variation in thickness, the tile weights must also vary consummately. Since weight was not part of the tile quantification, only whole tiles were weighed. These are between 4.8 and 6.3kg (Table 24), and average 5.4kg. The average weight at Beauport park, East Sussex, was 5.8kg (Brodribb 1979, 143).

C. Imbrices

Introduction
Two-thousand nine hundred and thirty-five fragments of *imbrex* were identified, in Fabrics 1 and 2 (Table 21). Only three of the tiles exhibited animal prints since, unlike flat tiles, the weight of an animal on a drying *imbrex* would tend to break the tile. None of the *imbrices* exhibited any form of decoration whatsoever.

Non-decorative features

Dimensions
(Table 25)
Measurable dimensions were present on only six examples. *Imbrex* length was expected to tally with that of the *tegulae*, and this is the case in all but one of the measured examples. The *imbrices* range from *c.* 370 to 405mm in length (*tegulae* 375 to 415mm). The exception, from upper fill *1770* of pond *F679* (Phase 7), is only 335mm in length.

The measurable *imbrices* all taper towards the top in the same way as the *tegulae*. This would have allowed an overlap with *imbrices* above and below in order to increase the waterproofing qualities of the roof. Tapering would also have prevented these tiles from slipping. External top breadth is between 145 and 170mm, and bottom breadth is 170mm in all three measurable cases. It would therefore appear, from this extremely small sample, that the maximum breadth of the *imbrices* was reasonably constant, but that the achievement of an exact length might have been of lesser importance. The average weight of the two almost complete *imbrices* is 2.3kg.

Thickness
The *imbrices* were very similar in thickness, averaging *c.* 15mm.

Fabric
Only the soft and hard fabrics were found, no examples of wasters being present. About two-thirds of the *imbrices* were made in the hard Fabric 2.

		Breadth		Hole Diameter			
Context	*Length*	*Top*	*Bottom*	*Top*	*Bottom*	*Signature*	*Weight*
66	400	-	-	-	-	C	-
680	-	280	-	-	-	G	-
1439	395	308	308		-	C	5.55
1439	395	320	330	12	8	C	-
1439	385	300	315	-	-	D	*c.* 5.05
1720	385	295	305	-	-	C	4.95
3590	375	275	295	-	-	D	4.80
3649	-	-	325	-	-	C	-
3650	405	315	325	14	5	C	5.75
3650	415	290	330	16	8	C	6.30
4048	385	295	-	-	-	C	-
4180	390	310	320	12	10	F	-

Table 24 *Tegula* dimensions (mm) and weights (kg)

		Top Breadth		Bottom Breadth		Weight
Context	*Length*	*Inside*	*Outside*	*Inside*	Outside	
1240	-	135	170	135	170	-
1770	335	105	145	-	-	-
1916	370	100	145	130	170	*c.* 2.60
2196	-	135	165	-	-	-
3730	405	145	170	145	170	2.05
4686	370	-	-	140	*c.* 170	-

Table 25 *Imbrex* dimensions (mm) and weights (kg)

Mortar
Only about 4% of the *imbrices* showed traces of mortar, but it is felt that most, if not all, were nevertheless used in roofing. Several partially intact examples of large mortar fragments with *imbrex* and *tegula* impressions were found (*e.g.* Fig. 122.C).

Holes
Circular holes are present on four examples (all kept). These are of large diameter (*c.* 45mm), but their purpose is unknown. These unexpected features are present half-way up one side (or perhaps both sides) of the tiles.

Animal prints
Two of the three observed animal prints (all kept) were identified (Animal Bone Report, p. 217).

D. Brick

Introduction
A total of 1317 fragments of flat tile were identified as 'brick', *i.e.* floor or bonding tile. Thirty-three whole or almost complete tiles were present, including twenty-six found *in situ* in the font (*F1348*). Several other measurable examples were also found.

Signatures
(Fig. 123)
A total of thirty-seven brick fragments, all of which were saved, were observed to have signatures. None of the tiles from the font exhibit signatures. Only ten of the signatures are recognisable, divided into five types, identified with reference to *tegula* signature types:

Signature A (1 example)
A circle, probably originally complete, in the middle of the tile. *2377 (depression F2409, horizon 4); Phase 6*

Signature B (4 examples)
A three-quarters arc of a circle, executed with one or two fingers, truncated near the edge of the tile by a horizontal line, to form a 'Q' shape. *1204 (depression F2409, horizon 5); Phase 7*

Signature D (1 example)
An arc forming half a circle at the edge of the tile. *907 (ditch F823); Phase 6–7*

Signature G (2 examples)
A wavy line pattern, similar to box tile Style 21 (Fig. 120), but executed with fingers rather than a comb. *98 (depression F2409, horizon 5); Phase 7*

Signature H (2 examples)
Two parallel straight lines, probably stretching between opposing corners. *2026 (pond F679, lower fill); Phase 6*

Apart from the simple Type A, few of the brick signatures are precisely the same as those of the *tegulae*, although it is possible that some were made at the same tilery and by the same tiler. As with *tegulae*, the brick signatures were incised using up to three fingers. The very small number of signatures (3%) shows that most bricks were not marked in this way. Brodribb (1983, 231–6) found 16% of bricks to exhibit signatures, as opposed to 60% of complete *tegulae*.

Non-decorative features

Dimensions
(Table 26)
All bricks which exhibited dimensions were kept. Measurements were observed on forty-two examples, of which thirty-three are complete. Six different size groups were defined, and an attempt has been made to categorise these within the recognisable types described by Brodribb (1983, 91–126).

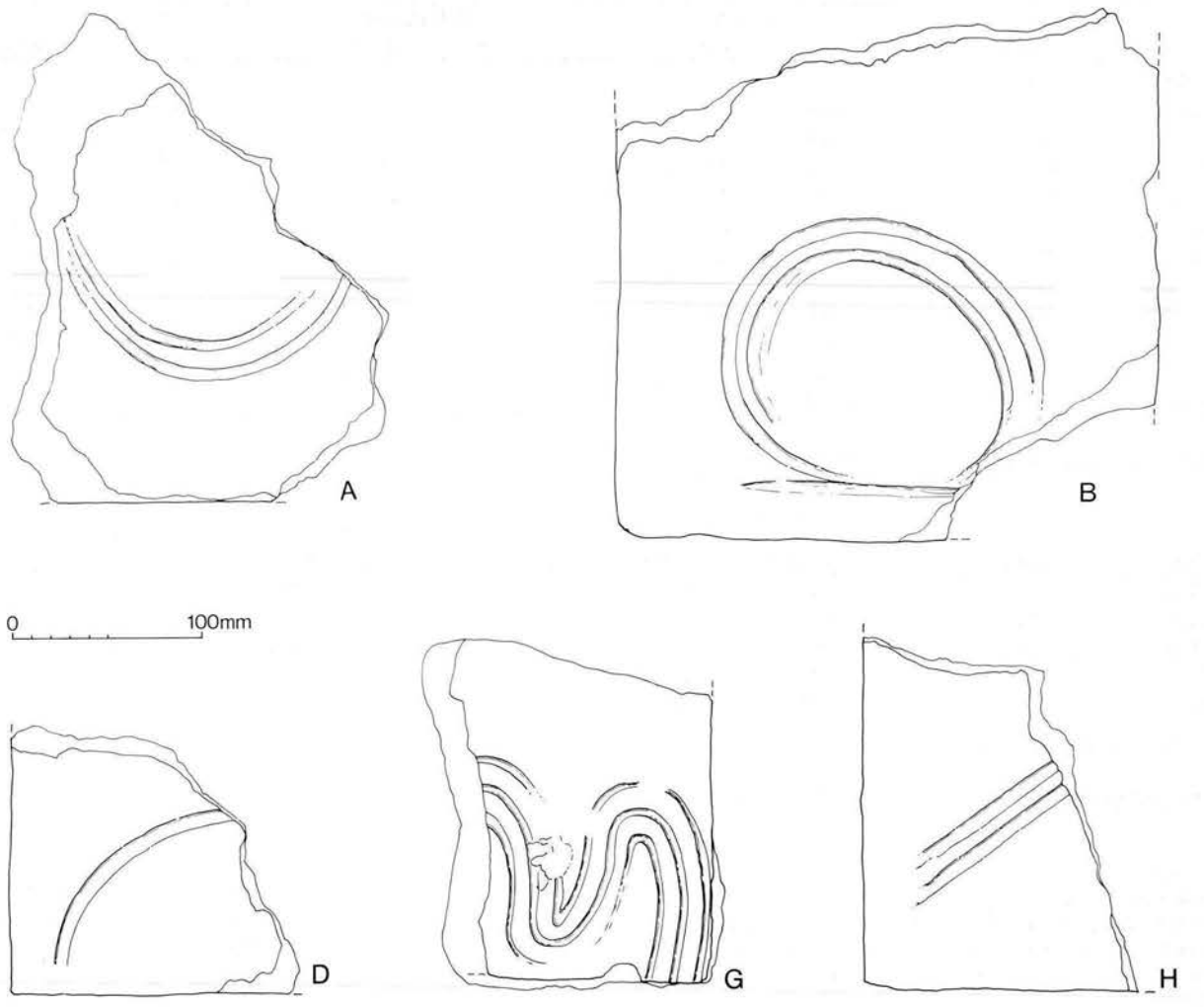


Figure 123 Brick and tile: brick signatures. Scale 1:4

Group A: (1 example)
Very soft fabric: 170mm square and 28mm thick. This may be a small *bessalis* (see Group B).

Group B: (16 examples)
All of Fabric 2: 185–205mm long, 185–190mm broad; between 26 and 35mm thick, but generally near 31mm. All but one present *in situ* in the font floor, the exception being found under the floor of building *F4044*. These tiles were normally used in *pilae*, but are not uncommon in floors. Average weight 2.3kg.

Group C: (1 example)
Fabric 2: breadth 240mm, length unknown; thickness 40mm. This fragment is surrounded by mortar. No other measurable tile from the site falls into this breadth group, although this may be a small example of a *lydion* (see Group E).

Group D: *Pedales* (16 examples)
Mainly Fabric 4: 255–280mm long, 255–280mm broad; thickness varies between 31 and 45mm, average *c*. 38mm. Apart from Fabric 4 (11 examples), two *pedales* are of Fabric 1 and three of Fabric 2. All in Fabric 4 were derived from *in situ* in the font wall; these show less size variation than those in other fabrics. Of the remaining group, four were found in pit *F1003* (Phase 4; Fig. 35) and vary considerably in size, and one was found in upper fill *680* (Phase 7) of pond *F679*. Average weight 5.3kg.

Group E: *Lydion* (7 examples)
Fabric 2 (5 examples) and 3: 425–430mm long, 290–295mm broad; average 32mm thick. The four complete examples of these tiles were found *in situ* in the font floor and are almost identical in size, although each varies in thickness by up to 12mm. Tiles of this type were made for bonding, and are common in standing Roman walls. Average weight 8.4kg.

Group F: *Opus spicatum* (1 example)
Fabric 2: 150mm long, 44mm broad; 34mm thick. The presence of a single example of this type, used in herring-bone pattern tile floors or walls, may suggest that it was a commercial sample. *Opus spicatum* has been found on at least thirty sites in Britain, including Colchester (Hull 1958, 91 and 189), but its dimensions vary considerably. It was often used in the 1st and 2nd centuries AD to floor bath-house complex buildings. Weight 0.5kg.

Thickness
Since various different sizes of tile were present, thickness was subsequently variable, from 26 to 45mm. A variation between 28 and 40mm was present on a single tile, showing thickness to be a poor indicator of tile size or type in some cases. Many of the unidentified fragments of flat tiles may have been derived from relatively thin bricks.

Fabric
The proportions of Fabrics 1, 2 and 3 (22%: 60%: 12%) were broadly similar to those of the *tegulae* and *imbrices* (Table 21), although the number of fragments in the soft Fabric 1 was lower in bricks. Fabric 4, with a fairly soft, laminated matrix, was only present in bricks, many of which were present within the font walls, and two of which were found to floor building *F4044*. Only 6% of bricks were made in Fabric 4.

Two anomalous fabrics were found in fragments of brick from stratified Roman contexts. One (fill *4217*, beneath the floor of building *F4044*; Phase 6), a yellow-buff gault fabric, has characteristic areas of dark grey banding inside. The second (fill *59*, depression *F2409*; Phase 7), a soft, pink fabric with large inclusions of red and yellow clay pellets, has buff-coloured surfaces which appear to be a feature of manufacture rather than an applied slip.

Context	*Length*	*Breadth*	*Type*	*Thick*	*Signature*	*Weight*
680	275	?	D	31	-	-
1004	270	265	D	33	-	5.00
1004	280	280	D	40	-	5.40
1025	255	255	D	35	-	4.70
1026	270	270	D	35	-	5.30
1204	296	280+	E	32	B	-
1799	150	44	F	34	-	0.50
1974	170	170	A	28	-	-
2041	?	240	C	40	-	-
2660	?	295	E	30	-	-
2696	?	290	E	42	-	-
4217	185	185	B	32	-	2.30
Font wall:						
	270	270	D	36	-	5.50
	265	260–5	D	37–45	-	-
	275	270	D	35–8	-	-
	275	270	D	40	-	-
	265	260	D	35–8	-	-
	265–270	260	D	40	-	5.65
	280	275	D	38–40	-	-
	275	270	D	38	-	5.50
	265	?	D	38	-	-
	275	265	D	40	-	5.40
	265–270	?	D	40	-	-
Font floor:						
A	425	290	E	32–8	-	8.80
B	425	290	E	35–40	-	-
C	425	290	E	35–40	-	-
D	430	290	E	28–40	-	8.10
F	?	185	B	30	-	-
G	190	185	B	32	-	*c.* 2.30
H	195	190	B	30–5	-	*c.* 2.50
K	195	185	B	30	-	2.35
L	200	190	B	32	-	-
M	200	195	B	30	-	2.25
N	195	190	B	30–2	-	-
O	190	185	B	30–2	-	2.35
R	195	195	B	28	-	-
S	195	190	B	35	-	-
T	195	190	B	30	-	-
U	200	190	B	30	-	2.20
V	200	190	B	26–30	-	-
W	?	190	B	30	-	-
X	205	190	B	28–30	-	-

Approximate dimensions of types
A =170 × 170mm; B =196 × 189mm; C =? × 240mm; D =271 × 267mm; E =426 × 292mm; F =150 × 44mm

Table 26 Brick (floor/bonding tile) dimensions (mm) and weights (kg)

Mortar
Twenty-four percent of the brick fragments had mortar adhering, *i.e.* substantially more than the other tiles except box tile. This figure is slightly inflated because a number of fragments were found *in situ* in the font.

Animal prints
Only two prints were observed on bricks, one of which was of a hobnail boot (see also Animal Bone Report, p. 217).

E. *Tesserae*

Twenty-five examples of small, cuboid tile fragments were identified as possible *tesserae*: of these, ten were found in the pre-1978 excavations. Four occurred in a single context (in depression *F2409*; Phase 7), but all others were single isolated finds. Considering the small number and broad distribution of these finds, it seems unlikely that most in fact represent *tesserae*, their shape and dimensions being fortuitous. Only one example has signs of surface wear.

F. Flat tiles

In total, 5733 flat tiles were quantified. These were featureless, and could have belonged to any of the major groups described above. Of the flat tiles, 4997 were small and 736 were large.

XIX. Baked clay

by Hilary Major and Marcus Jecock

Introduction

The 1978–83 excavations produced a total of 41,104g of baked clay, mostly consisting of small fragments, probably daub. Some value might have been gained from a study of the different fabrics present, but fabric was not initially recorded, and a re-examination of all pieces was deemed impracticable. A few pieces bear wattle impressions. Other structural clay comprises oven floor fragments.

About eight broken Iron Age triangular loomweights were found, but all are substantially incomplete and little can be deduced about variations in form. The fabrics are consistent: hard-fired and fairly sandy, with chalk and flint inclusions. The distribution and typology of triangular loomweights in Essex has recently been discussed by Major (1982). Half a spindle-whorl (No. 5) was also found.

Three contexts contained fragments of 'Belgic bricks' — enigmatic rectilinear blocks of unknown use (Major 1988, 94). Also of unknown use, but earlier in date, is part of a Late Bronze Age or Early Iron Age perforated clay slab (No. 6).

Fourteen sherds of briquetage were found, reflecting the trade in salt with the Essex coastlands. Briquetage is now being identified more frequently on inland sites in Essex, usually, as at Witham, in small quantities. These inland finds have been discussed most recently by Barford (1990).

Objects

Triangular loomweights

(Fig. 124)

1. Six conjoining frags of a triangular loomweight, plus one other frag. in the same fabric: hard, sandy fabric with some organic content and chalk and flint inclusions up to 10mm across; surface buff to pale orange; core dark grey to black; thickness 64mm. Surviving angle 60°, suggesting the original shape approximated to an equilateral triangle. One complete suspension hole survives, diam. *c.* 11mm. *D14 (disturbed); Phase 9*

Not illustrated

a. Three frags, probably from one triangular loomweight: largest frag. retains traces of two sides and a broken 18mm diam. hole. Another frag. has faint traces of a hole. *288 (sinkage F196); Phase 6–7*

b. ?Triangular loomweight frag.: two surfaces survive in part, with the faint trace of a single perforation. *651 (slot F644); Phase 2.3*

c. ?Triangular loomweight frag.: two roughly smoothed surfaces; broken *c.* 17mm diam. hole. *715 (slot F714); Phase 2.3*

d. ?Triangular loomweight frag.: two surviving surfaces. In addition to a broken hole, *c.* 14 mm diam., is what appears to be the beginning of a groove which would originally have cut through the corner of the weight and may have been repeated at both other apices (*cf.* Wild 1984, fig. 120.3), thus forming an alternative means of suspension. Both methods of suspension are original features, but the significance of this is unclear. *1119 (ditch F1124); Phase 2*

e. Large frag. from a roughly-made triangular loomweight: thickness *c.* 83mm. Elements of three surfaces survive, plus a short length of one slightly oval hole, *c.* 11 by 13mm, and a second incomplete perforation of similar dimensions. *[712]; D1621 (disturbed); Phase 1*

f. Corner frag. of a triangular loomweight: part of *c.* 18mm diam. hole present; original thickness *c.* 90 mm. *[5022]; 4699 (depression F4502, middle fill); Phase 2.3*

g. Three frags probably from a single triangular loomweight: all three frags have two flat surfaces at right angles to each other, and the smallest has a *c.* 15mm diam. hole. 4791 *(depression F4502, lower fill); Phase 2.3*

'Belgic bricks'

(Fig. 124)

2. Two joining frags of a large rectangular clay 'brick': hard, sandy fabric with common chalk inclusions up to 14mm; cream surface; streaky orange and cream core; max. surviving dimensions 114 by 78 by 53mm. Three smoothed surfaces, all at 90° to each other. *707 (slot F662); Phase 2.3*

Not illustrated:

a. ?Corner frag. of a 'Belgic brick'. *665 (slot F664); Phase 2.3*

b. ?Corner of a 'Belgic brick'. *4931 (depression F4502, middle fill); Phase 2.3*

Other objects

(Fig. 124)

3. Possible clay pellet: fine, hard, pink fabric; length 32mm; oval section, max. 20 by 16mm. Clay has been smoothed and drawn into points at either end. *95 (depression F2409, horizon 2); Phase 6*

4. Clay slab frag.: fairly soft, sandy fabric with common chalk inclusions, rarely up to 7mm; pale yellow surface; some red mottling in core; *c.* 25mm thick with rounded edge. *665 (slot F664); Phase 2.3*

5. Half of a cylindrical spindle-whorl: fine, soft, pinkish fabric; diam. 34mm; hole diam. 13mm; thickness 19mm. *[710]; D1621 (disturbed); Phase 1*

6. Perforated clay slab frag.: fairly hard, vegetable and grog-tempered fabric with some fine sand; pale red to red-brown colour; core sometimes black; dimensions 92 by 81 by 14mm. One complete hole survives, formed by pushing a rod through from one side before firing and moving it about slightly, thus creating a gently tapering hole with a raised ridge, *c.* 2mm high, on both surfaces. Traces of three other perforations survive, suggesting there may originally have been a fairly regular grid of holes over the slab, *c.* 20mm apart ridge to ridge. *[1001]; D3034 (disturbed); Phase 9*

7. Smoothed clay object: fine, hard, black fabric; max. dimensions 28 by 19 by 9mm. Broken at edges, but likely to have had an irregular ovoid shape. *4267 (depression F3321, horizon 4); Phase 6*

(Fig. 125)

8. Tip of fired-clay phallus: fairly hard buff fabric with occasional small chalk fragments and sparse sand. Length 42mm. *[X132]; B17/C (=Horizon 7 of depression F2409); Phase 7*

Not illustrated:

Several frags of grog-tempered clay slabs in red fabrics were found. Some retain only one original surface; others have organic impressions on one surface. Thickness ranges from 10 to 19mm. One frag. (fill *1144*) appears to be the base of a shallow trough, broken off at the angle between the base and sides. *674 (sinkage F196); Phase 2.3: 705 (sinkage F196); Phase 2.3: 1144 (slot F1143); Phase 2: 1291 (pit F1290); Phase 2.3: 1613 (ditch F1612); Phase 6*

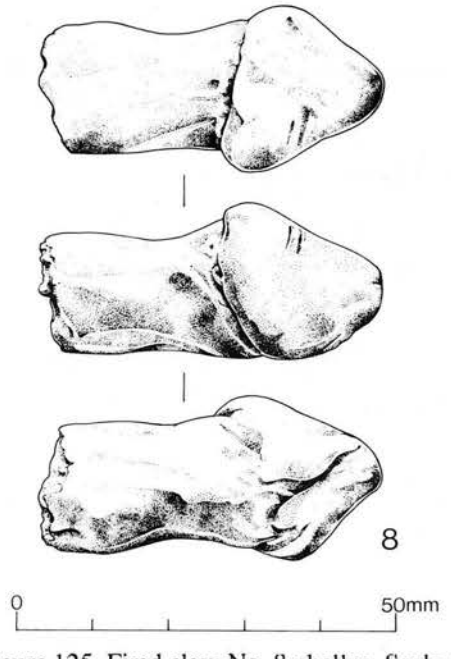


Figure 125 Fired clay: No. 8 phallus. Scale 1:1

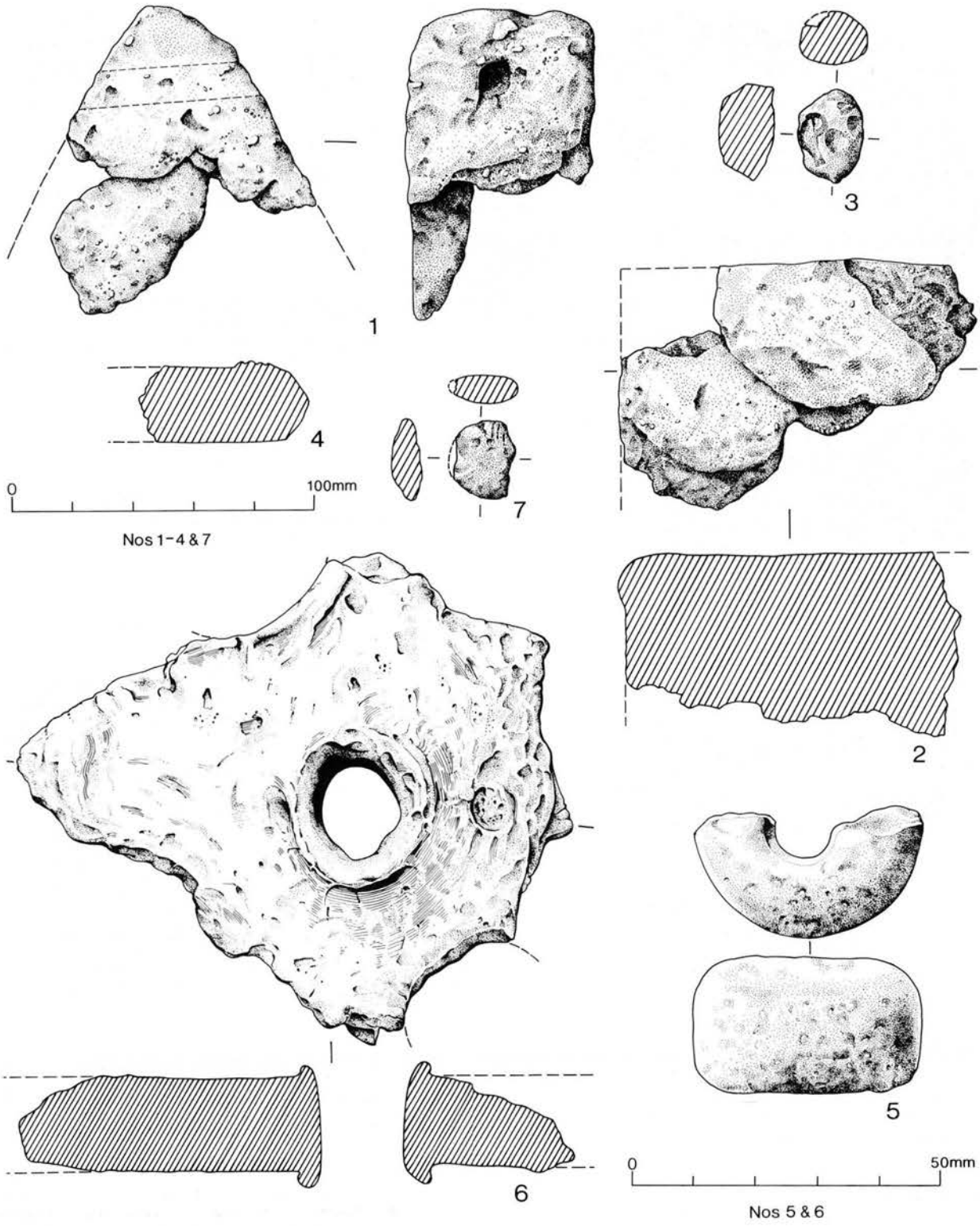
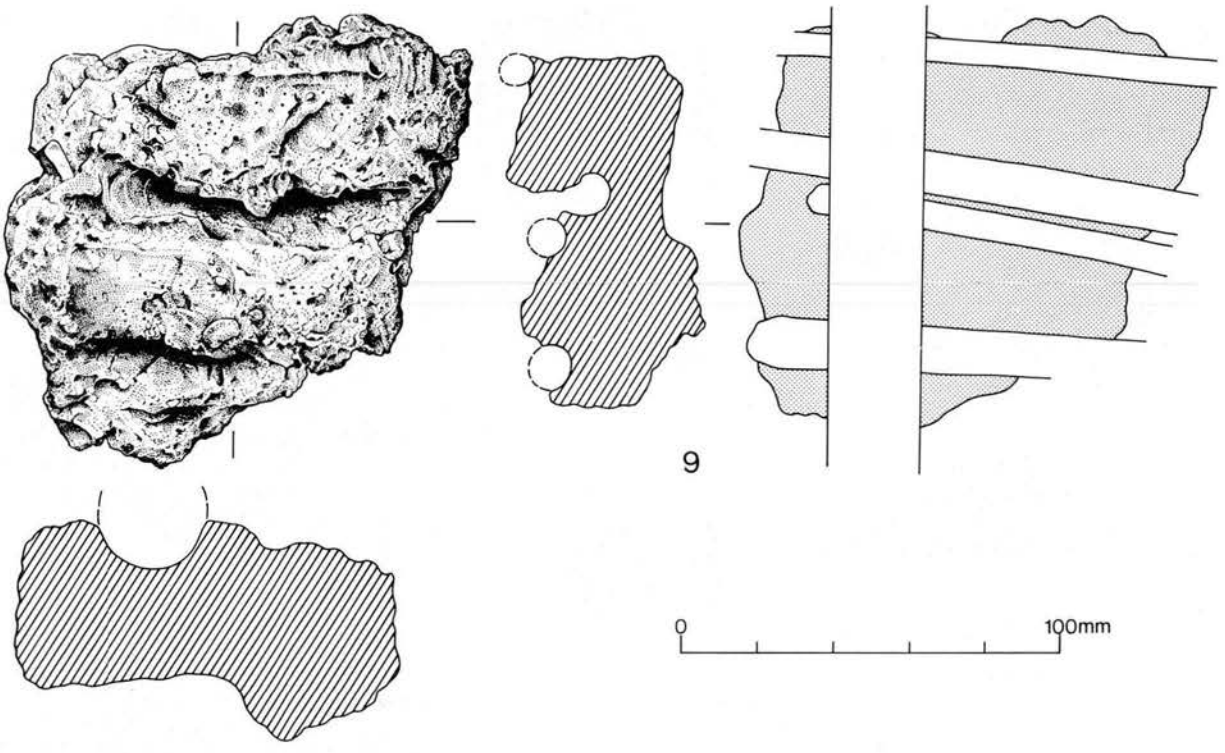
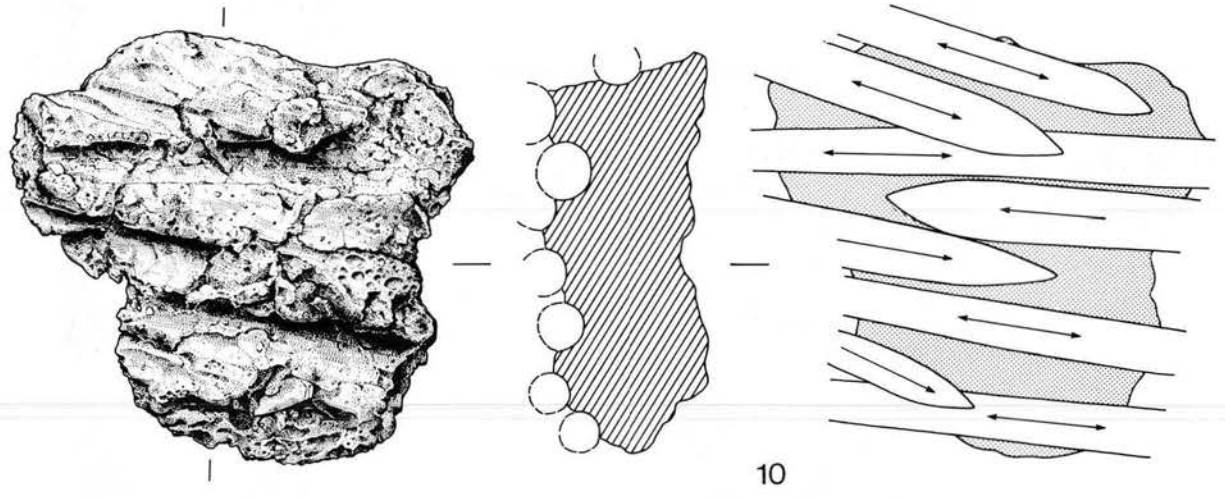


Figure 124 Fired clay: No. 1 triangular loomweight; No. 2 'Belgic brick'; Nos 3 and 7 pellets; No. 4 slab; No. 5 spindle-whorl; No. 6 perforated slab. Nos 1–4 and 7 scale 1:2; Nos 5 and 6 scale 1:1





a. Crucible fragment: Justine Bayley writes: 'from a triangular crucible of the typical Iron Age form. X-ray fluorescence analysis detected copper, tin and lead, suggesting the crucible was used for melting leaded bronze.' *4936 (depression F4502, upper fill); Phase 2.3*

Briquetage

Not illustrated:

Eleven contexts produced a total of fourteen briquetage frags. Most are fragmentary or undiagnostic, but one flat-cut rim (fill *288*) is present. The fabrics vary in fineness and amount of organic filler; one is also flint-gritted. The colour is mostly orange to red, often with a distinctive pinkish surface tinge typical of Essex briquetage, and sometimes with black cores. One frag. (fill *665*) has a black surface. *139 (sinkage F196); Phase 5–7: 288 (sinkage F196); Phase 6–7: 665 (slot F664); Phase 2.3 (2 frags): 1023 (post-hole F1022); Phase 3 (3 frags): 1119 (ditch F1124); Phase 2: 1778 (slot F1777); Phase 2: 3240 (ditch F3239); Phase 2.3: 3422 (pit F3421); Phase 3–7: 3772 (pit F3435); Phase 3: D4501 (unstratified); Phase 9: 4736 (depression F4763) Phase 6–7*

Oven frags

Not illustrated:

a. Possible oven floor frag.: hard, sandy fabric; reddish-brown colour, merging to buff below surface and black on surface; surviving thickness 72mm. Surface roughly smoothed. *87 (hearth F192); Phase 7*

b. Oven floor frags: frequent chalk and flint tempering. Pinky-red clay, becoming increasingly more fired until pale yellow or white surface. *3981 (oven F3962); Phase 1*

Structural clay

(Fig. 126)

9. Large frag. of wattle-impressed daub: hard, sandy fabric with sparse pebble inclusions up to 20mm and more common chalk frags up to 10mm; colour variable, from cream to grey; max. thickness *c.* 53mm. Bears impressions of horizontal wattles and an upright around which they were laced. Horizontal wattle diam. *c.* 15mm; vertical wattle diam. *c.* 27mm. *[750]; 1793 (ditch F1199); Phase 1*

10. Large frag. of wattle-impressed daub: fabric similar to No. 9; max. thickness *c.* 45mm. Impression of 8 wattles lying as in a hurdle weave; wattle diam. up to *c.* 15mm. Arrows on illustration indicate direction of wattle impressions towards the daub. *[751]; 1793 (ditch F1199); Phase 1*

Not illustrated:

a. Three ?structural frags: lightly-fired, friable fabric with chalk and pebble inclusions up to 20mm diam; max. thickness 40mm. The largest piece has one flat surface. *[847]; 2106 (ditch F1990); Phase 3*

XX. Mortar

Introduction

Mortar was present in 417 contexts, of which 373 were undisturbed, and was in large enough fragments to be sampled in 244 undisturbed contexts. Where possible, three or four fragments of each visually distinct mortar type were saved, as well as those fragments exhibiting recognisable markings such as mortar from under the imbrex of a roof. Mortar attached to tiles or to wallplaster has not been included in this examination: the mortar concerned is considered in the discussion of the material to which it adheres.

The mortar analysis was of the simplest possible kind. Detailed analysis would have been expensive in both time and effort, and would almost certainly have produced inconclusive results since in almost all cases the mortar was residual — perhaps by centuries — and subsequently of very little use for dating or associations. Nevertheless, the samples have been kept for future reference.

Although the original intention was to divide the mortar into various fabric groups, this was later abandoned because of the substantial overlap of the types. Two main types have been defined, but the dividing line between even these broad categories is still unclear:

Type 1: Cream-coloured, sandy matrix with small (<2 mm) to medium (2–6mm) rounded flint pebbles;

Type 2: Pink mortar with dense crushed tile and some chalk inclusion (*e.g. opus signinum*).

Discussion

Both types were found in roughly equal quantities, and, being in use at the same time, were often present in the same context or even on the same fragment. They were both used in walling, but Type 1 was more commonly used on roofs, and Type 2 in floors. In some of the walls of building *F4044* (Phase 6), both types were used in the masonry fabric.

As with other building materials, mortar was virtually absent before Phase 4 (later 3rd century) and does not appear to have been abundant before Phase 5 (early 4th century) — after which time it was present in some quantity. In total, 340 (91%) of the undisturbed contexts containing mortar are dated to Phase 4 or later, and some 317 contexts (85%) are Phase 5 or later.

Much of the mortar was derived from roofing, although wall and floor mortar was also present, especially in the robber trench fills around building *F4044* where it was also present *in situ*. Some mortar may, however, have been imported to the site. The presence of a nearby important building is therefore suggested.

Contexts with dense mortar inclusion

All contexts which contained mortar in sufficient quantity to be considered a major inclusion were examined in particular detail. These fall into three categories: contexts near or associated with building *F4044*; contexts near the font; and other, unassociated contexts.

By far the largest number of mortar-rich contexts were found in the vicinity of stone building *F4044*. The mortar was presumably mainly derived from the construction, alteration and demolition of the building. The font was also a source of mortar, but this was never present in large quantities since only one major demolition (after Phase A) apparently ever took place. Upper fills of the font depression (*F2409*), and of depression *F3321* near the stone building also contained a few contexts with appreciable amounts of mortar. However, the overall quantities involved are quite small, and could have been derived from the demolition of the stone building. Late depressions *F1905* (Phase 7) and *F4697/F4763* (Phase 6–7) also contained building debris, including mortar, as part of their backfills.

Almost all of the above contexts with large amounts of mortar belonged to the later 4th century AD. The only notable exception is segment *F4254* (Phase 3) — a stratigraphically early part of ditch *F738*. The proximity of the ditch segment to building *F4044* and to the rubble-filled re-cuts of ditch *F3203* suggest that this mortar may have been erroneously attributed to the early ditch segment, and may have belonged to a much later feature which was not recognised during excavation.

Illustrated mortar

(Fig. 127)

1. Fragment of flooring: fabric consists of *opus signinum* on upper surface and buff slurry below, with a horizontal interface. Flat upper surface. The slurry may be a natural concretion formed by percolating calcium carbonate-rich water; it was evidently formed in *c.* 0.1 mm thick layers. *[1102]; 3590 (ditch F3635); Phase 5*
2. Fragment of *opus signinum* in the shape of chamfered moulding: smoothed on outer surface; no trace of plaster. See also Wallplaster No. 6. *[1361]; 3710 (depression F3681); Phase 7*
3. Fragment of *opus signinum* moulding with rounded corner: smoothed outer surface. The underside is also rounded and must have keyed into a space with the reverse shape to the resultant moulding. *[1367]; 3899 (depression F3681); Phase 7*

Only three fragments of mortar or wallplaster exhibit traces of moulding; all from Phase 7 contexts, and all from around building *F4044*. It is assumed that the mouldings were derived from the building.

4. Cream plaster keyed to a coarse cream mortar, which is itself attached to a pink, tile-rich mortar layer beneath. *[3209]; D4048 (disturbed); Phase 6–7*

XXI. Wallplaster

Introduction

Roman wallplaster was present in 110 undisturbed Roman contexts, 106 of which were sampled. Where possible, all wallplaster was collected, but occasionally too much or too little was present for a complete sample. For this reason, the quantification relates to the number of contexts in which wallplaster was present rather than to the amount found in each context.

All of the wallplaster samples are attached to mortar. In most cases there is a fine-grained plaster above the mortar, but in some instances mortar was directly painted over. *Opus signinum* is often present, but an intervening layer of cream or white mortar usually separates the *opus signinum* base from the plaster on the surface.

The following colour combinations are present:

Background	*Paint*
Cream	Wash; red; yellow; pink; orange; green; grey and red; yellow and red; yellow and pink.
White	Wash; red; yellow; pink; orange; grey; yellow and red.
Red	Wash.
Pink	Wash; white.
Yellow	Wash; red.
Green	Wash; dark green.
Grey	Wash; dark grey.
Purple	Wash; dark purple.

Washes of cream, white, pink and red are most common on cream or white mortars, while pink mortars are generally washed with darker colours such as red,

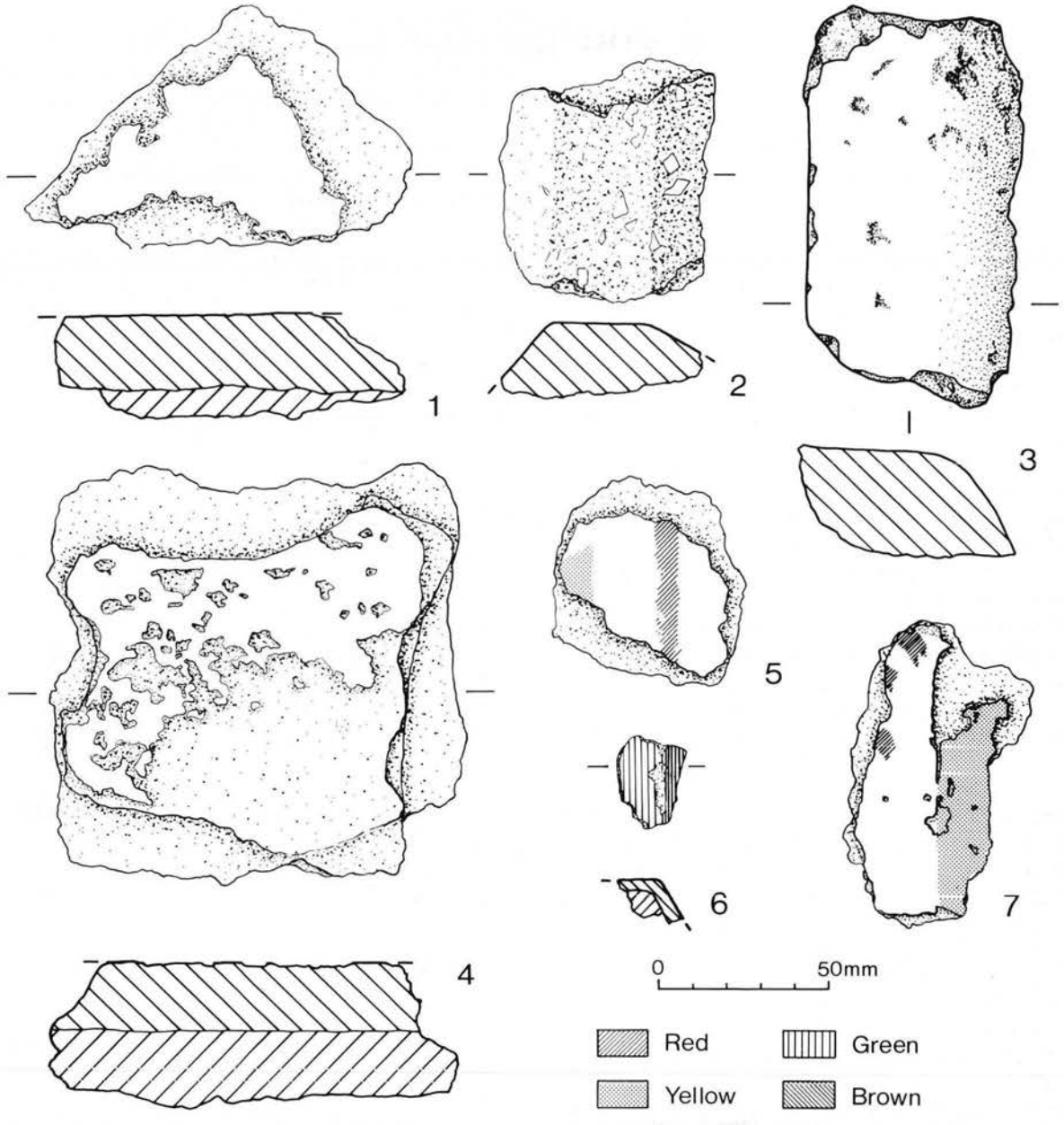


Figure 127 Mortar and wallplaster. Scale 1:2

green and grey, presumably to obscure the colour of the base. In sixteen of the undisturbed contexts, all of Phase 6 or 7, wallplaster was found on an *opus signinum* base. Table 27 (microfiche) shows all of the colour and fabric combinations.

It will be apparent from the few examples worthy of illustration that the quality of the painted wallplaster from Witham is poor. There is no evidence of complex designs, and the quality of the washes and paint is inferior to, for example, mortar found in Roman Chelmsford. There is, however, a very broad range of colour combinations, perhaps suggesting a number of sources rather than a psychedelic mural.

Distribution

A large proportion of the wallplaster came from contexts in the vicinity of building *F4044*, ditch *F3203* and depression *F3321*. Smaller amounts came from fills of depression *F2409*, and from various isolated findspots throughout the site.

Dating

Of the undisturbed contexts containing wallplaster, 83 (75%) have been dated to the later 4th to early 5th century (Phases 6 and 7), and 98 (89%) to within the 4th century (Phases 5 to 7). Cases where wallplaster was found in earlier Roman contexts may be treated as intrusions. However, the wallplaster appears to have been present on the site before the construction of building *F4044* in the mid-4th century: most of this came from Phase 5 contexts of ditch *F3203*, and does not seem to have been intrusive.

Illustrated wallplaster

(Fig. 127)

Although none of the fragments show signs of a discernible pattern, a few pieces of intrinsic interest are described below.

5. Yellow and red stripes on cream. Coarse white mortar. *[1168]; 2238 (slot F3862); Phase 7*
6. Green wash on a very fine, white mortar, attached to a fine pink mortar beneath. The surface of this fragment is angled at 60°, and it is derived from some form of moulding. *[2017]; D3338 (disturbed); Phase 7*
7. Yellowish-buff band and red pattern on white. Coarse cream mortar base. *[2135]; 3684 (ditch F3204); Phase 5*

Not illustrated:

a. Brown squiggle on a white wash: perhaps part of a pattern. *Opus signinum* mortar base. *[X4007]; unstratified*
b. Dark grey stripes on a light grey wash. Traces of *opus signinum* on top of surface indicate that the painted wall had been plastered over. *4686 (depression F4695); Phase 6–7*

XXII. The bone objects

by Nina Crummy (1984)

Introduction

The bone objects in this assemblage reflect the votive character of the general deposits, in that most of them fall into two main groups of personal objects (in the form of hairpins) and ?knife handles, and there is a complete absence of other groups usually represented on habitation sites, such as needles, spoons, counters, or dice. Some post-Roman objects are present in the group, and, without reliable stratigraphic information for the pre-1978 excavation finds, the later material can only be guessed at where the form of the object is incomplete or undiagnostic.

Hairpins

(Fig. 128)

Hairpin types used in the following description have recently been defined (Crummy 1983). There are no bone pins belonging to the 1st or 2nd century AD. Of the later bone hairpin types, the most common (Type 3) is predominant at Witham, although examples of the other three later types (Types 4–6) are also present.

Type 3

Pins with a more or less spherical head; date range *c.* 200 to the end of the Roman period. The heads of these pins can be divided into: A, globular or elliptical, possibly with a small flat area on the top; B, a semi-circular or elliptical lower half with a slightly conical or low convex upper half; C, lenticular; and D, hemispherical.

1. Complete but for the very tip: head B. Length 72mm. *[45]; 86 (depression F2409, horizon 5); Phase 7*
2. Complete but for the very tip: head B. Shaft polygonal in section from its thickest point down to the tip, giving impression of being unfinished. Length 72mm. *[64]; 86 (depression F2409, horizon 5); Phase 7*
3. Complete: head roughly Type B. Length 89mm. *[70]; 86 (depression F24095); Phase 7*
4. Head A. Length 49mm. *[879]; 2702 (depression F2409, horizon 2); Phase 6*
5. Complete: head A. Short pin with a large, well-made globular head. Possibly re-pointed. Length 58mm. *[1169]; 3733 (ditch F3732); Phase 4–5*
6. Complete: head B. Well-made; tip slightly rough, possibly chipped and re-pointed. Length 91mm. *[XM9]; B2*
7. Complete: very squat head of Type A. This example may perhaps more correctly belong with reel-headed pins of Type 6. Length 59mm. *[XM27]; B1*
8. Complete: head B. Length 69mm. *[X87]; T12/7/C*
9. Complete: head C. Length 89mm. *[X246]; S27/C2*
10. Complete, in two pieces: head A. Length 88mm. *[X328]; S28/C2*

Not illustrated:

a. Tip missing: small Type B head. A long pin in three pieces. Length 72mm. *[5120]; T13/2/C*
b. Tip missing: head B. Length 56mm. *[XM15B]; B2B*
c. Complete but for the tip: head A. Length 50mm. *[X77]; T12/6/C*
d. Head A. Length 43mm. *[X119]; T14/1/C*
e. Head B. Length 47mm. *[X120]; T14/1/C*
f. Complete but for the tip: head B. Length 67mm. *[X158]; B17/D*
g. Head C. Length 52mm. *[X169]; T14/2/C*
h. Head A. Length 38mm. *[X224]; S20/C*
i. Head A. Head quite rough and dished on one side where cancellous bone tissue has been cut away. Length 52mm. *[X262]; S20*
j. Head A. Length 22mm. *[X265]; S19*

Type 4

Pins with a faceted cuboid head; date range *c.* 250 to the end of the Roman period.

11. Head and about half of shaft survive. Head rather clumsily executed, though surfaces of both shaft and head are well finished. The difficulties of achieving a regular faceted cuboid head have recently been discussed (Crummy 1983, 22–3). Length 46mm. *[67]; D1 (unstratified); Phase 9*
12. Head and part of shaft survive. Length 18mm. *[X261]; S20*

Type 5

Pins with one or more reels beneath an ovoid or conical head; dated to the 4th century.

13. Head and half of shaft survive. Squat, ovoid head, but a finely carved piece. One reel beneath head. Length 29mm. *[677]; D1530 (disturbed); Phase 7*
14. Complete except for the very tip. Ovoid head and one reel. A well-made and delicate example of the type. Length 74mm. *[1196]; 3621 (ditch F3618); Phase 5*

Type 6

Pins with a bead-and-reel or reel-shaped head; date range *c.* 200 to the end of the Roman period.

15. Complete. Head of three well-made reels. Length 87mm. *[XM10]; B2*
16. Fragment, possibly a crude example of a Type 6 pin. Head elliptical in section rather than round. Length 42mm. *[X156]; B17/D*

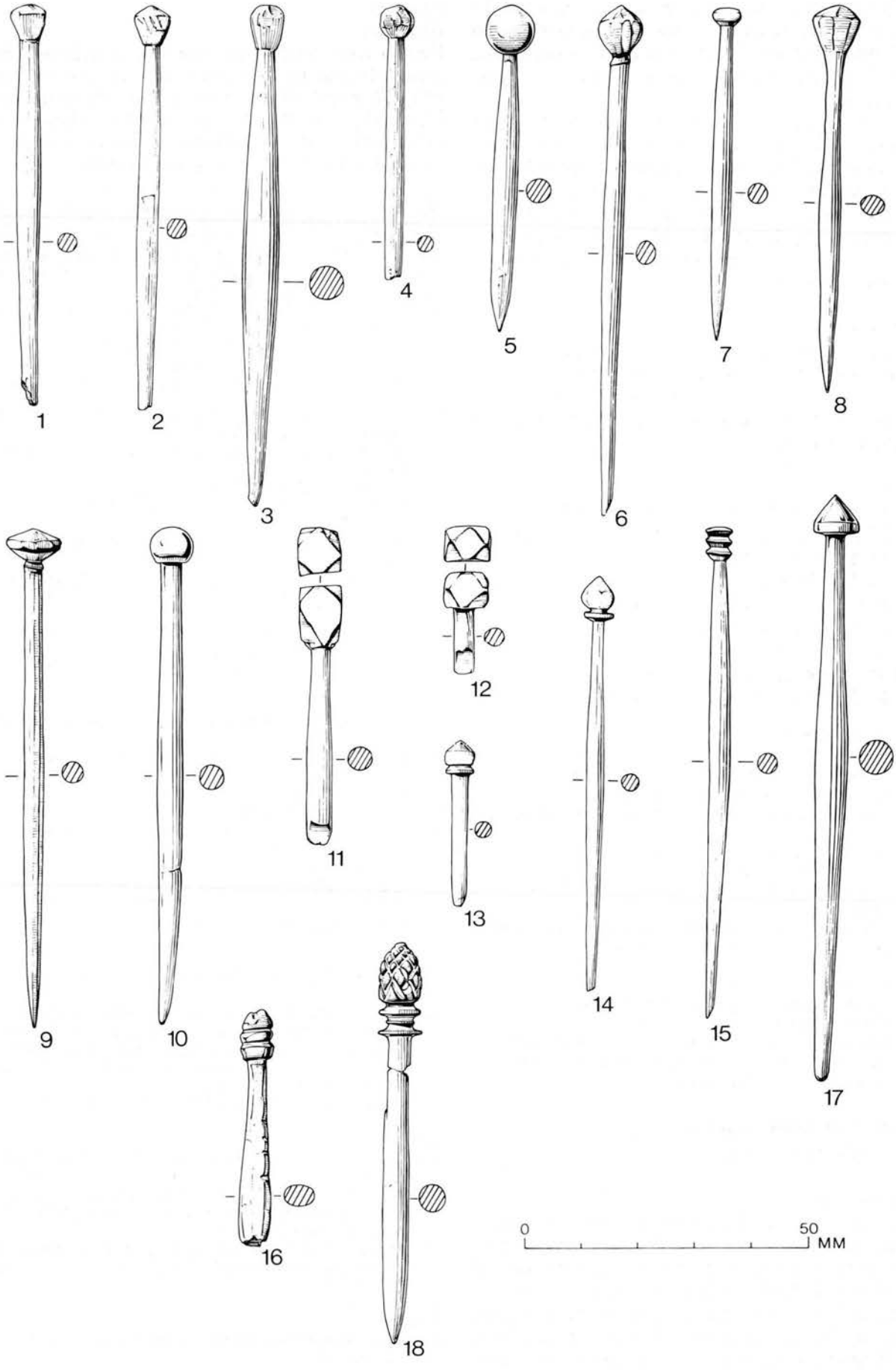


Figure 128 Bone objects: Nos 1–18 hairpins. Scale 1:1

Miscellaneous pins

17. Complete. Well-made pin with a stilted conical head and a pronounced swelling above the midpoint of the shaft. Head stands proud of the shaft, and this, together with the swollen shaft, places the pin in the latter half of the Roman period. However, given the context of the object, it is possible that it is post-Roman: the swelling of the shaft is rather high to permit the pin to be considered as 'hipped' and therefore Saxon. Length 105mm. *[89]; D1 (unstratified); Phase 9*

18. In two pieces with damaged shaft, although the full length is represented. Elaborate 'pineapple' head atop a bead-and-reel motif. The latter allies the pin to Type 6. Length 71mm. *[X337]; S26/C3*

Pin shaft fragments

Not illustrated:

i. *[93]; D1 (unstratified); Phase 9*
ii. *[95]; 93 (depression F2409, horizon 1); Phase 3*
iii. *[853]; 2375 (depression F2409, horizon 3); Phase 6*
iv. *[856]; 2375 (depression F2409, horizon 3); Phase 6*
v. *[858]; 2503 (depression F2409, horizon 3); Phase 6*
vi. *[875]; 2699 (depression F2409, horizon 2); Phase 6*
vii. *[881]; 2702 (depression F2409, horizon 2); Phase 6*
viii. *[1104]; 3206 (depression F3321, horizon 3); Phase 6*
ix. *[1202]; 3205 (depression F3321, horizon 5); Phase 7*
x. *[1360]; 55 (depression F2409, horizon 6); Phase 7*
xi. *[3206]; 3278 (depression F3321, horizon 4); Phase 6*
xii. *[3230]; 3515 (depression F3321, horizon 3); Phase 6*
xiii. *[3244]; 4180 (depression F3321, horizon 3); Phase 6*
xiv. *[3254]; 4180 (depression F3321, horizon 3); Phase 6*
xv. *[XM18]; B2A*
xvi. *[XM20]; B2A* (Two fragments)
xvii. *[XM27]; B1* (Three fragments)
xviii. *[XM28]; B1*
xix. *[X18A]; unstratified*
xx. *[X18B]; unstratified*
xxi. *[X82]; T12/5/C*
xxii. *[X130]; B17/D*
xxiii. *[X148]; B17/D*
xxiv. *[X169]; T14/2/C*
xxv. *[X201]; S22/C* (Two fragments)
xxvi. *[X216]; S20/C*
xxvii. *[X240]; S27*
xxviii. *[X249]; S27/C2*
xxix. *[X252]; S21/C3*
xxx. *[X269]; T13/2/C* (Two fragments)
xxxi. *[X275]; unstratified*
xxii. *[X277]; T12/7/C*
xxxiii. *[X324]; S27/C2*
xxxiv. *[X345]; S28/C1*
xxxv. *[X351]; S26/C3*

Other bone objects

Comb

(Fig. 129)

19. Small fragment of the narrow connecting plate from a comb: probably red deer antler. Each end has broken across a rivet hole. Plate has slight marginal step (damaged on one side) and groove. Central area decorated with double diagonal grooves between two transverse grooves: this would seem to indicate that the length of the comb was divided into blocks by transverse grooves, with alternate blocks containing either a rivet or double diagonal grooves. Three notches from cutting wide comb teeth can be seen on the undamaged side of the plate. The narrowness of the connecting plate could indicate a date towards the very end of the 4th century, or into the 5th. *[X113]; T14/2*

Handles

(Fig. 129)

20. Fragment of a bone handle, with the end of an iron tang. Handle decorated with three fine parallel grooves at the surviving end, and a further three at the broken end. This piece and No. 21 below may be companion pieces, possibly from a pair of knives or a set of tools. Length 52mm. *[1025]; D3200 (unstratified); Phase 9*

21. Fragment of a bone handle: traces of iron corrosion products on inner face. The surviving end bears three fine parallel grooves; these may suggest that this fragment and No. 20 were companion pieces. Length 48mm. *[1026]; D3200 (unstratified); Phase 9*

22. Bone handle from a clasp knife: fragment of iron blade remaining in groove. Handle plain, possibly lathe-turned: there is a bone peg set in the dished face of the upper end, utilising the hole made by the lathe bit. The other end is slightly recessed and is marked with two parallel grooves. A deep groove for the movement of the hinged blade runs across the lower face. The blade was held in position with an iron pin fitted with copper-alloy caps (indicated by a trace of copper-alloy corrosion on one side). It is very likely that a copper-alloy collar was set around this end, also fixed by the capped pin, and the grooves noted above may have helped to key the collar in position. Length 65mm. *[1218]; 3553 (depression F3321, horizon 2); Phase 5*

23. Small antler handle pierced lengthways by an iron nail with a pyramidal head (Manning 1985, type 1A). The illustration shows the object before conservation. It has since been cleaned and repaired with the handle in a different position on the nail.

The rectangular notch at one end of the handle does not seem to be deliberately made; its three internal surfaces appear to be broken, not cut, probably as a side-effect of the damage clearly suffered by the handle which has at some stage prior to conservation been cracked (presumably by the expansion of the corroding nail) into three pieces. A V-shaped piece is missing from the opposite end and side to the rectangular notch.

Any suggestions that the nail is a rod tang with hammered end can be dismissed: were this so, the blade would have to rise from immediately below the handle to prevent it slipping down. Moreover, the pyramidal head is much larger and thicker than the usual more or less circular hammered tang ends, and could not have been formed after the handle was passed onto the tang. Several possible explanations for the association of these two objects can be put forward, all of which would be speculative rather than informed. Length of handle 47mm; length of nail 80mm. *[3288]; 3733 (ditch F3732); Phase 4–5*

24. One half of a bone handle. This piece has split in two along its length, but was clearly originally solid, and must therefore be from a bone implement. This is borne out by the shape of the broken end. Possibly post-Roman. Length 45mm. *[XM1]; unstratified*

25. Most of a bone or ?antler handle. Crude diagonal and horizontal grooved decoration. Hole for tang does not completely pierce the handle. Length 57mm. *[XM11]; B2*

(Fig. 130)

26. More or less complete iron knife with bone handle: only the very tip of the blade is missing. Blade has slightly curved back and very slightly curved edge. Tang seems to be placed centrally to the blade, and passes through the bone handle to be hammered flat against the far end. There is a large stop-ridge between blade and tang. Handle has been cracked and distorted by the corrosion of the iron tang: it is hexagonal in section, with two faces rather wider than the other four, a feature no doubt dictated by the form of the longbone from which it was made. At both ends of the handle, each pair of narrower faces has a chevron of three grooves cut into them, and the broader faces bear an incised cross. Length 227mm.

The knife form is not paralleled in Manning's type series (1985, figs 28–9), and the stop-ridge separating blade and tang is not common on Roman knives, though Manning (1972, fig. 65.42) illustrates an example from Verulamium. The handle is similar in size and style to a heptagonal example from Middleborough, Colchester (Crummy 1983, fig. 110, 2932), of late 3rd or 4th-century date. *[X39]; B2B*

Peg

(Fig. 130)

27. Top of a bone peg: too thick to have been a hairpin. Flat-headed pegs are found in late and post-Roman contexts, whereas plain hairpins have conical heads and belong to the late 1st and 2nd century. It is possible to see a link between flat-headed pegs and Saxon dress pins (MacGregor 1976, 13), though other possible uses are numerous (Crummy 1983, 162). Length 42mm. *[X382]; S47*

Worked fragments

Not illustrated:

k. Fragment cut from a long-bone. Max. length 49mm; width 17mm. *[XM21]; T12/6/C*

l. Two horn cores: the more complete cut across the tip. These cores may indicate horn-working in the area (Schmidt 1972, 46–8), but more evidence would be needed to make this a serious proposition. *[XM25]; B3*

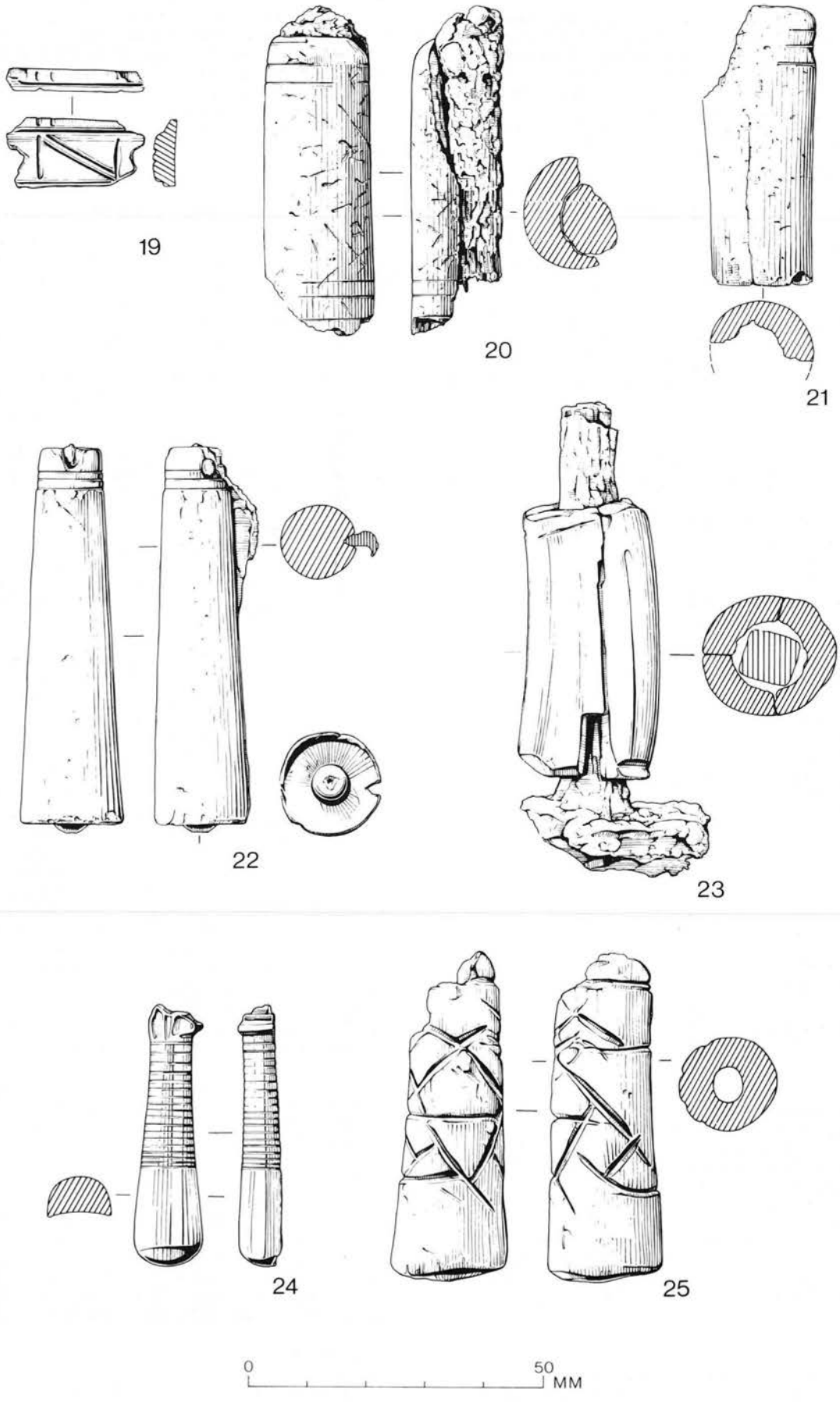


Figure 129 Bone objects: No. 19 comb; Nos 20–25 handles. Scale 1:1

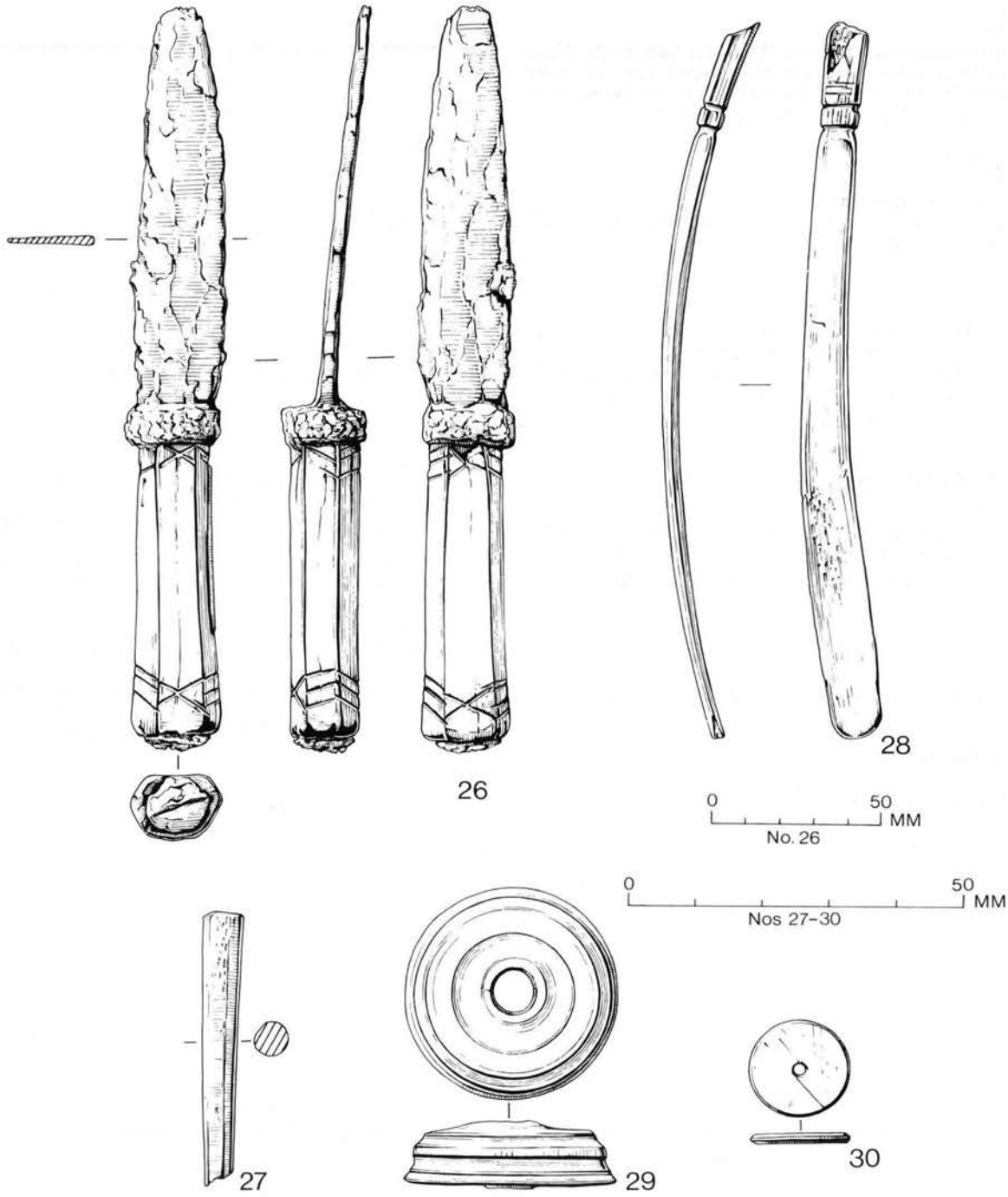


Figure 130 Bone objects: No. 26 bone-handled knife; No. 27 peg; No. 28 spatula; No. 29 spindle-whorl; No. 30 button. No. 26 scale 1:2; Nos 27–30 scale 1:1

Spatula
(Fig. 130)

28. Curved ?spatula made from a rib. The broken ?handle end is thicker than the main part of the object, and separated from it by a collar formed by two grooves. The piece shows considerable wear. Possibly post-Roman. Length 110mm. *[XM5]; B1/C*

Spindle-whorl
(Fig. 130)

29. Bone spindle-whorl with decorative mouldings: made on a lathe. Almost certainly of post-Roman date. Diameter 32mm; height 10mm. *[XM3]; B1/C*

Button
(Fig. 130)

30, Small button or disc: plain on both sides, with central perforation. Both faces have been sawn and then turned on a lathe; edge bevelled. Almost certainly post-Roman, *cf.* similar discs or buttons from Northampton (Oakley 1979, fig. 141, 100–101). Diameter 15mm; thickness 1.5mm. *[654]; D1240 (disturbed); Phase 7*

XXIII. Stone objects

A small number of stone objects were collected, mainly possible rubbers and whetstones (not illustrated), but including a fragment identified as marble and a fine small mortar or stone bowl.

Mortar
(Fig. 131)

1. Mortar or stone bowl frag. *[3214]; 4006 (depression F3321); Phase 7*

Possible whetstones

a. Fragment *c.* 55 x 18–22mm, by 14–16mm thick. *[939]; 86 (depression F2409); Phase 7*

b. Possible whetstone. *1651 (pit F1650); Phase 3–5*

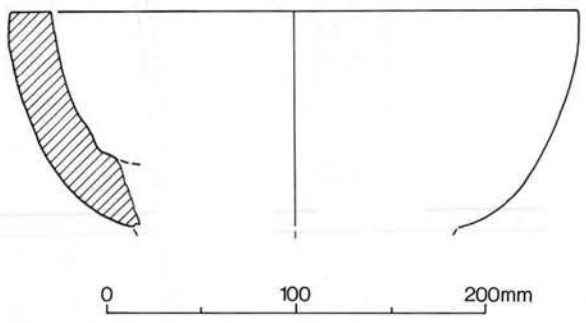


Figure 131 Stone: mortar. Scale 1:4

Possible rubbers

c. Small frag. dark red coarse-grained sandstone, conceivably part of a rubber, *288 (depression F196); Phase 6–7*

d. Large frag. fine-grained sandstone; two flat faces at 45°. Possibly part of rubber. *[822]; 680 (pon F679); Phase 7*

e. Possible rubber of fine-grained sandstone; one smoothed and rounded surface. *[747]; 1792 (ditch F1199); Phase 1*

Other stone objects

f. Small flat slab of white marble or marble-like stone; *c.* 11mm thick. *[1146]; 3331 (slot F3325); Phase 6*

g. Medium-sized water-worn pebble in the shape of a polished Neolithic axe. *[3293]; 3509 (depression F3321); Phase 7*

h. Red-brown mudstone with fossil fish scales. *[X306]; B1*

Part 4. Zoological and Environmental Evidence

I. Animal and human bones

by Rosemary-Margaret Luff
(1985, revised but not updated 1995)

Synopsis

Seventeen thousand, three hundred and three animal bones from the 1978–83 excavations represent the species horse (*Equus caballus*), cattle (*Bos taurus*), sheep/goat (*Ovis aries/Capra hircus*), pig (*Sus domesticus*), dog (*Canis familiaris*), cat (*Felis domesticus*), roe deer (*Capreolus capreolus*), red deer (*Cervus elaphus*), hare (*Lepus* sp), fox (*Vulpes vulpes*), badger (*Meles meles*), mouse (*Mus* sp), wood mouse (*Apodemus sylvaticus*), bank vole (*Clethrionomys glareolus*), water vole (*Arvicola terrestris*), field vole (*Microtus agrestis*), common shrew (*Sorex araneus*), frog/toad (*Rana/Bufo* sp), domestic fowl (*Gallus gallus dom*), greylag goose/domestic goose (*Anser anser/Anser dom*), mallard/domestic duck (*Anas platyrhynchos/Anas dom*), woodcock (*Scolopax rusticola*), raven (*Corvus corax*), and golden plover (*Pluvialis apricaria*).

Although cattle bones dominate the assemblage in all phases, horse becomes increasingly important in the Roman period, where on occasion, it was the second most important taxa. Cattle and sheep/goat were slaughtered at their optimum body weights, while the majority of the horse remains were under 12 years of age at death. There is evidence that horse flesh was consumed in the Roman period. Some very large cattle occurred in the pre-Roman Iron Age and Roman Iron Age deposits and a few large ovicaprids were found in the Roman period only.

Five hundred and fifty seven human bones were recorded, constituting one adult burial, one infant burial, two foetal burials and isolated human fragments. Comparisons with Essex bone assemblages from Sheepen, Colchester, Chignall St James, Chelmsford, Kelvedon and Great Dunmow are based on the author's current research.

Aims and methods

The main objective of the anlysis was to determine whether the bones denoted 'ritual' and/or 'domestic' activity on the site. The relative proportions of the main domestic taxa were examined by phase, and this information together with ageing, sexing and metrical data was compared and contrasted with related sites in the canton.

The animal and human bones from the site were analysed chronologically using the following divisions:

Phase 1 - Early to Middle Iron Age
2 - 'Belgic' (pre-Roman Iron Age)
2.3 - Belgo-Roman (Roman Iron Age)
3 - Early Roman (early-2nd to mid-3rd century)
4–7 - Later Roman (mid-3rd to 5th century)

The finds from Phases 4–7 were amalgamated, since the ceramic dating was insufficiently defined and many key contexts in features, such as pond *F679* and depressions *F2409* and *F3321*, were composed of midden debris, finds of which had accumulated during the whole of the later Roman period.

Selected bone deposits were sampled across the site and the bone sieved through a 0.5mm sieve.

The Witham bones were analysed using the methods described by Luff (1982, 1–25). In quantifying the material, the Number of Bone Fragments Method was used (NISP); only bone fragments with old breaks and with marked diagnostic features, for instance foramina, were counted. The Minimum Number of Individuals method (MNI) has rapidly declined in use with urban zoologists. Grayson (1973, 433) has emphasised repeatedly that MNI varies greatly according to whether site stratigraphy is used, that is 'the maximum distinction method', or not used, that is 'the minimum distinction method'. On complex urban sites it is impossible to decide which features to aggregate bone-wise. Further, it has been claimed that the MNI method is not of great value in urban conditions where retail butchery may have been practised. It is impossible to distinguish animals represented by joints rather than carcasses.

In sexing the cattle bones, the methods of Higham (1969), Higham and Message (1969) and Howard (1963) were employed. Howard measured modern cattle metapodials and found that two indices (distal breadth/length; mid-shaft width/length) were reasonably constant within each sex. Despite alterations in absolute size, the relative proportions of the bone had not changed with time to any great extent — an important implication for archaeological material. The sex indicators in Figures 133–138 and 142 are based on Howard.

Higham showed that certain bones showed high degrees of sexual dimorphism, for example metacarpal distal width, while others displayed little, for example astragalus length. Also, the bones of the fore-limb expressed more sexual dimorphism than those of the hind-limb (Higham 1969).

Mennerich constructed indices that doubly determine relative breadth measurements. He had previously concluded that ox and bull metacarpals cannot be satisfactorily separated by length/breadth indices alone (Mennerich 1968).

The jaws of horses, cattle and sheep/goats were aged after Levine (horse:1982), Merillat (horse:1905), AAEP (horse:1966), Grant (cattle:1975), Payne (sheep/goat:1973) and Silver (1969).

The measurements of von den Driesch (1976) were utilised and shoulder heights were estimated as follows: horse (Vitt 1974) and cattle (Fock 1966, Matolcsi 1970).

More details concerning the methodology are explained by Luff (1982, chapter 1).

Results

Preservation and recovery

The Witham faunal remains comprise 17,303 fragments of animal bone, of which 14,284 could be identified, and 557 human bones.

The bone from all phases was generally in an excellent state of preservation with scarcely any eroded bones. A very low percentage of the assemblage (<8%) had been gnawed by dogs.

Few identifiable bones were recovered by sieving, the vast majority having been carefully hand-picked. The sieved material yielded some small mammal bones, for example shrew and water vole, but scarcely any avian material.

The vast majority of animal bones have been butchered, apart from:

articulated limb-bones:
cattle-beast left fore-limb *(D1530 (disturbed); Phase 7);*
cattle-beast right fore-limb *(3228 (ditch F3227); Phase 3);*

partial burials:
dog *(242 (ditch F240); Phase 5–6);*
dog *(3188 (ditch F3154); Phase 5–7);*

whole burials:
immature sheep *(3989 (ditch F3966); Phase 1);*
year old pig *(4728 (slot F5081); Phase 2);*
year old pig 927 *(718 (ditch F549); Phase 1).*

None of the human remains exhibit evidence of butchery, and consist mainly of skull fragments and infant burials.

Relative representation of the taxa

The differences between Phases 1 and 2 (Tables 28 and 29) could be accounted for purely in terms of economics, perhaps in the Late Iron Age the grassland suitable for sheep-rearing became more wooded, thus allowing the increase of pigs. However, socio-economic factors cannot be ruled out. Cattle percentages roughly stayed the same while sheep decreased and pigs increased. However, the samples are small and caution should be used in their interpretation. The 1st-century AD deposits at Sheepen were characterised by high percentages of pig, the animal remaining second in importance after cattle (Luff 1985, 143). In Phase 2.3 at Witham, the transitional period between Belgic and Roman, sheep percentages rose significantly, with an increase in horse numbers while cattle and pig remains decrease. In the later Roman period (Phases 4–7) horse becomes more important, with an increase of sheep/goat and pig remains, whereas those of cattle decrease.

In all periods cattle was the predominant species slaughtered and eaten. The second most important species was sheep/goat, except in Phase 2 where it was pig, and in Phases 4–7 where it was horse.

Fragmented sheep and goat bones are difficult to distinguish, but two metacarpal bones from later Roman contexts were identified as sheep, while skull and horn-core remains reveal sheep in depression *F2885* (fill *2884*; Phase 7) and goat in depression *F3321* (fills *4004* (horizon 4) and *4180* (horizon 3); Phase 6); goat in pit *F4092* (fill *4109*; Phase 6–7); and a hornless sheep in depression *F1925* (fill *1907*; Phase 4–5).

The Witham horses

Horse age spans
(Table 30)

If the contexts are treated as separate entities, sixty-eight horses are represented by the maxillary and mandibular remains, forty-nine of which (72%) died under 12 years of age. Out of these forty-nine, twenty-five (37% of the total) were less than 8 years old. At least four animals were in the 15–20 year age bracket.

Phase	*Horse*	*Cattle*	*Sheep/goat*	*Pig*
1	21^{1}	211^{31}	78^{17}	11^{1}
1–2	-	1	2	-
2	10^{1}	159^{9}	26^{4}	41^{7}
2.3	76^{13}	625^{106}	366^{71}	84^{23}
3	43^{8}	847^{128}	73^{27}	18^{9}
3–4	-	21^{3}	2	-
3–5	4	47^{2}	48^{3}	-
3–7	15^{8}	128^{11}	34^{7}	3
4	1	18^{6}	14^{6}	4^{2}
4–5	37^{2}	350^{36}	60^{13}	22^{9}
4–7	4^{1}	84^{15}	8^{2}	5^{3}
5	22^{8}	218^{29}	19^{5}	15
5–6	9^{2}	78^{13}	18^{9}	2^{1}
5–7	41^{15}	48^{12}	20^{6}	9^{4}
6	115^{9}	758^{117}	143^{26}	52^{29}
6–7	127^{23}	718^{104}	139^{38}	39^{17}
7	369^{28}	1491^{355}	215^{47}	147^{71}
4–7	738^{83}	3923^{700}	667^{157}	297^{139}
TOTAL	1628^{201}	9641^{1552}	1924^{436}	744^{312}
% Teeth/ total bone & teeth	11%	14%	18%	30%

Note: X^{y}, where X is the number of bone fragments and y is the number of teeth

Table 28 Number of bone fragments from main domestic species

Phase	*Horse*	*Cattle*	*Sheep/goat*	*Pig*
1	6.5	65.7	24.3	3.4
2	4.2	67.4	11.0	17.4
2.3	6.6	54.3	31.8	7.3
3	4.4	86.3	7.4	1.8
4–5	7.9	74.6	12.8	4.7
5	8.0	79.6	6.9	5.5
6	10.8	71.0	13.4	4.8
6–7	12.4	70.2	13.6	3.8
7	16.6	67.1	9.7	6.6
4–7	13.1	69.7	11.9	5.3

Table 29 Percentage number of bone fragments of main domestic species per phase

Table 31 shows the small number of unfused bones found per period. This suggests that most of the horse remains were probably adult, that is 4 or more years old. However, using Silver's method of ageing, depression *F3321* (Phase 7) produced jaw bones where the first and second molars had not erupted, thus indicating an animal of less than one year and therefore the possibility of *breeding* on the site (Silver 1969).

Horse size

Table 32 illustrates the long bone greatest lengths and estimation of the withers heights in centimetres. Meek and Gray (1911) claimed that in the Romano-British period three sizes of horse existed:

a. a type of 142cm;
b. a type approximately the size of a New Forest Pony, that is about 122cm; and
c. a small-sized animal approximately the size of an Exmoor Pony, that is 112cm.

By far the majority of the Witham measurements fall into pony size. However, two bones from the later Roman period represent animals of 142cm plus. Large beasts were found to concentrate on villa and farmstead sites and it has been suggested they would be of considerable use in rounding up sheep and cattle (Luff 1982, 136): a farmer would gain great advantage from being seated on a tall horse. Large numbers of horse and cattle bones in association have been found at Appleton, Norfolk; Hambleden, Buckinghamshire; and Rockbourne Down enclosure, Hampshire (Applebaum 1972, 209).

	Phase											
Age (yrs)	*1*	*2*	*2.3*	*3*	*3-7*	*4-5*	*5*	*5-7*	*5-6*	*6*	*6-7*	*7*
0–3½	*	-	-	-	-	-	-	-	-	-	*	***
3–6½	-	-	-	-	-	*	*	-	-	*	*	*
4–8	*	-	*	-	**	-	*	-	***	*	**	****
6½–9	-	-	-	*	-	-	-	-	-	*	-	***
7–10	-	-	-	-	-	-	*	*	-	-	-	***
8–11	-	-	-	*	-	*	-	-	-	*	-	****
8½–12	*	-	-	-	-	*	-	-	*	***	-	*
9–14	-	-	-	*	-	-	-	-	-	*	-	-
11–15½	-	-	-	-	-	-	*	-	*	-	*	-
14–15	-	-	-	-	*	-	-	-	-	*	-	*
11–20	-	-	-	-	-	-	-	-	-	-	-	*
15–20	-	*	*	-	-	-	-	-	-	*	-	-
20+	-	*	*	-	-	-	-	-	-	-	-	-

* =1 animal

Notes: Molar and premolar ageing using Levine 1982
Incisor ageing using Merillat 1905 and AAEP 1966

Table 30 Horse: age spans

Phase	
1	-
2	-
2.3	cervical vert., distal tibia
3	cervical vert., proximal femur (3)
3–5	-
3–7	-
4	-
4–5	axis
4–7	-
5	-
5–6	-
5–7	-
6	-
6–7	-
7	proximal femur (2), distal femur, distal tibia, cervical vert. (2), lumbar vert. (2)

Table 31 Horse: number of unfused epiphyses

Bone	*Greatest length (mm)*	*Phase*	*Shoulder height (cm)*
Radius	306	2.3	126.0
	329	3	135.0
	284–345	7	116.0–141.2
Metacarpal	202	1	120.9
	221–224	2.3	133.0–134.1
	230	4–5	138.2
	235	6–7	141.2
	203–230	7	121.9–138.2
Femur	344	4–5	122.9
Tibia	322–344	2	127.0
	351	2.3	136.1–139.2
	349	5–6	138.2
Metatarsal	252–268	2.3	132.1–140.2
	287	5–7	150.4
	261–281	6	137.2–147.3

Notes: The bones were measured after the method of von den Driesch 1976
Shoulder height estimation is after Vitt 1974

Table 32 Horse: greatest lengths of long bones and shoulder height estimations

It is likely that the Witham horses were mares or geldings since entire horses were preferred for the Roman army. The single Phase 1 horse measured 121cm and is typical of the small Celtic pony which was used in chariot warfare in the Iron Age.

Horse slaughter and butchery

Butchered horse bone occurred in all phases, albeit in small quantities. Figure 132 shows the bones exhibiting knife and chop marks. Most of the marks pertain to skinning of the animals; marks resulting from skinning occur when the skin comes into close contact with the bone, for example the lower limbs, toes and head.

Evidence for removal of the head from the body is provided by an atlas (*4686* (depression *F4695*); Phase 6–7) which exhibits two knife-cuts across the dorsal surface. Dismemberment of the fore-limb was achieved by chopping through the scapula neck (*645* (slot *F644*); Phase 2.3), and also by severing the origin of the triceps brachia muscle (*3509* (depression *F3321*, horizon 5); Phase 7). Dismemberment of the hind-limb was achieved by chopping through the acetabulum and femoral head as in (*680* (pond *F679*, upper fill); Phase 7). The hind-limb was split into components by chops through the proximal and distal tibia (718 (ditch *F549*); Phase 1) by a chop through the calcaneum (*D1210* (disturbed); Phase 7), and a chop through the proximal metatarsal (*1745* (pond *F679*, upper fill); Phase 7).

However the most conclusive evidence for consumption of horse meat is provided by examples from ditch *F3559* (Phase 3–5), depression *F3321* (Phase 5), depression *F2409* (Phase 6), and depression *F4651* (Phase 6–7), where meat removal from the humerus shaft is indicated by numerous knife cuts. It could be argued that this meat was for consumption by dogs rather than humans. Were this the case, however, surely the whole bone would have been given. Further, all the animal bones were scrutinised for canine chewing marks, but only 0.2% of the horse bones show this evidence. As with the cattle, sheep/goat and pig examples, it is assumed that these were scavenged by the dogs themselves. Two femora exhibit knife-cuts indicative of flesh removal for eating (*3509* (depression *F3321*, horizon 5); Phase 7; and *4723* (depression *F4502*, upper fill); Phase 3).

From this slender but important evidence it is clear that horse meat was consumed during the whole Roman period at Witham, with the skin being removed as a by-product; horses were also skinned in the pre-Roman period.

In an examination of the distribution of skeletal elements, all the bones of the skeleton were found to be present on site, thus entire animals were led into the area of occupation. There is no evidence for the methods used to slaughter the horses, if, indeed, they were slaughtered (see p. 221–3).

Table 33 shows waste bone predominating in all periods: skull, pelvic, shoulder blade, and metapodial bones. There are distinct differences between the Belgo-Roman and the later Roman periods: meat-bearing bones — distal humerus, radius and ulna, distal femur and tibia plus astragalus and calcaneum — dwindle from 30% in Phase 2.3 to 8.3% in Phases 4–7. Also, there is a tremendous increase in skull remains in Phase 4–7: 71% as compared to 13.6% in Phase 2.3. In order to understand these percentages it is vital to know whether the horses

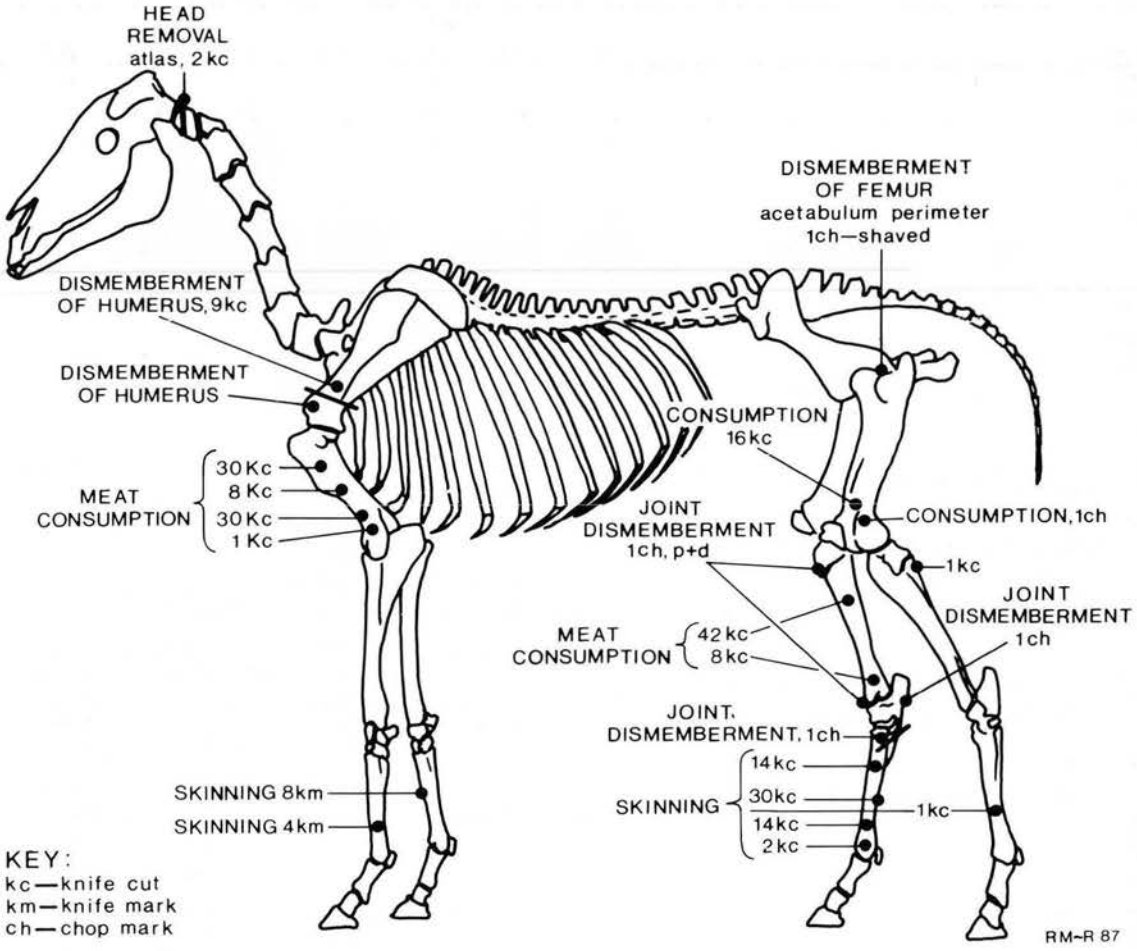


Figure 132 Horse: skeletal elements showing butchery marks

	*Phase 2.3**	*Phases 4–7*
Head (skull, mandible, maxilla, atlas)	13.6	71.0
Vertebrae	10.9	2.3
Pelvis and scapula	14.5	7.2
Distal humerus, radius and ulna	12.7	3.7
Distal femur, tibia, astragalus and calcaneum	17.3	4.6
Carpals, tarsals and metapodials	20.0	8.6
Phalanges	10.9	2.6
Total fragments	76	738

Note: * percentage of horse remains per phase

Table 33 Horse: chronological distribution of skeletal elements

Phase	*Early fusing*[1]	*Middle fusing*[2]	*Late fusing*[3]
1	-	-	4
2	1	1	3
2.3	1	3	12
3	1	1	4
4–7	7	18	90
	less than 18 mths	less than 2 yrs	less than 4 yrs

Notes: 1 Distal humerus, proximal radius, proximal phalanx
2 Distal metacarpal and distal tibia
3 Proximal humerus, distal radius, proximal and distal femur, proximal tibia, ulna, and calcaneum

Table 34 Cattle: unfused long-bone epiphyses

were being slaughtered for sacrifice and/or food or whether they were concomitant to the usual Roman beef diet, having been butchered when no longer able for work.

The Witham cattle

Cattle ageing

Grant (1975) devised a system of relative ageing utilising the third deciduous molar, fourth premolar, and the first, second and third molars. As a tooth wears down, the patterns of dentine and enamel change and Grant assigned a numerical value to the various stages, known as the tooth wear stages. Values for each of the permanent molar teeth are then added up to give a total, the mandibular wear stage which is illustrated in Figure 133. This is fairly difficult to interpret since absolute ages cannot be given, only rough assessments. The author has applied Silver's figures of tooth eruption to the horizontal axis (Silver 1969) and also figures Grant has derived from observations on whole skeletons from Danebury (Grant 1984, 504).

Sixty-four percent of the Witham cattle mandibles were mature, in the order of about 4 years old. This indicates a meat economy since the majority of animals were bred to their optimum body weight and then slaughtered. Milk was not important since very few animals were butchered at less than 6 months: an examination of the unfused long bone epiphyses bears this out (Table 34). However, if the unfused late fusing bones of Table 34 are expressed as a percentage of the total number of fused and unfused (late fusing) bones for Phases 4–7 then 37.5% are from animals less than 4 years old. This is very close to the figure 36% which was deduced for the mandibles from all periods in Figure 133 and 35.4% for Phases 4–7.

One very old cow is represented by a mandible with extremely worn molar teeth, with the first molar having split.

Teeth remains from the pigs reveal that the majority of animals were male and domesticated: the age at death was 2 to 3 years, that is, as with cattle when the body had reached its optimum body weight (Table 35).

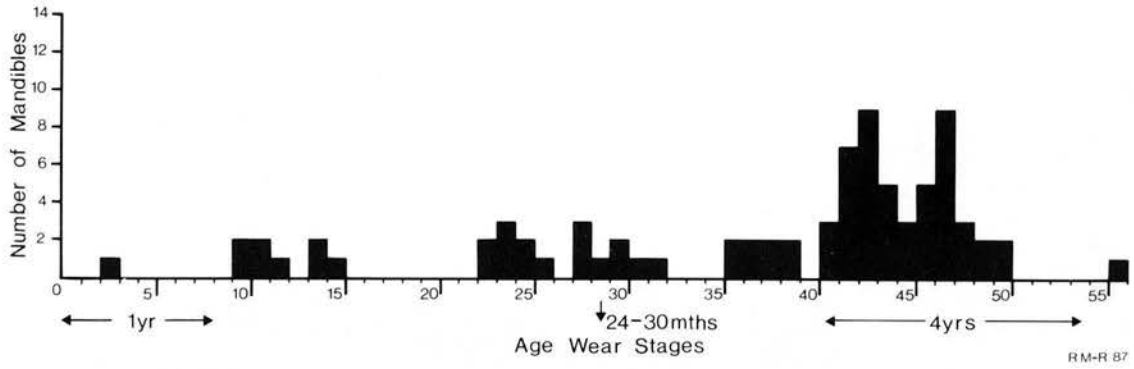


Figure 133 Cattle: mandible ageing (after Grant 1975)

Lower third molar length measurements (mm)		
Phase		
4–7	33.0	
5–6	39.1	
6	31.1–31.9	
6–7	34.1–34.7	
7	32.4	
-	34.0–42.6	Domestic modern European Sus scrofa
-	38.0–53.0	Modern wild European Sus scrofa

Morphological sexing via the canines		
Phase	*mandible*	*maxilla*
2.3	3 male	1 male
3	1 male	-
4	1 male	-
4–5	1 male	-
5	1 male	-
6	6 male, 1 female	4 male
6–7	2 male	-
7	15 male, 5 female	1 male
	Total 20 male: 6 female	

Table 35 Pig: metrical and sexing data

Phase	*Length of outer curvature (mm)*	*Type*
1	54; 115	Small-horned
4	118	Small-horned
4–5	200	Short-horned
5	212	Short-horned
5–6	144	Small-horned
5–7	113	Small-horned
6	142	Small-horned
	175; 183; 199	Short-horned
	265	*Medium-horned*
6–7	146	Small-horned
7	161	Short-horned
	233	*Medium-horned*

Ayrshire female	200	Hereford female	240
Dexter castrate	305	Hereford female	220
Dexter castrate	220	Hereford male	150
Friesian female	120	Hereford male	290
Friesian male	210	North Devon female	260
Guernsey female	95	North Devon castrate	280

Table 36 Cattle horn-cores: length of outer curvature and a comparison with modern breeds

Cattle metrical analysis

The cattle metrical analysis revealed the presence of some very large cattle at Witham, far exceeding any measurements previously recorded. For instance, two horn-cores were found (Phases 4–7) which fit into the revised Armitage and Clutton-Brock classification as medium-horned (Table 36: Armitage 1982). The Witham horn-cores (Pl. XXV) are compared with modern ones provided by Noddle (1983).

Large cattle were already present at pre-Roman Iron Age Witham as evidenced by two metacarpals, 216mm in total length (Table 37). In a compilation of Iron Age and Romano-British metrical data (Luff 1982, table 2.15), one of the largest Iron Age measurements emanated from Beckford, Northamptonshire, at 192mm. With regard to Romano-British measurements, one of the largest was 222mm at Great Chesterford (Luff 1982, table 3.12) followed by 211mm at Barton Court Farm, Oxfordshire. It is interesting that the Witham and Great Chesterford bones fall within the same canton.

Armitage (1980) has made extensive studies on the remains of medieval and later cattle from archaeological sites in the City of London and elsewhere. He claims that large-sized long-horned cattle did not appear in Britain until the late 14th century. Prior to this time, it was thought that cattle were invariably of the small short-horned variety (Armitage 1980, 411).

It is known that the size of a bone is determined by its genetic inheritance, sex and nutritive status during the growing period. Noddle (1983) has rightly emphasised that the influence of nutrition has been underestimated and makes her point by citing a paper by Wiltbank *et al.* (1965) which describes a group of Aberdeen Angus cows kept under a range of conditions, including winter conditions, inadequate in energy and/or protein content. Cows averaged *80mm less* in withers height at the time of second calving than their fully fed counterparts.

Noddle further stresses that it is unlikely that the majority of domestic animals reached their full genetic size prior to the adoption of adequate feed in the 18th-century. She cites the presence of the 'odd animal' of much greater stature on a number of Roman sites including Gadebridge villa, Hampshire and Segontium, Gwynedd, which she claims were fully fed (Noddle 1983, 229). It is possible that the large beasts from Witham represent animals specially chosen for sacrifice and thus given more nutritious fodder.

It seems significant that a very large sheep/goat bone, possibly a ram, was found in the later Roman levels (fill *3509*, horizon 5, Phase 7) of depression *F3321* where one of the large cattle horn-cores was found.

A massive cattle horn-core was also recovered from fill *1974* (Phase 6) of pond *F679*. The pond also yielded some horse bones, five of which (upper fills *680* and *1745*, and edge fills *2150* and *2498*) demonstrate butchery marks.

Figure 134 shows a distribution in size of the Witham cattle horn-cores (see also Pl. XXV). The smallest horn-core, designated small-horned, belongs, not surprisingly, to the Iron Age. Excluding the medium-horned animals already discussed, the remaining horn-cores consist of short-horned and small-horned varieties. Although males and females appear to be polarising, there is not a clear-cut distinction of sexes.

Cattle metacarpal distal epiphysial widths were plotted against distal widths using the methods of Higham (1969) and Howard (1963) (Fig. 135). As with the horn-cores, there is some separation of females

	Humerus	*Greatest length (mm)*			*Shoulder height (cm) after Matolcsi (1970)*	
	Phase 3	280			(115.9)	
	Radius	*Greatest length (mm)*			*Shoulder height (cm) after Matolcsi (1970)*	
	Phase 1	255–256			(109.6–110.1)	
	Phase 2	258			(110.9)	
	Phase 3	271			(116.5)	
	Phases 4–7	301, 302, 306			(129.4, 129.9, 131.6)	
	Metacarpal	*Greatest length (mm)*			*Shoulder height (cm) after Fock (1966)*	
	Sex	*no.*	*range*	*mean*		
Phase 1	Female/castr.	2	216–216		(131.8–131.8)	
2	Male	1	167		(104.4)	
	Female/castr.	1	173		(115.5)	
3	Female/castr.	1	189		(115.3)	
	Female	1	198		(118.8)	
4–7	Female	5	183–195	190.4		
	Male	6	178–208	196.3		
	Castrate	1	199			
		12	178–208	193.2	(st. dev. =8.2) (111.2–130.0)	
	Metacarpal	*Greatest distal width (mm)*				
	Phase 1	67.8–67.4				
	Phase 2.3	60.4				
		no.	*range*	*mean*	*st.dev.*	*var.*
	Phase 3	4	55.4–57.0	56.3		
	Phases 4–7	38	52.1–71.7	60.5	6.1	10.1
	Metatarsal	*Greatest length (mm)*			*Shoulder height (cm) after Fock (1966)*	
Phase 2	Female/castr.	224			(121.0)	
	Female	215			(115.0)	
	Male	230			(124.2)	
Phases 4–7		229–243			(123.7–131.2)	
		223–228			(119.3–122.0)	
		213			(115.0)	
		228			(123.1)	
Phases 4–7		*no.*	*range*	*mean*	*st. dev.*	*var.*
		6	213–243	222.7	8.9	4.0
	Metatarsal	*Greatest distal width (mm)*				
	Phase 2	45.3–52.5				
		no.	*range*	*mean*	*st. dev.*	
Phase 3		6	52.4–68.3	59.3	5.6	
Phases 4–7		40	44.1–75.7	56.6	6.5	
	Tibia	*Greatest length mm*			*Shoulder height (cm) after Matolcsi (1970)*	
	Phase 3	318			(109.7)	
		no.	*range*	*mean*	*range*	*mean*
Phases 4–7		3	336–348	343.7	115.9–120.1	118.6
	Overall shoulder height estimation					
	Phase 1	109.6–131.8				
	Phase 2	104.4–124.2				
	Phase 3	109.7–115.3				
	Phases 4–7	110.4–131.6				

Table 37 Larger cattle: metrical analysis

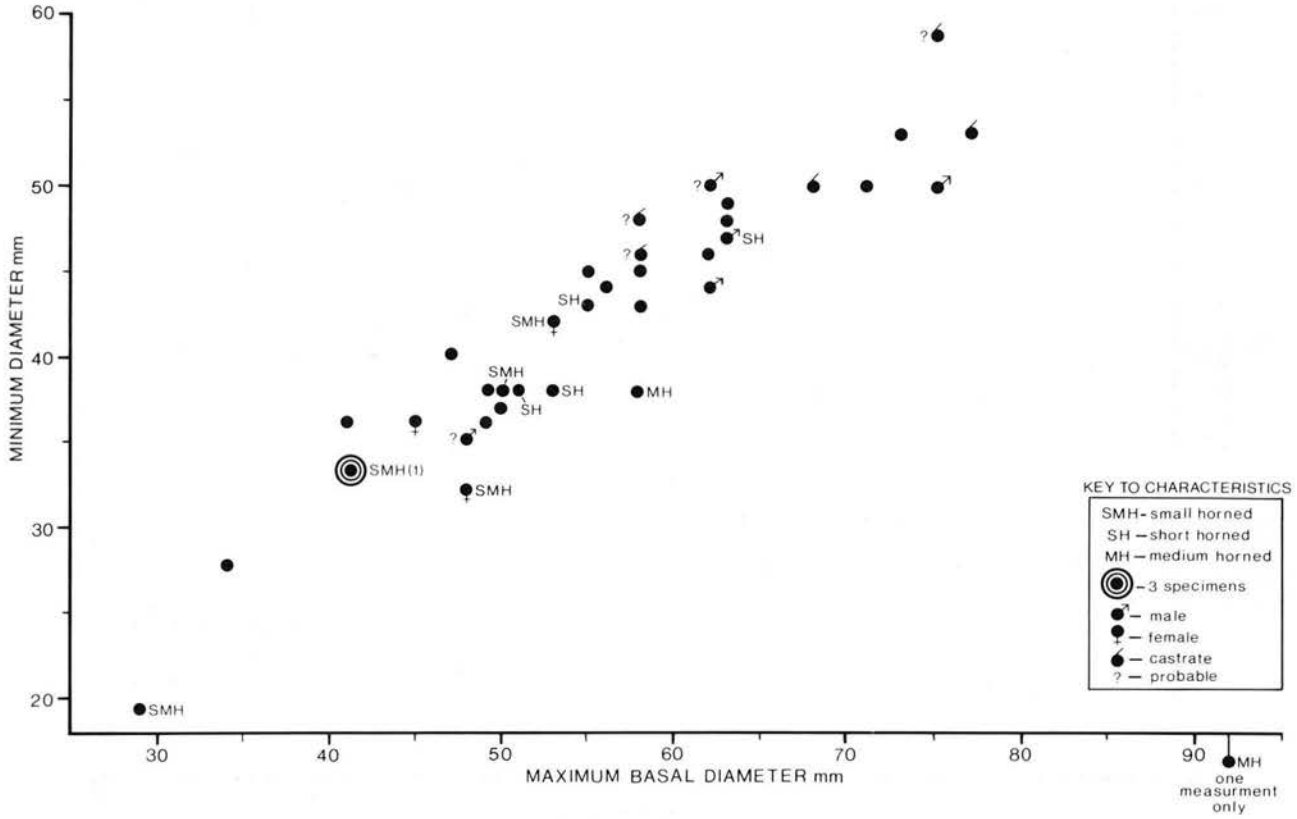


Figure 134 Cattle: horn-core minimum basal diameter against maximum basal diameter

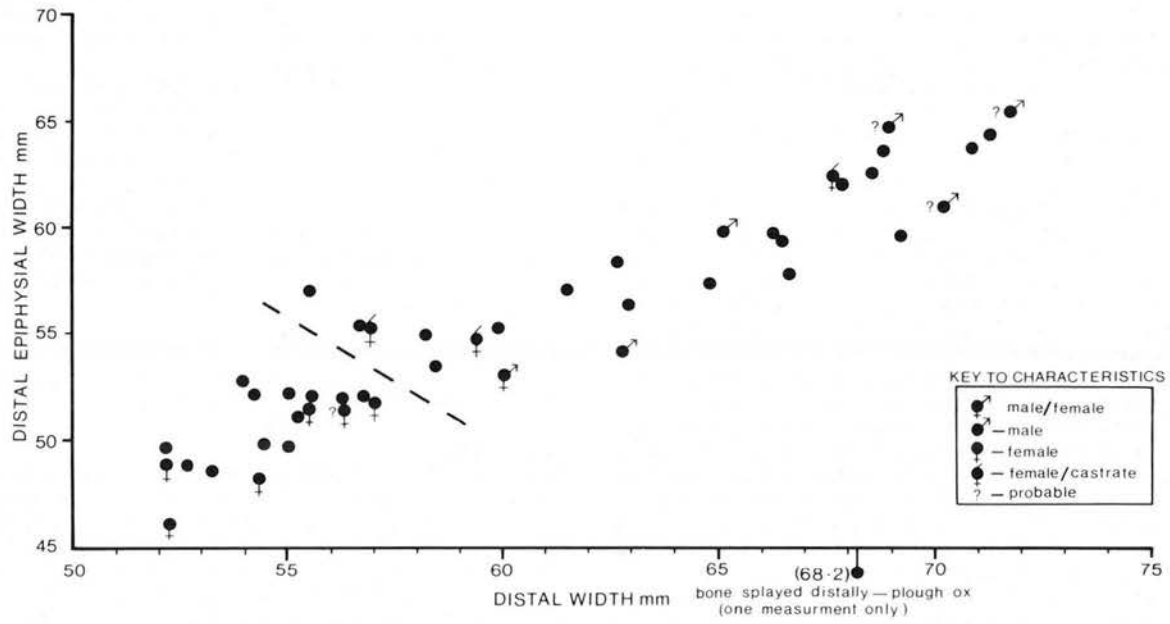


Figure 135 Cattle: metacarpal distal epiphysial width against distal width

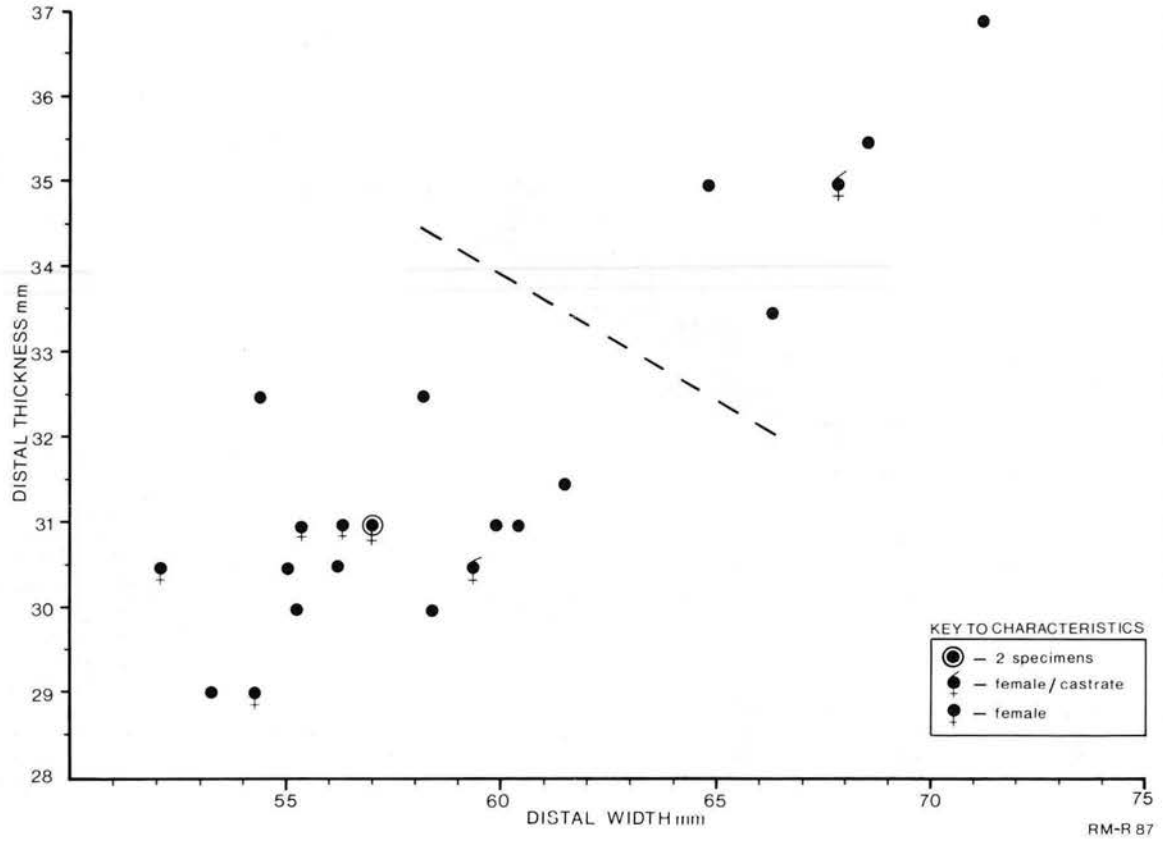


Figure 136 Cattle: metacarpal distal thickness against distal width

in the bottom left-hand corner, but then males and females become mixed in the middle, with some separation of males in the top right. When the distal thickness of the metacarpal is plotted against the distal width (Fig. 136), fewer plots are available, but females are separating out in the bottom left corner. The same measurements for the metatarsal (Fig. 137) show no real separation except for an arthritic bone. However, a plot of metacarpal distal width divided by greatest length against greatest length (Fig. 138) shows some separation, with females separating at the bottom, female/castrates above this, and males at the top.

A graph of mid-shaft width divided by greatest length against greatest length (Fig. 139) is slightly more ambiguous. There is a separation of females at the bottom, but they are mixed with a few female/castrates, some of which may be female since only one index could be calculated (see Appendix for calculation of indices). However there are at least five definite female bones. The two female/castrate bones separating out to the right of the figure could be proper castrates with concomitant longer bone lengths, or they could simply represent larger females which have enjoyed a better nutritional status.

In order to clarify the position, Mennerich's Indices were calculated: Figure 140 demonstrates a separation. Perhaps the confusion with the female/castrate sexing is that some of the females may have been used as draught oxen. Thus in Figure 140 one would expect the 'draught' female animals to have similar bone lengths to females but with wider distal ends. There are two bones like this. Morphological sexing of the cattle pelves indicates a sex ratio of 8 males to 4 females (Lemppenau 1968).

Table 37 shows a summary of the main cattle long bone measurements and shoulder height calculations. With regard to shoulder height, both small and large animals were present in Phases 1, 2 and 4–7. Beasts of 131 +cm shoulder height are rare (from Phase 1 and Phase 4–7) but have been found at Gadebridge Park Roman villa (Hertfordshire) and Great Chesterford (Essex). The overall shoulder height estimations in cm are shown in Table 37. As has been mentioned earlier, large animals occur not only in the later Roman period at Witham but in the pre-Roman Iron Age.

The Witham cattle metacarpal bone lengths were compared with those from other Romano-British sites recorded by Luff (1982, table 3.12). Using the Students t test, the Witham bones were found to be significantly larger than those from late Roman Exeter; Sheepen; Corstopitum, Northumberland (at 0.1 level of significance); Thistleton Roman villa, Rutland; Shakenoak Roman villa, Oxfordshire; and Woodcuts, Dorset (at 0.5 level of significance). The bones from Barton Court Farm, Oxfordshire (3rd–5th century), and Godmanchester, Huntingdonshire (2nd–3rd century) were not significantly different to those from Witham. In the Trinovantian canton, the Witham cattle bones are amongst the largest so far analysed.

If metacarpal distal widths are considered, then again no difference in size is found between Witham and Barton Court Farm, while there is a significant difference in size between the late Roman Colchester sample and Witham (at 0.1 level of significance), with the latter site showing the larger animals. Indeed, a comparison of metatarsal distal widths for Witham and Colchester again verifies this (at 0.1 level of significance). When the metatarsal greatest length was considered, the Witham bones prove significantly larger than those from Corstopitum (at 0.1 level of significance), while no significant difference is found with Barton Court Farm and Thistleton.

Cattle slaughter and butchery

No differences in cattle butchery were observed between phases. In all periods, cattle were led onto the site and slaughtered.

Evidence of skinning

After the animal had been killed, it was commonly skinned, the hide being a valuable commodity at all times. Figure 141 shows the bones evincing knife-cuts indicative of skinning: that is the lower limb bones, phalanges, and parts of the malar, squamous temporal and frontal bones around the base of the horn-cores of the skull. Knife-cuts on the extreme edge of the proximal metapodials have been interpreted by Binford as evidence for the hock dismemberment (Binford 1981, 120). However, since the same marks were discovered on the proximal edge of the phalanges where no reason for separation is apparent (they were not removed for glue manufacture), it is claimed skinning was carried out.

Dismemberment

Head: after skinning, the head was removed by chopping through the occipital condyles of the skull and the atlas. Ventral transverse chop-marks on the occipital condyles and on the atlas describe this. (Sometimes there are transverse cut-marks along the ventral surface of the basi-occipital bone and chops through the paraoccipital process). This was the method most commonly used for severing the head, but occasionally the neck was dismembered by oblique chops across the cervical vertebrae. In such circumstances the axis shows transverse knife-cuts on the ventral surface behind the anterior articulation.

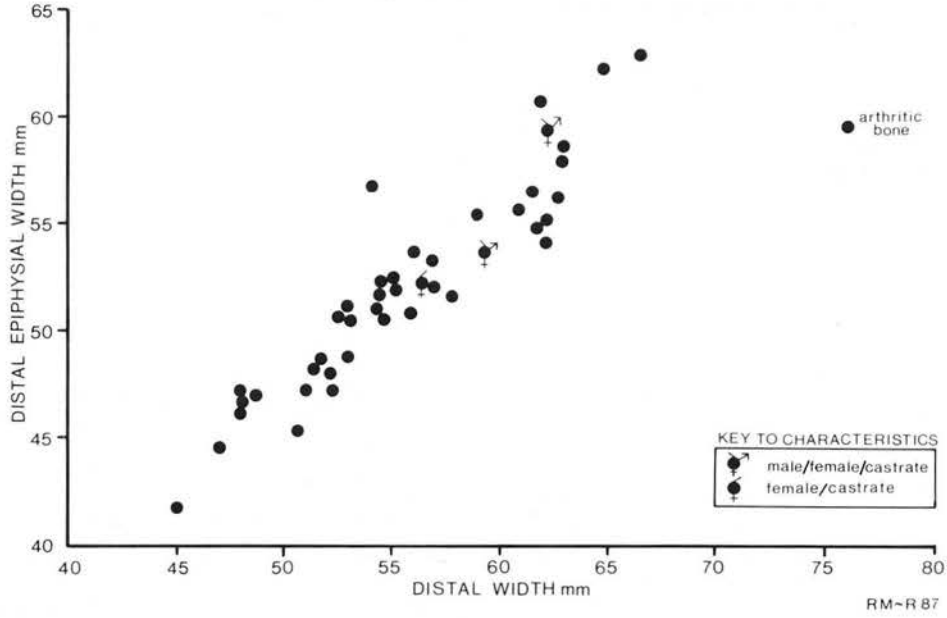


Figure 137 Cattle: metatarsal distal epiphysial width against distal width

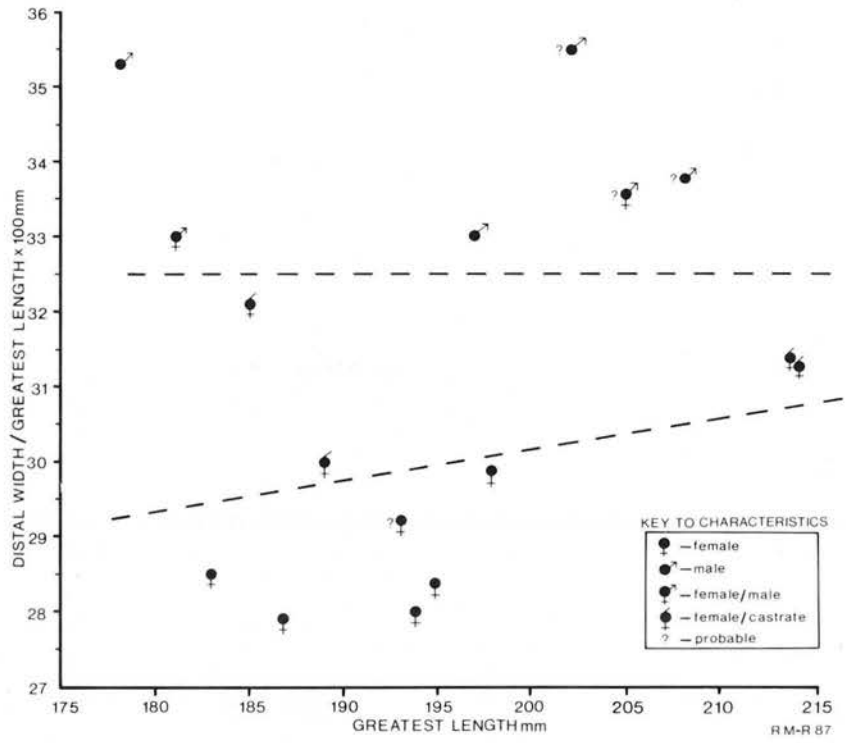


Figure 138 Cattle: metatarsal distal width/greatest length against greatest length

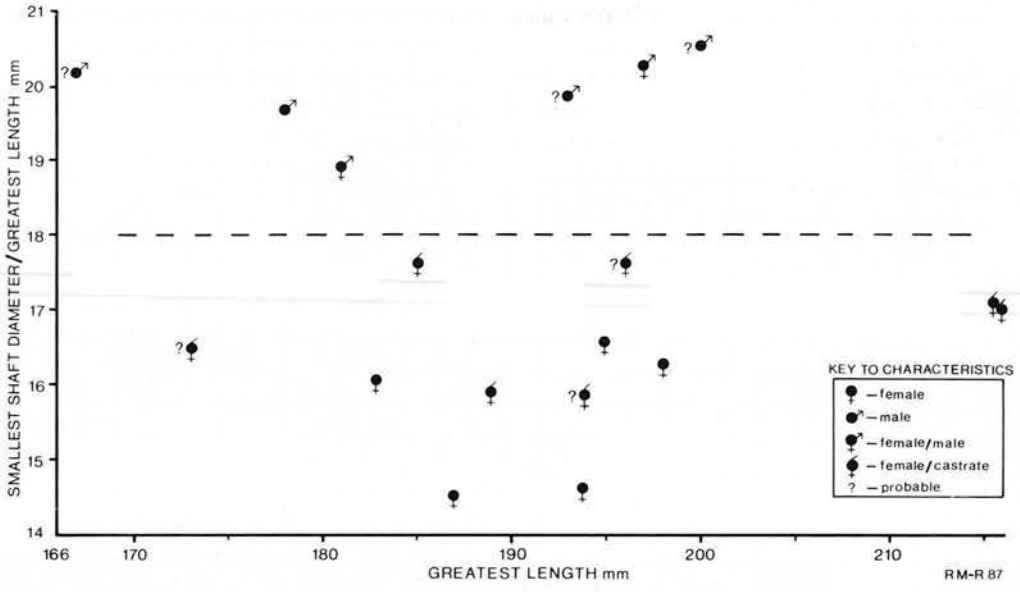


Figure 139 Cattle: metacarpal smallest shaft diameter/greatest length against greatest length

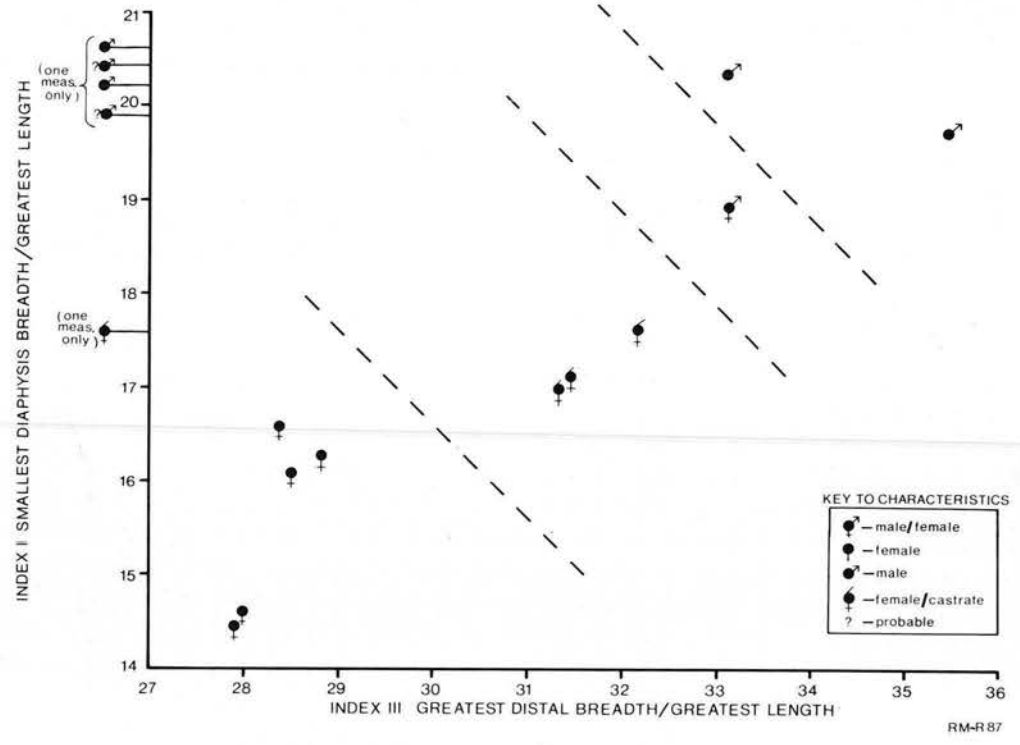


Figure 140 Cattle: Mennerich's (1968) indices: I (smallest diaphysis breadth/greatest length) against III (greatest distal breadth/greatest length)

Plate XXV Selected cattle horn-cores

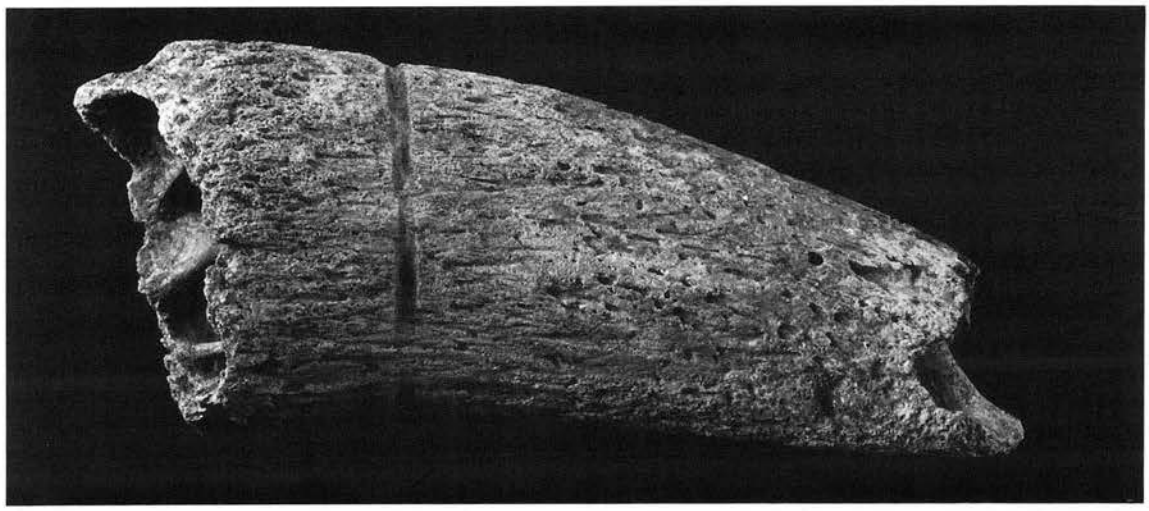


Plate XXVI Cattle horn-core from depression *F2409*

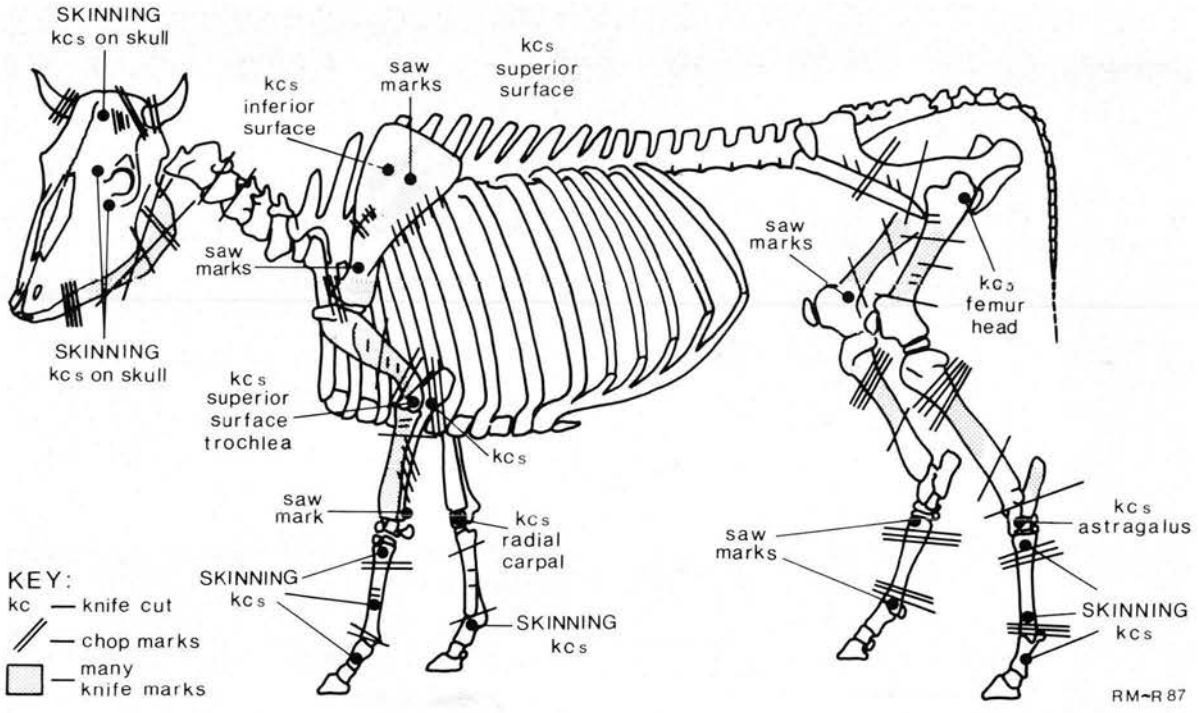


Figure 141 Cattle: skeletal elements showing butchery marks

The disarticulation of the mandible from the skull was achieved by firstly removing the masseter muscle; knife-marks along the buccal side of the mandible indicate this. After this muscle, which is usable cheek meat, was removed, many chop-marks were made into the inferior surface of the mandible condyle. The mandible could then be torn away from the skull. Evidence for tongue removal, a delicacy in the Roman period, is provided by knife-cuts on the lingual surface of the mandible.

Horns were crudely chopped off the skull, either through the base of the horn-core or through the frontal bone surrounding the horn. Sometimes the horn was sawn off the core (as in fill *924* (ditch *F775); Phase 2.3).*

Fore-limb: marks commonly seen on the scapula include chops to the supraglenoid tuber and chops directed into the spine caudally. Sometimes saw-marks are found directed into the anterior part of the spine, though these are more associated with meat removal proper. The scapula was rarely chopped completely through the neck; the ligaments of the shoulder joint were mainly severed through the joint itself which was fully extended.

The elbow joint appeared to be dismembered in a characteristic fashion: chops were made between the olecranon process and the posterior surface of the distal humerus. It is interesting to note that Binford in his work on Caribou claims that these marks result from butchery when the body is stiff and/or frozen (Binford 1981, 124). This is a point which has never been properly investigated in bone reports and merits consideration. The leg was then extended and a cut made into the joint with the knife and turned inward across the medial face of the distal humerus; this therefore accounts for the series of transverse knife-cuts on the medial distal humerus. It is quite common to observe the distal lateral condyle of the humerus and proximal lateral radius articulation chopped through, thus facilitating dismemberment of the joint.

Hind-limb: the femur was commonly separated from the acetabulum by chops into the acetabulum, thus shaving the perimeter of the socket. Femoral heads were found mostly intact, although some exhibit a few knife-cuts. Scarcely any information could be obtained concerning separation of the knee-joint.

Hock-joint: dismemberment of the hock-joint was facilitated by a series of transverse knife-cuts on the anterior distal face of the astragalus and fused central and fourth tarsal. Once the limbs were removed, the carcass was not split sagittally through the backbone; the vertebrae were nearly always intact.

Flesh removal

The humeri and femora exhibit a variety of knife and chop-marks along their lengths where flesh had been removed. Filleting of meat from the scapula is indicated by longitudinal knife-marks along the supra and infraspinous fossae.

A few isolated articulated limb-bones were found which showed little flesh removal, for example from ditch *F3227* (fill *3228*, Phase 3) which contained a right cattle-beast limb-joint consisting of articulated scapula, humerus, radius, ulna, metacarpal, and first and second phalanges. Only the scapula reveals any butchery marks; three chop-marks directed caudally into the anterior spine and several pear-shaped, gouged-out marks on the inferior surface.

Evidence of horning

A right cattle horn-core with a circular indentation around the base of the core was recovered from ditch *F1199*, Segment *F775* (fill *924*; Phase 2.3). A similarly marked horn-core was found at Abingdon, Oxfordshire and apparently is the result of sawing around the core to release the horn. The Abingdon horn-core, like the one from Witham, was sawn some distance from the base and indicates a preference for the distal horn sheath (Wilson, B. 1978, 123 and pl. 15). It is interesting to note that depression *F2409* (fill *86*, horizon 5; Phase 7; Pl. XXVI) produced a left horn-core with a like indentation near the base.

The Witham Sheep/goats

Sheep/goat ageing

Figure 142 shows the age structure for the later Roman Witham sheep/goat mandibles (58) using the method of Payne (1973), and information from the Roman temple sites at Chelmsford (Luff in prep.) and Harlow (Legge and Dorrington 1985) has been included for comparison. Each tooth in the mouth wears down at a constant rate, revealing characteristic enamel and dentine patterns which assign the animal to one of the following nine stages:

A 0–2 mths
B 2–6 mths
C 6–12 mths
D 1–2 yrs
E 2–3 yrs
F 3–4 yrs
G 4–6 yrs
H 6–8 yrs
I 8–10 yrs

Payne based his work on Turkish goat mandibles and caution should be exercised in using the absolute ages. The Chelmsford temple bones (combined phases) show peaks of slaughter at Stages C and F, with the phase IV sample showing a similarity to that at Harlow where most of the animals were killed at Stage C. The phase VI Chelmsford sample exhibited a peak at Stage F: clearly more mature animals were being killed, and this can be related to the less religious nature of the site.

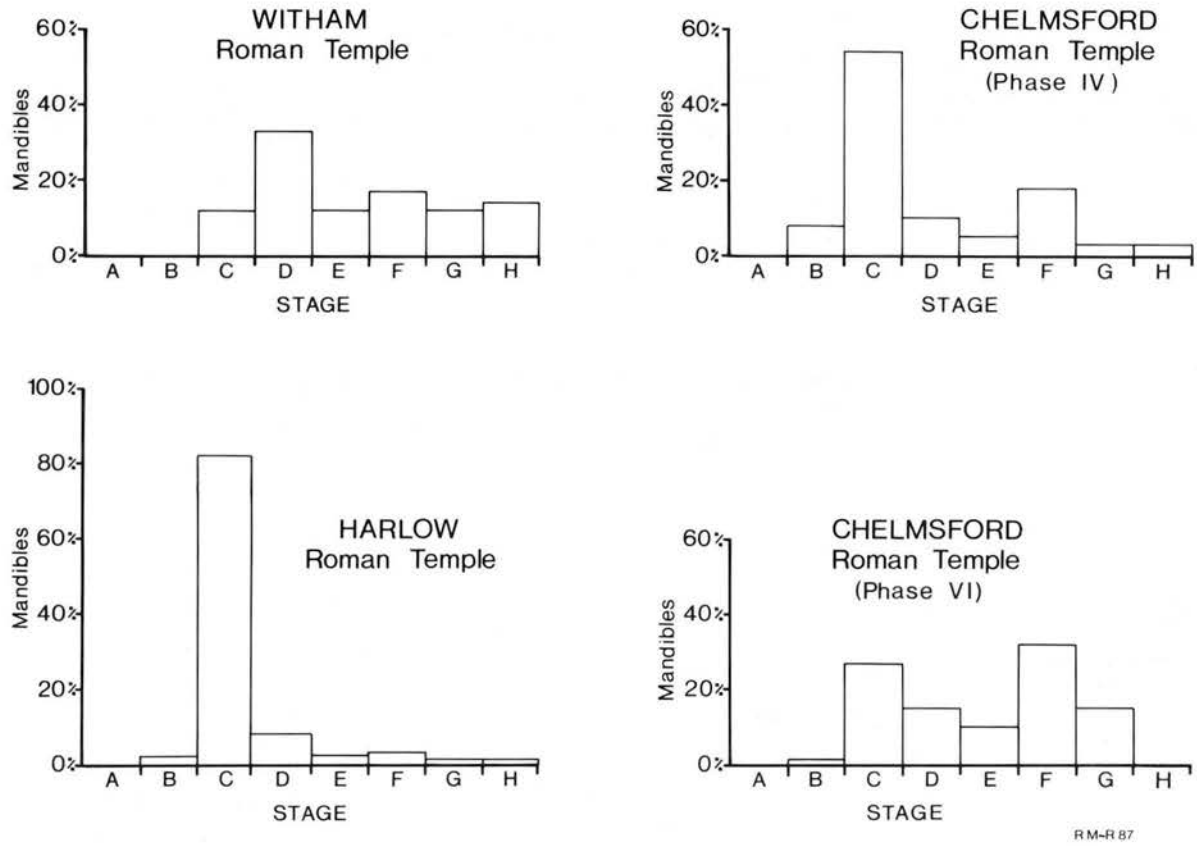


Figure 142 Sheep/goat: mandible ageing (after Payne 1973). Comparison of the Witham material with Chelmsford and Harlow

Phase	*Early fusing*[1]	*Middle fusing*[2]	*Late fusing*[3]
1	1	2	5
2	-	-	1
2.3	2	4	4
3	-	1	1
4–7	5	5	6
	less than 10 mths	less than 2 yrs	less than 3 yrs

Notes:
1 Distal humerus and scapula
2 Distal metacarpal and distal tibia
3 Distal radius, proximal and distal femur, proximal humerus, proximal tibia, and calcaneum

Table 38 Sheep/goat: unfused long-bone epiphyses

	Greatest length of metatarsal (mm)
Phase 3	143 (fill *95*, depression *F2409*)
6	134 (fill *2026*, pond *F679*)
6	114-159 (fill *4170*, depression *F3321*)
7	159 (fill *3509*, depression *F3321*)

	Distal width of tibia (mm)			
	number	*range*	*mean*	*st. dev.*
Phase 2.3	4	21.6–25.1	23.0	1.3
3	-	24.8	-	-
3–7	-	23.9	-	-
4	-	24.4	-	-
4–5	3	25.9–29.0	27.8	1.6
5–6	-	26.8	-	-
6	5	23.3–27.4	25.4	1.3
6–7	-	23.8	-	-
7	4	23.6–27.1	24.7	1.4

Table 39 Sheep/goat: metrical analysis

The Witham animals contrast with Chelmsford and Harlow in that the main peak of slaughter was at Stage D, 1–2 years, but many older animals were kept suggesting a wool and meat economy was being practised. Sheep's milk cannot have been important since scarcely any lambs were identified. The best time to kill a sheep for meat is 2 to 3 years, that is at the optimum body weight: 38.7% were in this category, while 40.8% were 4 to 8 years old and represent breeding females and beasts kept for wool, that is wethers and old ewes. These data suggest a glimpse beyond dietary items to the agricultural economics of the period.

A complete skeleton of a 1 to 2 year old Iron Age sheep was found in ditch *F3966*.

Table 38 illustrates the number of unfused epiphyses for early, middle and late fusing bones. This gives more evidence than Figure 142 for the presence of lambs (<10 months) on the site. No ritual significance is given to them as they were probably natural lambing mortalities.

Sheep/goat size

As with the cattle, some large sheep occurred at Witham (Table 39). A midden deposit (fill *4170*, horizon 3; Phase 6) within *F3321* contained bones of both very small and very large sheep. The metatarsal of 159 mm length compares well with measurements from Colchester (BKC G (AD 250–300) 158mm; BKC K (AD 80–100) 159mm). These measurements are outside the Romano-British range, and only the Magdalensberg civil settlement in Roman Noricum (Austria) gave comparable measurements (Hornberger 1970).

A bone from fill *95* of depression *F2409* (Phase 6), 143mm in length, is also large: bones of 140+ mm have been found at Exeter; 2nd to 3rd-century Frocester, Gloucestershire; Gadebridge Park, Herts; and Thistleton, Rutland.

Small sheep (<120mm metatarsal length) were characteristic at 4th-century Rudston villa, Yorkshire, and Chew Park villa, Somerset, and were also found at Corstopitum, Northumberland and Woodcuts, Dorset. The Witham small-sized sheep fit within the range of variation found for 1st-century Sheepen.

In a comparison of distal tibia widths (Table 39), using the Student's t test, the Witham sheep appear significantly larger than Sheepen, 2nd to

	Phase									
	1	*2*	*2.3*	*3*	*4–5*	*5*	*6*	*6–7*	*7*	*4–7*
Horn-core	5.6	1.3	4.0	11.4	4.0	4.6	4.9	4.9	5.6	5.1
Head (skull, mandible, maxilla and atlas)	45.8	52.9	35.8	65.3	41.6	37.2	29.8	54.0	33.6	38.0
Vertebrae	2.8	1.9	6.3	2.9	3.7	8.2	2.8	5.2	3.7	4.1
Pelvis and scapula	3.3	7.6	10.9	6.0	14.5	14.2	14.6	7.4	11.2	11.7
Distal humerus, radius and ulna	5.6	10.8	5.1	3.2	6.8	9.2	11.0	6.7	11.1	9.6
Distal femur, tibia, calcaneum and astragalus	8.9	7.0	10.0	2.9	8.0	7.8	8.9	6.5	9.1	8.4
Carpals, tarsals and metapodials	8.4	7.0	11.7	4.8	16.1	12.4	17.6	8.5	16.6	4.8
Phalanges	2.3	7.0	3.1	3.0	4.6	5.5	7.4	6.0	6.9	6.5
TOTAL	211	159	625	847	350	218	758	718	1491	3923

Note: Figures represent percentages, except total which is the number of bone fragments

Table 40 Cattle: chronological distribution of skeletal elements

	Phase			
	2.3	*6*	*6–7*	*7*
Horn-core	2.5	0.7	2.9	0.5
Head (skull, mandible, maxilla and atlas)	41.2	23.8	25.2	29.5
Vertebrae	0.8	2.8	4.3	2.8
Pelvis and scapula	4.7	9.8	8.6	3.7
Distal humerus, radius and ulna	13.2	7.0	13.7	12.4
Distal femur, tibia, calcaneum and astragalus	18.7	16.8	16.5	18.0
Carpals, tarsals and metapodials	9.9	28.0	17.3	25.8
Phalanges	0.8	2.8	0.7	0.9
TOTAL	366	143	139	217

Table 41 Sheep/goat: chronological distribution of skeletal elements

Phase	*Cat*	*Dog*	
1	-	2	
2	-	0^{1}	
2.3	-	1	*F4745*: cranium
3	-	10	
3–4	-	1	
3–7	2	14^{1}	
4–7	-	68^{5}	
5–6	-	57	*F240*: partial burial
5–7	-	19^{3}	*F316*: 3 dogs, one less than 6–7 months and two adults
5–7	-	15	*F3154*: partial burial
7	-	19	*F3321*: partial burial
7	-	1	*F679*: skull
TOTAL	2	156^{10}	

Note: X^{y}, where X is the number of bone fragments and y is the number of teeth

Table 42 Dog and cat bones

3rd-century Frocester and Exeter (at 0.1 level of significance). No significant difference is found between Witham and the late Roman sheep at Colchester, Shakenoak and Barton Court Farm.

Chronological distribution of butchered cattle and sheep/goat elements

Table 40 shows a distribution of butchered cattle elements across the main periods of occupation at Witham. In Phases 1 and 2 (Iron Age and Belgic), omitting head parts, there were relatively high percentages of meat-bearing bones, while in Phase 2.3 (Belgo-Roman), head parts decrease and pelves, scapulae, carpals, tarsals and metapodials increase. Phase 3 (early Roman) demonstrates an increase in head and horn-core parts, with meat-bearing bones dwindling and waste bones remaining at higher percentages. Thus the Phase 3 (early Roman) deposits appear to represent the waste from bone.

In the later Roman phases, head-parts and horn-cores decrease in importance while there is a striking increase in carpals, tarsals and metapodials. Meat-bearing bones also become more significant.

The point of immediate interest concerning Table 41 of sheep/goat butchery is that Phases 4–7 show a large increase in carpals, tarsals and metapodials from Phase 2.3, and a slight increase in the pelves and scapulae. Again this could be supporting evidence for the importance of bone-working and/or tanning in the later period. Meat-bearing bones are important in both Phases 2.3 and 4–7. As with cattle, sheep were brought into the settlement on the hoof.

Dog and cat remains

Table 42 illustrates the number of dog and cat bone fragments recovered from Witham. Cat is extremely scarce as it is on most Roman sites. The dog is represented by 156 bone fragments and ten teeth, which includes six partial burials.

Ditch *F316* contained several dogs, one of which had a slightly fore-shortened face and bent fore-limbs characteristic of the lap-dogs introduced by the Romans (Harcourt 1974).

None of the dog bones exhibit butchery marks, neither are they of a size large enough to have been guard dogs. It is assumed that they were kept as pets. A humerus and radius give the following measurements:

humerus greatest length 153mm: shoulder height 498mm (after Harcourt 1974) (*86* (depression *F2409*); Phase 7)

radius greatest length 119mm: shoulder height 398mm (after Harcourt 1974) (*3188* (ditch *F3154*); Phase 5–7)

The shoulder heights of the animals fall within the Romano-British range of variation.

A perforated dog's canine was excavated from ditch *F4597* ([5020]; fill *4598*; Phase 4–7): distinction of dog, fox and wolf teeth can be difficult, but this particular tooth is thought to be dog. Two canines of dog or wolf, both pierced for suspension, were found with a 6th-century inhumation at Wheatley, Oxfordshire (Leeds 1917), and another was found at Abingdon, Oxfordshire (Leeds and Harden 1936).

The bone context *3587* (fill *3324* (ditch *F3323*); Phase 4–5) revealed a line of dog teeth, 20mm apart (5 upper incisors, 4 lower incisors and 2 lower canines) which were 0.2m south of a horse skull. No other dog bones were found in this context.

Evidence of the presence of dogs is also provided by chewed domestic animal bones (cattle 2.1%; sheep/goat 7.3%; pig 7.8%; and horse 0.2%), and also dog and cat paw prints which were visible on tiles from the following contexts:

Pond	*F679*	fill *680*	upper fill	Phase 7	cat
Depression	*F1905*	fill *1950*		Phase 7	cat
Depression	*F3321*	fill *3509*	horizon 5	Phase 7	dog
		fill *4201*	horizon 3	Phase 6	dog
		fill *3509*	horizon 5	Phase 7	cat
		fill *4142*	horizon 4	Phase 6	cat

Phase	*Red deer*	*Roe deer*	*Hare*	*Fox*	*Badger*	*Small mammals and amphibians*
1	-	1	-	-	-	-
2	3	-	-	-	-	bank vole, rat and frog/toad
2.3	60 (57 skull)	-	-	-	-	rat, mouse and shrew
3	4 (2 antler)	3 (5 antler)	-	-	-	field vole, shrew and frog/toad
3–4	-	-	-	-	-	rat
3–5	- (1 antler)	-	-	-	-	-
4–5	3 (2 antler)	4	-	-	-	mouse, wood mouse, shrew, water vole and frog/toad
4–7	- (1 antler)	1	1	-	-	-
5	1 (8 antler)	-	1	-	-	-
5–6	8 (1 antler)	- (1 antler)	-	-	-	-
6	5 (4 antler)	2	-	-	-	rat, bank vole and frog
6–7	8 (7 antler)	1	-	-	-	common shrew
7	11^{1} (31 antler)	2 (4 antler)	1	2	3	bank vole, water vole, shrew and frog/toad

Note: X^{y}, where X is the number of bone fragments and y is the number of teeth

Table 43 Number of bone fragments from wild animals

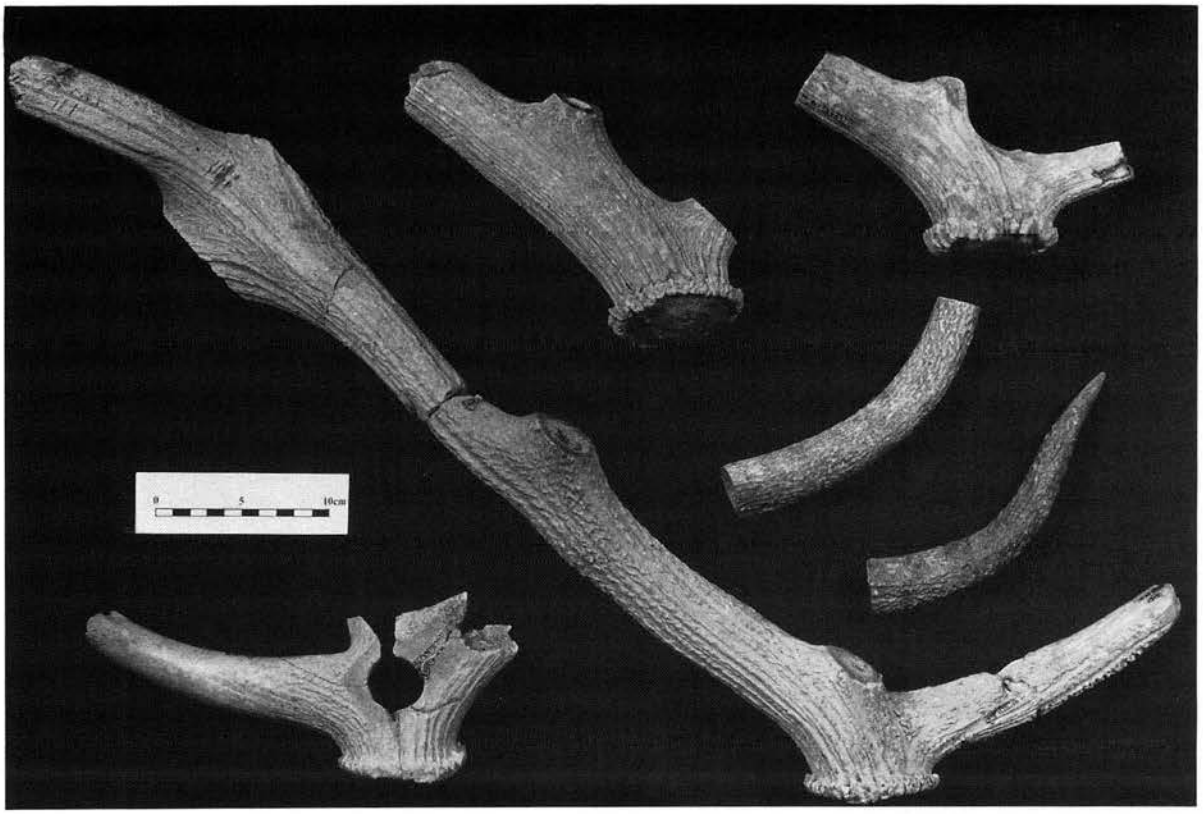


Plate XXVII Selected antlers

Wild animals
(Table 43)

The remains of wild animals, as on most Romano-British sites are extremely scarce. Apart from skull fragments in Phase 2.3 (fill *4755*, ditch *F4745*), the red deer is mainly represented by antlers (Pl. XXVII), many of which had been worked — particularly in the later periods. Roe deer bones and antlers were recovered together with two fox bones. Hare was an item of diet as evidenced by the knife-cuts on a tibia from ditch *F3204* (fill *3684*; Phase 5), although only three bones were found.

Antler working was initially undertaken in the Belgic period (Table 44), as illustrated by three red deer fragments from depression *F4502* which include a burr with the first and second tines chopped off. This particular feature also revealed a human skull fragment, horse and dog bones (the human bones are described below). A red deer burr was also found in the Phase 2.3 levels of the depression. Other red deer worked antler fragments are summarised in Table 44.

Although only a few red deer bones were retrieved they did yield some metrical data (Table 45). Some of these specimens proved much larger than modern-day comparative material, for example the distal humerus width and metacarpal length, but fit within the range of variation for Romano-British specimens. However, the greatest length of the radius and distal tibia width occurs within the range of variation for modern specimens and also those from the Romano-British period. One must not forget that there is quite a size difference between the sexes.

Red deer were hunted primarily for meat and skins as evidenced by the following butchered bones: *F679* (lower fill *2327*; Phase 6) four knife-cuts on the medial proximal shaft of a red deer metacarpal, indicative of the skin being utilised: a scapula (fill *93* (depression *F2409*, horizon 1); Phase 3) shows longitudinal knife-marks in the supraspinous fossa indicative of meat-filleting. An intact humerus from disturbed fill *D1530* (Phase 7), proximally unfused, exhibits knife and saw-marks, and a distal unfused radius also has knife-cuts. From the same context was found an articulated left red deer fore-limb in which the distal radius and proximal humerus were unfused.

Gully *F4563* (fill *4564*; Phase 3) contained the partial antlers and skull frontal parts of a roe deer with deformed antlers: the left antler is bent forward much more than the other and both are generally misshapen. Antlers of deer are very vulnerable to aberrations in size and shape, indeed the antler embryonic cells are most sensitive to injury hence many abnormalities occur in young animals.

Feature	*No.*	*Context*	*Phase*	*Deer*	*Description*
Depression	*F4502*	*4969*	2	Red	Three fragments, including a burr with 1st and 2nd tines chopped off
Depression	*F4502*	*4887*	2.3	Red	Extremely worn burr
Ditch	*F1354*	*1876*	3	Red	Two worked fragments
Gully	*F4563*	*4564*	3	Roe	Partial, deformed antlers and skull frontal parts of an immature beast
Ditch	*F3559*	*3670*	3–5	Red	Tine fragment which has been shaved by an implement with a serrated edge
Post-hole	*F801*	*802*	4–5	Red	Worked fragment with grooving near the tip. (See also pond *F679*, Phase 6)
Depression	*F1925*	*1914*	4–5	Red	Worked fragment
Ditch	*F3271*	*3272*	4–7	Red	Sawn-off fragment with two chop-marks showing an attempt to work one end
Depression	*F3321*	*3553*	5	Red	Implement with 1st tine cut off and 2nd tine hollowed out. ?Part of blade or pick-head. Main shaft hollowed out, possibly for a wooden handle
Depression	*F3321*	*3553*	5	Red	One burr and main axis: the 1st tine sawn-off and the 2nd worn
Pond	*F679*	*2116 & 680*	6 & 7	Red	Worked fragments, some showing grooving near the tip. (see *F801*, Phase 4–5)
Depression	*F2409*	*76*	6	Red	Tine with blackened tip, worn smooth. Possibly used as an implement
Depression	*F3321*	*3278*	6	Red	Two antler fragments, one sawn off at both ends, split longitudinally by a saw, and with a sawn-off tine
Depression	*F3321*	*3516*	6	Red	Tine [3183] worn smooth in places
Depression	*F3321*	*4004*	6	Red	Antler fragment [3210], *c.* 40 mm in length, with sawn-off ends which had been hollowed-out, probably for a knife handle
Slot	*F3325*	*3326*	6	Red	Slightly hollowed-out, sawn-off fragment
Disturbed		*D4264*	6	Red	Antler tine
Ditch	*F3204*	*3695*	6–7	Red	Worked tine
Depression	*F1560*	*1561*	7	Red	Fragments of worked antler, incl. [696] and [698]: one sawn-off, one with three cut-marks
Depression	*F2409*	*55*	7	Red	Sawn-off antler fragment
Depression	*F3321*	*3509*	7	Red	Fifteen antler fragments including [3215], [3242] and [3341]: four sawn-off; one rectangularly-shaped at both ends, with twenty-five knife-cuts on the outside edge
Disturbance		*D3595*	7	Roe	Burr and part of the main axis which has been shaved
Disturbance		*D3747*	7	Red	Two antler tines. Context equivalent to fill *3509* of depression *F3321*
Depression	*F5202*	*5233*	7	Red	Five antler fragments; a burr [5071] with sawn-off tines (in two pieces but found complete) and with a number of knife-cuts

Table 44 Deer antler remains (excluding unstratified finds)

Humerus	Greatest distal width		Smallest shaft diameter	
Phase 2	56.0		26.5	
Metacarpal	Greatest length	Proximal width	Smallest shaft diameter	Distal width
Phase 6–7	255	38.5	20.4	38.2
Radius	Greatest length	Proximal width	Smallest shaft diameter	Distal width
Phase 3	282	53.5	30.0	50.0
Tibia	Greatest distal width			
Phase 5–6	43.2–45.4			
7	47.8			

Table 45 Red deer: measurements (mm)

Small mammal and amphibian remains

Table 43 shows the small mammal and amphibian bones discovered at Witham. These bones could well be significant and it is interesting to compare them with those found in the 'Puits Funeraires' of Gaul. The 'Puits Funeraires' are ritual/burial pits and date from 50 BC to the 4th century AD. They are characterised not only by cremations and funerary offerings, including pottery and domestic animal bones, but also by animals in the form of insectivores and amphibians. For example, four pits at the 4th-century Montmaurin villa (Haute-Garonne, France) contained ninety-one animals, including three insectivores (greater white-toothed shrew), sixteen rodents (water, field and red-backed voles), and seventy-two amphibian species (toad and frog) (Poulain-Josien 1958).

However, Rodwell has warned of the problems caused by burrowing animals on temple sites; small objects, for instance coins, can be moved quite a distance in the soil (Rodwell 1980, 235). Badger remains occurred in fills *4013* and *4101* of pit *F3681* and fill *1563* of ditch *F837* (all Phase 7), and these animals could well have been killed as pests.

Avian bones

In comparison to the number of mammalian remains relatively few fragments of bird bone were recovered (Table 46). Most of the bones were identified as domestic fowl and mallard, while goose, woodcock, raven and plover bones were also recorded. Knife-cuts occurred on a chicken femur (D3532 (disturbed); Phase 7), two tibio/tarsi (fill *3795* (slot *F3791*); Phase 5; and fill *734* (hoard in ditch *F316*); Phase 7) and a tarsometatarsus (fill *5251* (depression *F5202*); Phase 7); the chicken being the most popular species consumed. The Phase 7 Witham tarsometatarsus measurement is larger than that for Sheepen but fits into the range of variation for Colchester (Table 47). The ulna measurement falls within the range of variation for both Sheepen and Colchester.

Human remains

Table 48 records the human bone found at Witham. Whimster (1981, 182) has mentioned the numerous deposits of individual human bones and bone fragments that have been tabulated from excavated Iron Age ramparts, ditches and storage pits in Britain. Clearly some of these 'detached pieces of humanity' are more than the outcome of grave disturbances.

None of the Witham remains exhibit butchery marks. It is noticeable that most of the adult human remains are skull fragments, and their presence on a religious site may be indicative of a 'Celtic Head Cult'. However, caution is necessary since isolated human bones are sometimes found among Romano-British urban food refuse, although many of these dumps are secondary or tertiary in nature.

Period	*Domestic fowl*	*Greylag goose/ domestic goose*	*Mallard/ domestic Duck*	*Woodcock*	*Raven*	*Golden plover*
2.3	4	-	-	-	1	-
3	1	-	-	-	-	-
4–5	1	-	-	-	-	-
5	3	1	1	-	-	-
5–6	-	-	-	-	-	-
5–7	1	-	1	-	-	-
6	5	-	1	-	1	1
6–7	8	2	1	1	-	-
7	17	1	11	-	-	-

Table 46 Avian bone remains

Three infant burials were excavated, two being foetal and one a baby of about 6 months (fill *3588* (ditch *F3635*, burial *F3697*); Phase 5: [5053], fill *4911* (grave *F4910*); Phase 2.3: [916]; fill *2908* (post-pipe *F2900*); Phase 3). The associated animal bone found with the burials is described in Table 48 and includes mouse bones found within *F2900*. Burial *F3697*, within the packing material of ditch *F3635*, was associated with a small hoard of seventeen barbarous radiate coins, while the burial in post-pipe *F2900* was associated with eggshell. Mouse bones were found with burial [5053].

Middle Iron Age burial (grave F5117, fill 5118)

An adult human burial was only partially recovered during a watching brief in 1985, and consists of a fragmented skull with forty post-cranial bones. The individual was a young adult male who had suffered severe periodontal and caries disease leading to the loss of one tooth. A whole tibia of length 367mm allowed the individual's height to be estimated, after Trotter and Gleser (1952 and 1958), at 5 feet 7 inches (1.70m). The following animal bones were associated with the human burial: pig ulna, cattle pelvic fragment, cattle second phalanx, and unfused proximal humerus epiphysis.

		Greatest length (mm)				
Phase 7	tarsometatarsus	83.6	male			
7	ulna	63.9				
	number	*range*	*mean*	*stand. dev.*		
Sheepen 1st century AD	7	59.3–73.5	66.3	4.5	tarsometatarsus	female
	2	82.4–82.8	82.6	0.28	tarsometatarsus	male
Colchester late Roman	2	81.7–85.4	83.6	2.6	tarsometatarsus	male
	4	63.1–74.9	68.3		ulna	

Table 47 Fowl bone: measurements compared with archaeological finds from Sheepen and Colchester

Feature	*No.*	*Fill*	*Phase*	
Pit	*F4940*	*4941*	1	3 adult cranial frags
Grave	*F5117*	*5117*	1	Articulated adult human; associated cattle and pig bone
Depression	*F4502*	*4771*(3), *4791*(2), *4804*(7), *4828*, *4890*	2.3	14 adult cranial frags
Pit	*F4807*	*4819*	2.3	1 adult skull frag.; dog cranial frags
Pit	*F4910*	*4911*	2.3	*foetal burial* (north-south); mouse bones
Post-pipe	*F2900*	*2908*	3	*infant burial c. 6 mths*; 9 animal bone frags; associated avian eggshell
Post-hole	*F1462*	*1463*	3–5	1 adult skull frag.
Post-pit	*F727*	*728*	4	2 infant long bone frags; 12 animal bone frags; 2 adult long bone frags. Associated with four coins and a jet bead in a post-pit of ?temple *F731*
Ditch	*F3635*	*3588*	5	*foetal burial*; associated animal bone (associated with coin-hoard); cow, pig, sheep/goat, horse skull, adult human navicular bone

Table 48 Human remains

Feature	*No.*	*Fill*	*Description*
Phase 1			
Ditch	*F549*	*718*	Horse mandible with slight periostitis of the buccal and ventral surfaces
Ditch	*F1199*	*1792*	Cattle skull with ante-mortem lesion on the parietal bone
Phase 2.3			
Sinkage	*F196*	*705*	Cattle upper molar with frayed roots
Depression	*F4502*	*4771*	Dog mandible with slight swelling, mid-posterior of the shaft
Phase 3			
Depression	*F1479*	*1779*	Horse proximal metatarsal with spavin
Ditch	*F1354*	*1367*	Dog radius shaft with slight swelling, mid-posterior of the shaft
Phase 4–5			
Depression	*F1925*	*1914*	Equine scapula with a lesion in the glenoid cavity
Pond	*F679*	*2498*	Cattle skull with ante-mortem hole in the parietal bone
Phase 6			
Depression	*F2409*	*62*	Cattle radius shaft with possible indications of osteomyelitis
Depression	*F2409*	*113*	Cattle mandible with severe alveolar bone recession at the 4th pre-molar llustrating periodontitis
Depression	*F2409*	*2375*	Cattle distal metatarsal with osteo-arthritis; cattle proximal metatarsal showing spavin
Depression	*F3321*	*3515*	Cattle upper molar with frayed roots and very uneven wear
Depression	*F3321*	*3624*	Lower jaw of 9 to 11 year old horse; diseased, leading to necrosis and huge abscess on lingual side
Phase 7			
Pond	*F679*	*680*	Cattle hind phalanx with an exostosis
Pond	*F679*	*1745*	Equine femoral shaft with osteomyelitis
Disturbed		*D1530*	Sheep/goat mandible with abscess on buccal side
Depression	*F1798*	*2094*	Horse 1st and 2nd phalanx with high ring bone; cattle 2nd phalanx with proximal exostosis at interior medial corner and slight exostosis laterally
Depression	*F1905*	*1961*	Red deer 1st phalanx with 2 lesions proximo-laterally; cattle mandible of very old animal: post-mortem loss of 2nd and 3rd pre-molars; 4th pre-molar worn to the roots; 1st molar extremely worn, split in half leaving the anterior section
Disturbed		*D2000*	Cattle 2nd phalanx with periostitis
Disturbed		*D2360*	Cattle mandible with condyle lesions
Depression	*F2409*	*86*	Sheep/goat mandible with abscess on buccal side; cattle mandible with severe cementum deposits on the teeth
Disturbed	*D2551*	*D2551*	Cattle metatarsal with spavin
Depression	*F3321*	*3205*	Sheep/goat metatarsal anterior/medial edges showing prominent exostoses, probably due to trauma
Depression	*D4146*		Cattle mandible with no sign of 2nd pre-molar

Table 50 Summary of animal pathology

Ritual or rubbish deposits?

Certain deposits have been singled out for more detailed observation; these include features containing adult human bone, infant burials, unusually large bones, butchered horse bones (see Fig. 132), and animal skull remains. Bone groups from these deposits are described in the microfiche report (see Table 49, microfiche).

Animal pathology

This is summarised on Table 50, but more interesting examples are described below.

A cattle skull of Phase 1 (fill *1792*, ditch *F1199*) exhibits an ante-mortem lesion in the parietal bone. The cause is difficult to establish, but Ryder pointed out that holes could result from an acute inflammatory condition caused by increased vascularisation and that cattle wearing yokes may have experienced this (Ryder 1971, 424). A second example was found in the pond (fill *2498* (pond *F679*, edge fill); Phase 4–5).

A Phase 3 horse proximal metatarsal (fill *1779*, depression *F1749*) demonstrates spavin. The aetiology of the disease is uncertain, although severe concussion could be a factor and may be due to faulty shoeing and/or heavy work. Spavin usually only causes a mild degree of lameness. A metatarsal from Phase 6 probably also exhibits spavin.

A horse first and second phalanx from Phase 7 (bone deposit *2094*, depression *F1798*) shows high ring bone which probably caused considerable lameness. The causes of ring bone are similar to spavin; most ring bones are probably due to concussion. Ring bone is primarily the disease of the fore-feet of heavy draught horses.

Non-metrical traits

A cattle mandible of Phase 7 (*D4146* (disturbed)) shows no sign of a second pre-molar; this is fairly common and reasons for its non-occurrence is given by Andrews and Noddle (1975). The teeth exhibit severe calculus deposits.

The significance of the taxa found at Witham

Osteological remains from Romano-British temple sites have been sadly neglected. Only five other sizeable reports (four in prep.) are known to the writer: Hayling Island, Sussex (King *et al.* in prep.); Uley, Gloucestershire

(Levitan in prep.); Great Chesterford (Legge *et al.* in prep.); Chelmsford (CHK, phases IV and VI: Luff in prep.) and Harlow (Legge and Dorrington 1985). In addition, a brief survey of Romano-British 'ritual' remains has recently been published (Luff 1982, 176–194).

The main taxa recovered from Witham had been butchered, that is the cattle, sheep, goats, pigs and horses (Tables 28 and 29). This is in direct contrast to the 4th-century Romano-British shrines at Brigstock, Northamptonshire, which contained whole animal carcasses, for example young sheep/goat skeletons (*F14* of the circular shrine and *F48* of the polygonal shrine: Greenfield 1963). Butchered sheep remains characterised the bone assemblages from Chelmsford and Harlow religious sites but in contrast to Witham there was a striking selectivity for one particular taxa, sheep.

Although sheep/goat was the predominant species found at the Chelmsford (CHK) and Harlow temple sites, cattle were consistently more numerous at Witham. Whether the abundance of cattle bones signify sacrifices is difficult to determine, since, in general. the Romano-British period is characterised by the pre-eminence of cattle.

The Witham sheep/goat slaughter patterns while contrasting with Harlow and Chelmsford, phase IV, do bear a similarity to Chelmsford Phase VI, in that there was a concentration in killing older animals. Lamb kill-off patterns are not confined to ritual sites but can be observed on non-religious sites as well, such as Sheepen and the post-Boudiccan Fort at Chelmsford (Luff 1982).

The large increase of sheep in Phase 2.3 is mirrored in the Sheepen deposits and also in the 1st-century AD deposits at Chelmsford and Colchester.

Non-meat bearing bones of sheep, for example metapodials, were noticeably scarce at the Chelmsford and Harlow temple sites, while they were much more abundant at Witham in the later Roman period, possibly signifying tanning and maybe bone working.

The presence of horse in Tables 28 and 29 is interesting but not exceptional. In a summary of Romano-British sites (Luff 1982), the following was deduced (only sites with 100+fragments were used):

Percentage number of sites with 5%+horse	
Roman Iron Age sites	36%
Roman military sites	0%
Villa sites	61%
Towns/civil settlements	20%
Native settlements	42%

Unfortunately there are no figures concerning temple sites but it is clear that horse was much more popular on agricultural settlements.

Within the Trinovantian canton, horse is not found in large numbers, for example:

Sheepen	< 5.0%
Chelmsford	< 5.0%
Colchester BKC E, T, N, G, H, K,	< 5.0%
Colchester LWC L	< 5.0%
Colchester LWC J	6.7%
Colchester BKC T (Period I deposits)	7.9%
Kelvedon	7.0%
Great Dunmow	4.5%
Chignall St James	13.0%

However, the largest percentage of horse remains occurs on a Roman villa site, Chignall St James. The Roman Colonia sites at Colchester revealed very little horse apart from the 1st-century military levels, while lesser civilian sites such as Kelvedon produced 5%+.

Only a few of the Witham horse bones show pathological symptoms — for example high ring bone (in Phase 7) and spavin (in Phase 3) — which perhaps would have made the animals unsuitable for work (see above). It is unwise to attach significance to the fact that many horses died before 12 years of age, since other 'non-religious' sites have provided similar evidence.

Harcourt (1979) found that the average age at death for horses from the Early, Middle and Late Iron Age site of Gussage All Saints, Dorset was 8 years, and also the horses from Longbridge Deverille, Wiltshire, showed a similar age structure.

Seventy-three percent of the horse remains from 30 contexts at Roman Chelmsford were between 7 and 12 years old at death. Many of these contexts emanated from the Roman *mansio*, and the horses could represent worn out beasts from the Imperial Post. However, a ritual connotation was not entirely ruled out for the *mansio* due to the unusual contents of well *F31*, site AR (Luff 1982, 176). Perhaps there was a staging post for horses at Witham, and 8 to 12 years represents the average life span for such horses.

Varro relates that mares were not allowed to mate before 2 years of age and were considered useless for bearing after the 10th year (Varro II.7.11). It is possible that some of the Witham horses represent worn out mares. Sexing via the canine teeth has not been attempted since some mares as well as stallions can possess canines (Habermehl 1975). Columella (VI. 27.9) recommended that stallions should be put to stud from the age of 3 to 20 years: one stallion is sufficient for fifteen to twenty mares.

Whole or partial horse burials are rare at Witham, and most of the equine bones were spread out at random across the site. It is assumed that horse was generally eaten, even though only a few bones show butchery (Fig. 132). This is significant, since few sites in the canton, indeed in the Province as a whole, revealed horse eating. Vehement protests against the ingestion of horse-flesh by the early Christian church of the 6th and 7th centuries were probably directed more at the religious ceremonies than to the meat consumption itself.

Significance can perhaps be attached to the occurrence of very large beasts, particularly cattle and sheep/goat, and to a lesser extent horses. Animals singled out for sacrifice could well have had more attention paid to them, particularly in the form of better feed. However, larger-horned cattle would have provided more horn for this particular industry.

If the same religious cults had been practised all through the different periods, one might expect the same proportions of taxa in each phase. This is not found at Witham, and could suggest that more than one god/goddess was being worshipped.

Ogilvie (1974, 43) states that, in Roman religion, male animals were invariably offered to gods and females to goddesses. Sexing the Witham cattle bones did not produce clear-cut results: certainly male, female and castrate beasts were present.

Evidence of horse-sacrifice in the Roman period is confined to the October Horse Festival where one of the winning pair in a race was sacrificed to Mars. In the Celtic World, the goddess Epona was patroness of horses and her cult was largely centred in eastern Gaul at Alise-St-Reine,

Côte-d'Or, France (Magnen 1953). Evidence of her cult in Britain is scarce, although at Colchester there is a stone fragment from an Epona statue. However, Green has noticed that the distribution of Epona carvings and Jupiter-Giant columns is identical (Green 1976a, 21). Although no Epona carvings have been found at Witham, there is evidence that a form of Jupiter-Giant column may have been present (p. 247).

It is interesting to note that Epona is associated with and often has the symbols of the Matres who were also river goddesses, and in addition, Epona was often associated with sacred springs (Oaks 1986). In her paper on shafts, pits and wells as sanctuaries of the Belgic Britons, Ross mentions several sites where 'votive deposits' of horse skulls and bones have been found (Ross 1968). She emphasises that the distribution of shafts, pits and wells is very much in the south-east of Britain. A 3rd-century well at Chelmsford contained five horse skulls, foetal and young lambs, human bone, raven, cockerel, and goose bones, which suggest a possible 'votive deposit' (Luff 1982, 176). Also, at Ardleigh, Essex, a hollowed-out tree trunk packed outside and inside with clay was found in a 1.5 m deep gravel pit (Ross 1968, 284). Among the bones and Romano-British sherds inside was the skull of a young horse.

Perhaps two of the deities worshipped at Witham could have been Jupiter and Epona. However, the industrial nature of this site must not be underestimated. The bones have provided evidence of horning, skinning (horse, cattle, red deer, sheep/goat), antler and possibly bone working. Perhaps these industries provided revenue for the upkeep of the temple.

Conclusions

The main feature of the bone assemblage is that cattle are dominant in all phases, with horse becoming more common through the Roman period, where on occasion it is the second most important taxa. Wild animals are always scarce.

The relative proportions of the Witham taxa, their age and sex, with respect to cattle, are not unparalleled on domestic sites. That cattle is the dominant taxa, is true of Roman Britain as a whole, and slaughter at optimum body weight for both cattle and sheep/goat makes sound economic sense. It is evident that the Witham horses did not live past twelve years of age but this has been observed with other Iron Age and Romano-British assemblages. Clearly domestic activities were being undertaken on the site, for example horning, antler working and possibly bone working.

However butchered horse bone is uncommonly recovered in the Romano-British period, and is especially significant when it relates to the consumption of horse flesh; this and the larger sized cattle and sheep may reflect possible 'ritual activity' on the site.

II. Shell

by Martin Jeffries and Robin Turner

Shell was abundant and well-preserved on the site, and was recovered from 735 contexts. When present in quantity shell was recorded as an inclusion, and was generally sampled from each context in which it occurred. The samples did not represent the total number of shells present, but were designed to reflect the quantity and variation of the different species. Quantification is therefore in terms of presence or absence by context, rather that total shell population, and little opportunity for quantitative analysis is available.

The shells were cleaned after excavation, but lack of storage space necessitated that the samples were discarded after identification. A small reference collection was, however, retained.

Oyster shell was, as expected, by far the most abundant type, followed by edible land snails, mussels, whelks, cross-cut carpet shells, cockles, limpets, and avian eggshell. A summary of the less ubiquitous types is presented on Table 51.

Phase	*Edible snail*	*Mussel*	*Whelk*	*Cross-cut carpet*	*Cockle*	*Limpet*
1	3	-	-	-	-	-
2	2	-	-	-	-	-
2.3	6	2	-	-	-	-
3	17	4	6	-	-	-
3–5	1	1	-	-	-	-
3–7	3	3	1	-	-	-
4	-	1	1	-	-	-
4–5	10	3	1	1	-	-
4–7	3	-	-	-	-	-
5	6	3	2	-	1	-
5–6	4	-	-	-	-	-
5–7	2	2	2	2	-	-
6	12	16	17	3	2	-
6–7	18	5	1	1	1	-
7	37	14	17	2	3	1

Table 51 Phase details of contexts containing edible mollusc shells

Edible mollusc shells

Oyster (*Ostrea edulis* L.)
Oyster shell was present in 699 contexts, ranging in date from the 1st century AD to the end of the Roman period. Although four of the contexts are dated to before the conquest, it is quite possible that these were extant in the mid-1st century AD.

Oyster shell was especially prevalent in over 100 contexts, although twenty-four of these were disturbed. It is surprising to find eleven Phase 3 contexts with abundant oyster shells. Since Ivy Chimneys does not appear to have been a normal settlement site in the Roman period, there is a suggestion of non-domestic activity, conceivably religious feasting, at this early Roman phase. However, it is not until the mid-late 4th century that the bulk of oyster shell-rich contexts appear. Many of these late contexts were backfills into large depressions (*F2409* and pond *F679*) and old ditches (*F316, F823* and *F837*, and pond outlets *F1612* and *F1614*). It would appear that middens with accumulations of oyster shells were dumped at this time.

Numbers of upper and lower shells were counted from various large deposits, and were found to be roughly equal, showing that the oysters were probably complete when brought to the site, unlike sites such as Hayling Island, Hampshire (Downey *et al.* 1979, 15), where there is evidence of preparation off site. Shells from other marine molluscs were sometimes found attached to oyster shells.

Edible snails (*Helix Pomatia* L.)
Large shells identified as edible land snails were found in 135 contexts throughout the site. These shells were between 30 and 40mm in diameter, and were often well-preserved. Five pre-Roman contexts contained shells of this species.

Mussel (*Mytilus edulis* L.)
Sixty contexts contained mussel shells, often fragmentary but sometimes whole. Mussels were present in contexts from the 1st century AD onwards.

Whelk (*Buccinum undatum* L.)
Whelk shells were observed in fifty-eight contexts. The shells varied in height from 40–90mm, but averaged *c.* 65mm. A few whelks were found in early Roman contexts, but the majority were later Roman. The presence of whelks indicates that offshore shellfish beds were being exploited, from low water mark or deeper.

Cross-cut carpet shells (*Venerupis decussatus* L.)
The eleven contexts found to contain this shell were all later 4th century in date. Cross-cut carpet shells are found in muddy gravel or clay below half tide level.

Cockle (*Cardium edule* L.)
Like cross-cut carpet shells, none of the cockle shells occurred in contexts earlier that the 4th century. Cockles prefer large sandy bays, between half-tide and the low water mark.

Limpet (*Pucella vulgara* L.)
Only one limpet shell was found, perhaps transported on the back of an oyster.

Avian eggshell

A single bird eggshell was identified ([914]; *2895* (post-pipe *F2900*); Phase 3). The shell, which has been retained, is very fragmentary, but is of large size; it is *c.* 0.6mm thick, and is the product of a large bird such as a goose or a swan. This was found in association with infant burial [916] (see bone report), in the pipe of a post-hole related to trapezoidal structure *F181*. It is assumed that the deposition in association with the infant remains was intentional.

Discussion

The quantity of marine and edible land mollusc shell at Witham is consistent with other Roman sites. Oyster was clearly very popular, but it should be remembered that oyster shells are large, leaving an inordinate amount of debris compared to the nutritional value of their contents. When put into perspective, the amount of shell does not indicate a major food source.

The oysters were probably brought to the site from the well-known oyster beds around Colchester, but it does not seem as though the other marine molluscs were collected accidentally: in contexts where it occurred, mussel was often the predominant species, and the fact the cockles and cross-cut carpet shells were restricted to 4th-century contexts could also argue for specialised importation.

The survival of a single example of avian eggshell is probably due to depositional circumstances rather than the lack of exploitation of this common food source. The remains of several farmyard fowl have been found on the site and, unless used for purely religious purposes, some of these probably testify to the consumption of bird eggs.

III. Molluscan and plant remains

by Peter Murphy

Land and freshwater molluscs

Mollusc shells were common in almost all deposits excavated at this site. Apart from the upper sediments in the main Roman pond (*F679*), which were decalcified, the

fills of the archaeological features consisted principally of re-worked chalky boulder clay and were calcareous. The most informative contexts for reconstructing conditions at the site were the major features — the ponds and depressions: shells from these contexts appear to be derived from a relatively extensive catchment. Assemblages from ditches and pits are thought to provide more limited and local information on the stages of in-filling of each individual feature. Molluscs from the larger features will therefore be considered in the first part of this report in some detail, and assemblages from selected ditches will be discussed in outline subsequently.

Details of contexts sampled, extraction methods, and full species lists are given on microfiche Tables 52–59. The results are summarised in Figure 143. Nomenclature follows Kerney (1975) and Kerney and Cameron (1979). Ecological information is taken from Boycott (1936), Evans (1972), Kerney and Cameron (1979) and Sparks (1961).

The depressions and ponds

The contexts discussed here are from: the Iron Age/early Roman depression (*F4502*); the re-cut of this feature (*F4651*); the late Roman pond (*F679*); and two other hollows or depressions of Roman date (*F2409* and *F3321*). Full descriptions of sediments and deposits filling these features are given on microfiche, but the fills in general consisted of dry greyish-brown to pale brown calcareous clay loam with prominent brownish and ochreous mottles and coarse angular blocky peds, more or less stony, with chalk pebbles and flints. Deposits differing markedly from this will be noted below. The results of mollusc analysis are summarised in Figure 143. This diagram is schematic, largely due to limitations of space, but also because juvenile and fragmentary shells of some closely related taxa have not been specifically identified.

Depression *F4502*

(Tables 52 and 53, microfiche)

Shell assemblages from contexts *4709, 4771, 4773, 4791* and *4792* filling the first stage of the Iron Age/early Roman depression *F4502* (Phases 1–3) consist largely of terrestrial species. Shells of 'catholic' aquatic species (*Valvata* sp., *Bithynia* sp., *Bathyomphalus contortus*, *Gyraulus albus*, Sphaeriidae) are extremely rare and the specimens present are fragmentary, suggesting that they were derived from aquatic habitats elsewhere. Marsh and 'freshwater slum' snails including *Lymnaea truncatula*, Succineidae, *Vertigo antivertigo* and *Vertigo angustior* account for up to 13% of snails in the assemblages from layers in this feature, and this is thought to indicate the presence of some shallow, probably impersistent, pools and puddles with surrounding areas of marshy ground. Two other species commonly found in marshes, though not confined to them, are present: *Carychium minimum* and *Vallonia pulchella*. The remaining terrestrial species consist of a mixture of shade-requiring taxa (*Carychium tridentatum, Lauria cylindracea, Ena obscura, Punctum pygmaeum, Discus rotundatus, Nesovitrea hammonis, Aegopinella* sp., *Euconulus fulvus* and Clausiliidae) with open-country species (*Vertigo pygmaea, Pupilla muscorum, Vallonia costata, Vallonia excentrica* and *Helicella itala*) and catholic or intermediate species. *Trichia* spp. are particularly common, comprising up to 44% of total molluscs. Adults of *T. hispida, T. plebeia* and *T. striolata* are present, but most juveniles were not specifically identifiable. This poses problems in palaeoecological interpretation, though all three species could have occurred in tall damp grassland somewhat disturbed by human activity.

The assemblages from the column sample through layers *4709, 4771, 4791* and *4949* (the fill of pit *F4938* beneath the depression fills) indicate the persistence of wet marshy ground. Fills *4791* and *4949*, however, include fairly high frequencies of open-country terrestrial taxa, whereas in the topmost fills (*4709, 4771*) these species were less common. Progressive slight shading-over of the habitat seems to be indicated. Although conditions were not generally suitable for the survival of plant macrofossils, a sample from *4709* produced a fruitstone of *Rubus fruticosus* (bramble). The snail assemblages from *4792* and *4773*, sampled in a second column, include a high proportion of shade-requiring species, and *4792* also produced abundant seeds of *Sambucus nigra*. It seems probable that these layers were related to a late stage in the infilling of the depression, when it became overgrown with elder scrub. Bone fragments, oyster and mussel shell fragments, charcoal, and charred cereals from the samples show that there was some refuse disposal in the feature, and the more stony depression fills (*4709, 4791*) appear to have included some dumped material, but the fills also included a component of in-washed sediment.

Depression re-cut *F4651*

(Table 53, microfiche)

The fill (*4658*) was of later date (Phase 6–7; later 4th–5th century) than depression *F4502*. The fill was still a clay-based deposit but it was less stony than the lower fills, and it included some small tufaceous concretions with impressions of plant stems and leaves. It is probable that these concretions formed in shallow swampy pools partly as a result of evaporation of lime-rich water, though there may also have been some biogenic carbonate precipitation (Evans 1972, 299).

The mollusc assemblage from this layer includes rare valves of Sphaeriidae, and shells of some marsh snails, principally Succineidae with a few specimens of *Lymnaea truncatula, Vertigo angustior* and *Vertigo antivertigo*. Compared to fills *4792* and *4773* of depression *F4502*, the sample from fill *4658* contains fewer shells of shade-requiring terrestrial species (8–11%) and more shells of open-country species (29–31%). This deposit therefore seems to have accumulated in damp, fairly open conditions.

Pond *F679*

(Table 54, microfiche)

The assemblages from the 3rd–4th century pond *F679* are quite different in character, consisting almost entirely of aquatic species. Only two contexts produced useful assemblages: *2026*, a wedge of shelly detritus up to 60mm thick, representing an accumulation of shells at the water's edge; and *1863* (680–720mm) a calcareous stony deposit at the base of the pond. The most abundant species in both samples is *Armiger crista* (33–53%). Other aquatic snails include *Valvata piscinalis, Bithynia* sp., *Lymnaea palustris, Lymnaea stagnalis, Lymnaea peregra, Gyraulus albus, Bathyomphalus contortus, Hippeutis complanatus* and *Acroloxus lacustris*. The bivalves include *Sphaerium corneum, Sphaerium rivicola* and *Pisidium* spp. This range of species clearly indicates that there was a slow but consistent flow of water, maintaining well-oxygenated conditions. 'Freshwater slum' species are absent and there is thus no reason to suppose that the pond was subject to seasonal drying. Freshwater species make up 98% of the assemblage from fill *1863*, near the centre of the pond, but the marginal deposit 2026 includes a proportion of terrestrial species. Even in this deposit, however, marsh snails are rare. This reflects the fact that the pond had a wooden revetment on three sides, producing an unnaturally sharp distinction between aquatic and terrestrial habitats. The upper sediments in this pond were largely decalcified and the few shells which they contained could be intrusive, having been introduced via soil cracks and earthworm burrows. No information is therefore available on the subsequent environmental history of this feature.

Depression *F3321*

(Table 55, microfiche)

The fill (*3278*) of the 2nd-4th century depression *F3321*, however, contained mollusc shells throughout. The assemblages from the base of this feature resemble those in the pond. Below 150mm depth aquatic molluscs make up 62–66% of the total, and since *Bithynia tentaculata* and *Valvata piscinalis* are present it seems that there was initially a through-flow of well-oxygenated water. Charophyte remains are also present. Above this, freshwater snails decline steadily in frequency and the proportion of terrestrial snails, particularly shade-loving species, increases. At 50–100mm depth shade-loving taxa, notably *Discus rotundatus*, reach a peak of 53%, but above this decline slightly. This sequence is thought to indicate initial deposition of sediment in flowing water, but as the system of ditches became choked there was a change to a quieter sedimentary environment and ultimately to the development of drier and more shaded conditions, probably scrub and tall herbs, subject to periodic flooding. The presence of marine mollusc shells, bone fragments and charred plant remains indicates some refuse dumping whilst sediment accumulated.

Depression *F2409*

(Table 56, microfiche)

The 2nd-4th century depression *F2409* adjacent to the pond (*94, 95*) has not been included in Figure 143 for two reasons. Firstly, it included large

quantities of tile, bone, marine mollusc shell, charcoal and carbonised cereals and its fills clearly include much dumped material. Secondly the mollusc assemblages recovered are sparse and consist principally of fragments of *Pisidium* valves which have not been identified specifically.

Ditches

Samples were taken from several Iron Age and Roman ditches, mainly in order to establish whether their lower fills were deposited in flowing water. Results from three ditches will be discussed here. Notes on others which produced only sparse mollusc assemblages are given on microfiche.

F5081*: Belgic ditch (Phase 2) adjacent to depression *F4502

(Table 57, microfiche)

Two samples from the lowest 200mm of this feature (fill *4728*) at 860–1060mm depth were taken. The lower sample at 950–1060mm contains few shells, but a larger assemblage was obtained from 860–950mm. *Lymnaea truncatula* is common in this ditch fill, accounting for 45% of total shells. By contrast, in the depression *F4502* this species never exceeds 8.5% and is generally present at lower frequencies. It thus appears that the ditch was markedly wetter than the depression, though aquatic snails requiring well-oxygenated bodies of permanent freshwater are absent. From this it seems that the ditch held stagnant or very slow-flowing water and probably dried out periodically. The remainder of the assemblage consists of a mixture of marsh and terrestrial snails with *Trichia* spp. making up 21% of the total.

F1060*: Roman inlet ditch for pond *F679

(Table 58, microfiche)

A central column sample through this shallow feature was examined. The lower fills (*1130* and part of *1061*) produced very few shells, almost entirely of terrestrial species apart from two small fragments of Sphaeriidae valves. In the topmost 100mm of fill *1061* shade-loving taxa (*Carychium tridentatum, Clausilia bidentata, Discus rotundatus*, Zonitidae) make up just under 60% of the total assemblage. The fill of this ditch is obviously related to a period after the ditch itself had ceased to function as part of the drainage system of the site, when it was becoming overgrown with tall herbs or scrub.

F180/F1612*: Roman outlet ditch from pond *F679

(Table 59, microfiche)

Unlike *F1060*, freshwater molluscs are present throughout the central column sample from the ditch (*F180*; fill *1634*) and its re-cut (*F1612*; fill *1613*). These include *Valvata piscinalis, Bithynia tentaculata, Bithynia leachi, Lymnaea truncatula, Lymnaea peregra, Planorbis planorbis* and *Anisus* cf. *leucostoma*. Terrestrial species, mainly *Vallonia* spp. and *Trichia* spp., are also present, but snails characteristic of shaded conditions are not common. It appears that this ditch continued to function as a drain whilst it became infilled with sediment, and also after it was re-cut.

Marine molluscs

(Table 60, microfiche)

Fragments of marine mollusc shell are present in many samples. As most of these are non-hinge and non-apical fragments, direct counting is impossible, though the frequencies with which fragments of different species occur in these samples are thought to be a reasonably reliable indicator of their relative importance. Fragments of fossil shells from Mesozoic and Tertiary deposits, glacially transported, are also present in some samples. Oysters and mussels predominate. These shellfish were presumably shipped up-river from the Blackwater Estuary. The badly abraded shell of *Hydrobia ulvae* (from context *4080*) was probably accidentally imported with the edible shellfish. Hand-collected edible molluscs are dealt with in a separate section of this volume (Part 4.II).

Plant macrofossils

Plant macrofossils were preserved in three main ways at this site. The lower fills of the Belgic well (*F5058*, fills *5056, 5059*) contained plant material preserved in wet conditions; carbonised plant remains, mainly charcoal and cereals, are present in almost all samples examined; and samples from the ponds and depressions include some calcified plant material and impressions, produced partly by biogenic concentration of carbonates and partly by evaporation of lime-rich water. Details of methods used for the recovery of plant remains and full species lists are given in Tables 61–64, microfiche.

***F5058*: Belgic well**

(Tables 61 and 62, microfiche)

The seed assemblages from this feature are dominated by common weeds. *Urtica dioica* is the most abundant species, but fruits or seeds of *Papaver* cf. *dubium, Papaver argemone, Stellaria media, Chenopodium album, Atriplex* sp., *Malva sylvestris, Aethusa cynapium, Rumex* sp., *Urtica urens, Hyoscyamus niger*, cf. *Ballota nigra, Plantago major* and *Cirsium/Carduus* sp. also occur. There are a few seeds of grassland and wetland species (*Ranunculus acris/repens/bulbosus, Ranunculus* subg. *Batrachium, Apium* cf. *nodiflorum*). Scrub plants and trees are also represented at low frequencies (*Rubus fruticosus, Sambucus nigra, Betula* sp.). Overall the assemblages indicate that whilst the well filling accumulated, local vegetation consisted predominantly of nettles and other weeds, with some wet grassy areas. Some bramble and elder scrub was apparently present nearby and birch was growing in the general area.

Carbonised plant remains

(Tables 62–64, microfiche)

Charcoal is present in almost all samples examined, but has not been identified. Other carbonised plant remains consist of cereals, weed seeds, hazel nutshell fragments, and fragments of stems and tubers.

Most Iron Age samples contain some remains of cereals, but usually only small numbers of grains and spikelet fragments. However, in fill *5059*, a layer within Belgic well *F5058*, there was a concentration of carbonised cereal remains, including grains, 'sprouts' from germinated grains, rachis internodes, spikelet forks, glume bases and culm fragments. This material seems to consist largely of crop-cleaning waste. The two main species represented are the glume wheats spelt (*Triticum spelta*) and emmer (*Triticum dicoccum*). Other layers in this well contained further wheat remains including carbonised awn fragments. Well fill *5059* also produced a single fragmentary rachis internode of barley (*Hordeum* sp.). Carbonised weed seeds were relatively common in this layer: species identified include *Ranunculus* cf. *flammula, Montia fontana* subsp. *chondrosperma, Medicago lupulina, Trifolium* sp., *Vicia/Lathyrus* sp., *Rumex* sp., *Plantago lanceolata, Tripleurospermum maritimum, Avena* cf. *fatua*, and *Bromus* sp. A characteristic weed of cereal crops on heavy alkaline clay soils, *Anthemis cotula*, has not been identified from Iron Age contexts at this site, although it has been reported from contemporary deposits elsewhere (Jones 1978, 105). Here the only mayweed species is *Tripleurospermum maritimum*. This gives some grounds for suggesting that the arable fields of the settlement were not on clay soils in the immediate vicinity of the site but may have been on terrace gravels in the river valley. The few seeds of plants characteristic of damp soils (*R. flammula, M. fontana* subsp. *chondrosperma*) could indicate that cultivation extended onto poorly-drained land at the edge of the river floodplain.

Samples from Roman contexts contain fairly similar assemblages of carbonised cereals to those of the Iron Age. Again, there are small quantities of grains and spikelet fragments in most samples. Late Roman fills *94* and *95* of depression *F2409* contained a concentration of charred cereals, predominantly wheat grains and glume bases of *Triticum spelta*. *Triticum dicoccum* is tentatively identified from a few damaged glume bases, but no remains of barley were recovered. Weed species identified were *Anthemis cotula, Avena* sp. and *Bromus* sp. Interpretation of this rather sparse material is difficult, but it is possible that use of incompletely-threshed cereal ears for fuel or kindling could be indicated.

Calcified plant remains

A single oogonium of *Chara* sp. was recovered from a lower fill (*3278*, Phase 6) of the Roman depression *F3321*. The rarity of charophyte remains in the pond and ditch sediments is surprising, though it is possible that aquatic vegetation was regularly cleaned out when these features were in use, and that when the system became defunct the growth of phytoplankton inhibited growth of charophytes by shading. The upper fill of the re-cut Iron Age depression *F4651*, fill *4658*, produced some small tufaceous concretions with impressions of stems and leaves. These, however, were only partial impressions and have not been identified.

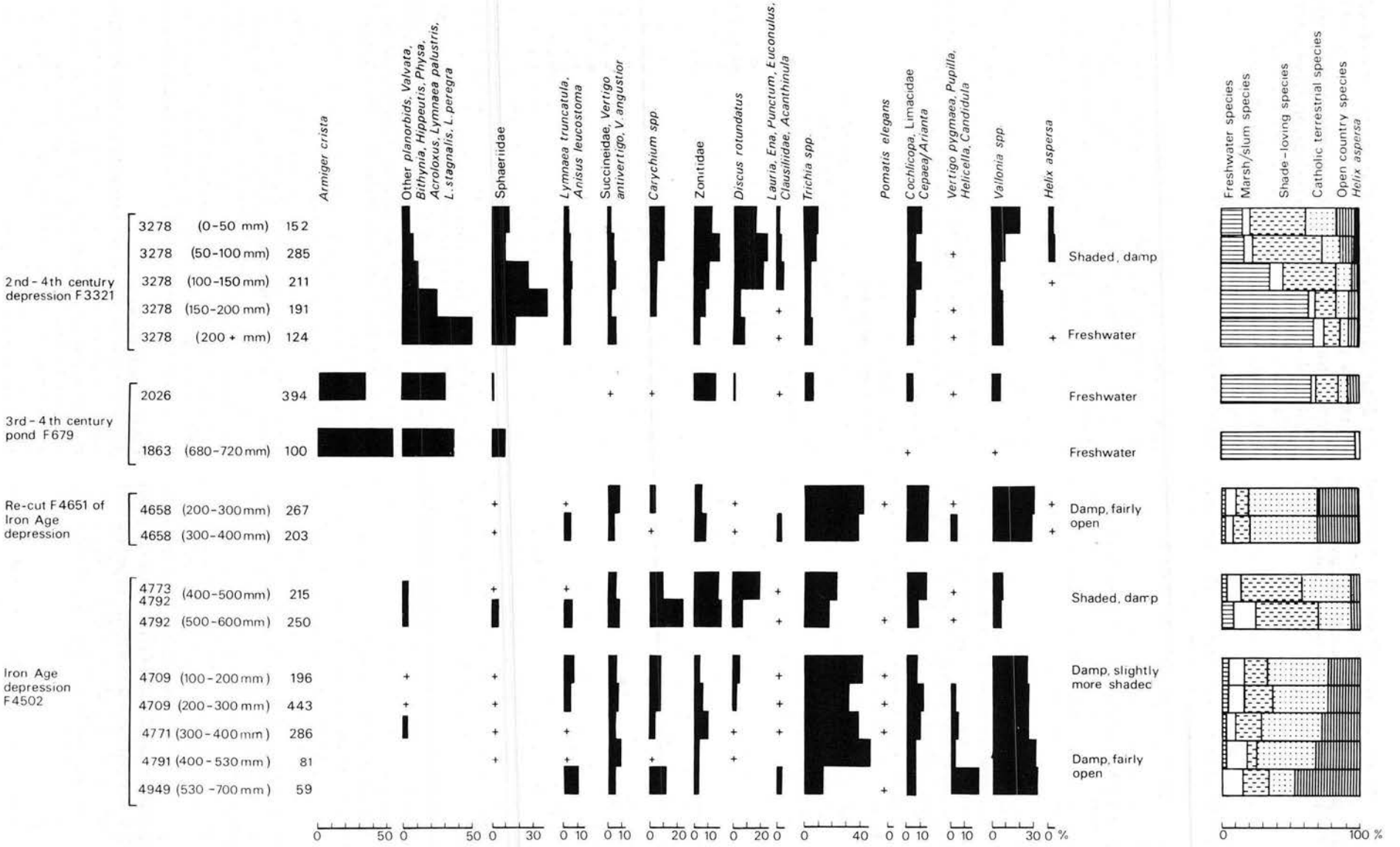


Figure 143 Molluscs: molluscan remains from depressions *F3321*, *F4502* and *F4651*, and pond *F679*

Part 5. Discussion

Introduction

In the following discussion each major phase is considered individually. After a summary of the main features, the components of the phase are considered singly or in groups. The finds and economy are then discussed and the overall nature of the activity of the phase assessed. Finally, evidence for religious activity and for continuity is considered.

The phase discussions are followed by a wider assessment by Miranda Green of the religious aspects of the site, including comments on the discussion. In order to avoid unnecessary duplication, the attention of readers is drawn to recently published monographs on major sites in the area: Rivenhall (Rodwell and Rodwell 1985); Kelvedon (Rodwell 1988) and Chelmsford (Drury 1988) should suffice to put the site into its local context.

This part of the report was largely completed in 1986, the results of research in the mid 1980s.

I. Phase 1: Iron Age

(Fig. 144)

Introduction

Despite the limited nature of the excavations of the Iron Age settlement, a reasonably coherent picture of its form, composition and status has been derived.

Components of the settlement

The main enclosure ditch F549

Very little of this feature was examined in detail, and the ditch was substantially re-cut in the Belgic phase. It is, however, clear that the original ditch was more than a slight affair intended to prevent stock from straying, and a more defensive role is postulated.

The ditch was originally up to 2m deep and perhaps 3m wide, with a fairly steep, sharp profile. Although evidence of the position of a bank did not survive the Belgic re-cut, redeposited natural clay in the secondary fills of the original cut shows that the upcast had been retained as a bank to supplement the ditch. A reasonably off-putting though by no means impenetrable barrier would thus have been formed.

Where it was uncovered in the excavated areas the ditch appeared to be continuous. Although the ditch may have been broken for an entrance elsewhere, the original access point may have been retained in the Belgic re-cut, in which there was an eastern entrance facing down the slope. Recent excavations at Haddenham, Cambridgeshire have revealed a smaller Middle Iron Age continuous enclosure ditch of V-shaped profile, and a wooden bridge for access has been postulated (Evans 1986, 8). Likewise, at Barton Court Farm, Oxfordshire, a large Iron Age settlement ditch appeared to be continuous (Miles 1986).

The external enclosure

Apart from the main settlement ditch, the only other ditched enclosure in this phase was *F229*. This may have had an entrance in the south-west corner at the junction with the main ditch, and was sufficiently secure to have held stock. A ditched enclosure of similar nature at Winklebury, Hampshire, lay within the settlement, and was dated to the 3rd to 1st centuries BC (Smith 1977, 52).

Round-houses

Round-houses of three types were present: post-hole; gully; and combined post-hole and gully with possible porch.

Post-hole round-houses have been found at many sites in Britain, although the slender evidence for the one at Witham produces a very irregular plan (Fig. 7, *F3191*). Even so, other Iron Age post-hole round-houses, for example at Heybridge, Essex (Drury 1978b, 46, fig. 13, hut B), are equally crude. The Heybridge building, dated to the 4th century BC, was a *c.* 10–11m diameter oval composed of close-set post-holes. In general, Iron Age post-hole round-houses in the south and east of Britain are dated to the earlier part of the period and derive from the Late Bronze Age tradition.

Round-houses represented by continuous or discontinuous gullies are generally roughly circular, but a polygonal variant is also recognised. Circular round-house gullies are common on lowland Iron Age settlements. There is a broad range of dimensions, but diameters often fall between 12 and 14m (*e.g.* Drury 1978a, table 2). The function of the gullies is an old chestnut: it has even been suggested (Reynolds 1977, 37) that some result from rodent activity. A recent survey (Allen *et al.* 1984) maintains that most circular gullies were for the draining of water from the eaves of the houses, and points out that there is no convincing evidence that the gullies were foundation trenches for wall plates or post-holes. Excavations at Haddenham (Evans 1986, 7–8, fig. 2, C) have produced some remarkably well-preserved evidence *in situ*: a Middle Iron Age round-house, built over an earlier structure, had wall footings of stacked turf in order to prevent erosion to the wattle and daub walls from splash and ground-water. The structure was completely surrounded by a deep (*c.* 0.80m) continuous eaves-drip gully; allowing for erosion and ploughing, such a deep gully would have survived at Witham as a very considerably shallower feature.

Polygonal round-house gullies like *F3021* (Fig. 7) would appear more likely to represent foundation trenches (Drury 1978a, 23–5, fig. 68), but could alternatively be explained as eaves-drip gullies for structures with polygonal roofs.

Round-houses with gullies are usually thought to be of Middle Iron Age date (Allen *et al.* 1984, 100), although they can continue into the very late Iron Age in places (*e.g.* Fengate, Cambridgeshire; Pryor 1984, fig. 18) or even well into the Roman period. This is probably not the case in Essex, where round-houses generally cease to occur after the advent of the Belgic period (*c.* 50 BC), except perhaps in the south of the county (*cf.* Orsett 'Cock'; Toller 1980).

Round-house *F185* (Fig. 7) of composite post-hole and gully construction is an uncommon type, but the use of post-holes as the primary construction and the presence of a possible porch suggest an Early Iron Age date. A sherd of Middle Iron Age pottery was found in slot *F532*, but the remaining few scraps from the fills were flint-tempered. If Middle Iron Age in date, the position of this round-house outside the main settlement ditch and perhaps near an eastern entrance may suggest an unusual, perhaps religious, function (see below). The use of slots in this structure was clearly constructional and not concerned with eaves-drips.

In common with even the best-preserved round-houses (Evans 1986, 7–8: Allen *et al.* 1984, 94), no internal features could be attributed to the Witham structures.

Four-post structures

The four definite four-post structures were of two forms: square (*c.* 2.50–3.00m) and rectangular (*c.* 2.50 by 1.00m). Although the square structures fit well into the range of excavated plans, fewer rectangular four-post structures are known. The variations in the characteristics of post-holes of the rectangular structure *F2970* (Fig. 8) are not typical, such structures generally being composed of equal-sided, deep, flat-bottomed features (*e.g.* Slonk Hill, Sussex (Hartridge 1978, 74) and Gussage All Saints, Dorset (Wainwright 1979, 18–19)). Both four-post structure types can, however, be found together on the same site, as at Gussage.

Unlike many settlement sites of the period, there was not a large number of Iron Age post-holes at Witham. This made the attribution of features to structures easier, and enabled the identification of a phenomenon which might be described as the 'three-post structure', consisting of three post-holes of similar nature, forming a right-angle. These structures would not normally be sought in the ground plans of excavated settlements, but such plans with a multitude of unattributed post-holes could easily conceal such features. Some, for example, are visible in the plans of Gussage (Wainwright 1979, 17, fig. 16) and Balksbury, Hampshire (Wainwright 1970, fig. 13). The possible three-post structures from Witham mainly lie in the expected position and alignment of four-post structures, but are admittedly of variable dimensions (Fig. 8). If three-post structures do exist, there is as yet no evidence of their function.

Bearing in mind that only a small area of the Iron Age settlement was investigated, the probable and possible four-post structures appear to cluster at the periphery of the settlement, parallel to the main enclosure ditch. This follows the pattern on many other sites, particularly visible on the well-preserved example at Moel y Gaer, Clwyd (Guilbert 1975, fig. 1). It has been shown that this is the least defensible position (Ellison and Drewett 1971, 185), but locating these structures round the outer circuit of the site would have reduced the amount of traffic through the residential part of the settlement.

The two four-post structures found well away from the Iron Age settlement area offer new evidence for the location of these features, but do not really help in interpreting their function. After years of suggestions, it is now commonly recognised that the main function of four-post structures was to store grain, legumes and other foodstuffs (Gent 1983, 245–252). Gent is not convinced by the arguments of Reynolds (1974, 125) that the lateral pressures of the grain would have been too great, and the similar form of later granaries, often on four or six stilts, confirms that grain storage in structures of this apparently flimsy plan is certainly achievable. On sites such as Witham where no grain storage pits were found, the interpretation is even more convincing.

Turning for a moment to alternative functional explanations, there is no evidence from Witham, in the form of semi-articulated or gnawed human remains, that four-post structures were used as exposure platforms. Alternatively, there is no reason why some should not have been lookout towers. Structure *F2971* (Fig. 8), to the north of the later entrance, might have been paired with a southern counterpart (in an unexcavated area) to act as a gate-house, although the possibility of multiple functions for the structures should not be overlooked: a granary could also serve as a lookout tower at no extra cost.

The two four-post structures found by chance over 80m to the east of the settlement are unlikely to have been lookout towers since they would have had less visibility than those further up the hill. Their positions make it much more likely that they were used for the storage of agricultural produce. If they were indeed granaries, then their lack of protection must reflect the confidence of their builders. It is assumed that they lay within a field system of which no trace survived. It may, however, be significant that one of the four-post structures (*F2973*) lay on the same alignment as and in the middle of a gap between two Belgic slots (Fig. 145). Could these later slots represent the continuity of an Iron Age hedge or other barrier? Drury (1980b, 50) has pointed out the need to separate livestock from crops, and has suggested, in the absence of many field ditches until the Late Iron Age, that hedges were used extensively.

Gent's (1983, 254) observation that 80% of four-post structures have been found within enclosed settlements might now be seen as an archaeological bias, not only because unenclosed settlements are more difficult to find, but also because many four-post structures may have lain too far from the settlement to be included in the excavated areas.

Guilbert (1975, 215, fig. 4) examined the effects that just 0.24m of ploughing would have had on the unploughed site at Moel y Gaer. He observed that the only surviving trace of most stake-hole round-houses would be the four or two posts at the entrances. The presence of a possible porch on round-house *F185* has already been noted, but the four-post structures at the edge of the settlement seem to have been discrete.

There is a consensus that structures of this type belong to the Early and Middle Iron Age: from 7th to 3rd century BC at Slonk Hill, Sussex (Hartridge 1978, 74); from 750 to 430 BC at Gussage All Saints, Dorset (Wainwright 1979, 18); and 6th century at Balksbury, Hampshire (Wainwright 1970, 53). Those at Little Waltham were thought to have been later: mid-3rd to late 2nd century, late 2nd to mid-1st century, and late 1st century BC (Drury 1978a, 25–6, 34 and 36). The weight of the scant ceramic evidence from Witham points to a Middle Iron Age date (*i.e.* up to 1st century BC).

Two-post structure

Only one example of an Iron Age two-post structure was identified. This lay in the area of four-post structures near the eastern edge of the settlement, and was identified by

its unusually wide pair of post-holes. Although it has been shown (Guilbert 1975, 215) that two-post structures can result from the ploughing-out of stake-hole round-houses, leaving only the entrance posts, the location of the Witham example would favour an independent function. Drury (1978a, 124) identified two peaks in the distance between the Little Waltham two-post structures (at *c.* 2.50 and 3.50m), and the Witham example at 2m belongs to the shorter group. It has been suggested (Bersu 1940, 95: Ellison and Drewett 1971, 189) that two-post structures were used as drying racks but many other uses can easily be imagined.

Pits

In common with other Iron Age sites in the region, there was a distinct lack of pits. The only excavated example (apart from series *F5082*; see below) was pit *F3133*, a roughly oval feature with a flat bottom (Fig. 9). This was similar to some of the working hollows found at Gussage All Saints, Dorset (Wainwright 1979, 19–20) where six of the seven examples were of Early Iron Age date. The sides of the Gussage hollows were irregular but the bottoms could be flat: the regular sides at Witham can probably be attributed to the easily shaped surrounding silt clay subsoil, but there was no evidence of the function of this feature and no working debris was found in the almost sterile lower fills.

The lack of Iron Age storage pits is a regional trait, but the economy is known to have been identical to those areas where pits are abundant. Drury (1978a, 125) attributes this anomaly to the water-retentive properties of the subsoil, and it may be that alternative methods of storage proved more suitable.

Oven

Oven *F3962* (Fig. 10) was dated on the basis of just two conjoining sherds of Middle Iron Age pottery from the base of the pit which the oven was found to cap. The evidence shows that the oven was contemporary with the filling of the pit, and an Iron Age date has thus been accepted.

A domed oven is suggested by the way in which the edges of the floor were broken, and a similar form of the same size from Staple Howe, Yorkshire, has been the subject of a reconstruction drawing (Brewster 1963, 36–7, fig. 20). There was no evidence for the precise function of the Witham oven, but it is known that very high temperatures were achieved.

As Barton (1977) has pointed out, the daub from ovens like the Witham example is similar to that found elsewhere on settlement sites. This daub has often been interpreted as the remains of burnt-down wattle and daub walls from round-houses, but it is more likely, considering the temperatures needed to fire daub to this consistency, that much of it was debris from dome-shaped ovens with structural supports of wattle.

Depression F4502 and pit series F5082

Artificial depression *F4502* was situated over 70m from the settlement, and was of large proportions. The series of pits *F5082* lay within the depression (*e.g.* Fig. 13), and it is difficult to believe that the two were not closely related: the nature of the pit fills, lacking in topsoil and conspicuously silty, suggests that these features were dug into the bottom of the pre-existing depression, rather than pre-dating it.

Slot *CF4884* (Fig. 13) must have acted as a drain at the depression edge, and carried away rain water and the water from the natural springs within the depression. Environmental evidence (p. 225) shows that the depression was wet but not waterlogged, and therefore drained. If its purpose was not to hold water, then it is difficult to envisage a straightforward agricultural function for the depression. It may therefore have been dug as a preliminary to the series of pits.

The irregular, shallow pits are also enigmatic, and our only clues as to their function come from their location, at the bottom of a marshy artificial feature, and their unusual fills which indicate rapid backfilling of the excavated upcast. It is more than likely that the answer to this puzzle lies in organic remains which have not survived, and a consideration of the use of wooden votives on Iron Age sites is presented below. An alternative functional interpretation is, however, available: the depression might have been excavated in order to extract the chalky boulder clay subsoil for use in the manufacture of structural daub or fired-clay objects. Although the idea cannot be discounted, the apparent regularity of the depression edge and bottom, and the poor quality of the subsoil in the area argue against this interpretation.

Apart from burial *F5117* (see below), the only Iron Age feature to contain human remains was pit *CF4940* of pit series *F5082*, in which three fragments of adult cranium were found.

Burial F5117 (not shown on phase plan)

This inhumation cannot be directly related to the main Iron Age activity, being found almost 200m to the east of the settlement, and might have been of pre-Iron Age date. The surrounding area was only observed during a watching brief, and was badly disturbed by a Roman depression. Further burials may therefore remain undiscovered or may already have been destroyed. Being sealed by a feature containing Belgic pottery, the grave might have been dated to the same period, but a Belgic inhumation is reasonably unlikely in this area under the influence of the Aylesford-Swarling cremation tradition.

A recent survey has shown that the majority of Iron Age inhumations on occupation sites were found in the interior of the settlement (Wait 1985, fig. 4.8). The obvious bias caused by the focusing of archaeological attention towards the more fruitful settlement interior is highlighted by this chance discovery at Witham, well away from the focus of occupation.

The Iron Age economy

There is sufficient evidence to suggest a mixed economy on the site during the Middle Iron Age. The total number of animal bones of this phase is small, but is enough to suggest that cattle were the main domesticates but that sheep were also of some importance. Several horse bones of Phase 1 exhibit butchery marks, but horse and pig do not appear to represent a major meat source.

The cattle were doubtless mainly for meat, milk and leather, and the sheep appear to have been kept for milk and wool since few lambs were present (Table 38). Evidence for working the wool is restricted to a few triangular loomweights (?thatch-weights), a fired-clay cylindrical spindle-whorl (Fig. 124.5), and a single spindle-whorl in a Middle Iron Age pottery fabric but from a later context (Fig. 118.14).

Apart from a quernstone from small enclosure ditch *F1199* (Fig. 79.8) and a small amount of carbonised cereals (p. 226; Molluscan and Plant Remains Report), evidence for cereal production is mainly based on the interpretation of four-post structures as granaries.

Other than the subsistence economy, there is little evidence for specialised activity at this time. No metal-working slag was found, but pit *F900* may provide evidence for pottery manufacture: as well as a large amount of Middle Iron Age sand-tempered pottery, a good deal of burnt daub was also found in the pit fills. Depending on the method of construction, this might represent the debris from a pottery kiln.

Despite the high temperatures achieved, oven *F3962* was doubtless too small to have been used for pottery production, and is, on balance, best considered as a domestic oven perhaps for baking bread.

The overall nature of the settlement

Although a certain amount of Early Iron Age flint-tempered pottery was present, all of the main features are dated by sand-tempered Middle Iron Age pottery. The settlement therefore consisted of: a large defensive enclosure ditch; a smaller ?stock enclosure; several round-houses, mainly of gully type; four- and two-post structures; depression *F4502* and associated pit series *F5082*; and various minor features. The only features which may have been Early Iron Age are round-house *F185*, perhaps with an associated porch (*F2977*), and ?round-house *F186*.

The dating of flint-tempered Iron Age pottery in the area is not restricted to the Early Iron Age, but the presence of some diagnostic Early Iron Age forms precludes the suggestion that the occupation began in the Middle Iron Age. The presence of a perforated clay slab (Fig. 124.6) confirms activity in the Late Bronze Age/Early Iron Age transition.

The settlement would therefore appear to have been unenclosed in the Early Iron Age, and it is unfortunate that further evidence of this period has either been ploughed-out or has been obliterated by subsequent activity (*cf.* Gussage All Saints, Dorset (Wainwright 1979, 3)). The main period of occupation was certainly in the Middle Iron Age when the settlement was enclosed, the sequence following that suggested by Drury (1978b, 74–5). The settlement was divided into zones, with a residential area in the middle and storage facilities on the periphery. The alignment of the four-post structures with the main enclosure ditch may be fortuitous, dictated by the natural slope, but is more likely to indicate that the structures were constructed after the ditch was dug.

Although it is possible that only one or two structures were in use at a time, the zoning of activity areas suggests the need for a planned, or at least controlled interior. Assuming a number of contemporary dwellings, the status of this settlement would equal that of many small 'hillforts' of the upland zone: a hilltop settlement surrounded by a defensive ditch enclosing several round-houses.

Evidence of votive activity and continuity

Round-house *F185*, which lay outside the settlement enclosure ditch and immediately under the possible Romano-Celtic temple *F731*, could have functioned as a shrine. Drury (1980a) has argued that religious structures may have been present even in minor Iron Age agricultural settlements, although some of his structural evidence is admittedly unconvincing. Drury himself, on the basis of classical texts, was aware that the majority of these buildings may not have been recognised because they are of identical plan and construction to domestic houses (Drury 1980a, 66). This is not surprising if the object was to provide the deity with his house, and has perhaps been overlooked by Hingley (1985, 209) in the case of Frilford, Oxfordshire, where an Iron Age structure, long recognised as an Iron Age shrine below the Romano-Celtic temple, is now considered by some to have been a domestic building. The large number of Romano-Celtic temples found on sites with pre-Roman activity is surely more than coincidence, particularly since in many examples the temples directly overlay simple Iron Age structures. The unfortunate problem is that these predecessors of purpose-built temples are in no way unusual in themselves, and one must wait for elusive finds evidence to confirm their true function. At Witham, round-house *F185* and possible round-house *F186* were unusual in their location beyond the settlement ditch. However, these features contained mainly flint-gritted pottery which, combined with their basically post-hole construction, points towards an Early Iron Age date, before the construction of the settlement ditch. The suggestion of a votive function for these structures is therefore less compelling but nevertheless a possibility.

There are, however, two other aspects of the Iron Age site which could indicate votive activity: the series of pits (*F5082*) and the presence of butchered horse remains. It has been demonstrated that the pits were excavated within the bottom of an area specially demarcated by depression *F4502*, and that they were backfilled almost immediately after excavation, perhaps to bury organic objects. A group of organic objects of Iron Age date which were buried in a very similar manner are the wooden idols of this period, exemplified by the site of Saint-Germaine-Sources-Seine (Sequena), Côte d'Or, France (Martin 1965). At that site, 190 wooden votives of various forms were found, comprising: statues; heads; multiple heads; heads and trunks; legs; arms; animals; and carved plaques. These were all deposited in the bottom of a Late Iron Age gravelled depression (not a natural pool as first thought). Late Iron Age wooden sculptures are also known from the *viereckschanze* at Fellbach-Schmiden, Baden Würtemberg, south-west Germany (Planck 1982) and other occurrences have been explored by Wyss (1979). These finds have been related to a passage in Lucan (*Pharsalia* I, 444) which refers to sanctuaries and funerary enclosures containing wooden idols.

The similarity of depositional circumstances between the Saint-Germaine-Sources-Seine votives and the pit series at Witham is clear, even though there was no preservation of organic material at Witham. A link with the continental examples is provided by the Dagenham Idol, found in a marsh deposit in southern Essex (Wright 1923), and by a votive wooden head, probably Roman, from a ritual shaft at Armsley, Hampshire (Edwardes 1931). The digging of pits in watery places is further paralleled at the site of Argentomagus, Indre, France (Fauduet 1986). These pits, dug in the early part of the 1st century AD, contained ritual deposits of pottery and animal bones, and were built over in the Flavian period when a fountain was constructed, *c.* 200m from the Romano-Celtic temples and *temenos*.

Of a less ephemeral nature is the occurrence of butchered horse bones at Iron Age Witham. This subject has been explored by Rosemary Luff in the Animal Bone Report (p. 222). The ritual association between horses and Celtic cults is briefly examined, and it is suggested that the unusual practice of eating horses at this time might signal some form of ritual, perhaps associated with the goddess Epona.

The tentative evidence for votive activity at Witham in the Iron Age has been highlighted in order to expose the possibility of maintained religious use of the site from that early time into the Roman period. The presence of Early Iron Age pottery forms and the Late Bronze Age/Early Iron Age perforated clay slab (Fig. 124.6) indicates that the site was in use for more than a millennium, but a continuous or almost continuous use of the site would be required to associate any Iron Age beliefs with the Roman religious period. This may at first appear to be untenable, but a closer examination of the evidence shows that long continuity is a possibility.

It has been shown that very few Early Iron Age features have survived in the excavated areas despite ample evidence for activity at this time. However, the paucity of post-holes can be attributed to the extensive ploughing of the site, and the fragmentary survival of the Middle Iron Age structures confirms the incompleteness of the evidence. In particular, the need for specialised areas within the Middle Iron Age settlement conflicts with the surviving evidence of very few structures, and implies that many must have been lost without trace.

Turning to the material evidence, the amount of Middle, and more particularly Early Iron Age pottery recovered from the excavation is relatively small (from stratified contexts of all dates: EIA =about 1500 sherds, *c.* 4.7 EVEs; MIA = over 1800 sherds, *c.* 7.6 EVEs). Although a substantially larger amount of pottery would be expected if there were continuous occupation, a number of factors must be considered in order to assess how representative the excavated material is. In particular, only about 2% of the main settlement ditch was sampled, and it is from this feature that the largest density of pottery survived. To this must be added the friable pottery which must have found its way into the ploughsoil and has subsequently disintegrated. The status of Iron Age pottery to its users is another important factor: the density of pottery is often greater in later contexts, partly because the fabrics (sand-tempered, becoming higher fired) are more durable, and partly perhaps because pottery became more popular as a substitute for wooden and leather receptacles. Bearing these factors in mind, it becomes possible to envisage that the small excavated sample might represent a long and continuous occupation.

There is little evidence in the form of re-cuts of the major features to support the longevity of the Iron Age settlement. Although it is possible to identify re-cuts in the sections (Fig. 6), none was able to be followed along the line of ditch *F549*, partly because of later disturbance by the Belgic enclosure ditch *F1124*. It is clear (*e.g.* Fig. 6, EM1) that ditch *F549* was allowed to silt up dramatically before the Belgic re-cut, although it still survived as a visible feature, perhaps *c.* 1m deep plus an eroded bank.

It will be clear from the above discussions that there is some evidence for both votive activity and continuity of occupation in the Iron Age, but that the evidence is indirect and insufficient to confirm either.

II. Phase 2: Belgic

(Fig. 145)

Introduction

As has been stated, limitations in the current state of knowledge of native 1st-century BC to 1st-century AD pottery in the area has made the clear definition between Phase 2 (Belgic) and Phase 2.3 (Belgo-Roman) impossible. It must be accepted that the current phasing is likely to require future amendment in the light of new research into these ceramics. Some features did, however, contain sufficient amounts of what was tentatively recognised as un-'romanised' Belgic pottery, and these are discussed here.

It has recently been suggested that, in the light of the lack of surviving evidence for Late Iron Age structures, settlements may be inferred by the presence of enclosing ditches containing significant quantities of domestic debris (Allen *et al.* 1984, 100). The Ivy Chimneys site falls into this category.

Components of the settlement

Large enclosure ditch F1124

A ditch of this size (original depth up to *c.* 1.80m) is most unusual on domestic sites of this date, and has few parallels; the recently excavated example from Orsett 'Cock', Essex is unhelpful (Toller 1980), but the sub-rectangular enclosure at Barton Court Farm, Oxfordshire has broad similarities (Miles 1986).

The Belgic ditch re-cut the line of the Middle Iron Age settlement ditch *F549*: some need therefore arose for a new ditch of this magnitude and the most obvious line was chosen.

Apart from a boundary delineating the edge of a settlement, the ditch might conceivably relate to evidence from the excavations conducted in the early 1970s by W.J. and K.A. Rodwell. Rodwell (1976, 331, fig. 47) has suggested the existence of an oppidum at the site of the Iron Age hillfort at Chipping Hill, Witham, *c.* 2km north-east of the Ivy Chimneys site. During trial excavations Rodwell found part of a 'major linear earthwork', including an inturned entrance, on the line of the Roman London to Colchester road (Appendix II). He suggests that this earthwork, up to 4m deep (Fig. 154), was part of a dyke associated with the 'oppidum'. Although there is some doubt as to whether Chipping Hill was, in fact, a major centre in the Belgic period, there is the possibility that ditch *F1124* was an internal feature attached to the putative dyke.

The presence of significant quantities of pre-conquest pottery associated with food debris shows that some domestic activity almost certainly took place on the site at this time. Ditch *F1124* appeared to turn to the west at the south-east corner of the enclosure, and was not found by Brooks *et al.* (1976) to continue towards the road: it could not, therefore, have been an extension of Rodwell's dyke, assuming that the dyke was continuous. The ditch was, however, irregular in depth away from its eastern length, and may even have been virtually absent along the southern line of the Iron Age enclosure. The Late Iron Age ditch at Barton Court Farm, Oxfordshire, ranged in depth between *c.* 1.40 and 0.60m (Miles 1986, 4), and it could be that the *c.* 0.50m deep hollow left by Middle Iron Age ditch *F549* along its southern length was sufficient to protect a Belgic settlement within the same enclosed area.

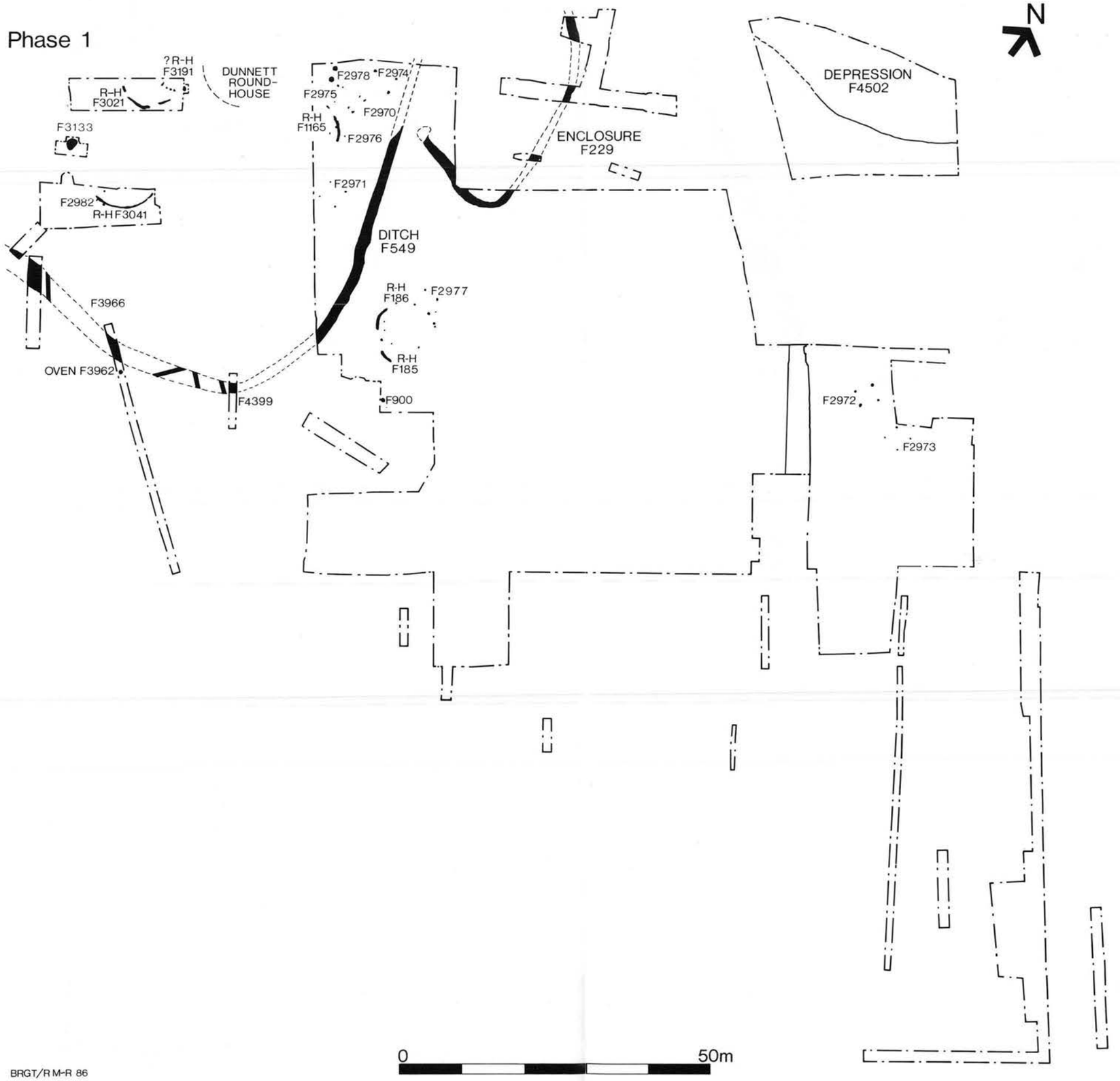


Figure 144 Phase plan: Phase 1. Scale 1:700

Phases 2 and 2.3

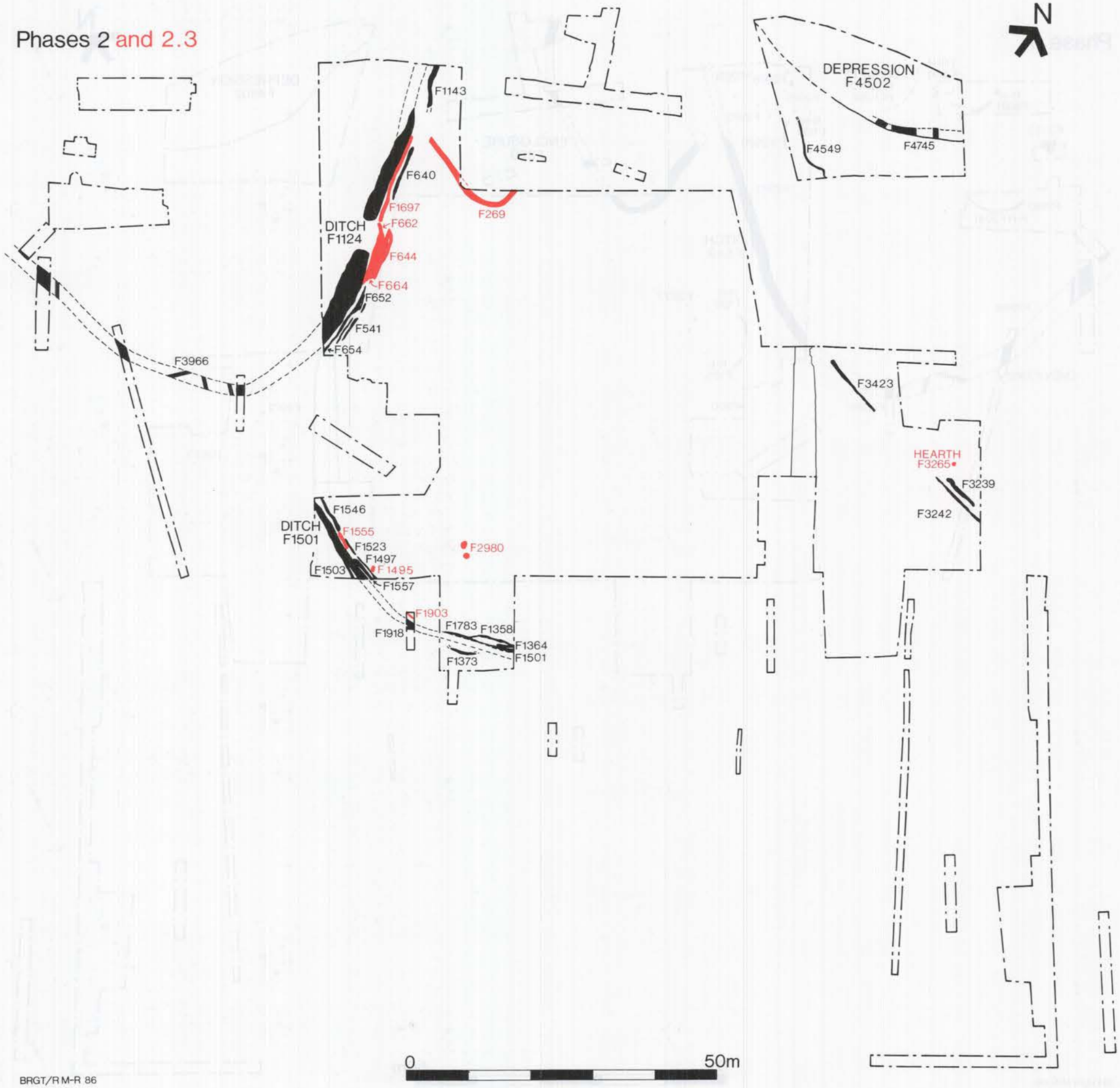


Figure 145 Phase plans: Phase 2 and 2.3. Scale 1:700

?Field ditch F1501

This east-west aligned ditch was much shallower than ditch *F1124*, but would nevertheless have provided a substantial boundary. Ditch *F1501* is interpreted as a field boundary because it extended from the presumed settlement area, but it is possible that the ditch could have acted with the main ditch to form an enclosure to the central area of excavation. However, in this case one would expect to have found more evidence of Belgic activity in this central area, but very few finds were present, even redeposited in the fills of the large Roman depressions (just five sherds in pond *F679* and thirteen from depression *F2409*). Although it is true that the density of Belgic material within the proposed settlement area at the top of the hill was equally small, this paucity may be explained by the fact that no large features in which occupation material might have been found survived in that location.

?Field boundary slots F3242 and F3423

These two slots formed part of a distinctive boundary to the east of the Iron Age settlement area. Iron Age four-post structure *F2973* lay on the same alignment and almost exactly centrally within the *c.* 14m gap between the slots, and it has been suggested that the slots represent the continuation of a previous, archaeologically invisible field boundary.

The shallow nature of these slots and slots of series *F1123* show the poor survival of slighter Belgic features, and help to emphasise that only the deeper features survived.

?Palisade slot series F1123

These curious arrangements of arc-shaped slots appear to be unparalleled, although irregular lengths of shallow ditches are a characteristic of this period. The junction of three separate Early Iron Age palisade slots forming arcs at Staple Howe, Yorkshire (Brewster 1963, fig. 9) is reminiscent of the Witham phenomenon, but is much earlier and interpreted as part of a rampart-like structure which is not feasible at Witham. A more appropriate parallel can be found in the Late Iron Age gullies (*c.* 100 BC) from site 2 at Dragonby, Lincolnshire (May 1970, 232, fig. 5), where some of the gullies were short, shallow, irregular, and curved. The Dragonby examples were even less regular than those from Witham.

Slot series *F1123* appears to have originated in the Belgic phase, but was extended and enlarged in post-conquest times at the point of the break in ditch *F1124* (see Fig. 146). These later slots of the series would have obliterated evidence of Belgic predecessors, and the system may have been complete before the conquest.

The function of the slots is not at all clear. They have been interpreted as palisade slots on the basis of their size and nature, but there is no further supporting evidence. They were clearly intended to follow the lines of ditches *F1124* and *F1501*, and were presumably designed to provide an extra barrier. Why it was necessary to construct such a barrier in short discontinuous lengths is not clear, but this arrangement would have had no advantage over a continuous fence parallel to the ditches, and would have required more labour and raw materials. If the slots did not hold a palisade, then their function as *c.* 0.60–1.00m deep discontinuous gullies is even more difficult to comprehend.

Where survival was good, the slots seem to have been arranged in triplets and may have been contemporary, although stratigraphy shows the Belgo-Roman slots at the entrance to be of different dates and even to post-date the main ditch itself.

The presence of slots of the series along the line of ditch *F1501* probably means that they were not intended purely to enclose the settlement. The slots bowed-out in the direction of the central excavated area as though this was the direction from which a threat might come.

In summary, the slots would not have provided a strong palisade and were not situated in positions where they would have served as effective barriers. In the light of their unusual nature, an non-functional interpretation might even be proposed.

Lack of structures

It has been stated that the absence of structural evidence of occupation of a Belgic site in the region, and indeed in the lowland zone as a whole, is unremarkable. It is clear that structures of this period were built in such a way as to leave no trace on ploughed sites under normal circumstances. At some sites, such as Fengate, Cambridgeshire (Pryor 1984, fig. 18), round-houses survived into the Late Iron Age, but Essex structures of this date tend to be rectangular and of slot construction (*e.g.* examples from Kelvedon; M.R. Eddy, pers. comm.).

There is no direct evidence of Phase 2 structures at Witham, nor is there any indication of their former location, but there is ample material evidence in terms of pottery and animal bone to imply that the site was occupied at this time.

Depression F4502

(Fig. 11)

Few depression fills of Belgic date survived later re-cutting, but the almost total lack of Middle Iron Age fills beneath the Belgic layers suggests that the depression may have been cleaned out at this time. Ditch *F4745* and slot *F5081* ran around the depression edge and appear to have held palisades to revet the depression edges, but too little survived subsequent disturbances for a confident interpretation. The fill of slot *F5081* contained molluscs suggestive of stagnant or slow-running water and periodic drying out: this may reflect the conditions within the depression at about this time.

The continued use of the depression is shown by well *BF5058* and other pits for water collection. This area of natural springs would have provided a clean and reliable source of drinking water. Pits of series *F5082* were still being dug at this time, but these were stratigraphically earlier than most of the Belgic depression fills. The area of the depression was partially surrounded by palisade slot *F4549* in which the stake-holes were clearly visible.

The Belgic economy

The limited available evidence for the period indicates a mixed economy. A sufficient quantity of animal bone was recovered from the Belgic contexts to suggest a change in the pastoral economy. Cattle were still the primary stock animal, but the percentage of pig remains by bone count exceeds that for sheep/goats. Although this might be interpreted as an indicator of a more wooded environment, it is more likely that the pigs were fully domesticated and under the control of the occupants of the site. Evidence for

arable agriculture is present in the form of carbonised cereal remains (Table 62), but is absent in terms of the material culture because of an archaeological bias (few querns, granaries, *etc.*).

A single occurrence of hearth slag from the top fill (*4982*) of well pit *BF5044* suggests some small-scale attempt at iron smelting, although the context was relatively late and may have been post-conquest.

Votive activity and continuity

As in the Iron Age, the evidence for Belgic votive activity is largely circumstantial but nevertheless worth highlighting. Pit series *F5082* within depression *F4502* appears to have extended beyond the Middle Iron Age, and the possibility of the burial of wooden votives has been explored above. A few butchered horse remains were still being deposited and were found in the main ditch *F1124* and depression *F4502*, but these admittedly could be residual.

Cunliffe (1984, 34) has shown that southern hillforts were abandoned or much reduced in size from *c.* 100 BC, but this need not be the case here. Although the subject is developing, our current state of knowledge of Belgic pottery usually precludes the confident dating of sites in the area specifically to the 1st century BC: the manufacture of most early forms is considered to have extended into the 1st century AD. However, since some relatively early forms were present at Witham (see Pottery Report), there seems to be sufficient evidence to propose a continuity of occupation from the end of the Middle Iron Age.

III. Phase 2.3: Belgo-Roman

(Fig. 145)

Introduction

As has been said, features attributed to this phase are dated on the basis of what was tentatively identified as 'romanised' Belgic (Belgo-Roman) pottery. In some cases Roman tile and fully Roman 1st-century AD pottery was present, but the activity was basically native with a minimal Roman influence and could properly be termed Roman Iron Age. The evidence for activity at this time is confused, and no coherent picture has emerged.

Components of the activity

Ditches

Major Belgic ditch *F1124* had considerably silted by the post-conquest period, but would nevertheless have been quite obvious (*c.* 1m deep from contemporary ground level) and must have merged with sinkage over the main Iron Age ditch to produce a wide hollow. The ditch would not have presented a barrier at this stage. The Middle Iron Age stock enclosure was at least partly re-cut during the later 1st century AD: the function of this small new ditch was not evident but it may once again have served in conjunction with other features as an enclosure.

Slots

Slot series *F1123* continued into the post-conquest phase, but only in diminished numbers except for the position of the former Belgic entrance (Fig. 146). Assuming that the dating evidence is adequate and that the earlier slots have been correctly phased, the purpose of these new slots is even less clear than their predecessors: unless many much shallower slots once existed, the Belgo-Roman features did not even form a continuous barrier. At least two of the three particularly large slots at the entrance were stratigraphically non-contemporary, and, in these potentially most informative features of the series, no signs of posts were observed.

Structures

As would be expected, evidence of Belgo-Roman structures was very limited indeed. The only possible candidate, two-post structure *F2980*, exhibited no post-pipes. There was no direct evidence for domestic structures.

Depression F4502

(Fig. 15)

This large depression represents the only area of major Belgo-Roman activity to be found intact. The origin of the depression in the Middle Iron Age and its continued use into the Belgic period has been discussed above, but it was not until the mid-late 1st century AD that the majority of the surviving depression fills were deposited. A substantial re-cut or clean-out probably occurred at this time, but the evidence at the depression edge has been confused by ditches *F4745* and *F4796* which represent the continued drainage or revetment of the marshy depression. The gravelling of the depression presumably allowed access and prevented the formation of mud. The gravel was not, however, thick or close-set, and would not have been effective against trampling by animals. It was presumably laid to provide human access to the few features within the depression at this time.

Within the depression, pit *CF4807* and small pits in Area A appear to have been used for water collection after the Belgic well *BF5058* had been backfilled. The pits were much shallower than the well and would have been much less efficient.

An enigmatic group of features was also present in Area B: ditch *BF4823* and bank *BF5034* and associated slot and post-holes. These are puzzling in that they did not extend into the adjacent excavated areas. Ditch *BF4823* would certainly have been found in Area A had it continued its observed line to the west, but it curved round at the east towards the south as though to join the edge ditches. The ditches could not, however, have been related, since the top of ditch *BF4823* was lower than the bottom of the ditches at the edge of the depression. The ditch would have acted as a sump for the collection, but presumably not for the removal, of water. No sign of bank *BF5034* was found beyond Area B, although this could have extended into an unexcavated area to the west. The 'bank' was formed by cutting into horizontal build-up layers of the depression, and slot *BF4793* within the bank appears to have been lined with wood. This arrangement seems to indicate a wooden leet, carrying water from the west to an undiscovered location to the east, between Areas B and C. The leet was followed by parallel row of post-holes *BF4848* which might represent an internal fence within the depression.

The horizontal nature of the depression fills above the gravel layers probably indicates an intermittent sequence of deposits. The pottery shows that these fills were deposited within a relatively short time span — probably too short for the levels to have silted naturally to this extent. The relative thickness of the layers would support the suggestion of backfilling, although it must be said that some of the layers were quite homogenous. The

depression therefore appears to have been deliberately backfilled in a number of stages within the second half of the 1st century AD. It may, being a boggy place, have presented a threat to livestock, or may have been levelled so that the area could be ploughed.

Finds and economy

A decline in sheep/goat bones in Phase 2 was reversed after the conquest, sheep/goats becoming much more prominent in the small assemblage of this phase. There was no evidence of arable activity, but such evidence is expected to be elusive on a site where pollen did not survive.

For the first time on the site, smithing slag was found in quantity, and the three burnt-edged features (Fig. 146) might have been associated with this activity: they survived only because, in the sinkage of the large pre-Roman ditches, they were protected from the plough by which they would normally have been destroyed.

Overall nature of the activity

As in the Belgic phase, direct evidence of settlement was lacking, but the presence of domestic-type pottery and of a reasonable group of animal bones point to an unenclosed residential occupation. The continued use of the large depression, with its internal features of unexplained function, may hint at further votive activity at this time.

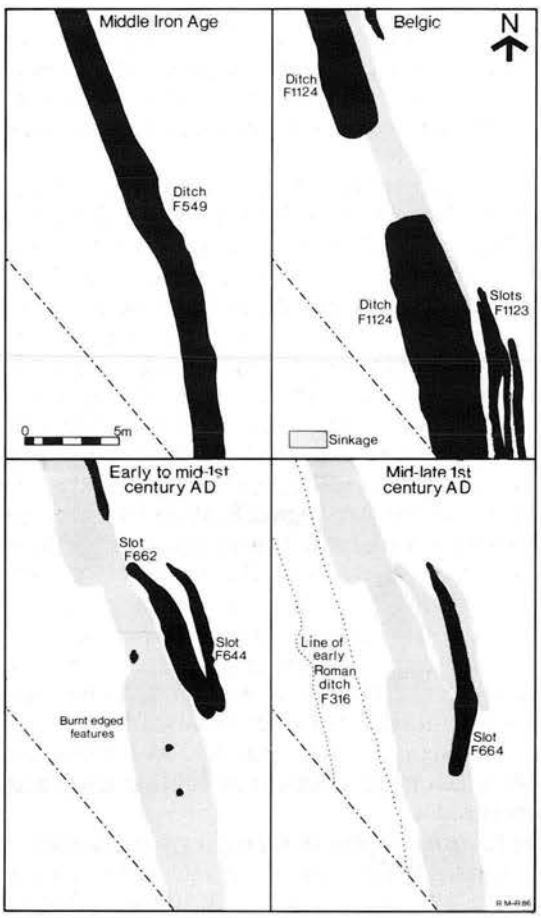


Figure 146 Chronological sequence at the entrance to the Iron Age settlement. Scale 1:400

Votive activity and continuity

Direct evidence for votive activity as such is lacking, although some inferential evidence is present. The most significant finds are of adult cranial fragments in various fills of depression *F4502* and also a fragment from pit *CF4807* within the depression: this small quantity is insufficient to imply the presence of a Celtic head cult. Foetal burial *AF4910* need have equally little significance except for the fact that it was in a small grave. The upper fill of pit *F1495* may also have held human remains, this time cremated.

The remains found in depression *F4502* could be coupled with the enigmatic nature of the features in Area B to hint at a religious use of the depression, but the fact that it was backfilled at this time seems to point away from this interpretation. The nature of the slots outside the former Belgic entrance is also difficult to understand, but they appear to have been part of a previous system of enclosure and cannot be further interpreted.

Only three British coins were found, and only two of these were from 1st-century AD contexts. No extensive deposition of votives, such as that found at Harlow (Fitzpatrick 1985), was present. It is confusing to find that almost all of the brooches from the site were made in the 1st century, but that they were all found in much later, often votive deposits and cannot be related to votive activity in the Belgo-Roman phase. These brooches may have been kept for many years in a similar way to the barbarous radiate coins (see below).

Continuity is implied by the pottery tradition which follows through from prc- to post-conquest with no obvious break. Depression *F4502* and the slots of series *F1123* also continued to be used.

Of particular importance is the lack of significant quantities of early Roman pottery in these 1st-century deposits. The amount of early samian, for instance, is very small indeed, and everything points to a native occupation of the site, with minimal official influence despite the proximity of the busy main Roman road. Fragments of Roman brick and tile occurred in a number of Belgo-Roman contexts and were presumably intrusive or incidental imports from a nearby site rather than implying a tiled structure at Ivy Chimneys at this time.

IV. Phase 3: Early Roman

(Fig. 147)

Introduction

The predominant evidence of 2nd to mid-3rd century AD activity is in the form of enclosing ditches and fences. Only three structures of this phase have been recognised, all enigmatic and difficult to interpret. The instigation of two large artificial depressions, following Belgo-Roman depression *F4502*, may be the most significant event in terms of religious activity at this time.

Components of the site

Enclosing ditches and fences of Phase 3 and Phase 3.7

In the 2nd century the site was extensively enclosed by a series of ditches of widely varying character. In the light of the lack of any direct evidence for early Roman settlement and of the various votive activity on the site, these features are interpreted as the *temenos* of the site of an early Roman shrine or religious place.

The largest of these features was ditch *F316* which assumed the approximate line of the still visible Iron Age and Belgic ditches at the west of the excavated area (Fig. 52). A similar continuity was observed in the location and nature of the Late Iron Age, early Roman, and later Roman *temenos* at Lancing Down, West Sussex (Bedwin 1981, 41). Ditch *F316* was much more substantial than would have been required to confine stock, and it seems likely that it had an enclosing function unassociated with agriculture or domestic settlement. The ditch formed the west side of a trapezoidal enclosure in conjunction with ditch *F738* to the north and ditch *F1354* to the south. Although ditch *F1990* was present at the east end of the north ditch, it did not continue to the south and could not have played an effective enclosing function within the proposed arrangement. No alternative east side was identified, despite the considerable likelihood that such a ditch would have been picked up in the various exploratory trenches and watching briefs. It was found that southern ditch *F1354* terminated the same distance (*c.* 70m) east of ditch *F316* as northern ditch *F738*. It was at that point that ditch *F1990* extended from the northern ditch. Roman ditches of indeterminate date have been included with the plan of Phase 3, and may well have functioned in association with the enclosing ditches under consideration.

The considerable differences in dimensions of the proposed *temenos* ditches is slightly worrying, but their broad contemporaneity is indicated by sufficient ceramic evidence, and it is assumed that they were to some extent dug piecemeal rather than the enclosure being planned as an entity. An association is further indicated by the fact that the two east-west aligned ditches were symmetrical about the central axis perpendicular to the main ditch. There are a good number of temple sites where the *temenos* is irregular and slight, for example Wood Lane End, Hertfordshire (Neal 1984, fig. 1) and Pesch, Aachen, Germany (Lehner 1919) where the trapezoidal *temenos* was represented by a fence.

In association with structure *F181*, incomplete fence *F1228*, parallel to ditch *F316*, extended between the north and south ditches approximately half way along their total lengths to form two internal areas. Depression *F2409* and structures *F181* and *F182* lay within the eastern, open-ended part of the area. Although ?temple *F731* (Phase 4) lay within the western area, dating based on evidence from just two of the post-settings places the structure just beyond Phase 3. Even if the surviving evidence of structure *F731* dates it to Phase 4, there are instances where an ambulatory was appended to an earlier *cella* (*e.g.* at Trier; Gose 1932, bau 30 and 41).

Palisade slot *F1181/F344* clearly followed the line of ditch *F316* and may have been contemporary — conceivably acting to revet a large external bank. Within the enclosed area, fence *F187* at right angles to fence *F1228* appeared to be discontinuous.

The early 2nd-century Phase 1 temple at Harlow was enclosed within an incomplete fence of large post-holes and a palisade slot, and included an internal division between the temple and the altar area (France and Clark 1985, fig. 18). At Gosbecks, Colchester, the *temenos* area was similarly sub-divided but on a larger scale (Crummy 1980, fig. 11.3) and may even have been incomplete. Other similar parallels lead to the conclusion that an irregular-shaped, incomplete *temenos* with an internal division is a reasonable possibility.

Ditch *F1594*, perpendicular to and contemporary with ditch *F738*, continued the line of fence *F1228*, and was initially thought to have carried water from the area of natural springs to the north. The discontinuous nature of ditch *F1594*, however, calls this into doubt, and the fact that ditch *F738*, which would have directed the water downhill, terminated before reaching any suitable destination also argues against a water-carrying function for either of these features.

Structures

The most conventional Roman structure of this phase was L-shaped building *F182* (Fig. 24). The west wall of *F182* was on an identical line to fence *F1228*, and the two features were probably contemporary at some stage. The building provided no evidence of its function other than that it was of irregular construction, with shallow post-holes, and may have been relatively flimsy.

Trapezoidal structure *F181* (Fig. 25) was extremely unusual and may not have been a building as such. It is difficult to imagine the form this arrangement might have taken. Although the dating evidence seems to indicate non-contemporaneity with the structure, slot *F1001* (Phase 4) was identical in nature to the other two slots of *F181* and has been included with the plan of the structure. As with L-shaped building *F182*, fence *F1228* appears to have been an integral part of the trapezoidal structure, the line of the fence continuing to the north with slot *F2846* and its associated post-holes (Fig. 25). Roman four-post structure *F2981* (Fig. 25) likewise lacked evidence of its function, and gave no clues about the activities which occurred within the enclosed area at this time. Roman four-post structures elsewhere have tentatively been interpreted as granaries (Morris 1979, 31). Both structures *F181* and *F2981* were sealed by gravel *93* of depression *F2409* and lay within the depression area: they thus belong to the earlier part of Phase 3. Unless integrated in some way, both structures could not have existed at the same time.

Depressions

There is no way of telling whether depression *F2409* (Fig. 45) was present before gravel *93* was laid in the early to mid-3rd century. The bulk of the pottery from the gravel was earlier Roman, pre-dating the mid-3rd century, but a small proportion of later 3rd-century pottery was also present. The gravel was either laid in the early 3rd century and contaminated by trampled material of slightly later date, or, less likely, it might have been deposited in the late 3rd century and contained residual material. It is maintained that gravel *93* was laid within the depression during the earlier part of the 3rd century. The Palaeolithic hand-axes within the gravel may be combined with other circumstantial evidence (see below) to suggest that votive activity took place on the site at this time, and the function of part of depression *F2409* as a pond is seen as associated with this activity. There are numerous instances of ponds on Roman religious sites both in Britain and on the Continent. Examples of paved ponds were found at Woodeaton, Oxfordshire (Goodchild and Kirk 1955, 17) and Farley Heath, Surrey (Winbolt 1927, fig. 2). In both cases the ponds were a considerable distance from the associated temples, but many continental examples were

adjacent to temples. The temple at Belbèze-en-Comminges, Haute-Garonne, France (Manière 1967, fig. 2) was built next to a spring which was turned into a small ritual pool. At Witham, ditch *F1028* and its delta of ditches may, by means of wooden leets, have directed water from the springs to the north of the site into the pond area of depression *F2409*. Slots of this sequence were sealed by gravel *93*, suggesting that the depression was extant as a pond before being gravelled.

The earliest use of depression *F3321* does not seem to have been associated with water. The early gravel within the depression was generally removed during later activity, but enough survived to show that it had probably been laid down for human rather than animal access, in a similar way to Springhead, Kent (Penn 1961, 114) where a large area was excavated in Roman times in order to make a shallow depression bottomed with a spread of deliberately laid clay. A layer of gravel was also found beneath a later phase of Springhead temple I (Penn 1960, 3), and was found to contain votive material. Gravelled areas have been found on a few other Romano-Celtic temple sites, but have probably been destroyed by ploughing on numerous other examples. There is, however, no real evidence of the activities which took place on the gravelled areas. Many votive objects have been found within or upon the gravels, but these finds could have resulted from unassociated activity. The gravelled depressions and areas may have been used as congregational places or as the sites of fairs or markets, but these explanations do not take into account the fact that many of these areas were within depressions rather than relatively flat areas. An alternative explanation may be that some object of veneration was present within the gravelled hollows.

Field ditches and ploughmarks

The group of small ditches in the east part of the excavated area may have functioned as field boundaries, reminiscent of the arrangement at Dunston's Clump, Nottinghamshire (Garton 1981) where a sub-rectangular system *c.* 50 by 65m had a wide corner entrance. Further evidence of agricultural activity comes from the Roman ploughmarks *F5263* (not shown on phase plan) which were similar to 1st-century AD examples from Newhaven, Sussex (Bell 1976, 248–50). Like the Witham marks, those at Newhaven were flat bottomed and of irregular width; indeed the marks from both sites were unlike the narrow, regular, V-shaped profile features which might have been expected.

Finds and economy

The presence of what appear to be field ditches and of ploughmarks (of indeterminate Roman date) suggests that the site partly maintained an agricultural function at around this time. This presumably mixed economy was probably controlled from a farmstead off site, since no evidence of farmyard buildings was found, unless *F182* is considered to have served this function. Small-scale iron smithing continued during the early Roman phase.

Religious activity and continuity

The discussion of this phase has been influenced by an implicit assumption that at least part of the site was used for votive purposes. This has partly been due to the presence of unequivocal later votive activity, and partly because of the presence of unusual features and finds. Of these, the Palaeolithic hand-axes are discussed in full elsewhere in the report (Turner and Wymer 1987; reproduced in Fiche), and there is little doubt that their presence signifies some unusual and probably votive activity. Apart from a number of relatively small deposits of marine mollusc shells and very occasional bronze objects, the expected profusion of *ex votos* found on Roman religious sites was absent. Surprisingly, this is the situation on many British Romano-Celtic temple sites in use in the 2nd and early 3rd centuries, such as Wood Lane End, Hertfordshire (Neal 1984, 208) and Harlow (Gobel 1985): at both of these sites there was a distinct paucity of votives and coins of this time, yet a continuity of religious activity is postulated. The work of Richard Reece (*e.g.* 1980) has shown that the 2nd century coin supply was very considerably less than that of the later 3rd century onwards, and this is coupled with a decline in the availability of brooches after the *floruit* in the 1st century AD. If these two major sources of votives are removed, then the residue of personal ornaments, *etc.*, might more easily be overlooked and their presence should be given more weight. Apart from the hand-axes there were so few obvious votives from this phase that a religious function in the usual sense might be cast into doubt. One must, however, be mindful of the writings of Gregory of Tours where it is noted that offerings of such things as cloth, bread and cheese were made into the waters of a lake (*In Gloria Confessorum, Cap 2*). Such offerings would only survive in exceptional conditions, and serve as a reminder of the bias in the archaeological record. The lack of surviving votives in the pond within depression *F2409* and over the early gravels of that feature and of depression *F3321* may be more apparent than real. The construction of such features would be most unusual in a domestic context, whereas the occurrence of ponds and gravelled areas on religious sites has already been highlighted. Depression *F4502*, which was perhaps used for religious purposes in the pre-Roman period and lay over the site of natural springs, was the perfect location for a local water cult, and the shift in focus to a new pond in depression *F2409* may represent the continuation of similar practices in Roman times.

It has been shown that a combination of certain ditches could have formed a reasonable *temenos* area, comparable with other sites, and showing a degree of continuity with pre-Roman features (*cf.* Lancing Down, West Sussex; Bedwin 1981, 41). The *temenos* thus defined would have enclosed depression *F2409* in its eastern part, but the western area seemed devoid of features of this date. The post-hole structure (?temple *F731*) of the subsequent phase filled this gap, but would, like the depression, have been off-centre. There are many examples of temples in non-central positions within their *temene*, and the consensus of opinion is that some other feature was present within these enclosed areas before or when the temple was built (Wightman 1970, 219). Wilson (1973, 33) has suggested the presence of sacred groves on some sites, although there are a number of alternative features which could have had the same effect and likewise leave no archaeological trace. Although they are always difficult to identify unless there is more tangible later activity, the existence of shrines without associated structures is well known and of considerable importance to the origins and development of Romano-Celtic religion: Stambaugh

(1978, 557) points out that the Latin word *templum* means a piece of land set aside for religious purposes, and did not originally specifically refer to a building, more properly the *aedes* (*i.e.* house). It may not therefore be wholly inappropriate to consider the possibility that the Phase 3 Witham site was a local shrine, but lacked an actual temple building.

The animal bones from Phase 3 may contribute to the weight of evidence for votive activity. An undue proportion of the cattle bones are of waste rather than meat areas, showing either that this was a butchery site or that less useful parts of animals were brought to the site for some purpose. Several deposits rich in sea shells may also be significant: oysters and other marine animals may have played some part in religious activity (*cf.* Chanctonbury Ring, West Sussex; Bedwin 1980, 177: and Hayling Island, West Sussex; Downey *et al.* 1979, 15). The sea shells at Hayling Island were in some cases deposited by species, while a hearth within the *cella* of a temple at Springhead, Kent was found to contain cockle and mussel shells (Penn 1960, 6). Conspicuous deposits of shell were found in ?field ditch *F3230* (oyster and mussel) and in ?inlet ditch *F1028* (mussel).

The pottery sequence shows a general continuity from the later 1st century AD into Phase 3, and the practice of butchering horses appears to have been maintained. There is therefore no reason to suspect a break in occupation from the Iron Age to the late Roman period.

V. Phase 4: Later 3rd century

(Fig. 148)

Introduction

The principal feature attributed to Phase 4 is structure *F731* which may represent traces of a timber-framed Romano-Celtic temple. It must be emphasized that the suggestion that this group of post-holes was part of a temple is not central to the interpretation of the rest of the site as a religious focus: other evidence, particularly from the latest Roman contexts, puts this beyond reasonable doubt. Structure *F731* lay within an area enclosed by various ditches, some surviving as mere sinkages over features of previous phases. A large pond of considerably greater proportions than the Phase 3 feature within depression *F2409* was constructed at about this time and was serviced by a series of inlet and outlet ditches. Other features of interest are cobbled depression *F1925* which may represent the vestiges of a structure, and two very substantial isolated post-holes which might indicate the locations of large timber columns.

Apart from the post-settings of structure *F731*, very few contexts were dated specifically to Phase 4. The pond and associated features, depression *F1925*, and the remnant and new ditches could all date from the early 4th century and are therefore elsewhere attributed to Phase 4 or 5 (*i.e.* Phase 4–5). The paucity of finds-bearing contexts is reflected by the small number of finds, resulting in some difficulty in the interpretation of the significance of the artefacts.

Components of the site

Enclosures and ditches

Ditch *F316* had largely filled up by the later 3rd century, but was probably re-cut to a depth of about 1m from contemporary ground level. Ditch *F738* was also re-cut at about this time by ditch *F823* along the same line. A new ditch, *F4403*, was created to the south of structure *F731*, and formed, in conjunction with fence *F1228* and the two other ditches, an enclosure in which the structure was centrally contained. Several other ditches were open or dug at this time, but no coherent pattern could be discerned.

Possible temple structure F731

On the most basic level very little can be said with confidence, but there are a number of clues as to the function of this structure.

To summarise the available evidence:

1. The structure consists of a group of obviously related large post-settings, many containing evidence of posts of very large proportions;
2. Only two and a half sides of the structure survived;
3. The post-settings became larger the further downslope they were situated;
4. The fills contained little material, but a later 3rd-century date seems likely.

The first salient point is whether this arrangement actually represents a building. The large size of the post-settings used indicates that the posts were meant to carry a great weight or were designed to look impressive. Such posts would not be required for an ordinary fence, neither could the features observed combine to perform an enclosing function: furthermore, such mundane interpretations do not account for the increasing depth of the post-settings. Despite the slightly irregular layout of the surviving features, there is a possibility, being on a religious site, that the arrangement represents part or all of an artificial sacred grove. Sacred groves and forest sanctuaries are often mentioned in Classical literature with respect to the Celts (Green 1976a, 3), and a possible example was found at Haddenham, Cambridgeshire (Evans and Hodder 1984). The Haddenham feature was a *c.* 22m long range of posts forming a west and south side only. The range was aligned east-west and contained a small timber *?cella*.

Perhaps the greatest objection to interpreting *F731* as a building is its incomplete plan. It can be demonstrated that this was in part due to the nature of the slope and of the disturbed ground into which some of the post-settings were dug, but the almost complete lack of post-holes along the south side could have been deliberate: the Romano-Celtic temple at Chanctonbury Ring, West Sussex, had no outer wall on its east side (Bedwin 1980, 179). However, this is an isolated instance, and it is highly unlikely that the *c.* 18m gap between the east and west walls could have been bridged by a roof structure. A possibility is that these were the posts of a timber colonnade providing a roofed corridor round most but not all of a *cella* or ambulatory, but it seems more likely, at least at Witham, that the post-holes simply did not survive. This is surely the case for the '*temenos*' fence round the phase 1b temple at Harlow (France and Gobel 1985, fig. 18), which was also composed of very large posts but only survived intact on two sides. A series of widely spaced post-sockets parallel to the east and west sides of the temple at Maiden Castle, Dorset, may have had a similar function, although the phenomenon was interpreted as a fence (Wheeler 1943, 74–5, fig. XXII). The original completeness of the plan at Harlow is indicated by the subsequent stone replacement of the timber arrangement.

Phases 3 and 3.7

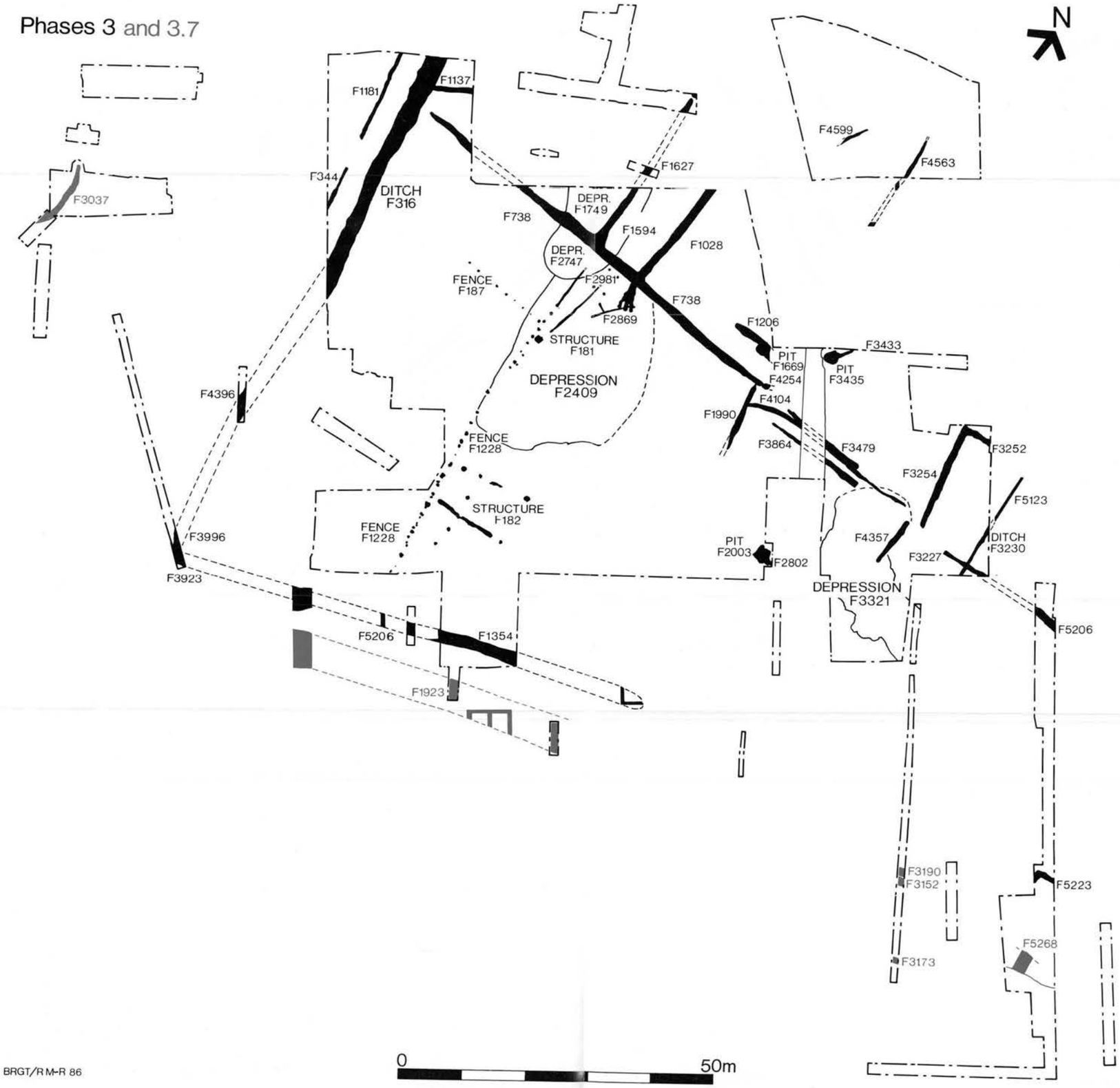


Figure 147 Phase plans: Phase 3 and 3.7. Scale 1:700

Phase 4

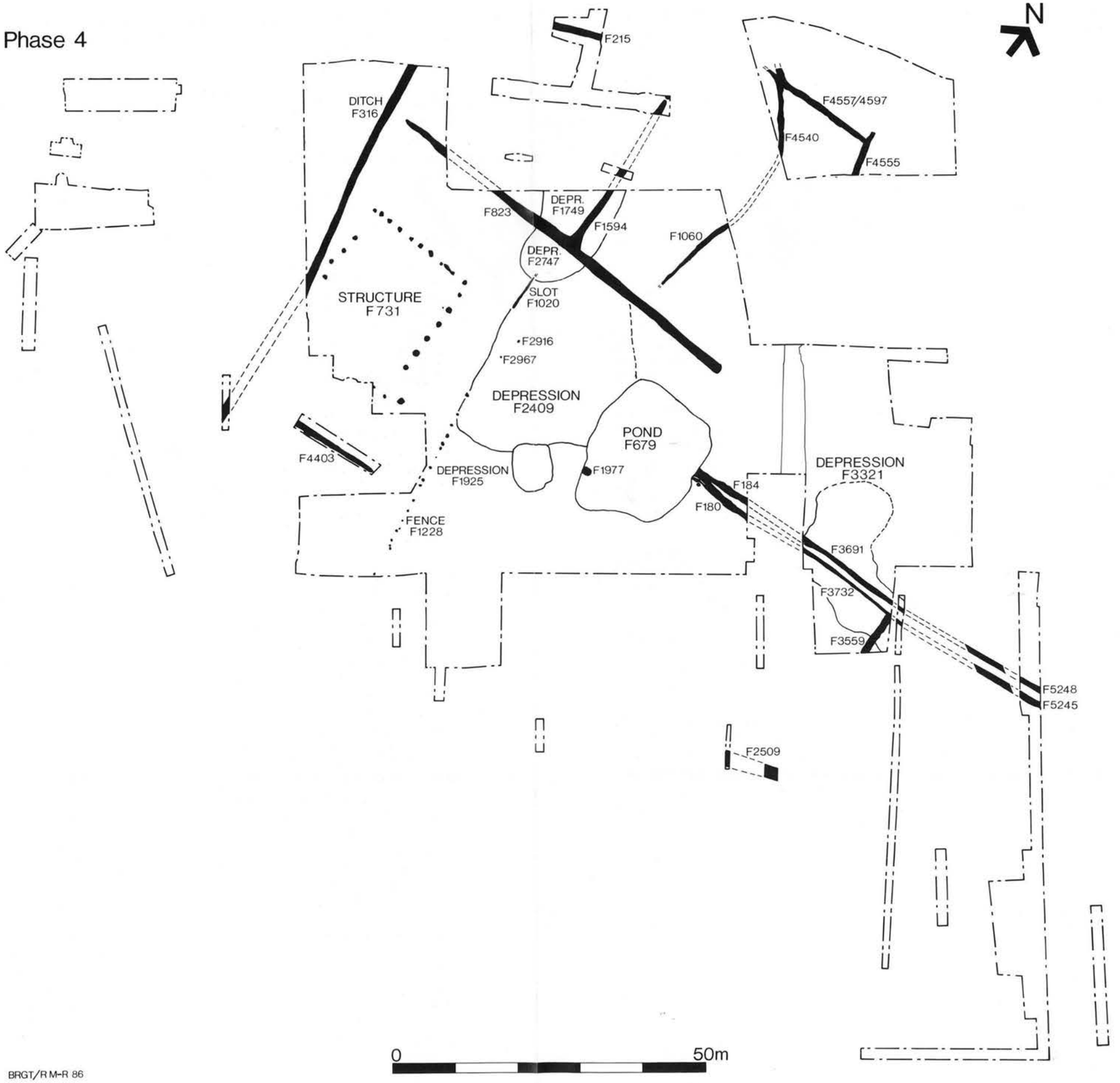


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Figure 148 Phase plan: Phase 4. Scale 1:700

The Harlow post-settings provide an alternative '*temenos*' explanation for the Witham structure, but neither could have been *temene* in the usual sense, and are more likely to have been timber colonnades if not actually integral to the temple structures. The timber ambulatory at Godmanchester temple 2, Cambridgeshire (Green, H.J.M., 1986, 30, fig. 3) provides a very useful parallel, where the timber-framed *cella* was originally freestanding but was later surrounded by an ambulatory of widely-spaced timber uprights.

There are, however, other factors which must be taken into account at Witham, most important of which are the increasing depth of the post-settings downhill and the symmetry of the post-pit dimensions (Fig. 34). It has already been suggested that the increased depth of the post-settings of the north wall and the considerable depth of the east wall might have been designed to strengthen those walls against the lateral pressure of an earthen podium. Wilson (1980, 8) notes that many Romano-Celtic temples were raised above ground level, in which case the outer wall would need to be quite substantial. Some British podia were as much as 2m high, while sometimes (*e.g.* Hüttenböschen, Glarus, Switzerland; Horne and King 1980, 420–1) a foundation platform was the only feature to survive. The presence of a podium would neatly explain the lack of internal features at Witham; the *cella* foundations, as in many Romano-Celtic temples, could have been very light. At Springhead, Kent, for example, the temple II *cella* walls rested on tiled plinths (Penn 1963, 112); the *cella* at Stuttgart, Nordwürtemberg, Germany, was similarly timber-framed on stone platforms (Bersu 1922, 118, abb. 1); and at Colchester temple 5 the *cella* was represented by a sleeper beam only *c.* 0.30m deep (Wilson 1980, 14). Wilson (1980, 8) notes that steps leading up to the podium were normally no wider than the *cella* (*i.e.* usually half the length of the ambulatory wall), and it is instructive to note that the deep central post-settings of the east wall of the Witham structure covered just over half the length of the wall (Fig. 34). Evidence of a timber *cella* could easily have been removed on the destruction of an earthen podium.

If there were a temple structure of Romano-Celtic form at Witham, then its destruction, collapse or demolition might have been expected to produce substantial amounts of debris. There are a number of ways in which such debris could have been dispersed without trace. Most important is the fact that very few contexts of this phase were found, much reducing the chance of finding building rubble, and those contexts which did survive in this area were often small and unlikely to produce such material. The position of best potential for finding this debris would have come from the sinkage areas along the west side of the structure, but these would have been less pronounced at the time, and would also have been filled with podium material rather than rubble.

In order to assess the nature of the structure, we must try to envisage the materials used in its construction. A tile roof, for instance, would have produced a great deal of debris, and so this might be ruled out unless the tiles were very carefully collected and re-used elsewhere. A thatched roof would have been equally viable, especially considering the weight advantage in such a large structure, and this is paralleled by a sandstone model of a temple from Titelberg, Luxemburg (Wilson 1975, 8). Although tiled or tessellated floors were common in temples, Springhead temple I phase A had a clay floor (Penn 1960, 4), and the continental evidence shows that floors of pebbles, chalk, or beaten earth were common (Horne and King 1980). The walls of structure *F731* were clearly framed with timber, and were presumably infilled with wattle and daub. A considerable amount of daub would therefore have been used, but this debris would soon have been reclaimed by the soil after the walls had collapsed. Although precariously based on negative evidence, it is possible to envisage a timber-framed wattle and daub temple on an earthen podium (see front cover), with a thatched roof, only the post-settings of which need have been evident in the archaeological record.

If a complete rectangular plan for structure *F731* is considered, then it would have had certain features in common with other Romano-Celtic temples: the building would have been aligned with the compass; the two pairs of very deep post-pits might indicate eastern entrances; and there is some evidence for a podium. The location of the structure on top of a slight hill is also common in Romano-Celtic temples which were thereby situated nearer to the heavens (Wightman 1970, 220), while its proximity to the main London to Colchester road would have made the building a landmark for travellers (*cf.* Wood Lane End, Hertfordshire; Neal 1984, 208). The location of the site may ultimately have been dictated by previous native religious activity, and this is supported by the fact that the site does not appear to have been associated with a Roman settlement other than the thinly scattered ribbon development along the main road (Rodwell and Rodwell 1985, 66–8, fig. 49).

There are numerous parallels for Romano-Celtic temples with timber walls, indeed Wilson (1980, 7) has recognised that this was the prefect medium to create a colonnaded portico. When Penn (1960, 4) was presented with the possibility of timber walls in the slight foundations of temple I at Springhead, he discounted this because of the lack of nails nearby. Large numbers of nails were also absent from the Witham structure, but these may not have been required if wooden pegs were used: it must be remembered that the Roman carpenter was a master craftsman, comparable with his medieval counterpart, and timber structures would often have been as impressive as masonry ones. Indeed, it is often overlooked that many buildings on masonry foundations were in fact timber-framed above ground. Neither should the large size of the Witham structure cause concern, since although it was comparatively substantial, several other Romano-Celtic temples were equally large or even larger. The northern temple in Insula XXX at Silchester, Hampshire (Boon 1974, 155), measured *c.* 25 by 11m, and was raised 2m above the Roman ground surface: Lewis (1966, 20) suspected this temple of having a timber superstructure. The temple at Aeschi, Solothum, Switzerland, was very large indeed, at *c.* 28 by 22m, with a *c.* 12.5 by 10m *cella* (Horne and King 1980, 420–21).

In conclusion, there is no denying that the features of *F731* represent a large structure of some form (see front cover). If this were a building, then it is best interpreted as the ambulatory wall of a Romano-Celtic temple, probably with a concentric timber *cella* based on an earthen podium. The building may have had a double eastern entrance, presumably with steps leading to a podium floor of beaten earth of similar material. The ambulatory walls might have been completely open, while the *cella* walls may have

been infilled with wattle and daub and roofed with thatch. The main factors thus defined are basically represented at the much more elaborate Temple of Janus at Autun, Saône-et-Loire, France (Lehner 1919, taf. 30). Although it is possible to build to the highest standards in timber, the materials envisaged at Witham would not have created a structure of particular splendour. The outcome would nevertheless have been imposing, but of local importance: the votive finds of other phases are also fairly ordinary, and the site has always been seen to have a native rather than official status.

Depressions

Early Roman depression *F2409* was certainly extant in the later 3rd century, as attested by trampled ceramics of this time within gravel *93*, but the Phase 4 depression fills themselves were probably all destroyed during cleaning out in Phase 6. Depression *F3321* also appears to have been open but was also cleaned out at a later date.

One of the most remarkable features of the site was instigated in the later 3rd or perhaps early 4th century. Pond *F679* (Fig. 30) was a very large feature containing over $100m^3$ of stratified fills. The pond appears to have been constructed from new in Phase 4 or 5, but the lie of the land suggests that it may have replaced a previous boggy area. The paved ponds at Woodeaton and Farley Heath have already been considered (p. 238) and the presence of ponds on Romano-Celtic sites, particularly on the continent, has also been mentioned.

Molluscan and fish remains from outlet ditch *F180* shows that from an early stage the pond held fresh running water, to a maximum depth of *c.* 0.80m. Water was provided from the area of springs to the north of the site, but only one ditch (*F1060*) of this date was found which could have undertaken this function. In contrast, an elaborate series of outlet ditches was present at the east side of the pond. The earliest of these appear to have been possible ditch or sump *F1917* and slot *F1774* (Fig. 32). There is little doubt that the slot was wood lined, and it may have served as a by-pass to the main outlet ditches *F180* and *F184* (Fig. 33, A). Later re-cuts of Phase 6 or 7 obliterated evidence of the mechanism of water management, but a system of wooden sluice gates is most likely. Exactly why the water level had to be regulated to this extent is not clear, but from the relative levels of the ditch bottoms it can be calculated that if ditch *F180* was fully open then *c.* 0.40m of water would have remained in the deeper parts of the pond. This may be a misleading figure, since the pond bottom was extensively modified in the mid-late 4th century, and full drainage might have been possible at this earlier time, presumably to assist in regular cleaning to maintain the freshness of the water. The only surviving fills of this time were behind the Phase 6 revetments, and a large volume of Phase 4 or 5 fills must have been removed. Since they were not identified during the excavation of other features, these displaced fills were presumably spread over the contemporary surrounding ground or, considering the rich organic content of pond silts, may in part have been used for fertiliser.

To the south of the pond and depression *F2409*, shallow gravelled depression *F1925* and slightly later depression *F1888* may represent either the foundations of a timber-framed structure or perhaps a yard or courtyard surrounded by a building. The latter suggestion is probably more convincing in view of the rough nature of the secondary surface of crushed and broken tiles separated from the underlying gravel by a layer of make-up soil. The large number of nails in the vicinity could have come from an associated structure. The initial surface may have been cut into the natural in order to equalise the ground level with the pond and depression to the north.

Substantial post-settings

Isolated post-pit *F1977* at the south-west corner of the pond would have held a massive timber post, and the possibility that it represents a timber Jupiter column or totem pole is considered elsewhere (Turner and Wymer 1987; reproduced in microfiche).

Overall nature of the activity

The inclusion of *F4403* in the arrangement of ditches would have provided a better balanced enclosure for structure *F731* than the *temenos* postulated for Phase 3. There is no real evidence for domestic activity at this time, and features like structure *F731* and pond *F679* are large enough to indicate something out of the ordinary. Although the number of possible votive objects of this phase was small there are mitigating circumstances, and there is a reasonable case for a religious interpretation.

Whether structure *F731* represents the ambulatory wall of a Romano-Celtic temple with a portico, the *temenos* around a shrine, or part of a sacred grove is not clear, but these seem to be the most likely interpretations of the limited available evidence. The construction of a very large-scale feature like pond *F679* also demands an extraordinary explanation. The association of post-pit *F1977* with the Phase 3 hand-axes of depression *F2409* and of depression *F3321* in Phase 5 could be more apparent than real, but there is ample evidence of freestanding columns with religious functions on other sites.

Comments on the artistic reconstruction painting

The watercolour reproduced on the front cover was commissioned for display in the refurbished 'Temple Bar' of the local pub, and is based on the author's early interpretation of the results of the archaeological excavations. The scene attempted to represent the site in the late 3rd century AD, as viewed from the north-east, and is based on preliminary dating, some of which was later revised: an indication of the reinterpreted results is therefore appropriate.

Phase 4 features

A good number of the features shown are still considered to be of late 3rd-century date (Fig. 148), and the representation of the temple (*F731*) remains a favoured interpretation. The pond (*F679*) is also thought to be of this date, although the revetting is now thought to be later. The pond inlet comes in from the north (*F1060*), through depression *F2409*, while the paired outlet ditches (*F180* and *F184*) run through depression *F3321* to the east. In the north-east corner of the enclosed area is the representation of a sacred grove, while a Jupiter-Giant column is shown at the edge of the pond in the position of post-pit *F1971*.

The Roman road from London to Colchester is shown at the top of the scene, with a conjectural track coming off towards the religious area. One enclosed field is shown,

with a few cows grazing. The fence between the temple and the pond is an amalgamation of fence *F1228* and slot *F1020*, and shows a double entrance to match the twin doors of the *cella*.

Rephased features

One of the main changes in dating has been the arrangement of ditches and fences to provide a *temenos*, and most of these features in the reconstruction have been re-dated to Phase 3 (Fig. 146), including fences *F181* and *F344* to the west of the temple. To the north of the temple, kiln *F278* and associated shed *F944* are now thought to have been slightly later than the temple, although some contemporaneity is not out of the question. To the south of the temple is a midden, implied by the build-up of Phase 4 artefacts found in Phase 7 contexts, but it is now thought that this material was probably built up in Phase 7. The 'trinket-seller's hut' just outside the south-eastern corner of the enclosed area is implied by the reuse of coins no longer in circulation, and by the personal ornaments which had been cut into convenient segments, but again relates to material found in late 4th-century contexts.

VI. Phase 5: Early 4th century

(Fig. 149)

Introduction

The site does not seem to have been enclosed at this time, although this is the first phase where sufficient coins and personal objects were found to indicate the deposition of *ex votos*. Despite its enigmatic nature, there is good reason to suspect that apsidal ditch *F3203* represents part of a structure which may have had a religious function. Adjacent depression *F3321* contained votive material and may have been used for religious ceremonies, while pottery kiln *F278*, *c.* 50m from the new religious focus, may have had a conventional function.

Components of the site

Enclosing ditches

Most of the earlier ditches had filled up by the beginning of the 4th century, but would have survived as clearly visible sinkages. The only indication of new work at this time was Phase 4 or 5 ditch *F823*, a complete re-cut of ditch *F738*. Ditch *F823* led from the infilled early Roman ditch *F316* to the west, towards the middle of the west side of apsidal ditch *F3203*. It is quite likely that some surface water would have collected in ditch *F823*, and this would have run downhill to the east. The means of disposal of this water or even its destination are not clear.

Apsidal ditch F3203 and associated features

Ditch *F3203* (Fig. 37) might better be termed 'sub-rectangular' since its apsidal eastern end was of a very wide arc rather than the virtual semi-circle more commonly associated with apses of the Roman period.

Although there are arguments against the ditch itself representing the foundation trench of a timber building based on timber beams, the presence of beam-slot *F3644* from the earliest phase must be taken into account. The ditch could not have served as a stock enclosure; the south-east part was so shallow that this function could not have been viable. The beam within slot *F3644* appears to have been only *c.* 0.10m wide in the north-east corner, and could not at that point have held the weight of a substantial building, but evidence further along the north wall suggests the presence of a wider beam, up to 0.25m: slumping after removal of the beam might account for its narrowness in places. The sandy bedding and horizontal laid tiles under the slot leave little doubt that the ditch was specifically dug in order to carry a wooden beam. The internal features within the ditch, although badly disturbed, probably represent additional weight-bearing supports of the proposed building, and areas of debris within Phase 6 fills of depression *F3321* suggest the possibility of a tiled roof.

There is a chance that, rather than a timber beam, slot *F3644* housed a lead or wooden pipe for water drainage. Ditch *F823* would have drained into this general area, but this arrangement does not provide an efficient means of water disposal since the easiest solution would have been to divert the water before it reached this area, and even if the route round ditch *F3203* were preferred there would be no advantage in encircling the area when a single course around the south side of the ditch would have sufficed.

Along the north wall at least, the slot must have held a beam capable of withstanding considerable weight and might have borne the superstructure of a substantial building, especially if supplemented by internal supports. A feature of the ditch was that, although on a natural slope of *c.* 0.60m, the bottom of the ditch was horizontal and level. The need for a level bottom might be explained by a prefabricated timber structure of sleeper beam construction, which would require either a flat platform or a modified surface to make it level. There are objections to this interpretation, most notably the very fact of burying a sleeper beam would have led to rapid deterioration: the sleeper beam construction of many Roman granaries and the earthen setting of posts in a variety of buildings both show that Roman builders were not averse to earth-fast construction techniques. Secondly, even if a structure were prefabricated, relatively little effort would have been involved in adapting it for construction on a slope, although some difficulties might be encountered unless craftsmen were available to assist.

To support the suggestion that ditch *F3203* represents the sleeper beam-slot of a large timber building, parallels must be sought. Very few sites have produced comparable features, and where similar ditches or buildings have been found the evidence of their functions is often inconclusive. Three cases of broadly comparable ditched enclosures, all on non-religious sites, have been interpreted as stock enclosures. A sub-rectangular ditch of the later 1st century AD at Orton Hall Farm, Cambridgeshire was *c.* 21–22m long by 11–12.5m wide, with a *c.* 0.50m deep and 0.75m wide ditch (D. Mackreth, pers. comm.); at Primrose Island, Stifford Clays in south Essex a possibly Roman sub-rectangular enclosure *c.* 28 by 18.5m was aligned east-west and had an eastern 'apse' (Turner 1989); while enclosure 67 at Wendens Ambo, Essex (Hodder 1982, 12–15, fig. 13) was *c.* 19 by 14m, with a *c.* 0.30–0.40m deep, 0.80m wide ditch. Hodder has suggested that the early to mid-2nd-century Wendens Ambo enclosure was too large to be a building or building drain.

Other parallels which should be borne in mind are *scholae*. These apsed buildings are seldom as large as the Witham structure (*e.g.* Corbridge, Northumberland *schola* 2 at *c.* 15 by 6m, with the apse to the west; Lewis 1966, fig. 72). A masonry structure in the north part of Insula XXX at Silchester, Hampshire (Hope 1903, 414, pl. XXVIII: Boon 1974, 155–6), is also of some interest. The north-west to south-east aligned building with a western apse was perhaps *c.* 20 by 8m, and was associated with a deep well containing a deposit of animal bones (skulls of horse, sheep and cattle; *cf.* Fig. 40). On balance, however, there is little evidence to confirm that structure *F3321* was a *schola*, and its rural location makes this suggestion most unlikely.

A final parallel at Caerwent, Monmouthshire, should also be noted. 'The long room' lay at the entrance to the temple area. This room, with an eastern apse, was *c.* 20 by 4m, and was convincingly interpreted as an antechamber to the temple precinct (Ashby *et al.* 1910, 6, pl. I).

Kiln F278
(Fig. 41)

Few rural Roman religious sites have produced evidence of pottery kilns contemporary with votive activity. The evidence is certainly biased by the usually small scale of investigations focused on temple structures, and more extensive excavations would probably reveal a good deal more peripheral activity. At Farley Heath, Surrey, a pottery kiln lay about 100m from the temple (Goodchild 1938, 18), while on the continent kilns were found near the temple at Labuissiere, Pas-de-Calais, France (Horne and King 1980, 424). The kilns appear to have had a very general production, supplying the needs of dispersed settlements of which the religious foci were but a single element. The three pottery kilns of 3rd-century date at Icklingham, Suffolk, for example, were very near the area of small-scale pagan religious activity but were part of a spread of occupation over a wide area (West and Plouviez 1976, 65).

When the ceramic and archaeomagnetic dating of the Witham kiln showed that it was likely to have been contemporary with Phase 5 votive activity, it was at first thought that its purpose was to produce new and unused 'virgin' vessels for use in religious ceremonies and feasting. This judgement was clouded by modern Christian ideologies of purity, largely alien to the concept of personal belongings which were preferred for pagan votive deposition. Kiln products were subsequently found to be virtually absent from non-kiln contexts on the site, and the kiln offers one of the few instances of secular use.

The commonplace nature of its products illustrates the everyday status of the kiln. However, the choice of location of this semi-industrial feature — a good distance from known clay sources, situated on unsuitable chalky boulder clay and not part of any known nearby settlement site — is worthy of mention. It may also be significant that at Hayling Island, West Sussex, the pottery associated with the temple was, like the products of the Witham kiln, mainly ordinary grey wares (Downey *et al.* 1979, 15).

The small group of tightly packed post-holes comprising 'shed' *F944* (Fig. 42) to the east of the kiln is reminiscent of building 8 near 1st-century AD kiln 4 at Dragonby, Lincolnshire (May 1970, 229, fig. 4): a rectangular structure *c.* 5 by ?10m, of stone-packed post-settings. Although shed *F944* was much smaller than the Dragonby building and was not closely dated, it is reasonable to suggest an association with pottery manufacture.

Depressions

The only depression in which evidence of use during Phase 5 was not destroyed by later activity was *F3321*, immediately south-east of ditch *F3203*. By this time pond outlet ditches ran through the lowest part of the depression, but its function may not have been entirely associated with the drainage of the pond. For the first time a significant number of coins (10), personal ornaments (12) and Palaeolithic hand-axes were found. These came from gravel *3553* at the depression bottom, and were within rather than over the gravel. The significance of gravelled depressions on Roman religious sites has already been considered (p. 238–9). Pond *F679* and depression *F2409* were undoubtedly still in use at this time, but no Phase 5 fills survived.

Overall nature and dating

The early 4th-century focus of the site appears to have shifted downhill to the east of pond *F679*. Considering the evidence for votive activity at this time there is good reason to suspect that apsidal ditch *F3203* was part of or associated with a very large building, perhaps a temple. As on other sites where there was fortuitous survival, a gravelled area (in depression *F3321*) adjacent to the main structure appears to have been a focus of votive activity. Access to the shrine and gravelled depression may have been via ?road *F4418* which also survived by chance circumstances, being protected from ploughing by an old right of way. The extensive nature of the excavations enabled kiln *F278* to be found, some distance from the religious focus of the time, and watching briefs and uncorroborated builder's tales of other Roman remains found during the construction of the surrounding housing estates probably indicate a considerable spread of non-religious activity around the site in all phases.

Dating in Phase 5 relies fairly heavily on coin evidence and on the absence of later 4th-century ceramics, but is also firmly founded on stratigraphic grounds. The presence of votive material in early Phase 6 levels of depression *F3321* may indicate continued pagan activity into the middle of the 4th century, at which time there was a lull in votive deposits and the site may have become Christian for a short time.

Votive activity and continuity

In addition to the hand-axes and votive coins and personal objects in gravel *3553* of depression *F3321*, butchered horse remains once again indicate the slaughter and consumption of horses. The dating of gravel *3553* to the early 4th century is sound, and at variance with the dating of 3rd-century gravel *93* of depression *F2409*. As well as being of different dates, the nature of these hand-axe bearing gravels was also different, and there is every reason to suppose that they were laid at two separate times. Although the hand-axes in gravel *93* were consistent in size with the other constituent natural flints, gravel *3553* was largely composed of much smaller pebbles in which the hand-axes stood out. The suggestion that the presence of the hand-axes in both gravels was fortuitous is therefore difficult to maintain, and their occurrence is much more likely to indicate the continuity of their special

significance. The Phase 5 hand-axes are suggested to have represented thunderbolts, and might thus be indicative of the worship of a Celtic form of Jupiter (Turner and Wymer 1987; reproduced in microfiche). Large timber column *F1977*, established in Phase 4 or 5, may well have played a part in ceremonies for that god, as a timber Jupiter-giant column.

Apart from the normal deposits of *ex votos*, two bone deposits are of some interest. The small hoard of seventeen barbarous radiate coins associated with a partial infant burial in upper fill *3588* of apsidal ditch *F3203* is likely to have been a foundation deposit, assuming the association of a structure with the ditch. Infant foundation deposits are reasonably common, for example at Colliton Park, Dorset (Green 1976a, 200), but are quite unusual in temple contexts. Temple IV at Springhead, Kent, however, contained infant burials at each of its four corners, and these were thought to have been deposited in pairs at two separate dates (Penn 1961, 121).

The second bone deposit, within ditch *F3323* immediately east of apsidal ditch *F3203* consisted of horse, sheep/goat and dog remains (Fig. 40). Three occurrences of bone deposits in ritual shafts in Kent provide useful parallels. At Northfleet a single shaft produced dog, horse and sheep/goat remains, as well as pig bones, sawn antlers, teeth and horn cores (Ross 1968, 270); at Birchington the bones of horse, sheep and dogs were found, probably purposefully placed, *c.* 9m down the Roman shaft (Ross 1968, 260); while the shaft at Keston was found to contain mainly dog remains, but also those of horse and possibly sheep (Philp 1985, 35). The association of these three animals in the Witham deposit may therefore have been a magical combination.

Two other bone deposits also provide useful comparison. At a farmstead at Ardleigh a 3m deep shaft, 1.5m in diameter, and probably Roman, contained pottery, horse bones and a horse skull, and deer antlers, all arranged in a deliberate way (Erith 1965). At Armsley, Hampshire, another probably Roman settlement produced a shaft, over 2m deep. In addition to a horse skull, deer bones and antler, a possibly votive wooden head was present (Edwardes 1931). The Armsley shaft also contained organic materials, animal bones, complete pots, coins, iron tools and quernstones.

VII. Phase 6: Mid–4th century

(Fig. 150)

Introduction

As in previous phases there is some difficulty in accurately attributing contexts with confidence to Phase 6. The phase therefore includes contexts which date approximately to the mid-4th century. Most important of these are the font *F1348* and small stone structure *F4044*, both of which are interpreted as having Christian functions. Depression *F2409* in which the font was situated was clearly important, but pond *F679* proved to be the primary large feature of this time and was almost entirely re-cut. The relative lack of votive finds in the central part of Phase 6 is considered to reinforce the Christian interpretation of the site at this time.

Principal features

Font and associated features

The functional interpretation of the font (Figs 43 and 44) is based largely on its form. In his discussion of the Richborough, Kent, font, Brown (1971) considered continental parallels, of which the German examples at Cologne and Boppard are of special interest. In Britain, apart from Richborough only three other non-portable fonts have so far been recognised: Silchester, Hampshire (Boon 1974, 181–3); Icklingham, Suffolk (West and Plouviez 1976, 71, fig. 35); and a possible example at Chedworth, Gloucestershire (Goodburn 1972, fig. 3). These British fonts have recently been discussed by Professor Thomas (1981, 213–227).

The Richborough font, although hexagonal, must originally have closely resembled that at Witham: it was about 2m in diameter, with mortared tile walls and a tile floor laid on a bedding of mortar (Bushe-Fox 1926, 19, pl. XXXIII). The cog-shaped internal sub-structure lay on, but was not bonded into the floor, and the original phase was therefore very simple. The octagonal plan at Witham reflects the popularity of that shape through the Western Empire (Thomas 1981, 207).

In almost all cases there is evidence of a water outlet leading from the font. This was usually, as in the case of Richborough, a lead pipe, but the cruder soakaway drain at Witham and perhaps at Silchester would have served equally well. At Witham, a water supply was provided from the north via ditch *F2347* into sump pit *F2513*. Since this water was presumably used in baptism ceremonies, it may have come from a source with some religious significance. The source was the natural springs to the north of the site which had been used in earlier times to supply the pond in which the font was situated.

The absence of overtly Christian evidence at Witham need not cause undue concern, since such evidence is elusive even in association with well-known Christian sites in Roman Britain. However, the possibility must not be overlooked that, despite its date and parallels, the Witham structure had some other function. It is possible, for example, that the Chedworth font began as a Nymphaeum and that only later did it assume a Christian use, while a Christian function has never been attributed to the piscina at Bignor Villa, Sussex (Winbolt and Herbert 1930, 12). The Bignor piscina, which still survives, is a hexagon of *c.* 1.20m internal diameter and *c.* 0.50m deep. It was filled with water through lead pipes which ran beneath the early 4th-century Gannymede Mosaic, and had a central drain in the form of a lead pipe. The piscina is dated to period IIIA (late 3rd century; Frere 1982, fig. 3) and no evidence of Christianity was found in association. However, the circumstances of the Witham font were very different, and its interpretation as a decorative piscina would be difficult to maintain.

Of the British fonts, Icklingham is said to have produced evidence of a surrounding baptistery while Chedworth was contained within a room, perhaps of previous non-Christian function. A timber-framed housing had been interpreted for the Silchester font, but Boon (1974, 181) found no convincing evidence for this despite actively seeking it. At Richborough and Witham there were no signs of surrounding structures, although traces may have been destroyed or missed.

At both sites, a freestanding structure rather than a pit-like arrangement is suggested (Fig. 44, Phases A and B). Although this may have caused some inconvenience during the baptism ceremony, freestanding fonts are well known elsewhere (Cabrol and Leclercq 1910, 395). Thomas (1981, 206) discusses evidence that 'affusion' baptism was the practice at this time: the devotee would stand naked in the font and libations from a vessel would be poured over him. The first part of this ceremony may be depicted on a frieze on the decorated tank from Walesby, Lincolnshire (Toynbee 1964, 354), which represents a female figure disrobing. Although not in the tradition of the great cathedral baptisteries of the continent, the possibility of naked baptisms in the open air is not out of the question. It may be that some form of roof covered the Witham font, and that the Phase B and C post-holes not only revetted the sides but also supported a roof. Evidence of a more substantial building was sought during excavations and would almost certainly have survived within the undisturbed and stratified levels which surrounded the font, and it can therefore be said with some confidence that no baptistery was present.

Depression F2409

The font was, perhaps deliberately, situated within the part of depression *F2409* which had in early Roman times been a pond (Fig. 45). When the first phase of the font was built, the surrounding depression fills were entirely removed, and the depression as a whole was cleaned out to the level of the grey silts of Horizon 2 (*e.g.* Fig. 27, fill 95). Not until Phase C was the depression partly filled with make-up layers, ultimately capped with gravel for access to the west of the font. To the east, excess water from sump *F2513* and from baptism ceremonies would have run through soakaway *F1349* into pond *F679*.

Building F4044

This structure (Fig. 46) shares the characteristics of a number of other buildings on 4th-century temple and cemetery sites (Fig. 151). Although the possibility that these were small early Christian chapels has been proposed in the past, there has as yet been no summary of the evidence, and there is therefore a need to examine the main components of those structures most relevant to building *F4044* at Witham (Table 65): the southern building at Brean Down, Somerset (ApSimon 1965, fig. 50); building B at Icklingham, Suffolk (West and Plouviez 1976); the small secondary building at Lamyatt Beacon, Somerset (Rahtz and Watts 1979, 189, fig. 11: Leech 1980 and 1986); the 'house' to the north of the temple at Maiden Castle, Dorset (Wheeler 1943, 132–3); building XXIII at Nettleton, Wiltshire (Wedlake 1982); various mausolea at Poundbury, Dorset (Sparey-Green 1982, 63); the two-celled masonry building at Richborough, Kent (Bushe-Fox 1932, 32–3); and structure VIII at Uley, Gloucestershire (Ellison 1978, 37 fig. 2: Ellison 1980, 313–4).

Thomas (1980, 156–7) has pointed out that Roman churches will be or have been found but can not be recognised, and that recognition will often depend on non-architectural details. However, the recent finds from Nettleton, Uley and Witham contribute to the growing evidence that these small single or two-celled very late Roman structures were of Christian function.

All of the structures were small, ranging from the north room at Witham at *c.* 3 by 3m and the 3.5 by 3.0m structure at Lamyatt Beacon, to the 10 by 5m building at Icklingham. The basic plan is rectilinear, but the Icklingham building may have had a south-eastern apse, and a tiny chancel-like arrangement was present at Uley. The addition of the south room at Witham is paralleled by the secondary south-eastern room at Nettleton, while the northern part of the Maiden Castle structure and the eastern room at Richborough would also appear to have been additions.

There is a wide variation in alignment which was perhaps partly controlled by the local lie of the land, and although Witham is the only north-south example, it must be remembered that its first phase could equally well be interpreted as east-west. An obvious feature of the Brean Down, Lamyatt Beacon and Maiden Castle buildings is their mis-alignment with their associated temples. It is conceivable that this was deliberate, perhaps symbolising the lack of importance of what had gone before: the Brean Down and Lamyatt Beacon buildings post-dated their temples, whereas the Maiden Castle example, if the lack of concrete dating evidence is taken into account, may have preceded its temple.

There is a good concordance of wall thickness, usually *c.* 0.60m, but the Uley foundations, built using the same pitched stone technique found at Witham, were unusually deep at up to 1m. The mortared walls at Lamyatt Beacon also included pitched stone blocks. The Witham and Brean Down foundations were noticeably shallow, but this is misleading at Witham since the structure was built in a prepared hollow dug a little way into the natural subsoil, and the foundations might originally have been up to 0.60m below contemporary ground level.

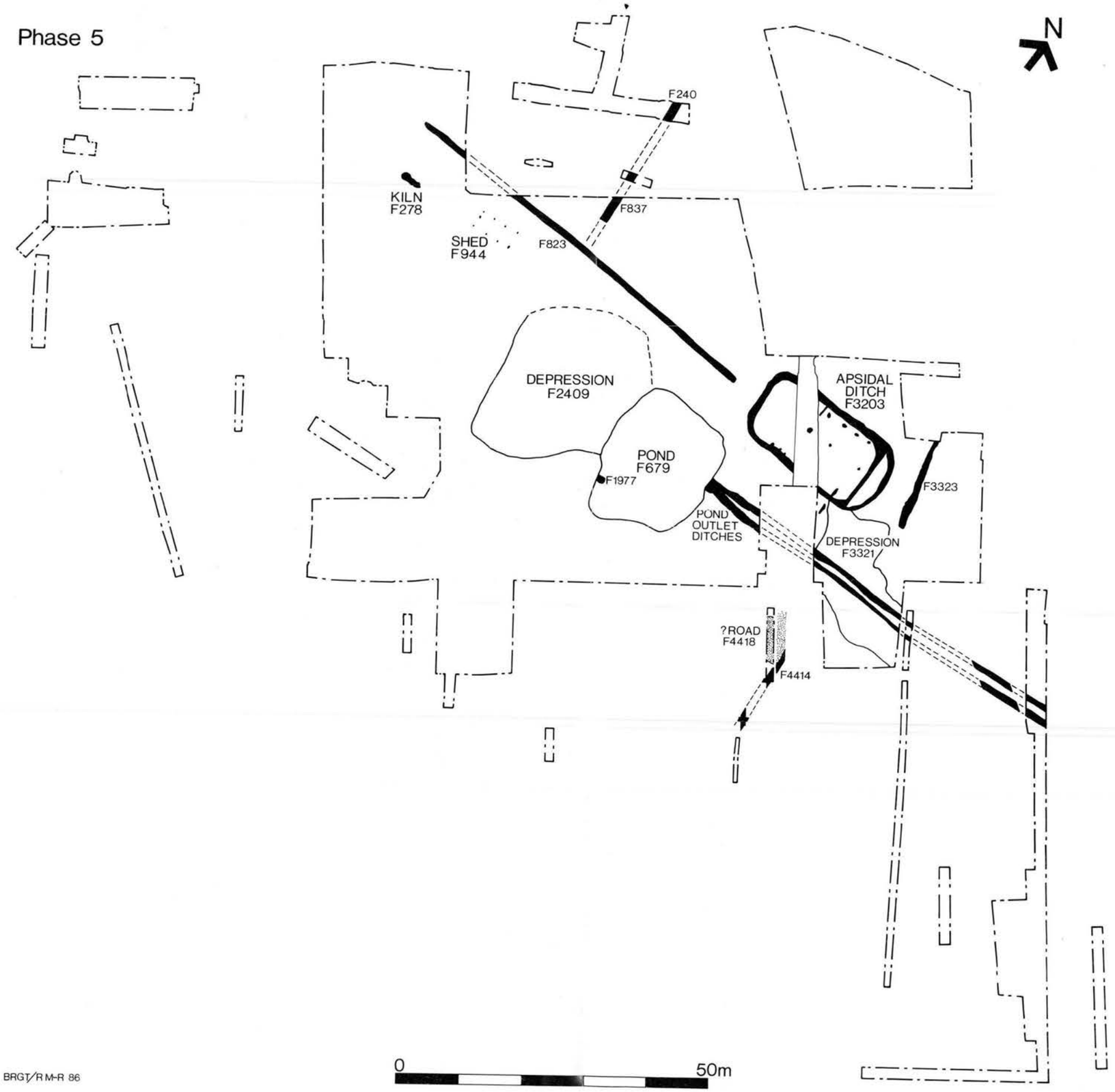
The doorway at Witham was splayed in the reverse direction to that at Brean Down, a building which also

Site	*First phase*	*First align.*	*Second phase*	*Final align.*	*Approx. date*	*Associations*
WITHAM	3.0 × 3.0	N-S or E-W	5.0 × 3.0	N-S	mid-4th	Font; post-?temple
Brean Down	4.7 × 3.7	NW-SE			late 4th	Post-temple
Icklingham	7.3 × 4.7	NW-SE	9.6 × 4.7	NW-SE	?late 4th	Font and cemetery
Lamyatt	4.0 × 3.0	NW-SE			post-330	Cemetery; post-temple
Maiden Castle	5.8 × 4.5	NW-SE	8.2 × 5.8	NE-SW	?4th	Temple
Nettleton	4.8 × 3.9	NE-SW	7.9 × 4.8	NW-SE	?late 4th	Cemetery; post-temple
Poundbury R8	6.8 × 5.1	NW-SE			later 4th	Cemetery
Richborough	6.6 × 5.0	NW-SE	8.8 × 5.0	NW-SE	post-270	?Font; ?church
Uley	6.5 × 4.5	NE-SW			late 4th	Post-temple

Note: Measurements and orientations approximate: see also Fig. 151

Table 65 Comparative data of possible late Roman Christian chapels (measurements in metres)

Phase 5



BRGT/R M-R 86

Figure 149 Phase plan: Phase 5. Scale 1:700

Phases 6 and 7

BRGT/R M-R 86

Figure 150 Phase plans: Phase 6 and 7. Scale 1:700

included a soakaway pit in its north-east corner (ApSimon 1965, fig. 47). While the walls at Brean Down and Witham were probably plastered, those at Richborough were only mortared.

All of the examples were found on temple, cemetery or Christian sites, and it is reasonable to assign them some religious function. They can all be dated to the 4th century, at a time when the popularity of Christianity as a minor religion was growing. When there was a pagan temple on the site these buildings mainly appear to post-date it, and four can be associated directly or indirectly with possible Christian cemeteries.

It is interesting to note a number of cases where the establishment of these structures may have been intended to deliberately undermine and show dominance over the previous pagan activity. This is neatly displayed at Icklingham where a layer of clean chalk was used to seal previous levels. At Uley, structure VIII was built over the corner of the defunct temple, while the structure at Coleshill was built from material robbed from the temple. The small buildings at Brean Down and Lamyatt Beacon were, perhaps deliberately, built on different alignments to their respective temples, and the Brean Down example certainly outlasted the use of the temple.

Returning to the Witham structure, it too was built in a significant position — centrally within the west end of the structure represented by apsidal ditch *F3203*. Despite some difficulties in dating, there is little doubt that the ditch and building *F4044* were not contemporary. However, in the absence of stratigraphic evidence, there is a remote chance that *F4044* was built within the pre-existing structure and functioned as a western tower.

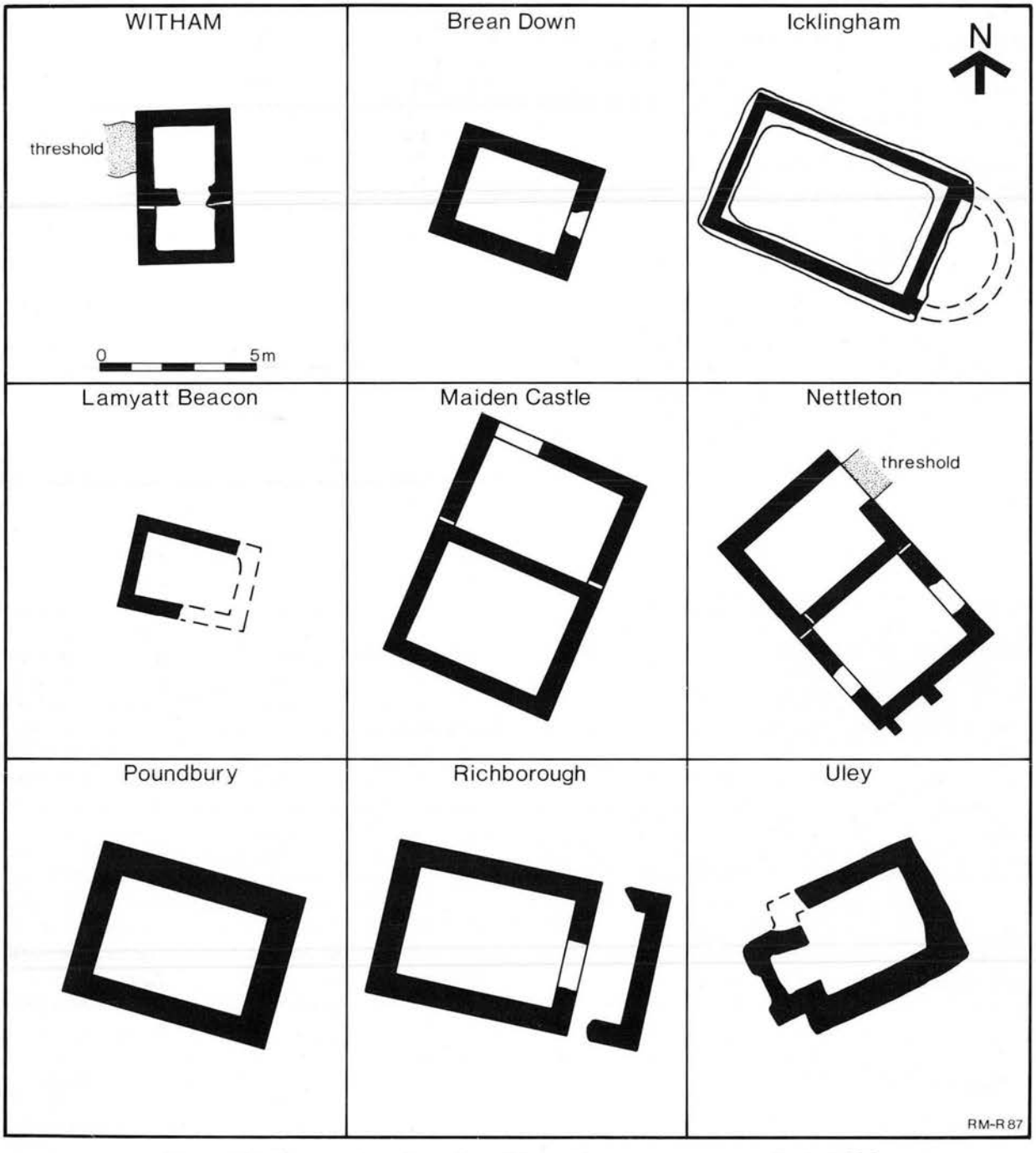


Figure 151 Comparative plans of small later 4th-century structures. Scale 1:200

It seems more likely that building *F4044* was deliberately constructed within a focus of the pagan site, just as the font was positioned in the early Roman pond which was another centre of pagan religious activity.

Building *F4044* and its counterparts on other sites may therefore have served as chapels or small extra-mural churches. At Poundbury some of these structures were probably mausolea, but at Richborough, Icklingham and Witham the association with fonts supports a function as small chapels. These would have belonged to Thomas' (1981, 158) third class of church, the *parochia* or estate church, a rural building built and maintained by its congregation.

Pond F679

There is no doubt that the pond (Fig. 30) had its origins in the 3rd century, but a major phase of renovation occurred in the mid-4th century. It is unclear whether this was exactly contemporary with the use of the font and possible chapel since late Oxfordshire colour-coated pottery found in many of the lowest pond fills may not have been introduced to the site until immediately after the Christian period within Phase 6.

The pond appears to be unparalleled, and probably came into existence simply because it happened to be present at this time and was convenient to use. At this time watery places do not yet appear to have been adopted within Christian beliefs (Alcock 1966, 1). The water from the font would have drained into the pond, but this was a negligible part of the pond water supply. From its earliest use the pond had a supply of fresh running water, but evidence did not survive of the source of the water or the means by which it was introduced to the pond at this later time. As in the earlier phase, the outlet system was of two probably wood-lined ditches in conjunction with a system of sluice gates at the pond edge (Fig. 33). The effort put into maintaining the pond is further exemplified by the series of revetting stakes around the pond bottom and by the stake line along the top which would have kept animals and perhaps also people from straying into the waters. A point of further interest is the sloping south side. This is a feature of agricultural ponds and allows access by animals even when the pond is almost empty. An agricultural interpretation of this sort is not likely for the Witham pond, since the undisturbed nature of the light gravel at the bottom indicates that it was never trampled to any large extent.

Also on a functional level, the pond could have provided a head of water for a mill. This might explain the elaborate outlet system, and Roman four-post structure *F2979* within depression *F3321* to the east could represent the basis of a water mill. Fragments of millstone grit millstones were found in five late Roman contexts, one of which was in the pond and two in depression *F3321*. Although a possibility, this interpretation does not explain the sloping sides of the pond, nor does it justify the expense of revetting the sides. In view of the nearby River Brain and its tributaries, the Ivy Chimneys site would appear to have little benefit to offer. Nor is the pond likely to have been used for swimming or recreation since it could never have been more than 0.80m deep.

A viable though unverifiable religious interpretation is that it may have taken over from the font as the receptacle for baptism. It was certainly substantial enough for submersion baptism (Thomas 1981, 204–6), a technique normally restricted to large natural aquatic features.

Depressions F3321 and F4695/4763

Lower Phase 6 fills (Horizon 3) of depression *F3321* contained a high density of votive material which can probably be attributed to pagan use extending from the previous phase. In contrast, the extensive upper Phase 6 (Horizon 4) levels of this depression produced few such objects, and the depression may largely have gone out of use. The shallow pond outlet ditches which ran through the depression could only have contained a trickle of water, and the presence of aquatic mollusc remains in Phase 6 fills show that the depression was subject to periodic flooding.

Depression *F4695/F4763* was fairly shallow and backfilled largely with building debris perhaps, considering the small proportion of septaria to mortar and tile, removed during the construction or alteration of stone building *F4044* rather than from its demolition.

Overall nature and dating

Once again there was no evidence of everyday domestic activity on the site at this time. After an initial stage of remnant pagan activity, testified by the Horizon 3 fills in depression *F3321*, the site took on a Christian function with the three major units of the font, the possible chapel, and the pond. This activity lasted long enough for three phases of the font and two of the stone building, but the end of Phase 6 saw a period of demolition of the structures and the beginning of backfilling of the main depressions. By this time, late Oxfordshire colour-coated ware had begun to appear in abundance, dating the end of the phase to some time after AD 360 (see Pottery Report, Introduction). This type of pottery seems to have been introduced after the initial phase of the font, and perhaps during the life of the stone structure, although it was found in even the lowest fills of the re-cut pond. The pond may therefore have largely post-dated the other two features. In support of the argument that the pond nevertheless belonged to the Christian phase is the complete lack of coins or votives in the lower and bottom fills, suggesting that the fills accumulated before the revival of pagan activity in the early part of Phase 7, no earlier than AD 360.

Religious activity

The votive material in lower Phase 6 fills of depression *F3321* may represent partial backfilling of imported material, or it could argue for votive activity early in the phase.

As has already been stated, no specifically Christian objects or symbols were found on the site, but this is a common feature of many other British Romano-Christian sites (Green 1976a, 64) and need not be significant. The dating and nature of both the font and stone building are sufficient to argue for a Christian period at this time, and this is reinforced by the positions of these features in the midst of places of pagan significance, and also by the lack of votives in contexts datable to this time.

The foundation deposit in pit *F4138* might be interpreted as of pagan origin and was certainly associated with the stone building. The deposit is almost exactly paralleled by a tiny depression in the chalk under the foundation of the ambulatory wall of the temple at

Chanctonbury Ring, West Sussex (Bedwin 1980, 179), which was just large enough to accommodate a small intact votive vessel. A similar feature was found at Lamyatt Beacon, Somerset, where a small jar was buried in the north ambulatory of the temple. Within the jar was a coin of AD 161–80 — much earlier than the temple itself, which was dated from the late 3rd to early 5th century (Leech 1986, 271). Miniature vessels were also found in pits at the Triangular Temple at Verulamium (Wheeler and Wheeler 1936, pl. LIX, fig. 32.45), but such deposits were not confined to religious buildings, as attested by foundation deposits of pots below houses in Gloucester (Green 1976a, 171). As Rahtz and Watts (1979, 184) point out, the Roman Christians in Britain knew the folly of striving to totally eliminate pagan elements, and usually compromised by a certain degree of integration. If the evidence of Phase 6 at Witham demonstrates a heavy-handed approach, the resumption of paganism and destruction of the Christian features in Phase 7 may tell the price that was eventually paid.

It has not been possible, with the available evidence, to tie down the date of the presumed Christian phase at Witham more closely than the mid-4th century. If a date range were to be given, it would probably span from *c.* AD 330, when at least a background of the abundant Constantinian coinage might have been expected to figure in the coin loss pattern, to *c.* 360–70 when late Oxfordshire wares became popular and when post-font levels in depression *F2409* probably began to develop. This cannot, then, be linked to the death of Magnentius at which time Graham Webster considered the possibility of major destruction of pagan monuments in Britain, when Constantius II took vengeance on the followers of Magnentius (Webster 1983). Evidence for the destruction of sites in North Gaul in the mid- 4th century may show a response to the order by Constans in AD 341 for the cessation of heathen sacrifices and destruction of temples in Italy (Frend 1955), and to Constantius II's order that rural and urban temples be closed and that those practising sacrifice should be put to death. It is not possible to place the events at Witham precisely within the religious ebb and flow of the mid-4th century, but the positioning of the probably Christian features over pagan foci may be put into the perspective of these historical events. At Icklingham in Suffolk we have already seen the probably symbolic covering of the site with a layer of pure chalk before the construction of the possible cemetery chapel (West and Plouviez 1976, 69–70), and the levelling of middens residual from pagan activity along with the demolition of pagan buildings at the time of the small stone ?chapel at Uley, Gloucestershire (Ellison 1980, 313–4). There are many more relevant archaeological and historical accounts of this destruction by Christians, and the evidence from Witham fits well into the picture.

A further part of this process is hinted at by the evidence inferred from building debris found on the site before and at the time of the stone building. Mortar, wallplaster, septaria, window glass and used box-flue tile fragments were found in particular quantity in Phase 6 levels, especially in the vicinity of the stone building in which some of this material was re-used. This is clear evidence of the existence of a masonry building on a grand scale, dated by the window glass to before the introduction of the 'double glossy' type at *c.* AD 300, and near enough to have been robbed for building material. No hypocausted building could have been present in the excavated area, and the rubble is therefore likely to have come from a nearby structure, in all likelihood a bath-house or guest-house associated with the pagan site. Bath- and guest-houses were common appendages to religious complexes (*cf.* Wood Lane End, Hertfordshire; Neal 1984: Coleshill, Warwickshire; Magilton 1980, 36). The Witham hypocausted building may well have been destroyed and robbed as part of a Christian campaign to dominate the site.

VIII. Phase 7: Latc 4th to Early 5th century

(Fig. 150)

Introduction

The later 4th and early 5th century is of the greatest interest in terms of artefacts, but is least informative with respect to associated structures. Phase 7 was a time of demolition, backfilling and accumulation, affecting all of the extant features on the site. The presence of just one structure, implied by debris in an adjacent pit, belies the considerable evidence of votive deposition indicated by the high number of coins and personal ornaments from Phase 7 fills.

Principal features

Ditches, depression and structures

All of the ditches and depressions still extant were filled, through various means, during this phase. These fills tended to be very dark brown or black in colour, and appeared at first to represent a single major episode of the backfilling of deposits which had accumulated over many years: the large number of barbarous radiate coins seeming to suggest an origin in the later 3rd century. Backfilling and destruction is a feature of the later phases of many temple sites, and is sometimes associated with the adoption of Christianity. At Uley, Gloucestershire, for example, debris containing many votive objects and vast amounts of animal bones was spread over the site when the temple went out of use, possibly at the time of constructing the small chapel (Ellison 1978, 34); a similar phenomenon was observed at Brean Down, Somerset (ApSimon 1965, 224); and at Springhead, Kent (Penn 1965, 170) the temple ditch was filled with a large number of smallfinds of votive nature. A close examination of the Witham deposits show that most were formed in the later 4th century, after the Christian phase: the pottery from these fills is largely of very late date, contradicting the evidence of the earlier coins. Since the Phase 7 fills in depression *F2409* were also later than the font, a post-Christian date is confirmed.

The backfilled rubble in the font was almost certainly derived from a demolition or renovation phase of stone building *F4044*. The flooring material from the north room of the building is likely to have been borrowed from the Phase A font: the font and the stone building were therefore probably contemporary at this stage. The font backfill can therefore be dated to during or, much more likely, after the use of building *F4044*.

It is clear that the building was not only demolished, but that it was also robbed to foundation level. Since evidence of a subsequent masonry structure was not present within the excavated area, this demolition may have been to some extent symbolic, and the use of the rubble to fill the font may have been a meaningful act.

Such deliberate destruction is usually connected with the conversion of a pagan site to Christianity, as previously noted with respect to the work of St Martin in 4th-century central Gaul (Sulpicius Severus, *Vita Martini*, 13–15). The political temperament of the age might nevertheless have been sufficiently volatile to allow for tit-for-tat reprisals by pagans against Christians. An alternative and less controversial purpose for the demolition of the stone building may have been to convert the site back to agricultural use, but at this time the font depression and the pond were still quite formidable features, and the large pit *F3681* adjacent to the remains of building *F4044* would have provided an obstacle to ploughing and a hazard to livestock.

The main deposits of votive material were found in depressions *F2409* and *F3321*. It is clear that depression *F2409* was re-cut to the level of its early gravel when the font was constructed in Phase 6, and it seems to have been kept open until Horizon 5 fills *86* and *94* were deposited — both of which contained votive material as well as numerous large spreads and dumps of oyster shell and animal bones. The thickness and homogeneity of these fills suggest that they had accumulated elsewhere during the third quarter of the 4th century and were backfilled into the depression in a single episode after the Christian phase. Very dark Horizon 6 and 7 fills *59* and *55*, which were also fairly thick in places, were different from Horizon 5, containing less food debris but more votive material. The *terminus post quem* of Horizon 6 is AD 388. These deposits are therefore interpreted as two episodes of backfilling midden material residual from later 4th-century votive activity, the lower horizon midden also being associated with feasting.

During the later part of Phase 6, fills had gradually accumulated at the edges of depression *F3321*, but these were almost devoid of votive material. In Phase 7, fill *3509* was similar in nature to the upper fills of the font depression and contained abundant bronze objects as well as coins up to Theodosian date. Similarly, apart from uppermost fill *680*, the pond backfills contained few votives, although even the lowest of these deposits (fill *1724*; Fig. 29) contained a Theodosian coin of AD 388–402.

The combined evidence suggests at least two phases of backfilling in these depressions, using accumulated material of later 4th and late 4th to early 5th-century middens.

The accumulation of votive material generally occurred within the *temenos* areas of temples and shrines and, despite the value of the finds, these dumps were of sufficient religious importance to have been left without being pillaged at a later date: it seems unlikely that the archaeologically excavated evidence merely represents a residue of material which was missed or discarded by Roman treasure hunters. Caesar (*De Bello Gallico* VI, 17) refers to the spoils of war being gathered into one place, and to heaps of such objects often being piled in hallowed places, while Strabo (*Geography* IV, 3) tells of great treasures in sacred places and pools. Both of these classical authors emphasize that these heaps of booty and votive offerings were held inviolable by the Celts, and there were grievous punishments for unauthorised removal. Such levels are generally of identical character to those found at Witham, their dark colour being the result of a high charcoal content. They often contain food debris as well as coins and personal objects. A *c.* 150mm layer of such material accumulated at Harlow temple (*Curr. Archaeol.* 1968, 289), and at Woodeaton, Oxfordshire, finds of animal bones, bronzes and coins (up to AD 364–7) built up over a gravel surface near the temple (Goodchild and Kirk 1955, 20). Areas of the *temenos* at Faye-l'Abbesse, Deux-Sèvres, France, contained dumps of burnt material consisting of human and animal bones, oysters, bronze and iron objects, coins, and two stone axes (Horne and King 1980, 410). At Farley Heath, Surrey, a large pit *c.* 7.3m in diameter, by up to 1.7m deep was filled with black soil containing votive material, and the latest coin provided a *terminus post quem* of AD 395 (Winbolt 1927, 188).

The accumulation of very late middens and the backfilling of their contents is therefore attested on many sites, in some cases as the result of the adoption of Christianity, in others to level the site for agricultural purposes, but in others perhaps to safely deposit previous *ex votos* while making room for subsequent middens.

Depression *F4651* to the north of the main site was perhaps the only large feature encountered to have silted up entirely naturally, and medieval pottery in its upper fill indicates the length of its duration. It is even possible that the depression was dug in the post-Roman period, and that all of the Roman finds in the lower fills were residual: the medieval and modern field ditch which ran through apsidal ditch *F3203*, for instance, contained almost exclusively Roman finds despite its much later date. Depression *F5202* to the south-east of the main area was filled with very black soil but, apart from a number of later 4th-century coins, was devoid of votive finds and almost certainly served a mainly industrial function.

Pit F3681

The pit post-dated a robbing episode of building *F4044* and contained much evidence of burning. The function of the irregular-bottomed pit is unknown, but the nature of the scorched and burnt daub and charred wood found in its central layers suggests that a structure of some sort existed to the south-east and had burnt down then collapsed into the pit. The daub was mainly poorly fired and did not come from an oven-like structure, and the large plank-like size of the charred wood remains would indicate a large structure, probably a building. No other structural evidence of late date was present in the vicinity.

?Tree-root hollows

Depression *F1905/F1882* was very nebulous, mainly composed in its lower fills of disturbed natural, with deposits of septaria and building rubble above. This may represent evidence of the uprooting of trees. Although the upper fills contained a coin of AD 364–78, those below could have been mid-4th century and might belong to the Christian phase. The depression could therefore be the result of the uprooting of sacred trees in the manner of St Martin previously described.

Economic activity

The black and charcoal-rich fills of depression *F5202* induced a ferrous reading on a discriminating metal detector, and contained many iron objects as well as smithing and hearth slag. The working of iron is therefore likely to have taken place within the depression. Metalworking evidence has been found on other Roman temple sites but is generally confined to bronze-working.

At Nettleton, Wiltshire, however, late 4th-century buildings XVI and XXVI produced evidence of iron working contemporary with the post-Christian resumption of pagan activity (Wedlake 1982, 74–5).

On a broader economic level, the cattle bones of this date represent a mixture of male and female animals reminiscent of a market.

Religion and continuity

The robbing of building *F4044* and the backfilling of the font may have been a deliberate action in response to the grubbing-out of a grove of sacred trees and the imposition of the font and stone building in previous religious foci. The very large number of coins and votive finds indicates revived pagan activity in the later 4th and early 5th century, similar to the sequence at Nettleton (Wedlake 1982) where very late industrial and some agricultural activity was also found. Notwithstanding the grandeur of some of the temples at this time (*cf.* Lydney; Wheeler and Wheeler 1932), the late establishment of pagan sites in the West Country might previously have been used as an indicator of lesser official influence in a backwater area, but there is increasing evidence of a late 4th-century pagan revival in other parts of the province. In Essex, for instance, the Witham evidence is complemented by that from Harlow (Gobel 1985, 68) showing latest 4th and early 5th-century pagan activity rather than the whole-hearted adoption of Christianity.

A fired-clay phallus (Fig. 125.8) from depression *F2409* is one of numerous phallic finds from Britain (Turnbull 1978). The native phallic cult was mainly concerned with fertility, and phalli were most important in a ritual context. Such objects were not thought of as shameful, and even children wore phallic charms.

Overall nature and dating

There is ample evidence to indicate votive activity at late 4th and early 5th-century Witham, in conjunction with some metalworking and doubtless a degree of agricultural use, but there is a surprising lack of evidence for contemporary structures. Later temples are characteristically large scale, and the likelihood is that such a building was indeed absent at Witham. The local religious significance of the site is evident from the continuity of its use, perhaps because of a *genius loci* whose influence was strong even in the absence of a house in which to reside. The site may, alternatively, have become a periodic market or fair with religious connotations.

The dating of features to this phase is largely based on the presence of later 4th-century coins, but most Phase 7 contexts also contained or were associated with later 4th-century pottery: red Oxfordshire colour-coated ware and late Roman shell-tempered ware.

IX. Religion and deities

by Miranda Green

Introduction

A substantial amount has been written, both in the specialist reports and in the main discussion, on the religious implications of individual features and finds. The site is undoubtedly of religious importance but, as is so often the case, hard evidence for the kind of cult or cults practised and the nature of divinities worshipped is largely absent. It is tempting but unwise, then, to read too much into what is frequently very tenuous and circumstantial data. Indeed, whilst I would not wish in any way to seek to diminish the religious significance of Witham, I would not always go along with the rather positive assertions of the presence of specific deities proposed in the report.

The suggestions for belief and worship at Witham rest upon a number of specific categories of evidence. These comprise, principally, the following: the hand-axes; the timber columns; the animal bones (notably that of horse); the local presence of sources of water (springs and ponds); the stone sculpture; and the model horns. The other religious features of the site fall into the category of ritual activity which may have pertained to any cult: the structures, pits and depressions on the one hand and the votive objects — especially coins and trinkets (some deliberately broken) — on the other. General ritual evidence such as this has been more than adequately considered in the main discussion, and it is unnecessary to do more here than to bear it in mind.

Zoomorphic ritual

Animal bones on Romano-British and Iron Age religious sites are commonplace as evidence of sacrificial activity (Wait 1985: Green, M.J. 1986). Nevertheless, there are features of the bone material at Witham which point to the predominance of certain animals and which may, accordingly, imply a connection with specific worship involving animals at a divine rather than at a purely sacrificial level. Most prominent in the assemblage is the evidence for horse ritual. Horses, sometimes quite young, were brought to the site, butchered and apparently consumed in fair quantities — a fairly uncommon occurrence. A broad continuity of tradition manifests itself in the presence of frequent horse bones in for instance Phase 1 (Iron Age) and Phase 5 (early 4th century AD) and sporadically in some of the intervening phases.

It is, of course, always possible that the butchering and eating of horses at Witham may have been a secular activity; Iron Age settlement sites in south-east Britain (Wait 1985, 122–53) have yielded similar evidence. But if we assume that the presence of butchered horses reflects a religious purpose here, then a number of cults involving horses are known to have been followed by the pagan Celts (Green, M.J. 1986, 171–5). What must be stressed in the present context is that, on the basis of the pre-Roman evidence, we must assume the presence of an indigenous cult. Whilst Epona is the most obvious horse-deity who comes to mind for the Roman period, it is too speculative to argue for an Epona cult at Witham. Although a sculptured fragment of what may be a representation of the horse-goddess occurred at Colchester (Hull 1938, 198), the cult is extremely rare in Britain and the goddess appears only as an imported deity. Epona is a Gaulish goddess *par excellence* and the evidence simply does not permit assumption of her presence at Witham. If we are going to consider the possibility of a Romano-Celtic horse-deity, we must, in any event, recall the other major equine cults — those of the Celtic Mars and those with solar and healing associations for instance (Green, M.J., 1986, 93–4 and 174). But what is, to my mind, more likely is that we may be seeing the manifestation of a local Trinovantian horse-cult at the site. This would fit in well with observations of such ritual amongst some of the Celtic tribes of East Anglia, notably the Trinovantes and

the Catuvellauni. In the Romano-Celtic period, worship of horse-deities manifests itself at the Catuvellaunian temple site of Brigstock, Northamptonshire (Greenfield 1963) where a local cult is represented by small bronze figurines of horsemen. Similar images occur sporadically throughout the eastern counties.

If we focus more closely on the interpretation of the horse bones themselves as evidence of religious activity, it is worth considering the significance of the butchering and the eating of the animal. At one level, this may mean that a religious interpretation is less likely. Indeed Wait has pointed out (1985, 122–153) that horses are not uncommon as food animals on Iron Age settlement sites. However, individual horse burials may be observed in a number of south-eastern British contexts. It has been noted elsewhere in this report that ritual shafts have yielded evidence of horse burial as a religious act; Northfleet in Kent has been cited as an example, and there are others closer to Witham. Thus at Ardleigh in Essex a ritual shaft contained a horse skull and other animal bones (Ross 1968, 258: Green, M.J. 1976a, 215). At Wickford, also in Essex, a possible cult well of 3rd-century AD date yielded five horse skulls (Wilson 1971, 273: Green, M.J. 1976a, 229). Pit deposits in post-400 BC levels at Danebury, Hampshire, again contained horse mandibles (Cunliffe 1983, 156–171: Green, M.J. 1986, 168). Temple sites have themselves revealed unequivocal and striking evidence of horse ritual indicated by horse remains. A good example of this is South Cadbury, Somerset (Alcock 1972, 136–53), where horse and cattle skulls were carefully buried the right way up in pits associated with what has been interpreted as an Iron Age shrine. At Bourton Grounds, Buckinghamshire, horses were buried in foundation deposits under the threshold of a roughly built basilical structure of 3rd to 5th-century AD date, situated 70 yards west of a Romano-Celtic temple (Green 1965). The widely distributed practice of ritual involving horse burials is illustrated by the Hallstatt Iron Age religious site at Býčí Skála in Czechoslovakia where areas of a cave were used for grim rites including the burial of dismembered human females and the quartering of two horse carcasses (Megaw 1970, 58, no. 35: Green, M.J. 1986, 124).

The other zoomorphic cult which may be significant here is that of the bull, ox or cow, evidenced not only by large numbers of cattle bones but, more importantly, by the presence, as a votive object, of model gilt iron horns (Fig. 62.72; Pl. XXI, C). This last find is unique and is noteworthy both in being made of iron rather than bronze and in being gilt. Horn cores were a prominent feature in the natural bone assemblage and it is difficult not to believe in the presence of some form of fertility ritual, based on reverence of the strong, virile, aggressive qualities of the bull. The presence of sawn antlers may reflect similar symbolism associated this time with the stag. There is good British evidence for antler ritual. A recent find is a deposit from Wasperton, Warwickshire, where a pit contained a stone, inscribed *feliciter*, face down, above which, beneath a layer of burnt material, were two sets of unburnt antlers arranged to form a square surrounding a fire (Frere 1984a, 296: Green, M.J. 1986, 184). More specific to fertility symbolism are the curious antler phallic amulets known, for instance, in southern Britain (Green, M.J. 1986, 184). The choice of antler for the portrayal of male genitalia may not be fortuitous, but may reflect the potency of the stag itself, with the seasonal connotations of the autumn shedding and the spring growth of the antlers. As is the case with Epona, it is dangerous, in my view, to put forward arguments for the presence at Witham of the antlered god Cernunnos himself. He is again essentially Gaulish (Bober 1951) and his definite appearances in Britain are few. Rather, the evidence from Witham may suggest a simple reverence for a stag's qualities — speed, strength, aggression, and its related concept of fertility. There may even be implicit tree symbolism (see below) in the imagery of the branched antler shape. One should remember the local 'Silvanus' cult represented at Colchester by a votive bronze stag and associated plaque dedicated by a local coppersmith to Callirius (the 'Woodland King': Green, M.J. 1986, pls 79 and 80).

Possible sky cults at Witham

Two features of the Ivy Chimneys site have aroused speculation as to the presence of a sky-god cult, perhaps a native version of Jupiter. These are the, surely not fortuitous, occurrences of over forty Palaeolithic hand-axes, and the suggestion, from the discovery of holes for two large isolated timber uprights, of wooden columns postulated as being monoxylous Jupiter columns.

The hand-axes are interesting, and I would agree with the excavator and specialist reports in assuming a cult significance in their collection and subsequent deposition as deliberate votive acts. The whole question of the symbolism for the Celts of antiquities such as Palaeolithic hand-axes is problematical. But it is surely almost exactly the same phenomenon as the deposition in Romano-Celtic temples of Neolithic polished stone and flint axes, recognized as a wide-ranging practice in Britain and Gaul (Adkins and Adkins 1985, 69–70), the latter being far more common. Certainly there is some reason for thinking that such implements may have been regarded as symbolic thunderbolts (Evans 1897, 58–9). If so, the supposition may be that some celestial supernatural power was being honoured or invoked. Whilst the Romano-Celtic sky-god (Green, M.J. 1984; 1986, 39–71) was closely associated with thunder there was, in addition, a god specifically of thunder, namely Taranis (Green, M.J. 1983). His name embodies not a Thunderer but the elemental force of thunder itself. So if there were a thunder-god at Witham, then the occurrence of Taranis himself or a local variant or precursor would be a possibility.

The presence of wooden columns at Witham is an interesting phenomenon, but less definitely linked to Celtic sky symbolism. The evidence cannot by itself be associated at all closely with the very specific phenomenon of the Jupiter columns. These form a distinct and discrete group, with a very concentrated north-east Gaulish distribution (Bauchhenss and Noelke 1981). The very few and fragmentary putative examples from British contexts must be seen as imports, at least in concept: Witham has so little in terms of Gaulish religious iconographic tradition that it would be unnecessarily far-fetched to suppose that the large post-holes belonging to Phase 4 represent Jupiter columns. That said, there is a strong possibility that these features do represent large wooden pillars which were foci of cult activity and may well have been connected with celestial symbolism. Wightman (1970, 225) suggests that columns stretching high into the sky were obvious sky symbols, and as such

were later adopted as appropriate monuments to the Romano-Celtic sky-god.

The other aspect of the Witham pillars which may be relevant concerns tree imagery (already suggested above for antlers). The presence of sacred trees is argued at the site, and Powell (1958, 136) believed that the ultimate prototype for the Jupiter column was a growing, sacred tree. It is by no means impossible that, as well as living trees at Witham, there may have been tree skeuomorphs which were erected and treated as objects of veneration. The sacred tree has powerful imagery, not only as a sky symbol but as a bridge between the upper and lower worlds (with its roots penetrating deep underground and the branches reaching towards the heavens). Related tree imagery concerns the 'Tree of Life' concept, the seasonal cycle of life, death and rebirth represented by the burgeoning and decline of leaf growth in summer and winter.

Fertility and water symbolism

If we are perhaps looking at cyclical, regenerative and fertility symbolism at Witham, already hinted at with horns, antlers and trees, then the limestone 'janiform' cult figure may spring into focus. The image is extremely schematised, with little attention to detail apart from the eyes (as has been noted in Graham Webster's specialist report). The significance of the nameless carving may lie in the differential treatment of the clothing: the long and short garments of the two figures may well, as Webster suggests, represent winter and summer images in acknowledgement of the earth's seasonal cycle. Certainly, in images where all but essentials have been pruned away, the treatment of the tunics stands out and must be meaningful. The 'looking-both-ways' aspect of the figure would fit well into an interpretation of a cult-being representative of both the 'live' and 'dead' parts of the year.

The theme of regeneration, with the closely related concept of healing, may be taken further in consideration of the presence of a water element as a significant cult feature at the Witham site. Ponds, waterlogged pits and depressions and springs play a prominent role, and the choice of such a situation must have been deliberate. Apart from the watery context, there is nothing which itself pertains to an aquatic cult. Nevertheless, it may be that a healing water god or goddess was worshipped here, to whom votive offerings were made. Springs were frequently associated with therapeutic cults in Britain, as in Gaul (Green, M.J. 1986, 138–166) and reference has been made in the Discussion to comparisons between Witham and the Source of the Seine sanctuary near Dijon (Deyts 1983). In the context of healing, too, it behoves us to note that in Gaul, at Sainte Sabine, Côte d'Or, for instance (Thevenot 1951, 131), there was a strong link between healing cults and horses. Thus, the combination of horse and water ritual at Witham may point to a healing deity.

Conclusion

It is, I think, impossible to argue positively for a specific, identifiable divinity at Ivy Chimneys. Most of the votive material is common to numerous sanctuaries and is in no way indicative of a particular god. There are, however, distinctive aspects of religious activity which may reflect cult themes or trends which were perhaps especially important to Witham devotees. The Palaeolithic hand-axes are of interest and they may well, like Neolithic polished axes, have been deliberately collected as votive offerings. Their interpretation as thunderbolt symbols is unproven but reasonable. But we should also not forget the possibility that such items may have held significance also for their pure antiquity value, which may itself have been endowed with magical imagery. Neolithic flint axes are known in Merovingian graves (Evans 1897, 144), and may have possessed the same kind of reverence value.

It is the seasonal, fertility and perhaps therapeutic symbolism which, it seems to me, is dominant at Witham. The zoomorphic ritual, with its emphasis on stags, cattle and horses would support this. Horn cores and the model horns point to the significance of the potent fertility imagery associated by the Celts with horns (Green, M.J. 1986, 195–9). Cattle are appropriate as symbols of prosperity; after all, the Ulster Cycle of early Irish tales is rich in references to cattle as sources of wealth, and indeed, the cow was the main unit of value in early Ireland (Green, M.J. 1986, 4). The presence of horse ritual may also reflect fertility and prosperity. Apart from the multifarious Celtic cults associated with horses, these beasts may have been revered in terms of their value for transport, traction, and indeed food. Linduff (1979) is of the opinion that Epona herself was especially concerned with the qualities of the domestic, pastured beast, its fertility and the well-being of it and the tribe. Epona was first and foremost a mother-goddess figure; the iconography is clear on this. Although, as I have argued above, it is rash to suppose that she was present at Witham, her cult does illustrate the fertility/prosperity aspect of horse symbolism in the Celtic world.

Trees, columns, pits, the cult figure and water are, as I have sought to demonstrate above, all in keeping with a cult concerned with fertility, seasonal regeneration and healing, and I think that this is the kind of religious interpretation that we should be looking for at Witham. Indeed, if we accept the thunderbolt symbolism of the hand-axes, the consequential implications of heat and rain themselves accord well with fertility as well as destruction. This site should be seen as an essentially local sanctuary, where indigenous Trinovantes followed beliefs and cult practices familiar to them for centuries. But there is no need to argue for the presence of imported continental deities such as Epona, Cernunnos or the Celtic Jupiter. The religious needs of the local population — with its necessary preoccupation with health, fertility and prosperity — were amply provided for at the Witham shrine, where the evidence for religious activity accords with a profound but unsophisticated system of beliefs. It is interesting that the putative Christian phase here, represented by font and 'church', may have been swiftly ended by the re-establishment of the local pagan spirits.

Appendix I. Microfiche contents

The published body of this report was produced at a time when detailed factual backup was expected to be reproduced in microfiche. This practice has since largely been disused, but, as the published report was written with this in mind, it remains necessary to make the microfiche material available.

As well as indicating the main title of the microfiche components, where necessary the following list of contents includes short descriptions of the components and an indication of how they might be used in conjunction with the published report. The microfiche contents have been divided into three main categories: Excavation Details, Excavation Illustrations, and Finds Details.

1. Excavation Details

1.1 Stratigraphic matrices
Stratigraphic matrices are included for each of the major features. These could be used in conjunction with the smallfinds list (see below) to examine the major finds occurring within a series of contexts. Stratigraphic matrices for the following contexts have been included:

Pond *F679*
Pond outlet ditches

Depression *F2409*
Depression *F3321*
Depression *F4502*

Ditch *F549*
Ditch *F738*
Ditch *F823*
Ditch *F837*
Ditch *F1124*
Ditch *F1199*
Ditch *F1594*
Ditch *F3203* and slot *F3644*

Kiln *F278*
Slots *F1123*
Pit *F3681*
Building *F4044*

1.2 Archive example
This example from the written archive includes the verbal description and details, plus an excerpt from the appropriate stratigraphic matrix. Most cut features will be shown on one of the major plans (see below), and a guide grid reference can be found in the context/finds index (see below).

1.3 Context/finds index
A list of all contexts showing the presence of major finds types, and also giving a guide grid reference for each context.

2. Excavation Illustrations

2.1 Drawing Numbers
For small plans and sections, indicates the type of drawing (pre-excavation, post-excavation or intermediate (pre- and post-excavation on same drawing) plan; section or profile), and the archive drawing sheet number on which the drawing occurs.

2.2 Major plans
Derived from 1:100 reductions of 1:20 plans of each 10 by 10m grid square, these major site plans are ordered in relation to their south-west grid reference. The scale and location can therefore be ascertained with regard to the grid references shown. Figure 2 shows the whole site, including outlying areas with prefixed grid references.

3. Finds Details

3.1 Smallfinds
This list of smallfinds in context order enables at a glance to see the major non-bulk finds for each context.

3.2 Axes
Full reproduction of Turner, R. and Wymer, J.J., 1987 'An assemblage of Palaeolithic hand-axes from the Roman religious complex at Ivy Chimneys, Witham, Essex', *Antiq. J.* 67.1, 43–60.

3.3 Box tiles
Database of characteristics of all recorded fragments of box flue tile.

3.4 Bronze
by Graham Webster
Descriptions of all minor bronze (copper alloy) objects.

3.5 Coins
Includes the following:
A. Catalogue of coins from the pre-1978 excavations by Richard Reece and J.A. Davies
B. Catalogue of barbarous radiate hoard from pre-1978 context S28/C (see also coins from S28/C2) by J.A. Davies
C. Catalogue of coins from the 1978–83 excavations by Richard Reece and J.A. Davies
D. Catalogue of barbarous radiate hoard 734, ordered by smallfind number by J.A. Davies
E. List of coins from the pre-1978 excavations, ordered by context, layer and coin number (latest coin underlined), with identifications by Richard Reece and J.A. Davies
F. List of provenanced coins from the 1978–83 excavations by Robin Turner
G. Key to catalogue numbers from coins in Plates
Table 5 Tabulated information from Catalogue F
Table 6 Original data for Reece's (1987) Temple Group of coins

3.6 Roman Glass Report
by Denise Allen
Summary of all minor vessel glass objects.

3.7 Iron Nails Report
by Hilary Major
Detailed report and short discussions on all iron nails.

3.8 Iron Objects
by Hilary Major
Descriptions of all minor iron objects.

3.9 Querns
by David G. Buckley and Hilary Major
Descriptions of all quern fragments not described in printed report.

3.10 Wallplaster
by Robin Turner
Table of colour combinations on wallplaster related to contexts from which they came.

3.11 Animal Bone Report
by Rosemary-Margaret Luff
Details of animal bones from rubbish and possible ritual deposits.

3.12 Molluscan and Plant Remains
by Peter Murphy
Details of methodologies plus tabulated details of key environmental columns.

Appendix II. The Witham Lodge earthwork: observations and trial excavations, 1970–72

by Warwick J. Rodwell

Introduction

Witham Lodge was a small country house set in an equally small private park alongside the Roman road from Chelmsford to Witham (A12), immediately to the south-west of the Ivy Chimneys site (Figs 152 and 153). The house was demolished in the late 1960s, and the building of a private housing estate on the former parkland commenced in 1970.

At the time, nothing was known of the archaeological potential of Witham Lodge, but in view of its proximity to the Ivy Chimneys site it was felt by the Chelmsford Excavation Committee (later Chelmsford Archaeological Trust) that at least a minimal evaluation exercise should be initiated. Trial excavations were therefore undertaken in July 1970 by Miss B.R.K. Dunnett, in the north corner of OS Field 1054, on behalf of the Committee and the Department of the Environment. Part of a hut circle of the Early pre-Roman Iron Age (EPRIA) and two curving ditches of the late Roman period were found (Fig. 152, *F6, F7* and *F9*), the latter evidently being part of an enclosure situated on rising ground some 200m from the Roman road. Unfortunately, no report could be prepared on this work, owing to the loss of the records: these were removed from the site by a supervisor who has never subsequently been traced, despite considerable effort. The *approximate* positions of Miss Dunnett's trenches were, however, planned by the late Mr M.C. Wadhams, so that the locations of the principal features have not been lost (Fig. 152).

In September 1970, when the roads were being laid out for the new housing estate, deep trenching for sewers revealed several large ditches close to the Roman road, in an area which had not previously been investigated. A hasty note of the features was made, and one major section drawn by Mr PJ. Drury. In an attempt to define more clearly the nature and extent of the ditches, it was determined that further trial trenching should be undertaken by Chelmsford Excavation Committee. This work was carried out by Mrs Kirsty Rodwell and the writer in December 1970, under extremely difficult conditions. This investigation demonstrated the presence of a substantial Iron Age settlement, apparently within a major ditched enclosure, which was later overlain by the Roman road. The possibility that the curving ditches on the higher ground were associated with the *temenos* of a Roman religious precinct was recognised, and proposals for large-scale excavations were formulated.

For various reasons, including the lack of adequate funding, the proposed excavations were not then carried out, and the opportunity to examine the roadside earthworks was wholly lost. A small amount of further trenching was undertaken by the late R.T. Brooks in 1972 on the Iron Age features, and a partial report on this work was published (Brooks, *et al.* 1976).

The excavations

The purpose of this note is to report briefly upon the various excavations and observations made in 1970, incorporating also the work of 1972. A composite plan of the trenches excavated in OS Fields 1054 and 1961 has been prepared (Fig. 152). All trenches were machine-dug, supplemented by only a small amount of cleaning up and excavation by hand. Of the 525m of trenches cut in December 1970, most involved no more than the removal of topsoil and hill-wash, the intention at that stage being to establish the general pattern of archaeological features, without occasioning unnecessary destruction. Partial sections of the ditches beside the Roman road were, however, cut by machine.

The features will be described under three heads: the large ditches close to the road (which have become referred to in recent years as the Witham Lodge earthwork); the religious enclosure; and other minor features.

The Witham Lodge earthwork

(Figs 152–155)

The 1970 sewer trenches intercepted at various angles, and to varying depths, at least two major ditches which ran as a parallel pair almost due east-west for a distance of upwards of 150m, from the edge of Hatfield Road to a group of ponds close to the former Witham Lodge (Fig. 153). The line of the ditches is in part still visible as a slight scarp, and it is evident that an indistinct earthwork must have marked much of their course before building operations began. Moreover, the ponds provided further tangible evidence for the outer ditch, and the early 19th-century curving drive to the Lodge was clearly laid out to take advantage of the topography. The ground around the Lodge and its outbuildings was heavily disturbed, but it appeared that the ditches did not continue westwards, under and beyond the Lodge, but turned north, passing under the stables and then following the line of an extant field boundary. There was formerly a long, narrow pond incorporated in this boundary: this was presumably contained within one of the ditches, and possibly even marked the site of an opening through the earthwork, since there was a slight change of alignment in the field boundary at this point (Fig. 153).

A definite entrance into the earthwork enclosure was found on the south side, where the terminals of the more northerly (inner) ditch were inturned. East of this entrance there appears to have been a third ditch, outside the other two, and all three were clearly overlain by Hatfield Road. The eastward continuation of the earthwork was, however, perpetuated first by a short length of field boundary, and then by a streamlet running past Howbridge Hall. Part of another earthwork still survives on the south side of Maltings Lane, running eastwards to a four-way road junction at Pondhalton Farm. However, this is entirely separate from the Witham Lodge earthwork (Rodwell 1993, 52–3)

Fieldwork and observation in 1970 thus established the south-west corner of a major enclosure, and further parts of the south and west sides were elucidated topographically with a reasonable degree of precision. Unfortunately, the opportunity to seek the north side of the enclosure was not seized soon enough, and the whole area has now been obliterated beneath housing estates. It is, however, possible, with retrospective analysis of the topography based on estate maps of 1752 and 1812, and on the Tithe Map of 1839, to suggest the likely course of the earthworks on the north and north-west. It is apparent that the medieval manorial complex at Blunt's Hall was developed alongside a curious junction of boundaries which would make eminent topographical sense if they marked the north-west corner of the Witham Lodge earthwork. From here, a continuous line of boundaries

runs eastwards to a small side-stream of the Brain. Two entrances are likely on the north, though only one may be original. If these deductions are correct a very large, polygonal enclosure is indicated. The area enclosed would be *c.* 70ha (180 acres), if the river itself formed the east side. Topographical evidence, however, suggests an independent east side and an enclosed area of *c.* 56ha (140 acres), as shown on Figure 153.

The south side of the earthwork was noted in nine places in the contractors' trenches, shown on Figure 152; other trenches that cut the line were not archaeologically observed. The inner ditch, *F1*, was seen at points A, B, E and G. In two further places, points C and D, sections of north-south ditches were seen, but from the markedly different profiles presented in opposed faces of the same sewer trench, it was evident that these features were in fact butt-ends. Thus ditch *F1* had an inturned entrance. The outer ditch, *F2*, was cut by the contractors at points F and H, and its line further indicated by the visible escarpment at K and the ponds at L. Nothing is known of any entrance arrangements through this ditch. In digging a manhole at point J the contractors encountered what appeared to be the butt-end of yet another substantial ditch, *F3*. It was not possible to examine this feature at any other point.

The trial excavations of 1970 confirmed the line of ditch *F1* in Trenches 1 and 2, but not explicitly in Trench 5. Here, an infilled pond was encountered precisely where the ditch should have been. Ditch *F1* was also sectioned in 1972, in Trench 25 (Brooks' ditch B; Brooks *et al.* 1976, fig. 2). Brooks did not, however, locate ditch *F2* in Trench 25; instead he found a new feature, *F4*, a ditch on a different alignment (Brooks' ditch A). There is no reason to doubt that *F2* was in fact present, but its inconspicuous filling was overlooked in favour of the more obvious *F4*, which was merely a smaller ditch cut into the top of the infilled *F2*.

Ditch *F1* had a slack, V-shaped profile, and its original dimensions were *c.* 5.0m wide by *c.* 2.8m deep (Fig. 154). The base of the ditch was not reached in the sewer-trench sections, but in Trench 25 the primary silting was located, and was found to have entered from the north. The bank was thus internal, as might be expected, and vestigial traces of it were recorded in one sewer trench section. The bank was shown to have been at least 3.5m in width, after which the evidence faded out.

Finds from *F1* were sparse, except in the uppermost fills, where late Roman material occurred. The section in Trench 25 showed that the ditch had been more than half filled by the late Roman period, when a small V-shaped ditch (*F5*) was cut into it (Brooks *et al.* 1976, fig. 3, BB). The lower fills of *F1* were of stiff, leached clay which yielded traces of preserved organic materials and many small lumps of fired boulder clay. Effectively, the ditch remains undated, although it can only be prehistoric since it was demonstrably overlain by the Roman road from London to Colchester, and that is one of the earliest roads in the province.

Ditch *F2* ran parallel to *F1* and must have been associated in some way, although it is impossible to demonstrate strict contemporaneity. The ditch was *c.* 4.6m wide and *c.* 2.5m deep, and had a similar filling to *F1*. There was clearly no room for a bank or berm between the ditches, and the general impression gained from the sections is that *F1* and *F2* formed a defensive pair, with a single internal bank (Figs 152 and 154). The possibility that *F3* was a third ditch in the same system, or perhaps an entrance-work, cannot be pursued further.

Little can be said about the later features, *F4* and *F5*, which cut through the partly levelled earthwork; also at the south end of Trench 2 a spread of fired clay and charcoal sealed the lip of ditch *F1*. This material was probably derived from a nearby hearth, but again there was no dating evidence. However, a sherd of late Saxon cooking pot, in reddish-brown gritty fabric, was found in the filling of *F1* below the spread of burnt material. There was thus some post-Roman activity in the partly silted earthwork, but the area had been too heavily disturbed by the newly-laid sewers to permit further exploration.

The religious enclosure
(Fig. 152)

On the rising ground, *c.* 120m north of the entrance into the prehistoric earthwork, the rounded corner of a second enclosure was found. It appeared to be concentric with the earthwork at this point, and to consist of a pair of ditches (*F6* and *F7*) of broad, shallow profile, with evidence of several re-cuts (Brooks *et al.* 1976, fig. 5). On the south-east side of the enclosure a third ditch (*F8*) was located outside the others; this was seen in trenches 10, 11, 14 and 17; if this ditch continued further west it must have diverged from, or merged with, the inner pair. The ditches yielded much late Roman material, and clearly defined the *temenos* within which the Roman religious buildings were set. No evidence for an entrance into the religious enclosure was found.

Just outside ditch *F8*, in Trench 10 (Fig. 152), a bed of clean gravel was found, overlain by 0.75m of dark silt. Water issued freely through the gravel, at what was evidently a spring-rising point; there had formerly been a pond here, although not in modern times.

Other features

In addition to the ditches associated with the two principal enclosures already described, various other ditches of Roman, medieval and later date were encountered, following several different alignments. Some ditches were aligned in sympathy with the prehistoric earthwork and with the orientation of Iron Age and Roman features in the temple complex (*e.g.* ditches in Trenches 10, 12 and 17); others formed part of a rectilinear system of small fields, based upon the Roman road (*e.g.* ditches in Trenches 6, 8, 13, 25–7 and 31). There were no post-Roman finds from any of these ditches, but at least one was clearly associated with a planned block of five small fields of medieval or, more likely, later date (Rodwell 1993, 96–7). Finally, definite post-medieval ditches associated with existing roads and boundaries were located in Trenches 4 and 16.

Trench 4 was opened to examine the slight scarp along the north-west side of Hatfield Road. It was found that the road had been terraced into the gently rising ground, and provided on the uphill side by a ditch to arrest the rainwater run-off. Two successive ditches were found here, one largely under the present footpath, the other alongside it. Both were heavily disturbed and yielded post-medieval artefacts. The ditches were broad and flat-bottomed; the outer one was 3.2m wide, and had originally been *c.* 0.8m deep, but was buried by a further 0.4m of hill-wash which was the result of post-medieval agriculture. Trench 16 located two post-medieval ditches flanking the track which formerly led to Ivy Chimneys Cottages.

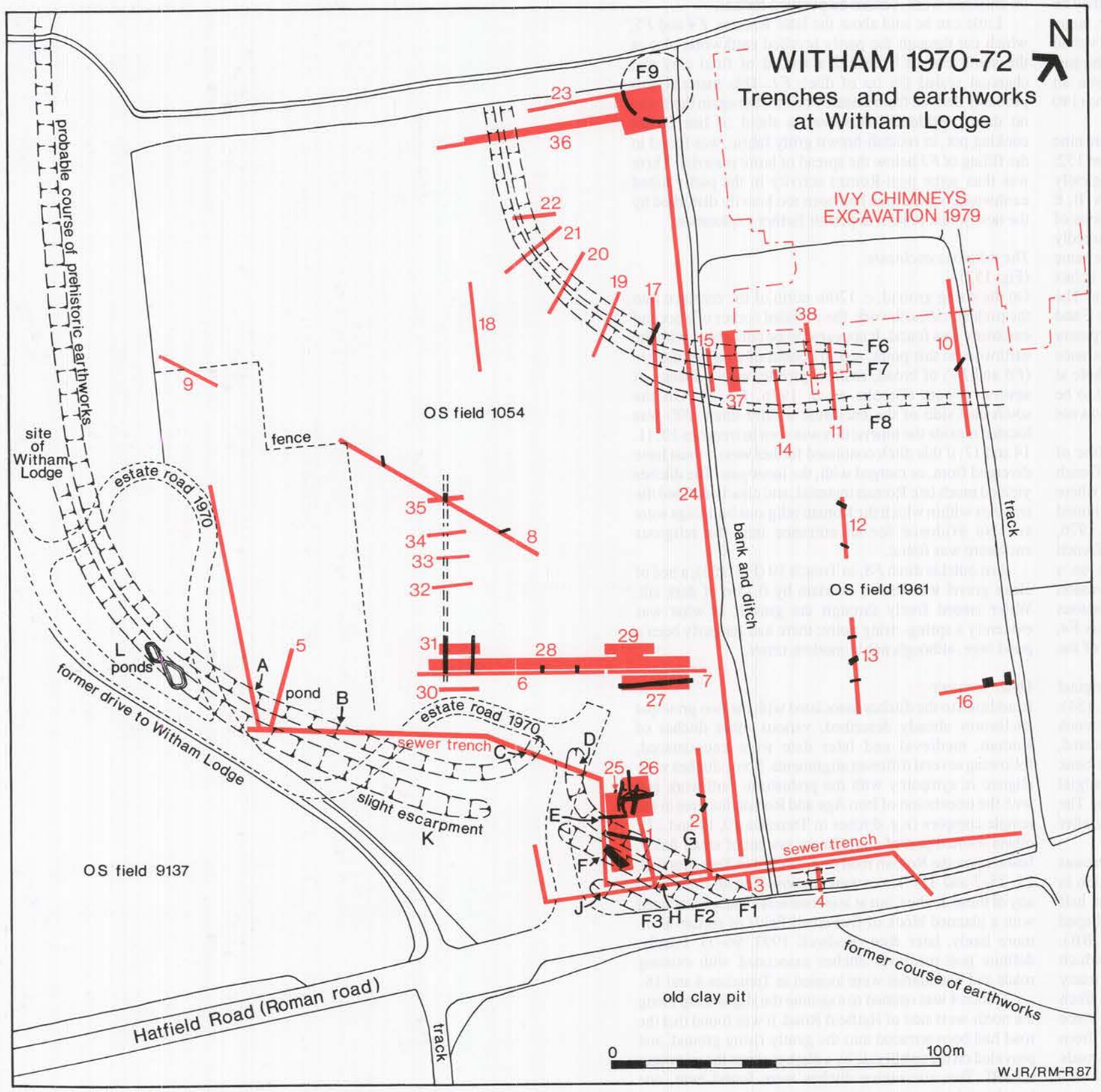


Figure 152 Witham Lodge 1970–72: composite plan of sewer trenches and all archaeological trenches in relation to topographical features existing in 1970. Scale 1:1500

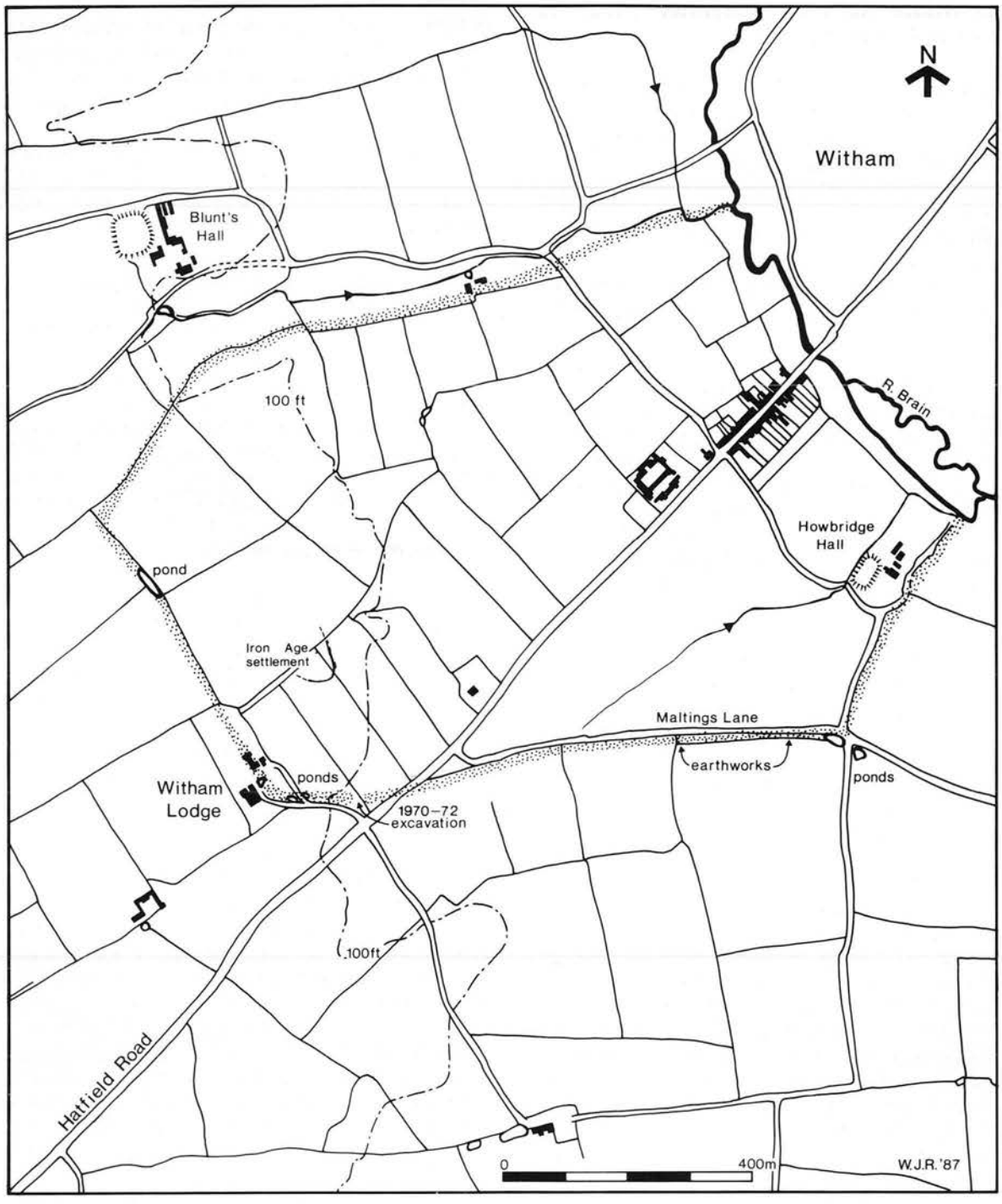


Figure 153 Witham Lodge Earthwork: probable extent of prehistoric enclosure. Scale 1:10,000

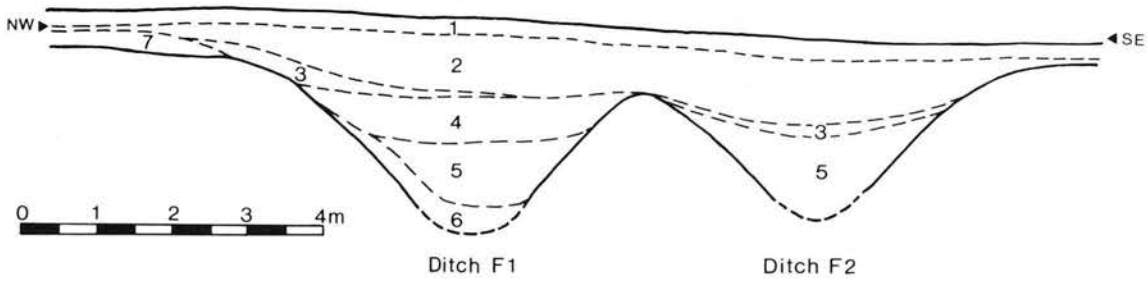


Figure 154 Witham Lodge Earthwork: simplified section of prehistoric earthwork. Scale 1:100

Figure 155 Witham Lodge: prehistoric earthwork in relation to surviving traces of a rectilinear landscape. Scale 1:30,000

Minor features — post-holes, gullies, hearths, shallow depressions, *etc.* — were prolific in most trenches, particularly in the central region of the site; insofar as they were datable, they could be assigned to the Iron Age and Roman periods. These features were too fragmentary to be worth cataloguing or illustrating in detail; one was, however, clearly comprehensible as the wall-trench of a circular hut, *F9*. About one quarter of the building was excavated by Miss Dunnett (Trenches 23 and 24), and is recorded as having a diameter of *c.* 20m. The irregular U-shaped gully which defined the structure was of the wall-trench type, which originally held a continuous series of posts or planks. The only finds from the gully were small sherds of flint-gritted pottery of the EPRIA.

There was a notable dearth of features and topsoil finds on the west and south-west sides of the site, indicating the limits of occupation, both Iron Age and Roman; Trenches 5 and 9 were entirely barren, while 8 and 18 yielded very little. At the south-west end of Trench 6, also towards the fringe of the settlement, an extended inhumation burial of an adult male was found. Coincidentally, this was precisely aligned with, and contained within, the machine-cut trench; the head was to the north-east. The grave was shallow and there was no sign of a coffin. The feet had been cut off at the ankles by a later feature, and the skull was partially missing too; this had been disturbed by a modern land drain. The skeleton was not lifted at the time (apart from the lower legs, which were disturbed by the machine), but was carefully re-covered for subsequent excavation, which did not come to pass. Several sherds of EPRIA pottery were found on the ribs indicating that the grave must be assigned to the Iron Age or a later period. The orientation militates against a medieval date, but not necessarily against an earlier Christian origin.

An isolated and unaccompanied burial here is perhaps unlikely to be Roman, especially since a cemetery of unknown size was found in the late 1960s, when garages were built just north of the temple complex at Ivy Chimneys; there, the inhumations were accompanied by pottery vessels. The balance of probabilities favours the Iron Age for this single burial.

The finds

Most of the finds recovered from trial trenching were not in significant groups; some of the Roman pottery has already been published (Brooks *et al.* 1976, figs 6 and 7). The finds are therefore dealt with here in summary form, and only intrinsically significant items are illustrated. Some of the finds from Miss Dunnett's excavations are in the Colchester and Essex Museum; those from Mr Brook's work are in the Passmore Edwards Museum, West Ham; and those from the Rodwells' excavations are in the Chelmsford and Essex Museum, along with the finds from the main site at Ivy Chimneys.

Coins

The writer was shown a Class ii Potin coin from Dunnett's trenches across the Roman *temenos* ditches: present whereabouts uncertain. In addition to the thirteen late Roman coins found by Brooks, an illegible 4th-century bronze was found in the upper fill of *ditch F1* (Trench 1) and one of Constantine I was found in a *gully in Trench 2*.

Copper alloy

(Fig. 156)

1. Hoop-shaped handle: for attachment to the rim of a small metal bowl, or a glass bowl, with a rim diameter of *c.* 75mm. Rectangular cross-section; decorated on the upper face with engraved lines and notches. Roman. *Trench 1, gully butt-end*

Pewter

(Not illustrated)

Short length of rod: square section (6mm); spirally twisted; length 80mm. Perhaps part of the handle of a pewter spoon. Roman. *Trench 1, gully*

Flint

(Fig. 156)

2. Microlithic blade: 47mm long; very finely retouched on one edge to form a saw-toothed edge. *Trench 7, small pit*

Glass

(Not illustrated)

Very small biconical bead: green glass; 5mm diameter. Probably late Roman. *Trench 1 unstratified*

Prehistoric pottery

(Fig. 157)

The EPRIA pottery from Witham Lodge provides a small but welcome addition to the modest quantity of material from central Essex, and is therefore given fuller treatment here.

1. Situlate jar: coarse orange-brown fabric; tempered with sand and large fragments of crushed calcined flint. Plain flat-topped rim; externally the neck is decorated with a series of diagonally set, shallow finger-nail impressions, and below the shoulder are vertical

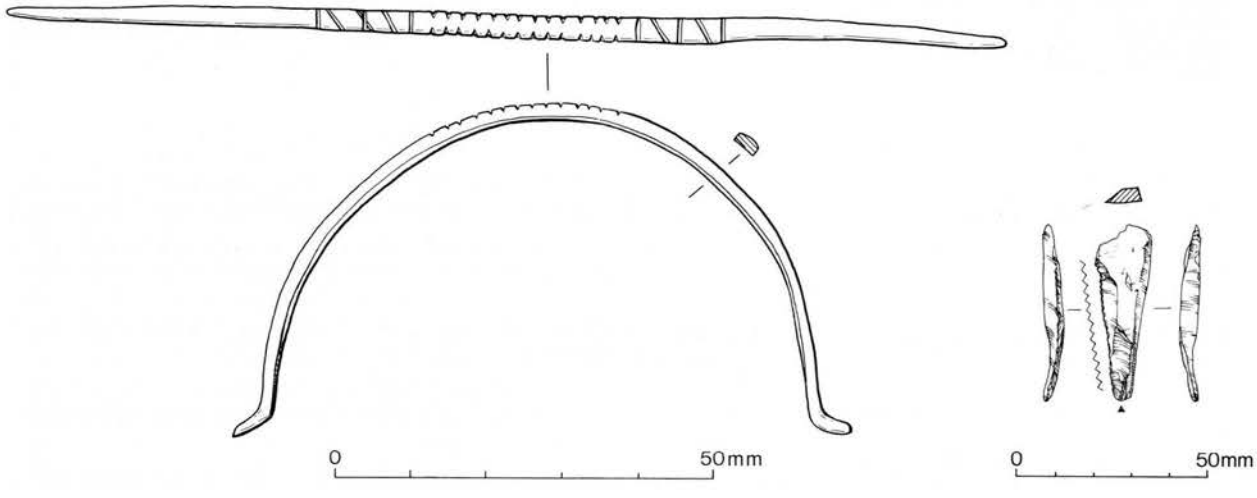


Figure 156 Witham Lodge: No. 1 coppper-alloy handle; No. 2 flint blade

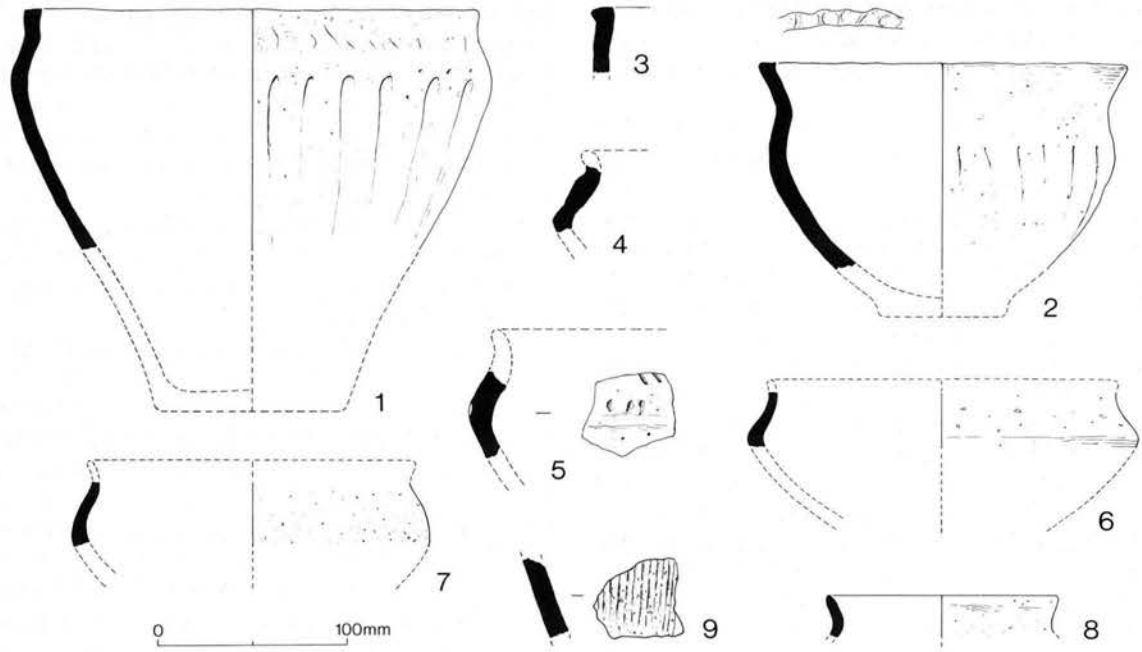


Figure 157 Witham Lodge pottery: Nos 1–9 Early pre-Roman Iron Age

finger-wiped markings. The fabric and form match a vessel in a waster group from a pit at Rivenhall, *c.* 4.5km distant (Rodwell and Rodwell 1993, 60). A date in the Late Bronze Age has been suggested for that group. Inadequately illustrated in Brooks *et al.* (1976, fig. 7.62). *Trench 29, small pit*

2. Bowl with outward-flaring rim: soft, orange-brown fabric; tempered with sand and occasional fragments of crushed flint; there are also some vegetable lacunae. The flat-topped rim is roughly cabled, and there is a series of shallow indentations or wipe-marks below the shoulder. The form is rare in Essex, although characteristic of the neighbouring 'Chinnor-Wandlebury style' (Cunliffe 1978, fig. A10). The closest parallels in the locality are from Twitty Fee, Danbury (Dunning 1934, fig. 1). From the same location as No. 1 above (incorrectly published as two separate vessels in Brooks *et al.* (1976, figs 7.63 and 7.64)). *Trench 29, small pit*
3. Rim of jar or bowl with flat top and externally pointed lip: grey-brown fabric; tempered with crushed flint of mixed size. Secondary firing has given the sherd a purplish tinge, and the surfaces have begun to vitrify.
4. Shoulder of a sharply carinated bowl: fabric and condition as No. 3.
5. Large carinated bowl: hard, well-fired grey-brown fabric; tempered with a moderate amount of crushed flint (mostly fine, but also containing a few large lumps). Mottled brown surfaces, with finger-nail impressions on the carination.
6. Shoulder of a plain carinated bowl: reddish-brown fabric; black interior and smooth reddish-brown exterior; tempered with small amounts of sand and crushed flint. A typical example of the 'Darmsden Linton' group (Cunliffe 1978, fig. A11.24). *Trench 2, pit*
7. Shoulder of a similar but more rounded bowl: black fabric; reddish-brown surfaces similarly tempered to No. 6. Found with No. 6. *Trench 2, pit*
8. Everted rim of a small bowl or jar: hard-fired, reddish-brown fabric; tempered with a small amount of finely crushed flint; smooth surfaces, probably once burnished. Found with No. 6. *Trench 2, pit*
9. Body sherd of a large jar: reddish-brown fabric; tempered with coarsely crushed flint; decorated with vertical combing. While surface wiping is paralleled locally on flint-tempered pottery, true combing is not: for a possible occurrence on EPRIA pottery at Thriplow, Cambridgeshire, see Trump (1956, fig. 3.10). Vertical combing is, however, commonly found on early Belgic sand-tempered wares locally. Found with No. 6. *Trench 2, pit*

Roman pottery

(Fig. 158)

10. Argonne ware. Rim and traces of two bands of roller-stamped decoration of a bowl of Drag. f.37: fine, orange-red paste, formerly covered with bright orange slip, now almost entirely excoriated through adverse soil conditions. The roller, with a simple diagonal hatching, almost certainly matches Chenet's die no. 11 from Lavoye (Chenet 1941, pl. 29, no. 11). Late 3rd or 4th century.

    Finds of roller-stamped Argonne ware are not common in Essex: they have been recorded at Colchester, Heybridge, Bradwell-on-Sea, Rawreth, Mucking and Harlow. The sherd from the Harlow temple site was decorated with the same roller as the Witham vessel (Rodwell 1985, 105, fig. 53.7). *Trench 15, ditch F7*

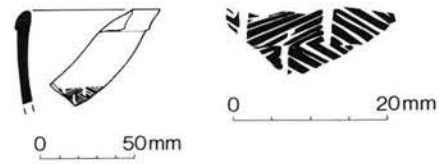


Figure 158 Witham Lodge pottery: No. 10 Argonne Ware

Summary and discussion

A series of trial-trenching operations carried out under entirely unsatisfactory conditions revealed extensive traces of prehistoric and Roman settlement, much of which had already been destroyed by housing of the 1960s before the significance of the site was fully realised. Earlier prehistoric activity is attested by finds of flint implements and waste, but the oldest structural remains recorded belong to the Early pre-Roman Iron Age (EPRIA) and are associated with an open settlement. No finds or features specifically attributable to the Middle pre-Roman Iron Age (MPRIA) were recorded, which may be purely fortuitous, or may be connected with the refortification of the plateau camp on Chipping Hill, 1.4km to the north-east (Rodwell 1993).

In the Late pre-Roman Iron Age (LPRIA), however, there was considerable activity at Witham Lodge, and a rectilinear system of enclosures was laid out on a nearly east-west axis. Excavation, coupled with fieldwork and topographical analysis, also indicate that the large ditches found at Witham Lodge belong to a major Iron Age enclosure containing the whole of the known settlement area. Moreover, it is readily apparent that the same rectilinear ditch system that is found inside the enclosure also occurs outside it, over a wide tract of land west of the river Brain (Fig. 155). This system is detectable amidst the older lanes, footpaths and other boundaries which survived into early modern times, to be recorded through estate and tithe maps (*cf.* Rodwell 1993, fig. 36). Detailed topographical analyses undertaken in Essex (Rodwell 1978) and elsewhere in recent years, often in conjunction with excavation, have indicated the unexpected survival of tracts of pre-Roman landscape: a nearby example has been identified at Rivenhall (Rodwell and Rodwell 1985, 66–8, fig. 50). At Witham Lodge the rectilinear system is probably slightly earlier in date than the main earthwork enclosure which, in terms of landscape stratigraphy, appears to be overlaid on the fields. Not only are both elements internally dated to the Iron Age, but additional and unequivocal confirmation of their pre-Roman date is provided by the fact that the early Roman military road from London to Colchester cut a diagonal swathe across the whole area. The same road cut across another series of pre-Roman fields at Chelmsford (Drury and Rodwell 1980, fig. 23), while the early Roman military roads into East Anglia have been demonstrated to be later than field systems at Little Waltham (Drury 1978a, 134–6, fig. 74), and at Yaxley, Suffolk, and Scole, Norfolk (Williamson 1986, 242–5, figs 1 and 2).

The Witham Lodge earthwork itself belongs to a class of large enclosures constructed in the final decades of the Iron Age in lowland Britain, of which major examples such as Wheathampstead, Hertfordshire, and Dyke Hills, Oxfordshire, are well known (*cf.* Cunliffe 1978, fig. 13.29). While the area enclosed at Witham (probably *c.* 56ha) was large, the scale of the rampart and ditches could never have been impressive or constitute a defence which could be fully manned. The ditch sections at Witham may be compared to some of the minor dykes at Sheepen, Colchester (*e.g.* ditch IB or ditch II in Region 5; Hawkes and Hull 1947, figs 30 and 31), while the plan is reminiscent of the phase 2 enclosure at Stanwick, Yorkshire (Wheeler 1954, fig. 2).

The laying out of the London to Colchester road in the mid-1st century must have occasioned the destruction of part of the earthwork, but the settlement formerly contained within it continued in use, and while new field systems based on the alignment of the road were laid out to the north-east of the Brain (in Witham, Rivenhall and Kelvedon), the pre-Roman arrangement south-west of the river (as far as Terling) was modified piecemeal, but not wholly replanned. In the post-Roman period the interior of the Witham Lodge enclosure was largely uninhabited, settlement having shifted to the perimeter; here on opposite sides, the two Domesday manors of Blunt's Hall and Howbridge Hall emerged alongside the former defences, possibly at entrances (Rodwell 1993, 49). The few post-Roman features, together with the small quantity of Saxon and medieval pottery, recovered from the Witham Lodge site relate to the history of Ivy Chimneys, a relatively minor property. It would also appear that the first significant attempt to create a new pattern of fields in this area, based on the axis of the Roman road, was of fairly recent date, probably post-medieval.

The above account was written in 1980 and revised in 1987. A fuller discussion of the archaeology and topography of the Witham area has since been published (Rodwell 1993).

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