

**CAISTER-ON-SEA  
EXCAVATIONS BY  
CHARLES GREEN 1951-1955**

East Anglian Archaeology

Field Archaeology Division, Norfolk Museums Service 1993

EAST ANGLIAN ARCHAEOLOGY





**Frontispiece**

Aerial view in 1952 looking south, showing the excavation of Area 1 in progress. *Crown copyright.*

# **Caister-on-Sea Excavations by Charles Green, 1951–55**

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with David Gurney**

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Reconstruction of Roman Port, Caister-on-Sea, by Alan Sorrell (1972)

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The volume has been prepared for publication by Susanne Atkin and Susie West.

M.J. Darling

D.A. Gurney

November 1988

## Abbreviations

In addition to conventional abbreviations for units of length and area and other common abbreviations, the following are used in this volume:

I to XII (preceded by A to S)	Grid square easting
4/92 (example)	Green Notebook 4, page 92
A to S (followed by I to XII)	Grid square northing
AML	Ancient Monuments Laboratory
F (1 to 78)	Feature number
G	Grave (= Interment)
Int. (fiche)	Interment (= Grave)
LB	Layer Bag number
NAU	Norfolk Archaeological Unit
NCM (with accession number)	Norwich Castle Museum
OD	Ordnance Datum
Pl/soil	Ploughsoil

PR (fiche)	Post-Roman
Rooms 1 to 9	Rooms of Building 1
Rooms NW1 to NW6	Rooms of Building 2
SF	Small Find number
Site	Site in the Norfolk Sites and Monuments Record
(3099) (fiche)	Layer Bag 3099

Within various sections of the volume, generally in specialist reports, other abbreviations have been used. These are listed at the beginning of the relevant section.

References to Figures, Plates and Tables in this volume have initial capital letters (i.e. Fig., Pl. and Table); references to other reports cited are in lower case (i.e. fig., pl. and table).

Abbreviations used in the bibliography are those of the *Standard List of Abbreviated Titles of Current Periodicals and Series* (Council for British Archaeology, 1974).



## Sites in this volume

The two excavations which are the main subject of the volume are:

1. Charles Green, 1951–55  
for the Inspectorate of Ancient Monuments and Historic Buildings, Ministry of Works.  
Excavation of an area in the south-west quarter of the fort, and the post-Roman cemetery to the south of the fort.  
SMR Site No.8675  
NCM Acc. No.193.961  
(see Chapters 1, 2.I–II, 3–9, Appendix 8)
2. David Gurney, 1986  
with the NAU MSC excavation team for the Historic Buildings and Monuments Commission.  
Excavation of a small area of the intra-mural road.  
SMR Site No.8675  
NCM Acc. No.131.988  
(see Appendix 4) (microfiche)

Other published excavations frequently referred to are:

3. J.A. Ellison, 1961–63  
for the Inspectorate of Ancient Monuments and Historic Buildings, Ministry of Works.  
Excavation of trenches at the north-west, north-east and south-east corners of the fort, and trenches to the north of the fort.  
SMR Site No.8675  
(published in *Norfolk Archaeol.* 33 (1962), 94–107; 34 (1966), 45–73 (see Chapter 2.I))
4. D.C. Higgins, 1966–68  
A small excavation at the north-east corner of the fort, an area previously trenched by Ellison (3. above).  
SMR Site No.8675  
NCM Acc. No.607.972  
(section, summary of structural sequence and three groups of pottery published in *Norfolk Archaeol.* 35 (1972), 279–301)
5. A. McEwen, 1979  
for the Great Yarmouth Archaeological Society.  
A small area of the post-Roman cemetery was excavated.  
SMR Site No.8675

(published in *Yarmouth Archaeol.* I, 3 (1981))  
(see Chapter 3)

Information from the following unpublished excavations has also been incorporated:

6. A.E.S. Musty, 1972  
for the Department of the Environment.  
Two areas excavated, one across the defences on the east side of the fort, and the other outside the wall on the west side.  
SMR Site No.8675  
(see Chapter 2.IV)
7. A. Lawson and A. Rogerson, 1977  
for NAU with the Norfolk Archaeological Rescue Group and the Great Yarmouth and District Archaeological Society.  
A watching brief on the Caister By-pass led to the excavation of part of an enclosure and pits.  
SMR Site No.12737  
(see Chapter 2.V and Appendix 6 (Roman pottery) (microfiche))
8. Norfolk and Suffolk Metal-Detector Society, 1978–1981  
Metal-detector finds from the Caister By-pass.  
SMR Site No.12872  
(see Chapter 2.V)
9. NAU MSC excavation team, 1986  
Excavation west of the fort in advance of a housing development.  
SMR Site No.12872  
NCM Acc. No.132.988  
(see Chapter 2.V)
10. Casual finds, 1970s or early 1980s  
Finds probably from a military burial south of the fort.  
SMR Site No.8675  
NCM Acc. No.291.987  
(see Appendix 5) (microfiche)
11. A.K. Gregory, 1976  
A watching brief on the removal of a pylon in the south-west quarter of the fort (Area 1).  
SMR Site No.8675

## Preface

Between 1951 and 1955, the late Charles Green carried out excavations at Caister-on-Sea on behalf of the Inspectorate of Ancient Monuments and Historic Buildings, Ministry of Works. The excavation was at first intended to be of only two months duration, but within a few weeks the full importance of the site was realised, and excavation continued without a break from the summer of 1951 to January 1955.

Charles Green died in 1972 without producing a report on the excavations. The first part of an account of the site had been prepared (Green, n.d.; an unpublished typeset report, mainly concerned with early records, the name of the site, the Great Estuary and the local topography, and post-Roman settlement and the cemetery). Annual summaries were published in the *Journal of Roman Studies*, 1951 to 1954.

Post-excavation work on the site records and finds was commenced by the principal author (M.D.) at the Archaeology Department, Norwich Castle Museum in 1977, this being funded by the Department of the Environment, later the Historic Buildings and Monuments Commission. This

post-excavation project continued (alongside work on other projects) until March 1986.

Between January and September 1988, the second author (D.G.) was responsible for co-ordinating the completion of specialist reports, completing other unfinished sections of the report, and sub-editing the volume for publication. The 1986 excavation included as an appendix was the subject of a separate project.

The length of time over which the report has been in preparation is largely due to the complexity of the records and the very large quantities of finds from the excavations. All specialist reports completed early in post-excavation have been updated where possible (in 1988) before publication.

The completion at the last moment of the report on the human bone from the Area 4 cemetery has meant that this has been included as an appendix. Similarly, it is now possible to include the human bone report for Charles Green's excavations at Burgh Castle, which had not been completed when the excavation report was published (Johnson 1983).

## Summary

The Roman defended site at Caister, hitherto viewed as a small town, can now be seen to be an early coastal fort, probably contemporary with Reculver and Brancaster, both of which appear in the *Notitia Dignitatum* as forts of the Saxon Shore. The initial foundation of these sites may be related more to a reorganization of both army and naval forces than purely coastal defence.

The Caister fort appears to have been built on unoccupied ground in the early 3rd century on the south-east corner of the island of Flegg overlooking, in the Roman period, a wide estuary; although there was a mid-1st century settlement to the west, there is sparse evidence to suggest contemporary civilian occupation in the area. The design of the fort is of the earlier Roman type, with a defensive wall backed by an earthen rampart. There were probably internal towers at the corners, but no bastions. The wall encloses an almost square area of approximately 8.75 acres (3.54ha), and this was surrounded by at least two ditches, the whole site covering some 12 acres.

The fort interior is now largely covered by housing. The excavated area in the south-west quarter of the fort examined the west side of the south gate, the defences and the internal road from the south gate. Behind the rampart, used for rubbish dumping throughout the occupation, a simple strip-building (1) possibly constructed in the mid- to late 3rd century, had flint walls with a superstructure of timber framing with wattle-and-daub and a tiled roof. Traces of earlier timber buildings underlay this building. Later additions, which cannot be closely dated, included an unusual wide angled passageway to the north, and a west range at right angles, probably including a water tank. The function of the building clearly changed during its long life, and

while there is evidence to suggest that it may have been a workshop or service building, the provision of a hypocaust suggests some domestic use, while open hearths also occur. The last phase is structurally unusual, provided with rough *opus signinum* flooring and wallside gutters, suggesting a specialist function. The provenance of a Constantinian coin hoard suggests that the building may have been partially ruinous in the later 4th century.

North of this building, a second fragmentary timber-framed building (2), possibly of 4th century date, was excavated, overlying the ephemeral remains of an earlier flint-walled structure with a hypocaust. The latest building had notably small rooms, some floored with *opus signinum*, and its function is unknown. Between this building and the internal road, a feature resembling a small corn-drier was found, and in the open area to the south, a water tank.

Finds indicate occupation by cavalry, although specifically late military equipment is absent, and women appear to have been present for most of the occupation. Finds from a military burial including a sword have been recovered from the area south of the fort. Items of late metalwork, buckles, crossbow brooches, etc., suggest high-ranking officials, whether military or civilian. The high quality of some of the finds is noteworthy. There is evidence for metal, shale, bone and antler working and, from the animal bones, indications of slaughtering, related either to food or hide supplies.

The replacement of earlier structures by Building 1 may have coincided with the construction of Burgh Castle, some 5½ miles to the south across the estuary, in the later 3rd century. The placename *Gariannonum*, derived from the River Yare, may have been that of the initial fort at Caister,

later being applied to both sites. The necessity for the proximity of the two forts may have arisen from the problems of guarding the large and complex estuary. Later occupation of the two sites appears to have been identical, both producing Constantinian hoards, perhaps indicating a crisis affecting both sites in the 4th century. The nature of the military use of the site in the mid- to late 4th century is uncertain; the emphasis may have reverted from defence back to supply and shipping protection.

The site produced a large assemblage of small finds and approximately one tonne of pottery. The importance of this assemblage rests in the relatively restricted date range in the later Roman period. The early ceramics includes an important group of North Gaulish coarse wares, and it would seem that the earliest supplies of pottery came from varied sources, probably including Essex. By the mid-3rd century, local kilns and trading links with the Nene Valley had been established; a range of mortaria, unusually in grey fabrics, were found. The later pottery resembles that from Burgh Castle. Finds include an unusual coin hoard, assembled probably in the Danubian area which, with a glazed mortarium from the same area and a steatite bowl, suggest incoming personnel in the mid-4th century.

The finds evidence suggests active occupation ceased in the later 4th century, possibly in the period *c.* AD 370–390, although some casual occupation may have occurred later. There is no evidence of destruction of the buildings, which seem to have fallen into slow decay.

The site appears to have been unoccupied until the Middle Saxon period, when activity within the fort is attested by numerous disturbances and pottery. Two Middle to Late Saxon burials were dug into the remains of Building 1, suggesting it was no longer discernible. The main area of post-Roman occupation appears to have been towards the centre of the fort.

Outside the walls to the south, an extensive cemetery developed. The area of the cemetery has been estimated as

*c.* 8800sq m and, if the small sample excavated is representative of the overall burial density, a total of *c.* 3000–4000 graves is possible. The earliest burials appear to belong to the 8th century, and interments took place until the mid-11th century. All the burials lay with their feet to the east, and the cemetery was mixed. There were few finds from graves, which were of several different types, including burials with clenched nails, flexed and coffin burials, and burials with packing stones at the head and/or the feet. Thirteen burials contained clenched nails in up to three rows, suggesting that re-used lapped oak planks were being used as coffin lids. Positive evidence that these were boat timbers is provided by the use of hazelwood plugs, as in the Graveley boat. The Caister burials are entirely consistent with the hypothesis that conjoined strakes from a boat were laid over some burials, generally as lids to conventional coffins. In one burial, boat timbers were used as a bier.

Further burials were recorded in the 1930s within the north-west quarter of the walled area, and these appear to be similar to the burials in the cemetery south of the fort. Both cemetery areas exhibit Christian characteristics in their mode of burial, and there is a distinct probability that they were associated with a church, perhaps a minster.

It is difficult to interpret the evidence of post-Roman occupation within the fort, but the assemblage of Middle Saxon finds, including seven sceattas, suggests a high status settlement. There is a case for considering that Caister rather than Burgh Castle could be Fursa's monastery of *Cnobheresburg*, described by Bede as 'pleasantly situated near to the sea and to forests and constructed in a castrum'. The description could equally well fit either site, and the evidence from Burgh Castle does not put the identification of that site with *Cnobheresburg* beyond doubt. Indeed, the evidence at Caister of a large Middle Saxon population might be considered to give Caister a stronger claim.

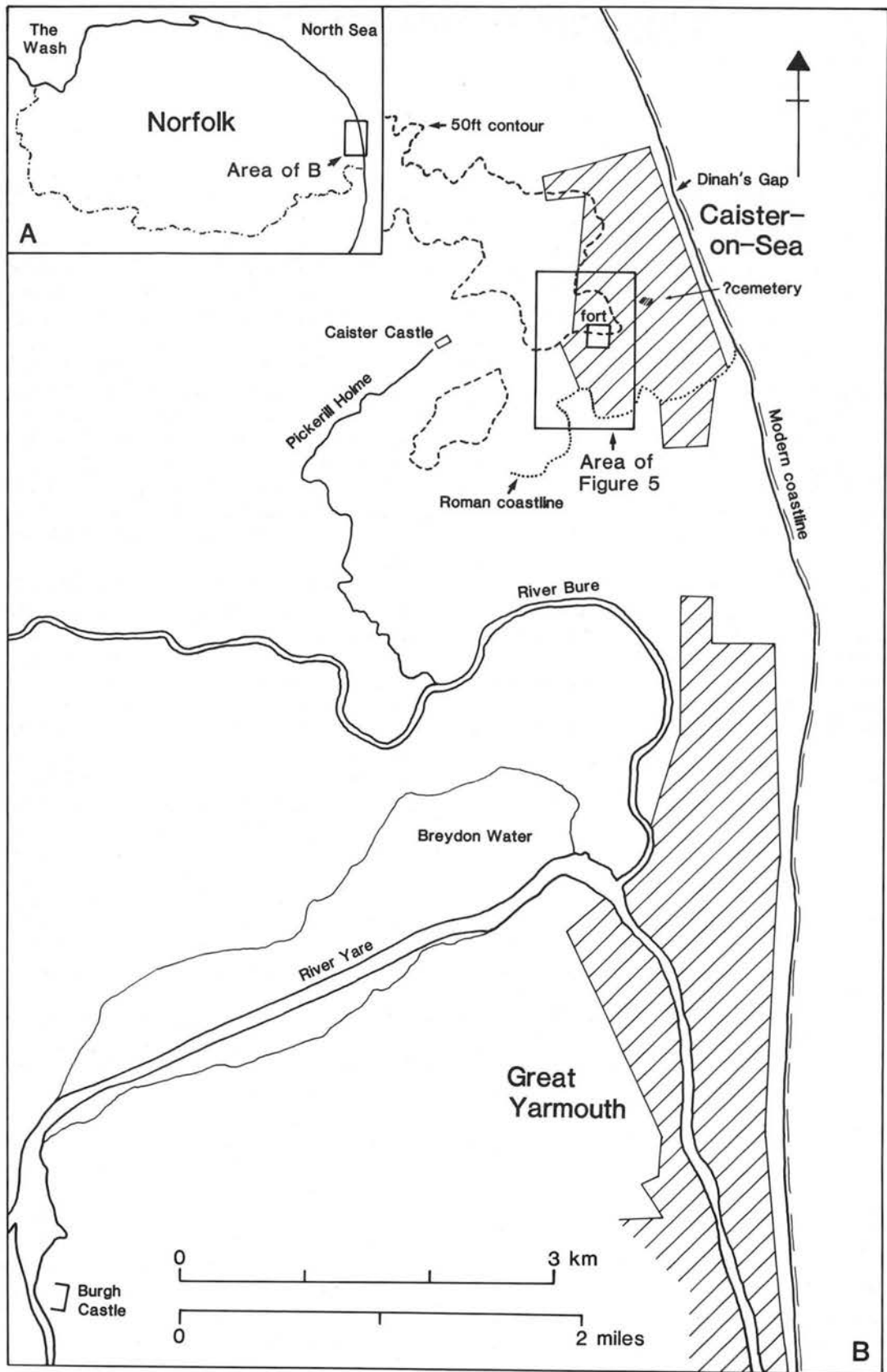


Figure 1 Location map.

# Chapter 1. Introduction

## The site

The excavations by Charles Green described below are centred on TG 5170 1230, within the parish of Caister-on-Sea. It should be noted that the parish name is commonly cited as Caister-by-Yarmouth, but following the Ordnance Survey, the former should be used. Having said that, in later sections of this report the parish name has generally been abbreviated to Caister. Where reference has been made to Caistor St Edmund (also known as Caistor-by-Norwich) (Norfolk), the parish in which is located the Roman town of *Venta Icenorum*, that parish name has been given in full.

In the Norfolk Sites and Monuments Record, the excavations are within Site Number 8675. Part of the excavated area is within Scheduled Monument Number 231.

The finds and archive have been deposited with the Norfolk Museums Service, NCM accession number 193.961.

## Early discoveries

The first archaeological references to Caister were made by Camden who, in the first edition (1586) of his *Britannia*, was disposed to regard it as the site of *Gariannonum*. In later editions (1789, edited by R. Gough) his views changed and we find him saying that '*Gariannonum* was at Burgh Castle in Suffolk ... and ... Caister was one of Roman camps to guard the mouth of the Gar, now filled up.'

To this view, Sir Henry Spelman (1564–1641), whose *Icenia* was not published until 1698, gave little credence. He was also concerned with the identification of *Gariannonum* and wrote (here translated from the Latin of his day):

The river Yare leaving its channel, has committed to oblivion the ancient situation of *Gariannonum*. The vestiges of both situation and river are not to be ascertained. Two places seem to lay claim to it: Burgh Castle in the county of Suffolk which at this day hangs over the south side of the river; and Caister a small village four miles distant on the north. Both appear of the Roman kind, the former a four-sided oblong pitched camp, crowned with a wall, but too remote from the sea and in a place so surrounded by marshes and narrow passes as to be incommodiously situated for troops of horse; the latter, on the very shore, in an open plain discovering also the ruins of a wall and fortification and very commodious for the excursion of horse, for the defence of the shore, which was given in commission to this Count and to this cavalry; for the interior and midland parts were guarded by another Count and rather with cohorts of foot, than troops of horse. I therefore am of opinion that Caister is the *Gariannonum*, though Camden was pleased with Burgh. Caister, a name taken from the Romans, conduces to my opinion, especially since nothing (that I know) will be found of this name throughout England, but Roman.

There can be little doubt that Spelman had seen the remains of Caister's wall still standing, for his reference to it is explicit. A letter from a Mr Cannell of Caister contained in Tom Martin's Church Notes (Rye MS 17 in Norwich Record Office) dated 1726–7 states that there were no Roman remains in Caister, and in 1774, Ives could say: 'At this time, not the least vestigia of Roman building appear at Caister'. In 1842, Turner could suspect that Spelman had confused Caister with Caistor St Edmund, but Turner also refers to recent finds 'in a field to the north-west of the church' where tradition held that the camp lay. He also

states that 'the form and extent of its enclosure may still, under the influence of the morning dew, be discerned, from the varying hues of the herbage'.

It would appear, therefore, that at some time between the early 17th and probably the early 18th century the ruins of the walls had been demolished. Local antiquaries were, however, recording Roman objects from the site, among them Sir Thomas Browne who, in his *Hydriotaphia* (1658), stated that: 'Most Roman remains at Caster by Yarmouth are found in a place called East-bloudy-burgh furlong, belonging to Mr. Thomas Wood, ... from whom we have received divers Silver and Copper coins.' Again, in describing cremation urns, he wrote: 'Among these Urnes we could obtain no good account of their coverings: only one seemed arched over with some kind of brickwork. Of those found at ... Yarmouth Caster, all were closed with Roman bricks.'

Although it is now known that many of Browne's urns were Anglo-Saxon, later discoveries of cremation burials mentioned by Clowes (1837) and Gunn (1846) may substantiate a Roman cemetery to the north-east of the defended area (see Fig.1 and Appendix 1).

Clowes also describes a curious pit lined with roofing *tegulae* laid horizontally, the 'trough' of each being filled with mortar as a bedding for the next above, a building technique known from Green's excavations. It is now impossible to tell what this feature was or to locate it accurately (see Appendix 2). Gunn's (1846) account states that finds were 'in the great abundance in a field on the west of the church, where tradition has fixed the Roman camp. In this spot one can scarcely use a spade without meeting with foundations of buildings ...'. The mid-19th century saw much activity on the site, and some of the post-Roman disturbances recognized in the excavated area may well have occurred then.

A pottery kiln (Fig.5, Kiln 1) was found in 1851, and reported by Gunn (1880), in a sand-pit 'on the south side of the church, and between it and the marshes'; the location seems to echo Clowes' (1837) reference to urns being discovered south-west of his pit, bordering upon the marshes. The kiln was found on Mr Daniels' farm, which has been identified as the farm on West Road (Fig.5) which has a stone set into the farmhouse inscribed 'T WD 1861'. The kiln is discussed below (see Appendix 3). The building of the reservoir (Fig.5) in 1853? (Morant (1872) says 1855) to the north-east of the defended area produced many finds, including the bronze head of Bacchus (Fig.113, No.793, identified hitherto as a faun or Mercury), reported by Morant (1872). Fox (1889) mentions the bronze 'wolf' staff-head (Fig.114, No.794) as also having been found in making the reservoir, but since this was exhibited by Fitch and published (in the same volume of *Norfolk Archaeology* as Morant's paper) as 'said to have been found at Caister by Yarmouth' and since it is not mentioned by Morant, its find-spot is unknown.

In 1879 excavations in the Rectory gardens (Fig.5) uncovered 'masses of rubble foundations about three inches thick' on the natural sand. An ashpit was found nearby

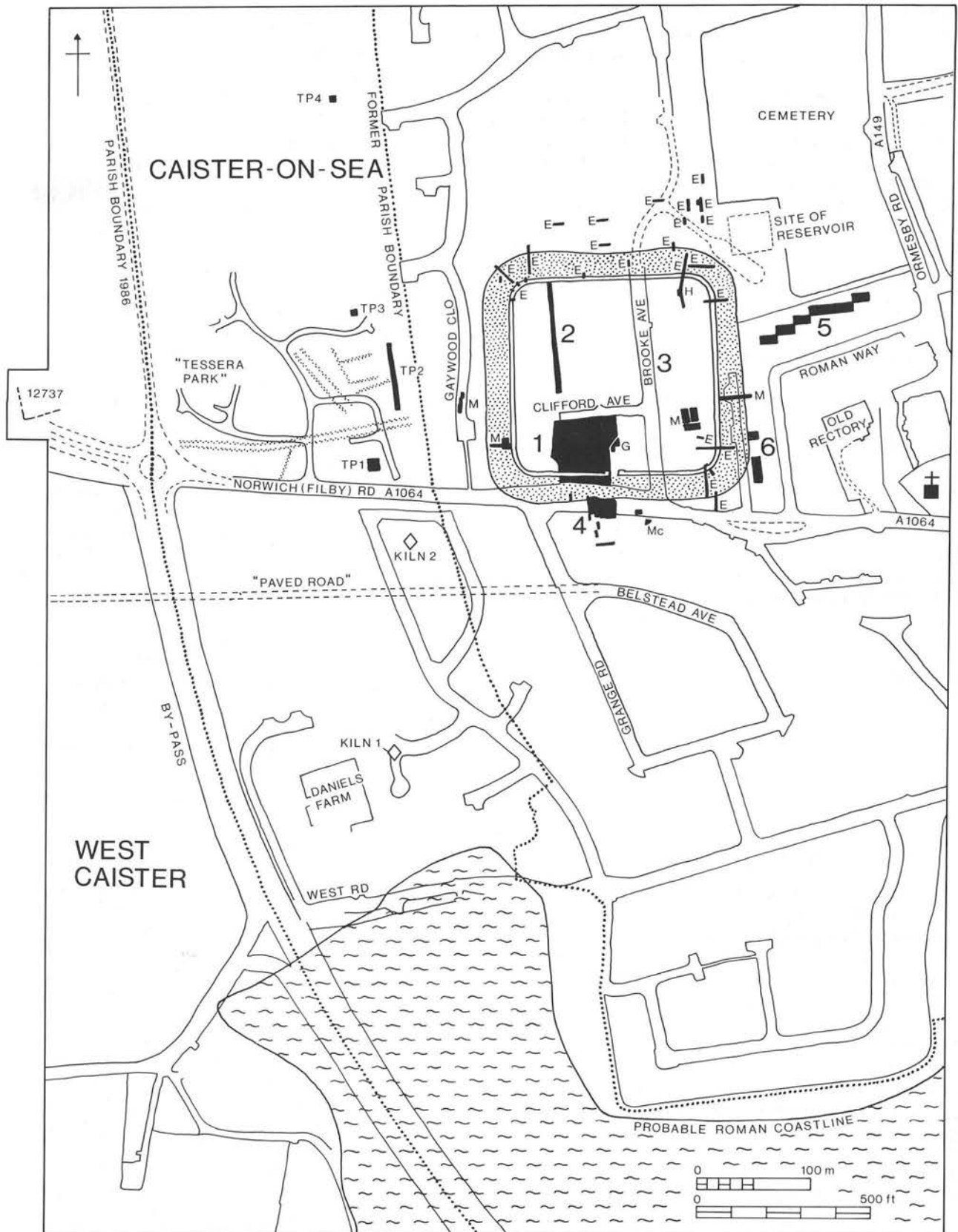


Figure 5 Map of the fort and the surrounding area, showing Green's Areas 1-6 and trenches by Ellison (E), Gurney (G), Higgins (H), Musty (M) and McEwen (Mc); for details of these see 'Excavations described in this volume' above. Also shown are Kilns 1 and 2, Site 12737 and 'Tesseract Park' trenches TP1-4. The area of the fort defences is stippled, also crop-marks west of the fort. Scale 1:5000.

containing some coins and pottery 'on some of which was a representation of a duck'. There was no suggestion that it was other than Roman but the significance of the duck is obscure.

Fox (1889) summarized the above finds from Caister, and added the detail that 'in sinking a well beside the Yarmouth road, at a depth of 20ft below the present surface of the marsh, a piece of plank was found, apparently the plank of a ship.' Anchors are said to have been found in the marshes, probably of Roman date (Clowes 1837, 52; Green and Hutchinson 1960, 116).

In his review of the evidence for the Victoria County History, Haverfield (1901) viewed Caister as a small settlement, and dismissed the earlier controversies and its identification as a fort. A fresh series of discoveries began to be made in 1932, with a number of inhumation burials and a sceatta under the Norwich Road near the Old Rectory. 1935 saw the start of building on the Brooke Avenue estate, and the site was visited almost daily by three local amateurs, P.E. Rumbelow, A.R. Bishop and H.A. Moseley. The first named, apart from publishing a summary account (Rumbelow 1936), produced a magnificent illustrated manuscript, along with copious notebooks and photographs, now in Norwich Castle Museum. Two coin-hoards were found and published (Robertson 1936; Jenkins 1948). The significance of the buildings and finds went unnoticed until after the 1939-45 war, when the area was scheduled as an Ancient Monument by the Ministry of Works, and the excavations by Charles Green were initiated.

### Topography and geology

(Fig.1)

The present parish of Caister-on-Sea is bordered on the east by the North Sea and on the west by West Caister where there is a deep narrow creek in which now lies the gutter (leading to Caister Castle and partly artificially straightened) known as the Pickerill Holme (Fig.1). In Roman times this creek may have been a haven for small craft; Green notes and plans the line of a 'narrow paved road', running west from the road from the fort to the harbour (Fig.5 and cover plate cf. Green and Hutchinson 1960, 120, caption to fig.4), although what evidence he found of this is unknown. Between this track and the hill-crest just to the south, coarse pottery and oyster shells have been found on occasion in excavations for tanks and house-foundations.

The south part of the parishes comprises marsh-pasture and, east of the Yarmouth Road, the north end of the dune-capped shingle spit which reaches south beyond Great Yarmouth to the harbour-mouth. The north part of the parishes includes a ridge of boulder clay, lying above 50ft OD (Fig.1). At its extreme south-east tip, there is a small, roughly rectangular spur. On this the fort was built, with its south wall lying just below the 50ft contour and so on the loams which come to the surface at this level. To the south, some 335m from the south gate, lay the shore of the bay which was probably the harbour/anchorage (Fig.1). Another bay of similar size lay a little to the east of the first, but was less suitable because of its shallower shelving beach.

Many trenches since 1932 have enabled details of the 'fossil' shoreline to be examined. These cuttings have shown that the beach at the north end of this second bay was a 'hard', a cobbled surface up which small boats could be drawn above high water mark. In the area immediately to the east of the parish church, now a cemetery, grave-

digging has revealed rubbish-pits, traces of timber foundations and other occupation debris.

The stiff boulder clay underlying the fort's centre provided an excellent foundation for building, but outside the wall, the ditches cut into the softer underlying loams which proved an unsatisfactory and unstable matrix. The differing subsoils encountered in digging the defensive ditches may account for some of the anomalies found around the circuit by Ellison. The loams were also ill-suited for the foundation of roads, and all these outside the clay area had a foundation of boulder clay laid on the loam to carry the paving.

The harbour-bay appears to have been well-chosen as a haven. It was protected from all quarters except the south-east, from which severe gales are rarely experienced, and yet it lay comparatively close to open sea. Green considered its east shoreline, which he based on the line followed by the parish boundary, as possible evidence for some harbour-work to form a quay. He reported that sewer trenches dug near the south end of this line had shown a confusion of deposits. They suggested to him that, as a protective wooden sheathing of vertically-cut surface decayed, the formerly-protected clay-loam could no longer stand alone and so collapsed in a line of debris. Green's views on the harbour are debatable (see Murphy, below), and since he viewed the site as a port to which merchant vessels would come to off-load cargoes to be taken up river to *Venta Icenorum* (Caistor St Edmund), his approach was necessarily different. The use of small scouting vessels is documented (Vegetius, *De Re Militari*, iv, 37), and the possibility of safe anchorage at the Pickerill Holme needs exploration. The finding of anchors in the past in the marsh which would have been open sea in the Roman period (Clowes 1837, 52; Green and Hutchinson 1960, 116) suggests vessels standing out to sea, served by tenders.

### The Coastline: summary, by Peter Murphy

(See microfiche and Figs 2-4 for details)

Between about 2000 and 1500 BP, the Broadland rivers entered a major estuary to the south of Caister, and estuarine conditions extended up the Yare to within 7km of the site of Norwich (Coles and Funnell 1981). Stratigraphic data of relevance to the detailed palaeogeography of the estuarine shore adjacent to the site were obtained from borehole logs on the line of the Caister by-pass, from examination of temporary sections and from some limited hand-augering.

In summary, a coastline trending west-south-west with two embayments, at around TG 5165 1180 and TG 5205 1190, may be inferred (Fig.1). The latter, eastern, embayment was drained by a now-infilled creek. The 'Broadland Upper Clay' estuarine sediments filling this creek contained some 3rd to 4th-century pottery, charcoal and flint cobbles. No evidence for staites or other harbour-works was detected, but it may be suspected that these would have been slight, related to the beaching of estuarine craft with shallow draughts. Continued inspection of ditch sections following cleaning-out is recommended in order to detect further details of coastline morphology and any waterfront structures which may be present.

### The excavated areas

(Fig.5; frontispiece)

The areas excavated by Charles Green in 1951-55 were as follows:



Figure 6 Plan of Green's Areas 1 and 4, showing the excavation grid.



*Area 1* comprised part of the south-west corner of the fort (frontispiece) including one of the south gate guard-chambers, the remains of the south defensive wall, palisade trench, and the inner ditch. Inside the fort, the remains of two buildings and other features (tanks, corn-drier, road) were excavated. Excavation ran from 25.7.51 to 26.7.52 and then intermittently alongside other areas. See Chapter 2.I and II, and Chapter 3.I below.

*Area 2* consisted of a number of relatively small trenches (maximum excavated area 22 by 12ft (6.7 by 3.66m) running north from the north-west corner of Area 1, the northernmost trench lying just short of the line of the north defences. The grid was not tied into that for Area 1, but can be located with reasonable accuracy. The small size and the extent of excavation limit conclusions. Excavation 28.5.52 to 1.9.52. See Chapter 2.III below.

*Area 3* was the area occupied by the houses in Brooke Avenue. There are no detailed records.

*Area 4* to the south of the fort. The area was occupied by the Middle to Late Saxon cemetery, but it also provided evidence for a roadway towards the coast. The grid used here is tied to the main grid in Area 1; isolated trenches were also laid out to examine the outer ditch system in KVIII and X. The construction of houses at the time led to some burials being noted in builders' trenches. Excavation 16.3.54 to 9.11.54. See Chapter 2.III and Chapter 3.II below.

*Area 5* consisted of a series of staggered trenches opened to the east of the fort, their location being related to the excavator's anticipation of a much larger fort. See Chapter 2.III below.

*Area 6* represented by a number of trenches adjacent to the south-east corner of the fort, laid out in an attempt to locate the defences on that side. Little convincing evidence was found, and this area was subsequently explored more fully by Ellison (1962, 1966). Excavation of Areas 5 and 6 was from 17.12.54 to 6.1.55. See Chapter 2.III below.

### The site grid

(Fig.6)

In the two main Areas (1 and 4), a 25ft grid was laid out, lettered (A–S) from north to south, and numbered (in Roman numerals) I–XII from east to west, grid line I lying on Brooke Avenue, and grid line A on Clifford Avenue. Grid squares are denoted by reference to the letter line to the north and the numerical line to the east, except in Area 2 where they are named from the letter line to the south. Levels were tied to the bench-mark at No.1 Brooke Avenue (42ft 11½in = 42.95ft OD).

### Excavation method

Excavation started first in Area 1, and consisted, in the first instance, of a number of 3ft trenches dug north to south on the east sides of various grid squares (as DIVa *etc.*). These were subsequently expanded to form later sub-trenches (a) on an *ad hoc* basis; some (a) trenches involved half the grid square, whereas others were narrower, and were associated with two further sub-trenches within the grid square, (b) and (c). Other grid squares later in the excavation were laid out with two east-to-west trenches, denoted by the letters (x) and (y); these occurred more, but not exclusively, in the area of the rampart. Excavation in Area 4 was simpler in terms of trenches, the burials encountered immediately below the ploughsoil dictating to some extent the excavation limits. It needs emphasizing that the practice of cutting

'test' trenches, usually 3ft wide, was followed throughout, particularly in Area 1, and despite the 25ft grid squares, these were never stripped in one operation. Also as the excavation progressed and baulks were removed, grid squares were frequently combined, as for instance, ABIX–X, and locating from the records the precise part being excavated has not always been possible.

### Site recording

The basic site record consists of twelve quarto sized hard-backed site notebooks, written in pencil, on a diary basis. Each page refers to work in one grid square, with dates, excavators' names, details of the excavation, coins and small finds being listed on the opposite page, usually concluding with a reference to a further page later in the records continuing the excavation of that grid square; the following page covers another grid square being excavated contemporaneously. The site notebooks were supplemented by lists of bag numbers, coin finds, small finds, plans/sections and photographs, these contained in four limp covered exercise books. There is also an interment register for the Area 4 cemetery.

The written records are supplemented by field drawings, consisting in Area 1 of individual grid square plans (often drawn with the excavation at varying stages and not necessarily added to after further excavation), supplemented by occasional sections, some clearly unfinished. Few sections were of value for this reason, and drawn layers could not be directly related to the layers recorded in the notebooks. The plans for Area 4 were dictated more by the graves than by the grid lines. Post-excavation problems with field drawings occur in Area 1 more than in Area 4; features mentioned are sometimes totally unplanned or, on occasion, appear on the smaller scale plans of the whole area, or as sketches in the notebooks. The termination of some linear features emphasizes the frequent absence of planning after the baulks had been removed.

### The bag number system

A bag number system for finds was followed by Green, in which a bag number would be assigned to the finds from a new deposit, but a further bag number would also be assigned to finds from the same deposit excavated on the following, or any later day. 3552 bag numbers were assigned. Layer numbers were used in a limited and specialized manner; layer 2 always referred to the ploughsoil; layer 3 often covered the lower part of the ploughsoil but could, dependent upon the location, refer to an unsealed but stratified deposit. Layer 4 and subsequent layers could cover a number of different deposits in each grid square (4 could refer to more than one feature/layer within the grid square), let alone in adjacent grid squares, and it is clear that the layering was a form of stratigraphic sequence rather than layering in the modern sense.

### Post-excavation

In order to assign finds to layers, and to relate layers across the site, an identification of a layer whether represented by one or more finds bag numbers had to be found. Rather than impose a totally new numbering on an already complicated numerical record, the lowest bag number of a group of bags deriving from a recognized layer has been used to denote that layer, and is referred to as the LAYER BAG NUMBER (hereafter abbreviated to LB). A correlation of all bag numbers to their respective LB is in the archive. All small

finds and coins are similarly related, via their original bag numbers (or an equivalent where the absence of pottery/bones led to no bag number being assigned) to the relevant LB. Record cards were made for each LB, noting details of the layer and its constituent bag numbers, and all small finds and coins. The pottery was initially normally examined as separate bags and then amalgamated for recording under the LB. Finds, coins and pottery are thus all interrelated with the site by the LB.

This has, inevitably, made work with the records complicated. The bag number system does have compensations since finds and pottery are very closely associated, deriving from one day (or less) of excavation. In all cases of doubtful stratification, bags have been phased upwards and, while this has inevitably meant that quantities of probably unsealed but stratified material have been phased into the ploughsoil, this was felt to be the safest course.

The excavation and recording methods precluded the preparation of stratigraphic matrices except for isolated sequences, and finds and pottery have therefore been largely dealt with in broad groupings, as follows:

#### **Plough.**

**Post-Roman deposits,** disturbances.

**Road layers;** most disturbed in the post-Roman period.

**Ditch fill;** upper fill certainly post-Roman, evidence for earlier disturbance below, and the silt of limited dating value.

**'Spill';** Green's term for the material resulting from the collapse of the buildings, immediately below the ploughsoil.

**Refuse in Building 1;** underlying spill, some rooms producing what might have been complete vessels before post-Roman disturbance.

**Refuse on the rampart;** the upper layers immediately underlying the ploughsoil, overlying the rampart spill.

**Rampart spill;** the earliest refuse on the rampart. It was not possible to isolate certain primary rampart layers, and indefinable disturbance unrecognized during excavation is suspected in some areas.

**Fills** of features, miscellaneous spreads, etc.

#### **The pottery**

The pottery has been recorded according to the value placed upon its stratification. Major deposits, as with the refuse dump, the rampart spill, material directly overlying the floors of the building, etc., have been fully recorded for form and fabric, decoration, etc., and quantified by three methods, sherd count, weight, and vessel equivalent (VE) based on rim percentages. Since the latter is the most time-consuming method, less well stratified layers (particularly those associated with the collapse of the building, the 'spill') have been quantified only by count and weight. These two measures of quantification cover all deposits. The illustrated sherds are boxed in publication order; samian, mortaria, amphorae and post-Roman sherds are boxed separately. The bulk of the pottery is boxed according to stratigraphy and location. Pottery small finds which were not fashioned into objects are boxed with their context.

#### **Small finds**

Detailed index cards were prepared for all small finds and coins. All finds that could be identified to some extent are catalogued, the unillustrated finds appearing in the fiche catalogue. Final boxing was primarily by material, secondarily by object.

#### **Outline of the site's chronology**

A brief outline of the features and finds of all periods will be given here, to place the description of the features

(Chapters 2 and 3), finds (Chapters 4 to 7) and zoological and botanical evidence (Chapter 8) in the overall context of the site's history and chronological development.

1. *Neolithic.* A neolithic flint arrowhead (Fig.111, No.788) was found below the fort wall footings in Area 1. Other flint flakes have been found in excavations west of the fort in 'Tessera Park' (see Chapter 2.V below).

2. *Early Bronze Age.* A sherd from a collared urn (see Chapter 7.I below) was found in Area 4, KVIII.

3. *Late Bronze Age.* Two hoards have been found in the area, a gold hoard from Belstead Avenue in 1955 (Hawkes and Clarke 1963), and a bronze hoard from the By-pass site (see Chapter 2.V; Site 12872; cf. Lawson 1979).

4. *Iron Age.* Excavations west of the fort have produced a few sherds of undiagnostic but probably pre-Iron Age prehistoric pottery, and one sherd of probable Iron Age date. A strap-junction (Fig.105, No.749) found in the 19th century could be of any date between the Late Iron Age and the mid-2nd century.

The only evidence for occupation prior to the Roman period is artefactual, consisting of a small number of casual and metal-detector finds and one or two prehistoric finds from excavation. There is no suggestion of any substantial occupation during any prehistoric period in the immediate vicinity of the fort.

5. a) *Early Roman.* Evidence for early Roman occupation west of the fort has been found in excavations on Site 12737 during works for the Caister By-pass in 1977 (Appendix 6). Part of an enclosure was found, with pottery of the mid-1st century AD. There is no evidence for early Roman occupation of the fort site.

b) *The Fort.* The fort appears to have been built on unoccupied ground in the early 3rd century. A possible early defence, represented by a palisade trench, is unproven. The fort wall, rampart, inner ditch and possibly an outer ditch belong to one phase. There is some evidence to suggest a later remodelling of the defences. Occupation of the fort appears to have been continuous until the latter part of the 4th century.

Within the fort, there are two main buildings in the excavated area, and a number of other structures and features. An earlier structure below Building 1 may be represented by post-trenches and gullies, and the remains of Building 2 are of more than period.

West of the fort, there is evidence to suggest the development of a possible *vicus* during the third century.

6. *Middle to Late Saxon.* In the Middle Saxon period, the interior of the fort was subjected to considerable disturbance, the evidence indicating both undefined occupation and burials. To the south of the fort, in Area 4, a substantial inhumation cemetery was excavated, and the burials appear to have taken place over a considerable period of time, probably from sometime in the 8th century to as late as the mid-11th century.

7. *Medieval and later.* The fort wall appears to have stood in part at least until the time of Spelman (1564–1641), but in 1726–7, no trace of the wall remained visible. Local antiquaries continued to take an interest in the site, and the mid-19th century saw much activity, probably accounting for some of the recognized post-Roman disturbances in the excavated area.

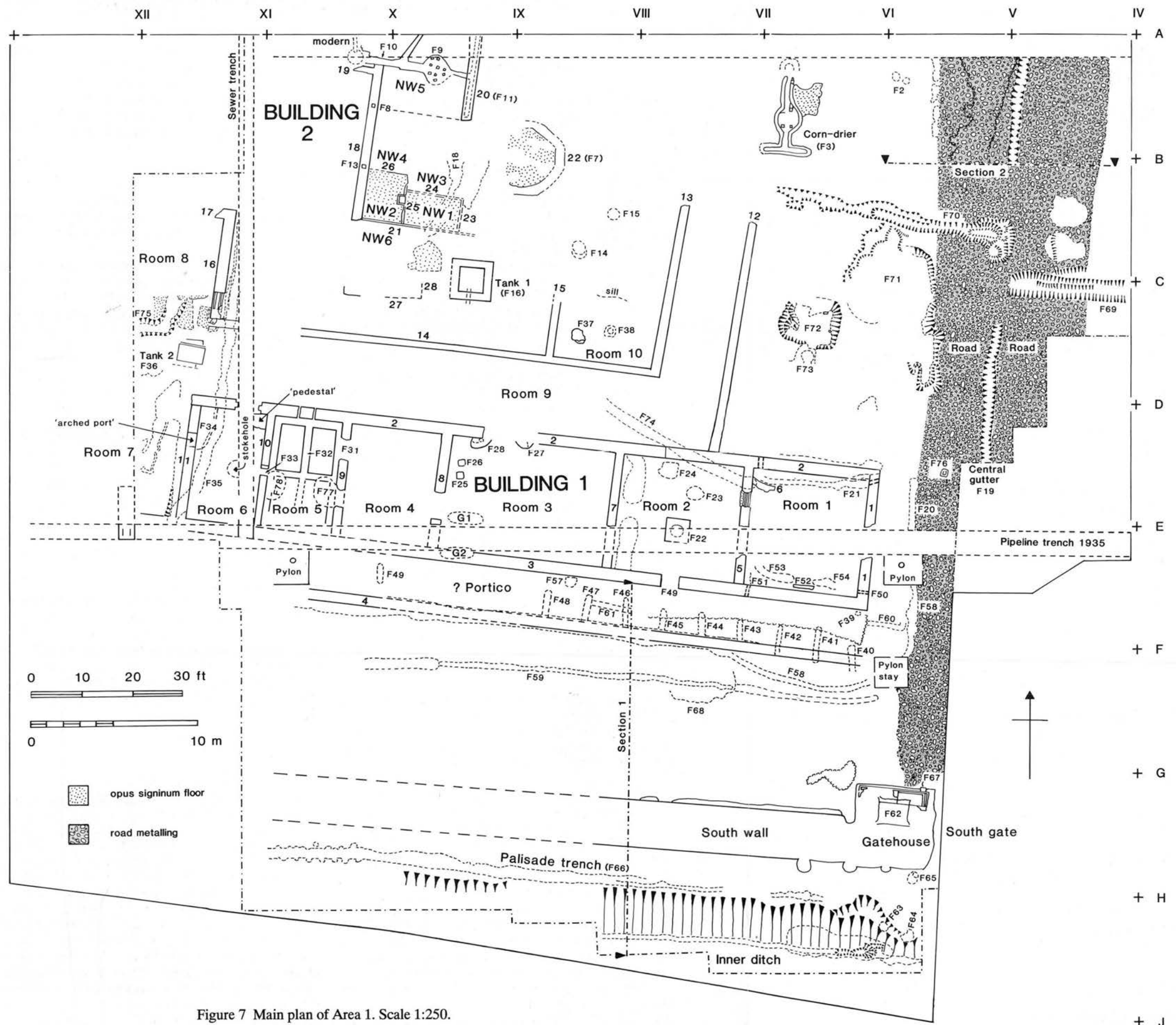


Figure 7 Main plan of Area 1. Scale 1:250.

# Chapter 2. The Excavations: Roman

## I. The Defences (Figs 7–10; Pls I–II)

### Introduction

The fort wall encloses an almost square area (Fig.5) measuring internally approximately 189 by 187.5m (620 by 615ft), an area of 3.54ha (8.75 acres). Only the location of the south gate is known with certainty, where it occupies a central position. There is evidence to suggest an internal angle tower at the south-east corner, and a thickening at the north-east corner (Ellison 1962, 98, fig 3; 1966, 51, fig.3) is perhaps the remains of an *ascensus* (staircase) (as at Saalburg: Johnson, A. 1983, 66). Outside the wall there is evidence for two ditches; the distance between these varies and they were both recut at different periods. On the berm outside the south wall and close to the edge of the inner ditch there is a possible palisade trench (F66); this feature has also been observed at the south-east corner, but it has not been traced further along the east side of the defended area.

### The fort wall (Figs 7–9)

The wall survives only at footings level (Fig.9), having been deliberately demolished, probably in the early 18th century. The south wall is 2.9m (9ft 6in) wide at foundation level, and may have been reduced by internal offsets (as at Reculver). The foundation trench was filled with flint beach cobbles and natural flint nodules set into boulder clay brought to the site (the underlying natural in this area is sand although elsewhere on the circuit natural clay occurs), on which were laid more cobbles set in mortar.

The wall has been badly robbed for over half the excavated length from GVIII westwards (Fig.7). In the better surviving section (GVI–VII), the footings appear to have projected about 30cm (1ft) from the inner line of the wall; about 50–60cm (1ft 8in to 2ft) from the junction of the wall with the west wall of the guardroom, these wider footings curve inwards to meet what appears to have been the usual building line (Fig.8). This seems likely to have arisen due to gangwork, the wall and guardroom having been built at different times, albeit as part of the same programme.

There is evidence on a working plan of the area for a break of about the same size (50–60cm) in these northward-projecting footings in GVII, followed by a further 1.20m (4ft) of wider footings again before the wall-line disintegrates, and from where it seems to continue on a slightly more southerly line (shown on Fig.7).

There are three curious circular to semi-circular projections from the footings on the exterior face of the wall close to the guardroom, in GVI and GV (Fig.8). Their depth and function are unknown, although they may be related to the construction of the guardroom. Their presence elsewhere along the wall is uncertain due to its robbed state.

The form of the superstructure of the wall is unknown, although by analogy with Brancaster where the wall was still standing 12ft (3.66m) high in the 17th century, a height

of 4 to 5m is probable. In the tumble of the wall stone into the ditch in GVI, Green noted a few 'slipped bricks', which suggest that the wall may have had at least one tile-course.

### The south gate (Fig.8)

The west guard-chamber of the south gate was excavated. There may have been a twin guard-chamber to the east, but not necessarily (as at Reculver). The width of the opening is unknown.

The east and west walls of the guard-chamber abut the fort wall as later additions. The change in the fort wall footings on the north side close to the guard-chamber would seem to have been caused by gangwork, but the outer (south) facing of the wall is carried straight through, lying 30cm (1ft) behind the footings at the guard-chamber but immediately above the footings as the wall runs west. The footings of the guard-chamber were found to be slightly higher than those of the fort wall, and differed in that they were carefully coursed with a band of clay between the lower and upper courses of beach cobbles, packed into the clay of the underlying subsoil. The footings for the guard-chamber measure 4.9m (16ft) across and project from the wall by 2.4m (8ft).

The only parts of the superstructure surviving are the basal tile courses, three bricks thick at the north-east corner, set in 'brick-mortar', but largely destroyed on the west side. The superstructure of the guard-chamber measured 4.3 by 2.3m (14ft by 7ft 6in). A rectangle of tile-work in the north-east corner partially overlies the very small internal chamber, which measured approximately 2 by 1.5m (6ft 6in by 5ft). A post-hole (F67) had been cut into the tile-courses of the north face of the guard-chamber at the north-east corner, so that the post it contained lay flush with the wall. This may be the remains of a door pivot for the guard-chamber doorway.

No post-holes which might have related to the gate pivots were observed in the confined space at the edge of the excavation.

### The inner ditch (Figs 7–9)

The inner V-shaped *fossa fastigata* ditch was approximately 1.8 m deep (6ft), and although the outer lip was barely within the excavation, an overall width of 4.9 to 5.5m (16 to 18ft) may be estimated. The bottom of the ditch had a cleaning channel which measured some 18cm deep by 23cm wide (7 by 9in). A counterscarp formed by upcast from the excavation of the ditch was observed on the south side in GV–VII. The berm was approximately 2.4 to 2.7m wide (8 to 9ft). In GV–VII the ditch had been dug through the natural sand, penetrating a narrow layer of stiff cream-yellow clay, but the sand below was so friable that means had to be taken to keep the ditch profile intact. This seems to have involved the application of a clay lining. In GIX the palisade trench F66 was dug through a capping of clay laid on the berm which, unfortunately, does not appear on the only drawn section on the VIII grid line (Fig.9).

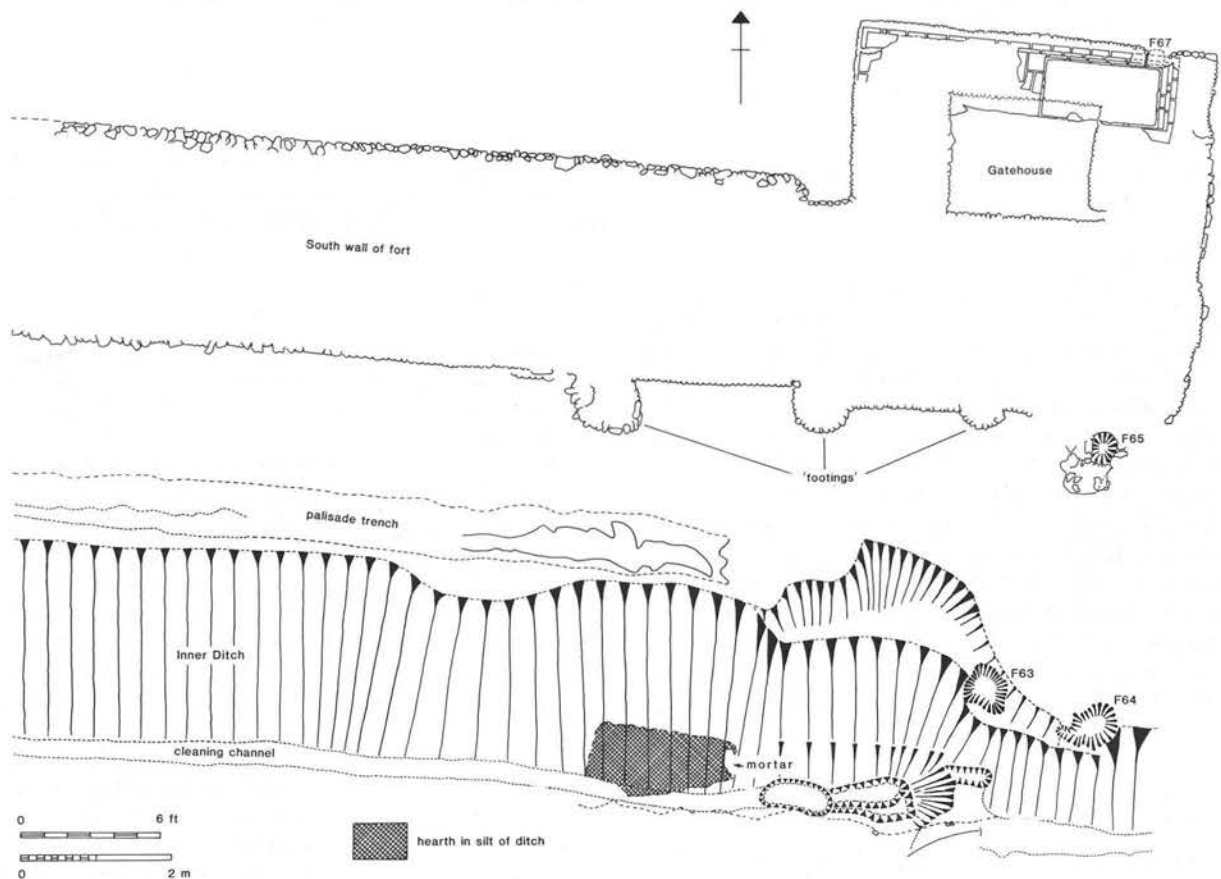


Figure 8 Plan of the gatehouse, south wall, palisade trench and inner ditch, Grids GV (part) and GVI. Scale 1:100.

The fill of the ditch was almost entirely of post-Roman date, the upper layers representing the demolition of the wall. Below the heavy wall 'spill', there was some evidence to suggest Middle to Late Saxon occupation in the form of a possible hearth of flint cobbles in GHVI (Fig.8); this was separated from the debris of the wall by a band of clear silt some 15cm (6in) or more deep. Two fragments of human skull found in the bottom layer in GVIII suggest post-Roman disturbance, as has been noted elsewhere (Ellison 1962, 98, fig.2, section ABC, pit, layer 9, and layer 17 in inner ditch; fig.4A, layer 4 in ditch; fig.4B, layer 4a; 1966, 52, fig.4, section ABC, layers 11 and 12; fig.5, layer 5 in ditch, and shallow irregular pit on the berm between the ditches; fig.8, layers 7 and 8). Quantities of wallplaster were found in GV-VII but not elsewhere along the ditch; this appears to have been a discrete deposit (LB 753) in the ditch, below the wall 'spill' (see Fig.81, Nos 507-509). Ipswich Ware was found in most layers of the ditch, predominantly in the rubble spill from the wall, but also below this spill; Thetford Ware and Stamford Ware also occurred but only in the rubble spill (see Ellison 1966, 52, fig.9, nos 97, 98). Ipswich Ware was also found on Musty's Site 2, in layers of ash and burnt daub in the upper filling of the inner ditch (layers 6 and 8, below the rubble from the destruction of the wall), and from a pit cut through the rubble on the same site. Tile fragments found in the ditch fill may have derived from the wall itself, as *tegulae* were regularly used in wall construction and, in any event, the type of tiles are not always specified in the notebooks. There is also the possibility of tile courses in the wall, noted above.

### The outer ditch

(Figs 21, 22)

The outer (south) lip of a further ditch was located between 18.3 to 19.2m (60 to 63ft) south of the north lip of the inner ditch in Area 4, JX and KVIII (see below). From the approximate south edge of the inner ditch (based on grid line VIII) there is about 13.4m (44ft) to accommodate the intervening berm and the outer ditch. Only the south part of this outer ditch was available for excavation, and post-Roman disturbance was evident on both sections. This must be part of the large outer ditch encountered more fully in Ellison's sections (1962, fig.2, where it cuts an earlier ditch; 1966, figs 4, 5 and 8) which seems to represent a late remodelling of the defences. This would suggest an outer ditch of approximately 10.7m (35ft), separated from the inner ditch by a berm of approximately 3m (10ft). The east side of the same outer ditch may have just intruded into the DXII grid trench in Area 6, but no further information was gained.

### The bridge

(Fig.8; Pl.I)

The possibility of a bridge structure arises from the discovery of three post-holes, F65 adjacent to the south-east corner of the gate, and F63 and F64 to the south, on the north edge of the inner ditch where it was seen to be extending south of its normal line suggesting the presence of a causeway.

No parallels have been traced for either the location of similar post-holes adjacent to a gate, or for a gate with



Plate I Post-hole F65, looking north-north-east. Scale in feet.

projecting semi-circular footings and, while F64 and 65 in GV-VI might relate to some bridge structure, it is difficult to relate the western footing in GVI. Slots cut into the ditch at Gelligaer were interpreted as foundations to support a timber bridge, but there over a continuous ditch (Johnson, A., 1983, 52, fig.32). There is no certainty that the ditch in front of the south gate at Caister was continuous, and the behaviour of the ditch at the edge of the excavation could be read as being the start of a butt end. While these post-holes may relate to a bridge structure or a strengthening of a causeway, the evidence is insufficient.

### The palisade trench F66 (Figs 7-10; Pl.II)

This feature was immediately adjacent to the inner lip of the inner ditch, the intervening distance varying between 15 to 50cm (6 to 20in). The only area with any detail is GX (Fig.10; Pl.II), where the field drawing indicates individual post-holes set on either side within the trench, but also, in the middle of GX, a double ?post-hole to the north. A similar feature occurs in GIX (Fig.10) where two separate post-holes are shown immediately to the north of the trench, as well as post-holes within it at the west end. In GV-VII, it is recorded that the palisade trench disappears as the ditch is cut further north, apparently confirming Green's view that the earlier ditch (if any) was re-cut after the building of the wall. The trench is observed in GV-VII and GVIII without any structural or descriptive information.

The plan (Fig.7) shows a meandering feature, the bottom of which (where planned) can be as narrow as 15cm (6in) or may widen out and contain individual post-holes, about 30cm (1ft) in diameter. The trench itself varies in width between 60 to 90cm (2 to 3ft).

On the section across the defences on the VIII grid line (Fig.9), the palisade trench had a stepped profile, the north



Plate II Palisade trench F66 in GX looking north-west. Scale in feet and small scale in inches.

half about 23cm (9in) deep, the south part about 38cm (15in) deep. This is very shallow if the palisade trench held substantial timbers, and it is difficult to understand why the post-holes are not deeper, even if the trench was heavily packed with boulder clay. There is no information on the section about the fill of the palisade trench, so a reference to boulder clay in the site notebooks must suffice.

The palisade trench also appears in Ellison's section (1962, fig.2, section A-B, layer 8; p. 14 below) of the south defences at the south-east corner, and is disappearing under the fort wall (1962, fig.4A), just north of the south-east corner (1962, fig.3). Thereafter it has totally vanished. The trench across the east defences dug by Musty in 1972 shows a shallow feature of approximately the same width as that in Ellison's northern section (1962, fig.4A), immediately on the edge of the inner ditch. If this was the palisade trench, it has meandered off the line it was taking in Ellison's trench where it was located below the fort wall footings.

The palisade trench shown on Ellison's Site E section (1962, fig.2, section A-B, layer 8), immediately on the edge of the inner ditch, measured 53cm (21in). On a second section (1962, fig.4A, section E-F) it is shown as a shallow trench, 25cm (10in) deep, approximately 90cm (3ft) wide, underlying the remains of the fort wall footings. On a further section cut obliquely through the defences at the north-east corner of the fort (Site G), there is no sign of the palisade trench, but a ?post-hole 56cm deep (22in), 38cm (15in) wide, occurs in a similar position below the front of the wall footings (1962, fig.4B). He also mentions (1962, 100) a pair of post-holes, set together on an east-to-west line, dug into the make-up of the berm on the lip of the ditch.

The section (Fig.9) shows the feature apparently dug into natural. Two separate entries in the notebooks refer to it as having been dug through disturbed material or clay superimposed to strengthen the berm (and ditch). This would make it a secondary operation in the defences construction (see Ellison 1962, fig.2, section A-B, layer 8 dug into red clayey loam layer 4).

One possibility is that this was no more than a marking-out feature, or a very make-shift defence for the fort wall builders. If there was a rampart to accompany this

'palisade', it may be assumed to have been destroyed during the construction of the wall, and any ditch would likewise have disappeared either in the initial ditch digging, or in subsequent recuttings. Although Green refers to a 'palisade trench rampart', the VIII section (Fig.9) gives no supporting evidence. An important feature is the mortar layer overlying 'light sandy grey loam/light sandy (turf line)' which would appear to seal the slight construction trench for the wall footings (filled with clay), above which are various scattered flints, surely relating to the fort wall construction. There is no evidence on the section for a rampart before the wall construction period.

If there was an earth and timber defensive system, it would have had to fit into a space of about 5.5m (18ft) (from the north edge of the palisade trench to the south edge of the fort wall construction trench) for no trace of it to have survived in the section. This is a possibility since the turf-revetted rampart at The Lunt, Baginton, was reconstructed in a similar width (Hobley 1982, fig.12.2). The other possibility is that the palisade trench represents an additional obstacle, such as *cippi* (wooden stakes). These are usually located in the bottom of ditches, or on the berm between ditches (Johnson, A. 1983, 53, fig.33), and an obstacle on the berm in front of a stone wall would seem unnecessary.

The fill of the palisade trench (LB 1463, 1494) cannot be earlier than the late 2nd century on the basis of a samian mortarium, and the date of the coarse wares is more likely to be 3rd century. If, however, the timbers had been withdrawn as suggested by Green, the pottery could date the demolition rather than construction.

### The rampart (Fig.9)

The sections leave little doubt that the rampart belongs to the same construction phase as that of the fort wall. The base of the rampart is indicated by a mortar spread (Fig.9), seen fairly consistently across the relevant grid squares, often with a scatter of flint from the wall construction work.

There is no evidence to suggest an earlier rampart — the remains rest upon the wall construction layers. On subsidiary sections (in FVI and VII), the mortar line is clear at the base of the rampart layers. Even if discontinuous and not directly related on the section line to the defensive wall, it would be difficult to connect such a widespread mixing area with anything but the wall. It must be stated that this is *contra* Green's view, in that his records leave no doubt of his belief in a 'palisade trench rampart'.

The primary rampart is difficult to distinguish in the notebooks or on the site drawings, the latter due largely to post-Roman disturbances. It would, however, seem likely that the soil from the digging of the inner ditch was used to build up the rampart, and this would account for the heterogeneous nature of the rampart material, clay and sandy loam mixed.

There seems to be evidence to suggest that there may have been an original rear revetment to the rampart made of wicker-work. Given the amount of post-Roman disturbance to the rampart, there are several references to carbonized wood layers, deriving from light timber (branches, etc.). Although references are relatively sketchy, there is a certain consistency. The absence of post-holes to retain any such wattling in position is a problem; either they did not exist (which would cast doubt upon the identifica-

tion of the wattling as a revetment) or they were not found in excavation.

The primary rampart appears to have had a drainage gutter at its rear, F59 (Figs 7, 9), which was cut into the tail of the rampart down to the mortar spread at the base (Figs 7, 9). This lay between 7 to 7.6m (23 to 25ft) behind the fort wall, and may have terminated in a butt-end opposite the north-west corner of the south gate guard-chamber, where the gravelled area leading to the road adjoined the end of the rampart. In baulk EFX the gully appears to have lain open for some time before it was obliterated by the added rubbish of the rampart spill. F59 encountered two other features in its course; in FVII it crossed an irregular pit F68 (Fig.7). This oval pit, approximately 4m (13ft) across, which cut the mortar spread at the base of the rampart, was interpreted on the basis of its irregular bottom as a possible water reservoir for mortar mixing for the wall construction. In baulk EFIX, F59 ran into a second feature, a 'sump' outlined in stiff yellow clay; there is no information as to its section or depth.

The first addition to the original rampart was the flecked yellow clay (Fig.9) with rubbish which filled the primary drainage gutter F59 (the pottery from F59 (LB 977, 1262, 1266, 2102, ?2167) is of early to mid-3rd century date) and which extended into the area of the later portico. This was described by Green as the rampart spill, and a new drainage gutter F58 was cut at its north limit (Figs 7, 9). This gutter is best seen in FVI where it curved north at its west end to disappear under Wall 4 of the portico. It seemed to reappear in EVIII, crossing the main section line on natural, filled with flecked yellow clay with early to mid-3rd and mid- to late 3rd-century pottery (LB 781, 959, 1554). Immediately above it on the section (Fig.9) was a further drain F61 filled with rampart spill, underlying the cobbled pavement. Due to their superimposed positions, it is impossible to determine whether the feature planned was F58 (which is assumed to be the lower gully) or F61. The fill (LB 922) of the upper gully (assumed to be the planned F61) contained a sherd of a late 3rd to early 4th-century Nene Valley Colour-Coated Ware bowl or dish. The matter of these gullies is further complicated by the detailed plan of EVIII, which shows a curving gully apparently crossing one post-trench (F46) but being cut by another (F47). The likelihood is that the gully planned, noted as F61, was the upper gully underlying the cobbled pavement, and its relationship to the post-trenches is unknown.

At its east end (Fig.7), the gully F58 curved north and it may have continued again north as F20. If the gully running between the two pylon base-plots was the continuation of F58 as Green clearly believed, this was a secondary drain, as an apparently earlier gully was found in EV-VI, F60. This emerged from below the cobbles of the portico, and had been deliberately blocked with a wedge of clay where it would have been intersected by the later north-to-south gully, F58. Green considered that drainage gully F60 (LB 1589) was a continuation of that seen in EVIII (assumed to be the planned F61), and that it preceded the building.

It seems unlikely that the post-trenches (F40-48; LB 918-19, 947-8, 972-4) were functionally related to the defences or to Building 1, and they probably represented a fragment of an earlier structure, with which some of these gullies may have been associated. It seems clear, however, that the primary drainage gully for the rampart was F59, which was superseded by the cutting of F58 as the rampart

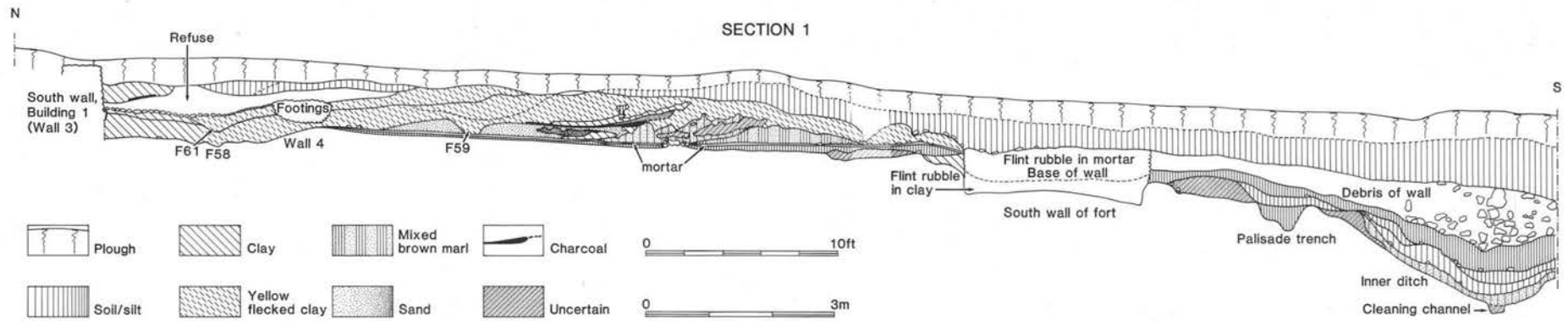


Figure 9 Section 1, through the defences. Scale 1:100.

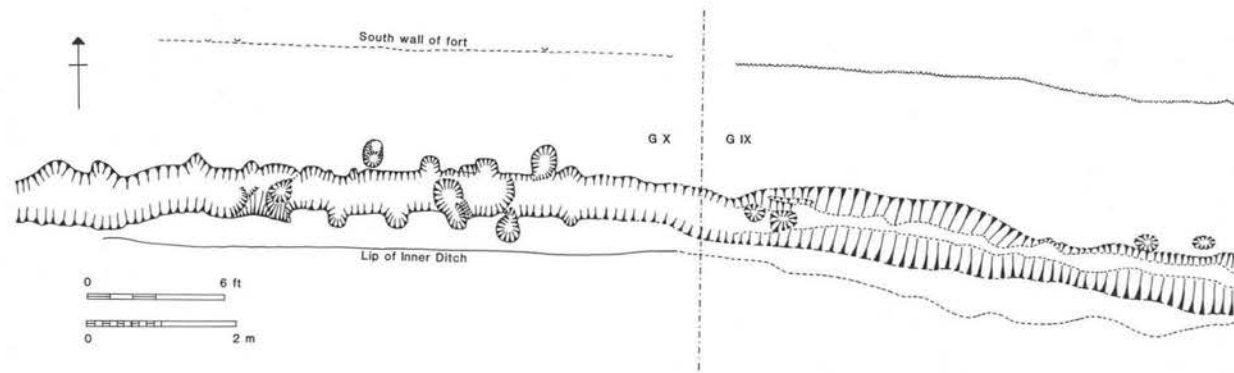


Figure 10 Detail of the palisade trench, GIX-X. Scale 1:100.



spread north. This was itself superseded by Wall 4, the footings of which were inserted into the upper layer of flecked yellow clay (Fig.9) which filled the upper gully (F58 or 60) under the cobbles.

Wall 4, which survives only fragmentarily (Fig.9), seems best interpreted as a measure to retain the spread of the rubbish dumped on the rampart. The cobbled pavement was of the same structural phase, and sealed both post-trenches and gullies, although in EVI and EVII the cobbles did not extend as far south as Wall 4, which was adjoined by a belt of clay. The wall is approximately 0.70m (2ft 3in) wide, and while it overlies its footings in the eastern sector, these footings extend on either side as it proceeds westwards, where they are about 1.2m (4ft) wide in EIX and EX. The reason for these exceptionally wide footings is not clear. It seems unlikely that the wall was part of a roofed portico to Building 1, and it went out of use as further rubbish spilled over it and the cobbled path to rest against the south Wall 3 of the building.

#### **Finds from the rampart spill**

Illustrated: 23, 64, 65, 351, 610, 686, 878.

Unillustrated: 47, 57, 76, 226, 280, 281, 283, 465, 487.

The pottery from the rampart spill is published separately, see Figs 137–8.

#### **Finds from gully F59**

Illustrated: 84, 696.

Unillustrated: 32, 572.

#### **Finds from gully F58**

Illustrated: 293.

Unillustrated: 69, 939.

#### **Finds from pit F68**

Illustrated: 864.

#### **Finds from pit F57**

Unillustrated: 406.

#### **Coins from rampart spill or associated gullies/pits**

None.

### **Refuse dumping on the rampart**

The dumping of refuse on the rampart started soon after the defences were built, the earliest refuse being that called by Green the 'rampart spill', discussed above, and subsequent additions were finally retained by Wall 4. This tidy arrangement appears to have been relatively short-lived, and the main refuse dumping soon over-rode the wall, spilling onto the portico cobbling against the south wall (3) of the building. If the break in Wall 3, F49, was a doorway into Room 2, it would have been rendered obsolete; evidence suggesting a later 4th-century date for its fill and the nature of the break in the wall casts doubt on its identification as a doorway. The portico cobbling may have been renewed, since Green records two layers of cobbling in EVI and EX, that in EVI having an intervening layer of clay. The sporadic occurrence suggests localized patching or reinforcement.

Green clearly felt that the refuse divided into upper and lower deposits, as is clear from his section, and in the area of EIX–XI, he recorded a layer of tiles and clay separating the two periods of dumping. Whether this deposit of tiles relates to the destruction and renewals of the roofing of the building, or is an isolated dump is not clear; it could also be viewed as an attempt to seal noxious rubbish, as was the case at Portchester in the reorganization dated *c.* AD 325 (Cunliffe 1975, 423). Layers underlying the tiles and clay

contained similar pottery (joins are recorded between layers stratigraphically separated by the layer of tiles) and the same Constantinian coins, but the question is complicated by post-Roman disturbances, particularly in the IX–X grid lines, some unrecognized during excavation.

Breakage of the jar containing Hoard No.1 may have been due to Grave No.2, but probable post-medieval disturbance is also indicated not only by fragments of lace tags (No.983), post-Roman glass and a copper alloy find (No.878), but also by the robbing of the defensive wall in GIX–X, and the ruinous state of Wall 4 in EIX. The cumulative evidence suggests fairly widespread disturbance in the area.

Where upper and lower strata of refuse could be defined from the records, the pottery and finds were recorded separately in the hope of identifying a middle phase on top of the early rampart spill dump. Consistent identification of lower refuse layers was unfortunately impossible, and as evidence of disturbance increased in the area of grid lines IX and X, it was clear that the refuse material could only be regarded as a single entity.

Nevertheless, examination of the pottery in individual grid squares, including upper and lower elements where these were defined, suggested that the refuse occurring in the grid line F, roughly on the crest of the rampart, was of broadly earlier date than that in grid line E, since it probably represented a lower stratum, the upper layers having been pushed forward over the line of the wall and into the inner ditch when the defensive wall was slighted, probably in the 18th century. Although seemingly crude, analysis of the pottery from the refuse in F squares provides some information relating to a middle phase of rubbish dumping in the absence of a stratigraphically defined intermediate phase. This is discussed below.

The top layers of the refuse underlay the ploughsoil, and some intrusive material is to be expected. Nearly 30% of the illustrated pottery came from the refuse deposits, together with 119 identified catalogued small finds, including three crossbow brooches (Nos 5, 10 and 11), numerous personal ornaments, weaponry, a fragment of a steatite bowl, and several worked bone and antler fragments (the latter all from the E squares refuse). Large quantities of animal bones, oyster shell *etc.* are also recorded.

Three coin hoards, all of Constantinian date, were deposited apparently in the rubbish dump, all unfortunately in grid square EIX, complicated by Grave No.2 and other unknown disturbances. As noted above, Hoard No.1 in a shell-tempered jar had been disturbed, and Hoards Nos 6 and 7 were found in the refuse down to and including the tile spread, *i.e.*, apparently a similar stratum, although slightly to the west of Hoard No.1.

It is possible that these hoards, Nos 1, 6 and 7, were disturbed, and the pattern of coin loss in the refuse layers needs consideration. There are relatively few coins from the refuse, only three recorded from F squares, but forty-six coins were found in E squares, with concentrations in EIX and EX, of twenty-one and twelve coins respectively. Of these thirty-three coins, twenty-one were of the same Constantinian period XIIIb as the hoards. Only two other Constantinian period XIIIb coins were found, in FVI and EVII. If the illegible coins and those of indeterminate date are excluded, 76% of the non-Constantinian coins were of late 3rd-century date (only two early 4th-century (XIIIa) coins were found, and single coins of periods V, VIII and IXa. Thus the coin losses in grid squares EIX and, to a

lesser extent, EX, are extraordinary, and since eleven of the seventeen period XIIIb coins from EIX were found associated with sherds from the jar containing Hoard No.1, and with intrusive modern glass, the inescapable conclusion is that they should be included in any evaluation of the hoards. Examination of the individual finds bags and their locations suggests that most of the other period XIIIb coins are more likely to have been associated with Hoards Nos 6 and 7. The only coins found near Hoard No.1 are those from the same LB 535, found before the hoard, and possibly those from LB 1862, Nos 394–396 found with the joining pottery sherds. The possibility that these were part of the hoard cannot be ruled out.

The concentration of three hoards in the portico area outside Rooms 3/4, and the three hoards inside Room 3 (Hoards Nos 4 and 5, and the 1936 hoard) suggests a certain attachment to Room 3. Analysis of the sizes of copies in the Constantinian hoards, moreover, suggested that Hoards Nos 4–7 formed a group (see Chapter 4). That this is the largest room and the only one with an entrance from the added northern corridor may be relevant, as may the evidence for relatively complete vessels in the rubbish on the floor. It is possible that the hoards in Rooms 3 and 5 were hidden in the roof timbers (see Room 3, the Coin Hoards, below).

Refuse was deposited on the rampart tail throughout the occupation and, while hoards are often hidden in ramparts on military sites (Robertson 1974, 26), location in an area of contemporary rubbish dumping suggests a temporary hiding place, such additional refuse as occurred before retrieval likely to be of relatively minor importance. This would suggest that the depositors of these hoards were unable to retrieve them once the reason for their concealment had passed. Some major disturbance in the mid-4th century and, similarly, for the hoards (Nos 8 and 9) hidden on the northern defences, at the end of the 3rd century, may be indicated.

#### Pottery and finds from the refuse deposits

##### *F squares*

Pottery: 46, 48–50, 52–58, 63, 66, 70, 72, 75, 164, 173, 191, 194, 201, 207–10, 216, 229, 282–3, 295–6, 299, 301–2, 318, 322, 325, 333, 338, 368, 376–7, 380, 385, 389, 403, 408, 410–11, 418, 430–1, 444, 446, 448, 466, 474, 492, 500, 520, 522, 528, 530, 532–6, 539, 551, 589, 618, 620–1, 634, 637, 639, 642, 644, 658, 670, 673–4, 680–1, 685, 693, 699, 711, 714, 719, 772, 788. Decorated samian 2–7, 26. Samian stamps 2, 3, 6, 10, 16, 19, 20, 23. Graffito 6.

Finds (illustrated): 5, 10, 22, 119, 173, 211, 222, 351, 537, 558, 667, 682, 752, 863, 1043, 1044.

Finds (unillustrated): 29, 43, 75, 89, 93, 98–9, 111, 237–8, 299, 764, 766, 769, 888, 957.

##### *E squares*

Pottery: 43, 60, 64, 68, 73, 163, 182, 204, 214, 227, 245, 267, 270, 275, 277, 281, 292, 294, 306, 329, 331, 334, 341, 346, 349–50, 358–9, 361–2, 364, 369–70, 374–5, 388, 392, 394, 401–2, 412, 414–15, 423, 425–6, 439, 443, 451, 462–3, 477–8, 480–1, 483, 491, 495–6, 499, 509, 513, 518, 529, 531, 540, 543, 554, 558, 560, 563, 567–9, 574, 579, 582, 584, 586, 588, 612, 622, 635–6, 641, 646, 650, 653, 656, 662, 665, 669, 672, 679, 684, 694–7, 724, 728–9, 751, 779, 782–3, 790, 799, 807. Decorated samian 1, 8–9, 27. Samian stamps 4, 5, 12, 14. Graffito 5.

Finds (illustrated): 11, 18, 21, 31, 34, 37, 40, 79, 110, 120, 149, 173, 201, 206, 207, 219, 292, 315, 341, 364, 381, 389, 405, 410, 606, 647, 675, 679, 684, 695, 806, 880, 1040, 1046, 1075.

Finds (unillustrated): 41, 53, 78, 86, 97, 100, 102, 108, 139, 170, 172, 244, 279, 282, 329, 349, 360, 398, 401, 441, 453, 462, 470, 481–2, 492, 567, 691, 715, 773, 778, 812, 828, 836–9, 892, 903, 906, 912, 915, 929, 933, 961, 973, 983, 1030–1, 1057, 1064, 1067.

49 coins from refuse: Period V:1; VIII:1; IXa:1; X:9; XI:1; XI barbarous radiates:6; XIIIa:2; XIIIb:23 including 17 from EIX possibly disturbed from hoards; 3rd–4th century:3; illegible:2.

#### The excavations of J.A. Ellison, 1961–2

Although part of the south defences was excavated by Green, the full perimeter was established by Ellison. His excavations located the wall on the remaining three sides, the presence of a corner turret at the south-east internal angle, and a possible stairway/*ascensus* at the north-east internal angle. They also revealed an extremely complex ditch system, and further traces of the ‘palisade’ trench.

In his first trench, Site E at the south-east angle (1962, fig.3), Ellison unfortunately caught the defences obliquely as they curved. These showed (fig.2, section ABC) the ‘palisade trench’ at about 46cm (18in) deep, dug into a layer of clay immediately on the north edge of the inner ditch. Further south the sprawling wide late ditch had the remains of a smaller ditch at the south edge, which Ellison viewed as the early Period 1 ditch. A small trench to the north-east, at right angles to the wall, caught both the inner ditch and the ‘palisade trench’ which was diverging away from the ditch towards the wall. The ‘palisade trench’ was located in the next trench to the north (fig.4A) as a shallow feature underlying the front of the wall footings, and the section also shows the inner ditch and a part of the small early outer ditch, which has veered much closer, about 4m (13ft) intervening between the ditches, as opposed to about 9.1m (30ft) in the southern section. The inner edge of the late wide ditch is shown on plan (fig.3), but does not appear on the section. The location of this last ditch is shown differently between his detail site plan (1962, fig.3) and the full site plan published in the second report (1966, fig.1), where it has moved closer to the wall.

In his Site G to the north, the first report viewed the defences as making an oblique angle to run north-west, due to having again caught the corner obliquely. This trench (located best 1966, fig.3; section 1962, fig.4B) show the remains of the wall with a clay-filled feature nearly 61cm (2ft) deep sealed below it which is not mentioned, although two post-holes were found dug into the make-up of the berm on the lip of the inner ditch (1962, 100). No sign of the ‘palisade trench’ occurred. Although the trench is shown on plan extending east into the line of the early outer ditch and the late wide ditch, the section terminates before this, so that the evidence for the extraordinary change of angle of the ‘early’ ditch to merge apparently with the inner ditch is not published. The slope at the east end of the drawn section (1962, fig.4B) could equally be the start of the late wide ditch. A trench IV cut to the south (1966, fig.3), cut the wall, inner ditch and the ?late wide ditch, but no section was published.

His next section (1966, fig.3, trench VII, fig.4, section ABC) just west of the angle was dug slightly obliquely to the wall, and was also not at right angles to his east-to-west trench IV above. This may be more important than first appears, as the strange junction of the inner ditch with the ‘early’ outer ditch seems to rest upon the slightly diverging line of the ditch in relation to the wall, seen in a 1.2m (4ft) wide trench. The section of trench VI, ABC, with the offset trench XIII, DE, shows the wall footings, inner ditch and

wide late outer ditch. There is no evidence supporting the merging of the two smaller ditches. A small trench was dug further west at the north end of Brooke Avenue, only shown on the main site plan, fig.1, which shows the south lip of a small ditch which is otherwise obliterated by the wide late ditch; again only seen in a narrow trench, and it seems unlikely that sufficient lateral length was opened to show alignment accurately.

The only other sectioning of these complex ditches was on Site H near the north-west angle (1966, fig.2). The section (1966, fig.5, section HJ) picks up a trace of what might be the earlier outer ditch on the north part of the wide late ditch, and in the rather oblique section through the north-west corner (fig.8, section MN) a similar ditch occurs on the outer curve of the wide ditch.

The behaviour of the 'early' outer ditch, particularly its distance from the wall at the south-east corner, rapidly narrowing as it curved north, and the peculiar line taken at the north-east corner, is inexplicable, and it is difficult to understand why it should be viewed as the earliest ditch. That it pre-dates the wide late ditch is undoubted. The evidence presented for its curious behaviour at the north-east corner seems very tenuous, particularly in view of the narrow trenches. If it had any relationship to the 'palisade trench', on the view that that feature was part of an early defence, evidence for the 'palisade trench' should have occurred at the north-east corner, but did not.

The evidence for the 'palisade trench' is useful but difficult to interpret. That the feature appears to extend along the south defences seems to relate it closely with the defences, but its disappearance shortly after the south-east angle is perplexing. If the feature underneath the wall footings in Ellison's trench (1962, fig.4A, section EF) is indeed the 'palisade trench', it pre-dates the wall. Since there is no evidence from the main defences section on Green's site for a rampart pre-dating the wall construction (due to the mortar layer), and the 'palisade trench' is such a flimsy feature, it is either a pre-fort fence to some enclosure, which seems unlikely due to its adherence at least to the south defences, or perhaps a feature connected with the laying out of the defences. If the latter, it seems rather overdone. No explanation can be found to fit the evidence.

The ditch defences seem more likely to have been twin ditches associated with the wall, both of which have been cleaned out and re-cut at times, and the outer one was eventually replaced by the wide outer ditch, probably in the 4th century. A notable feature of the ditch system seen frequently on the line of the defences was the number of presumably post-Roman pits and scoops dug both in the ditch fills and in the intervening berms. These would be confusing features in the narrow trench, and could be misinterpreted. There is also the complication as observed by Ellison that the diggers of the wide outer ditch tried to avoid digging into clay wherever possible, so that its line is more meandering than the earlier smaller ditches.

An important piece of dating evidence was found on Site G (1966, 51) where traces of the yellowish brown clay rampart were found, extending approximately 7.6m (25ft) behind the wall. A mortarium was found in it, fig.9, no.11, dated by Mrs Hartley at the time as 3rd, possibly late 2nd century. Most of the other evidence was from ditch fills which with cleaning and re-cutting is of debatable value.

The remains of the corner turret at the south-east angle (1962, 98) were very fragmentary. No trace of a similar turret was found at the north-east angle (1966, 51), but a

platform projecting 1.8m (6ft) behind the wall and 4.6m (15ft) long occurred close to the corner (1966, 51, fig.3). This was added to the wall, and both its insertion into a rampart and location adjacent to the north-east corner seem curious. The positions of the excavated trenches GII and GV are relevant, since in view of the small size of the south-east turret, the absence of a corner turret may be more apparent than real. If the rectangular footing added to the wall was carried to the full height of the wall, a platform some 4.9m (16ft) wide would result. There are similarities between this structure and evidence for masonry platforms added to the walls at Lincoln (Colyer 1975, 255, fig.6 and Jones 1980, 25, 54, fig.31), and at Brough-on-Humber (Corder and Romans 1936, 58, fig.4).

While it is difficult to estimate the width of the super-structures, the overall widths appear similar, but, strikingly, the lengths vary between 4.6m (15ft) and 9.75m (32ft). The Brough-on-Humber example, immediately adjacent to the east gate to which a rounded tower had been added, was interpreted as a ramp or stair leading to the tower. If so, the differing lengths would be dictated by the varying heights of the rampart walks, the two Lincoln examples coming from upper and lower *colonia* defences of differing date and character. *Ascensi* are more probable than any connection with static artillery as has been suggested, and the possibility of a turret in the north-east corner at Caister adjacent to the wall thickening suggests that its identification as a stairway may be correct. The sparse dating for the Lincoln examples suggests at the earliest a date after AD 270, and more probably in the 4th century; no dating evidence was found at Brough-on-Humber. The only certainty is that they are late modifications to the defences.

## II. The Interior

(Figs 7, 9, 11–20; Pls III–VIII)

### Introduction

(Fig.7)

The area excavated inside the fort contained a simple strip-building (Building 1) which comprised at least six rooms, to which had been added a corridor to the north and a probable new range on the west, aligned north-to-south. A wall (Wall 4) parallel to the south of the building may have been part of a covered portico, or merely a revetment of the refuse dumping on the rear of the rampart. The building is not precisely parallel to the defences, and although Wall 4 is aligned with the building, it was not certainly built at the same time. The addition of rooms to form a west range suggests the possibility of a courtyard to the north, opening on to the main road through the fort.

Within this area, and on the same alignment as Building 1, are the remains of relatively ephemeral structures, Building 2, in which a combination of different construction methods suggests a multi-period building. There are also two water tanks (one of which appeared to have been demolished probably in the Roman period) and, closer to the road, a structure resembling a corn-drier. This northern part of the site had suffered plough damage and was also the area most intensively occupied by the Middle to Late Saxons. These factors, together with the ephemeral nature of the structures, make it difficult to determine the nature of the Roman occupation there, and the plan clearly reflects more than one period.

### The post-trenches

(Fig. 7)

Nine so-called post-trenches (F40–F48; LB 918–19, 947–8, 972–4) were found, underlying Wall 4 of the portico, mostly protruding north of the wall. Where measurable, they were approximately 2.1m (7ft) long by 30cm (1ft) wide. Only one post-trench appears on a section, F40 in FVI where it is shown as 23 to 25cm (9 to 10in) deep, by approximately 30cm (1ft) across. A further short (1.2m; 4ft long) post-trench F49 was found in EX lying in the middle of the later portico. All were aligned north to south, and those of the main series in EVI–VIII squares were located approximately 2 to 2.1m (6ft 6in to 7ft) apart, their centres lying at approximately 2.4m (8ft) intervals. The length covered by the main series of nine post-trenches is approximately 19.5m (64ft).

Where the cobbling of the portico survived it sealed the trenches, and in post-trench F41, the cobbles seemed to have been carried down into the trench close to Wall 4. Two of the post-trenches F43 and 44 (in EVII), are drawn on the detail plan of the grid square as breaking the footings of Wall 4, whereas all the others are shown with the wall and/or footings extending across them. Traces of carbonized wood were noted in most of these; if they had originally contained timbers, these had been withdrawn. Their filling is mentioned only in relation to the atypical post-trench F49 (in EX), where it was 'normal soft clay and earth mixture'. Scraps of pottery, bone, some fragments of *opus signinum*, lava quern and coal came from the various fills, probably intrusive from the overlying refuse.

Apart from the complicated gullies, discussed above (see The rampart), also underlying the cobbling of the portico, there was a small pit or large post-hole F57 (in EVIII; LB 921) and a post-hole F39 in the portico at the south-east corner of Room 1. These may have been early features, since neither seem to be structurally related to Building 1. There is also the possibility that the holes through Walls 1 and 3 at the southern corners of Room 1 were the result of beams embedded in the masonry, that through Wall 3 being on the same alignment as the post-trenches further south, lying opposite F43. The relationship of the post-trenches to any of these other early features is unknown.

It is possible that these post-trenches contained timbers into which some form of revetment, preceding Wall 4, was inserted. Their regular spacing and alignment with the defences is notable, and their apparent absence west of EVIII (apart from the shorter trench in EX) would suggest that, had they been part of a revetment, it was only partial adjacent to the gate. Equally they may have belonged to a structure preceding Building 1. Had they formed part of the foundations of a timber granary, further trenches would have occurred to the north, underneath Building 1. Although there are references in the records to occasional early features below the floors, these are largely unplanned. Discovery of earlier structures is handicapped both by lack of excavation to natural, and extensive post-Roman disturbances.

The date of the pottery from the post-trenches was broadly of late 2nd to early 3rd century, except for F44, late 3rd, possibly to early 4th century.

### Building 1

(Figs 7, 11–14; Pls III–IV)

### Introduction

The following description of Building 1 is dependent upon the information in the site records; although parts of the structure have been checked on site, the walls have been subject to some reconstruction and consolidation by the Ministry of Works. Where heights of walls are mentioned below, these usually come from direct measurements on the site.

There was also evidence for extensive disturbance in the post-Roman period, some but not all, attributable to the Middle to Late Saxon occupation. A large water pipe trench was dug through the building in 1935, and a subsidiary trench ran north through the XI grid squares from the baulk DE XI. The base of the ploughsoil was often either at the level of the walls or immediately above it, which probably made the recognition of some later disturbances more difficult. These have been deduced during work on the finds and records. The amount of disturbance seems to have been relatively even across the site, and all rooms were affected.

The building was probably no more than a heap of rubble when the Middle Saxons arrived. Whether it was partially ruined towards the end of the Roman occupation is another question and one which, with indefinable later disturbances, is more difficult to answer. It is clear from Green's notes that he viewed the ruinous state of the main north wall, Wall 2, as having been related to structural changes, particularly the addition of the north corridor, during the Roman period. Since there are large areas of disturbance of indefinable date and extent in that area, the validity of theories based on the excavated condition of the walls is questionable.

The outer walls constructed of coursed flint with a mortared rubble filling were between 69 to 76cm (2ft 3in to 2ft 6in) wide. Quoins of brick are recorded for the south-east corner of the building. The footings of beach cobbles were noted occasionally as substantially wider than the superimposed coursed walls (as with Wall 2 in Room 1, and with the portico Wall 4), between 1 to 1.2m (3ft 6in to 4ft) wide. Although this is not an uncommon feature in Roman buildings, its localized appearance is inexplicable. The partition walls between rooms were generally about 53cm (1ft 9in) wide and, where better preserved as Wall 5, stood about four courses high (c. 50cm) capped with a flat course of tiles (mostly bonding tiles, but including some *tegulae*). The superstructure of the building was of timber framing with wattle and daub, although the end Wall 1 was possibly flint throughout (see below). There is no evidence in the records relating to how the wattle and daub was attached to the dwarf walls. The portico Wall 4 was ruined during the Roman period, but appears to have been about the same width as the outer walls of the building. The footings were about 38cm (15in) deep. The additional walls to the north of the original strip-building (Walls 12–16) are described separately below.

The catalogue numbers of the finds from each room are listed at the end of each section. The pottery from Building 1 is published separately, see Figs 139–41.

There are 76 coins from Building 1, excluding those from Room 5 considered to be from dispersed hoards: Period V:1; VI:1; IXb:2; X:11; XI:2; XI barbarous radiates:9; XIIIa:7; XIIIb:27 (including 15 from Room 3); XIV:1; XVa:1; 3rd–4th century:5; illegible:11.

## Room 1

(Fig.7)

This room was 7m (23ft) square. The room was bisected by the 1935 pipe-trench and excavation in the two grid squares was not always simultaneous, creating stratigraphic difficulties. There were disturbances other than those noted and planned by Green in the south-east corner, largely indefinable (Ipswich Ware, a bun-shaped loom-weight (No.337), a mid-15th-century rim and a glazed 17th-century sherd were found). It would appear that the partition Wall 5 had fallen into this room, over the debris on the floor which included substantial parts of individual vessels, including glass. Many of the sherds from this room showed evidence of burning after breakage (the sequence of fallen daub suggested that a fire had been lit on top of the fallen wall). Resting on the floor, between and below the collapsed timbers and daub of the partition, was a mound of charred grain, in or below which was hidden Coin Hoard No.2 of eighty-six Constantinian coins (see The Coins, below).

When clearing the debris on the floor below the find spot of the coin hoard No.2, in the south-west corner of the room, some remains of carbonized timbers were found. Although the records are difficult to follow, these were probably heavy roof timbers which must have fallen on to the ?sack of grain. Timbers jointed at right angles were visible, and a few grains of corn were seen pressed into the floor under a timber impression. Two parallel lines of carbonized wood suggested louvred window fragments. There was considerable evidence of burning, and some of the daub was burnt black.

Apart from finds of wallplaster in the debris on the floor, its presence is noted on detailed plans as occurring on Walls 2 and 5, and there was evidence for it also on Wall 1. The fallen remains of Wall 5 showed a sequence of daub, resting on plaster, resting on dark (burnt) soil, below which was occupation refuse resting on clay. Also resting as they had fallen were the remains of vertical and horizontal timbers of the partition framing. Some of the plaster was backed by heavy 'pugging', clearly derived from the flint-built part of the wall. Green felt that the absence of any comparable spill of daub and wallplaster from the east side of the room indicated that the outer wall (Wall 1) was flint throughout. The value of such negative evidence is, however, equivocal.

The floor was apparently clay with a skimming of mortar, rather worn and broken, laid on the natural Corton sand. A wooden step or sill resting on a mortar foundation was evidence of a doorway through Wall 5 into Room 2, north of the pipe-trench; this had been reinforced inside Room 1 by a line of flint packing.

This room had four holes, two apparently drains, through its walls at the corners. Green viewed Wall 6 as a wall screening a latrine. This wall seems to have been little more than a jumble of flints, about 35–36cm (14in) wide. A drain running from a quadrant pit (unplanned) in the north-west corner, its course marked by a dense fill of oyster shells, was described as a urine-drain sloping down parallel with Wall 2 and, probably protected by a wattle-and-daub screen, to empty at the east end through a drainage hole at the north end of Wall 1. The hole through Wall 2 was found to run downwards with a smooth mortared surface. A search for an outlet drain in the DVI–VII baulk found no evidence. While the construction of flint wall and wattle-and-daub screen seems debatable, the la-

trine interpretation is a possibility, particularly as elsewhere in the records for this room, Green refers to a mortar skimming of a 'curious greeny-yallery colour' unlike anything elsewhere in the building.

There are two amorphous drains shown in the south half of the room (F53 and 54), on either side of F52, but these seem unrelated to the holes in the southern corners, although a short length of ?drain is planned (F51) leading directly to the south-west hole. This hole was found to be the result of Wall 3 having 'been built around a flattened log' (the filling was carbonized wood dust with earth), while the hole F50 through Wall 1 in the south-east corner of the room was similar, a short 'sleeper' having interrupted the footings. When the exterior of the hole F50 through Wall 1 was investigated much later (during work on the road, see below), Green inexplicably changed his interpretation to view it as a drain, a gully leading *downwards* into the building.

Both these features have distinct similarities to the post-trenches under the portico Wall 4 (see above). Green had the impression that the timber in the hole through Wall 3 had not been withdrawn, and it may be noted that it is on the same alignment as the post-trenches below the portico Wall 4 and, moreover, lies opposite post-trench 4 (F43). Given that the 'drain' F51 (LB 3177) apparently leading to this hole may have been no more than the sinkage of the floor over an earlier trench (?containing a timber beam which had rotted), this hole through the wall may have had no functional relevance to the flint-walled building. The anomaly of the footings of Wall 4 having been occasionally interrupted for post-trenches has been noted above. In the same area (unplanned), he found a large circular ?post-hole, which he felt did not fit the building, but could conceivably belong to an earlier structure.

The interior of Wall 1 had a curious earth-filled recess at its base which started c. 1.2m (4ft) from the north-east corner, and measured c. 1.6m (5ft 3in) long. This seemed to be related to a quantity of carbonized wood set into the clay of the floor in this area, as though a small flat beam had been inset there. There was a plug of wood in the wall, with a tile set slantwise, in which were two iron spikes. These were probably T-staple shanks, and apart from being highly corroded, bore traces of plaster/*opus signinum*. The diagonally-placed tile (still visible) marks the north end of the recess, which was probably created by a small horizontal beam having been built into the wall, resting on the projecting lower course. The function of this feature is unknown; there are similarities to F52.

F52, the 'dresser-base' lying parallel with the south Wall 3 is difficult to interpret. Fragments of virtually complete vessels were found jumbled as they had been smashed by timbers apparently falling onto them, and intermingled with carbonized wood, burnt daub, and wallplaster face downwards. The timbers may have been part of Wall 5. Below this debris traces of further timbers were found resting on the floor (maximum thickness 25mm (1in)) and Green is quite definite that 'it is almost certainly not a part of the partition framework'.

There seem to be gaps in the record relating to this 'dresser', but it would appear that a timber, about 1.3m (4ft 3in) long by 23cm (9in) wide was found in the clay floor close to, and in the middle of, Wall 3; a year later, the two shallow drains on either side (F53 and 54; LB 3167, 3169) were discovered. Drain F53 was shown to be 'a shallow drain filled with darker matter' which started in a shallow

rounded end by the west end of F52. Drain F54 was similar, running from the east side of F52. Both drains had pottery and glass which joined to the overlying 'debris on floor' layer, which produced many fragments of corrugated blown window glass (Fig.87, No.554). Three small post-holes, approximately 15–18cm (6–7in) diameter, were also found on the north, nearly parallel to the 'dresser'. Fragments of tile lay over the two outer holes which were filled with carbonized wood. Green interpreted these as the bases of three legs to the front of the dresser, the two outer ones, having rotted below the floor surface, had tile fragments to give a solid base for ?replacements, and the beam by the wall was the base into which two uprights were slotted to carry the wall side of the table-top. The distance from the timber beam to the possible legs was approximately 1.2m (4ft). The possibility of timbers being morticed into this beam had been briefly mentioned earlier but without conviction, and it must be assumed that Green had proven this feature to his satisfaction.

It would appear that this was a work bench/table, associated with possible drains (but their shallow nature is notable), placed centrally against the south wall of the room, set into a timber beam close to the wall, and supported by timber legs set into post-holes. It is a curious construction, and without evidence for its use, difficult to understand.

#### Finds from Room 1

Illustrated: 3, 33, 109, 194, 208, 214, 217–18, 224, 313, 337, 342, 355, 415, 563, 591, 611, 649, 699, 711, 755, 760, 767, 804, 1037.

Unillustrated: 27–8, 138, 259, 278, 348, 353, 374, 457, 466, 479, 495, 498, 579, 589, 623, 641, 659, 827, 835, 899, 904, 940, 948, 952–3, 964–5, 977, 984, 997, 1004, 1017–18, 1065.

#### Room 2

(Fig.7)

Room 2 measured 7.5 by 7m (24ft 6in by 23ft). As with Room 1, this was cut by the 1935 trench, and excavated in two grid squares, work proceeding at different times. This, with innumerable test trenches, mostly unlocated in the notebooks, produced complex, sometimes contradictory records. There were two large post-Roman disturbances on the west side next to Wall 7, and a further large diagonal disturbance running from Wall 5 north-west through Wall 2 into the north corridor.

The room had a connecting doorway with Room 1 to the east (see above), and the gap (F49) through the south Wall 3 may have given access to the cobbled portico (the only evidence for communication between the building and the portico). When first discovered it was referred to as a 'break or opening' which had been blocked when rubbish was dumped into the portico. Several months later it was viewed as a doorway when two possible post-holes on either side were investigated. Of these, only the feature to the east seems to have held a post. An Oxfordshire Ware sherd from the blocking suggests a date, probably after the mid-4th century. The detail drawing shows an irregular break about 1m (3ft) wide with a fairly straight edge on the west side; towards the east, the wall shows a further irregular break more likely to have resulted from damage rather than a deliberate opening. It is not a very convincing doorway, but was consistently planned as such.

Wallplaster survived *in situ* on both the fragment of the north Wall 2 (in the north-east corner) and the east Wall 5. Post-Roman damage to Walls 7 and 2, which mostly survived as footings only would have removed evidence for

these walls. A quantity of red painted wallplaster was found when searching for the remains of Wall 2, possibly from the exterior.

The description of the floor in this room varies. In DVII this seems to have been clay with some patchy mortar, but there are also references to 'packed debris in parts with carefully laid clay patches'. In EVII the top floor was the 'true upper clay and rubble packed floor', but it is difficult to establish the nature of earlier floors (at least three). The complexity due to excavation method and post-Roman disturbance leaves little alternative to the view that the floor had probably been clay throughout the life of the building, relaid periodically, and ultimately patched with rubble, tile, etc.

In the north half of the room (DVII) remains were found of various hearths, three of which were planned (F22, 23, 24). Initially all were stated to have rested on the latest floor surface, but on further work, only the tile-built hearth F22, was associated with the last floor.

Hearth F23 of flint and tile fragments appears to have been roughly circular. The lower layer, resting on the clay floor, was a true hearth with much evidence of combustion. Above this, presumably to seal it, was a layer of yellow clay showing no signs of fire, carefully packed with tile rubble. When investigated later, a raised triangle of clay was found underlying the hearth, with a small post-hole at its north apex. An adjacent area, associated with a quantity of slag, showed similar signs of burning.

Hearth F24 was a concave saucer of mixed clay, below an upper hearth consisting of dark earth, with a 25–51mm (1–2in) flat layer of hard burnt clay rubble with occasional burnt and flaky potsherds. Green felt that the top hearth was post-occupation, *i.e.* after 'true occupation ceased, but before the building had completed its decay'. Green's comments on the finds (including the pewter plate No.352) suggest that he viewed the hearth throughout as being post-occupation.

Hearth F22 was a tile-built feature, either square or rectangular, cut by the 1935 trench. This was constructed, in the clay foundations of the late mortar floor, of tile fragments set on edge with clay inside; the west half was floored with tiles which probably originally extended over the whole surface. This was later repaired by further layers of clay which piled up higher than the original tile kerb. The north edge of the superimposed clay seemed to have a limit of tile fragments laid horizontally. The records contain a reconstruction sketch which shows a square tiled structure with a central circular 'fire-hole' which had been overlain by a circular clay plug.

The position of the tiled hearth F22 and the finds leave no doubt that this hearth was in use during the late occupation of the building. The hearths F23 and 24 seem to have been secondary, related either to a change of use of the room or to subsequent occupation before the collapse of the building. It is, however, notable that both the tile-built hearth F22 and hearth F23 which also had some indication of foundations, had been apparently sealed with clay layers, as if to render the room suitable for other use, whereas the excavated surface of hearth F24 was the last burnt surface.

The slag adjacent to hearth F23 is relatively close to the doorway from Room 1; this feature is not planned, but could conceivably have been a further hearth, based on a slag foundation, and its proximity suggests the doorway

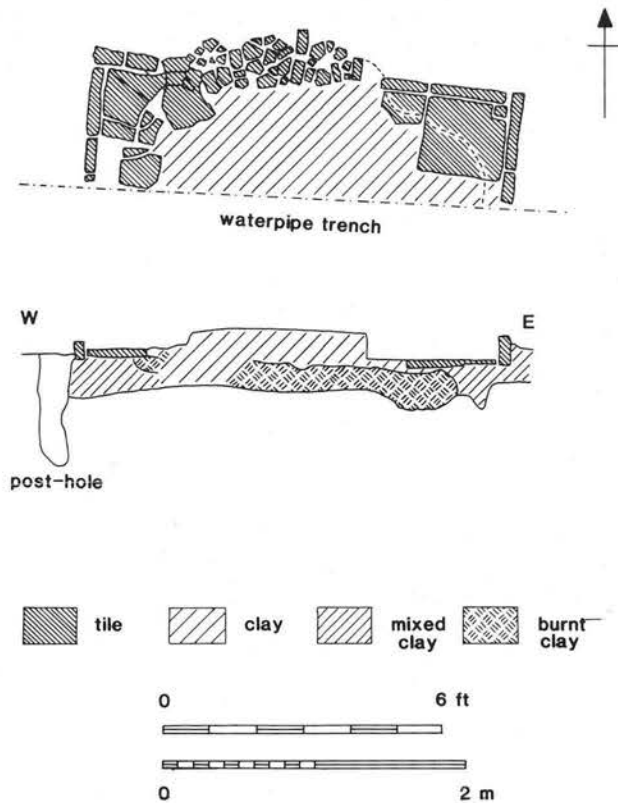


Figure 11 Plan and section of hearth F22, in Room 2, Building 1. Scale 1:50.

had gone out of use. The slag was furnace slag from smithing elsewhere.

The Room 2 animal bone assemblage included an unusually large quantity of cattle feet. While the complex records leave doubt about their precise stratigraphic position, due to post-Roman disturbances, the nature of the assemblage closely resembles that from the refuse on the rampart. This debris is presumably late rubbish from activities in the area.

#### Finds from Room 2

Illustrated: 14, 16–17, 50, 107, 150, 164, 205, 209, 352, 446, 501, 551, 743.

Unillustrated: 26, 74, 132, 372, 424, 777, 857, 920, 999, 1006–7, 1033, 1050.

#### Room 3

(Figs 7, 11, 12)

Room 3 was the largest room in the building, and measured 10 by 7m (33 by 23ft). The east section of the north Wall 2 in this room survived as only one course on top of the footings until shortly before the doorway into the north corridor, where it rose to two courses. Beyond the doorway the wall survived four courses high. The south Wall 3 was well preserved, six to seven courses high from the opening in Room 2 to about half way across Room 3, where it dropped to three to four courses, and was noticeably damaged before cut by Grave No.2. The east Wall 7 was damaged but stood some three to four courses higher than the fragment of Wall 2 which it abutted. The west Wall 8 survived only at the north end and was about five courses high.

The large size of this room, extending over three grid squares, and the numerous test trenches dug east-to-west,

north-to-south and along the walls, often impossible to locate accurately, produced many problems with the records. Apart from the 1935 trench, there were two Middle to Late Saxon burials, Graves 1 and 2, both in the south-west corner, the latter cut into Wall 3. The break in Wall 8 adjacent to Grave 1 does not seem to have been a doorway, and there is evidence to suggest extensive post-Roman disturbance in addition to the grave in this area. There are also extensive unplanned disturbances of uncertain extent and location; these are all of late date, cutting the last floor and, where described, filled with 'rubble and mixed earth-clay'. One is located in the area north of the 1935 trench adjacent to Wall 7, and extends some 1.5m (5ft) into the room, either a linear feature or an isolated pit.

The late floor appears to have been a 'roughish mortared surface resting on a bluish speckled heavy clay', the mortar being absent in places. This late floor is, however, referred to elsewhere as being of 'baked clay', which overlaid 'dark soil' and a 'lower baked clay', the latter with carbonized wood on top. Seen in a narrow test trench, this need be no more than an isolated area, a possible hearth, but there is evidence for much burning in the north-west area, the extent of which is uncertain. There are references to a possible 'smithing hearth' near the centre of the room, lying in a hollow in the latest 'brick concrete floor' and a circular shallow saucer packed with iron slag is sketched lying east of Wall 8, immediately to the north of Grave 1. Clear information about the floor is lacking, and it is assumed that a sequence of clay floors, variously patched with mortar or *opus signinum* occurred throughout the use of the building.

On the north side of the room, there are complicated references to a feature called by Green the 'Great Trench'.

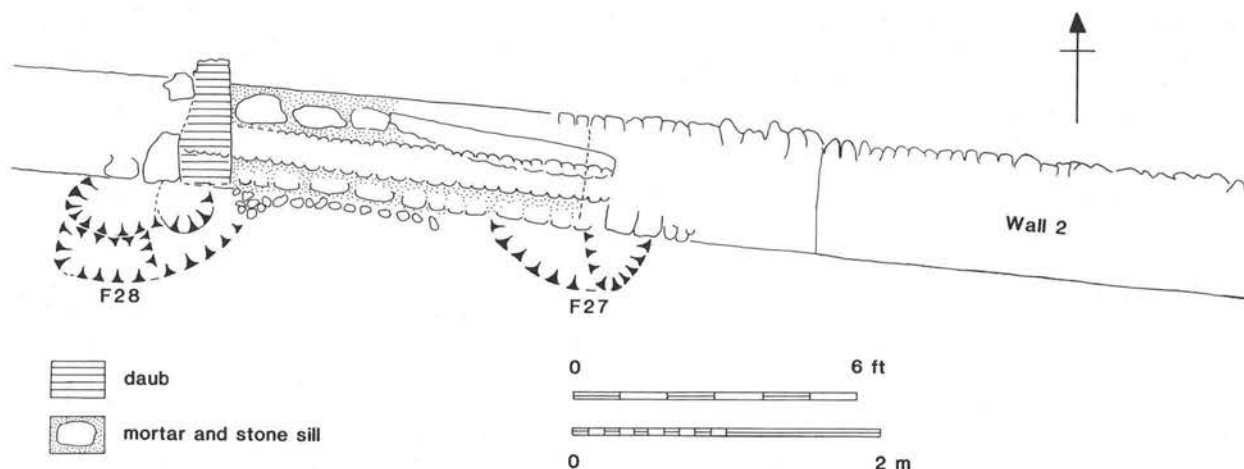


Figure 12 Plan of the doorway through Wall 2, Room 3, Building 1. Scale 1:50.

This was seen in north-to-south test trenches cut adjacent to Wall 2 to the east of the doorway, but other references to work in the north-west corner suggest that this was a massive feature running along all the north wall. A sketch section shows this as being 1.4m (4ft 6in) wide, cutting through all floor levels, and extending down to meet the beach-pebble footings of Wall 2. The section is not to scale, but judging from the measurement of its width, the depth was probably over 60cm (2ft).

Green states categorically that 'this "great trench" was certainly dug during the house's occupation', cutting a mortared surface, but covered by 'another mortared floor, under the roof spill'. A sketch section through the doorway in Wall 2 shows loamy clay below the door sill overlying disturbed loam butting against the wall footings.

The reason for this trench is not clear. It contained very little pottery, bone and some building debris. It seems too massive to have been a construction trench for any rebuilding of Wall 2, and neither would this interpretation be consistent with trench-built footings. It appears, however, to pre-date the insertion of the doorway, which Green considered to have been inserted through a demolished Wall 2.

The opening through Wall 2 from Room 3 into the north corridor is planned on the detail grid square as a doorway with sill beams bedded on mortar either side of a central ridge of beach pebbles, between 2.7 to 3m wide (9 to 10ft). The post-holes, F27 and 28, were revealed as saucer-shaped pits with post-holes immediately opposite the door-jambes. They were filled with dark matter containing shreds of carbonized wood, and Green comments: 'It is possible, though structurally it is not clear how, that these held posts lending added support at this point'. They measure approximately 36–41cm (14–16in) across, of unknown depth.

This is an exceptionally wide opening, but is structurally similar to doorways through Walls 5, 9 and possibly also Wall 2 in Room 6. Green viewed this as a modification, and states that the sill 'rested on the top course of the "demolished" early wall'. The sketch section of the doorway, noted above in relation to the 'Great Trench' indicates

that the possible post-holes must be late. The only dating evidence from them was a sherd of Rhenish Colour-Coated Ware from F28. The insertion and width of this opening suggests that Room 3 was not domestic at that stage.

The evidence of burning in the north-west area included quantities of carbonized wood, a thick scatter of flint flakes, fractured by heat, and immediately above these, much scattered burnt daub, some burnt through, but some still clayey, and only partly burnt. A similar area of intensive burning occurs on the other side of Wall 8 in the north-east of Room 4 (see below). Removal of the carbonized wood layer in this area revealed two squarish post-holes (F25 and 26), measuring approximately 40–41cm (16in) of unknown depth. Green considered that these were for two heavy posts to carry a ridge or purlin. While their size may imply structural timbers, their isolation and location suggest either, if structural, that this was a later modification, or an internal arrangement related to the function of the room, already notable for its exceptionally wide late doorway. Remains of timbers, almost certainly from the roof occurred under the tiles particularly in the west part of the room. One lying beside Wall 8 was 10–13cm thick (4–5in) and over 1.8m (6ft) long. Close to this were found two Constantinian coin hoards, Nos 4 and 5, and complete and nearly-complete pottery vessels (Nos 120, 123, 132, 141).

#### Room 3: the coin hoards

Since it is probable that the Constantinian coin hoard found in cutting the waterpipe trench in 1935 also came from this room (Robertson 1936), the room contained possibly three separate hoards, which, viewed with the hoards outside in the refuse on the rampart, produces a notable concentration of 'failed' Constantinian savings.

In clearing the debris on the floor in the north-west corner, the remains of a timber lying north-to-south about 2.1m (7ft) from Wall 8 were exposed. At its north end was a mass of burnt daub, which also occurred along its length, although not always burnt hard. The timber was shown to be approximately 5 by 17.8cm (2 by 7in), resting on a mixed clay floor. Nine coins (seven Constantinian and two



illegible) found scattered in the carbonized matter were not regarded as a hoard. Excavation to the south, still close to Wall 8, where the roof spill underlying Grave 1 was exposed, also revealed two timbers, one, a heavy 18cm (7in) beam underlay the spill, aligned east-to-west (?the ridge of the roof), and the second north-to-south timber overlay the tiles (?rafter or partition).

Immediately north of the north-to-south timber a Constantinian hoard of sixteen coins were found clustered in a 5mm (2in) diameter circle, and ten more within 7.6cm (3in) to the south-east, immediately under the roofing spill (Hoard No.4). The intense concentration of very dark carbonized matter at this point suggested a destroyed purse, perhaps of cloth. Large fragments, including about half the rim, of a grey wide-mouthed bowl were also found, but the positions did not suggest that the coins had been in it.

The second Constantinian hoard, No.5, of eight coins was found close to the east-to-west timber, some 1.5m (5ft) from Wall 8, clustered in a 25mm (1in) radius. Sherds of an incomplete grey vessel were found over them. Six more Constantinian coins were found scattered, not considered to be part of the hoard.

Both hoards were therefore found directly associated with the remains of timbers (probably from the roof) and roof tiles, and it is conceivable that they were hidden in the roof. If so, some scattering of coins could have occurred as the roof fell in, and the other coins from the room could belong to the hoards. A total of seventy-six coins were found in the various rooms of the building, of which twenty-seven were Constantinian of period XIIIb, distributed (excluding the large quantity from Room 5 which is viewed as part of the hoard(s), scattered by post-Roman disturbance): Room 1, three; Room 2, two; Room 3, fifteen; Room 4, seven. The quantity from Room 3 is exceptional, and with the evidence of joining pottery sherds from individual finds bags associated with the hoards, it is questionable whether the two groups of seven and six coins and a single coin were not scattered parts of one or other hoard. On the other hand, without a certain location for the find spot of the 1936 hoard disturbed during the pipe-trench work, these could be outliers of that hoard (coin finds Nos C280–288, 290, 292–297). It is interesting that, on the basis of the sizes of the copies, the hoards from this room and from the adjacent refuse (Hoards Nos 6 and 7) form a group (see Chapter 4, The Coins, below).

The pottery from this area is interesting since it includes three nearly complete grey wide-mouthed bowls, joining sherds coming from all the individual finds bags associated with the discovery of the hoards (LB 2051; Nos 120, 123 and unillustrated). Together with a complete dish (No.154) and other vessels (Nos 132, 141) found in the north-west corner (of which joining sherds were found in the area of the hoards), these vessels were probably lying complete on the floor when the roof collapsed. The sherds showed that the vessels were broken and burnt subsequently.

#### Finds from Room 3

Illustrated: 4, 7, 12, 153, 385, 396, 403, 412, 742, 746, 757, 795.

Unillustrated: 227, 305, 333, 454, 468, 665, 690, 716, 885, 914, 958, 970–1, 990, 1055, 1062.

#### Room 4

(Fig.7)

Room 4 measured 5.5 by 7m (18 by 23ft). Virtually all of the south Wall 3 had been removed by the 1935 trench. The north Wall 2, although the same height as immediately to

the east in Room 3, was noticeably more damaged, particularly on the north face. Wall 9 is discussed below in connection with Room 5, but this was broken by a post-Roman disturbance F77, and a probable doorway F31 between Rooms 4 and 5. The break in Wall 8 towards the south end was probably post-Roman damage. Wallplaster was found *in situ* on the inner face of Walls 8 and 9.

To what extent the ill-defined post-Roman disturbances through the west Wall 9 into Room 5, and that breaking Wall 8 affected this room is largely unknown. The break F31 through Wall 9, probably a doorway, may have suffered post-Roman damage. Examination of the junction of Walls 2 and 9 showed that these had been broken away deeper than in the adjoining lengths, which may indicate disturbance more relevant to Room 5 (see below).

A test trench dug along the north wall revealed masses of wallplaster, daub, and occasional roof-tiles bedded on clay. Most of the plaster (much of it in large pieces with daub attached) lay face upwards, which suggested that Wall 8 fell into Room 4, and that the timbers found in Room 3 (see above) would have been roof-timbers. There was a mass of building debris on the east side of the room, presumably from Wall 8.

An east-to-west trench (unplanned) across the middle of the room revealed a considerable spread of roof-tiles with masses of carbonized wood below. The flints of the north part of Wall 8 were both reddened and split by fire; the clay of the floor showed many signs of burning, and the completely destroyed carbonized wood seemed to indicate that the roof and Wall 8 were destroyed by fire and the floor renewed by covering the debris with fresh clay.

Excavation in the north-east sector, revealed an underlying 'brick-mortar' floor, which extended 84cm (2ft 9in) from Wall 8, but then stopped along a line roughly parallel to the wall. Beyond, its place was taken by a mixed but fairly clean yellow clay. The relationship of this brick-mortar floor to the north Wall 2 is uncertain, since a sketch plan shows a dark filling along that wall, the fill sloping down towards the wall, possibly related to the 'Great Trench' in Room 3 (above). A roughly rectangular hole (unplanned) cutting the brick (*sic*) floor contained a probable post-hole.

The brick-mortar floor was found along Wall 8, with a 'broken edge running off towards the S.W.'; its composition was changing into what looked like lime-mortar. On the west side of the room, a very irregular clay floor underlay the roof spill; its relationship to the brick-mortar on the east side is unclear. A pit (unplanned) under an area of packed stones in the middle of the room in a further test trench (not precisely located) antedated the last floor, but produced no significant finds.

The underlying brick-mortar floor was found in the area of F31, there showing wear repaired by a packing of hard clay. A sketch section across F31 doorway showed the clay packing of the upper floor of Room 4 abutted on to a nearly vertical ridge of brick-mortar, presumably the easternmost part of the late floor in Room 5. Burnt daub heaped against this showed that the brick-mortar floor was *in situ* before the destruction of Wall 9 and the roof. The *opus signinum* floor of Room 5 is shown resting on a thick mortar layer, which seems to butt up against the earlier brick-mortar floor in Room 4. The section (not precisely located or to scale) is difficult to interpret; the depth, however, from the top of what appears to have been the latest floor (its nature is undefined except as being 'clay packing') to the top of the worn brick-mortar floor in Room 4 was 66cm (26in).

There is evidence of late disturbance. The mortar packing was interpreted as a sill, with signs of a slight moulding below the brick-mortar floor of Room 5. Green felt certain that there must have been a step up into Room 5 during the 'middle-floor period'. This doorway was photographed but not planned.

There seem to have been at least three floors in this room, but whether the top floor was a floor as opposed to disintegrated unburnt daub from the walls, overlying the roof collapse is debatable. When excavation resumed nearly a year later, removal of the upper floor on the west side of the room revealed the 'original crushed brick floor below'. Finds noted as being from the 'true middle floor structure' included a Constantinian coin of AD 337–341. Further removal of this clay floor revealed the worn and irregular crushed brick floor, and produced an earlier 4th-century coin.

#### Finds from Room 4

Illustrated: 9, 549, 731.

Unillustrated: 489, 692, 947.

#### Room 5

(Figs 7, 13; Pl.III)

Room 5 measured 4.1m (13ft 6in) wide and would have been 7m (23ft) long. The detailed grid square plan (DX) was not completed. The south part of the hypocaust and the south Wall 3 were destroyed by the 1935 trench. There are two planned post-Roman disturbances, F77 cutting through Wall 9 and F78 cutting into the south-west hypocaust island. It is possible that the doorway F31 from Room 4 was also disturbed in the post-Roman period, and indefinable disturbance is suspected in the north-east corner of the room.

The north Wall 2 drops to three courses high at the junction with Wall 9. Approximately 1.5m (5ft) from the north-east inner corner, the wall is broken and a short stretch of about 1.1m (3ft 9in) has a blocking, before the wall resumes its course into Room 6. The filling of this break was termed a 'plinth', the top portion containing a number of *tegulae* fragments, flints and crags. Part of the original wall can be seen on site, continuing through at a lower level behind the columns of *pila* tiles in the north channel. The fill was described as 'spill' and the east side had a carefully constructed quoin of brick, but the west side



Plate III Room 5, Building 1, looking west along the north channel and Wall 2 towards the junction with Wall 10. Scale 1in and 6in.

was of quite roughly-set bricks. A Constantinian coin (C477, URBS ROMA) was found at the base of this blocking below the late floor level. A number of tiles were found north of this blocking, which Green viewed as being the upper part of the blocking, presumably above the usual flint wall level, which had fallen outwards.

This opening lies off-centre to the central north-to-south channel of the hypocaust, and is unassociated with the hypocaust. If the tiles fallen to the north came from the upper blocking, it was probably a blocked doorway, with which its width would be consistent. Green offers no interpretation of this feature, and in view of the Constantinian coin from the base of the blocking, its chronological relationship to the hypocaust is unclear. The possibility of later disturbance, particularly in view of the abnormal deposit of glass and pottery, and the number of Constantinian coins from the fills of the hypocaust channels, probably deriving from one or two scattered hoards, is relevant (see p.152).

The construction of east Wall 9 differs from that seen elsewhere, the coursing being more herring-bone. It is also noticeably narrower than the partition walls in the eastern part of the building, about 55cm (21 to 22in) as planned, although measurement on site was about 46 to 48cm (18 to 19in). Dark red wallplaster (white at a lower level) was found on the interior of Walls 9 and 10, apparently extending down to the basement floor of the hypocaust. An unusual feature occurred in the north-east corner, where two tile fragments (probably from *tegulae*) had been set into the wall vertically over another horizontal tile fragment located below the level of the upper floor of the hypocaust, about 5cm south of the corner. A similar feature was found in the north-west corner. These appear related to the functioning of the hypocaust, and corresponding features probably occurred in the destroyed southern corners.

The west Wall 10 was of a similar width to Wall 9, but its construction was less regular. It was broken by a flue F33 from a stoke-hole in Room 6. This was tile built, mostly using *tegulae* fragments, with some thicker bonding tile fragments, and *opus signinum* mortar. The section drawing shows that the base of the flue was about 30cm (1ft) wide, but widened further up to about 53cm (1ft 9in). This may have been inserted rather than built at the same time as the wall. The section shows the base of the flue at least 30cm (1ft) below the floor (clay) in Room 6; the respective datum levels on the relevant sections showed the bottom of the flue lay some 18cm (7in) below the basement floor of the hypocaust in Room 5. Coins of the House of Constantine and Magnentius (AD 351–353) were found in the filling of the flue.

The composition of the islands forming the channels is not stated, but it is assumed that these were inserted, rather than created by the excavation of the channels, in view of the wallplaster extending below hypocaust floor level. The basement floor of the hypocaust was stated to have been tiles, although it is not clear whether these extended below the islands, *i.e.*, that the islands may have been inserted to alter a tile column-based hypocaust to a channelled arrangement; excavation ceased at this point, so there is no information about any underlying layers, floors, *etc.*, or dating evidence for the laying of the hypocaust basement floor. Whether the level of the room was artificially lowered for the hypocaust is unknown.

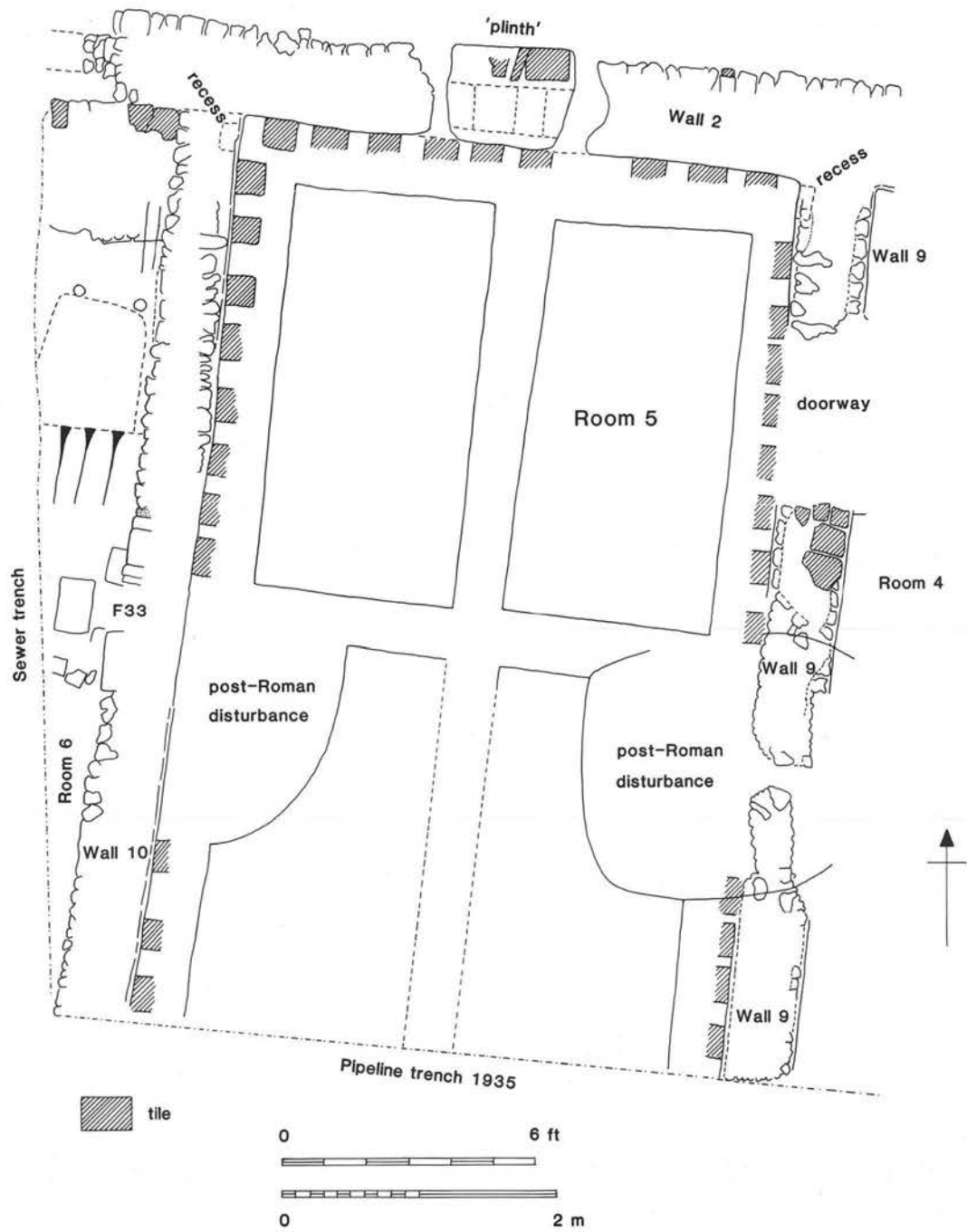


Figure 13 Plan of Room 5, Building 1. Scale 1:50.

The wall-side channels (north, east and west) all contained fragmentary columns of tiles, spaced at relatively irregular intervals, and comprising some *pila* tiles, but many being of fragments of other types, usually *tegulae*. There were no tile-columns in the central channels. Whether these were original to the heating system, or a later modification is unknown. The upper floor, which immediately underlay the ploughsoil, was of *opus signinum* and, judging from details of the excavation of the doorway through Wall 9 (see above), would seem to have been at about the same level as the late floor in Room 4. There are references to fragments of an earlier *opus signinum* floor occurring in the fill of the hypocaust channels, but it is not clear if a late floor was found in position over the channels. Green's view was that the hypocaust had gone out of use, was deliberately backfilled in one operation, and the room converted to another use.

The excavation of this room was bedevilled by post-Roman disturbances, some not recognized until relatively late, and others strongly suspected during post-excavation work. It produced four groups of coins which were isolated as being Hoards Nos 3, 10, 11 and 12, comprising seventy-five coins in total, all Constantinian. One hundred further coins can be isolated to this room (from the ploughsoil downwards), of which ninety-two were of AD 330–48, three of AD 348–64, and one AD 364–78. The extraordinary composition of the coins from this room, compared with those from other rooms and the site as a whole, and the occurrence of an unusual deposit of late glass in the northern channels, led to a more detailed examination of the records, and the view that the level of disturbance was such that the individual hoards were more likely to have been fragments of one or two such hoards. The four 'hoards' formed a group, on the basis of the size of the copy coins, with Hoard No.2 (Room 1), distinct from the hoards in and adjacent to Room 3. Examination of the upper, middle and lower fills, where identifiable, of the hypocaust channels showed that Constantinian coins were found throughout. Only scraps of pottery were found in the filling of the hypocaust channels except in the area of the north channel and the adjoining section of the north-to-south central channel, where a quantity of late pottery was associated with a deposit of late glass from the lower fill (LB 2571).

The room was termed by Green the 'granary' on the basis of some charred grain found in the filling of the north channel, which, since it lay in the area of the unusual pottery and glass deposit, is unlikely to be relevant to the use of the room.

The unfinished plan leaves doubts. Not only is the south central channel not drawn, but the tile-columns are only vaguely indicated. More importantly, the north-east island is shown as being regular, whereas photographs indicate that its upper surface at least had probably been cut away by some disturbance adjacent to the doorway F31 into Room 4. Any disturbance in that area, in view of the glass deposit (and the associated pottery) is important.

The evidence is equivocal, and it can only be concluded that use of the hypocaust ceased in the later 4th century. Whether the room continued in use or was allowed to fall into ruin is unknown.

#### Finds from Room 5

Illustrated: 85, 145, 180, 196, 251, 359, 391, 569, 604, 673, 1045, 1073.

Unillustrated: 306, 376, 393, 480, 662, 946, 1053, 1068.

#### Room 6

(Fig.7)

Room 6 measured 4.1 by 7m (13ft 6in by 23ft). A north-to-south sewer pipe trench ran down the east side, cutting Wall 2, and the south Wall 3 was largely removed by the 1935 trench. There was also a substantial trench F35, probably of Middle to Late-Saxon date.

North Wall 2, apart from the noted disturbances, was in good condition at the north-west corner, about six to seven courses high. The detail grid square plan shows it ending on the line of the west face of Wall 11, but on the main site plan its end is shown as broken, suggesting that the wall continued across the north of Room 7.

West Wall 11, about 61cm (2ft) wide, stood about four to five courses high, except where damaged. There was a narrow break of 43cm (17in) at its junction with Wall 2, which removed three courses. The post-Roman disturbance F35 probably caused a similar break 48cm (19in) in Wall 2 just east of the corner, and a further wide break in Wall 11 of 1.1m (3ft 8in) approximately 70cm (2ft 4in) from the south-west internal corner. South of its junction with Wall 2, it was pierced at its base by an 'arched port', to which F34, interpreted as a drain, led. The south Wall 3 had been largely removed by the 1935 trench.

The extent of most layers is unknown due to the excavation of small test-holes, many unlocated; no layer was completely removed in one operation. References to various floors are consequently very confusing. There is a suggestion that the room may have had an intermediate north-to-south partition of, presumably, timber and daub, so that differing floor sequences may be expected.

This possible internal partition (unplanned) would appear to have lain about 1.07m (3ft 6in) east of Wall 11, running north from Wall 3, but there is no evidence that it extended as far as Wall 2. The nature of this wall, its location and relationship to floor levels are unknown, but it was apparently not exactly parallel with Wall 11. This partition collapsed to the east.

A section (probably in the northern part) across this room shows a build-up of approximately 1.1m (3ft 6in) from the top ?floor down to the natural Corton sands. The original land surface slopes towards the west, so that there is a difference in levels between the bases of Wall 10 to the east and 11 to the west of about 46cm (1ft 6in); the section is completed down to natural only in the west 2.7m (9ft) of the room, so it is impossible to determine which floors were associated with the stoke-hole through Wall 10.

Over the latest floor lay some 15cm (6in) of very dark mixed matter and above this another 15cm (6in) of burnt daub and intermingled dark earth, representing the collapse of the wattle-and-daub partition between Rooms 6 and 7. A broad sequence of floors (probably different further south due to the internal partition) is: top floor of mortar embedded with occasional brick and pebble fragments on foundation of boulder clay. A floor of a similar nature perhaps intervened, below which a worn mortar surface, apparently at the level of the bottom of the sewer trench (probably about the same level as the bottom of the flue through Wall 10), was found on a clean fawn clay foundation, over dirty clay with occupation debris.

This debris below the clay, 15 to 30cm (6 to 12in) thick of clean fawn clay and overlying the Corton sands, may suggest that this area was not inside the original building. Immediately over the fawn clay on the section is a thin layer of grey clay, and then a general build-up, about 30cm (1ft)

thick with lenses of brick. A gutter was cut through this build-up.

Drain F34 was approximately 61cm (2ft) wide, immediately east of Wall 11. This feature is not planned in detail, but ran along Wall 11 from the north-west corner, to a drain hole through the base of Wall 11 (the 'arched port'), approximately 76cm (2ft 6in) wide, and thereafter probably south along the west side of Room 7. Its course to the north is unclear; F35 disturbance damaged only the top of Wall 2 and any drain through the wall could not have been missed in excavation. It is impossible to know from what level the drain was cut; Green states that it was cut through a mortar floor, upon which the wall seemed to rest, indicating the wall was secondary. Whether this was a 'floor' or a construction feature is impossible to tell. The drain appears to have lain open until the end of occupation, since there are joining pottery sherds between the fill of the drain and the debris on the latest floor. Many large joining sherds suggested that the drain had been deliberately filled. The bottom of the fill was 'greyish silt, of fairly loose texture, with some odd stones "packed" on its surface'.

The remains of a stoke-hole with a mortared surface for the flue F33 to the hypocaust Room 5 were observed below the sewer trench. It was filled with black wood ash covered by a layer of yellow clay; no coal was found.

Green had no doubt that there was a doorway through Wall 2 where it was broken by the sewer trench. The opening is approximately 1.5m (5ft) wide, and it is structurally similar to those elsewhere on the site. If a doorway, it must have gone out of use when a tile and mortar 'pedestal' was built in the north-east corner, since this protrudes, until cut by the pipe-trench, at least 61cm (2ft) into the door opening. This appears to be a large unmortared heap of tiles, *tegulae* and bonding tiles standing about five courses high, the top being only two courses below the surviving top of Wall 10. Its purpose is unknown.

#### Finds from Room 6

Illustrated: 382, 603, 697, 740.

Unillustrated: 92, 103, 163, 369, 573, 1000, 1013.

#### Room 7

(Fig. 7)

Only a small area of Room 7 lay within the excavation. The view that this was at some stage a separate room rests tenuously upon the possible continuation of the north Wall 2 across this room as noted above (see Room 6). Alternatively, it may have been a single structure with Room 8 to the north, forming a west range with a roof-line at right angles to the main building. The continuation of the south wall of the building, Wall 3, was found at a much lower level than usual, very close to the 1935 pipe-trench.

The floor was described as mortar, consisting of a smooth mortared base, covered with a thin skin of gravel which formed the base of another mortar layer, broken away in places. In a test on the west side, a floor-level of heavy clay surrounded the mortar floor, and this suggested to Green a timber wattled shed abutting onto Room 6.

Damage to the south Wall 3 may have been caused by a post-Roman disturbance along the west side of Wall 11, seemingly F35 crossing the wall towards the south end from Room 6. There is, however, reference to an underlying earlier linear feature cutting the mortar floor. A strip 61cm (2ft) wide of, initially, yellow mixed clay and earth with some pebbles, ran parallel to the wall; this was no more than 7.5cm (3in) thick, and sealed soft dark earth. At

the south end, where post-Roman disturbance is certain, the ditch was packed with building rubble, 'clearly the upcast when this later ditch was cut through the debris of the fallen building'.

This earlier linear feature was probably a continuation of F34 drain, passing through the 'arched port' in the base of the wall, confirmed by joining sherds between it and the drain fill in Room 6. A section across the south end shows a trench (under the post-Roman F35) 61cm (2ft) wide sealed with yellow clay mixture, going down into a sloping ditch feature, with a base of beach pebbles, about 1.16m (3ft 10in) below the surviving top of Wall 11, here no more than about 10cm (4in) below the modern surface.

No further excavation is recorded in this grid square. The extent and identification of this feature is not clear from the section or the written account. Its excavation preceded the discovery of the drain F34 in Room 6, and the excavation of the 'arched port' through the intervening Wall 11, and no subsequent conclusions appear in the records. Any continuation of the drain south, or whether it penetrated Wall 3, are unknown; no evidence was found in the adjacent grid square, EXI.

#### Finds from Room 7

Illustrated: 165, 199, 200, 203, 228, 314, 676.

Unillustrated: 298, 443, 496, 834.

#### Room 8 and associated features

(Figs 7, 14)

Excavation west of Wall 16 occurred in various east-to-west test trenches which can be only tentatively located. The detailed plan was not completed. The north-to-south sewer pipe trench ran immediately to the east of Wall 16, and the area between that and the wall is further complicated by a post-Roman ditch F35 running parallel to the wall, overlying an indeterminate linear feature, possibly a drain. To the west of the wall was a further post-Roman disturbance F75, only partially planned, cutting the debris of the building and its *opus signinum* floor.

Whether this was a separate room or, with Room 7, part of a west range, is uncertainly based on the possible original extension of Wall 2 to form its south wall, as noted (see Room 6). If a room, it was bounded by Wall 16, about 69cm (2ft 3in) wide, which was considered to be a sleeper wall with wattle-and-daub superstructure, butt-jointed with Wall 14 of the 'corridor' to the south, and turning west to become the slightly narrower (61cm; 2ft wide) Wall 17. A major problem is the possible continuation of Wall 16 south, since the detailed plan at the junction of Walls 16 and 14 shows a fragment of ?16 south of the south face of 14, noted as 'wall resting on floor'. To the south of Tank 2, a straight edge of ?flints is also planned, joining onto the north wall of Room 6 (Wall 2). Any continuation south of Wall 16 would lie slightly off the alignment of these stones, which may have been unrelated. It is, however, possible that a wall originally existed, dividing Room 8 from the 'corridor' pre-dating Tank 2, F36. This area was subject to much post-Roman disturbance.

Wallplaster was noted on the east face of Wall 16 and also on the north face of Wall 17 (the presumed exterior faces), stated to be a rough plaster facing. A section shows this north face of Wall 17, with an area of burning immediately adjacent to it (an oval about 1.52m (5ft) by 1.06m (3ft 6in), and 18cm (7in) deep) overlying 'mixed brown earth and rubble' which lay over extended footings 23cm

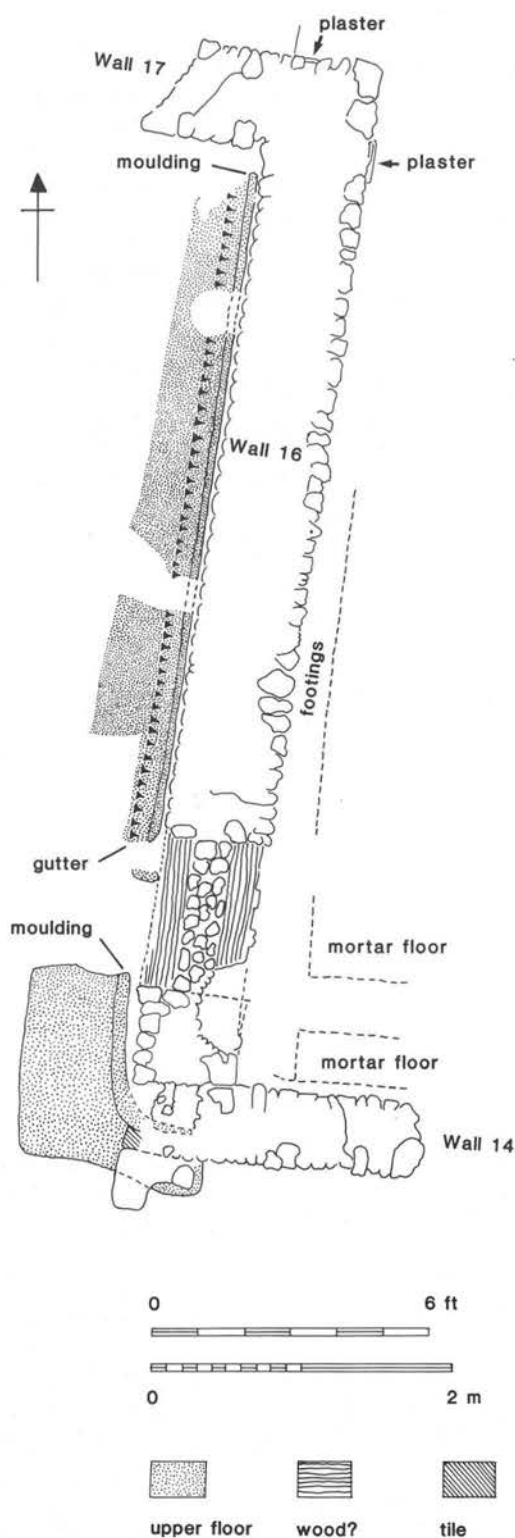


Figure 14 Plan of Wall 16, Room 8, Building 1. Scale 1:50.

(9in) deep. Wall 17 appears to have been cut by the post-Roman disturbance F75 to the west.

A test trench cut to isolate the face of Wall 16, found instead the sill (double mortar-bedded type with central ridge) of a doorway, with the mortar beds of two wooden sill beams about 1m (3ft 3in) wide. In the area between the east face of Wall 16 and the pipe trench, a mortar mass was found outside the sill line, possibly a step or porch pavement. This was cut by the post-Roman trench F35, which showed a lighter-coloured lime-mortar below, either an earlier floor, or foundation for the mortar above.

Green refers to this mortar as a 'mortar lower threshold' and states that it was not precisely parallel to the wall (15cm (6in) from wall-face at first) but was wider to the south. This suggested the possibility of a later wall on the footings of an earlier building. Later in the same area, he mentions 'a line of footing pebbles projecting well beyond the wall face', and on the detailed plan there is a dotted line parallel to the east face, noted as footings, varying from 23 to 30cm (9in to 1ft) wide. Although viewed as relating to the doorway, this may have been merely the remains of unusually wide footings, as occurred elsewhere on the site.

A 61cm (2ft) test channel dug along the west face of Wall 16 exposed an *opus signinum* floor with upturned edge (broken) and a shallow gutter running along the wall edge. The *opus signinum* in the extreme north-east corner was broken away. Further clearance exposed a quarter-round (approx.) moulding running along the wall base, in alignment with that across the doorway in CXI. The quarter-round moulding and adjacent gutter are drawn on the record section of the south side of BXI; the gutter is about 9cm (3in) wide but its depth is not shown. The quarter-round moulding is shown on plan as curving east around the junction of Walls 16 and 14, over the line of Wall 14.

Excavation of the post-Roman 'ditch' F75, west of Wall 16, in Room 8, exposed the broken edges of what seems to be a crushed brick floor some 23cm (9in) thick, resting on an earlier crushed brick floor, also referred to as *opus signinum*. In the same area Green says 'a foundation of mortared tiles, resting on the lower mortar, carry [?] the upper crushed brick surface'. The plans show upper and lower floor fragments, the lower mortar surface being denoted by a different convention. It would appear that this extended south to the area of the Tank 2, F36, and fragments were also found west of the post-Roman ditch, F75.

There was a possible earlier ?ditch which was not planned, but appears to have lain east of Wall 16 in the area of the post-Roman cutting F35. A quantity of coal was found in its fill. Post-Roman disturbance in this area precludes further information about these drains. The absence of evidence for the course of the drain in Room 6, F34, through Walls 2 or 14 suggests it is unrelated to this feature. The area is complicated by Tank 2, for which there is no clear evidence of drainage provisions (see below).

Evidence relating Room 8 to the corridor may come from the floors. The extent of the *opus signinum* floor in the former is uncertain; a fragment of upper floor is shown south of the line of Wall 14 but it is not clear whether this was disturbed. The lower mortar floor appears to have covered the area of Room 8 and the corridor, probably extending into Room 7. The central location of Tank 2 at the west end of the corridor is crucial for any interpretation of this area.

### Tank 2 (F36)

(Fig.7)

This tank was very fragmentary and measured approximately 1.5 by 0.9m (5 by 3ft) internally, but probably originally had a surrounding wall (as Tank 1), which would have increased its external dimensions to approximately 2 by 1.4m (6ft 6in by 4ft 6in).

The area had been disturbed in the post-Roman period, and a fragment of post-Roman glass, No.139 (microfiche) and a post-Roman bone needle (Fig.58, No.302) came from the dark fill of this feature.

The detailed drawing of CXI shows a strip on the north side of the tank (and a dotted line on the south) noted as 'cavity wall with box tiles'. What appears to be a fragmentary *tegula* is drawn at the exterior south-west corner. The tile and mortar structure had brick-concrete wall-facing still *in situ* on the north face, and showed fragments of *opus signinum* pavement and vertical veins of the same material. Excavation of the north-west corner exposed a small fragment of base moulding corner. It appears to have been structurally identical to Tank 1 (see below).

Breaks in the tank surround occurred on the west, south and east sides, the latter shown to be a V-shaped break which ran down in the north-east corner opposite the 'channel line' from CX. This 'channel line' is unplanned, but excavation showed that 'the surface sagged into a channel running east from the break [in the tank wall] and [aligned] with the below floor EW channel in CX.' The only find from here was apparently coal (*cf.* the earlier ditch east of Wall 16, noted above (see Room 8)).

The area in which the tank lay had a 'rough mortar floor' equated by Green with that found in Room 7 to the south, but the relationship of the tank to the floor is unknown. He does, however, state that clearing a small test north of Room 6 has 'shown that traces of the earlier mortar flooring, cut through by this trench when the upper floor was constructed, passes right up to the tank 'pillar' [Tank F36]'.

The trench referred to appears to have been the north-to-south trench immediately to the west of Wall 11 in Room 7, with an upper fill of clean light yellowish clay. Whether this trench turned east under Wall 11 to become the drain, F34, inside Room 6 or whether it bifurcated with a branch continuing north into CXI is impossible to determine. A very straight east edge shown on the detail plan of a fragment of 'lower floor' west of the junction of Walls 14 and 16 suggests the possibility of a drain related to this tank, but the disturbed fragments preclude certainty.

The dilapidated state of this tank could be due to a combination of demolition in the later Roman period, followed by post-Roman disturbance, the fragments of *opus signinum* flooring having originally covered the redundant tank. While certainty is impossible, the tank seems more likely to have been in use with the lower mortar floor, which appears to have extended over Rooms 7 and 8, and into the 'corridor', Room 9. When in use, it would have restricted access from the 'corridor', although the space on either side would have been approximately 1.2 to 1.5m (4 to 5ft).

The extensive post-Roman disturbance of the B-DXI grid squares precludes certainty that any dividing walls existed, and Rooms 7 and 8 could have been a single structure at right angles to the main building, open to the 'corridor' in the latest phase if not originally. The behaviour of the quarter-round moulding associated with the upper

*opus signinum* floor at the junction of Walls 16 and 14 is difficult to interpret, but suggests that there was no structural division in the latest phase between Rooms 7 and 8 and the 'corridor' 9.

### Room 9

(Fig.7; Pl.IV)

The north 'corridor', termed Room 9, is bounded to the south by the main north wall of Building 1, Wall 2, to the north by the east-to-west Wall 14, with a return at its east end, Wall 13, and on the east by the north-to-south Wall 12. Its north-to-south width between Walls 12 and 13 is approximately 4m (13ft), while the east-to-west section parallel to the main building range is 4.3 to 4.4m (14ft to 14ft 6in) wide.

The records for this room are exceptionally complicated, due to the recording method, test trenches and disturbances. Wall 12 was butt-jointed to Wall 2, and its south end was remarkable for the extensive use of broken *imbrices* in its construction (Pl.IV); this extended for some 1.2m (4ft) north, where the construction changed to a more regular herring-bone type. The width of the wall varied (average about 61cm (2ft)), probably due to plough damage, and in its north part in BVII, it was set upon wider foundations, which were of 'beach-cobbles set in brown loam'. Excavation of the north end of the wall showed that it ended there and was not broken.

Green suggested that Wall 13, the northern return of the east-to-west Wall 14 was of two builds, a lower build of smaller beach-pebbles, and a later narrower upper of natural nodules. Although possibly of more than one period, it could just as easily be caused by gangwork during its construction. As with Wall 12, examination of its north end showed this to have been constructed with a rounded end. This wall was of similar build to Wall 12, also with wider footings. No evidence for any gate/door structure was found in BVII, but any that might have existed could have been destroyed by the post-Roman activities in this area.

The east-to-west wall, 14, was only about 46cm (1ft 6in) wide, although its footings were over 61cm (2ft). Green observed a kink in its length, both in plan and elevation. This is not apparent on the detailed drawings of the wall, but the two builds are shown on a smaller scale



Plate IV Building 1; the butt-joint of Wall 12 (right) with Wall 2 (left), looking west-south-west. Note the *imbrices* in Wall 12. Scale in 1in and 6in.

plan, the division lying some 42ft (12.8m) west of its north return, Wall 13, immediately opposite Wall 8, the west wall of Room 3. A new wall running south is mentioned by Green but not planned, and may have been no more than a fortuitous strip of spill. These two builds of Wall 14 do not make structural sense, and could have occurred from the meeting of two work gangs. That the wall to the south, crossing the corridor, was never planned may be significant.

#### 'Room 10'

There is no detail in the records about the minor Wall 15, which was very narrow, only about 38cm (1ft 3in) wide. Excavation in B–CVIII–IX suggested that the wall originally reached the north side of the CVIII north baulk and had been robbed. Green viewed this 'Room 10' as a lean-to cart shed. A central post-hole F38 was found inside, which he suggested supported a central purlin; the section showed that it had held a post of about 15cm (6in), packed with flint nodules; there were no finds. A large circular pit, F37 (LB 1582), found at the same time, turned out to be a mound of conglomerate packing of clay, tile and flint cobbles, and contained mid- to late 4th-century pottery. The plans show a dotted line about the middle of the east-to-west baulk B–CVIII from the end of Wall 15 to Wall 13, and a line of 'crumbled mortar' on the underlying packed clay and debris, suggesting a sill to the 'cart-shed'.

Excavation in the general area of 'Room 10' produced some evidence suggesting the underlying remains of an earlier demolished building. It is difficult to locate the test trenches referred to in the records, but there are clear references to a 'laid line of red brick and tiles', the possibility of the remains of a north-to-south wall with a return to the west at the south end and, during preparation for consolidation of the site, a mention of the exposure of further *pilae*. These tantalizing references are incomprehensible without plans or sketches, but seem to indicate a possible hypocausted building, demolished to make way for the extension of Building 1 northwards (see 'Hut 2' and F73 below for a deposit of painted plaster and mortar).

Various tests were dug into the 'corridor' many of which cannot be located precisely. The floor in one section of the corridor was stated to consist of a thick layer of small brick rubble, fortified by occasional larger pieces of *imbrex* and a few ox bones, carrying a surface of floor-tile. In the area to the south of the junction of Walls 14 and 13, there were indications of a clay floor on the north side, with possibly a gutter channel close to Wall 14.

The west part of the 'corridor' suffered from probable post-Roman disturbances and extreme difficulty in locating test trenches; references to various features and indications of drains or channels in the flooring are almost impossible to understand. In a test, however, immediately north of Wall 2 (adjacent to the junction with the west wall of Room 3, Wall 8), there is a sketch of the floors showing, from the top down: i) upper floor of clay and brick rubble; ii) clay with pebbles; iii) red brick rubble floor; iv) clay with mortar skimming in patches (this sub-layer apparently patchy); and v) mortar floor. The 'red brick rubble floor' was later referred to as a 'crushed brick floor', which successive test trenches followed westwards to the area north of Room 5, where it was disturbed. An unlocated test trench, probably to the west, showed that towards the north side of the 'corridor', the red brick rubble of the upper floor was replaced by cream mortar rubble.

The north-to-south sewer pipe trench intervened between this and the recorded remains of mortar flooring, etc., in the area of Tank 2, F36. The 'corridor' probably had at least two floorings, one of the creamy mortar, later overlain by 'crushed brick'. Although fragmentary, the evidence suggests that the 'corridor' and Room 8, and probably Room 7, had a similar, if not identical, flooring sequence. Whether the top floor noted above of clay and brick rubble over clay and pebbles was a true late floor is questionable.

#### The function of Building 1

Little is known of the internal arrangements of forts of the later Roman period, and comparisons between forts in East Anglia and on the northern frontier may not be helpful. It is clear that the flint-walled Building 1 saw several changes of use during the occupation. It may originally have been a simple strip-building, and the hypocausted Room 5 suggests a period of domestic occupation. Later extensions and modifications to the north and west probably signalled a change of use, which, on the basis of the animal bones in Room 2 and various structural features, suggests some 'industrial' use. The possibility of it having been a *fabrica* at some stage may be suggested on the basis of the courtyard, water tanks and location within the fort, although its final or penultimate occupation could have been partially domestic. This is discussed below (Chapter 9).

#### Building 2

(Figs 7, 15–17; Pls V–VI)

#### Introduction

The most difficult part of Area 1 in terms of both excavation and interpretation of the record is that of Building 2, termed by Green 'the Brothel', mainly occupying grid squares ABVIII–X. The shallow depth of ploughsoil suggests that flint spreads in AVIII are of dubious archaeological significance. Ipswich Ware occurred in the eastern half of AVIII, adjacent to the concentration in AVII where there was evidence of a possible working hollow of that period. Various ditches or gullies occurred, largely unplanned, most of which were probably post-Roman despite mid- to late 4th-century pottery. The post-Roman gully F70, last planned in BVII, may have continued to form one of the ditches cutting the apse feature Wall 22. The building is cut by a gutter F18 (LB 1992), only planned in grid square BIX (with no datable finds), and there were indeterminate ?post-Roman disturbances on the east side of both AIX and BIX. There are no sections, few photographs, the plans are incomplete, and various gullies appear only in site notebook sketches. The only plan showing any detail covers BIX–X (Fig. 15), and records of the area are consequently difficult to understand.

The excavated remains appear to belong to more than one building, an earlier masonry building of which little remains (hypocausted Room NW5, Wall 18, ?19 and possibly apse Wall 22) partially incorporated into a later structure with largely timber walls (Rooms NW1–4, 6, based on Wall 18). Wall 18, seemingly connected to both is described first, followed by the masonry sections, and the later timber-framed structures.



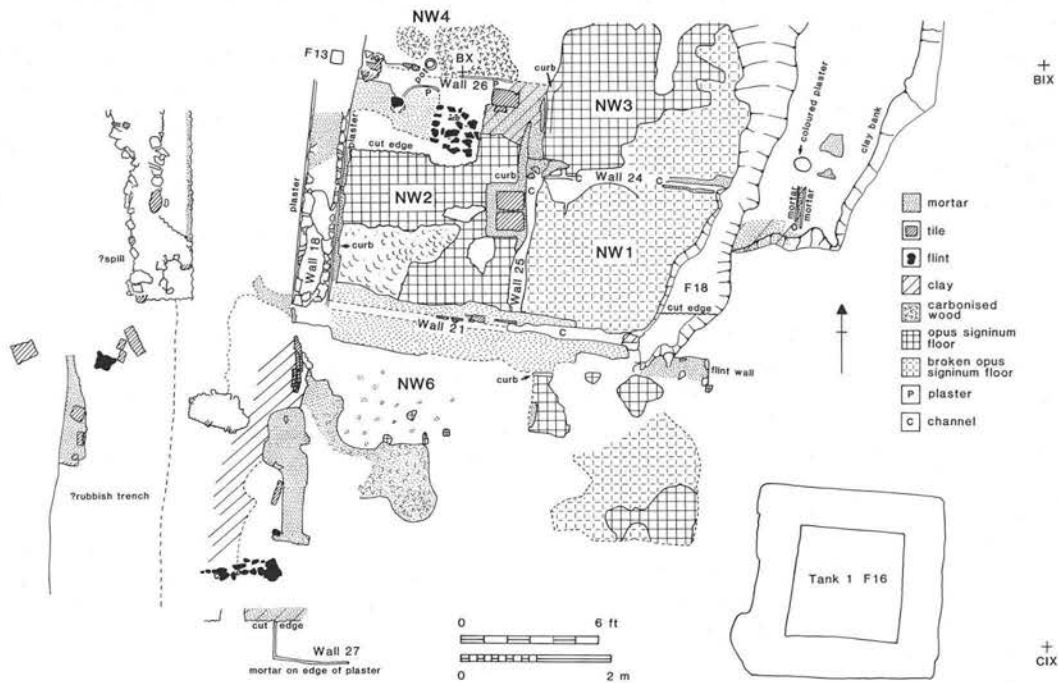


Figure 15 Plan of Building 2, Grids BIX-X. Scale 1:100.

#### Wall 18 (Figs 7, 15)

This wall, approximately 46cm (1ft 6in) wide, was extremely fragmentary in AX, but survived better in BX, where it is described as a thin north-to-south sleeper wall with plastered sides. In the area of Room NW4, clearance of 'crushed brick spill', revealed this as being 'a skin of brick concealing earth and a mass of painted wall plaster which is all lying face upwards (LB 2464) ... representing the outside of the wall [18] which here must have fallen inwards.' Wallplaster on both faces of the wall is noted on drawings (Figs 15 and 16). A 'curb built of mortar' is shown on its east face inside Room NW2, apparently related to a floor of *opus signinum*.

The wall had two quite deep post-holes, F8 and F13, embedded in it, both c. 15cm (6in) square (Figs 7, 15, 16). Green suggested that the post of F13 was set in a hole, mortar poured in around it, and the wall then built around the post, so that the upright was independent of the sleeper-beam resting on the wall top. F8 contained a sherd of late shell-tempered pottery (LB 2499).

#### The earlier masonry building

#### Room NW5 and Wall 20 (Fig.16; Pls V-VI)

This room protruded from the north baulk where it was disturbed by a modern pipe-trench. Its surviving components were: Wall 20 to the east (although this was not clearly the east boundary of the room, but was more likely to have formed part of the heating system); Wall 18 to the west; a possible timber wall running east from Wall 18 in the area of the post-hole, F8, to the southern end of Wall 20; inside were the remains of a channelled hypocaust with a central chamber. It measured approximately 5m (16ft 6in)

east-to-west (Wall 18 to 20), and the surviving north-to-south dimension was the same.

#### ?South wall to Room NW5 (Fig.16)

The postulated south wall of this room only appears as a fragment on a site notebook sketch, and is described as a slot of mortar, apparently to hold a sleeper beam as the base of a timber partition. Whether an earlier masonry version existed is unknown; this fragment may relate to the later structures to the south.

#### Cavity Wall 20 (Fig.16; Pl.V)

The east wall or feature is of some interest. This was approximately 66cm (2ft 2in wide). In the absence of drawn sections, its level in relation to Wall 18 can only be estimated from photographs. These show its top to have been on much the same level as the remnants of Wall 18 to the west. The structure according to photographs could be from 46 to 61cm (1ft 6in to 2ft) in depth. There are no detailed drawings, and although several photographs were taken (see Pl.V), its construction is difficult to understand. Green's record reads:

After the first few inches had been removed, the S side at the top was shown to be the inside of a broken box tile. The N side contained several box tile fragments lying in dark earth, presumably from the end of the line. Pieces of broken mortar against the back of the recess [post-Roman damage] and a fragment, face upwards of maroon painted wall plaster near the middle, below the uppermost flints. Another few inches and broken base edges of box-tiles revealed. Cleared a little more to N and revealed fallen flooring of uppermost level, due to underlying box tiles having broken. A few inches lower and the mortared sides (internal) of a cavity in the wall are now apparent. It is becoming clear that an internal flue communicating with a row of box-tiles (here broken away), set horizontally under the raised floor strip, inside a partition wall.

... continuing down, now between the linings of the flue. This is filled with darkened earthy matter with much carbonized wood (mainly pulverized),

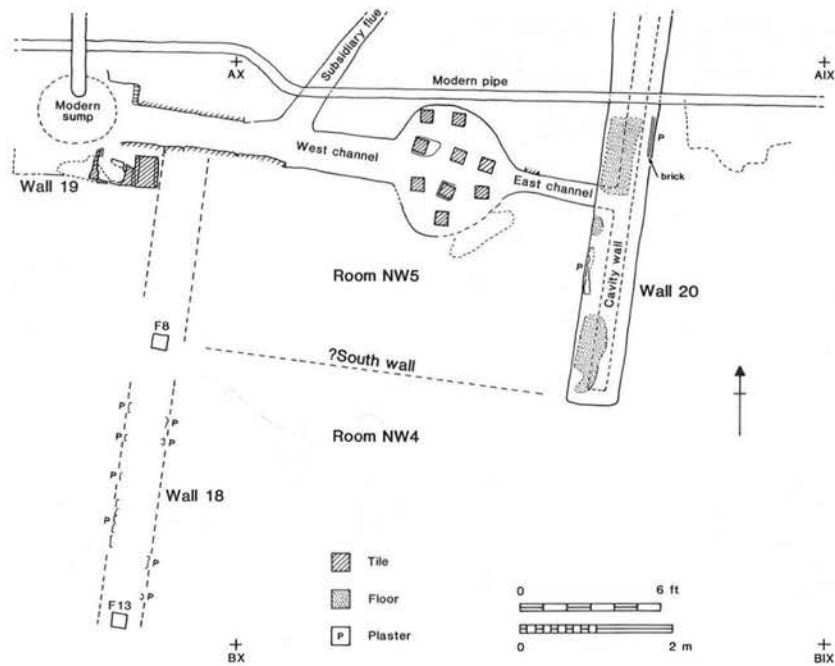


Figure 16 Plan of Building 2, Room NW5 and Wall 20, Grids AIX-X. Scale 1:100.

all resting on a clayey bottom, and running N & S under the box-tile rows *in situ*.

... [in exposing the south end] It is fairly certain that this will be a sealed end, and the flue therefore will not pass to the open here. Wall apparently sealed, of heavy build.

The photographs indicate box-tiles set laterally across the width of the wall, side by side, and it would seem that this was a single row, with a cavity below which connected to the west channel of the hypocaust. This is a curious construction since the box-tiles were not set to form a flue, but seem to have been used structurally. The detailed grid square drawing shows this wall to have been overlaid by fragments of floor. A perplexing feature is that plaster is noted as having been found on the east face.



Plate V Building 2, cavity Wall 20, looking north-north-west. Note the box tiles set laterally at each end. Scale in 1in and 6in.

#### Hypocaust chamber and channels (Fig.16; Pl.VI)

The central chamber was approximately circular, 1.7 by 1.5m (5ft 6in by 5ft) and contained nine brick *pilae*, which rested on a rough mortar surface. Whether these were genuine *pila* tiles or other tiles broken for the purpose is uncertain; they measure about 20–21cm (8in) square on plan. There is some evidence (?plough abraded sherds in the fill) to suggest that the floor survived in position until the post-Roman period.

The chamber was lined with mortar, and its lowest fill sloped upwards to both east and west channels. The west channel, probably the main flue, was much wider than that on the east, contained many fallen floor bricks, and had a subsidiary flue opening off it to the north. There were many signs of burning in this area, soot and many pieces of coal in poor condition (see Chapter 5.XV below). The fill of the west channel contained masses of collapsed debris, including a few bone fragments, large pieces of painted wallplaster, etc. Opposite the west Wall 18, the channel was half-filled with brick-concrete and flints, which Green interpreted as the spill from Wall 19 on the opposite side of Wall 18. The channel floor, which sloped up towards the west, was found to be 'a carefully smoothed and mortared surface', covered with fallen floor-bricks, carbonized wood and coal which he considered had drifted in before the floor collapsed. To the west of the junction with the subsidiary flue running northwards, the west channel was faced with vertical tiles on either side. The subsidiary channel was narrow and the sides had 'horizontally bedded tiles' above a mortared floor. The narrower east channel ran towards 'Wall 20' where it seemed to bifurcate and a channel ran under the row of box-tiles.

It would seem that the modern sump had removed the stoking area; a recessed angle was found on the north side of the west channel entrance (by burrowing under the modern intrusion), and this had a single step made of an



Plate VI Building 2, hypocaust Room NW5, looking east along the west channel. Scale in 1in and 6in.

embedded brick. The recessed angle was finished down to the step level.

#### Pottery and finds

Joining sherds occurred between the pottery from the upper and lower fills (LB 2540, 2559, 2664) of the hypocaust chamber and channels, and with the unsealed overlying 'spill' layer (LB 666). The pottery included large sherds of a Chalk type amphora (No.174) and the coarse pottery was broadly of mid- to late 3rd-century date; there were no sherds of conclusively 4th-century date. The only finds of note from the fill of the hypocaust were a glass counter (No.153), glass vessels (Nos 2, ?24, 30, 138n) and a wedge-shaped fragment of baked clay with a hole pushed through it (No.867).

#### Wall 19 (Figs 7, 16)

The fragment of east-to-west Wall 19 joining the west side of the main north-to-south Wall 18, is difficult to assess if, as suspected, the hypocaust was fired from this area. There is little information about this wall in the records, and on plan, it is shown as fragments of *tegulae* set crosswise instead of laterally, as more commonly used in wall construction.

#### Flooring

Green refers to a 'late high brick floor' with indications of brick flooring at an earlier level, but all very broken and fragmentary. The best evidence comes from Room NW4

to the south, where a small rectangular test (which should have crossed the line of the putative south wall of Room NW5) found a ragged edge of crushed brick, suggesting that a floor of this material comparable in level with that in Room NW4 underlay the higher level brick noted in Room NW5. The upper crushed brick floor (10cm, 4in) was excavated in an extension of this test in Room NW5 and exposed the earlier brick floor below.

It seems, therefore, that the room had successive floorings, but whether they were the same as found in the timber-framed structures to the south is unclear. The fact that it is not referred to as *opus signinum* may be significant.

#### Relationship with apse Wall 22

In view of the floor fragments overlying it, and the nature of the Wall 20, it is assumed that this lay within a building and did not form its eastern wall. It is therefore possible that this formed part of a building which included an apsidal room on the east. Since the north-to-south alignment of Wall 20 is approximately similar to that of the postulated timber Wall 23 to the south, the possibility of a corridor was considered, but excavation to the east of Wall 20 produced no evidence for a corridor or of further walls.

#### Apsse Wall 22 (Fig.17)

Wall 22, interpreted by Green as an apse to the building to the west was initially recorded as 'what may be a wall curving round to the north'. Much painted plaster was noted *in situ* on the interior of the wall (duplication of a finds bag number has precluded certain identification of the plaster, which was apparently of fairly rough quality but patterned). The flint wall is described as a smallish wall, without foundation, and considered to have carried no great weight or height. This enclosed fragments of *opus signinum*, and both walling and floor were cut by trenches from the east and south-east.

The photographs show a very damaged insubstantial wall. Green's comments relating to the building to the west make it clear that he viewed it as an apsidal end of a room, and the decorated wallplaster internally supports this interpretation. The absence of any continuation of the walling, or associated walls to the west could have been due to a ?post-Roman cutting which, although unplanned except as a site notebook sketch, was apparently an isolated disturbance west and slightly to the north of the apse. This contained no notable finds and the pottery was of mid- to late 4th-century date (LB 1599).

#### The timber-framed structure

The possible southward continuation and structural change of Wall 18 is problematical. It is difficult to find unequivocal evidence, but its southern part is referred to as a thin wall, plastered on both sides, apparently of timber resting on a mortar base. The plan of BIX-X shows a corner just inside CX, but its eastward extension, Wall 27, and the northern return, Wall 28, in CIX, is nowhere planned in detail.

#### Wall 21 (Figs 7, 15)

Only fragmentary foundations survived, which are said to have overlain a crushed-brick floor, although the plan (Fig.15) shows the wall line dotted over a mortar surface.

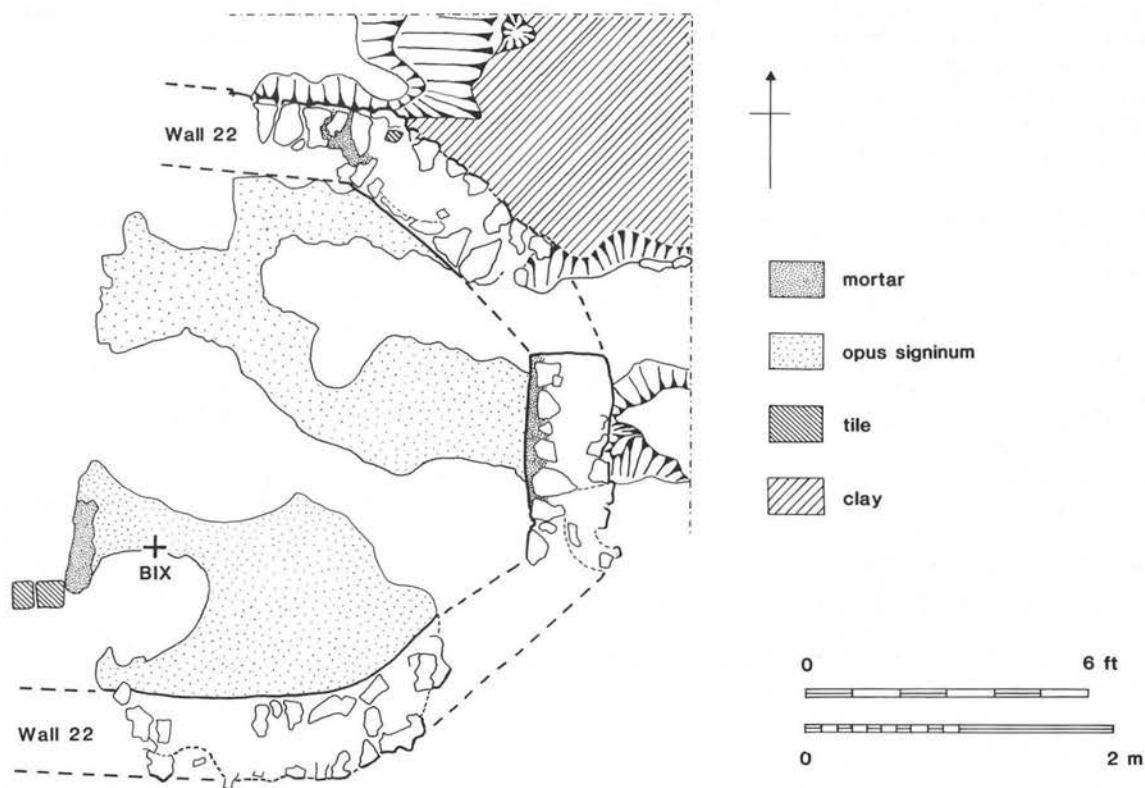


Figure 17 Plan of Building 2, apse Wall 22, Grid AVIII. Scale 1:50.

A narrow flint-footing is mentioned, against the north side of which an upcurved floor abutted, while on the south side in Room NW6, a second brick floor was found raised on a quarter-round skirting parallel to that to the north. This suggested a thickened (possibly cavity) partition. Within Rooms NW1 and 2, much wallplaster with daub showing timber traces was found on the 'crushed brick' floors, and Green believed this to be evidence that Wall 21 footing was the sleeper for a plastered, wattle-and-daub partition.

#### Wall 27 (Figs 7, 15)

As noted above, although the corner is planned on the BIX-X detail plan, its continuation eastwards appears only on the small-scale Area 1 site plan. This wall petered out in a mass of mortar and brick concrete rubble, but the mortar bed of the timber framing and the continuation of the mortar-bedded tile-line just inside the wall on the west side were still present, fixing the approximate position of the corner. There is little doubt that the wall line did turn here and did not under-run the tank [F16] which stands a few feet to the east.

#### Wall 28 (Fig.7)

As with Wall 27, this wall only appears on a small-scale site plan, where it is shown running north towards a large patch of *opus signinum*.

#### Wall 23 (Fig.7)

This wall appears on the detailed plan of BIX-X as two parallel lines of mortar about 9cm (4in) in total width with a sandwich of clay in between. Its total length was about 53cm (1ft 9in).

#### Wall 26 (Figs 7, 15)

The detailed plan of BIX-X shows this as a dotted line with some fragments of wallplaster on edge, the line delineating an area of carbonized wood to the north in Room NW4. The line meets Wall 18 at a right angle where the southern post-hole, F13, is embedded. The wall is described as a mortar and clay partition footing, irregular in parts, which springs east from the point where the west Wall [18] increased in thickness to the north.

#### Wall 25 and Wall 24 (Figs 7, 15)

These are not referred to in the site notebooks. Wall 25 is shown on the detailed plan of BIX-X partially as a 'channel', but also with discontinuous (and unaligned) lengths of 'curb in *opus signinum*' and 'curb built with mortar', the latter running around three sides of an emplacement of two tiles set side-by-side on the east side of Room 2.

Wall 24 is shown on the plan as a narrow channel, bordered partially by mortar at its east end (before being cut by the gutter, F18). An *opus signinum* floor in Room NW3 to the north terminates at the proposed wall-line, although the plan shows a 'lower brick floor' extending across its line in both Rooms NW1 and NW3.

## Floors (Fig.15)

The records indicate that these 'bedrooms' (Rooms NW1 to 3, and 6) had more than one floor. Terminology is a problem since, at the start of the records relating to these rooms, when excavating in the area of ABIX baulk down to an underlying pavement (perhaps Room NW2 or 3), Green describes the floor as being neither a true tessellated floor nor an *opus signinum* floor, but something between the two.

Floors are specified on the detailed BIX-X plan (Fig.15) as *opus signinum*, those shown as being broken possibly representing the remains of 'an overlying very broken mortar-floor'. In Room NW2, the tile feature against Wall 25 (bounded on the three sides inside the room by a mortar curb) is said to be set in a mortar plinth resting on an upper brick floor, also described as a crushed-brick floor; the floor fragment in Room NW6 is referred to in the records as a brick pavement.

This type of flooring did not extend into the area of 'Room NW4', noted as being in the central unpaved area, where a sketch section shows a mortar skim floor, overlying two different coloured clays on natural loam. Close to Wall 26 and just west of an oval patch of carbonized wood and soot, a nearly complete grey ware jar was found buried in the clay with only its neck projecting, possibly indicating a fireplace.

## Exterior of building

On the west side of the north-to-south Wall 18, a broad black streak, with 'some suggestions of a ditch about it' occurred next to the wall (this was later described as probably a 'rubbish trench'). The records otherwise indicate a surface of 'hard mixed earth, clay and rubble' with, in AX to the north, some possibility of a gravel surfacing, which suggests the area is extra-mural.

## The function of Building 2

The timber-built structure was referred to by Green throughout the records as 'the Brothel'. This interpretation would seem to have been based on the small size of the rooms and he humourously refers to the quantity of shale bracelets from the site, in a talk to the local Archaeological Society, as indicating the presence of ladies from the west country. In the context of the view that the site was the precursor of the modern Caister-on-Sea holiday camps, acting as a resort for soldiers stationed at Burgh Castle, this is an understandable theory.

While the small size of the rooms is inexplicable, the flooring of *opus signinum* suggests some 'wet' pursuit, and it cannot be viewed in isolation from the extended Building 1 and its west range to the south. No structural parallels have been traced on either military or civilian sites, and the function of this peculiar structure is unknown. Dating depends upon a single shell-tempered sherd in the post-hole F8 which, if related to the structural reuse of the remains of Wall 18, suggests a mid- to late 4th-century date.

It is impossible to interpret the fragments of the earlier masonry building incorporated in the late timber-built structure. Its construction and occupation cannot be dated, although the quantity of earlier window-glass from the area suggests a primary structure. The backfilling of the channelled hypocaust can be tenuously dated to the late 3rd or early 4th century. There is no stratigraphic basis to relate it to Building 1, except for the possibility that it was largely

demolished before the extensions northwards of the latter (see above for remains of earlier structures in the area of 'Room 10'). What little remains suggests a more elaborate building with hypocaust heating, possibly an apsidal room and decorated wallplaster. Beyond that is speculation.

## Tank 1, Fl6 (Fig.18; Pl.VII)

This tank was approximately 2.4m (8ft) square, the internal area being 1.4m (4ft 6in) square. Its walls were about 53cm (1ft 9in) wide. Areas of damage occurred on the west side and at the south-west corner. No section was drawn (see Pl.VII).

It appears to have been built of flint with tile coursing, and there were occasional tiles set vertically on the exterior face of the wall. Internally there is a notation that it had a 'convex plinth', approximately 32mm (1¼in) high and wide; the base and sides are lined with 'brick-concrete' over which was found black silt. The drawing shows a 'waste hole' through the south wall which, on the photograph, is shown as being broken to the base. There is no record in CIX that any drain was found leading from this hole. A curving feature was planned on the detail plan of CIX, directed to the south-west corner of the tank, not the drain hole, but subsequent work 'proved [this] not to be a gully but a compact mass of spill'.



Plate VII Tank 1, Fl6, looking south-east. Scale in 1in and 6in.

The plan shows this as being not quite parallel to the east-to-west Wall 14 to the south. There are fragments of *opus signinum* floor to the west in BIX probably related to Building 2 in that area. The tank is not aligned to that building, and its west wall, which appears to have suffered some external damage, lies in the area of any extension southwards of the timber Wall 23. The possibility of its association with Building 1 rather than 2 can only be suggested.

This seems to have been a separate water tank in a courtyard area. The nearly complete roofing tiles in the upper filling (?plough contaminated) do not appear to be relevant. Such tanks often occur in the courtyards of mili-

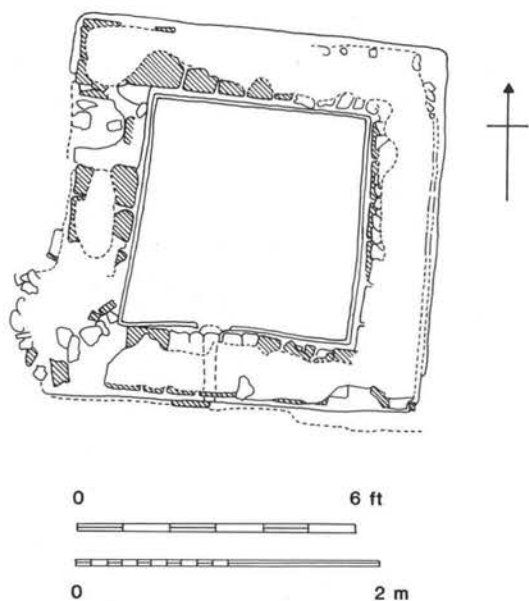


Figure 18 Plan of Tank 1, F16. Scale 1:50.

tary workshops (Johnson, A. 1983, 186, fig.140), although a similar arrangement may be expected to have existed in any civilian workshop.

### The corn-drier(?) F3

(Fig.19; Pl.VIII)

This structure, resembling a corn-drier, measured some 4.7m (15ft 6in) long, with a cross flue at the south end 3m (10ft) across. The narrow flues measured approximately 30cm (1ft) wide, and widened into an oval chamber about 1.3m (4ft 3in) across. On the east side of the structure was a fragmentary *opus signinum* floor, some 1.2 by 1.8m (4ft by 6ft), apparently resting on a stone foundation.

A modern waterpipe trench had probably damaged the north part of the structure, which was also damaged by the plough. It was surrounded by a sand-flecked featureless layer (LB 67), which contained considerable quantities of pottery, including many comparatively large sherds, suggesting a rubbish dump of mid- to late 4th-century date, adjacent to the road.

Green described the structure as being built of flints set in mortar with a finishing top-course of building brick. The central chamber had a very rough mortared bottom turning inwards from the mortar of the sides. One or two bricks on this mortar showed that there were *pilae* or piers, on either side of the central channel, at each end of the oval tank. On the west side, the mark of an intermediate tile suggested a third *pila* here.

A trench was dug through the floor, which proved to be 'mortar with an inch of clay resting on flints bedded on natural sand'. A sondage on the south-east exterior of the chamber led Green to conclude that the walling was built as the lining to an excavated trench. At the north end, removal of the tile debris revealed 'a penannular rounded clay edge with some mortar reinforcement, but with no true water-tight floor, and seemed to form a small "pouring" basin to the upper end of the lined channel'.

Green seemed to regard this feature as a tank, and indeed referred to it as the 'laundry'. There is no mention



Plate VIII Corn-drier, F3, looking south. Scale in feet and small scale in 1in and 6in.

in the records of burning or signs of heat, and only the occasional carbonized twig. No coal was found. The relationship of the fragment of *opus signinum* and any possible function this may have had is obscure, as is the 'clay edge' at the north end where, if this is indeed a corn drier, the stoking area would be expected.

There is no evidence for the date of construction, and it was clearly out of use and being filled with refuse in the 4th century.

### The Intra-mural Roads

#### The north-to-south road

(Figs 7, 20)

The main north-to-south road of the fort was found running north from the south gate, and its line was investigated in grid squares ABIV-V, and partially in C-GV (see also Appendix 4). This road had been severely disturbed during the post-Roman period, the so-called 'Hut 1' F71 impinging upon its western edge in BCV, and it had also been cut by gullies/ditches in BIV-V and probably in DV, F69 and 70. The largest area available for excavation had been subjected to plough damage, and only small areas were available in D-G V squares.

The latest road consisted of two carriageways with a central gutter, and was covered with heavy packed flint, apparently overlying a finer gravelled surface. Green viewed the upper flints as a road surface, but the character of this as seen in the 1986 excavation (Appendix 4) together with the nature of the finds from it suggest other-

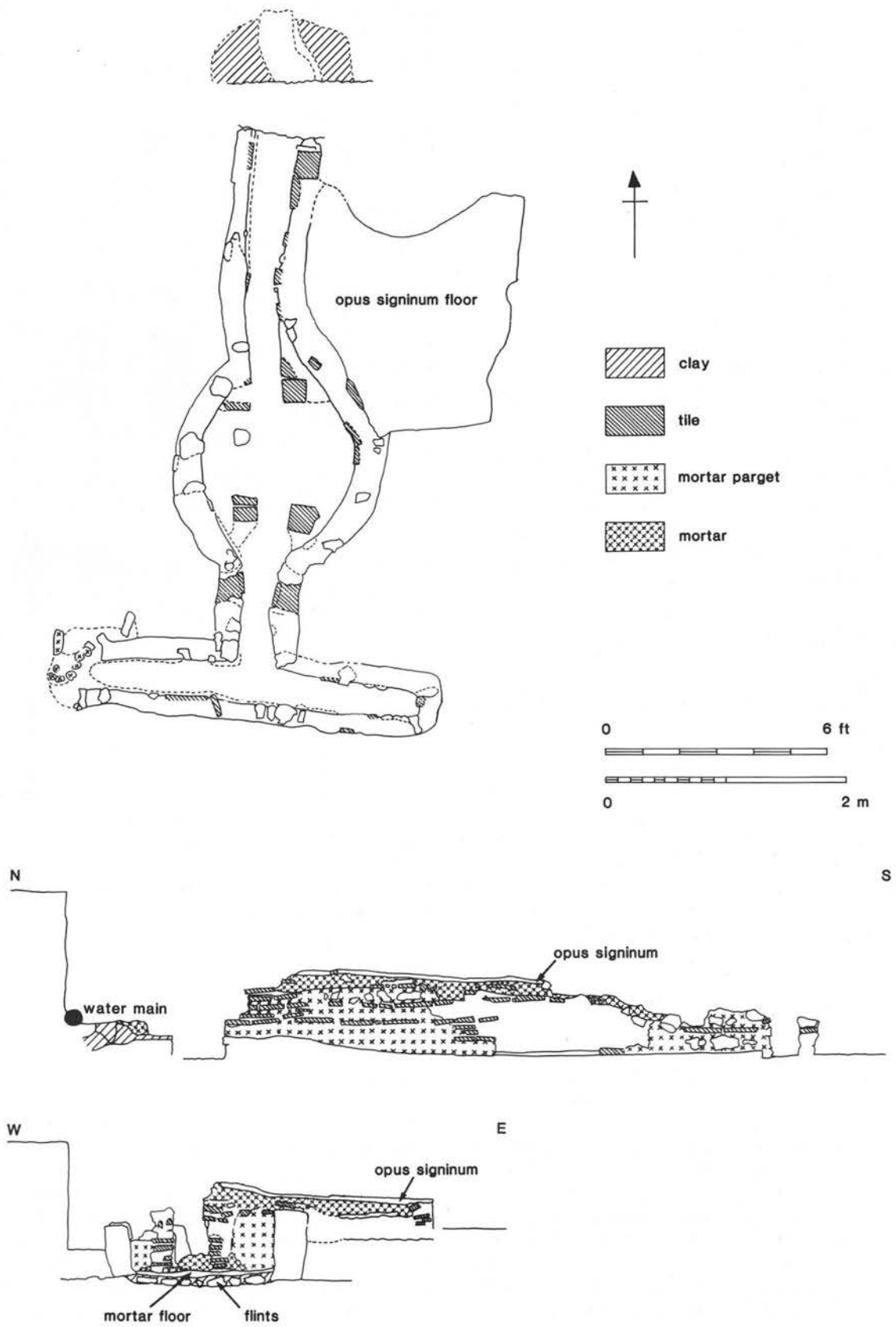


Figure 19 Plan and sections of the corn-drier. Scale 1:50.

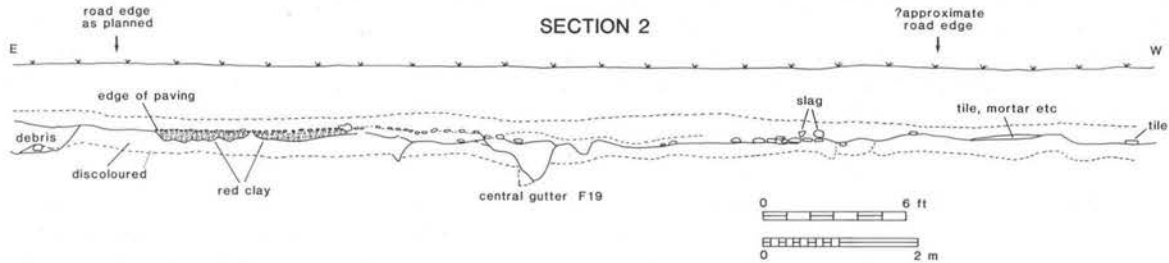


Figure 20 Section 2, across the intra-mural road. Scale 1:100.

wise. Any estimate of the width can come only from the best preserved section in AIV of the eastern carriageway. This was approximately 5m (16ft 6in) wide from the edge of the metalling as planned (see section, Fig.20) to the east edge of the central gutter, F19. The total width of the road may be estimated at 10.7m (35ft). The central gutter, F19, of varying width, was 46 to 61cm (1ft 6in to 2ft) across, and it is not clear whether it existed with the earlier surface; near the approximate line of its western edge in AV were a series of discontinuous linear features, the exact nature of which is not clear from the plan, section or notebooks. The section does not show an excavated feature, and it is assumed that these are conglomerations of metalling, etc.

Clearance of the main street surface in AIV-V exposed a broad clay surface which contained two ditches. It is assumed that the west ditch referred to is the central gutter, F19, and that the east ditch, 76cm (2ft 6in) wide, 'with a flint kerb on both edges' is the amorphous cutting at the east limit of the drawn section, its 'W'-shaped profile suggesting a recut roadside ditch.

Excavation was carried 15cm (6in) into the natural sand at the section line (south baulk of AIV-V). The natural sand mingled upwards into discoloured sand, dotted with lumps and nodules of red sandy clay on which the road-cobbling rested. Green states that in places the red clay was *in situ* and that in order to prepare a bed for the road metalling, this was beaten down, spread where necessary and also perhaps reinforced by more clay brought from elsewhere.

Green later cleared the north-to-south gutter (in DV) which was 30cm (1ft) or more deep below the clay surface. A post-hole F76 was found, which appears only on the main site plan. This was sub-rectangular, the post having been based on and wedged with tile fragments, and viewed as coeval with the upper flint surface. Excavation of the adjacent feature F20, referred to as a 'kerb', showed this to be a 'roll' of clay set in a slight hollow in the underlying natural, with large flints and small shingle, and considered to be contemporary with the upper surface. Both these features appear to be post-road, F20 probably being an accumulation in an earlier gully, possibly a north continuation of F58.

Excavation in EV was hampered by a pylon and its stay and complicated by various gullies, particularly F58, noted as curving round to run parallel with the road. A section showed that there were two gravelled surfaces with some 15cm (6in) of clay between. Subsequent excavation confirmed that 'the upper gravel [rested] on some 6in of clay, resting on heavy stone foundations overlying the lower gravelled clay-surface'. The second gravel and clay lower paving was removed down to the level of the drain, F58, and Green states: 'The surface in which this latter was cut

is certainly not gravelled and indicates a pre-building existence.'

This statement does not seem to agree with the evidence of the drawn section, where part of gully F58 appears to be cut into a 'mixed filling', which itself cuts a layer of shingle and sand, presumed to be the first road surface, separated from the upper by a layer of clay. The corner of the building is projected onto this section, but there is no drawn stratigraphic link to demonstrate its relationship to either upper or lower road. It is probable that an earlier trench, following the wall line, had cut away upper layers. There seems no doubt, however, that drain, F58, was obliterated by the later road metalling.

The problem of drains in this confined area of the excavation is compounded by the record of an unplanned drain leading, apparently *downwards*, into Room 1 of Building 1 from the road. The hole F50 through the south end of Wall 1 was exposed by cutting back 'the pavement surface', assumed to be the upper road surface, and this showed a shallow channel running east-to-west directly towards the hole in the east wall.

Neither this channel nor the hole F50 through Wall 1 is planned or sectioned. Earlier it had been regarded as a possible 'post-trench' (see above, Room 1), but this theory was dismissed in this later investigation from the road side. The inner ?outlet of the ?drain inside Room 1 had been removed by a post-Roman disturbance, but the possibility of a drain into Room 1 seems remote, and its higher level relative to the drain, F58, argues against this. It seems more likely that this was a pre-building timber feature, the timber having decayed, allowing the road metalling to sink into it. Green's reference to it having 'existed in the second pavement surface' is inexplicable.

### Conclusions

It would appear, therefore, that an early road, of finer metalling, of unknown extent existed. It is not clear whether the central gutter, F19, was coeval with the early surface or a later addition, but it was certainly part of the later road surfacing, however that is viewed. The upper road surface was covered with much refuse (albeit showing plough damage), including Middle Saxon pottery and a quantity of bone showing no evidence of shattering, which would have occurred if the surface had been a road at that time. The gutter contained late Roman pottery and coins (coin C224 in upper fill, AD 348-364).

The question of drainage channels at the sides cannot be resolved from the recorded information, although the drain, F58, probably curved round from the rampart to run northwards to protect the building in the earlier phase. This was out of use when the later road surfacing was laid.



### *An east-to-west road found by Ellison*

Ellison found an east-to-west street in the north-east corner (1966, fig. 3 plan, fig.4, section FG). This was c. 4.9m (16ft) wide, with evidence for two side ditches (c. 3.4–3.7m, 11–12ft apart) and a probable central gutter. The top was disturbed and composed of cobbles, rubble and tile fragments, seemingly similar to that observed in Area 1. This may not have been the last road surface, but a quantity of fine gravel was also found, representing a single period of metalling. Evidence for a type of soakaway occurred below the gravel metalling. It was laid on top of occupation material which continued beyond the line of the street, and contained fragments of wallplaster. The pottery from the occupation below the street, *etc.* (fig.10, nos 12–23) was of varied date but would certainly close in the late 4th century on the basis of no.17, probably Oxfordshire Red Colour-Coated or Much Hadham Ware, and probably also nos 13 and 20; this included a grey mortarium, no.15, of a type not seen otherwise at Caister.

This is much narrower than the road in Area 1, as a subsidiary street, and would appear to be a late modification. A north-to-south street has apparently also been seen in gardens on the west side of Brooke Avenue, and Ellison's reconstruction of a street grid is based upon this. There is no evidence for a central east-to-west street or the west gate, although both seem likely. The absence of a north gate on his plan is largely due to the results of his trenching outside the north defences, where he found no evidence for a road. The value of this negative evidence is tenuous in view of the position on rising ground and continuous agriculture.

### **The 'Saxon huts'** (Fig.21)

#### *'Hut 1', F71*

The remains of this feature sprawled over four grid squares, BCV–VI; fragmented excavation and records make the identification and assessment more difficult than usual.

The feature and its immediate area produced the largest concentration of Ipswich Ware (illustrated: Fig.166, Nos 5, 9, 11, 14–17 and 22). These sherds were larger and fresher than the Roman material, which was all very scrappy, abraded, and contained little of note, although all the late Roman fabrics were represented, with late BB1, Much Hadham, shell-tempered and late Nene Valley Colour-Coated Wares. The scrappy abraded sherds contrasted considerably with those from the so-called 'Hut 2' (see below).

Finds were singularly indeterminate, but included an iron awl (No.571) and an iron tracer (No.585); two small awls, catalogued under No.570, were found in F70, the drain/sump in BV, immediately to the north together with an iron knife of Saxon type (No.615).

Given the disturbance of the area and the policy of phasing any uncertain finds bags upwards and, in this case, into the ploughsoil, it may be noted that three of the post-Roman hairpins (Nos 122, 123 and 129) and the fine stylus, No.418, came from the ploughsoil of BV–VI. The curious decorated bone cylinder No.1071 was also from CVI ploughsoil.

There is little doubt that the feature dates to the Middle to Late Saxon use of the site; identification of the use is another matter. Definition of the limits of the feature

proved difficult, particularly on the south, the 'wall' line being marked by an irregular ridge of introduced clay with sporadic flints; the sloping irregular surface of the feature had been dug into sand. The floor was uneven, and there is a suggestion of a raised ridge which might have been caused by wear on either side. Unfortunately this is not planned, but may have represented a placement for some working feature, a bench or loom. There is also reference to a flint 'hearth' near the centre associated with large sherds of Ipswich Ware. A possible ironworking hearth was found immediately adjacent to the feature in CV, with much iron debris, slag and charcoal. No post-holes were recognized.

Although later disturbance had obviously destroyed evidence, particularly to the south, the absence of post-holes to support a roof structure precludes identification of the feature as a *grubenhäus*. It seems more likely to have been a working hollow, possibly connected with metalworking. The function of the meandering gully F70 to the north with its deeper sump cutting into the Roman road and the cutting F69 through the road at the BCIV baulk is also unknown. Quantities of animal bones were scattered over this area, including the complete skeleton of a horse in the north sector of BVI. There is no evidence that this was contemporary with the use of the feature as a working area, but it seems more probable that any domestic settlement that might have existed would have been located further into the fort. Unfortunately no sections were drawn of these features cutting into the road, and neither are their depths recorded in the notebooks. They appear on plan to be fairly substantial, and suggest that the road was no longer being used as a thoroughfare, at least not for any wheeled vehicle.

The nature of the post-Roman usage of the intra-mural area is impossible to determine from the available evidence, and there is no certainty that it was used for settlement. The only certain surviving evidence relates to its use for working and burials.

#### *'Hut 2', F72, and associated pit, F73*

This feature, F72, was roughly rectangular with, on the south side, a roughly rectangular projection. No post-holes were observed. There were vague indications of 'packing' along the edges, both by stones and by slightly raised clayey ridges, which were thought to have been the remains of a turf or wattled wall.

The filling was black earth with much rubbish, including many *tegulae* and *imbrices* at all depths, and 'masses of clinker or slag', scattered thickly through the middle filling. Sherds of Thetford and Mayen Ware came from the first three excavated bags. Green considered the possibility of a roof over the feature, but the distribution of tiles in the filling makes this unlikely.

The 'packed threshold' observed on the south side proved to be a pit packed with a mass of painted plaster, F73, ante-dating the 'hut'. Below the plaster was a mass of mortar fragments, mainly from a roof structure, with traces suggesting that they secured *tegulae* and *imbrices* at the ridge.

This pit was found to have been dug into an earlier pit (LB 1478), which contained no plaster, and seems to have been filled with black earth, oyster shells, with some large pieces of partly burnt red clay. Excavation was transferred to the surrounding area, and no further mention of this pit occurs in the site notebooks. A sketch shows it as an elongated east-to-west feature just to the south of F73.

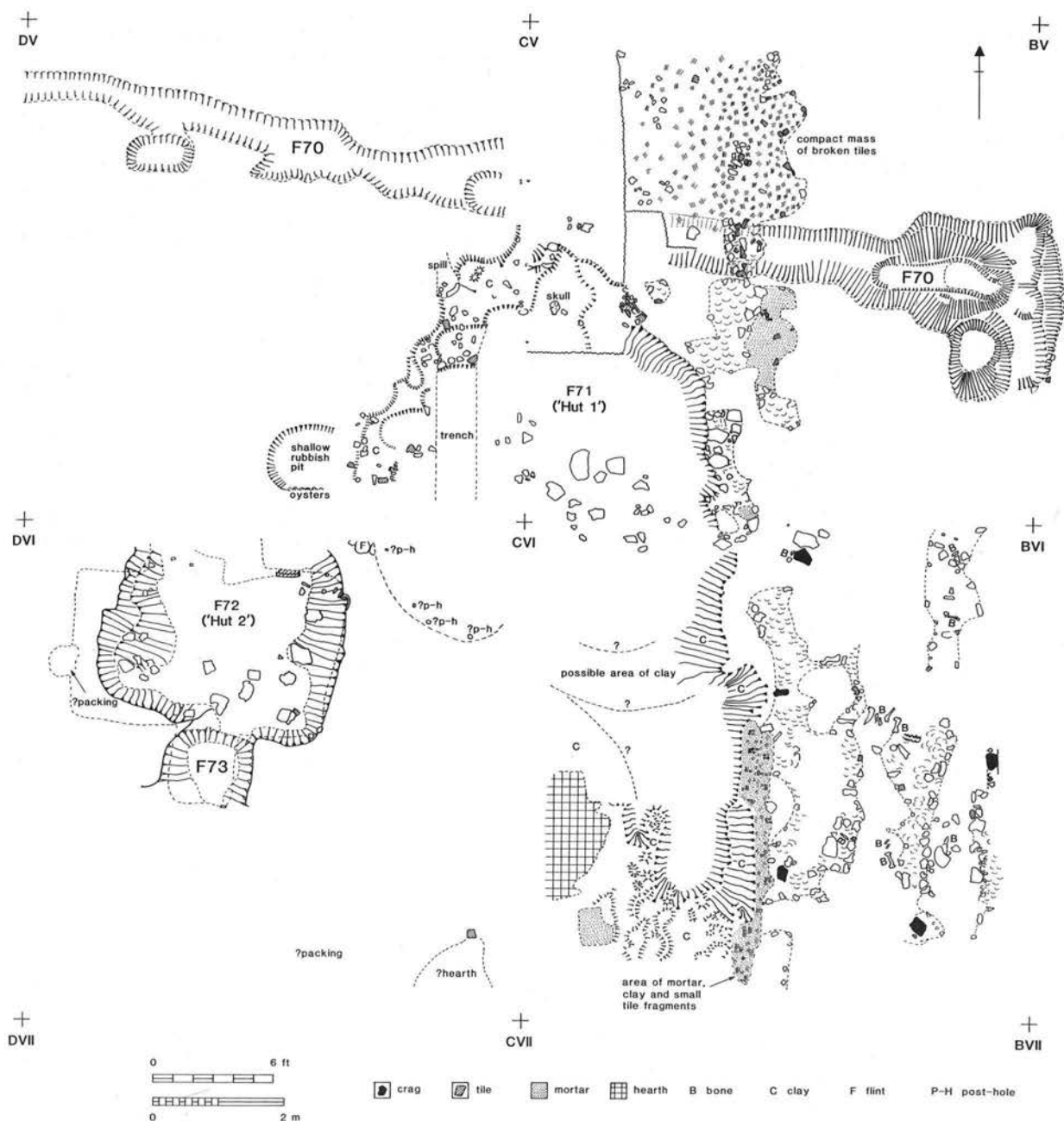


Figure 21 Plan of the 'Saxon huts', Grids BCV-VI. Scale 1:100.

Continuing work in the area involved the excavation of an unplanned hollow apparently pre-dating 'Hut 2' to the north, running into BVI. The fill is not described.

#### Discussion

Little can be made of the unplanned earlier pit and hollow, neither of which contained identifiable post-Roman finds. A spread of Roman rubbish to the north in AVI (LB 67) suggests that the area adjacent to the road was used as a rubbish dump, with which these features probably belong. The pottery from all three features was of mid- to late 4th-century date. A coin of AD 259-275 (C330) came from the hollow, and the iron shield umbo, No.787, from the earlier pit. The 'plaster pit', F73, contained only Roman material, notably the elaborate decorated plaster (Nos 515-

534), probably from a single room. Similar building debris also occurred in the area of 'Room 10' (see above).

'Hut 2', also termed 'the Smithy', F72, contained much rubbish, with many animal bones, the assemblage being reminiscent of the main refuse deposit (see Chapter 8.I below). The pottery includes many large Roman sherds with fresh fractures. No abnormal burning was noted on the sherds despite the associated masses of slag, carbonized wood, etc. The pottery is totally different to the assemblage from 'Hut 1' where the Roman sherds are notably small and abraded. Despite the presence of Thetford Ware sherds and a knife of Saxon type (No.616), the feature was probably a Roman rubbish pit, the later finds being intrusive. The pottery included Oxfordshire, Much Hadham and late shell-tempered sherds, all indicative of a late 4th-century date (Nos 235, 255, 262, 264, 332, 461, 467, 488, 497, 576, 606, 742 and 754).

### III. Areas 2, 4, 5 and 6

#### Area 2

(Fig.5)

Area 2 consisted of thirteen grid squares (AI–NI) laid out as a north-to-south line running north from Area 1. AI was at the south end and NI at the north. II was not used. The details of Area 2 are on microfiche.

The only useful new evidence from these trial trenches relates to the internal roads. An east-to-west road was postulated by Ellison (1966, fig.1) with a gate on the west, his positioning possibly based on the known proportional size of the *praetentura* at Brancaster rather than on any site evidence. Building remains in grid squares BI and CI suggest that no road existed on his postulated line and, although the evidence is scanty and equivocal, a road may have existed further north in the area of grid square EI. A road in this area would mean a larger *praetentura*, occupying approximately 60% of the interior, as was possibly the case at Reculver. If the secondary street further north (discovered in Ellison's Site G in the north-east corner of the fort (Ellison 1966, 55, fig.3)), continued westwards, its line would have crossed the trial trenches at about grid square LI. There is no mention of metalling or anything resembling a road surface in the records for LI, but two east-to-west ditches near the north and south baulks suggest that the street continued here.

The rubbish dumping on the north rampart is evident from excavation and finds in grid square MI. The evidence from the northernmost square occupying the crest of the slope, NI, was complicated by the presence of a manhole in the area. The position of the north defences have since been defined by Ellison (1966, Sites G and H).

The two coin hoards, Nos 8 and 9 (MI), are the only hoards pre-dating the 4th century from the site, apart from the hoard found in 1946 south of the defended area. Both occurred in the area of the refuse on the rampart, and there is no excavated evidence to indicate whether they had been deliberately hidden there or had arrived by accident in a load of rubbish. It is possible that Hoard No.8 of only five coins had been disturbed.

Human remains discovered in square JI indicate the probable spread of the Middle to Late Saxon burials to the west of Brooke Avenue where burials were encountered during the digging of service trenches.

#### Area 4

by Kirsty Rodwell

(Figs 22, 23)

##### *The outer defensive ditch*

This ditch was discovered in trench KVIII, which was extended northwards to the edge of the Norwich Road to obtain as large a section as possible. The western half of the ditch was excavated first and both sections drawn (the eastern edge is published, Fig.23, section 3). Green considered the uppermost layer to be Saxon occupation in the top of the ditch after it had silted up. It was a dark layer with bones, charcoal and pottery including Ipswich Ware, and it overlaid another black friable layer containing many oysters and animal bones which he considered to be a late Roman rubbish layer. Below this was a clayey layer with some pottery and bone, two silty layers with few finds and a clayey primary silt containing no finds. An iron-pan had formed at the bottom of the cut at its junction with the

undisturbed Corton sands. The ditch had a shallow V-shaped profile, less than half its width was available for excavation and it was a maximum of 8ft (2.4m) deep from the surface.

A second trench was cut 50ft (75.2m) further west spanning squares JX and KX. Once again the western half of the ditch was excavated first but only the east side section was drawn (Fig.23, section 4). Green considered the stratigraphy to be obscure, and divided the fill into three silt layers of which the middle one contained the greatest number of finds. A piece of wood was found embedded in one of the primary silt layers, which were otherwise almost devoid of finds. The section drawing suggests that a ditch with a shallow V-shaped profile was cleaned-out a number of times before silting up or being backfilled. Over half was excavated (14ft; 4.2m) its full width probably being in the order of 20ft (6.1m). Its maximum depth from the surface was 9ft (2.7m), but from contemporary ground level probably only 6ft (1.8m). Into the top of this a smaller ditch some 7ft (2.1m) wide and 3ft (0.9m) deep was recut at least four times. This was probably a post-Roman feature; it is not clear whether it is represented by any of the layers in KVIII.

The southern lip of this ditch was also located and excavated (but not planned) in KVI. It should have passed through KVII, but this square does not seem to have been excavated sufficiently to define it.

##### *The harbour road*

(Figs 22, 23)

Green anticipated that a road would run south from the gate in Area 1 to a harbour. Accordingly two 4ft (1.2m) trenches, LV–VII and PVI–VII were excavated across its supposed line, both of which located a metalled surface. Subsequently cutting LV–VII was enlarged and a stretch of road c. 30ft (9.1m) long was exposed beneath the Saxon cemetery (Pl.III). A 2ft (0.6m) wide section was cut through the road to the natural sand on the line of the original trench LV–VII. The road was not fully sectioned in the cutting PVI–VII.

The development of the road has largely to be inferred from the two drawn sections (Fig.23, section 5 and Fiche Fig.34) which indicate two main phases of activity and hint at underlying features.

As initially laid out the road consisted of two carriageways, each up to 18ft (5.5m) wide, separated by a central gully and bounded on both sides by a ditch. The carriageways had cambered cobbled surfaces which rested on a bed of clay and loam up to 1ft (0.3m) thick. Where fully excavated (Fig.23, section 5) this layer lay directly over the Corton sand, but beneath the western carriageway it appeared to seal a ditch with a silty fill. This feature was not located elsewhere.

At the northern end of the eastern carriageway there were two parallel shallow gullies 5ft 6in (1.7m) apart, filled with cobbles and loam. They were interpreted as cart ruts. The road metalling did not extend as far as the northern edge of LV–VII and there was a gap of c. 24ft (7.3m) between the edge of the road and the lip of the outer ditch where there was only a slightly stony horizon at road level. Green suggested that this area was occupied by a timber-framed bridge abutment. No clear structural traces of such a feature were found.

The central road gully was up to 5ft (1.5m) wide and 9in (0.2m) deep with a black fill. The side ditches were

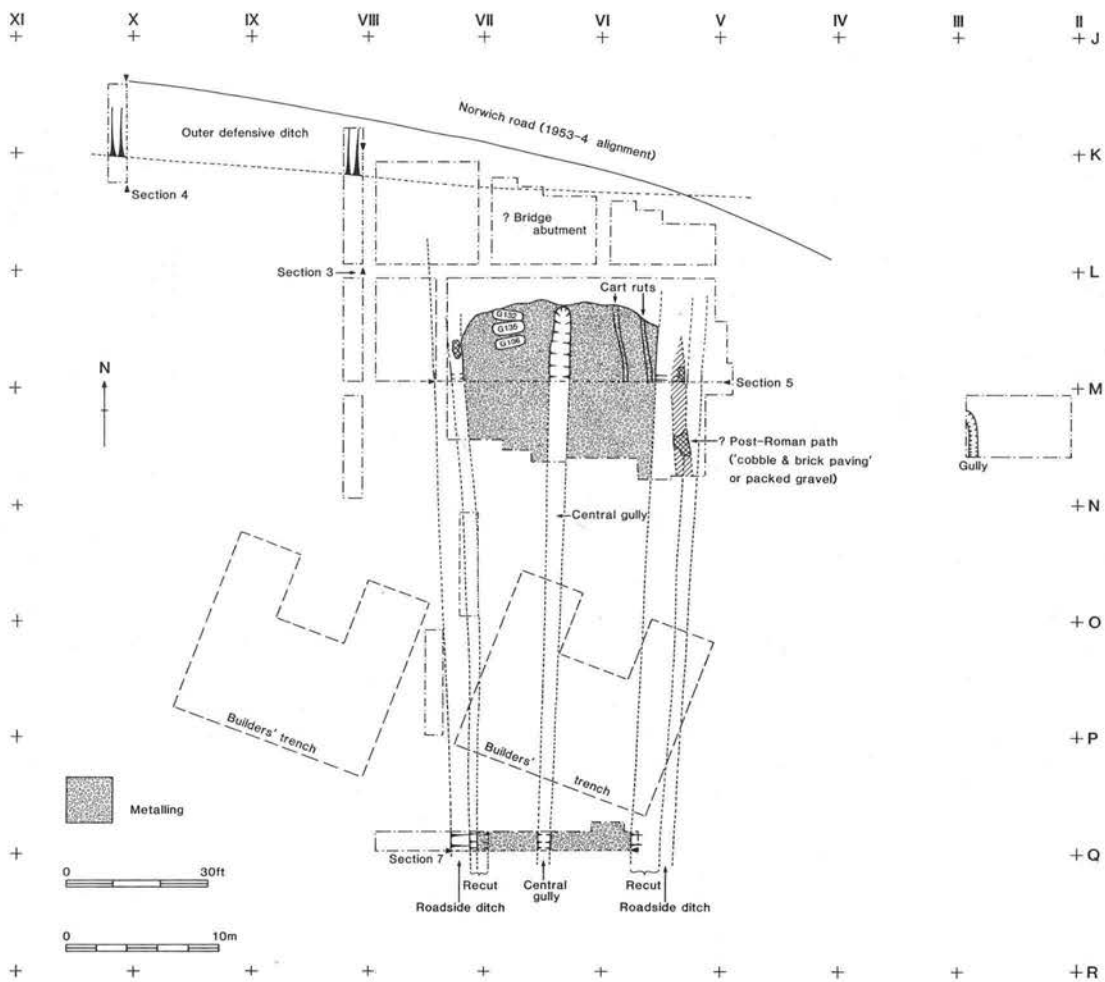


Figure 22 Area 4, plan of Roman features. Scale 1:500.

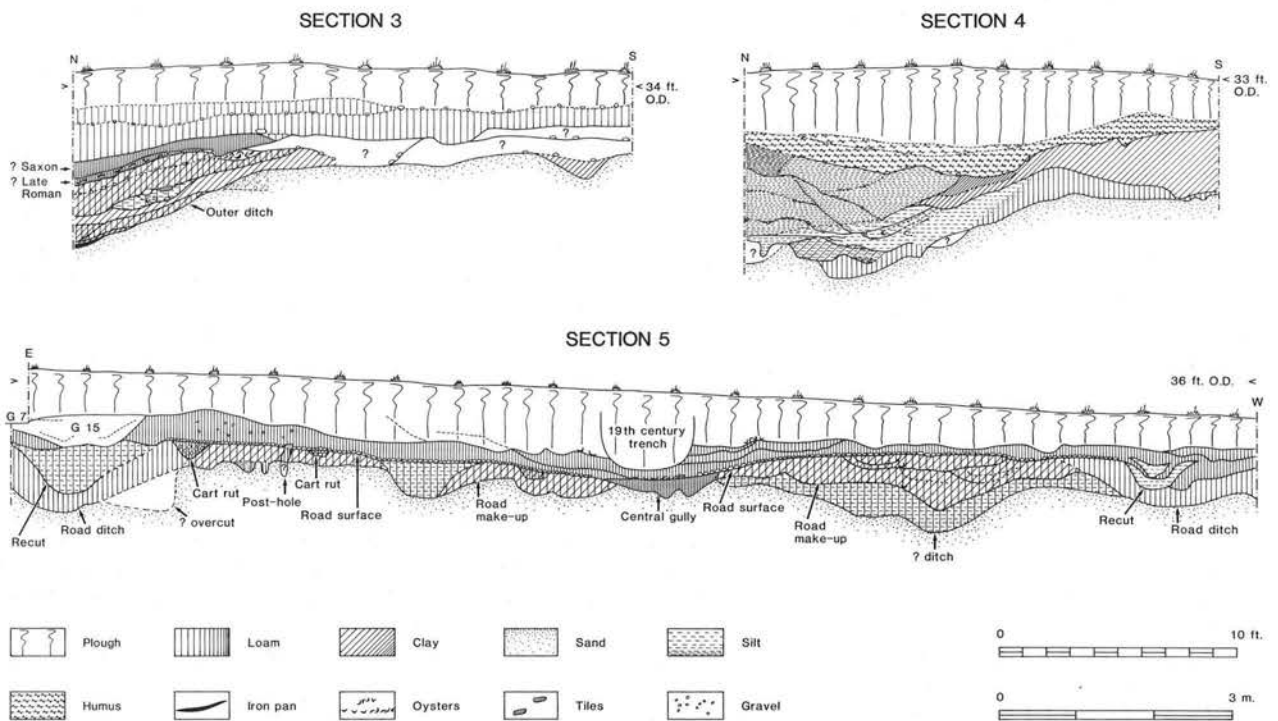


Figure 23 Area 4, Sections 3-5. Scale 1:100.

between 8–10ft (2.4–3m) wide and 2–3ft (0.6–0.9m) deep with light, silty fills.

In the second phase the road surfaces were re-metalled with clay and cobbles, which spread over the central gully and ?ruts and the roadside ditches. These were recut with smaller, more steep-sided profiles up to 6ft (1.8m) wide and 2ft (0.6m) deep.

After the road went out of use up to 1ft 6in (0.5m) of dark soil containing Roman debris accumulated on its surface, and it was from the top of this horizon that the post-Roman graves were dug. All features were covered by a ploughsoil 2–3ft (0.6–0.9m) deep.

Overlying the eastern road ditch and c. 9in (0.2m) higher than the main road surface was a discontinuous band of metalling, variously described as ‘closely packed cobble and brick paving’ or a ‘raised path — narrow and gravel packed intermittently’. Its maximum recorded width was 4ft (1.2m) and it was cut or overlaid by all burials. Green suggested that it was a post-Roman pathway perpetuating the line of the road, and this seems the most plausible interpretation. There was another isolated patch of cobbles over the western road ditch, cut by G130, but its significance is unclear. No features other than burials post-date the road in trench PVI–VII.

South of this cutting the road was discovered under Belstead Avenue when a watermain trench was dug in 1946 (*J. Roman Stud.* 27 (1947), 171). It was described as cobblestones c. 2ft below the surface; alongside was a 3rd-century coin hoard (Jenkins 1948).

#### *Other features*

(Fig.21)

Few features other than the road and the cemetery were encountered in Area 4. Close to the western edge of the cutting MII was a gully, 2ft (0.6m) wide and silt-filled, containing nothing but Roman pottery and cut by Graves 113 and 116. Nearby, the burials excavated in 1979 were cut into a Roman pit, probably a quarry, of unknown depth and dimensions. Further south, several ditches were noted in builders’ trenches, but no further details were recorded and their date is unknown. The gully in cutting OVII is discussed with the cemetery (below) as it may have served as the cemetery boundary.

#### **Area 5**

These small trial trenches beyond the north-east perimeter of the fort were laid out to explore the possibility of a much larger fort. A small quantity of pottery was recovered, and indications of cobbling in two grid squares (LLXVIII–XIX), one containing a gutter with a large proportion of a single grey jar (No.391). There was no evidence to determine the nature of the occupation, and the pottery sample is too small to draw firm conclusions. It is, however, notable that apart from a few sherds of samian, one of which was a South Gaulish Form 37 of Flavian–Trajanic date, a sherd of Dressel 20 amphora was of the earlier type of fabric and a 2nd-century mortarium from Colchester (No.718) also occurred, together with more sherds of flint-tempered grey ware than seen from Area 1. A North Gaulish cream beaker base was also found. Most of the pottery would fit a 3rd-century date, although 4th-century sherds also occurred, giving a date range of late 1st–early 2nd to 4th century. Considering the small sample, the early sherds suggest a possible pre-fort occupation.

#### **Area 6**

These four trial trenches must have lain almost immediately east of the south-east corner of the defences, on the opposite side of the lane to Ellison’s Site E (1962, fig.3) and the square DXII may have just touched the edge of the outer ditch or post-Roman disturbances. The minute quantity of pottery recovered was unremarkable.

### **IV. Excavations by A.E.S. Musty, 1972**

(This summary is based upon the manuscript report and excavation archive by the excavator in Norwich Castle Museum)

Two sites were excavated in advance of an extension to the housing development. Site 1, between Brooke Avenue and Uplands Avenue and in the grounds of the bungalow ‘Uplands’, comprised three rectangular trenches inside the defences on the east side of the fort, and to the east of these a long narrow trench crossing the defences (Fig.5). Site 2 consisted of two areas, one across the defences a short distance north of the south-west corner of the fort, and to the north-west of this, an area beyond the defences under Gaywood Close (Fig.5).

#### **Site 1**

A large area was available for excavation, but trial trenching demonstrated that most of the area had been disturbed by the excavation of a sunken lawn (?tennis court) for the bungalow ‘Uplands’. When this was created, ‘a few bodies were also reported to have been found ... . The man who made this lawn also said that they were accompanied by two “metal wine cups” which sound like shield bosses, but intensive enquiry of the original owner and other persons brought no further information’ (Green n.d., 13; Green’s source of information was probably verbal, and perhaps from Rumbelow, although Rumbelow’s manuscript (in Norwich Castle Museum) does not refer to these finds). Beyond the area of the sunken lawn, much of the area had been disturbed by landscape gardening or contained the footings of the new bungalows which could not be disturbed.

The most informative trench was the long narrow trench across the defences. Even this was not undisturbed, and features had been truncated or destroyed by the levelling of the site for agriculture, as they had in Ellison’s 1961 trenches to the south (Ellison 1962, 98).

The fort wall had been totally destroyed by the sunken lawn, but its line was observed in the side of the footings for one of the new bungalows. On the berm between the wall-line and the inner ditch a shallow trench was found, on the very edge of the inner ditch. If this was the palisade trench, as seems likely, then it has meandered off the line it was taking in Ellison’s trench where it was located below the wall footings. The inner ditch survived as a shallow truncated feature filled with wall rubble, and the primary silt contained sherds of probably 3rd-century date.

To the east of the inner ditch, what was believed to be an earlier ditch was found. This had a V-shaped but flat-bottomed profile, whereas on Ellison’s Site E, the early ditch was V-shaped with a cleaning channel at the bottom (1962, fig.2, section B–C). The fill of the ‘early ditch’ in the 1972 area was a hard brown clay with flints, similar to both the fill of the later outer ditch and the fill of a pit cutting the ‘early ditch’. Ellison’s sections show late pits between the inner and outer ditches (1962, fig.2, section A–B–C,

layers 9 and 9a; fig.4a, section E-F, layers 7–10), and it could be suggested that the ‘early ditch’ found by Musty was a similar pit. The fill of the postulated ‘early ditch’ contained a sherd of an Oxfordshire colour-coated mortarium, and this also casts doubt on the interpretation of the feature as an early ditch.

At the east end of the trench, the large flat-bottomed outer ditch was found cut into natural sand. The lowest layer of orange sand was overlain by a layer of broken tiles and small stones which the excavator suggested acted as a sump for drainage. Above this was a layer of yellow clay. At the very end of the trench, on the outer bank of the outer ditch, there was a very distinctive post-hole.

### Site 2

On Site 2, the fort wall was missed again, but a profile was obtained of the inner ditch. This ditch was much larger here due to the sand subsoil, and the primary silt, a light brown sand, contained an East Anglian mortarium sherd of AD 150–250. The ditch had been levelled by being filled with debris from the collapse of the fort wall. Above this rubble, a thick layer of ash (with sherds of Ipswich Ware) spread away from the defences and over the site of the outer ditch. A series of burnt clay layers were found, separated by thick layers of ash and burnt daub (see Chapter 5.IX below). Above the ash layer, a final layer of collapsed walling was found, indicating that the fort wall was still standing in part at least during the post-Roman occupation of the site. A pit was cut through the final wall collapse, and this contained both Roman sherds and Ipswich Ware.

### Summary

The excavations in 1972 have added some information about the defences. Neither area uncovered the fort wall, but on Site 1, the palisade trench was found on the very edge of the inner ditch. It was not seen on Site 2, but as the wall was not found, this does not prove that it did not exist in this area. The ‘early ditch’ on Site 1 could be the early ditch found by Ellison, but the possibility that this was in fact a large late pit cannot be discounted. On Site 2, considerable evidence of Middle Saxon occupation was found, no doubt associated with the concentration of Middle Saxon material on the western edge of Green’s Area 1.

## V. Other excavations west of the fort

### The Caister By-pass

Excavations and finds from fieldwork on the line of or adjacent to the Caister By-pass and recorded in the County Sites and Monuments Record under two sites numbers, 12737 and 12872. These will be summarized in turn:

#### Site 12737

(Fig.5)

This site is in the parish of West Caister, a short distance to the north-west of the roundabout at the intersection of the Caister By-pass with the A1064, the Norwich Road. The construction of the By-pass commenced before any field-walking was possible, so a watching brief was maintained by the Norfolk Archaeological Unit throughout the earth-moving operations. In August 1977, the construction of a slip road for the By-pass revealed subsoil features, and these were excavated by Andrew Lawson and Andrew Rogerson with members of the Norfolk Archaeological

Rescue Group and the Great Yarmouth and District Archaeological Society.

The features excavated were two ditches at right angles, and a number of pits both inside and outside the angle formed by the ditch intersection. These ditches probably represent the corner of a rectangular enclosure which must continue in the field to the north, although aerial photographs show no trace of this. No structures were identified, but a fine pottery assemblage dated to the mid-1st century AD was recovered, suggesting that occupation here pre-dates the occupation of the fort to the east.

#### Site 12872

Site 12872 is a large irregularly-shaped area, now bisected by the Caister By-pass. The whole of this area was formerly in West Caister, but in 1986 the parish boundary between West Caister and Caister-on-Sea was moved west to the line of the By-pass (Fig.5), so the site now straddles the boundary between the two.

During 1977, the line of the By-pass was searched and finds plotted by members of the Norfolk and Suffolk Metal-Detector Society, working closely with the Norfolk Archaeological Unit. Roman coin finds (23) were concentrated along a 200m length of the By-pass route to the north and south of the A1064, and dated from the late 2nd to the late 4th century. The principal find was a Late Bronze Age hoard found by Mr R. Turner on the east side of the new roundabout where the A1064 was being widened at the point where it meets the roundabout. The hoard contained a plain socketed axe, a cast bead, a comb-shaped plate and a hollow ring, all in copper alloy, together with a small block of lead. The hoard is in the Tollhouse Museum, Great Yarmouth (acc. no. Y368.977) and a full report has been published (Lawson 1979).

Full details of all the metal-detector finds since 1977 will not be given here, but some general observations can be made about the distribution of Roman finds west of the fort. There are very few finds from the fields to the west of the By-pass, and the main concentration of Roman metal-detector finds is just east of the roundabout, on either side of the A1064. The distribution extends neither very far north nor very far south of the roundabout, and is therefore restricted to an area almost directly due west of the fort. Most of the finds are coins (see report on the Roman Coins, Chapter 4, below), including a hoard of six or seven silver *denarii* (latest issue AD 218–222) found on the east side of the roundabout, not far from the Late Bronze Age hoard. Other finds include brooch fragments and a copper alloy goat figurine. Information about the post-Roman coins from the By-pass has been included by David Sherlock in his report (see Chapter 4.III).

#### ‘Tessera Park’, 1986

In July 1986, rescue excavations took place in an area west of the fort (within Site 12872) in advance of a housing development (‘Tessera Park’) by Bovis Homes Ltd. The Norfolk Archaeological Unit’s Manpower Services Commission excavation team led by Piers Millington-Wallace excavated five trenches, intended at the time to be preliminary work in advance of a much larger excavation. Regrettably, after the excavation of these trenches, no further work was possible. The positions of trenches TP1 to TP4 are shown on Figure 5. Trench TP5 was beyond the limit of Figure 5 to the north.

### Trench TP1

This trench, located well within the concentration of Roman material which spreads west from the fort, was the most productive. Natural was never reached in this trench, and the whole area appears to have been covered with a layer of redeposited natural to a depth of at least 60cm.

The features exposed in small sub-trenches within TP1 are difficult to comprehend, but include a number of clay-lined pits, post-holes and ditches and gullies. The complexity of the ditches and gullies suggest that several phases are probably involved, and some of the features may represent the corner of an enclosure, recut on at least one occasion.

### Trench TP2

This trench was laid out due west of the centre of the fort, in the hope of locating an east-to-west road leading from the west gate (the position of which is unknown). In this trench, two wide (3m and 5m) shallow ditches, 8m apart were found running east-to-west across the trench, but it was not felt that these were roadside ditches. No traces of metalling were found. It is possible that these may be related to crop-marks (stippled on Figure 5) to the west of the trench. South of Trench TP2, there are crop-marks which might suggest the line of a road running west-south-west from the fort, with a possible branch off to the north-west. This is discussed further below.

### Trenches TP3 to TP5

These small trenches were largely blank, and produced few finds. They are all beyond the limits of the main concentration of Roman material west of the fort.

### Discussion

The limited excavation unfortunately provides only a minute glimpse of this area west of the fort. The distribution of features and finds in these trenches provides confirmation of the probable limit of Roman occupation, as suggested by surface finds. As noted above, Trenches TP3 to TP5 were virtually blank. TP2, laid out to find the east-to-west road provided no clear evidence of this, and it seems probable that the road from the west side of the fort was slightly further south, where crop-marks show a pair of ditches running west-south-west with a branch to the north-west. If the two ditches which appear as crop-marks do in fact mark the main road west of the fort, the line of this can be projected to suggest a possible position for the west gate. No trace of a road was found by Musty in the two trenches dug west of the fort, and it is possible that the road passed between these two. If this is the case then the west gate would be one-third along the west side of the fort from the south-west corner, and the main east-to-west road inside the fort would run along or just to the north of Clifford Avenue. Such a position would mean that it would be missed by Green's Area 1 and Area 2, and also by the trenches dug by Musty on the east side of the fort.

Such a position for an east-to-west *via principalis* would mean that the *principia* would have been more-or-less in the angle formed by the north side of Clifford Avenue with Brooke Avenue, and that the *praetentura* would have been much larger than the *retentura*. Having said that, if as suggested as a possibility above (see Area 2), the road in Area 2 grid square EI, is the *via principalis*, then the *principia* would have been well into the north half

of the fort. If the road in Area EI is the *via principalis*, then if this line is projected westwards, the presumed position of the west gate would be roughly aligned with the two ditches seen in Trench TP2 and which also appear as crop-marks, though less convincingly a road than the crop-marks to the south. Further excavation on the housing development in 1986 would almost certainly have provided a solution to this problem, and it is most unfortunate that the chance was missed.

The only main internal road known is the north-to-south road leading from the south gate, and this was traced in Area 1 for c. 47m in the northern limit of Area 1. There is also a suggestion that in Green's Area 2, there may have been an east-to-west road running through grid square EI (see Area 2). In 1962, Ellison found an east-to-west road in the north-east corner of the fort (1966, fig.3).

No trace of a road leading to the west gate of the fort was found by Musty in 1972 (see above). The trench under Gaywood Close was excavated to look for this.

The position of the west gate is entirely unknown. Ellison postulated an east-to-west road running through the centre of the fort (1966, fig.1), but Green found no evidence for this in Area 2 grid squares BI and CI, which appear to have been occupied by a building (see Area 2).

The finds from the 1986 excavation are mainly from Trench TP1. A number of flint flakes (one retouched), a scraper, a fragment of a missile head with bifacial soft-hammer flaking and a few sherds of indeterminate prehistoric pottery (probably pre-Iron Age rather than Iron Age) with one probable Iron Age sherd suggest some pre-Roman activity in the area west of the fort. Large quantities of tile were recovered from TP1, mostly *tegulae* and *imbrices*. A rapid examination of the pottery suggests that most of this dates from the 3rd century, perhaps starting in the late 2nd century and ending in the early to mid-4th century. Small finds of note from the excavations include the remains of a pair of hob-nailed shoes, two coins of AD 337-340, and an inscribed copper alloy plaque, the details of which are as follows:

#### Copper alloy plaque (unillustrated)

by David Gurney and Mark Hassall

*Small find 1170 (1986 excavation)*. Inscribed copper alloy plaque with ansate terminals, originally c. 33 by 23mm but now in two fragments, the smaller coming from the top left-hand corner and the larger comprising about two-thirds of the remainder including the whole of the right hand edge. The edges of the letters have been finely nicked to provide a key for blue enamel, some pieces of which survive in the letters. When found there was a lump of solder on the reverse around a small alloy stud which attached the plaque to a second copper alloy object. The context of the plaque was a large depression containing 3rd- and 4th-century pottery. The three-line text reads:

A[.]RATTICI / A[.]JVS / MERCVRIO / VSLM  
A[u]r(elius) Attici[a]n[us] / Mercurio, / v(otum) s(oluit) l(ibens)  
m(erito)  
'Aurelius Atticianus willingly and deservedly fulfilled his vow to Mercury'

The name Atticianus also occurs on a stone pedestal from Whitley Castle, Northumberland (R.I.B. 1199: Col-lingwood and Wright 1965, 393), and Kajanto cites twenty-two examples in the *Corpus Inscriptionum Latinarum*. For previous publication, see *Britannia* XIX (1988), 485.

# Chapter 3. The excavations: post-Roman

## I. Inside the defences

(Fig.24)

Any consideration of post-Roman activity within the defences (Area 1) must take account of the fact that the extent of post-Roman disturbance suggested by post-excavation analysis of the finds is far greater than that indicated in the excavation records. It is clear that in Area 1, there were many areas of post-Roman disturbance which were not recognized during excavation.

Building 1 was certainly ruinous when the Saxons arrived, if not much earlier. It was extensively disturbed in the Middle to Late Saxon period, and this can be recognized in most of the rooms. In Room 1, drain F54 in the south-east corner was cut by a post-Roman disturbance, and Ipswich Ware was found. The north wall of Room 2 was cut by a large post-Roman ditch, F74, and there were large areas of disturbance parallel to the west wall (Wall 7) and in the south-east corner. In Room 3, there were Graves 1 and 2 (Pls IX, X), Grave 1 dug into layers of Roman building debris in the room and Grave 2 dug into the ruinous south wall (Wall 3), with the flint rubble and facing stones of the

wall removed down to a thick layer of mortar on which the body was laid, not quite parallel to the wall axis. In addition to these burials, in Area 1, any finds of adult human bone are likely to represent areas of post-Roman disturbance, and further finds occurred in Room 4, in EVII refuse and in GVIII in the bottom layer of the fort inner ditch.

Room 4 had two disturbed areas, one through Wall 9 into Room 5 (F31). In Room 5, two large disturbances cut into the south-east and south-west hypocaust islands, and further disturbance is strongly suspected. Room 6 was cut by a substantial post-Roman trench (F35) which continues to the north running parallel to Wall 16. A further ditch occurred in Room 8 (F75).

North-east of Building 1, there were extensive areas of post-Roman disturbance on or beside the road. Features 69 and 70 cut across the road, and further features of probable post-Roman date were found cutting the road metalling in the 1986 excavation (see Appendix 4). Just west of the road, two features referred to as Anglo-Saxon 'huts' were excavated, but these are reinterpreted as a post-Roman working hollow ('Hut 1', F71) and a Roman pit dug into in the Late Saxon period ('Hut 2', F72) (see above).

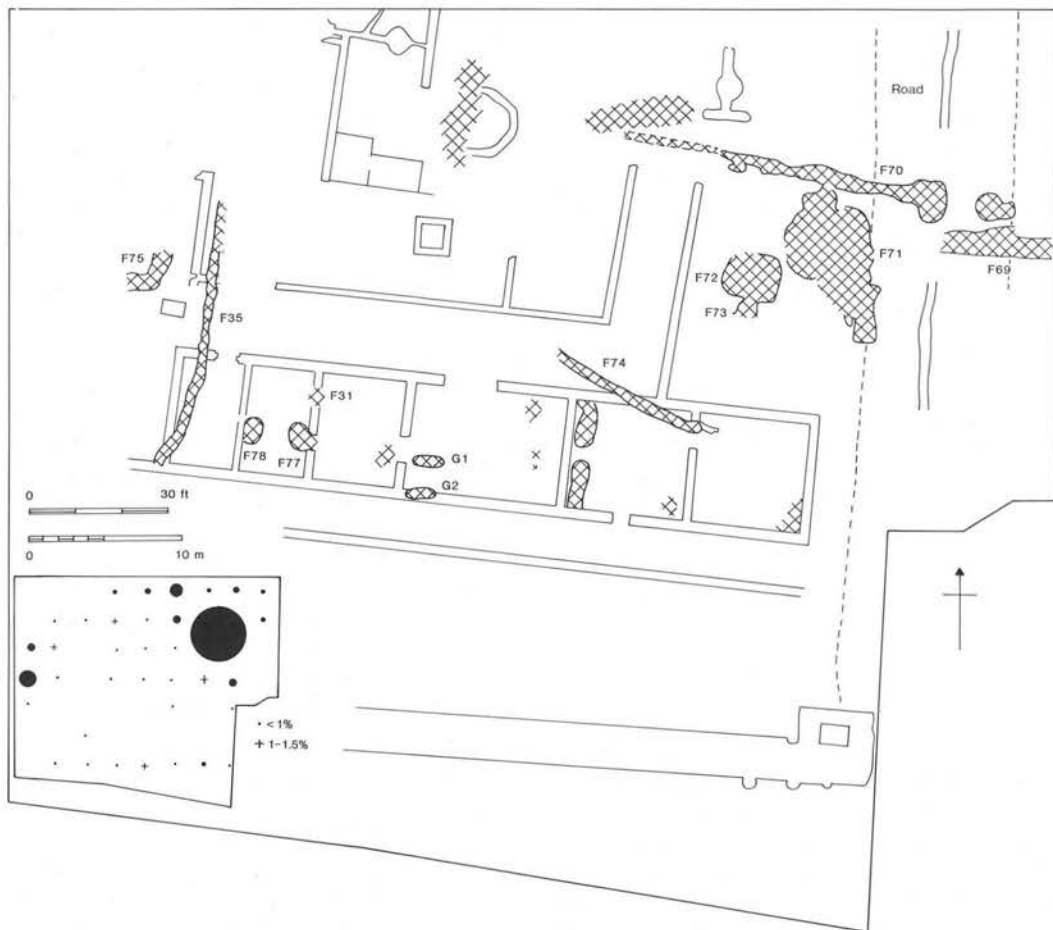


Figure 24 Area 1: plan of post-Roman disturbance, also inset showing the distribution of Ipswich Ware based on percentage total weight. Scale 1:500.



The inner ditch of the fort defences had fills almost entirely of post-Roman date. There was a probable Middle to Late Saxon hearth in GHVI (Fig.8), separated from the wall debris by a band of silt c. 15cm deep. Adult human bone, noted above, was also found in the bottom layer (as noted elsewhere; Ellison 1962), Ipswich Ware was found in most layers, and Thetford and Stamford Wares were found in the rubble spill.

The report on the Middle and Late Saxon pottery by Dallas (see Chapter 7.III below) notes at least twenty-two hand-made probable Middle Saxon sherds among the pottery, sixteen from Area 1. Of 408 sherds of Ipswich-type ware, 321 came from Area 1. The hand-made sherds invariably occur with Ipswich-type sherds, and this (with the absence of Early Saxon stamped sherds) suggests that these vessels are Middle Saxon in date. There is less Late Saxon pottery, perhaps indicating a reduction or shift in occupation in the late 9th to 10th century. An inset on Figure 24 illustrates the distribution of Ipswich Ware in Area 1, the circles representing the proportions by % weight.

In assessing the evidence for post-Roman activity or occupation within the fort, it becomes clear that much has not been recognized and that Figure 24 illustrates only perhaps a small fraction of the whole. The only firm conclusion to be drawn is that the northern part of Area 1 seems to have been the main area of activity in the Middle to Late Saxon period, mainly in the area of 'Hut 1' (F71), in AVII, which may have had the remains of a similar working hollow; and in grid squares B-DXI, matching the evidence of Middle Saxon occupation to the west found by Musty (Site 2, see Chapter 2.IV). The cemetery in Area 4, described and discussed by Kirsty Rodwell in the following section had as its northern limit the Roman defences, and a total of 3000-4000 burials is suggested. With such a large Middle Saxon population, extensive disturbance within the fort comes as no great surprise. It is unfortunate that the evidence of Middle to Late Saxon occupation within the fort does not provide a clearer picture of the settlements of that period to accompany that of the Area 4 cemetery. Indeed, there is no clear settlement evidence within the fort walls, and what evidence there is suggests use of the intra-mural area for working and burials.

## II. Post-Roman Burials

by Kirsty Rodwell

(Figs 25-37 (34-7 on microfiche); Tables 1-5 (microfiche); Pls IX-XXIX)

There are many accounts of the discovery of burials at Caister. They can be divided into two main groups, those within the Roman walls and those outside.

### Burials inside the walled area

#### *Brooke Avenue*

This cemetery was recorded in Rumbelow's manuscript notebooks and summarized in his 1936 article (180-2). In 1935 during the construction of the Sun Vale estate, sewer trenches were dug by hand northwards up each side of Brooke Avenue. The cemetery is first mentioned in a letter dated 13 May. Work had begun a month before and Roman buildings had already been discovered. Further skeletons were revealed as the trenches were extended to the top of the hill, where they were so shallow that they appeared in cuttings for kerbstones and cable trenches (29.7.1936,

Rumbelow MS 4,374). The burials ranged in depth from 6ft to 1½ft, but it is not clear whether they were cut into Roman layers or directly into the underlying Corton sands. No further stone buildings were discovered, and there seems to have been less Roman pottery than elsewhere.

The graves were regularly laid out 'about 6 ft apart', but there was also evidence for superimposed burial horizons (Rumbelow MS 4,362). The majority were oriented with feet to the east, although accounts differ as to whether this was universally the case (Green n.d., 12). The skeletons appear to have been supine and extended; no evidence for coffins or other burial ritual was noted, and there were no grave goods. Some of the graves appear to have contained more than one individual; an adult and a child were found together, and another deep burial seemed to contain about four people (Rumbelow MS 4,362). This may be taken at its face value, but could also represent an isolated group of closely intercutting burials. Men, women and children were represented, although in what ratio is not known. One skull was submitted to Dr A.J. Cave of the Royal College of Surgeons, who identified it as a woman of thirty to thirty-five years (Rumbelow 1936, 181), of 'ancient British' form. He also identified a fragment of an infant's skull (letter 6.7.1935). Observers considered that many of the leg bones came from tall individuals. An exact figure cannot be placed on the number of burials discovered, but it was evidently large and probably lay in the region of fifty to one hundred.

The cemetery can now be seen to have occupied the north-east quarter of the walled area; these walls were unknown in the 1930s. The burials lay well to the east of the principal internal Roman road, the western limit appears to have been immediately west of Brooke Avenue. It is not clear how far south burial extended. Rumbelow's plan (1936, 178) suggests that they stretched to the Norwich (Filby) Road, but his notes imply that they were first encountered some 300ft to the north. This is borne out by evidence from the grounds of 'Uplands', where a few burials were found when the sunken lawn in front of the house was created (Green n.d., 13). According to the man who made it they were accompanied by one or two 'metal wine cups', which may have been shield bosses. Despite extensive enquiry Green discovered no further information about these burials. Three more skeletons were found only 1ft below the surface when making a drive at Uplands in 1966 (*Eastern Evening News* 4 March 1966), but none were discovered in Musty's excavations in 1972 at the south end of the sunken lawn, although the area was disturbed. This suggests that the cemetery was confined to the north part of the area.

Its position within the Roman walls and its remoteness from the present church indicate that this cemetery belongs to the Saxon period, but there is no direct evidence beyond the rather vague reference to shield bosses to date it more closely.

#### *Area 1*

(Fig.7; Pls IX-X)

Two burials were discovered in the south-west corner of Room 3 in Building 1 during the excavations of 1951. Burial 1 (Pl.IX) lay in a shallow grave with a sloping floor no more than 1½ft below the surface. It had been cut from the top of the latest demolition layer within the building. The body lay prone with feet to the east; the left arm was flexed above the head and the right arm extended. Green



Plate IX G1, looking west. A prone burial, cut into the rubble of Building 1. Scale in feet.

considered that the burial was made in a state of *rigor mortis*.

The skull of Burial 2 (Pl.X) was only 4in (0.1m) below the base of the turf. The grave had been cut into the core of Wall 3 down to a mortar levelling course, on which the body was laid; it was backfilled with loose rubble. The skeleton was supine, with feet to the east and arms flexed over the pelvis.

These two isolated burials were clearly post-Roman, and belong to a period when Building 1 had been demolished. The prone position of Burial 1 suggests unusual circumstances, but Burial 2 resembles many others in the Area 4 cemetery.

#### Burials outside the walled area

These can be divided into two groups; 19th-century references to burials north and east of the walled area, and Rumbelow's observations to the south and south-east, which culminated in Green's excavation of Area 4.



Plate X G2, cut into Wall 3, looking west. Scale in feet.

#### Nineteenth-century discoveries

Burials must have been encountered in the fields west of the church from an early period, for in Thomas Browne's time the area was known as East-bloody-burgh Furlong (Browne 1658), a name which suggests that popular tradition linked them to a forgotten battle, or massacre (Green n.d., 12). Gerrish (1925, 843) noted that the field name 'survives in tradition only — at least it does not appear in the Enclosure Award or Tithe Award maps' so that it is not now clear exactly which field was so described. Morant (1872, 11–19) placed it south of the church in the area of Rumbelow's discoveries.

In 1837 many skeletons were discovered in a field a few hundred yards north-west of the church by labourers digging a clay pit (Clowes 1837, 518–21). The majority were found to be c. 2ft below the surface, their orientation was variable, and at least two directly overlaid a pit lined with mortared *tegulae*. These walls stood up to twenty-four courses high (3¾ft) and were battered, so that the pit measured 12ft by 8ft at the top, and 11ft by 7ft at the bottom. It had a natural clay floor and contained nothing beyond animal bones, oysters, stones, and fragments of Roman pottery. Clowes engaged in much speculation as to its function, but his description strongly suggests that it was a mausoleum of late Roman type robbed in antiquity. There were many fragments of Roman pottery in the overlying burials, but only one complete vessel, a 'lachrymatory' of pottery 3in high, was found. No coffin nails were noted, but there was a piece of wood exhibiting 'the hardness of incipient fossilisation'. Clowes considered that 'the skeletons ... must have been deposited in this spot long since the period of its occupation by the Romans, as the bones so near the surface would scarcely have endured half the time in so perfect a condition', but a date in the second half of the 4th century continuing into the 5th seems most probable on the available evidence. The clay pit was levelled shortly after it was dug and its precise location is not known, but it probably lay in the field north of the walled area towards its western boundary, for only domestic occupation was found when the reservoir was constructed in 1855 (Morant 1872, 11).

Further Roman inhumations in nailed coffins described as 'a large quantity of burnt wood, decayed wood, nails with wood adhering to them, and also a human jaw: the latter is partially fossilised' (Gunn 1846, 246–51), were found in another clay pit north-east of the church together with cremations.

#### Filby Road

In 1932 a paragraph in the *Yarmouth Mercury* (13 February) recorded the discovery of 'Roman skeletons' during the excavation of a sewer trench on the south side of the Filby (Norwich) Road between the Old Rectory lodge and the entrance to 'Uplands'. Rumbelow went to Caister to investigate and recorded a well-marked stratigraphy in the trench, which was cut to a depth of about 10ft. This comprised 4ft of road metalling overlying 3ft of discoloured sand, which was sharply differentiated from the clean natural sand, 'the graves cut just into the clean sand'. He saw c. 30ft of trench containing eight or nine burials, and although the workmen told him that the bones were 'just chucked in' he removed the greater part of one skeleton and demonstrated that it was extended and supine with feet to the east. There were no associated finds and no trace of a coffin, but there was a *denarius* of Julia Maesa

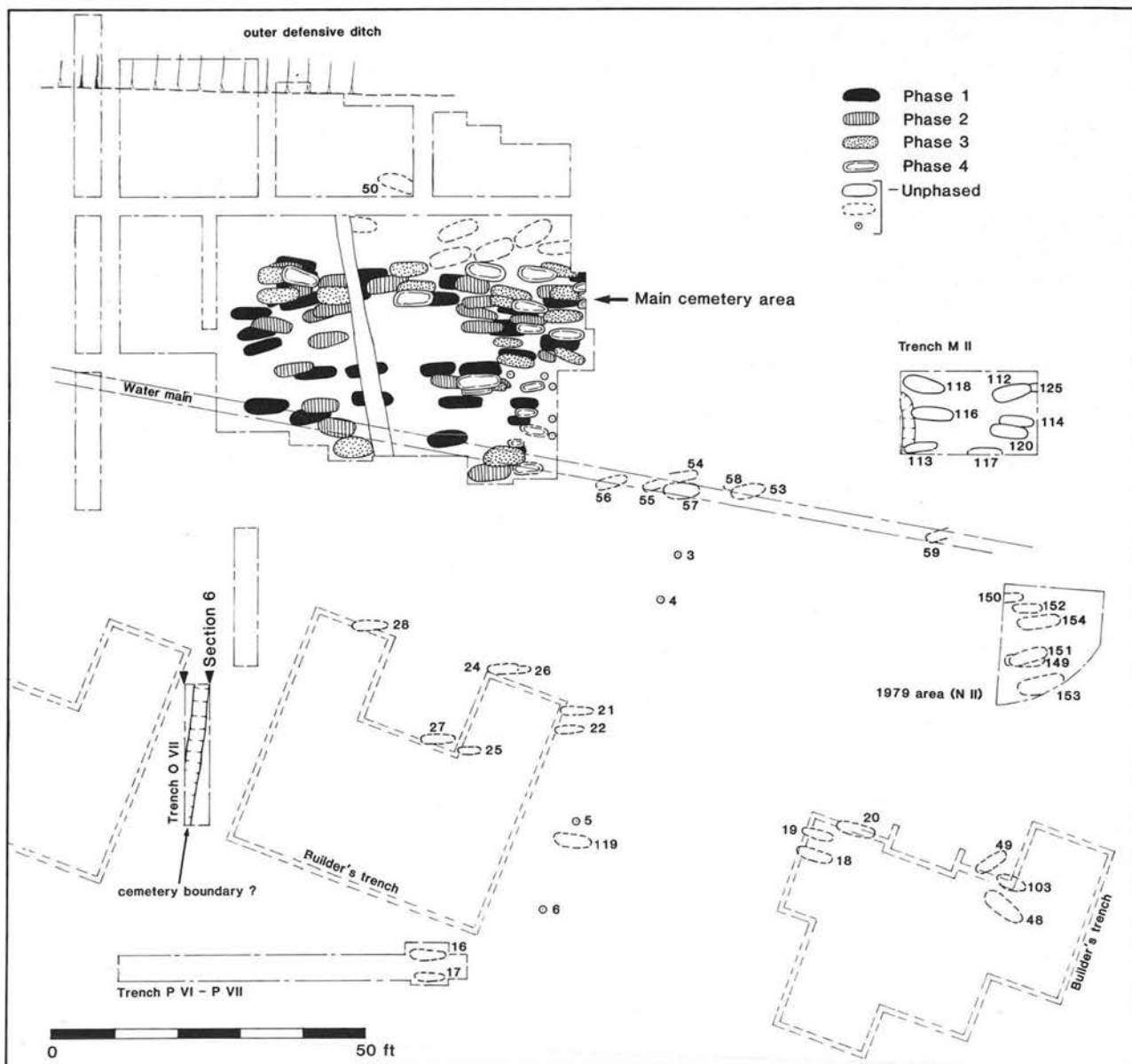


Figure 25 Area 4: phased plan of the main cemetery area, also showing the positions and numbers of burials outside the main area.

from the discoloured sand layer and a runic sceatta, c. 710–750 which ‘turned up at the same time and place’ (see *The Post-Roman Coins*, No.5, below).

In 1946 further burials were found in the locality when bungalows were constructed on the south side of the Norwich Road (Green, n.d., 12), but no more information is recorded.

#### Area 4

In 1947 Rumbelow and A.J. Morris carried out test excavations in the field south of the Norwich Road almost opposite Brooke Avenue. Between January and July they excavated seven burials in the hope of providing a date for the cemetery, which they believed to be a single entity, and whose post-Roman date had not then been established. Photographs and notes were taken but no plans were made. However, in 1954 Green discovered several empty graves

in the north-east corner of LV (Pl.XI), which he identified as the 1947 burials. Skeletal fragments, such as atlas vertebrae and finger bones which had been missed, made it clear that they had formerly contained inhumations.

The burials were all supine and extended with feet to the east. Three were complete and the remainder disturbed by various agencies including other burials. One of the skulls was supported by two large stones; another burial had several large pebbles over the feet, and a third was described as being ‘hunched up’ in the grave. There were no finds except for some sherds of Roman pottery in the grave fills. One of the skeletons was identified by Professor F. Wood Jones as a robust male of well over fifty years.

In 1954 when digging test-trenches to locate the harbour road, Green discovered more burials in this area. He subsequently excavated some 2240sq ft of cemetery prior to the straightening of the Norwich Road, which threatened

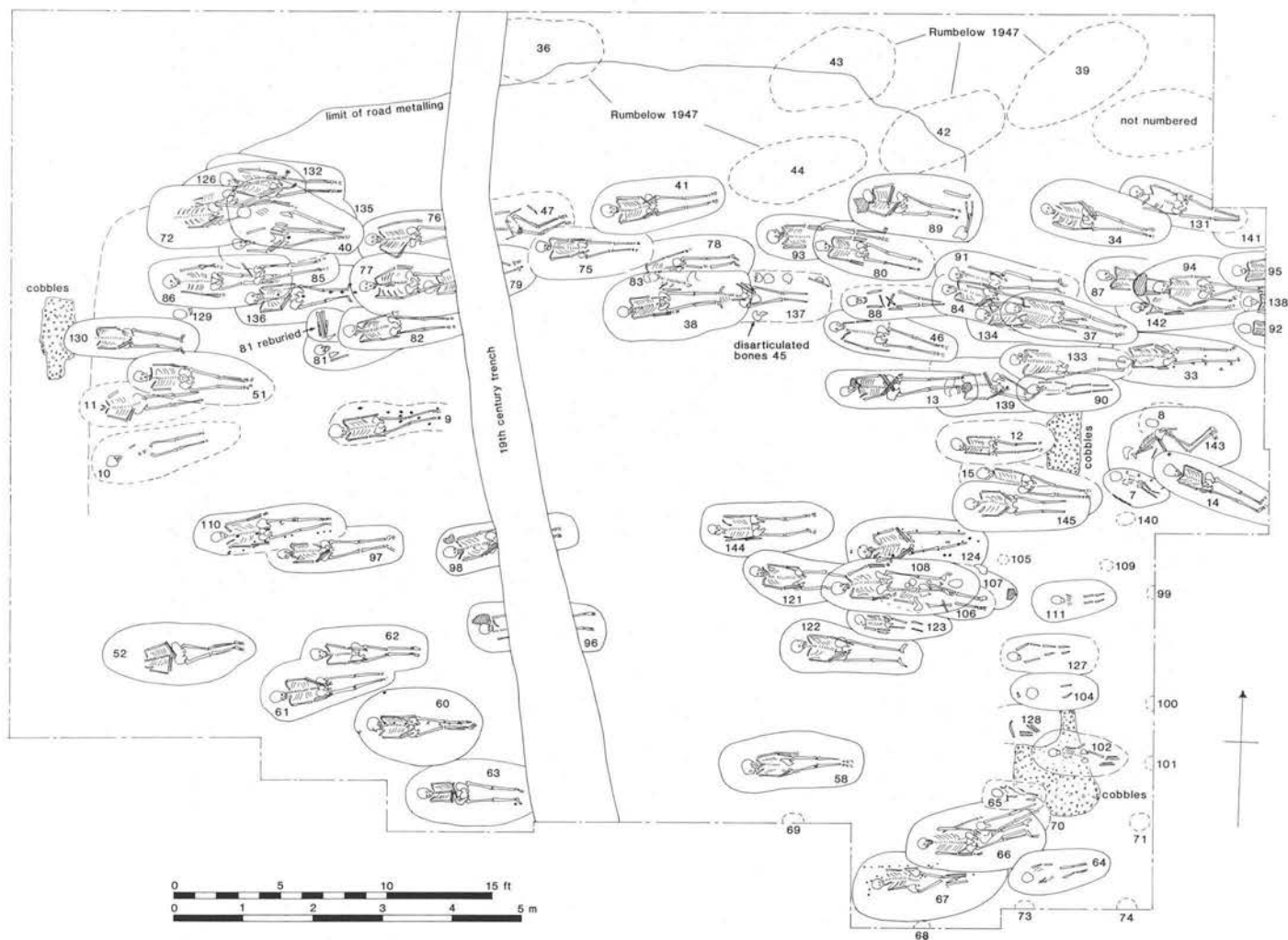


Figure 26 Area 4; plan of the main cemetery area. Scale 1:100.

part of the site. He also recorded burials found by builders in house and fence foundations, and in a watermain trench, giving a total of 147 numbered inhumations.

No further burials were recorded in this locality until 1979, when seven were discovered in laying gas pipes in the garden of 29 Norwich Road. They were excavated by A. McEwen for the Great Yarmouth Archaeological Society and are described with Green's excavations (Nos 148-54).

#### The Area 4 Cemetery

(Figs 25-37 (34-7 on microfiche); Tables 1-5 (microfiche); Pls XI-XXIX)

##### Recording and method of excavation

The cemetery was recorded in some detail; all excavated burials were drawn at a scale of 1:24, and a master plan of the main trench (L/MV-VII), phased in colour was produced. All the 'boat burials' were drawn at 1:12 and the clench nails plotted three-dimensionally. Over 100 photographs were taken, there are two notebooks, and a tabulated list of 147 burials. This numbering has been used in the present report; the burials found in 1979 have been added to it (148-54), and there is a supplementary group (A-G) of burials excavated by Rumbelow and re-excavated by Green which are included in the total but which cannot be

individually identified. Information on all numbered burials is summarized in Table 1 (microfiche).

Excavation proceeded outwards from the trial trench. Grid squares LV, LVI and part of LVII were cleared (Pls XI-XII), initially with 3ft baulks between them, and squares to the north and west were opened but discontinued when there were found to be outside the cemetery area. To the south squares MV-VII were partially cleared to include the line of a projected watermain trench, but the 3ft baulk separating them from the trial trench was only removed towards the end of the excavation. The trial trench PVI-VII was not enlarged, but part of MII was excavated. Burials discovered in the watermain and builders' trenches were noted but not systematically excavated except for G57, a boat burial.

Within the area LV-VII all burials were fully excavated and the surface of the underlying Roman road exposed (Pl.XIII). The only exception was G141. Squares MVI/VII appear also to have been fully excavated (there are no general photographs), but several burials on the east of MV were numbered but neither planned nor excavated (G99-101, 105, 109, 140), and these may have concealed others.

The trenches were entirely excavated by hand. After the ploughsoil was removed, the surface was trowelled over to locate potential grave outlines, and any which could be identified were numbered even if they later proved nega-



Plate XI General view of the cemetery, Area 4, LV-VII, looking west. Scales in feet.



Plate XII As Plate XI, but looking west.

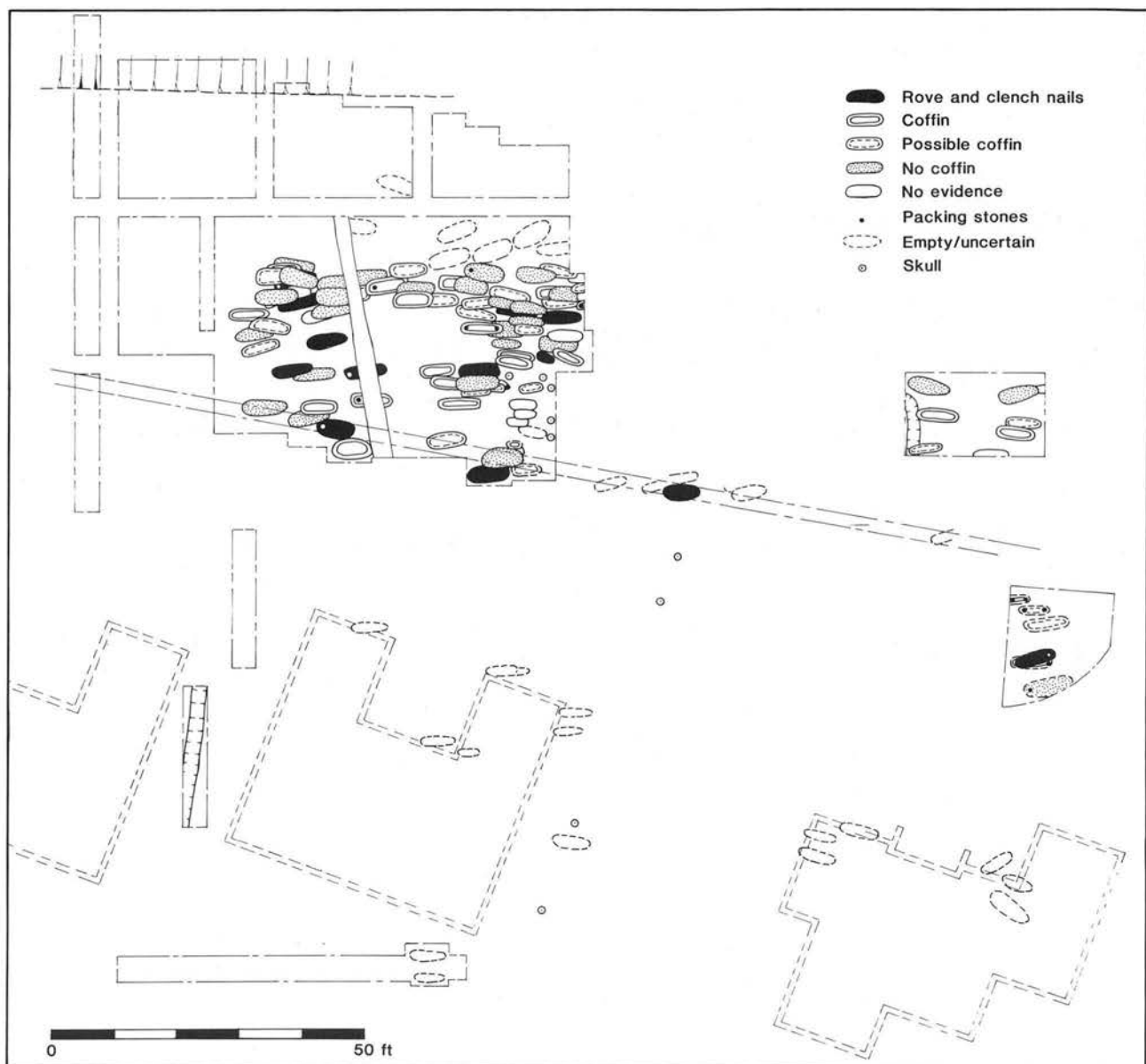


Figure 27 Area 4; burial types.

tive. There were no obvious colour differences to distinguish grave cuts in the main area, but Green noted that there were minor differences in texture and 'small-pebble' lines; also that grave areas were moister than their surroundings, a phenomenon which could be traced from turf level where burials appeared in section. In MII, which was higher and more denuded by ploughing than the main area, some graves (e.g. G118) could be defined by colour alone.

Areas where grave outlines could not be defined at a high level were taken down in spits, generally 5ft wide, until burials were encountered. These areas usually proved to be heavily intercut so that individual outlines were impossible to discern. In a few graves the size of the cut was indicated by the disposition of disarticulated bone within the fill (e.g. G86, G89 (Pl.XV), G137), showing that they were up to 3ft wide. When a grave was defined, the skeleton was cleaned, planned and usually photographed. They were not always lifted immediately but left in the ground for general photographs.

The shallowest graves were just below the ploughsoil and the deepest those cut into the Roman roadside ditches, e.g. G142, a range of c. 2ft to c. 4ft below the surface. However, no absolute depths were recorded, and the information in Table 1 has been extrapolated from notebook references such as 'this was lying high in the soil' or 'grave cut into and below road surface', from photographs, and from the road section (Fig.23, section 5). The majority of burials were on or slightly above the road metalling.

#### Phasing

The degree of intercutting (Fig.25) indicates that the cemetery was in use for a considerable length of time. Green divided the burials into four phases on a coloured plan, but left no other indications as to how this sequence had been arrived at. For this report the graves have been phased without initial reference to Green's conclusions. A matrix (Fig.37) was constructed as a basis for relationships; depth was also a guide, as the latest burials were the shallowest.

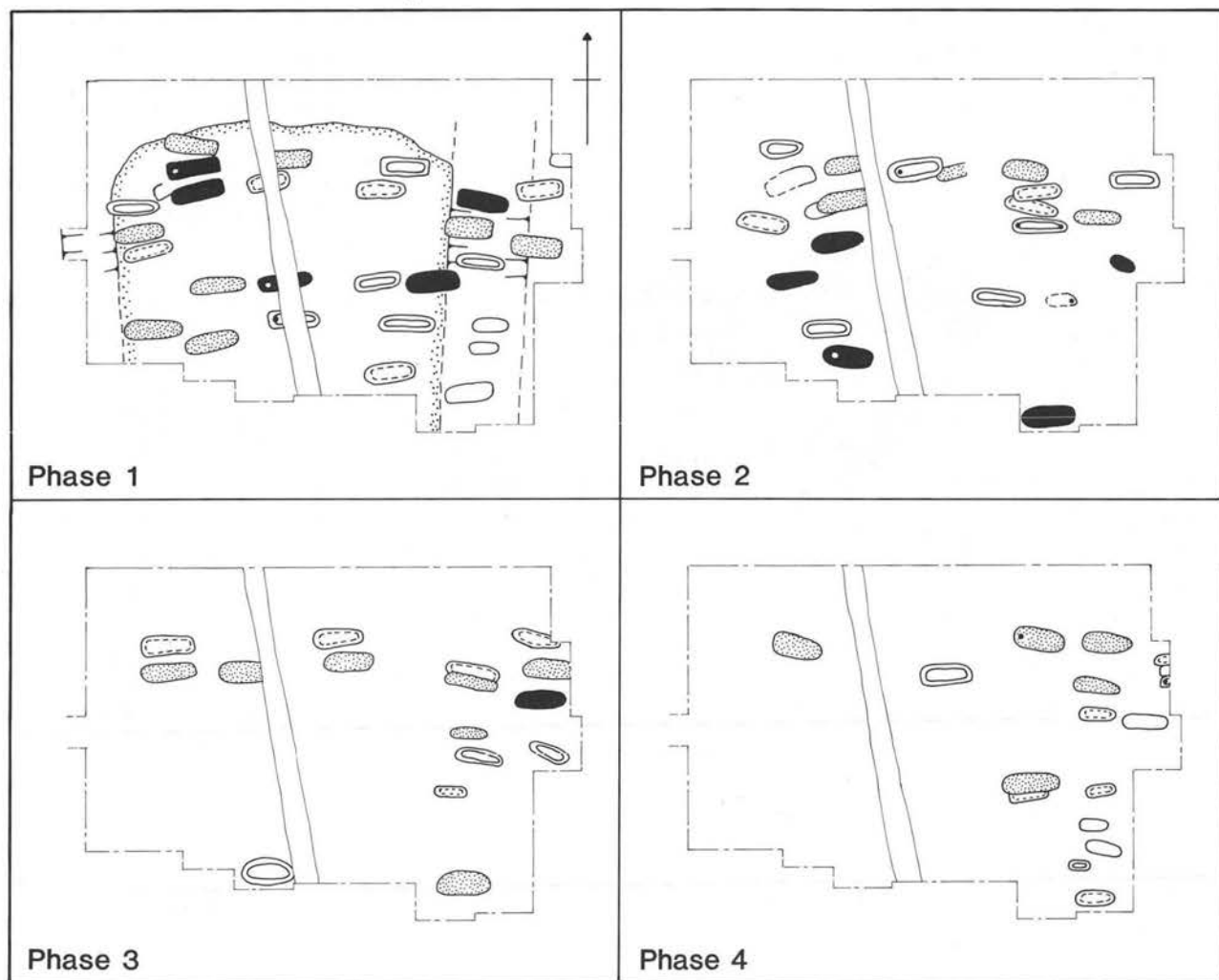


Figure 28 Area 4; burial types by phase in the main cemetery area. Key as for Figure 27.

For isolated graves less tangible factors such as grouping, alignment, and position within the overall distribution pattern were considered, together with what little direct dating evidence there was. Outside the main area there was not enough evidence to allow satisfactory phasing.

The cemetery could again be divided into four phases (Fig.26), although there was some variation from Green's results. Out of a total of eighty-two burials, forty-nine (59.7%) were ascribed to the same phase, twenty-two were altered for stratigraphic reasons, but the remaining eleven could validly be assigned to more than one phase. However, both models reveal the same trends in the burial pattern; graves were more numerous and were distributed across the whole of the excavated area in the first two phases, becoming sparser in phase 3, and being confined mainly to the east end in phase 4.

#### *Burial types*

Although there were no grave goods, there was a considerable range both of skeletal posture and burial features, such as pillow stones or clench nails.

#### *Skeletal posture*

(Pls XIV–XXII)

A few burials were flexed and lay on their sides (e.g. G143, Pl.XIV), but the majority were supine and extended. The greatest variation was in the disposition of the arms, which could assume the following positions:

- 1) Flexed, so that the whole arm projected from the body, e.g. G89 (Pl.XV)
- 2) Flexed over the pelvis, with the upper arms close against the body, e.g. G60 (Pl.XVI)
- 3) Lower arms crossed over the waist, e.g. G63 (Pl.XVII)
- 4) Straight arms either a) close to the body, e.g. G134 (Pl.XVIII), b) slightly splayed, e.g. G80 (Pl.XV)
- 5) Mixed, e.g. left arm straight, right arm flexed over pelvis, e.g. G136 (Pl.XIX)

This information is summarized in Table 1. It was also observed that some skeletons were very much more compactly laid out than others. Burials with arm positions 1 and 4b (e.g. G76, 77, 89) displayed no restrictions, but those in positions 2, 3 and 4a had compressed rib cages and hunched shoulder blades and upper arms (e.g. G33, 63). Rumbelow noted that one of the burials excavated in 1947 was of this type.



Figure 29 Area 4; burial orientation.

A few burials appeared to be disturbed, in that many of the bones had twisted out of position. Examples are G67 (Pl.XX), G150 (Pl.XXI), or most strikingly the infant G65 (Pl.XXII) where the majority of bones were jumbled. Green suggested that this was due to plough damage (it was a shallow grave), but he was unable to account for G67.

Comparison with another excavated cemetery makes it clear that these phenomena are indicative of burial in coffins. In the pre-11th-century graveyard at St Peter's Church, Barton-upon-Humber, there were numerous examples, ranging through a continuous gradient of conditions from those directly comparable to Caister, with no surviving wood, to waterlogged, perfectly preserved coffins (Rodwell and Rodwell 1982, 310-12). These demonstrated that coffins were normally constructed without nails and held together with wooden pegs. The compressed appearance of many burials can be seen to reflect the constraints of coffin boards, and the displaced

bones, movement within a void after burial and before the decay of the wood (Rodwell and Rodwell 1982, pl.XLIII).

Each of the Caister burials was therefore assessed for evidence of a coffin, a process facilitated by the large number of photographs (Table 1). They ranged from clear coffin burials to equally clear uncoffined burials via an indeterminate central group with no strongly marked characteristics (Fig.27). Occasionally there were other kinds of evidence, such as surviving wood traces.

#### *Clench nails*

(Pls XXIII-XXVI, cf. XVI, XVIII-XX)

Thirteen burials contained clench nails; one was excavated in 1979 and the remainder by Green. There were also a few residual examples. Each clench nail consisted of a square shank c. 30-40mm long with a flat head c. 20mm in diameter. The point was clenched over a diamond-shaped rove c. 25 by 35mm across the corners (Fig.78, No.499).





Figure 30 Area 4; sex of burials.

Average dimensions are given in Table 2. In some graves they were very uniform in size (e.g. G37, 60, 110), but in others there was a lot of variation (e.g. G9, 67). Numbers within a burial also ranged from two to thirty-seven, although the majority contained between five and fifteen. The most frequent arrangement was in a row down the centre of the grave over the skeleton, and they were usually vertical with the head uppermost. The exception was G136 (Fig.31), where the nails rested on the bottom of the grave and were rove uppermost. Patterns were more complex in the burials with larger numbers of nails (Fig.32). There were two rows in G110 and in G67, which also had a lateral row at the head of the grave. Grave 124 had three rows, one of which appears to have fallen from a central position, but the nails in G9 and 57 do not form a coherent pattern. However, about half the total from the former, which was the first burial of this type to be found, were not plotted. Many of the nails were spaced at regular intervals, usually c. 150–180mm, but in G33 this was 300mm.

Mineralised wood was preserved in contact with individual clench nails and proved to be of two varieties; oak, from boards with grain running at right angles to the nail shank, and hazel, whose grain ran parallel to the shank on one or two faces only. On well-preserved examples (e.g. from G124) it could be seen that the hazel took the form of twigs, inserted as wedges into a pre-drilled hole, and through which the nails were driven. In one instance the projecting end of a twig had been splintered and flattened beneath the nail head. Eight burials had good evidence for wedges, they were clearly absent from G110, and the remainder were indeterminate or unavailable for study. This technique implies that two timbers were being securely joined, but the evidence for separate boards was rather slight, perhaps because the joint was compressed. It was at its best in G67, where the boards were c. 15mm thick. The interpretation of this type of burial is considered below (p.254).

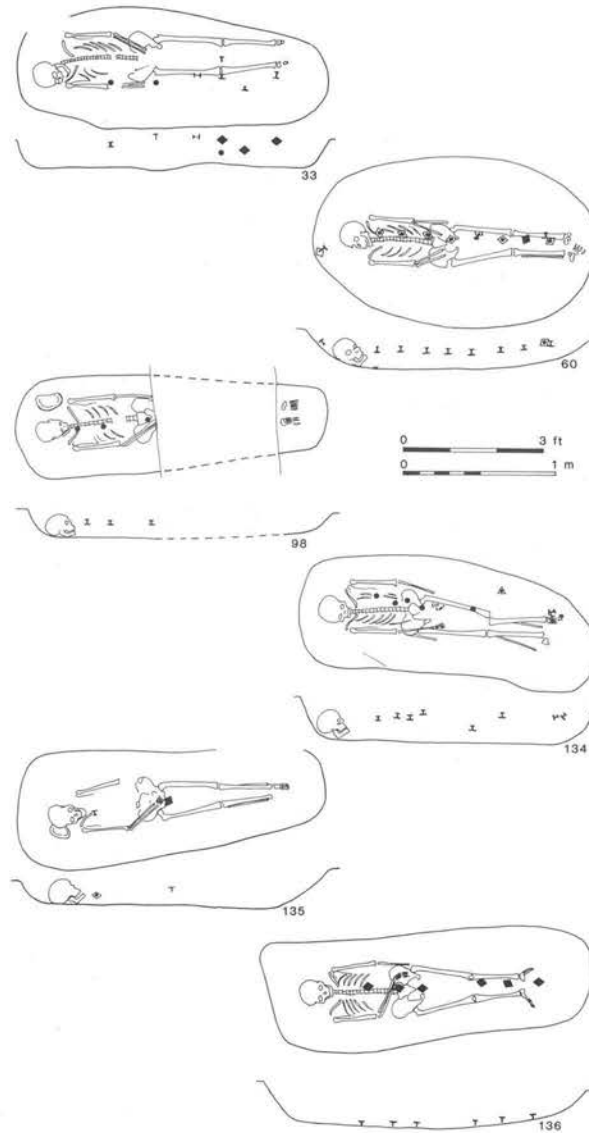


Figure 31 Area 4; plans and sections of burials with a single row of clench nails. Scale 1:50.

#### Other features

(Pls XXVII–XXIX, cf. XI, XV, XVI, XXI)

'Packing stones' were a feature of at least sixteen burials. These usually took the form of one or two large flint pebbles placed either side of the skull (e.g. G60, Pl.XVI; G96, Pl.XXXVII; G150, Pl.XXI), although Roman tile was also used (G89, Pl.XV). Occasionally flints were placed over the feet (e.g. G149, G151); one of Rumbelow's burials seems to have been of this type. A few burials had stones at both head and feet (e.g. G13, G152), and G150 (Pl.XXI) also had a large pebble in the pelvic region. Here the stones had clearly been placed within a coffin.

A noticeable trait, even in those burials without packing stones was the way the skulls appeared to have been propped to face forward (Pl.XI). This was even remarked upon by builders who described the skulls of G3, 4 and 5 as being nearly vertical and propped up on stones.

The only burial to contain structural ironwork other than clench nails was G116, where a pair of narrow plates, riveted at top and bottom (Pl.XXVIII) stood upright on the

grave bottom next to the pelvis. This may have been used to mend a split coffin board, or may have been included by chance on a re-used timber.

Green makes no reference to coffin stains, but does note the occurrence of flecks of charred wood in a number of graves (e.g. G116, 120, 126). This was identified in one instance as oak (G92), and indicates that, as at Barton-upon-Humber (Rodwell and Rodwell 1982, 301) coffins were constructed of charred oak boards. Charring, which takes place before the timbers were worked, prolongs their life in the soil. G66 appears to have been covered with a plank, which is clearly outlined as a soilmark on Plate XX. Unfortunately there is no reference to it in the notebook, so that it is not known how it was defined. In Plate XXV the plank has been removed to expose a skeleton angled at the pelvis, so that it could not have been contained within a coffin.

The only burial to have clear evidence for a grave marker was G94 (Pl.XXIX), where there was a stone at the head of the grave. It is not described in the notebook, but

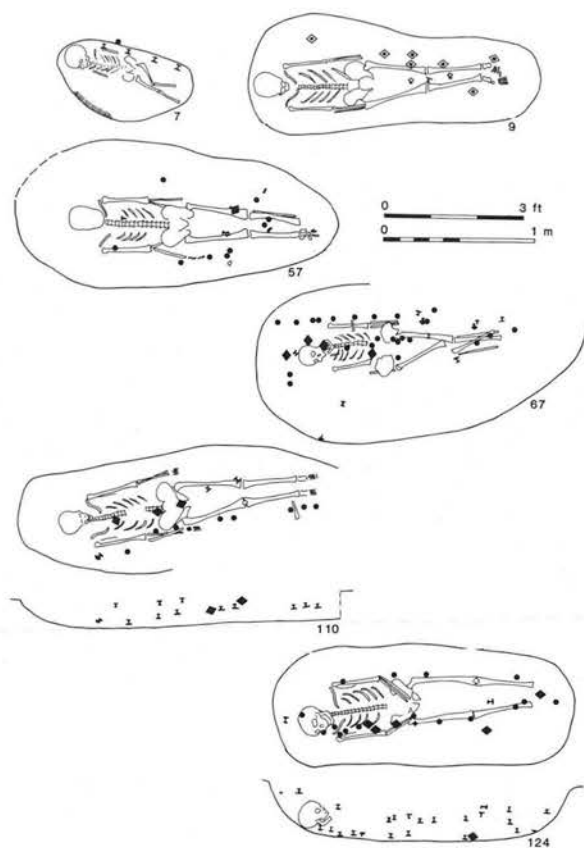


Figure 32 Area 4; plans and sections of burials with multiple rows of clench nails. Scale 1:50.

is recorded in the burial register as flint. However, the photographic evidence suggests that it is rather too large and irregular, and gives the appearance that it is the broken-off base of a standing stone.

### Boundaries

(Fig.33)

The excavations in Area 4 established the north and west limits of the cemetery and indicated that G16 and 17 were close to its southern edge. The line of the outer defensive ditch appears to have been the northern boundary, but the western side was enclosed by a fence. This was represented by a steep-sided gully *c.* 2ft wide in trench OVII. It had a clayey fill and the section (Fig.33) suggests that the trench, which had been recut three times, had held posts. It contained only Roman material. This feature was not located elsewhere; it should have passed through trenches LVII and KVII, but neither appear to have been excavated beyond the base of the ploughsoil.

After the cemetery went out of use the area was cultivated until the development of the 1950s. The only disturbance was a 19th-century drain, which severed some of the burials (Fig.25).

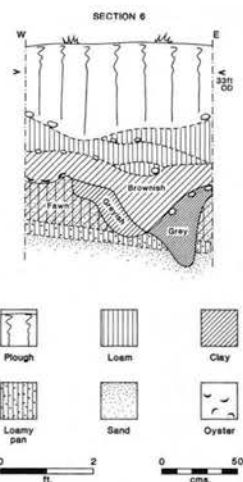


Figure 33 Area 4; section across the cemetery boundary, Section 6, Grid OVII. Scale 1:50.



Plate XIII The harbour road, Area 4,  
LV-VII, looking west. Scale in feet.

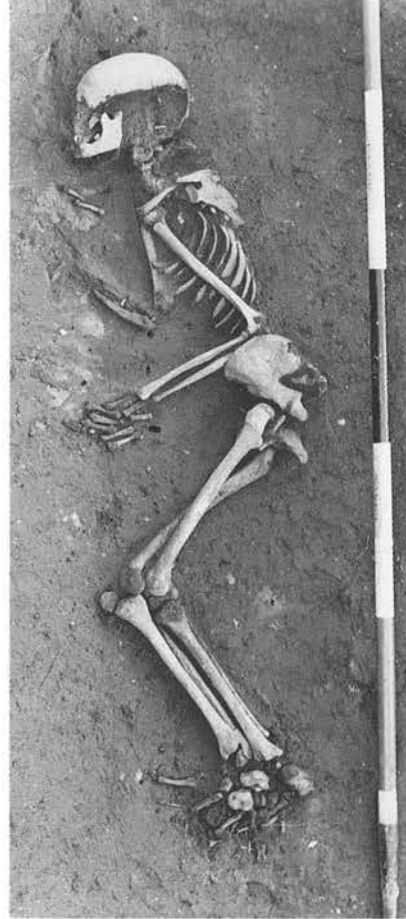


Plate XIV G143. Scale in feet.



Plate XV G89 (right), G80 (centre) overlying G93, and G88 (left). Scale in feet.



Plate XVI G60, with clench nails marked and  
flint packing stone by skull.

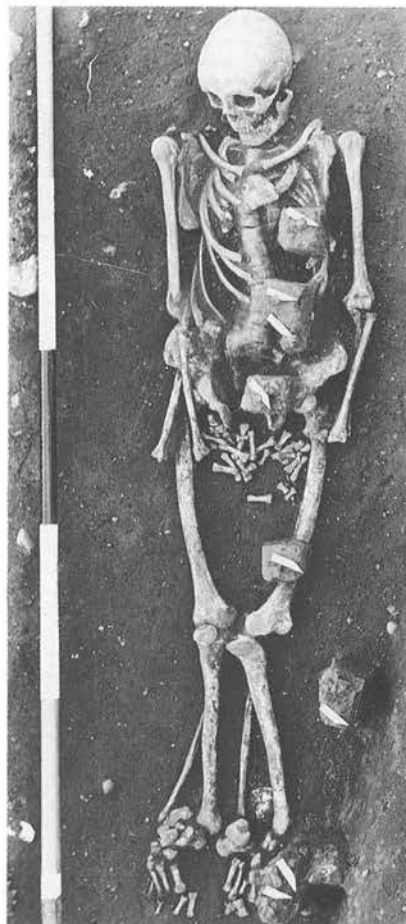


Plate XVII G63, constrained  
by a coffin. Scale in feet.



Plate XVIII G134, with a central  
line of clench nails. Scale in feet.



Plate XIX G136, with a central line of clench nails. Scale in feet.

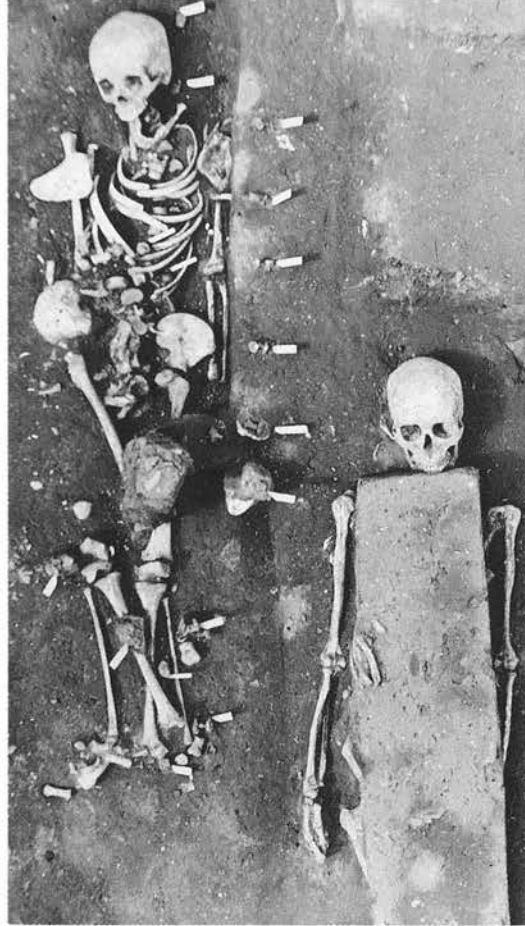


Plate XX G66 (right) with soilmark of plank and G67 (left) with bones displaced in a coffin and clench nails marked.



Plate XXI G150 with some bone displaced in a coffin and flints at head and foot.

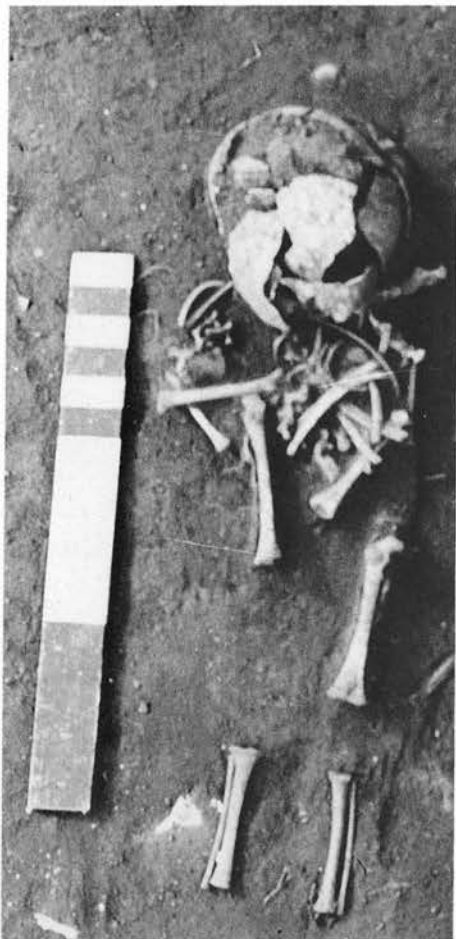


Plate XXII G65, an infant with bones displaced in a coffin. Scale in 1in and 6in.



Plate XXIII G7, a child with four clenched nails along left side. Scale in 1in and 6in.



Plate XXIV G33, with clenched nails marked. Scale in feet.

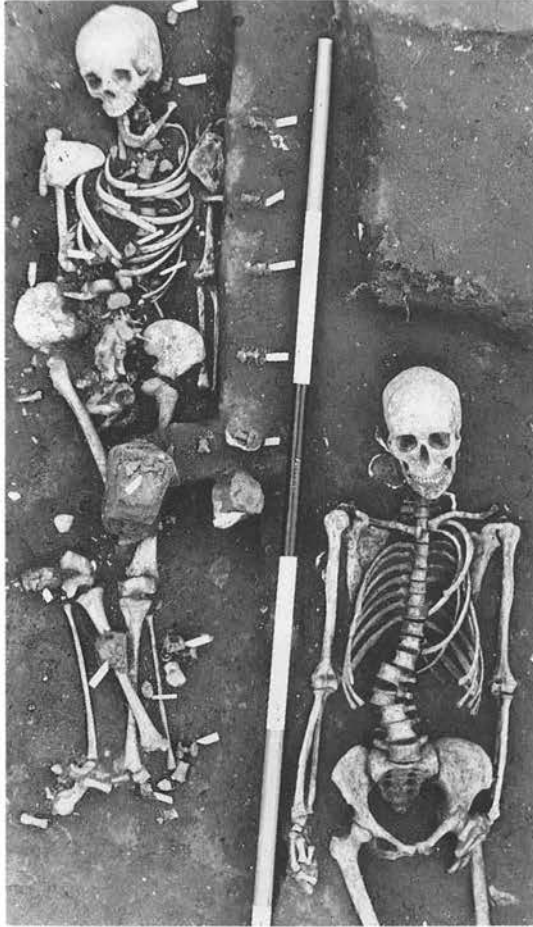


Plate XXV G66 (right) with plank removed  
(see Pl.XX) and G67 (left). Scale in feet.



Plate XXVI G135; some bones have dissolved.  
Scale in feet.



Plate XXVII G96 with pillow stone and cut by a 19th  
century trench. Scale in 1in and 6in.





Plate XXVIII G116 with foetal bones and an iron cleat  
(Fig.78, No.500).



Plate XXIX G94 with a headstone, overlying G87.  
Scale in feet.

# Chapter 4. The Coins

## I. The Roman Coin Hoards

by Richard Reece  
(Tables 6, 7)

### Summary of hoard locations

For further notes on the positions of the coin hoards see Davies (below), and the appropriate sections of the excavation report. Detailed notes on the positions of the hoards are in the archive.

- Hoard 1: EIX, in the portico close to Wall 3 and Grave 2. In a broken shell-tempered pot (Fig.147, No.462), in a refuse-type layer overlying the remains of the walls of the portico. The associated pottery is mid- to late 4th century.
- Hoard 2: EVI, Room 1 south-west corner. In a mound of charred grain on the clay floor, between and below collapsed timbers and daub. LB 1638.
- Hoard 3: DXI, Room 5, spill in centre of room. LB 1010.
- Hoard 4: DVIII, Room 3, north-west sector, under roofing spill. Coins in 3in radius with black carbonized matter, perhaps a cloth purse.
- Hoard 5: DVIII, Room 3, north-west sector, under roofing spill. Coins in 2in diameter.
- Hoard 6: EIX, west end of portico. Coins in 4in radius. Lower refuse. LB 1872.
- Hoard 7: EIX, west side of portico. Coins in 12in radius. Lower refuse. LB 1872.
- Hoard 8: Area 2, MI, north-west sector. Coins in 6in radius.
- Hoard 9: Area 2, MI, north end.
- Hoard 10: DX–XI, Room 5, east side. In oval hollow 9in by 18in. LB 2557.
- Hoard 11: DX–XI, Room 5. Transverse hypocaust channel, dark upper fill, west end over collapsed floor. LB 2548.
- Hoard 12: DX–XI, Room 5. Transverse hypocaust channel, mid/lower filling, west end with fallen floor. LB 2571.

### Summary catalogue

#### Abbreviations

- HK, CK Carson, R.A.G., Hill, P.V. and Kent, J.P.C., 1960, *Late Roman Bronze Coinage*, HK Part I; CK Part II
- RIC Mattingly, H., Sydenham, E.A., Sutherland, C.H.V. and Carson, R.A.G., 1923ff, *Roman Imperial Coinage*

**Hoard 1.** 24 coins. Possible date of deposition c. 340–345. Latest coin 340.

House of Constantine

- 320–330 Regular RIC 7 Thessalonika 107, Cyzicus 34.  
330–335 Regular HK 537, 541, 556, 743, 747, 748(2), 836, 840, 1013.  
335–341 Regular HK as 413, as 435 but Constantine II, 691(2), 692(2), 770(2), 780, 847, 854(2).

**Hoard 2.** 86 coins. Possible date of deposition c. 340–345. Latest coin 340.

House of Constantine

330–335 Regular HK as 52.

Irregular HK of 48, of 49(4), as 49(4), of 50, as 50, of 51, of 52, as 52(8), of 57, of 66(4), of 180, of 181(4), of 182, of 185(6), of 190(2), of 191(3), as 542, of 651.

Hybrid HK obv. as 52/ rev. as 48.

335–341 Regular HK 88(2), as 88, 92, 93(4), as 93, 94(2), 95(2), 104, 108, as 108, 112(4), 113(4), as 113(5), 126, 127(2), 129, 228, 400.

Irregular HK as 87, of 88, of 89.

Hybrid HK obv. as 52/ rev. of 222.

**Hoard 3.** 14 coins. Possible date of deposition c. 337–345. Latest coin 337.

House of Constantine

- 330–335 Irregular HK as 49(2), of 50, of 52(2), of 66, of 182, of 185(2), of 191, of 200(2).  
335–341 Regular HK 92, 238.

**Hoard 4.** 26 coins. Possible date of deposition c. 340–345. Latest coin 340.

House of Constantine

- 330–335 Irregular HK of 51(2), as 51(2), as 52(7), of 59, of 65, of 70, of 181, of 185(3), of 191(2), of 372.  
Hybrids HK obv. as 49/ rev. as 52; obv. as 51/ rev. of 185.  
335–341 Irregular HK as 87, as 90, as 112.

**Hoard 5.** 8 coins. Possible date of deposition c. 340–345. Latest coin 337.

House of Constantine

- 330–335 Irregular HK of 52, as 52, of 65, of 185(2).  
335–341 Irregular HK as 87, as 88.  
Illegible disintegrated.

**Hoard 6.** 15 coins. Possible date of deposition c. 340–345. Latest coin 337.

House of Constantine

- 330–335 Irregular HK of 51, as 51, as 52(2), of 181, of 185(3), of 191(2).  
Hybrid HK obv. as 52/ rev. of 190.  
335–341 Irregular HK as 87(3), as 112.

**Hoard 7.** 14 coins. Possible date of deposition c. 340–345. Latest coin 337.

Barbarous radiate

270–290 Irregular Obv. as Victorinus/rev. as Pax.

House of Constantine

- 330–335 Irregular HK as 48, of 49, as 51, of 52, as 52(4), of 185, as 185, of 187.  
Hybrid HK obv. as 51/ rev. of 52.  
335–341 Irregular HK as 87.

**Hoard 8.** 5 coins. Possible date of deposition c. 300. Latest coin 296.

Salonina

260–268 RIC (Sole) 24.

Claudius II

268–270 RIC as 63 but Libertas holding cap and sceptre.

Carausius

286–293 RIC 101 very poor style, 118- S/P/MLXXI.

Allectus

293–296 RIC 86.

**Hoard 9.** 16 coins. Possible date of deposition c. 310. Latest coin 308.

Lucilla

160–180 Halved Sestertius RIC (M.Aurel) 1751.

Claudius II

268–270 RIC 14, 109, 266.

Barbarous radiates

270–290 Obverses as Victorinus rev. as Victoria Tetricus I revs. as Invictus, Pax(3), Salus(2), Blank. Tetricus II revs. as Pax, Implements, Spes.

Maximian I Herc.

307–309 *RIC* 6 London as 52b but obv. ends PFAV, poor flan.

**Hoard 10.** 10 coins. Possible date of deposition *c.* 335–345. Latest coin 337.

House of Constantine

330–335 Irregular HK as 48(2), as 49, as 51, as 52(3), of 185, of 356.

335–341 Irregular HK as 87.

**Hoard 11.** 31 coins. Possible date of deposition 350–360. Latest coins 337 + 1 of 354.

House of Constantine

330–335 Regular HK 546.

Irregular HK of 48, of 49, as 49(2), of 51(2), as 51(5), of 52(2), as 52(3), of 55, of 181(2), of 184, of 185, of 190, of 201.

Hybrid HK obv. as 51/rev. as 52.

335–341 Regular HK as 90, as 108, as 112, as 113.

335–341 Irregular HK as 87.

350–355 Irregular CK as 25.

**Hoard 12.** 20 coins. Possible date of deposition *c.* 345–355. Latest coins 337 + 1 of 345.

Barbarous radiate

270–290 Irregular Obv. as Tetricus I/rev. as Spes.

House of Constantine

330–335 Regular HK 395.

Irregular HK of 48, of 51, as 51(2), of 52, as 52(3), of 65, of 66, of 180, of 181(2), of 184, of 185, of 191.

335–341 Regular HK as 90. 345–348 Irregular HK of 257.

A brief explanation is needed for the way that the hoards have been set out. A rough date has been given to each hoard solely on the basis of the coins contained in that hoard with no reference to the other hoards. These hoards will be considered further below both as to date, and to description. As listed, the coins have been divided into regular coins direct from one of the continental mints, and what are assumed to be copies made in Britain. For the coins of 330 to 335 this distinction was fairly easy to make and may, I think, be relied upon as repeatable by other workers. For the coins struck after 335 the matter is much

more complicated, as M. Hammerson has recently pointed out, by the decline in the standard of the regular coins, and the apparent rise in standard of the copies. In this I have erred on the side of regularity, thus only those coins which were clearly irregular at this date have been so described. Many of the coins listed as regular are near a borderline, and may have been set down on the wrong side. Finally, the term ‘as’ has been applied both to regular coins and to copies to show that, so far as could be seen, the coin was accurately represented by that reference, but all its details could not be seen. The term ‘of’ means that the coin is a direct and accurate copy of a particular reference number.

Before the discussion of the hoards two further summaries of evidence may be set down in table form. Table 6 gives a summary of the different issues, regular and irregular, in the ten Constantinian hoards. Table 7 gives the diameters of the coins in the different hoards.

### Discussion

The twelve hoards can immediately be divided into two groups. Hoards 8 and 9 belong to the end of the radiate period of coinage and were presumably hidden before the quick decline of the main silvered-bronze coin minted from 294 onwards. The other ten hoards consist of coins which are all very similar, although Hoards 11 and 12 have single later coins which would at first seem to give those two hoards later dates than the rest.

The ten hoards all consist of coins struck between 330 and 340 and all except Hoard 1 contain copies of those coins. Hoard 1 is a complete exception for not only are all its coins regular, but they all come from mints further away than Trier, the main source of the other hoards. It seems likely that Hoard 1 was put together outside Britain, and the mint-marks present would suggest an origin somewhere to the north or east of modern Italy. On present knowledge it is quite impossible that this hoard was put

Issues	Hoard										Total	
	1	2	3	4	5	6	7	10	11	12		
Radiates (Regular=R)	-	-	-	-	-	-	-	-	-	-	-	-
Radiates (Irregular=I)	-	-	-	-	-	-	1	-	-	-	1	2
320-330 R	2	-	-	-	-	-	-	-	-	-	-	2
320-330 I	-	-	-	-	-	-	-	-	-	-	-	-
Urbs Roma R	2	-	-	-	-	-	-	-	1	-	-	3
Urbs Roma I	-	5	3	7	1	4	2	1	9	5	37	
Constantinopolis R	1	1	-	-	-	-	-	-	-	-	2	
Constantinopolis I	-	20	5	13	3	5	6	5	7	7	71	
Gloria Exercitus 2S R	7	-	-	-	-	-	-	-	-	1	8	
Gloria Exercitus 2S I	-	20	4	1	-	1	3	3	7	4	43	
Gloria Exercitus 1S R	12	20	1	-	-	-	-	-	2	1	36	
Gloria Exercitus 1S I	-	3	-	2	2	3	1	1	1	-	14	
Aeterna Pietas R	-	-	1	-	-	-	-	-	-	-	1	
Helena R	-	5	-	-	-	-	-	-	1	-	6	
Helena I	-	-	-	1	-	1	-	-	-	-	2	
Theodora R	-	10	-	-	-	-	-	-	1	-	11	
Victoriae DD Augg I	-	-	-	-	-	-	-	-	-	1	-	
Fel Temp FH I	-	-	-	-	-	-	-	-	1	-	1	
Hybrids	-	2	-	2	1	1	1	-	1	-	8	
Illegible	-	-	-	-	1	-	-	-	-	-	1	
Totals	24	86	14	26	8	15	14	10	31	20	248	

Table 6 Roman coin hoards, summary of issues.

Diameters (mm)	Hoard											Total
	1	2	3	4	5	6	7	10	11	12		
Disintegrated	-	-	-	-	1	-	-	-	-	-	-	1
8.5	-	-	-	-	-	1	1	-	-	-	-	2
9.0	-	-	-	-	-	1	2	-	-	-	-	3
9.5	-	-	-	-	-	-	-	-	-	-	-	-
10.0	-	-	-	2	-	-	-	-	-	-	-	2
10.5	-	-	-	2	-	-	1	-	-	-	-	3
11.0	-	-	-	-	-	4	1	-	-	-	-	5
11.5	-	-	-	-	1	2	1	-	-	-	-	4
12.0	-	-	-	2	-	2	1	-	-	-	-	5
12.5	-	-	-	5	2	1	2	-	-	-	-	10
13.0	-	3	1	4	2	2	2	-	2	1	-	17
13.5	-	5	2	4	-	1	-	1	2	6	-	21
14.0	-	10	1	2	-	-	1	3	6	2	-	2
14.5	1	16	2	2	2	1	2	-	5	3	-	34
15.0	1	18	3	2	-	-	-	2	6	5	-	37
15.5	1	21	3	-	-	-	-	3	2	-	-	30
16.0	4	6	-	-	-	-	-	1	1	2	-	14
16.5	2	4	2	-	-	-	-	-	4	-	-	12
17.0	3	2	-	1	-	-	-	-	1	-	-	7
17.5	2	-	-	-	-	-	-	-	1	-	-	3
18.0	7	1	-	-	-	-	-	-	1	-	-	9
18.5	2	-	-	-	-	-	-	-	-	-	-	2
19.0	1	-	-	-	-	-	-	-	1	-	-	2
Mean	17	15	15	13	13	11.5	12	15	15	14.5	-	14.5

Table 7 Roman coin hoards, diameters.

together in Britain and it is totally unlike the pool of coinage available for hoarding in Britain in the 330s and 340s. It must therefore be a purse of coins brought into Britain and kept intact until its loss or deposition somewhere around 340. One feature which it does share with all the other hoards is the absence of coins minted after the death of Constantine II in 340. These coins are not uncommon in Britain, or the continent, and there is therefore no *a priori* reason, if the hoards were still unburied after 340, why such coins should not have been included in them.

There are two ways in which the remaining nine hoards may be divided up. The fact that Hoards 11 and 12 contain coins later than the general run has already been mentioned and this could be used to place these hoards into two groups, so that Hoards 11 and 12 were buried *c.* 345–355, and Hoards 2–7 and 10 were buried *c.* 340–345. An alternative method would be to look at the diameters of the coins shown in Table 7. This information conflicts with the first divisions made. On all counts Hoard 1 may be removed; but of the remaining Hoards 2, 3, 10, 11 and 12 form a group with a mean diameter of *c.* 15mm, while Hoards 4–7 form a different group with mean diameters of 13mm or less. If there is any correspondence at all between the size of the copies struck, and the length of time that had elapsed between the arrival of the original and the striking of the copy, then Hoards 4–7 ought to be the latest hoards, despite the presence of the later coins in Hoards 11 and 12.

This raises the question of whether these hoards were all put aside from the same pool of coinage, or whether they were assembled in different places at different times. To try to answer this question a quick but thorough die study was

made of all the reverses in the hoards. No die links whatever were found, and in nearly every case it was possible to be sure that every single coin reverse came from a different die. These hoards are therefore certainly drawn from a very mixed pool of coinage, but no information is forthcoming as to whether all the hoards are drawn from the same pool. The matter of time, however, gives more information.

The issue with the legend *Gloria Exercitus* showing two soldiers holding one standard was struck for the three Augusti Constantine II, Constantius II and Constans, sons of Constantine the Great. The mint-marks used change several times between 337, when the three Augusti took office, and 340 when Constantine II died. After his death the two remaining Augusti continued to strike this issue, and used new mint-marks which are clearly recognizable as they are not shared by Constantine II. At a mint such as Arles there can be no doubt at all about the dating because the city was named after Constantine II, born there, as Constantia, and so marked its coins during his life-time. At his death it reverted to the signature of Arelate. These coins, later than 340 and the death of Constantine II are not rare in Britain, the issue from Trier with an M in the centre of the standard being well known. None of these coins occur in the hoards under discussion, and this is a point of peculiarity.

I have given two ways in which the hoards might be dated after 340; there is the matter of later coins, but these could be intrusive, and there is the matter of size, but this could be due to selection. We therefore have to consider several possibilities without any way of distinguishing

between them. The simplest method is to take the coins in each hoard at face value and to date each hoard by the latest coin in it. This would give us a date of *c.* 340 for Hoards 1–7 and 10, and a date of 355 for Hoard 11 and 346 for 12. The second method would be to take note of the size of the coins. This would give a date of 340 for Hoard 1, *c.* 343 for Hoards 2, 3, 10, 11 and 12, and *c.* 346 for Hoards 4–7. Finally we might take note of the absence of coins struck between the death of Constantine II and *c.* 345. This, in itself, suggests that the pool of coinage was closed off for some reason in 340. It may therefore be that the pool continued in use, but remained closed to the later issues of the 340s and 350s and that would make their absence from the hoards no matter of chronology. If the pool of Constantinian coinage did continue until about 354 then it may well have been completely invalidated at that date. There was a change in the coinage acceptable at that date, and evidence is accumulating that there is a division in the coinage at that time, with earlier coinage no longer acceptable to authority. A whole coin pool could therefore have been demonetized at one stroke, and, if it had been unconnected with the main stream for some ten years already, it might have continued in use in its own particular sphere for any reasonable length of time.

I have stressed that the only factual method of dating these coin hoards is the first method outlined above; anything else is speculation. My subjective feeling, for what it is worth, is based on a belief in the importance of the size of coins in the 4th-century usage, and the feeling that the large-scale loss of Constantinian coinage perhaps represents a failure in coin use rather than success. I therefore prefer the idea of a coin pool which closes at around 340, so far as the entry of new money is concerned, but which continues to use the restricted coins available, perhaps for another twenty years. This whole question seems to be tied up, in a way that I do not at present understand, with the feature that we call the Saxon Shore, for the years between 335 and 355 seem to be very important at Burgh Castle, Richborough, and Portchester, to deal only with excavated examples. It may be that these hoards tie in Caister to this chain of command and its fortunes as Stephen Johnson has suggested for the actual structure, and its use.

## II. The Roman Coins

by John A. Davies  
(Fig.38; Table 8)

### Site finds

Dr Reece has considered the Roman coin hoards from Caister in detail. Coins from the hoards, as identified by Charles Green, account for 269 of the 924 Roman coins from the site, or 30% of the total. The coins from the site as a whole will now be considered (see microfiche catalogue).

The Caister coins, as presented in the summary list (Table 8) and in Reece's discussion of the hoards, in turn based on Green's information, show two remarkable features. The first is the high number of (small) hoards present, datable to the mid-4th century. The second is the unusually large peak of site finds in period XIIIb (AD 330–348) as shown in Table 8, column 4. Both observations reflect much activity on the site during the same period. Coin hoards of the 4th century in Norfolk are, in general, not common. They tend to be found in the southern half of the county and do not exhibit a coastal distribution, in contrast

to late 3rd-century hoards. Ten recorded hoards, albeit individually small in size within a single coastal site, are accordingly of great interest.

Hoards of the mid-4th century in Britain are often large and range from several hundred coins to many thousands. Examples include those from Bishop's Wood (Staffordshire) with 17,090 coins, Hamble (Hampshire) and Chorleywood (Hertfordshire) with 2479 and 4352 coins respectively (Burnett 1979), and Bicester (Oxfordshire) with 440 coins (King 1981). However, hoards of this period could also be small in size. The same excavator, Charles Green, interpreted sixteen 4th-century hoards from his excavations at Burgh Castle (Hammerson 1983), fifteen of which have a similar date to the Caister hoards and several contain less than ten coins. Hoards of this period can be seen to vary greatly in size. The constituent coins were of base metal and while the larger hoards could be seen to have represented a store of wealth, the smallest hoards, as represented at Caister, may merely represent the contents of a purse. These hoards, as presented above, were interpreted as distinct deposits by the excavator. In view of the significance of this to an interpretation of the site, Green's evidence relating to the hoard discoveries will be reviewed here.

*Room 1.* A single hoard, No.2, was found here. Despite evidence of disturbance in the room this collection of eighty-six coins appears to be a genuine hoard. No container was found but the coins were discovered within a mound of charred grain and many were lightly cemented together. Just twelve other coins were found in Room 1 and these do not appear to have originated with the hoard.

*Room 3.* Hoard 4 has twenty-six coins. All were found close together and an associated deposit of very dark carbonized matter suggested that they were once held in an organic purse, which has since perished. Hoard 5, containing just eight coins from a very restricted area, appears genuine also. A third hoard, of the same mid-4th century date, was found in this room during building work in 1936 (Robertson 1936). At least sixty-one coins were discovered.

*Area EIX.* Hoard 1 contains twenty-four coins. This hoard was found together with a ceramic container (Fig.147, No.462) and although the pot was broken, the hoard appears to be complete and genuine. Hoards 6 and 7, of fifteen and fourteen coins respectively, were discovered within a short distance of each other and appear to be genuine hoards, with their coins coming from small, fairly compact, sources.

*Room 5.* This room presents a more difficult situation. Four hoards were recorded; Nos 3 (fourteen coins), 10 (ten coins), 11 (thirty-one coins) and 12 (twenty coins). Green's notes leave room for doubt regarding their status as four distinct hoards. They were neither found in containers, nor as tightly clustered units. The degree of disturbance associated with this room must pose serious questions as to whether these hoards can be considered as separate entities. All four groups contain coins of similar date. Hoards 3 and 10 terminate with coins of 337 while 11 and 12 would end at that date but each also includes solitary later issues of AD 354 and 345 respectively. In view of the disturbed contexts, both of these coins could easily be intrusive.

One hundred other coins were discovered in this room. A massive ninety-two of these are dated to period XIIIb in common with the contents of the four hoards. The only real overall explanation for this number must be that they

Period	Site finds	Site finds less Room 5 Period 13b	Casual finds	By-pass
III AD 69–96	1	1	-	-
IV 96–117	-	-	-	-
V 117–138	3	3	-	-
VI 138–161	2	2	-	-
VIIa 161–180	6	6	14 to	6 to
VIIb 180–192	-	-	period VIIb	period VIIb
VIII 192–222	8	8	8	6
IXa 222–238	8	8	3	-
IXb 238–259	6	6	5	-
X 259–275	83	83	63	11
XI 275–294	122	122	52	4
XII 294–317	21	21	22	9
XIIIa 317–330	25	25	16	14
XIIIb 330–348	269	177	66	13
XIV 348–364	28	28	13	10
XVa 364–378	17	17	22	2
XVb 378–388	2	2	-	-
XVI 388–402	2	2	-	-
	603	511	284	75
1st–2nd century	1	1	-	-
3rd–4th century	22	22	10	2
4th century	6	6	15	5
Illegible	23	23	11	2
	655	563	320	84

Table 8 Roman coins, summary.

represent part of a single dispersed hoard. It seems clear that a larger deposit originally concealed in Room 5 during the 340s or soon after was subsequently dispersed by the later Roman and post-Roman disturbances. This deposit could easily have contained the small Hoards 3, 10, 11 and 12, as well as the ninety-two site finds. These small groups remained roughly together until Green identified them as distinct hoards. On this basis the original deposit would have numbered 165 to 167 coins.

In conclusion, the hoards from Rooms 1 and 3 and from EIX appear cohesive and were originally stored in ceramic or organic containers. Hoards of small and medium size are represented. Hoard 2 represents the latter, while the coins discovered in Room 5 appear to represent a single disturbed hoard of twice that size. As well as the previous hoard from Room 3 published by Robertson, two further hoards from Caister have been published. Hoard 1 was published by Pearce (1953) and at least 847 coins (found in 1946 during the excavation of a watermain trench in Belstead Avenue) ending with Postumus (AD 259–268) were published by Jenkins (1948).

The pattern of Roman coins recorded from sites in Britain has been documented by Reece (1972). That work is still a most valuable aid for comparing coin-loss on sites and provides a reasonable 'norm', established from a variety of British sites, over twenty-one coin issue periods. If the ninety-two coins of period XIIIb from Room 5 are considered to represent hoard finds and are removed from the site finds, the Caister site coin list then comfortably fits the typical pattern from Britain. There is still a site peak in period XIIIb but this falls within the normal range recorded on other sites. Revised figures with the Room 5 period XIIIb coins removed are shown in Table 8, column 4. This

revised list provides the basis for an interpretation of the site finds.

The pattern of coin-loss as listed in Table 8 and shown in Fig.38 shares specific similarities with other Norfolk sites. The Caister coin list opens with an *as* of period III (AD 69–96). This period can be seen as significant for Norfolk generally. Although other sites, including Leylands Farm and Sawbench (Hockwold-cum-Wilton), Great Walsingham, Brettenham, Crownthorpe, Brampton and Caistor St Edmund do possess coins of earlier date, all of these sites exhibit an initial peak in period III. This period appears to have been significant in the development of Norfolk sites and can be contrasted with the pattern for other British sites (Reece 1972). Only Sawbench and Caister are completely coin-less before this period.

A fairly continuous period of occupation is attested from the late 1st century and throughout the 2nd, with a short break in period VIIb (AD 180–192). Quite high values are recorded for periods VIII to IXb (AD 192–259). A sharp rise in coin-loss is recorded in period X (AD 259–275). This increases in period XI (AD 275–94) and remains very high through period XII (AD 294–317). The greater number of coins in period XI than in period X is at variance with the situation on British sites generally. This observation has been recorded at other Norfolk sites, including Leylands Farm and Sawbench, Great Walsingham and Crownthorpe. It appears to be a feature of this area. The other sites in question are all temples and this trait at Caister now shows it to be a feature of more than a single category of site. Although this pattern could have been caused by a more liberal identification of barbarous radiates (these are allocated to period XI, whereas the coins that

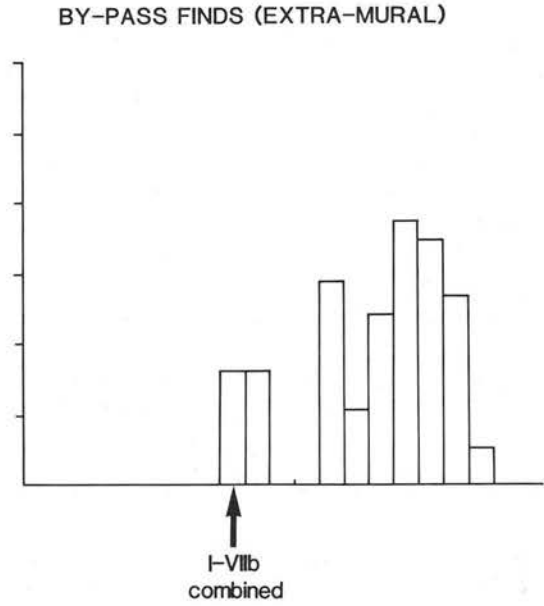
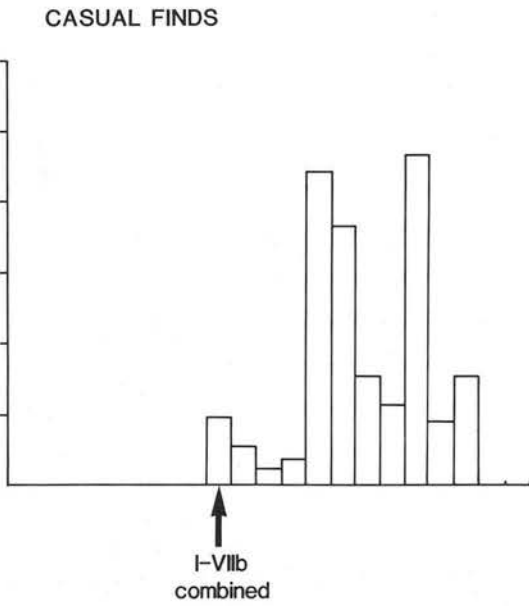
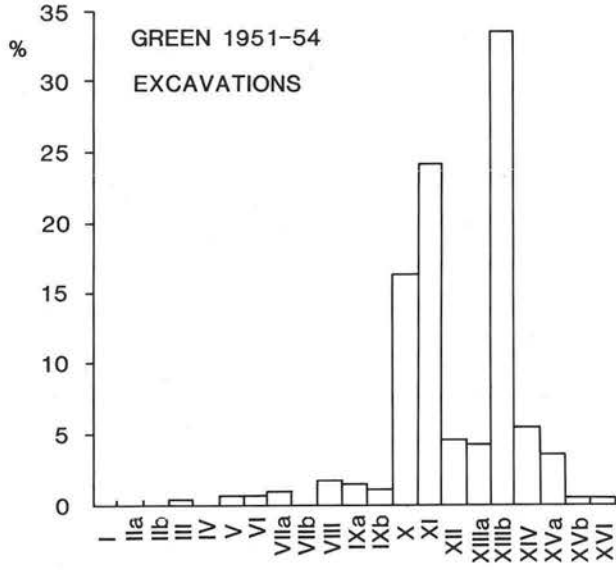


Figure 38 Histograms of the Roman coins from Green's excavations, casual finds and By-Pass finds.

they imitate belong to period X) this becomes less likely as it is seen to have been more widespread.

A high degree of activity during period XIIIb is reflected by the large peak of coin in this period (some 34% of identifiable site finds) and by the series of hoards, both representing small caches and reasonably large stores of coin. Following the peak of XIIIb, the number of finds drops abruptly. The value for period XIV (AD 348–364) falls just within the ‘norm’ cited above, but is low. Coins become more scarce through period XVa (AD 364–378). Coins of this period tend to be abundant on British sites and on Norfolk sites in particular, so this decline is particularly marked. Coins are present for periods XVb (AD 378–388) and XVI (AD 388–402) but in very low numbers.

The steep rise in coin-loss for periods X and XI, with a peak in XIIIb and a sharp fall in successive periods are features associated with sites known to have been Saxon Shore forts. Brancaster in Norfolk (Green and Gregory 1985), Lympne in Kent (Reece 1980) and Portchester in Hampshire (Reece 1975) all exhibit these features, together with an abnormally high value in period XII, as recorded at Caister. Richborough in Kent (Reece 1981) is slightly different, although it does possess an initial sharp rise in period X and a high value for period XIIIb. Unlike the other sites in question, only the other Norfolk site of Brancaster shares the appreciable occupation through the 2nd and 3rd centuries apparent at Caister.

In conclusion, the coin evidence from Caister shows specific features in common with other Norfolk sites. Also, the pattern of coin-loss is very similar to that seen on Saxon Shore forts, although there is more occupation in the years before AD 259 than at those sites. It is unfortunate that no comparable coin list is available for the nearby Saxon Shore fort of Burgh Castle.

#### Other finds

Some 400 other coin finds are known from the vicinity of Caister and have been summarized in Table 8. They can be divided into two main groups, casual finds and coins found during construction of the By-pass. The first group comprises coins from a number of different sources including both intra- and extra-mural finds. The second group are all extra-mural finds. One third of the casual finds and all of the By-pass coins are metal-detector finds. Their more piecemeal composition may mean that these lists are not as representative of coin use on and around the site as the more controlled excavation assemblage.

Unfortunately, details of the 1st- and 2nd-century issues were not available. Both groups show abnormally high numbers for period VIII. Periods IXa and IXb are well represented by casual finds, as in the site finds, but are absent from the By-pass. From period X onwards, both groups resemble the pattern exhibited by the excavated finds. There is a sharp rise in period X and high values through to period XIIIb, including the abnormally high value for period XII. Values for period XI are lower than for the excavated coins and the By-pass has a high number of XIIIa coins. As with the site finds, there is a notable fall-off in coin-loss after period XIIIb, with no coin at all after XVa from either group.

Despite some differences, partly stemming from the smaller numbers involved and the nature of their recovery, these subsidiary collections broadly show the pattern of coin loss recorded from Green’s excavations. Occupation is represented through the 3rd century. A major period of

activity from the mid-3rd to the mid-4th century was followed by a decline. Extramural occupation seems to have been closely comparable to the activity within the walled area, although the higher proportion of period XIV By-pass coins may indicate a slightly later decline in settlement outside.

### III. The Post-Roman Coins and Jettons

by David Sherlock  
(Pl.XXX)

#### Introduction

These coins come from two principal sources, Charles Green’s excavations, and 1977–78 metal-detecting in advance of the construction of the Caister By-pass (West Caister). All other coins from the parish of Caister are also listed, whether extant or lost, including metal-detector finds in 1979 in the field adjacent to the site. Ellison’s and Musty’s excavations produced no post-Roman coins and there are none from Caister in the Yarmouth museums. I have examined all Charles Green’s coins, also the sceat of Epa (2) and halfpenny of Aetheldred II (9), the sceat of Eadberht (7) and the two later English coins in NCM (11 and 46). Information on the other West Caister coins is taken from a list in NCM, details of which have not been checked. They may by now have been sold or dispersed so it is thought worth recording what was known about them here for the sake of completeness, even though details of some are very scanty and make the whole report uneven.

Five of the sceattas are already familiar from Rigold’s publications and *SCBI* to which the reader is referred for more details. There are now at least seven sceattas from the area and possibly nine if two ‘Caistor’ finds are included which were listed under Caistor St Edmund (by Norwich) by Rigold and Metcalf (*BNJ* 47, 36) but were in fact simply described as ‘from Caistor’ in the original publications. Caister-on-Sea or even Caistor-on-the-Wolds (Lincolnshire) once seemed equally likely provenances in view of the dearth of Middle Saxon finds from Caistor St Edmund itself, but recently many sceattas have been reported from the field on the west side of the Tas in the adjacent parish of Dunston (Metcalf 1988, 20), making this area now one of the most prolific provenances for sceattas. Seven sceattas from Caister-on-Sea almost equals the number recorded from Richborough, a Roman fort of comparable size. If Caister and Burgh Castle are considered as part of one settlement in this period the total number of sceattas is eleven. In Norfolk and Suffolk, Barham, Brandon, Butley, Caistor St Edmund/Dunston, Great Bircham, Ipswich, Lakenham, Middle Harling and Watton are the other sites which have yielded comparable numbers of sceattas (Metcalf 1988, 21, fig.1), though none of these places in the same quantities as Reculver and Southampton (Rigold and Metcalf 1984). The distribution now shows two main concentrations, both presumably the result of trade, one estuarine, and the other in the Lakenheath area on the Icknield Way. Epa sceattas are the only ones occurring randomly in both areas. These are found also on the Continent. Later 8th- and early 9th-century coin finds, for example, Offa’s and Coenwulf’s (noticeably absent from Caister but present at Richborough) are more evenly distributed throughout the area. At Caister, the newly found sceat of Eadberht (7) and the penny of Ecgbert (8) may reflect maritime connections as far apart as Northumbria and Kent which Aethelstan of East Anglia may have se-



cured by his treaty with Ecgerht and his breaking away from Mercian domination, both events perhaps marked by the striking of a coin with a symbolic ship on the obverse, one example of which was found recently at West Harling (Fenwick 1983).

The sceattas are listed below in chronological order, following the dating of the series given in Grierson and Blackburn (1986, 188, table 14). The earliest is a 7th-century sceat of Series B from London followed by examples of Series C and D from Kent and the continent respectively. The Series J example was probably minted in London. There are two sceattas of Series R which is thought to originate in East Anglia. The Eadberht sceat in Series Y is the latest and most surprising find in an otherwise fairly typical assemblage for an East Anglian site, spread over about fifty years.

After the sceattas there is one coin each for the 9th, 11th and 12th centuries (8, 9, 10) with a surprising Byzantine coin (67) in the 10th. There are six 13th-century coins, twenty 14th and the remainder are later. A few continental coins and jettons from the 13th century onwards reflect renewed contact overseas. A 17th-century gold hoard (47) was not recorded by Brown and Dolley (1971). The quarter anna of 1862 (66) is nicely matched by one of 1853 from Richborough! Other generalizations are difficult to make, given that such a small proportion of Roman and medieval Caister has been excavated. A number of the By-pass coin finds listed here relate to activity around Caister Castle and not to the Roman town.

#### Abbreviations

BP	From Caister By-pass Fieldwork, 1977–78
CG	From Charles Green's Excavations, 1951–55
L	Earlier finds, now lost
MD	Metal-detector find
BMC	<i>Catalogue of Coins in the British Museum, Anglo-Saxon Series</i> , 1887
BMH	<i>Handbook of the Coins of Great Britain and Ireland in the British Museum</i> (revised edition), 1970
BNJ	<i>British Numismatic Journal</i>
SCBI	<i>Sylloge of the Coins of the British Isles</i> 26, 1980 (East Anglia unless otherwise stated)

#### Anglo-Saxon (catalogue) (Pl. XXX)

- CG Silver sceat, c. 685–700. Mint: probably London. *BMC* type 27 (Rigold Series B, B1), *SCBI* 1002. Unstratified (D–E VI, Room 1, modern sewer trench; coin 562).  
*Obv*: Diademed head right.  
*Rev*: Bird on cross with annulets and pellets. Garbled legends.  
Weight: 1.15gm. Die axis: 0°. Good silver showing little wear.
- MD Silver sceat, c. 700–710. Mint: Kentish? Moneyer: 'Epa'. *BMC* type 2 Runic (Rigold Series C, R1x). From an area of crop-marks near Caister Castle (West Caister parish) in 1978 by Mr C. Turner. Casts in NCM. Hitherto unpublished.  
*Obv*: Radiate head right, TAT behind, in front 'epa' in Runic letters.  
*Rev*: Debased but recognizable standard in pellets, with cross below and plume above, TAT either side.  
Weight: 1.06gm. Die axis: 150°. Signs of wear.  
Typologically this falls somewhere between Rigold's Series R1x and R1y, i.e. a late primary sceat of series C. These coins occur in the Aston Rowant (Oxfordshire) hoard which was deposited c. 710. The Caister coin being somewhat worn may have been lost a little later. Cf. *SCBI* Hunterian Museum, pl.I, 10.
- CG Silver sceat, c. 700–715. Mint: lower Rhineland. *BMC* type 2c (Rigold Series D, 'Frisian Runic'). *SCBI* 1004. Area 4, LVI 3b, roadside (coin 680).  
*Obv*: Diademed head right, 'hp' (corruption of 'ep?') in Runic letters.  
*Rev*: Cross with four pellets surrounded by imitation legend.  
Weight: 1.26gm. Die axis: 0°. Little sign of wear.

- CG Silver sceat, c. 710–725. Mint: probably London. *BMC* type 37 (Rigold Series J). *SCBI* 1003. Area 4, LVI, 2, base of ploughsoil in or over top-filling of a grave (coin 614).  
*Obv*: Two diademed heads facing each other, long cross on pedestal between.  
*Rev*: Rose formed of four crude birds with cross in centre. No legends.  
Weight: 1.06gm. Die axis: 0°. Good silver showing some wear.
- L Silver sceat, c. 710–750. Mint: East Anglian. Moneyer: 'Epa'. *BMC* type 2 Runic (Rigold Series R). *SCBI* plate LII, B. Now lost. Casts in BM and NCM 10.939. Found in 1932 during roadworks immediately south of the parish church.  
*Obv*: Debased head right, in front 'epa' in Runic letters.  
*Rev*: Debased standard in pellets, no legend.  
Weight, die axis and condition unrecorded.
- CG Silver sceat, c. 710–50. Mint: East Anglian. Moneyer: 'Spi'. *BMC* type 2 Runic (Rigold Series R). *SCBI* 1005. From B–C VIII–IX, baulk 2, ploughsoil, i.e., from area of Roman courtyard, near Anglo-Saxon 'hut' site (F71, F72) (coin 138).  
*Obv*: Diademed head, right in front 'spi' or 'spu' in Runic letters.  
*Rev*: Debased standard, no legend.  
Weight: 0.84gm. Die axis: 0°. Some wear.
- MD Eadberht of Northumbria (738–57), silver sceat. Mint: York. Rigold Series Y. NCM 293.983. Found in 1979 by Mr R. Collett west of the fort. Hitherto unpublished.  
*Obv*: EOTBEREHTVS around cross bifurcated.  
*Rev*: Quadruped right, with long tail and raised left foreleg. Four pellets in annulets (a) in curve of tail, (b) between hind and forelegs, (c) between left and right forelegs, (d) between raised foreleg and head.  
Weight: 0.90gm. Die axis: 245°. Little sign of wear in antiquity but the letters hT are largely illegible as a result of uneven striking and some wear. Eadberht is only the second English king whose name appears on his coinage. It was a large coinage, generally well struck and of a higher silver content than contemporary coins south of the Humber though because of size and weight it is still classed amongst the sceat series. The coins circulated both inside and outside the Northumbrian kingdom and the Caister example is easily the furthest south so far recorded apart from a doubtful find from Reculver. Two have also come from the continent. Significantly, this coin has stylistic affinities with East Anglia: the well-spaced letters and pellets in annulets on King Beonna's coins and the fantastic beast (a horse?) which may have an Icenian prototype (cf. *SCBI* 20 Mack Collection, pl.X, 286–8). The coin belongs to Booth's class G, a clearly defined group of ten specimens, artistically the most accomplished (Booth 1984, 77–8, 94). Five other specimens have very similar dies: a) *BMC* 7; b) Baldwin stock (1980); c) Piercebridge 1977 (*BNJ* 47, no.1, p.44); d) Spink coin auction, 11.10.1978, lot 69 (= *BNJ* 1 (1904), p.71 no.5); and e) Thwing excavations 1983 (ex inf. E. Pirie). The fourth of these may be from the same obverse die but the reverse is different.
- CG Ecgerht of Wessex (802–839), Silver penny, c. 828–839. Mint: Canterbury. Moneyer: Swefheard. Blunt group 3 (*BNJ* 28 (1955–57), 467–76). *SCBI* 1108. Area 4, LV, below head of skeleton in Grave 14 (coin 553).  
*Obv*: Bust right, +ECGBEARHT RE.  
*Rev*: DOROBC in monogram, SPEFHEVRD MON.  
Weight: 1.38gm. Die axis: 0°. Some sign of wear. Ecgerht conquered Kent c. 825 and thus gained control of the Canterbury mint where the bulk of his coins were struck. Swefheard also struck coins for Archbishops Wulfred and Coelnoth. The position of this coin in a grave below the head of the skeleton is a late survival of an apparently pagan burial practice which yet persisted well into the Christian era. It need not denote the burial of a pagan Viking settler, trader or warrior. As well as gold coins (those from the Sutton Hoo ship-burial being the example *par excellence*) and coins (usually gold, sometimes re-used Roman) pierced or mounted as jewellery, there are a number of instances of silver coins being found in burials down to the 10th century both in England and on the continent. They are generally freshly minted or in good condition, in purses or other containers and from church graveyards. Examples of early 8th-century unstratified finds are from beside the early church at Richborough and from a child's burial beside St Pancras Church, Canterbury (Rigold 1977, 46, 38). To these and others may possibly be added sceat No.2 (above), though it came from *over* the top-filling of a grave, and No.5, found very near the present parish church. Rigold has suggested that the coins represent the purchase price paid by someone who had acquired the arms or costly possessions of the deceased and that they were buried so that the ghost should not feel



1



2



3



4



5



6



7



8



Plate XXX Anglo-Saxon coins. Scale 2:1.

he had been robbed (*BNJ* 30 (1961), 8) (such a practice may even have persisted down to the Civil War and explain the coin found with a mercenary buried in Bovey Tracey churchyard; see *Gents Mag.* 1860, 426). The Ecgberht coin No.8 was deposited roughly between the date of these sceat finds and the 9th- and 10th-century hoards from Christian burial grounds, one of which was at Hundon, Suffolk (*BNJ* 45 (1975), 19–32). This was in good condition, in a grave with feet roughly towards the east and with no other grave goods. Four of the single finds of coins from Repton (Derbyshire) were also found in graves (Biddle and Kjølbye-Biddle 1987, 28).

9. (unillustrated) BP Aethelred II (978–1016), cut silver halfpenny. Mint: London (?). Found by Mr C. Turner who retains possession.

*BMC* type IVa, Long Cross, c. 997–1003, possibly 'subsidiary' style (cf. *BNJ* 34 (1965), p11. II–III). Worn and fractured.

*Obv*: Diademed bust left, +DELRE[...]

*Rev*: Long cross voided and ending with crescents, ...]M'  
OLLVND[...?

See microfiche for:

Later English coins (10–66)

Foreign coins (67–73)

Jettons and tokens (74–88)

Coin weights (89–90)

# Chapter 5. The Small Finds

## Introduction

The artefacts included here under the category 'small finds' consist of objects of metal, bone (with antler and ivory), pipeclay, glass (other than vessel glass), stone or mineral, tile, pottery (other than vessels), fired clay and wallplaster. The coins (Roman and post-Roman) are dealt with separately in Chapter 4, and the vessel glass in Chapter 6. In the small finds category 'Objects and waste material associated with metalworking', a summary of the slags and crucible fragments has been included, and also a note on the provenance of the coal samples, as the coal distribution suggests that it was mostly used industrially.

The report on the ironwork was written by Quita Mould in 1981. 578 iron objects were found, along with 2486 nails and numerous fractured fragments. This material is covered in 319 catalogue entries, 241 (75%) of which are on microfiche.

Virtually all of the small finds described in the printed catalogues have been illustrated, with only one or two exceptions. The unillustrated small finds have been catalogued on microfiche.

The small finds have been allocated a single number sequence from 1 to 1077, including both the printed and microfiche catalogues. The numbers allocated to unillustrated small finds catalogued on microfiche run on from or are within the range of numbers allocated to illustrated small finds with printed catalogue entries. References to the microfiche catalogues have been added to the printed catalogues where appropriate.

The small finds have been classified by function rather than by material(s) of manufacture. Within each functional category, there are further subdivisions grouping similar finds together (*e.g.* all the hairpins are to be found together). Within these groupings objects in the same material have been similarly grouped (*e.g.* hairpins are subdivided into bone, copper alloy, iron and jet).

The small finds report is divided into the following categories:

- I. Objects of personal adornment or dress
- II. Toilet, surgical or pharmaceutical instruments
- III. Objects used in the manufacture or working of textiles
- IV. Household utensils and furniture
- V. Objects used for recreational purposes
- VI. Objects employed in weighing and measuring
- VII. Objects used for or associated with written communication
- VIII. Objects associated with transport
- IX. Buildings and services
- X. Tools
- XI. Fastenings and fittings
- XII. Objects associated with agriculture, horticulture, animal husbandry and fishery
- XIII. Military equipment and weaponry
- XIV. Objects associated with religious beliefs and practices
- XV. Objects and waste material associated with metalworking
- XVI. Objects and waste material associated with antler and bone working
- XVII. Objects and waste material associated with shale working
- XVIII. Miscellaneous clay objects
- XIX. Objects the function or identification of which is unknown or uncertain
- XX. The clay pipes

Details of context are added as endnotes, generally in the format:

Small Find Number

*e.g.* SF 3195

Area Number

*e.g.* Area 4 (if not specified, Area 1 is understood)

Grid Squares

*e.g.* LV-VI (for grid see Figure 6)

Layer Bag Number

*e.g.* LB 3099 (the Layer Bag Number system is explained in Chapter 1, above)

Context description

*e.g.* lower ploughsoil, spill, refuse, *etc.* Where 'post-Roman' is used, this does of course refer to the context rather than the object.

Where there is no contextual information given, the object is either from the ploughsoil or it is unstratified.

## I. Objects of personal adornment or dress (Figs 39–55)

### Brooches

by Sarnia Butcher

(Figs 39–42)

A summary and discussion is provided here. A full descriptive catalogue with details of parallels is on microfiche. See also on microfiche AML Report 4125, in which Justine Bayley gives the results of her analysis of the brooches and compares the crossbow brooches with those from Richborough (Fig.43, on microfiche). The metal compositions cited in the following summary are taken from her results.

### *Kraftig-profiliiert type*

1. Leaded bronze. This type is rare in Britain; its name is taken from Almgren (1923, 35ff, nos 68 and 69). According to Krämer's study (1957, 76) this brooch belongs to the latest group, dated Flavian or later. However, there is some controversy about the dating of the continental material and in the absence of dated finds from Britain (the Richborough examples are from an earlier series) it can only be suggested that this brooch dates from the later 1st century and is likely to be an import; the composition is, however, typical for British brooches of the period and it may eventually be established that production also took place within the province. 1935 excavation find. NCM 155.948.

### *Polden Hill or Dolphin brooch*

2. Leaded bronze. Examples of the type in general, and the lobed mouldings in particular, are most frequent in the West Midlands. The date should be late 1st or early 2nd century. SF 2808.

### Trumpet brooch

3. Leaded gunmetal. This belongs to the Rii group as defined by Collingwood (1930, 251–4) and discussed by Boon and Savory (1975, 50–61). The form had developed by AD 75, but many are found in later contexts. The distribution within Britain is very wide and includes military and civil sites. SF 836, DVI, LB 420, spill.

### Sheath-footed brooches

(This description includes the crossbow type listed separately below. The present type lacks their triple knobs and is sprung rather than hinged; it shares the P-shaped profile and some early crossbows have the same flange and similarly-shaped foot.)

4. (Leaded) bronze. On the German *limes* similar brooches are regarded as 'soldiers' brooches' dated to the second half of the 2nd century and first half of the 3rd (Böhme 1972, 24); however, the resemblance is not exact and this may be a British variant. SF 2298,

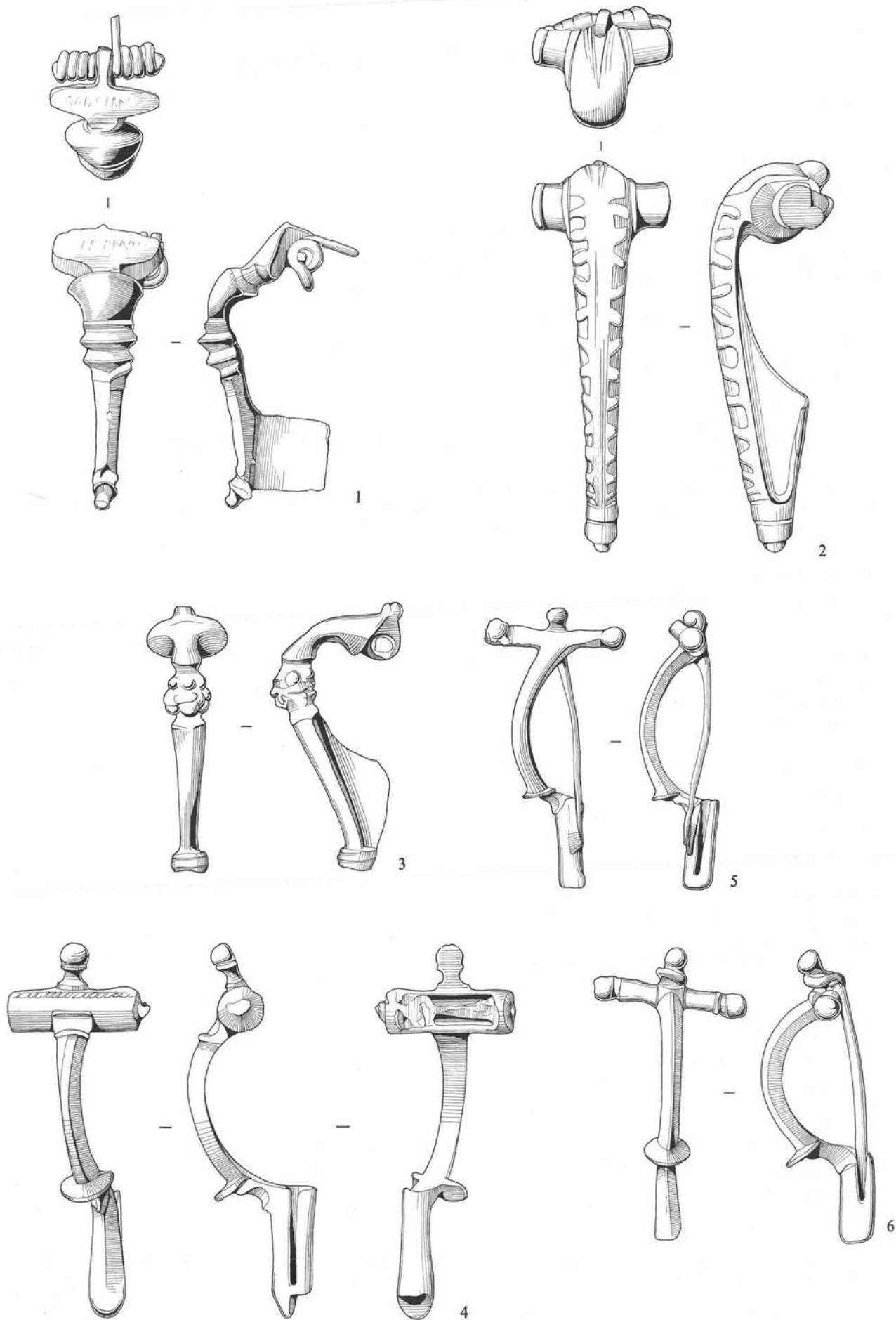


Figure 39 Brooches 1-6. Scale 1:1.

EVIII, LB 2518, post-Roman. (See also 12, below, of the same general type.)

#### Crossbow brooches

5. Bronze, with traces of tinning and gilding. SF 128, FVII, LB 69, refuse.

6. Leaded bronze. SF 2643.

These two brooches belong to what can be described as the 'light crossbow' type, which has small knobs at each end of the crossbar and on the head, all three cast in one with the rest of the brooch. The crossbar is narrow and undecorated and holds the rod on which the pin is hinged. The bow is of P-profile and is undecorated apart from a flange near the turn; the foot contains a sheath to hold the end of the pin (the pin of No.6 is a replacement: a piece of wire twisted round the headknob). Similar brooches are numerous on the German *limes* where they seem to succeed sheath-footed brooches like No.4 above as the typical 'soldiers' brooch' for the first half of the 3rd century (Böhme 1972, 26-8, type 28). Close parallels are, however, easier to find in Britain so these too may have been made in the province.

7. (Leaded) bronze/gunmetal. This brooch comes somewhere in the middle of the development of the crossbow series. It has fairly small pear-shaped knobs, apparently cast in one with the brooch, and the central knob is set back on the bow, leaving room for a shaped crossbar with deep slot for the hinge of the pin. However, the arched bow is plain and rectangular in section, unlike the fully developed type; it probably belongs to the latter part of the 3rd century (Riha 1979, 167, type 6.4). SF 2301, EVIII, LB 2524.

8. Leaded gunmetal. A very typical example of what Hull called the 'middle-weight' crossbow brooch, with large, collared, slightly conical knobs and deeply faceted bow and crossbar. The slight foot mouldings and sheathed catchplate are equally typical. A date in the first half of the 4th century is likely. As with No.7, parallels suggest a very wide distribution for the type. SF 3185.

9. Leaded bronze. SF 2386, DIX-X, LB 2547.

10. Brass. SF 1039, FX, LB 1200, refuse.

11. (Leaded) brass/gunmetal. SF 980, EX, LB 1167, refuse.

Three fine examples of the developed crossbow brooch. Most details are visible (Fig.41) but the unusual beaded wire attached to No.10 should be noted; it is clearly part of the original design, although the loose wire loop

on the same brooch probably is not. The headknobs of Nos 9 (missing), 10 and possibly 11 were separate pieces riveted on, while the end knobs of the crossbars of all three seem to have been cast in one.

They can be dated to c. AD 350-380 (Keller 1971, type 4a and Clarke 1979, 260, no.74). The general type is widely distributed on the continent and several are known from Britain; they occur on civilian as well as military sites and even as votives on native religious sites (Uley: Ellison forthcoming).

12. Bronze/gunmetal. The upper part only of a brooch which may be of the same general type as No.4 above, though lacking the head-knob and the bow now of flatter profile. SF 540.

#### Disc brooch

13. No longer available but drawn and described by the excavator. This appears to belong to a well-known type, usually gilded as here, which should contain a conical glass 'stone' in the centre. A similar brooch was found in the filling of the Saxon Shore fort ditch at Dover (Philp 1981, 150, no.72). They are usually found in 4th-century contexts in Britain and are rare on the continent, but one from the Saalburg should date before AD 260 (Böhme 1972, 43, no.1134).

#### Penannular brooches

14. Bronze. SF 2268, DVII, LB 2491, post-Roman.

15. Brass/gunmetal. SF 106A.

Two brooches of Mrs Fowler's Type C (1960, 165-6). This type, in which the terminals are coiled upwards at right angles to the ring, is common at *Camulodunum* and other 1st-century sites in the east and south, but is often found in later contexts.

16. Gunmetal. A later version of Type C in which the ring is flat and decorated in the chip-carved technique. Probably 3rd or 4th century (Fowler in Crummy 1983, 18-19). SF 1470, EVII-VIII, LB 1670, post-Roman.

17. Brass ring, possibly part of a penannular brooch. SF 182.

18. Bronze pin. One end flattened and coiled in the manner of penannular brooch pins, but the profile is not typical. SF 470, EVII, LB 164, refuse.

19. Brass pin. One end coiled, but as with No.18, the profile bowed and not typical of penannular brooch pins. SF 2709.

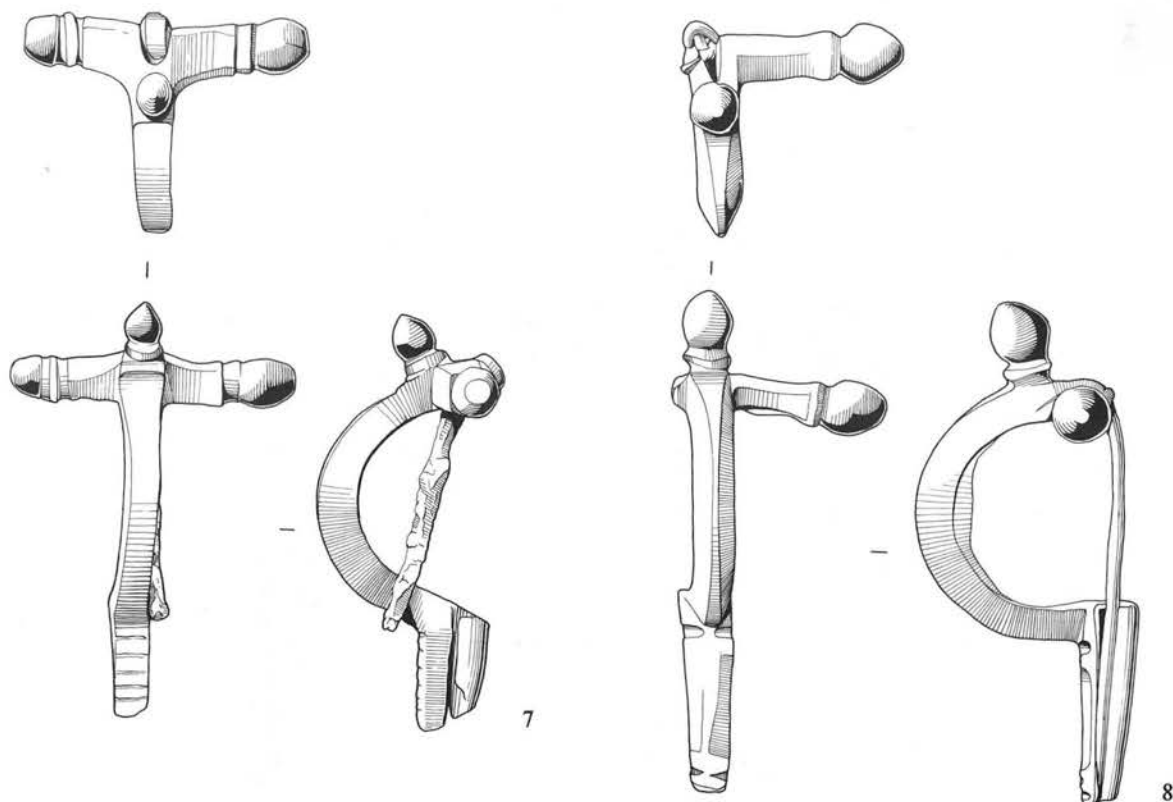


Figure 40 Brooches 7-8. Scale 1:1.

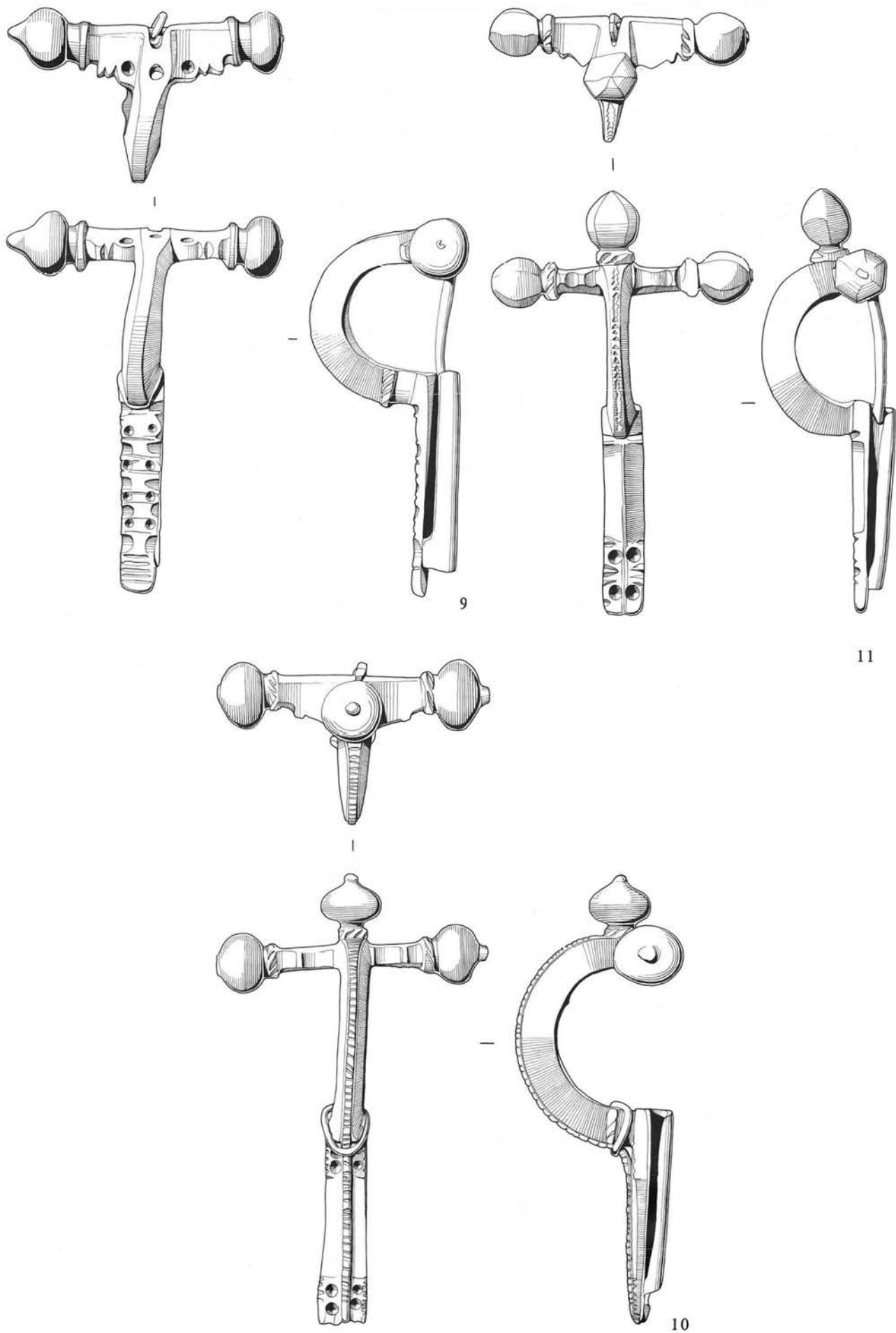


Figure 41 Brooches 9-11. Scale 1:1.

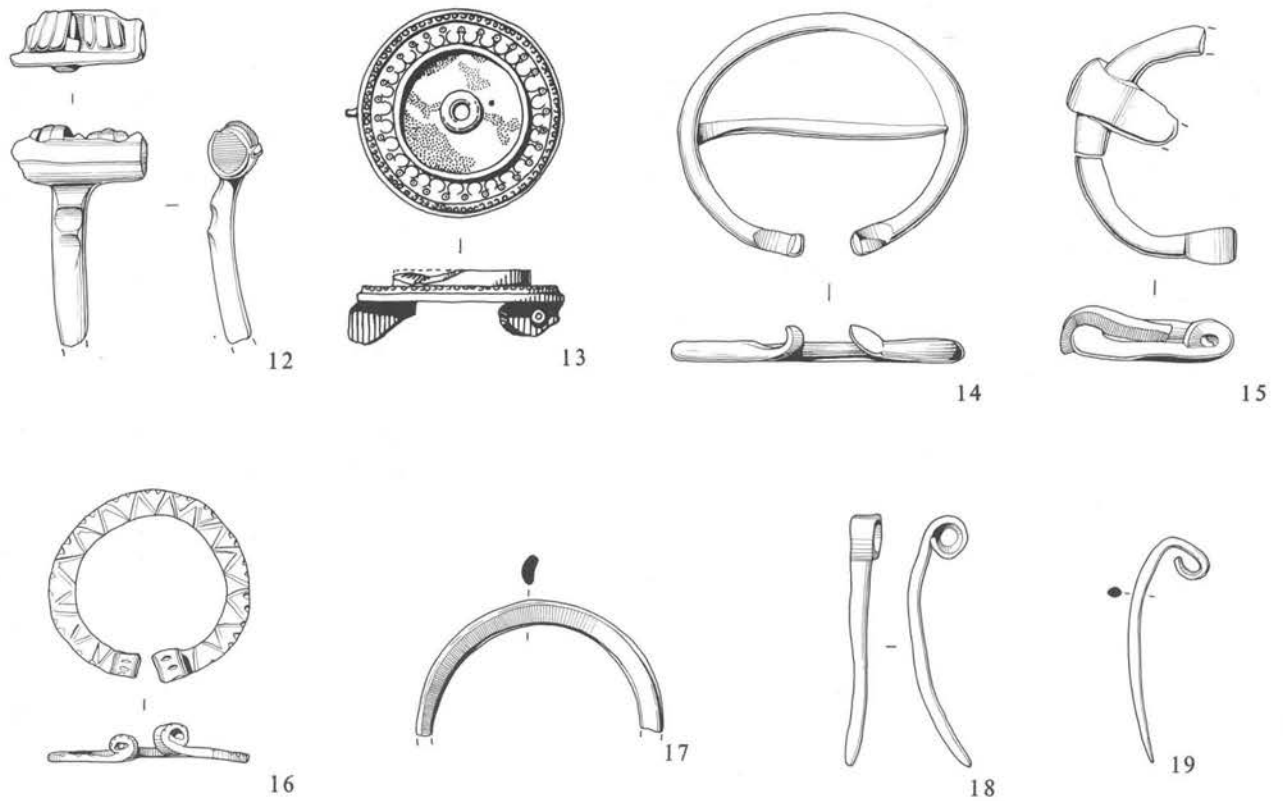


Figure 42 Brooches 12-19. Scale 1:1.

## Hairpins

### Bone

#### (Figs 44-5)

20. Incised head. SF 141.  
 21. Large spherical head with small conical knob on top. SF 987, EX, LB 1167, refuse.  
 22. Tip broken; reel/bead/reel Crummy type 6. SF 84, FVII, LB 69, refuse.  
 23. Crummy type 5. SF 807, EIX, LB 954, rampart spill.  
 24. Tip broken, Crummy type 5. SF 864.  
 25. Tip broken, Crummy type 5. SF 1653, Area 2, HI, LB 1825, ditch. Unillustrated. Four others (26-29) Crummy type 5; see microfiche.  
 30. Tip broken, cone-shaped head with incised lines to resemble a pine cone. SF 2810.  
 31. Flat disc head. SF 1065, E-FX, LB 1154, refuse. Unillustrated. 32; see microfiche.  
 33. Tip broken, faceted cuboid head, Crummy type 4. SF 2913, EVI, LB 3169, Room 1, drain F54.  
 34. Lenticular head, Crummy type 3C. SF 433, EIX, LB 535, refuse.  
 35. Oval head with flattened top with incised lines around the edge. SF 1980, Area 2, MI, LB 2216, refuse.  
 36. Tip broken, large spherical head with horizontal groove. SF 2734, CXI, LB 2941, Room 9.

### Plain pins

#### Spherical heads, as Crummy type 3A.

37. SF 78, EVII, LB 164, refuse.  
 38. SF 1741, BX, LB 1907, ?spill.  
 39. Area 4, LV, LB 3254, Grave 33.  
 40. SF 1108, EVII, LB 1049, refuse. Unillustrated. Seven others (41-47); see microfiche.

#### Spherical heads, slightly pointed tip, as Crummy type 3B.

48. Possibly re-pointed. SF 3107, Area 4, LV, LB 3367, Grave 90.  
 49. SF 3121.  
 50. ?Re-pointed. SF 2218, EVII, LB 2436, Room 2.  
 51. Large conical head, probably re-pointed. SF 3242. Unillustrated. Eleven others (52-62); see microfiche.

#### Spherical heads, with slight faceting, Crummy type 3B.

63. SF 1399.  
 64. SF 799, EIX, LB 954, rampart spill.  
 65. Tip broken. SF 1017, EX, LB 1182, rampart spill. Unillustrated. Thirteen others (66-78); see microfiche.

#### Oval heads, Crummy type 3B.

79. Tip broken. SF 1964, EVIII-IX, LB 535, refuse.  
 80. ?Complete/re-pointed. SF 2760, BXI, LB 2987.  
 81. Tip broken. SF 219, EVII, LB 154, spill.  
 82. SF 1778, Area 2, LB 1942, ?spill.  
 83. SF 1712, ABX, LB 666, spill.  
 84. Tip broken. SF 1908, EX-XI, LB 2102, Gully F59.  
 85. SF 2564, DX-XI, LB 2571, Room 5 hypocaust fill. Unillustrated. Twenty-one others (86-106), Crummy type 3B; see microfiche.

#### Spherical head with flat top, as Crummy type 3D.

107. SF 1474, EVII-VIII, LB 1670, Room 2, post-Roman. Unillustrated. 108; see microfiche.

#### Miscellaneous

109. Tip broken, slight oval head, separated from shaft by small indentation. SF 263, EVI, LB 383, spill.  
 110. Tip broken. Probably a pin in the making rather than an awl. SF 1008, EX, LB 1175, refuse. Unillustrated. 111; see microfiche.

## Discussion

### (Table 10; microfiche)

The most common identifiable small finds (apart from iron nails) are bone pins, of which there are 153 (ninety-one with heads, sixty-two shaft fragments). Crummy's types 1 and 2 of the earlier Roman period are absent. Virtually all the plain pins are Type 3 with a starting date of *c.* AD 200. Type 5 is the commonest decorated pin and, while many examples are known from late Roman deposits, its ubiquity at Portchester confirms its late date. Type 4 matches the



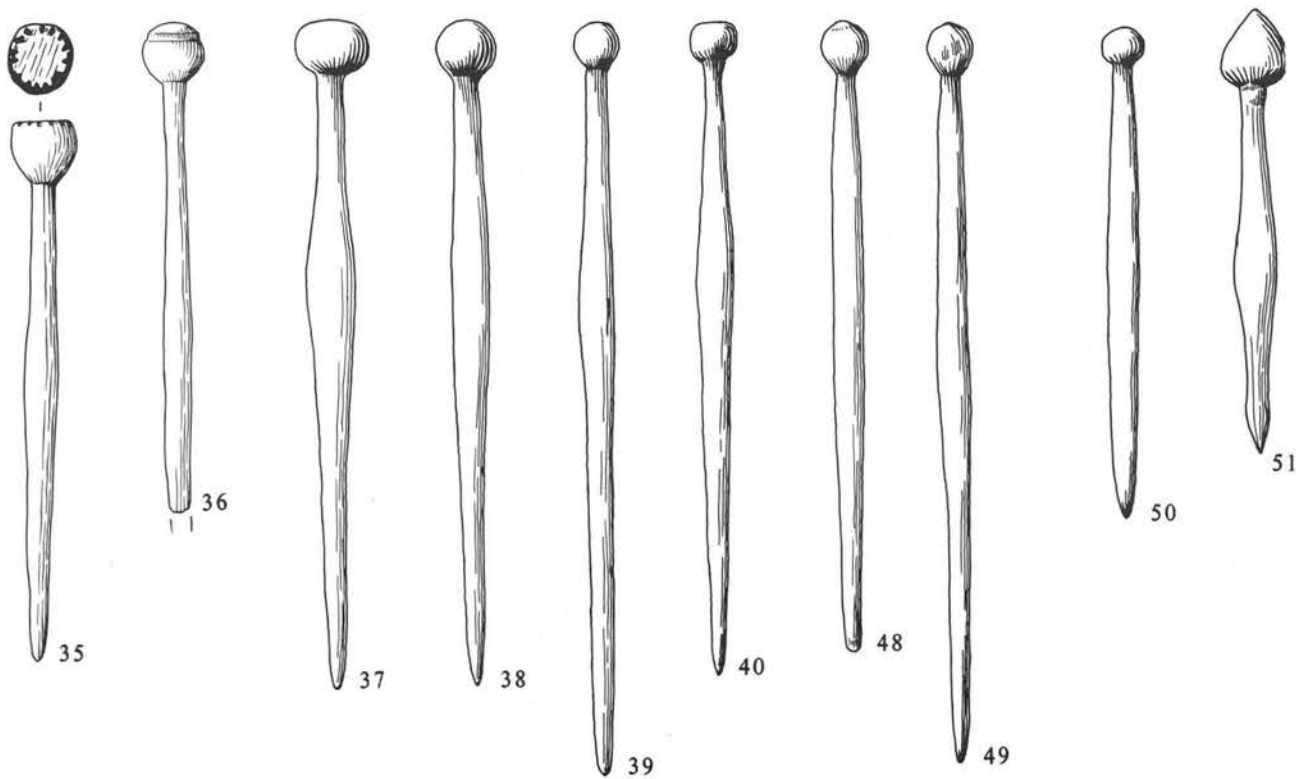
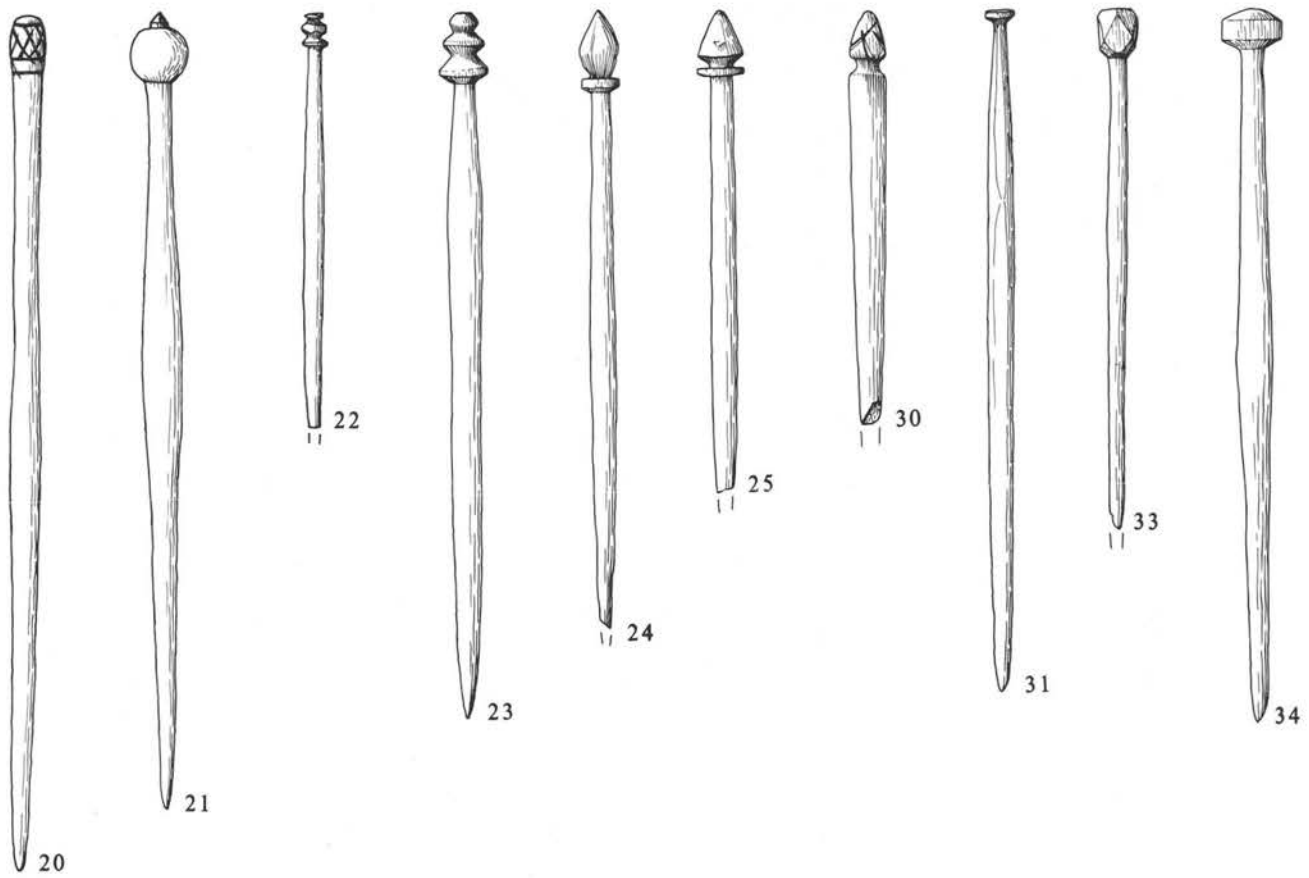


Figure 44 Hairpins, bone. Scale 1:1.

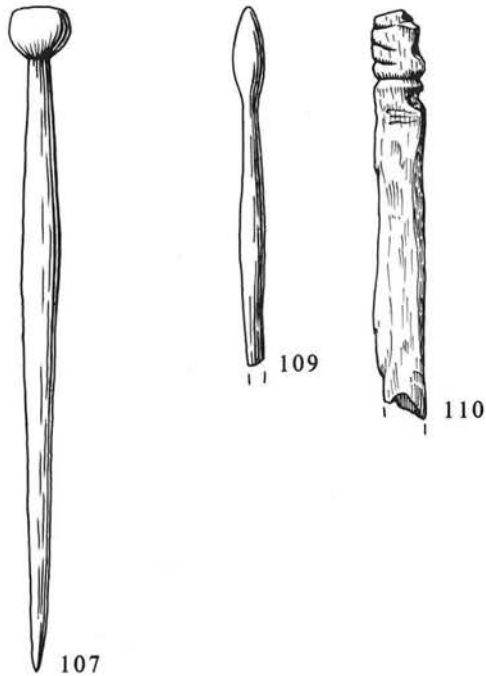
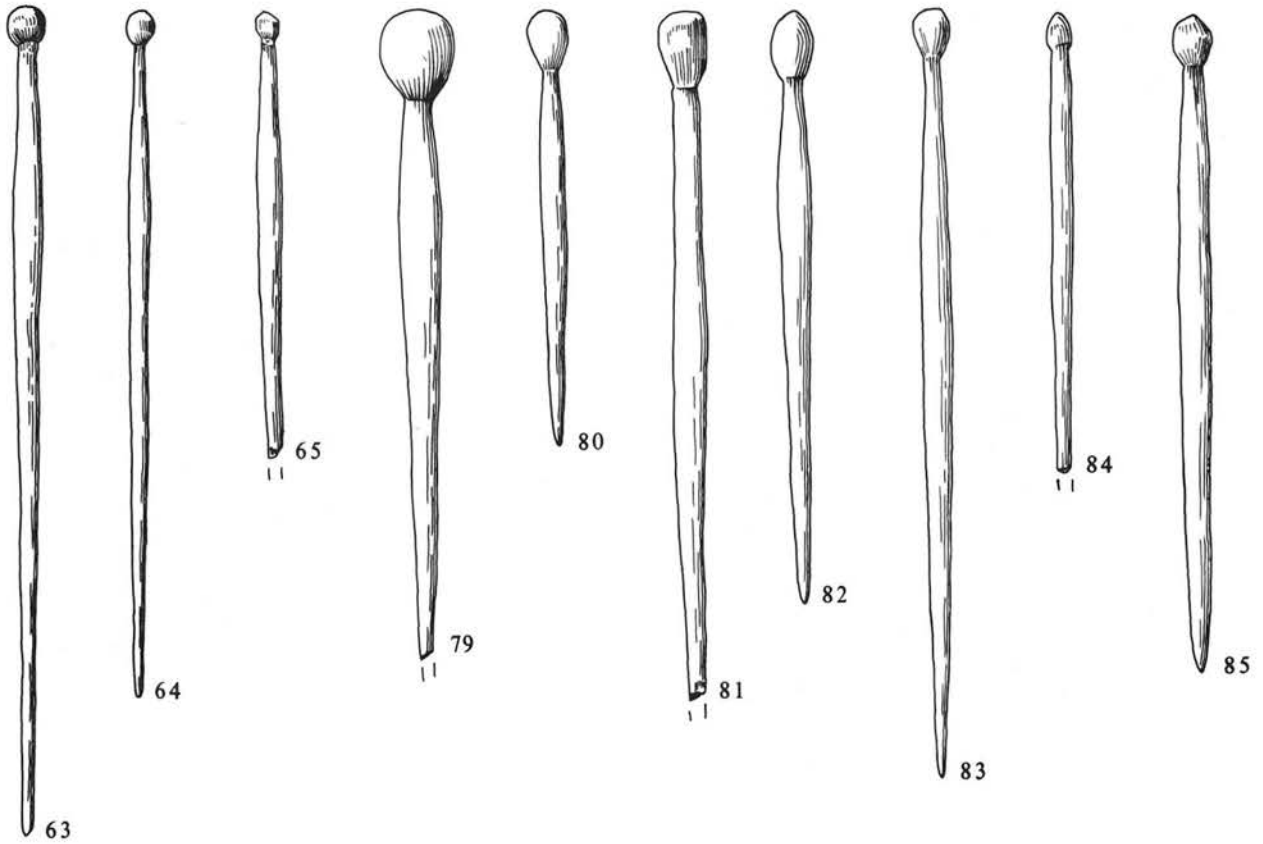


Figure 45 Hairpins, bone. Scale 1:1.

development of this type of pin head in both metal and jet in the late Roman period, and type 6 is another late Roman type known from Lydney, Shakenoak and Portchester. The other miscellaneous types can all be paralleled with late Roman finds from other sites.

The distribution of pins (confined to those with heads) is shown in Table 10 (microfiche). Over 53% of the pins from Area 1 come from deposits related to refuse dumping on the rear of the rampart. If late rubbish on the floors of the Building 1 is added, nearly 66% of the pins come from these deposits of late 3rd to 4th-century date. A similar concentration in the area of Building 1 and the defences is reflected in the shaft fragments, 63% of the Area 1 finds coming from those grid squares. Apart from this, the only other concentration is in the 'spill' layers of ABIX-X.

The earliest stratified bone pins are from gullies related to the defences, F59 producing No.32 (unillustrated) with a flat disc head as No.31 and No.84 of Crummy type 3B. The only pin from F58 is an unillustrated plain pin No.69 of the same type 3B.

*Copper alloy*  
by H.E.M. Cool  
(Fig.46)

- 112. Circular-sectioned hemispherical head; circular-sectioned shank with pronounced expansion one-third way down tapering to point below. LB 4624.
- 113. Oval-sectioned hemispherical head; two horizontal grooves around top of shank leaving cordon between; broken oval-sectioned shank tapering above and below marked expansion. SF 679.
- 114. Circular-sectioned shank with expansion one-third way down tapering to point below. Head broken, probably squashed spherical with central ridge, made from two pieces of sheet enclosing much decayed core material. Part of upper sheet only remains. SF 2862.

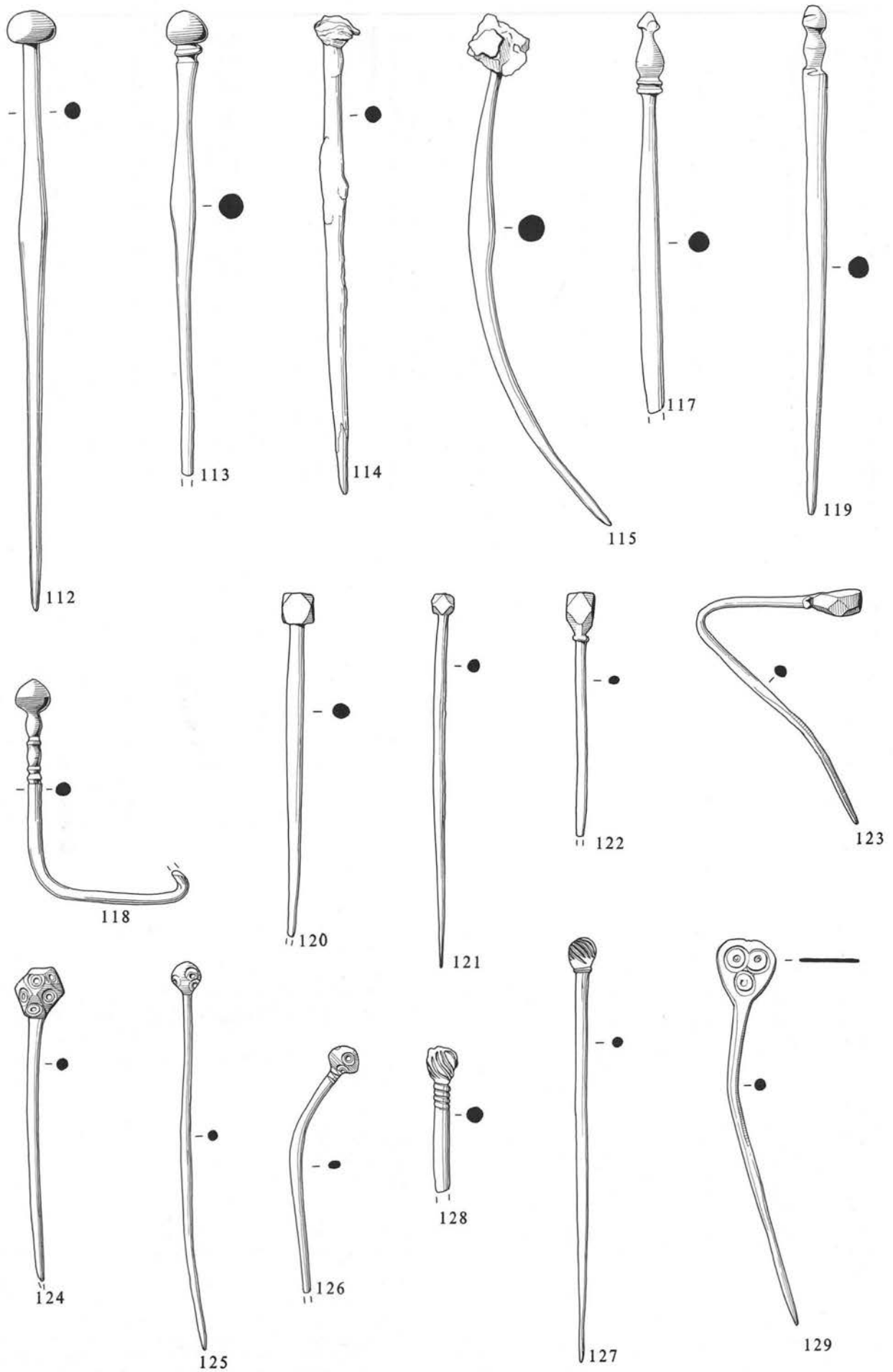


Figure 46 Hairpins, copper alloy. Scale 1:1.

115. Circular-sectioned shank with marked expansion one-third way down tapering to point below. Head of separate square base plate through which top of shank projects, original domed sheet covering of head survives only as small fragment and core material of head is much decayed. Head now bent into same plane as shank. SF 806.

Unillustrated. 116; see microfiche.

117. Circular-sectioned piriform knob head with pointed conical finial and two rounded cordons below; broken circular-sectioned shank expanding slightly away from head. SF 2875, Area 4, LVI, LB 3127, Grave 9.
118. Two circular-sectioned barrel-shaped units divided by rounded cordon with large onion-shaped finial above and two rounded cordons below; oval-sectioned tapering shank. SF 2156.
119. Oval-sectioned barrel-shaped unit with slightly faceted, nicked, conical finial above; oval-sectioned shank tapering to rounded point. SF 655, FVI, LB 735, refuse.
120. Diamond and triangle faceted cubic head; circular-sectioned shank tapering to broken point. SF 978, EX, LB 1166, refuse.
121. As No.120 but shank complete. SF 948.
122. Diamond and triangle faceted, square-sectioned head; small cordon on head/shank junction; circular-sectioned broken shank. SF 57.
123. Diamond and triangle faceted, rectangular-sectioned head, faceting sharp but irregular; asymmetrical cordon at head/shank junction; shank circular-sectioned above slight expansion halfway down and rectangular-sectioned and tapering below. SF 997.
124. Diamond and triangle faceted, square-sectioned head; each facet apart from small diamond facet on top has deep punched ring-and-dot; circular-sectioned shank tapering at bottom to chipped point. SF 3244.
125. Oval-sectioned knob head with slightly conical top; middle and lower part of head decorated with eight punched ring and dots in two staggered rows; circular-sectioned shank with slight expansion two-thirds way down tapering to point below. SF 1742.
126. Circular-sectioned knob head with conical top and convex base; four ring-and-dots punched on upper surface, three on base; spiral groove at head/shank junction; oval-sectioned shank with slight expansion above break. SF 1482.
127. Circular-sectioned knob head with wrythen grooves; narrow cordon at head/shank junction; circular-sectioned shank with slight expansion two-thirds way down tapering to point below. SF 2845.
128. Oval-sectioned knob head with wrythen grooves, top slightly flattened; spiral groove of c. five turns around top of oval-sectioned broken shank. SF 3108, Area 4, LV, LB 3367, Grave 90.
129. Thin rectangular-sectioned heart-shaped head plate showing filing marks; three ring-and-dots punched on each face; faceted circular-sectioned shank with slight expansion halfway down tapering to chipped point below. SF 29.

Unillustrated. Seven fragments (130–136); see microfiche.

## Discussion

Plain knob-headed pins both with and without a cordon at the head/shank junction were in use throughout the Roman period and were very common in Britain. Nos 112 and 113 cannot be dated closely. It is interesting to note that they and the fragment No.116 have marked expansions on the shank. This is a rare feature on Roman metal pins. When it does occur in Britain it is not entirely confined to pins found in the Norfolk–Suffolk area but there is a marked concentration of examples there. We may note, for example, that such pins have been found at Scole (Rogerson 1977, fig.57, no.32), Brancaster (Cool 1985, fig.88, nos 24 and 25), Spong Hill (Cool forthcoming); Brampton (in the possession of Dr A.K. Knowles), Caistor St Edmund and Hockwold Sawbench (NCM 1933 B/124 and 227). These all have plain knob heads. Occasionally the heads have vertical grooved decoration as at Caistor St Edmund (NCM 1933 B/246) and Brampton (in the possession of Dr A.K. Knowles). Unfortunately none of these are dated so it is not possible to tell whether they were the products of a particular workshop at one time or whether the expanded shank was a local preference occurring throughout the Roman period. There are indications that expanded shanks were already being used on pins in the early Roman period as the combination of knob head and cordon formed by grooves on examples like No.113 could have been copied from a large group of pins with squashed spherical heads and one or more similar cordons on the shank (see, for example, one from *Verulamium*; Frere 1972, fig.34, no.60). This group of pins was in use from the mid-1st to the late 2nd century.

Nos 114 and 115 are most unusual in having heads formed from two sheet metal plates infilled with a core material. Roman metal pins were almost invariably made in one piece. On the rare occasions when the head and shank were made separately the head was generally solid as can be seen on a diamond and triangle faceted pin from Silchester (Reading

Museum 03317). The only dated parallel with a head made in the manner of Nos 114 and 115 appears to be a pin with a squashed spherical head found in a 4th-century grave at Colchester (Crummy 1983, fig.28, no.484). However, as both Nos 114 and 115 have the locally preferred expansion on their shank it is possible that they represent products of a local workshop. If so, parallels drawn from outside the region would not necessarily be useful in providing a date for them.

In the 1st to 3rd centuries large numbers of pins were produced whose heads consisted of knob finials and curved units between cordons. At Caister this very miscellaneous group is represented by Nos 117 to 119. These pins show much variety and were obviously being produced at a large number of workshops both in Britain and on the continent. It is not possible to date individual pins of this type closely.

Nos 120 to 124 are all diamond and triangle facet-headed pins but whereas Nos 120 and 121 are of late Roman date, Nos 122 to 124 are Late Saxon. Pins with diamond and triangle faceted, approximately cubic, heads developed in the late 3rd century and became one of the two dominant pin head types in the 4th century throughout the western Empire (Cool 1983, 81-Pin Group XVII). They were made in bone and jet as well as metal and the form inspired a variety of post-Roman ornaments. It occurs as an earring worn by the Ostrogoths and the Franks (e.g. Doppel-feld 1960, taf. 14/6 a and b) and on Norse ring-headed pins like those from Meols, Cheshire (Bu'lock 1960, fig.5c and e). In the Late Saxon period dress pins with heads in this form were common. They occur, for example, at Whitby between AD 657 and 867 (Peers and Radford 1943, fig.14) and there was also a highly decorated one in the Trewhiddle hoard whose date of deposition was AD 872/5 (Wilson 1964, no.92).

Though superficially similar, there are two main differences which make it quite easy to distinguish between late Roman and the Late Saxon examples. The first is that Late Saxon ones often have a cordon at the head/shank junction as on Nos 122 and 123. This feature does not occur on late Roman examples. The second difference is that such metal pins of Roman date are almost invariably plain. Exceptions to this may be noted on a pair of silver pins with an inhumation at Park Street *Verulamium* which each had a diagonal cross on their top facet (*Verulamium* Museum); and a copper alloy pin from a grave-fill at Colchester which had a ring-and-dot on each of the lateral diamond facets (Crummy 1983, fig.29, no.490). Such exceptions are, however, very rare. Late Saxon examples by contrast frequently have ring-and-dot decoration punched on some or all of their facets as on No.124.

Knob-headed pins with punched ring-and-dot decoration like Nos 125 and 126 and flat-headed pins similarly decorated such as No.129 are also of Late Saxon date and are frequently found with the diamond and triangle faceted pins as can be seen at Whitby (Peers and Radford 1943, fig.13, nos 1, 2, 7, 7a). Wrythen-headed pins such as Nos 127 and 128 were also in use in the Late Saxon period. We may note a close parallel for No.127 from a late 9th-century cesspit at North Elmham (Wade-Martins 1980, fig.264, no.40).

## Iron by Quita Mould

Unillustrated

137. Round-sectioned stem, large faceted head, two inlaid bands below; inlay white metal, lead and tin predominating. Decorative iron pins are uncommon in the literature, probably because they are virtually indistinguishable from nail shanks without radiography. SF 2702.
138. Number not used.

## Jet

Unillustrated

139. Shaft fragment. SF 484a, EVII, LB 164, refuse.
140. As 139. SF 1252, BX, LB 1509, occupation below spill.

## Beads

### Glass

by Jennifer Price and H.E.M. Cool  
(Fig.47)

141. Segmented. Translucent green. Six segments, one ring-like terminal segment. Wound and crimped. SF 2077, Area 4, MI, LB2311, pit.
142. Segmented. Translucent green. Three segments, one terminal segment elongate and thin. Wound and crimped. SF 1466.
143. Long cylindrical. Translucent green. Drawn, longitudinal striations. SF 3065, Area 4, MVI, LB 3323, Grave 63.

144. Short cylindrical. Opaque green. Wound. SF 2732, CXI, LB 2934, post-Roman.  
 145. Short lozenge-sectioned. Translucent dark blue. Wound. SF 2938, DIX-X, LB 2548, Room 5 hypocaust.  
 146. Spherical. Pale blue. Wound. SF 1490, GV-VII, LB 1681, F66.  
 147. Squashed spherical. Opaque green. SF 1763, BX, LB 1907, ?spill.  
 148. Barrel-shaped. Translucent green. Wound. SF 3225.  
 Eight beads were found. They are all common Roman types and the reader is referred to Guido 1978 for full references and parallels. There are two green segmented beads (Nos 141, 142) (Guido 1978, 92), one long (No.143) and one short (No.144) cylindrical green beads (Guido 1978, 95). These are types that were in use in Britain throughout the Roman period but which may have been most popular during the later part of it. The blue lozenge-shaped bead (No.145) and the spherical and related barrel-shaped beads (Nos 146-148) tend to be found in late Roman contexts.

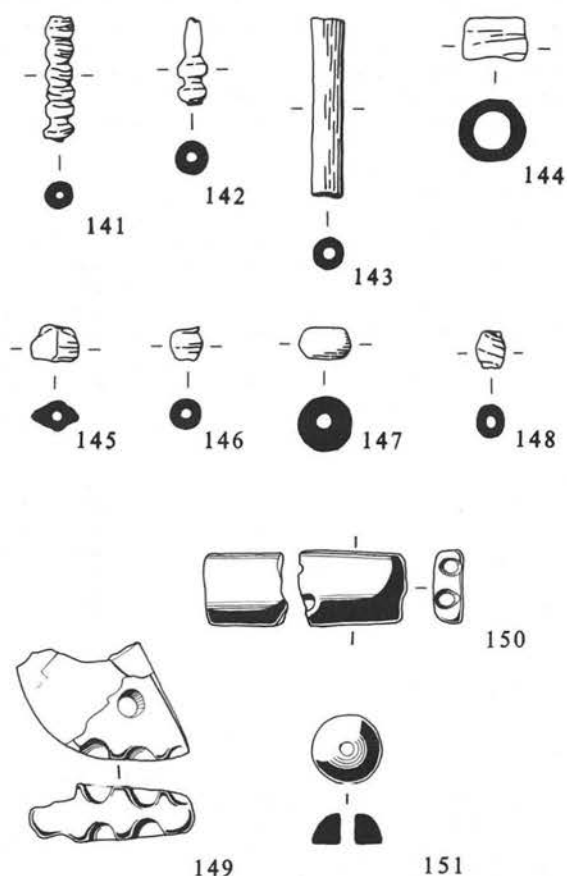


Figure 47 Beads: glass (141-148) and jet (149-151). Scale 1:1.

*Jet*  
(Fig.47)

149. Fragment of semi-circular bead with decorated upper edge and wedge-shaped section, of late 3rd to 4th-century date. Upper edge decorated with opposing V-shaped notches, similar to shale armband No.194. SF 1175, EVII-VIII, LB 1049, lower refuse.  
 150. Two beads, rectangular shaped with rounded upper face, one having slight incised lines around the edge of the upper face, with two perforations parallel to the longer sides. SF 222, DVII, LB 343, spill.  
 151. Half of spherical bead, slightly flattened at the perforation. Probably 3rd and 4th centuries. SF 3037.

*Necklace*  
by H.E.M. Cool  
(Fig.48)

152. Octagonal-sectioned bead, opaque pale green stone with polished faces; slanting circular perforation. SF 1189.

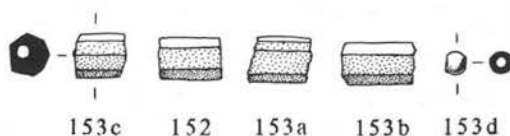


Figure 48 Necklace. Scale 1:1.

153. a. Octagonal-sectioned bead. Opaque streaky pale green stone with polished faces; circular perforation infilled with copper corrosion products; one end chipped. SF 1877(a), DVIII, LB 1895, post-Roman.  
 b. Septagonal-sectioned bead; opaque pale green stone; faces polished; off-centre circular perforation infilled with copper corrosion products; one end chipped. SF 1877(a).  
 c. Septagonal-sectioned bead; opaque pale green stone; faces polished; circular perforation infilled with copper corrosion products. SF 1877(a).  
 d. Spherical bead, translucent pale yellow glass; outer surfaces exfoliated. SF 1877(b).  
 Also one fragment of a similar yellow bead with fragment of copper wire in perforation and six shapeless lumps of copper corrosion products.

Nos 152 and 153 are the very fragmentary remains of a necklace consisting of tiny spherical glass beads and green seven- and eight-sided beads threaded on copper alloy wire. It is not possible to reconstruct the necklace but the beads were probably joined by wire links such as those on the necklace from the Lankhills cemetery, Winchester (Clarke 1979, fig.79, no.182). The green beads are either beryl emeralds or imitations of beryls in another stone. Beryl emeralds and their imitations (generally made of glass) were popular throughout the Roman period. Beryls, for example, occur on a gold necklace from Cannon Street, London, which was found in a context not later than the Hadrianic period (Johns 1976, 247), and both glass imitations and beryl emeralds occur in the Thetford hoard which was of late 4th or early 5th-century date (Johns and Potter 1983, fig.19, no.31).

**Bracelets**

*Copper alloy*  
by H.E.M. Cool  
(Figs 49, 50)

- Unillustrated. Nos 155-163, 170, 172, 175, 179, 183, 185, 186, 189, 190; see microfiche.  
 154. Two strand oval-sectioned cable twist. SF 2841.  
 164. Three strand circular-sectioned cable twist; two strands copper alloy, one strand iron. SF 1458, EVII-VIII, LB 1653, Room 2.  
 165. Circular-sectioned hoop tapering to ends; expanding joint of two and a half turns. SF 2554, DXI, LB 2756, spill.  
 166. One terminal and part of hoop of penannular snake's head bracelet, now flattened. SF 559, CVIII, LB 653, spill.  
 167. Flattened terminal of penannular snake's head bracelet. SF 1987, Area 2, MI, LB 2219, ?rampart.  
 168. Shallow 'D'-sectioned hoop expanding to pointed penannular snake's head terminals. SF 2737.  
 169. Rectangular-sectioned, torc-twisted hoop. SF 2878.  
 171. Shallow 'D'-sectioned hoop; penannular terminals tapering to blunt points; unit of vertical grooves behind each terminal. SF 850, GV-VII, LB 1034, post-Roman.  
 173. Shallow 'D'-sectioned hoop tapering slightly to straight cut penannular terminals; each terminal decorated with two grooves producing vertical ridge by edge with diagonal incised cross and unit of vertical or diagonal grooves behind. SF 432, 731, EIX, LB 535; FVI, LB 735, refuse.

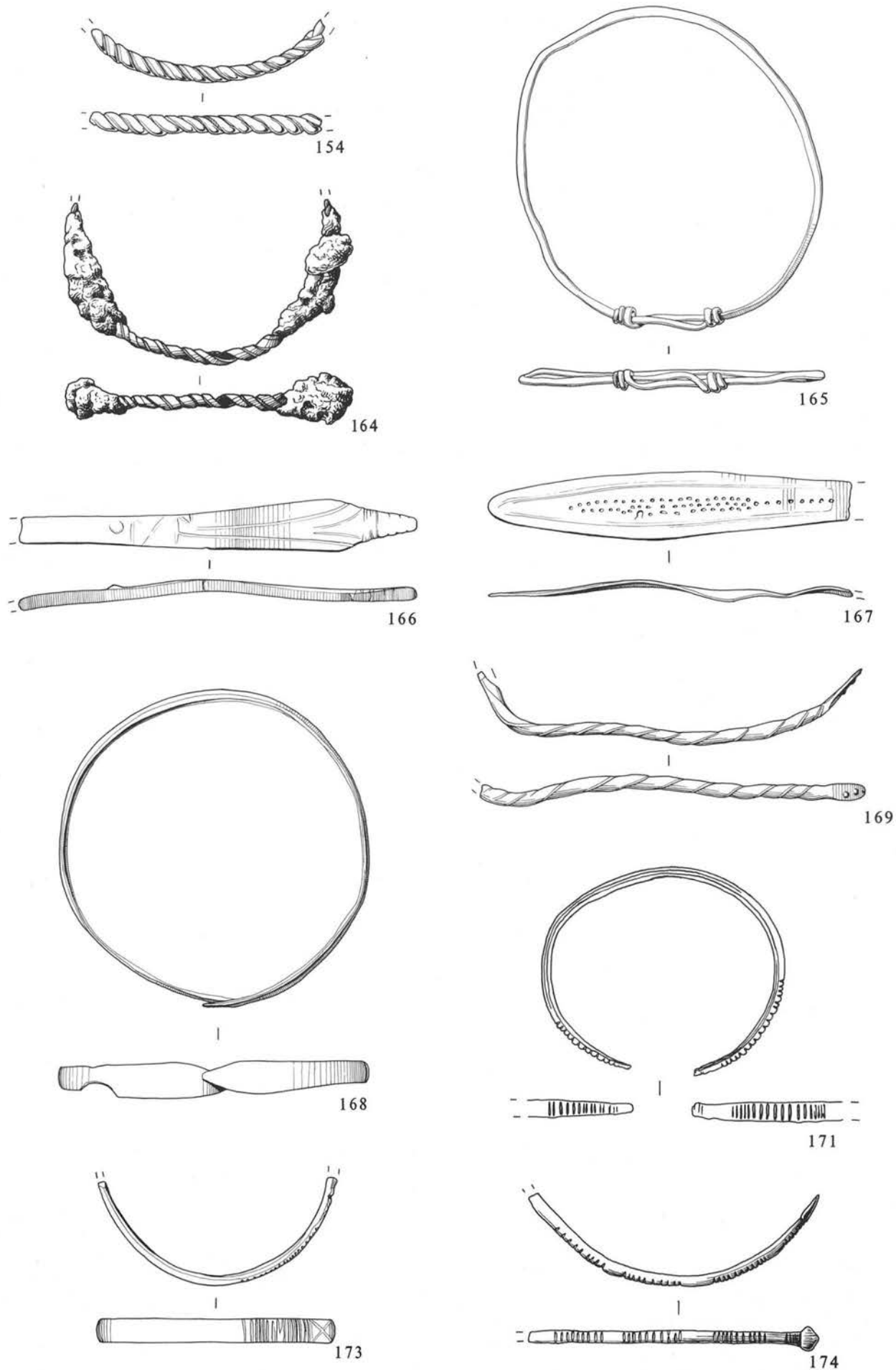


Figure 49 Bracelets, copper alloy. Scale 1:1.

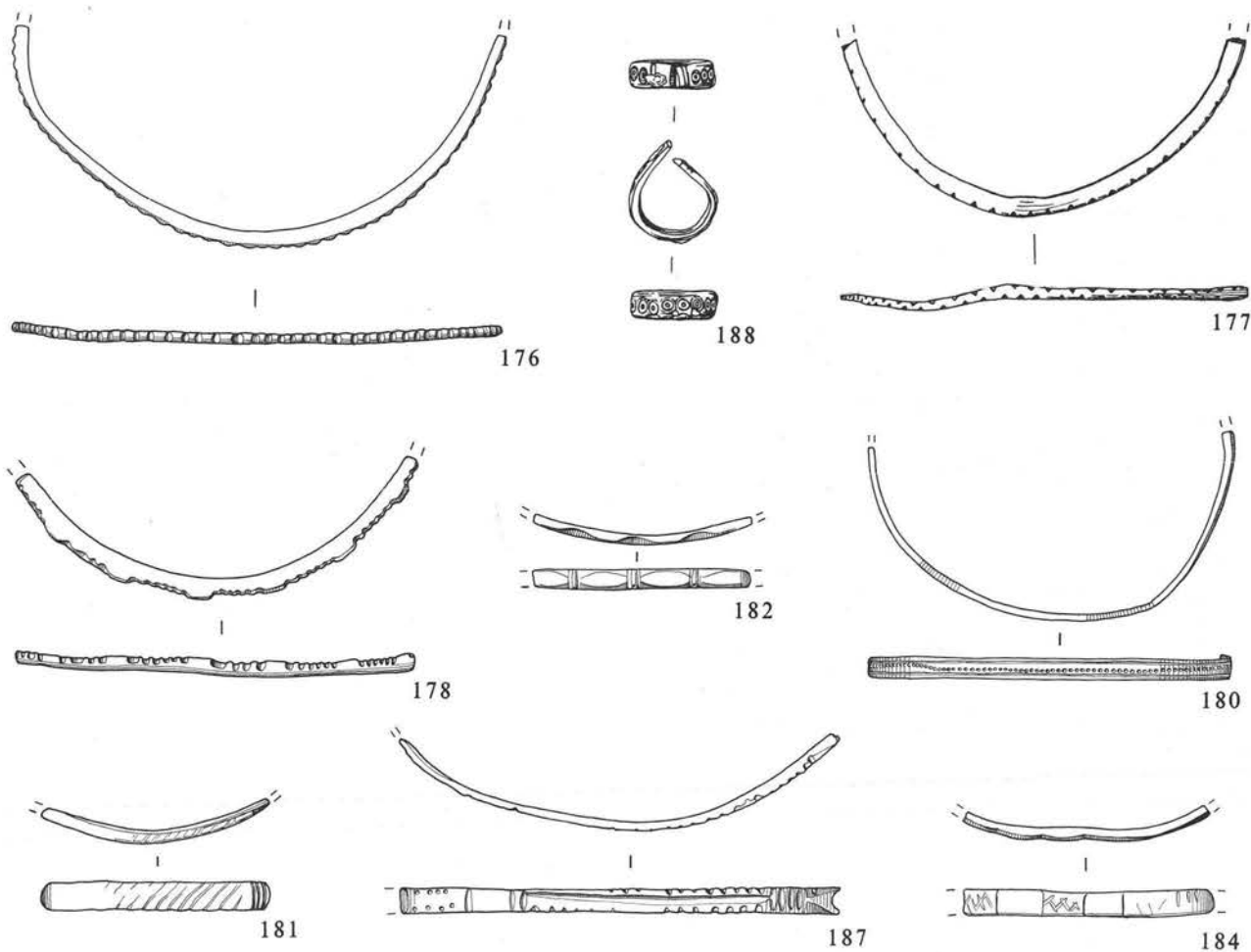


Figure 50 Bracelets, copper alloy. Scale 1:1.

174. Circular-sectioned hoop decorated with alternating short plain and long vertically grooved units; one end a flat diamond-shaped terminal with fine edge nicks and traces of two circular features (?). SF 1820, Area 2, MI, LB 1824, refuse.
176. Rectangular-sectioned, narrowest to wrist hoop; shallow vertical nicks. SF 3220.
177. Rectangular-sectioned, narrowest to wrist, hoop; one end a rounded side/side overlap joint terminal; triangular edge nicks forming simple zig-zag. SF 2289.
178. Rectangular-sectioned, narrowest to wrist, hoop; shallow battlement pattern with five or six grooves on lower units. SF 2472.
180. Rectangular-sectioned, widest to wrist, hoop; two horizontal grooves with row of punched dots between. SF 1844, DXI, LB 1010, spill.
181. 'D'-sectioned hoop; one plain unit and one unit of diagonal grooves with vertical grooves by one broken end. SF 1369.
182. Rectangular-sectioned, widest to wrist hoop; elongate diamond-shaped units separated by two vertical grooves and central ridge. SF 2586.
184. Rectangular-sectioned, widest to wrist, hoop; rectangular units bounded by vertical grooves alternately plain and carelessly cross-hatched with diagonal grooves. SF 3137.
187. Rectangular-sectioned, widest to wrist hoop; one end broken, other with eye terminal broken across perforation, paired triangular edge nicks behind perforation. First third of circumference has four vertical grooves and a horizontal groove with flanking edge nicks then two vertical grooves; a plain rectangular unit; one vertical groove; a rectangular unit with a horizontal row of four punched ring-and-dots and a horizontal row of four punched dots separated by a horizontal groove; one vertical groove. SF 1939.
188. Shallow 'D'-sectioned hoop; both ends broken and now bent into small ring; horizontal row of punched ring-and-dots? between two

horizontal grooves; one vertical groove at one end and two vertical grooves and plain unit at other. SF 2596.

#### Discussion

Cable twist bracelets such as Nos 154–164 were the main type of bracelet in use during the Roman period and occur in large numbers throughout the western Empire (Cool 1983, 120-Bracelet Group I). In Britain they were in use from at least the early 2nd to the 4th century and it is not generally possible to date the very common two and three strand examples more closely. There is some evidence though, that non-penannular cable twist bracelets with terminal types other than hooks and eyes, and ones like No.164 which are made from two different types of metals, may be earlier rather than later in date. Such varieties of cable twist bracelets are not common but a bracelet combining copper alloy and iron strands like No.164 was found with a pierced coin of Nero threaded onto it with early 2nd-century pottery at Colchester (May 1930, 276). By contrast, massive penannular examples like No.157 (not illustrated) seem to be a 4th-century variant (Cool 1981, 125).

Simple wire rings with expanding joints like No.165 were made in a variety of sizes and used as earrings, finger-rings, bracelets and occasionally leg ornaments. Though the form was common throughout the Roman

period, the dated examples of bracelet size are normally late Roman (Cool 1983, 130-Bracelet Group III).

There are three snake-headed bracelets with flat expanded penannular terminals. Nos 166 and 167 have punched and incised decoration, No.168 is plain. Snake-headed bracelets occurred in various forms throughout the Roman period but in Britain their greatest popularity was during the 3rd to 4th centuries. The type represented by Nos 166 and 167 is concentrated on the East Anglian area stretching down to north Kent, with only isolated examples elsewhere (Cool 1983, 149). About half the examples of this type have come from Colchester which would suggest that a workshop specializing in their production was based in that area. When precisely they were being made is not clear as they have not been found in closely dated contexts. At Colchester two were found in a 3rd- to 4th-century inhumation and a third, already re-used when deposited, in a grave dated to after AD 320 (Crummy 1983, fig.44.1693, fig.45.1771, 1712).

Although the other penannular bracelets (Nos 169–174) could have been made at any time during the Roman period, Nos 169, 171 and 174 are more likely to be 4th century than earlier. Penannular torc-twisted bracelets such as No.169 are known in earlier contexts, for example one dated to c. AD 100–130 at *Verulamium* (Davey 1935, fig.15.1), but the majority of torc-twisted bracelets, which more commonly have hook and eye terminals, were in use during the 4th century (Cool 1983, 135-Bracelet Group IV). Unfortunately the closest parallel for No.169 at Combe Hay, Somerset (Price and Watts 1980, microfiche fig.31.CA13) was undated.

The absence of dating also extends to the parallels for No.173. Penannular bracelets with decorated terminals (other than snake-headed forms) have a large and generally miscellaneous range of terminal motifs but the pattern of a diagonal cross between vertical grooves is the nearest there is to a standardized one. No British examples come from dated contexts but a very similar one was found at Vin-sobres, Drôme, in a 3rd- or 4th-century inhumation (Leglay 1971, fig.41).

A 4th-century date is also likely for No.174 because the hoop pattern of alternating plain and vertically grooved units is a common one on 4th-century light bangles.

Nos 176–186 are all examples of the light bangles which were mainly a 4th-century type although they may have developed in the late 3rd century. These are very common. All of the decorative motifs found here are found on large numbers of bracelets widespread throughout Roman Britain with the exception of the alternating plain and cross-hatched pattern on No.184. This is less frequently encountered although it was popular in the Kent area (Cool 1981, 128). The simple undecorated bracelet with hooked terminals No.175 (not illustrated) may also be viewed as part of this range of light 4th-century bracelets.

No.187 and probably No.188 are fragments from multiple unit bracelets. The precise combination and arrangement of motifs usually varied on each example and it is very rare to find precise or even close parallels. The multiple unit bracelets are often more massive than the light bangles and appear to be a contemporary aggrandized version of them. Multiple unit bracelets are common in Britain but rare on the continent. This is unusual as most of the bracelets in use in Britain in the 4th century were types that were widespread throughout the western Empire.

It is more than probable therefore that multiple unit bracelets were a Romano-British type.

### Shale (Fig.51)

#### *Decorated, in increasing size order.*

191. Int. diam. c. 45mm. Outer face has single angular median ridge, undecorated (as Lawson 1975, fig.6, no.53). SF 3190.
192. Oval section, int. diam. c. 55mm. Outer face decorated with short oblique incised lines (as Lawson 1975, fig.6, no.49). SF 67, EVII, LB 154, spill.
193. D-section, int. diam. c. 55mm, decorated with ring-and-dot. SF 3055.
194. Squarish section, flattened at top and bottom. Int. diam. c. 55–60mm. Outer edges decorated with adjacent notches, which extend halfway across the lateral faces, a common type of decoration which also appears on jet (see bead No.149). SF 279, EVI, LB 383, spill.
195. Oval section, int. diam. c. 60mm; with single median circling ridge and step on either side showing slight notching. SF 2073, BV, LB 2309, post-Roman.
196. Oval section, int. diam. c. 68mm; with curved inner face, more sharply rounded outer face, with broad median ridge (rounded) and four grooves on one side, three grooves on the other. One end burnt. SF 3247, Building 1, Room 5 hypocaust.

#### *Undecorated, in increasing size order (internal diameters in mm).*

197. 38mm. SF 2022, Area 2 GI, LB 1999, spill.
198. 42mm. SF 261, EVII, LB 154, spill.
199. 42mm. SF 2635, DXI, LB 2756, spill.
200. 46mm. SF 2566, DXI, LB 2756, spill.
201. 48mm. SF 748, EVIII, LB 895, refuse.
202. ?50mm. SF 324.
203. 50mm. SF 2628, DXI, LB 2756, spill.
204. 54mm. SF 752.
205. 55mm. SF 1497, EVII, LB 1691, post-hole.
206. 60mm. SF 2646, EXI, LB 2045, refuse.
207. 60mm. SF 211, EVII, LB 164, refuse.
208. 60mm. SF 325, EVI, LB 383, spill.
209. ?60mm. SF 2193, EVII, LB 1670, post-Roman.
210. ?64mm. SF 66, EVII, LB 154, spill.
211. 64mm. SF 3214, FVI–VIII, LB 3529, refuse.
212. ?65mm. SF 2113, BIV, LB 2342, post-Roman.
213. 68mm. SF 424, EVI, LB 383, spill.
214. 68mm. SF 1380, AVIII–IX, LB 1599, F6.
215. 70mm. SF 2802, Area 4, KVIII, LB 3055, outer ditch.
216. 70mm. SF 2787, Area 4, KVIII, LB 3035, outer ditch.
217. ?70mm. SF 1383, EVI, LB 383, spill.
218. 72mm. SF 1600, DVI, LB 420, spill.
219. 75mm. SF 2314, EIX, LB 1872, refuse.

### Discussion

(Table 11; microfiche)

Twenty-nine bracelets were found, six of which are decorated. They occur exclusively in 4th-century or later contexts, over 72% from the late spill, post-Roman contexts and ploughsoil. Five from refuse deposits on the rampart came from layers dated mid- to late 4th century. The internal diameters range from 38 to 75mm, the majority being between 50 and 70mm, and in common with other sites, the commonest internal diameter is about 60mm. The cutting of bracelets from a single slab results in two or more peaks occurring on a histogram of the sizes (Calkin 1955, 61, fig.6; Lawson 1975, 248, fig.3); while two peaks are common, smaller peaks can occur as shown in Table 11 (microfiche).

Caister differs from the Silchester collection in having fewer smaller sizes (Silchester armlets start at c. 30mm), and none of 80mm (10% of the Silchester armlets are over 80mm and 42% of those from the fortress baths at Caerleon have 80mm diameters (Zienkiewicz 1986, 213)). The baths and forum at Exeter produced ten, with seven probably above 80mm internal diameter, up to c. 12.5mm (Bidwell 1979, 239, fig.74, nos 68–77). The range of diameters



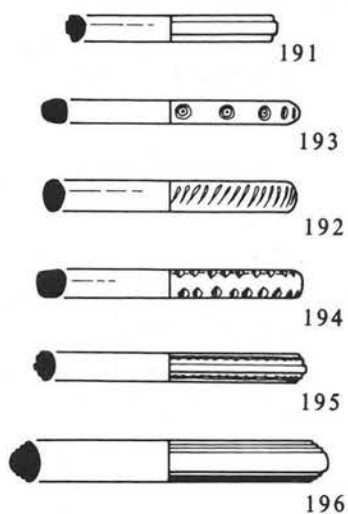


Figure 51 Bracelets, shale. Scale 1:2.

suggests that bracelets were worn by both sexes, and the emphasis at Caister on the smaller sizes may indicate more women. Although the smaller examples are categorized as bracelets, it is unlikely that the very small rings of 30–40mm could be bracelets even for children, and are more probably hair-rings or dress-fastenings (Lawson 1975, 247). As can be seen from Fig.51, there is no obvious relationship between diameter and thickness; the most common thickness lies in the range 5–7mm (over 64% of the armlets).

**Bone**  
(Fig.52)

220. Fragment of thin rectangular section, polished externally, int. diam. c. 100mm. SF 1774, AIX, LB 1579, spill.

Bone bracelets are relatively rare and would appear from the few known examples to belong to the late Roman period. The identification of this fragment as a bracelet is not certain.

**Finger-rings**

*Copper alloy*  
by H.E.M. Cool  
(Fig.53)

Unillustrated. Nos 226, 227, 229–239, 241–246; see microfiche.

221. Hoop expanding slightly to empty cup-shaped setting on each shoulder; cups separated from flat circular bezel by constriction; bezel has ring-and-dot cells produced by an internal metal division resembling a cog-wheel; ring-and-dot filled with enamel, now green. (From excavations by Great Yarmouth Archaeological Society, 1979, 29 Norwich Road.)

222. Thin 'D'-sectioned shoulders expanding evenly to flat oval bezel with diamond-shaped raised block punched with letters AMA. SF 818, FVII, LB 936, refuse.

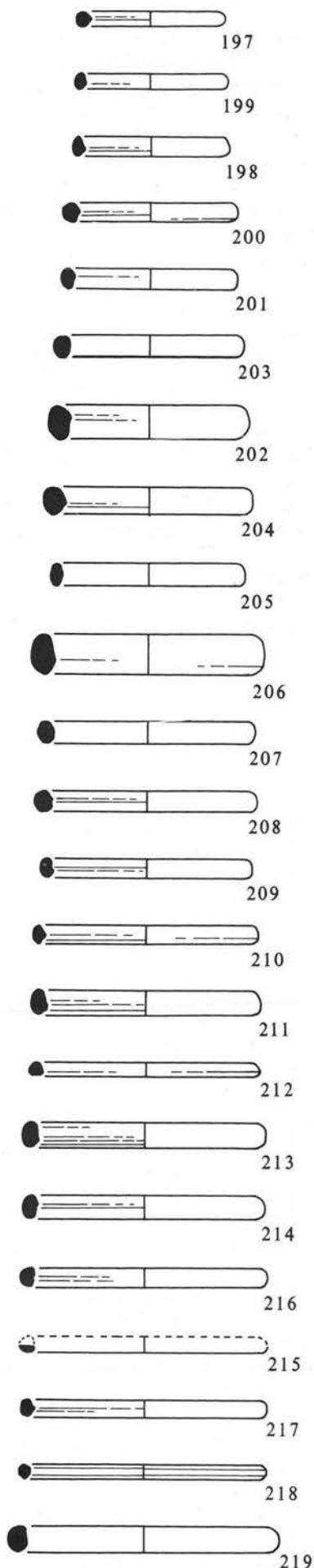
223. Rectangular-sectioned hoop expanding and thinning evenly to shoulders; three grooves parallel to edges on shoulders with three vertical grooves on hoop below. SF 529.

224. Rectangular-sectioned hoop broken at back; bezel of three rectangular panels, central one largest, formed by four constrictions across hoop. SF 1565, DVI, LB 420, spill.

225. Rectangular-sectioned ten-sided faceted ring. SF 2229, ABIX, LB 2450, Room NW3/4.

228. Rectangular-sectioned annular ring. SF 2640, DXI, LB 2756, spill.

240. Oval-sectioned wire bent into ring with ends twisted together. SF 2029, Area 2, LI, LB 2251, ditch.



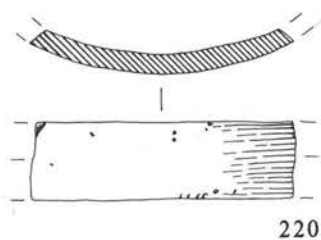


Figure 52 Bracelet, bone. Scale 1:1.

#### Discussion

No.221 has a central bezel panel filled with enamel separated from a small cup on each shoulder by a constriction. It is an example of a variant of a type which is more frequently found with a central bezel panel and ridged and constricted shoulders such as one from Brancaster (Henig 1985a, fig.88, no.28). Examples with the single bezel panel can have a solid enamel setting, sometimes with dots of other colours set in, or have two concentric rings of enamel as on No.221. The dividing copper alloy ring in those finger-rings can be either plain, zig-zag or resemble a cog-wheel as on No.221. By contrast, all the rings with shoulder cups from Britain known to the present writer have a cog-wheel ring and are very similar overall, perhaps suggesting they all came from one workshop.

The small cups on the shoulders of No.221 are now empty. They may originally have been filled with enamel but there is no trace of any in them now. Alternatively, they may have had small domed glass settings as in a ring from Heddernheim (Henkel 1913, taf.XLIII/1083).

Although not numerically large this variant has a wide geographical distribution as examples have also been found in the Rhineland (Henkel 1913, taf.LI/1333-4; LXXI/1886 and the Heddernheim example noted above) and at Nuits-Saint-Georges (Thevenot 1948, fig.39 bottom centre and right). None are from dated contexts. In general rings with constricted shoulders are a 2nd- and 3rd-century form (Cool 1983, Finger Ring Group XIII) but the ones with enamelled bezels seem to be of 2nd-century date. We may note one with a single circular bezel panel from Scole (Rogerson 1977, fig.56.13) in a context dated from the Trajanic to mid-Antonine period and one from Leicester with two bezel panels (Kenyon 1948, fig.83, no.12) in a deposit dated to AD 125 to 150. A 2nd-century date is also suggested by the obvious similarities between the enamelled bezels and the headstuds on the Lamberton Moor type of brooch which was in use at the end of the 1st and in the 2nd century (Painter and Sax 1969/70, 172) and the discs of the disc and trumpet brooches in use in the Antonine period (Richardson 1960, 206).

No.222 is a simple expanded ring with the word AMA punched onto a diamond-shaped raised bezel. The ring form was in use from the 1st to 3rd centuries but examples with similar inscriptions are generally of 3rd-century date. The inscriptions are usually messages of love and praise such as AMA/ME, AVE/PIA, AVE/VITA, etc. (see for example Henkel 1913, nos 818-73). Other examples from Britain include a gold ring from Carlisle (Henig 1974, no.774) and a ring from Wroxeter (Rowley House Museum, Shrewsbury).

No.223 is a fragment from a ring with shoulder incised with a triangular pattern. It probably had a block bezel like

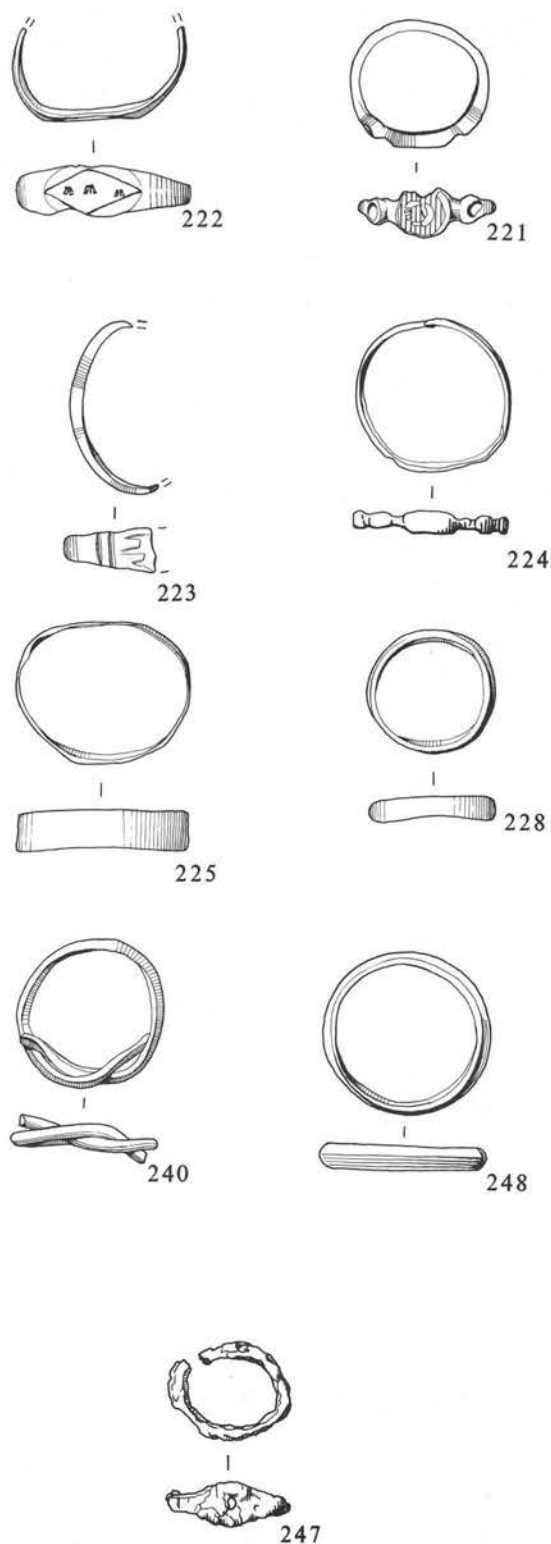


Figure 53 Finger-rings: copper alloy (221-228, 240), iron (247) and silver (248). Scale 1:1.

the ones from *Verulamium* (Wheeler and Wheeler 1936, fig.47, no.79) and Richborough (Bushe-Fox 1949, pl.XXXV, no.107). These tend to be found in 4th-century contexts but it is probable that they were also in use in the 3rd century.

Rings with faceted hoops such as Nos 225 and 226 were a 3rd- and 4th-century form. This was a period when the finger-ring was increasingly becoming an ornamental item rather than the mainly functional one it had been before. It is thus likely that No.224 is also of late Roman date, for a wide variety of such light trinket rings were in use then.

**Iron**  
by Quita Mould  
(Fig.53)

247. Finger-ring. Single strand of round-sectioned wire with twisted ends coiled to form the open circle of the bezel. SF 3093, Area 4, LB 3335, Grave 77.

This was found by the right hand of the skeleton in Grave 77. A similar finger-ring of silver wire was found in grave GI at Finglesham (Chadwick 1958, 11, fig.6, M). This style of ring was current in the late 6th century overlapping into the beginning of the 7th century, continuing the tradition of strand rings with coiled clasps found earlier (e.g. early Roman copper alloy ring from Colchester: Crummy 1983, fig.50, 1756).

**Silver**  
by Sue Margeson  
(Fig.53)

248. Finger-ring, of folded sheet. Probably Victorian or later. SF 2099, BV-VI, LB 1396, post-Roman.

**Glass**  
by Jennifer Price and H.E.M. Cool  
(Fig.54)

249. Black, two-thirds extant. Keeled 'D'-section hoop expanding to shoulders. Bezel originally of three circular flat-topped panels of which two remain; divisions between panels and between panel and shoulder deeply indented. Panels attached separately to bezel. Interior of ring very uneven with central seam and ground areas where pronounced irregularities have been removed. SF 2261, AX, LB 666, spill.

Glass finger-rings such as No.249 are not common finds from Roman Britain. Ones in black glass have been found at Smithfield, London (Wheeler 1930, fig.30, no.20) and at Poundbury (Price forthcoming) but in neither case do they show the tripartite bezel form of No.249 which is unusual on Roman finger-rings of any material. A very similar opaque black glass finger-ring with this bezel arrangement was found in a 3rd-century context at Braives, Belgium (Gustin 1981, fig.49, no.63).

**Pendant, jet**  
(Fig.54)

250. Wedge-shaped ?pendant, damaged at tapered end with slight evidence for a hole bored parallel to the face; rectangular section, curved face decorated with longitudinal grooves and oblique notches on the edges, which also appear on the base contained in a grooved margin. SF 1182, BC V-VI, LB 1445, post-Roman.

Similar objects have occurred at Wroxeter (Bushe-Fox 1913, pl.XI, no.27) and Richborough (Bushe-Fox 1949, pl.XXXV, no.111) but both have a projection pierced for suspension at the thick end, as does an example from South Shields (said to be in shale: Allason-Jones and Miket 1984, 7.169), this latter pendant being very similar decoratively to No.250. There is also a jet pendant from South Shields decorated with ring-and-dot and notched edges which is perforated for suspension at the narrow end (Allason-Jones and Miket 1984, 7.79), and a shale block of the same type, showing evidence for a suspension hole at the thin end (Allason-Jones and Miket 1984, 7.164). There are several other similar blocks from South Shields and strips with the same decoration (Allason-Jones and Miket 1984, 7.142 (shale), 7.148 (jet), 7.165-7.168 (shale)). Decoration, when it occurs, is confined to the face, sides and bottom and this, with the suspension rings, makes it clear that these were intended to be worn rather than, as has been suggested, used as chess/gaming pieces. Given the difficulty of distinguishing shale from jet or cannel coal, the rarity of objects of angular form in shale as opposed to jet, and the number of these at South Shields, suggests that these were products of the Whitby jet industry, active in the 3rd and 4th centuries.

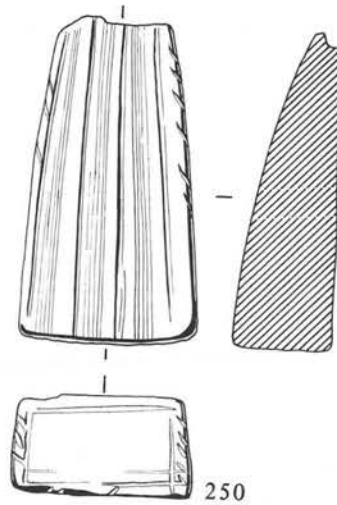
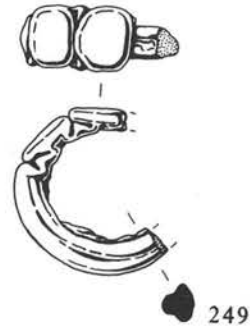


Figure 54 Finger-ring, glass (249). Pendant, jet (250). Scale 1:1.

**Buckles, copper alloy**  
(Fig.55)

- 251. Small D-shaped. SF 909, DX, LB 1010, spill.
- 252. ?Fragment. SF 1678.
- 253. Fragment, angular cross-section. SF 3191.
- 254. Small plain. SF 3067, Area 4, LVI, LB 3324, Grave 40.
- 255. Possibly the tongue from a buckle; a flat strip folded to form the attachment-ring, and a small sheet of copper alloy wrapped around it. SF 486.
- 256. ?Buckle decorated with incised wavy-lines. Almost certainly of medieval or post-medieval date. SF 3015.

**Buttons, copper alloy**

Unillustrated. Nos 257-274; see microfiche.

**Hobnails, iron**

Unillustrated. Nos 275-289; see microfiche.

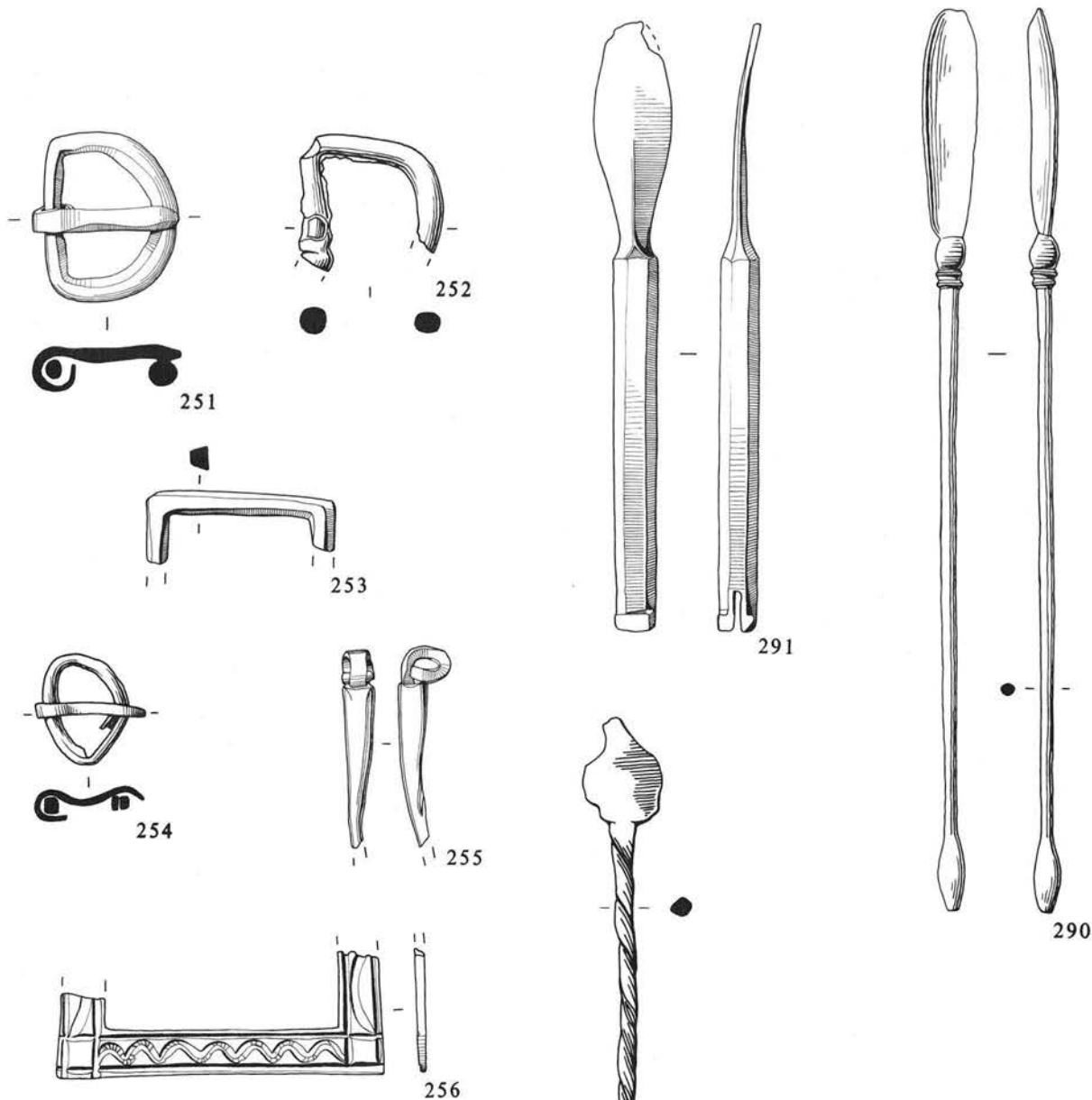


Figure 55 Buckles; copper alloy. Scale 1:1.

## II. Toilet, surgical or pharmaceutical instruments

(Figs 56, 57)

### Spoon-probe

(Fig.56)

290. Copper alloy. SF 3231 and 3241, Area 1, unstrat.

### Scalpel

(Fig.56)

291. Copper alloy. Leaf-shaped blade with double edge; octagonal-sectioned shaft with a small slot at the end, coupled with slight notches. A similar example from Colchester (Crummy 1983, fig.68, no.1948) is from a context c. AD 150–250. SF 453.

### Spatula

(Fig.56)

292. Copper alloy. Hooked blade, slightly damaged, with a twisted handle ending in a point. This can be broadly paralleled at Richborough by two silver instruments (Bushe-Fox 1949, pl.XXXVII, nos 126–7). SF 2889, EVI–VII, LB 3113, portico.

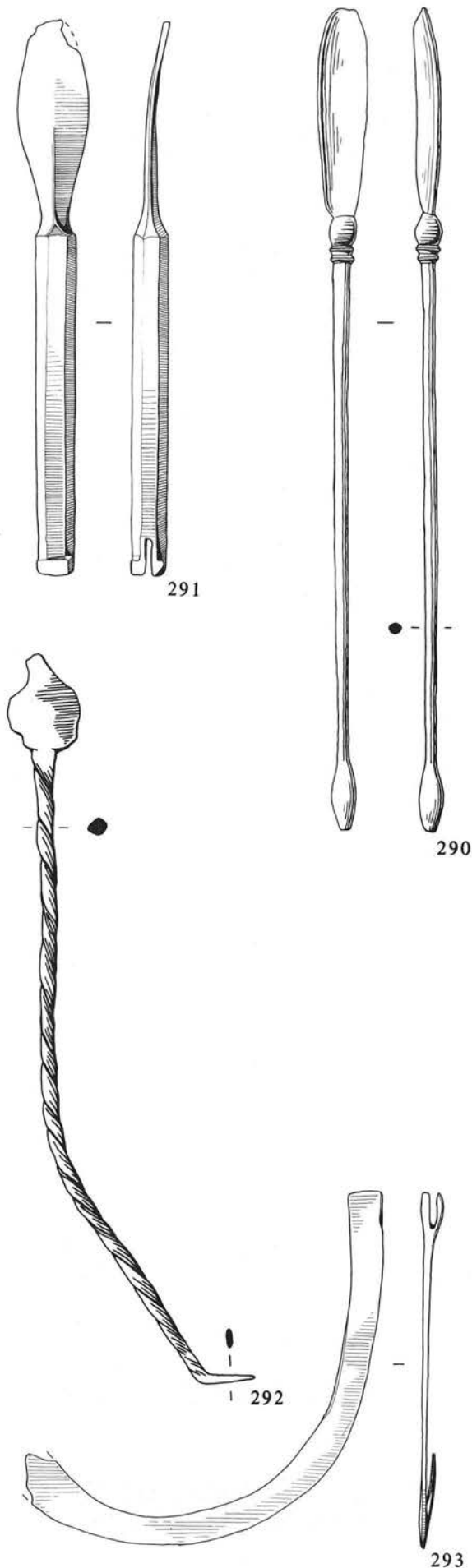


Figure 56 Spoon-probe (290), scalpel (291), spatula (292) and ?surgical instrument (293): copper alloy. Scale 1:1.

**Miscellaneous**

(Fig.56)

293. Very thin curved copper alloy strip with a bifurcated end; the outer edge of the point damaged. Purpose unknown; perhaps connected with some form of surgery. SF 684, FVI, LB 781, gully F58.

**Cosmetic mortar**

(Fig.57)

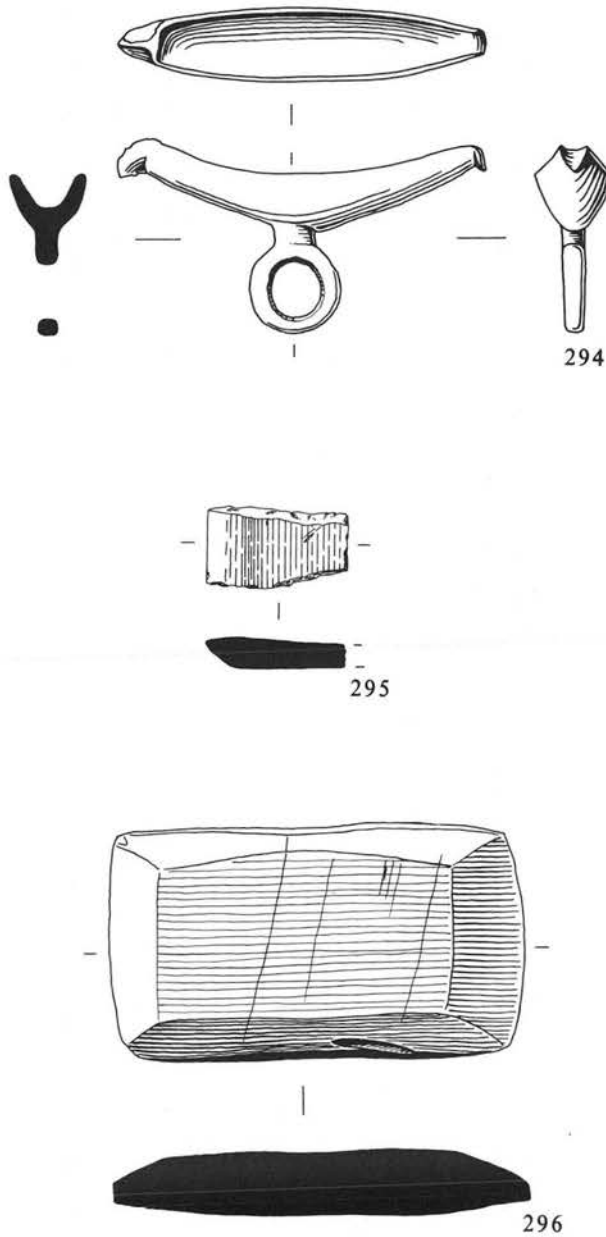
294. Copper alloy. Centre-looped mortar from a cosmetic set. A very small example with a proportionately short bow with lipped terminals. For discussion and catalogue of cosmetic sets see Jackson 1985 (No.294 is Jackson's no.85), and for East Anglian finds, Trett 1983. The majority of East Anglian examples are centre-looped (Jackson 1985, fig.4). Found on the site in 1936. NCM 155.948.

**Palettes**

(stone identifications by Diana Smith)

(Fig.57)

295. Fragment, made from a fine-grained mudstone, showing some wear on the unchamfered side, the underside showing a rough surface. SF 4598. BXI, LB 3007.



296. Complete, made from a fine-grained mudstone, worn more on the upper, unchamfered surface, but showing some wear on the underside.

**III. Objects used in the manufacture or working of textiles**

(Figs 58-63)

**Needles, bone**

(Fig.58)

297. Complete with flattened head and elongated hole. A common Roman type. SF 1921.

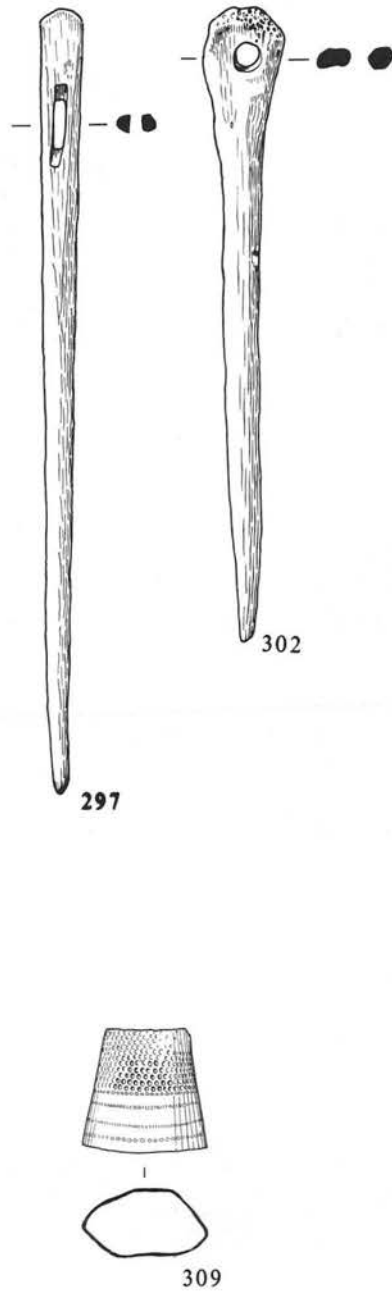


Figure 57 Cosmetic mortar (294) (copper alloy, scale 1:1) and palettes (295-296) (stone, scale 1:2).

Figure 58 Needles, bone. Thimble, copper alloy. Scale 1:1.

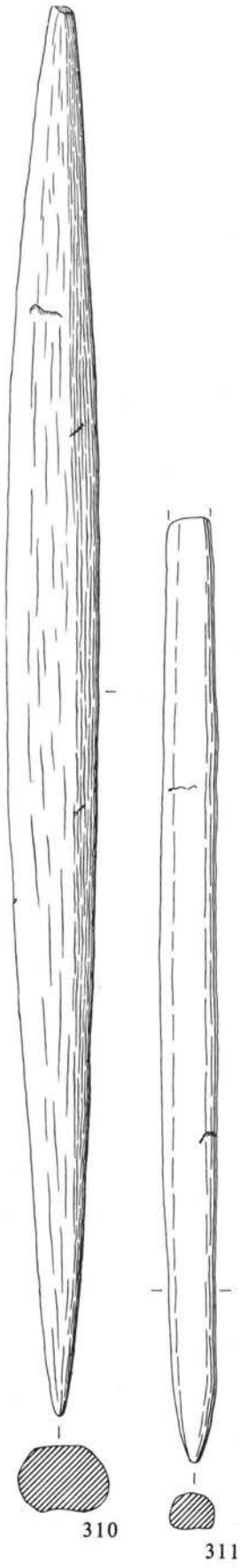


Figure 59 Spindles; bone. Scale 1:1.

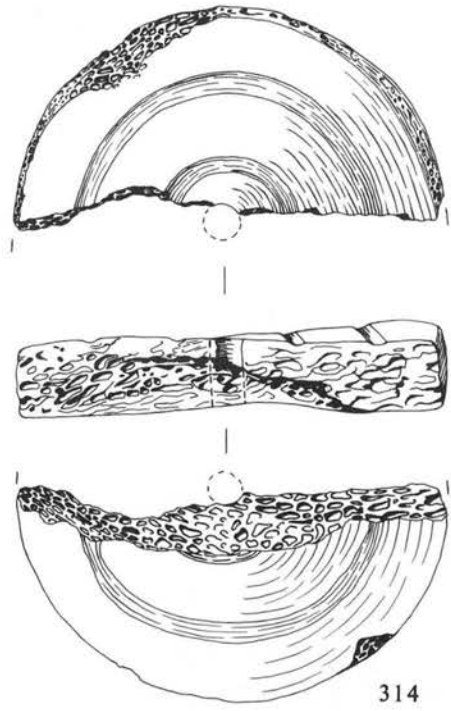
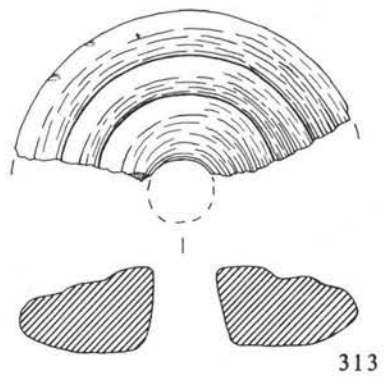
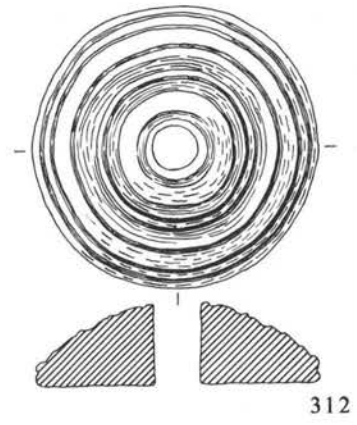


Figure 60 Spindle-whorls; bone. Scale 1:1.

Unillustrated. Four of the same type, Nos 298–301; see microfiche.  
**302.** ?Needle formed from a pig fibula, the distal end slightly shaped by trimming and pierced, the shaft tapered to a point. SF 2704, CXI, LB 2902, F36.

Although this could be of Roman date for coarse sewing work, it is probably from the Middle to Late Saxon occupation, and may have been used as a pin rather than a needle (Mann 1982, fig.6).

### Pins, copper alloy

Unillustrated. Six loose-headed 17th–18th century pins, Nos 303–308; see microfiche.

### Thimble

(Fig.58)

**309.** Copper alloy. Although thimbles are known from Roman contexts, this example is more likely to be of post-Roman date. SF 922.

### Spindles, bone

(Fig.59)

**310.** Irregular section. One tip chipped. SF 1985, Area 2, MI.

**311.** Broken, of oval section, flattened at the point. SF 2130.

### Spindle-whorls

(Figs 60, 61)

#### Bone

(Fig.60)

**312.** Plano-convex with concentric circle decoration. Similar examples from Richborough (Bushe-Fox 1949, pl.LIV, no.221) and Portchester (Cunliffe 1975, fig.117, no.107; fig.118, no.108). SF 2764.

**313.** Fragment, similar but less well-finished. SF 1373, EVI–VII, LB 383, spill.

**314.** Fragment, flat with concentric circles on both sides, made from scapula of cattle or horse. SF 2511. DXI, LB 2722, Room 7, post-Roman.

#### Shale

(Fig.61)

**315.** Complete, with biconical section, decorated with three concentric grooves on the top, two grooves on the bottom, and two fine shallow grooves around the circumference. Similar spindle-whorls from Silchester (Lawson 1975, fig.14, no.108a), Portchester (Cunliffe 1975, fig.121, nos 127, 128) and Colchester (Crummy 1983, fig.71, no.2002). Where dated, these would seem to fit the late 3rd to 4th centuries. SF 2313, EIX, LB 1872, refuse.

**316.** Complete, of biconical section, undecorated. Similar examples from late 4th-century deposits at Shakenoak (Brodribb *et al.*, 1968, fig.15, no.1; 1973, fig.22, nos 9, 10), Portchester (Cunliffe 1975, fig.121, no.130) and Silchester (Lawson 1975, fig.14, no.108e). SF 1202, GIX, LB 1459, berm.

#### Stone

(Fig.61)

**317.** Quartzite. SF 3072.

**318.** Quartzite. SF 2574. These were probably made from conveniently shaped pebbles from glacial or post-glacial deposits.

#### Pottery

(Fig.61)

**319.** Made from grey base, with concentric groove around central hole on one side. SF 62, EVII, LB 154, spill.

**320.** Made from grey base, the bottom string-marked and the upper side roughly trimmed. SF 335, CIX, LB 469, spill.

**321.** Made from fine grey body sherd with burnished exterior surface. SF 3249, Area 1, Wall 4 footings.

**322.** Made from Central Gaulish samian base. SF 1213, AVI, LB 1476, F3.

Unillustrated. Twelve others, Nos 323–334; see microfiche.

### Loomweights, fired clay

(Fig.62)

**335.** Complete, bun-shaped, in fine light brown clay with some mica, burnt greyish. Worn smooth with grooves on either side. SF 98.

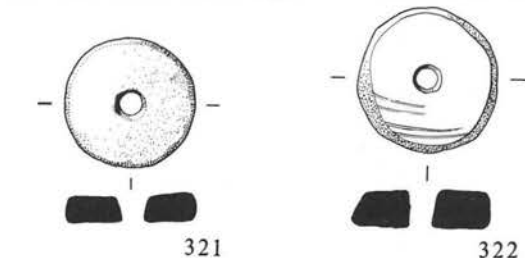
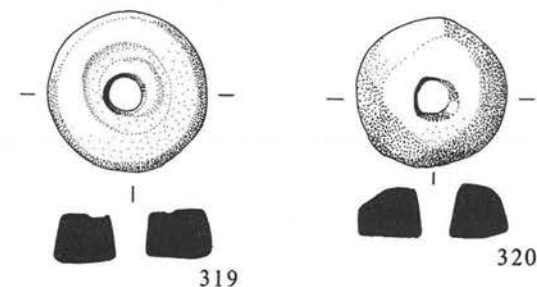
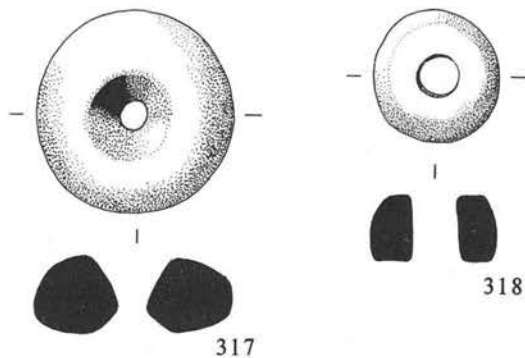
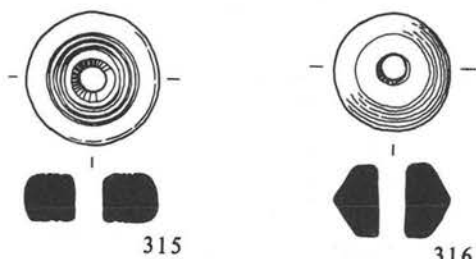


Figure 61 Spindle-whorls; shale (315–316), stone (317–318) and pottery (319–322). Scale 1:2.

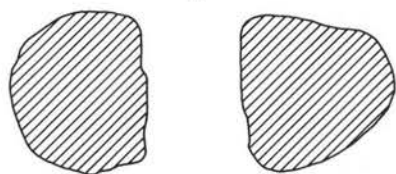
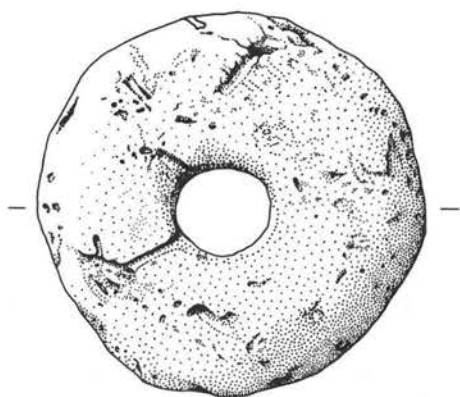
**336.** Damaged, bun-shaped, in coarse brown clay with flints and white clay inclusions, burnt. One side has four ?finger impressions equally spaced around the central hole. SF 2329.

**337.** Fragment, bun-shaped, in fine light brown clay, worn smooth. SF 837, DVI, LB 420, spill.

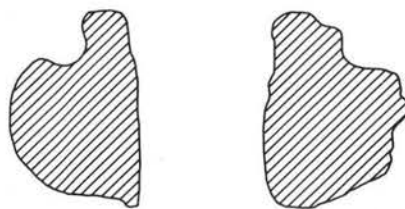
### Weaving tablet

(Fig.63)

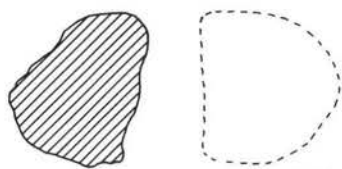
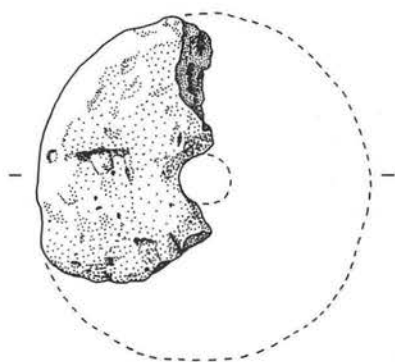
**338.** Triangular, bone, pierced at each corner, one damaged and mended with copper alloy secured by two rivets. For use and gazetteer, see Wild 1970, 73–4, 140–1. 1935 find, unstratified.



335



336



337

Figure 62 Loomweights, fired clay. Scale 1:2.

#### ?Pin beater

(Fig.63)

339. Bone, well smoothed slightly swollen shaft with one pointed end, the other rounded. SF 1999, Area 2, HI, LB 1809, spill.

#### ?Bobbin

(Fig.63)

340. Solid; ?antler. SF 2437, CX, LB 2628, spill.

### IV. Household utensils and furniture

(Figs 64–9)

#### Spoons

(Fig.64)

#### Copper alloy

by David Sherlock

Remains of five Roman spoons were recovered. All are of copper alloy but No.341 was coated with tin in imitation of silver. This spoon has a purse-shaped bowl and is stylistically the earliest. Bowls of the other spoons are all oval. None of the spoons are of particular interest for their date, design or context, or difficult to parallel with examples from elsewhere.

- 341. Fragment of bowl and handle in light-weight copper alloy, tinned, the bowl originally purse-shaped, the handle originally about 10cm long and pointed. Similar examples from Colchester and York (all uncontexted) and, with a plainer join between bowl and handle, from Hockwold-cum-Wilton, Norfolk (NCM 129). Purse-shaped bowls are mainly 3rd century, but are sometimes found in later contexts. For dating and continental parallels see Riha 1982. SF 988, EX, LB 1167, refuse.
- 342. Corroded bowl showing signs of right-handed use and fragment of handle. 2nd–4th century. SF 275, EVI, LB 383, refuse.
- 343. Fragments of bowl and handle of 4th-century spoon, the commonest type from Roman Britain. SF 1979a, Area 2, LI, LB 2213, spill.
- 344. Fragment of handle and join with notched decoration, the bowl missing. Common 4th-century type; also found in pagan Saxon cemeteries (e.g. Haslingfield, West Stow), sometimes with ring-and-dot and more pronounced notched decoration. SF 1836.
- 345. Small fragment of handle and join, similar to but plainer than the last. 4th century. SF 1664.



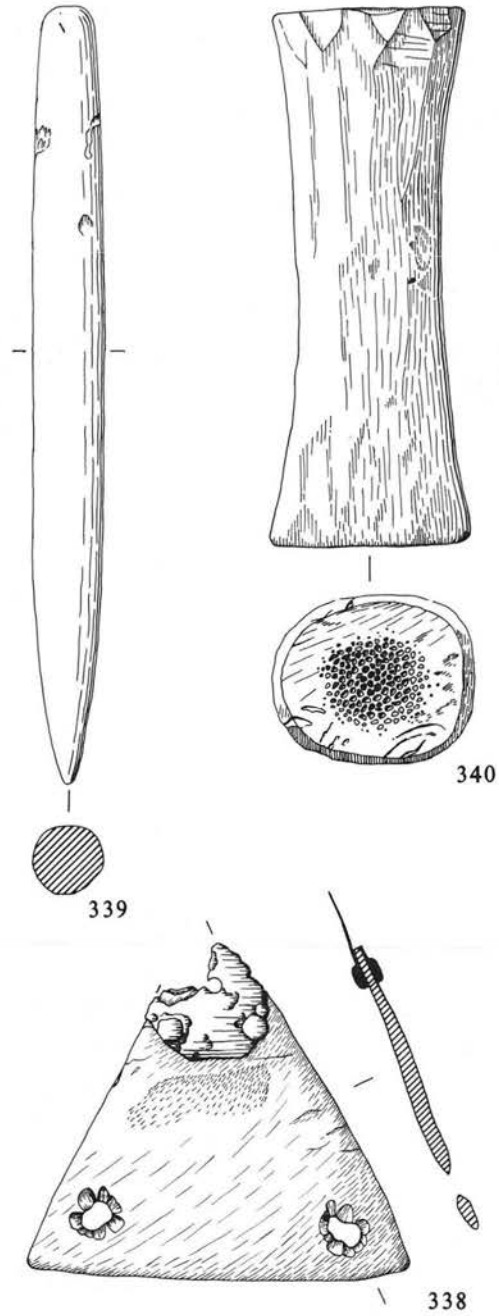


Figure 63 Weaving tablet (338), pin beater (339) and bobbin (340): bone/antler. Scale 1:1.

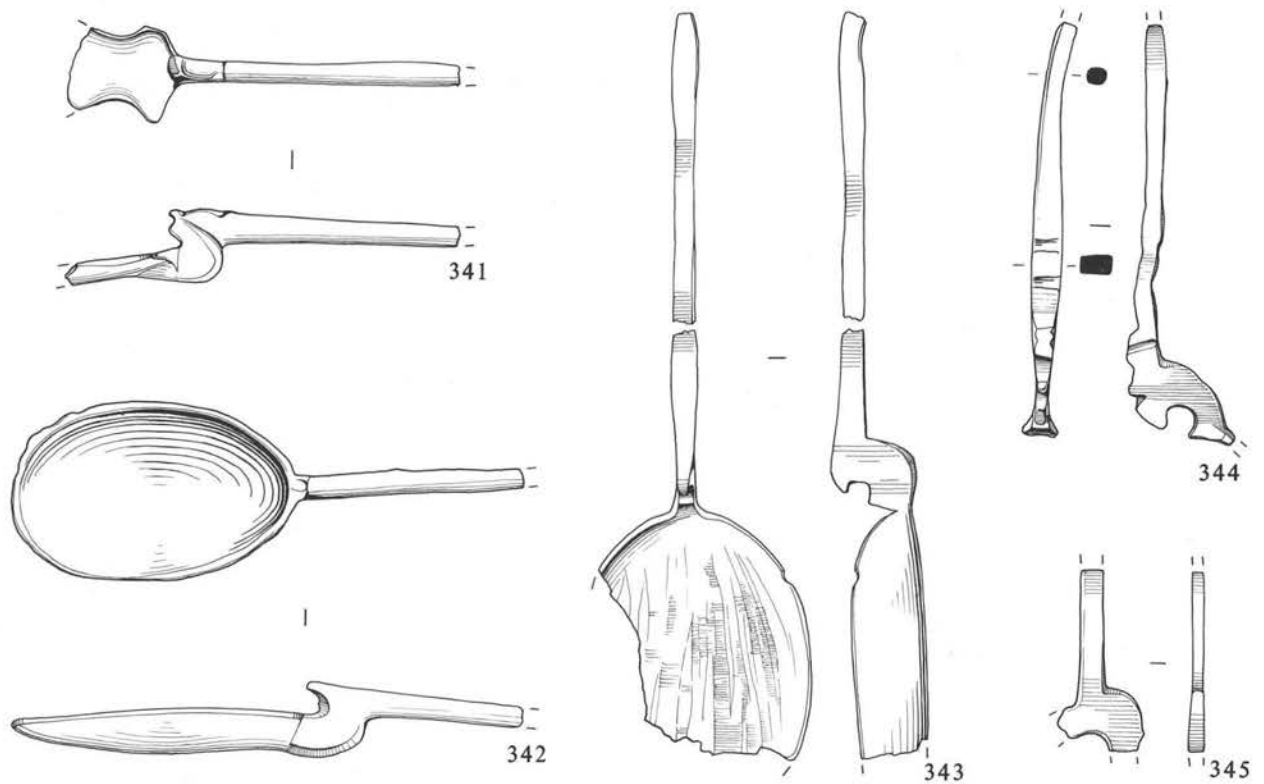


Figure 64 Spoons, copper alloy. Scale 1:1.

*Silver*  
by Sue Margeson

Unillustrated. No.345a. Tea-spoon, AD 1810; see microfiche.

**Vessels**

*Shale*  
(Fig.65)

346. Plain-rimmed hemispherical **bowl**, with slight groove on interior. No parallels have been traced.

347. Flake from the top of a reeded rim of a large **plate or shallow dish** (diam. c. 240mm). The complete rim form probably similar to two vessels from Silchester (Lawson 1975, 262, fig.9, nos 81, 82). SF 157.

Unillustrated. Three fragments, Nos 348–350; see microfiche.

*Stone*  
(Fig.65)

351. Steatite **?bowl**, rim and non-joining base sherds. Rim diam. estimated at 160mm, similar diam. base, the wall curving at a carination (diam. c. 180mm); height unknown. This appears to be the first steatite bowl of Roman date to be published from Britain; it differs from those of Viking date in having been lathe-turned rather than chiselled.

The pottery from the bags associated with both finds suggests a mid-3rd century and later date; the other material from both layers (i.e., less closely associated) takes the date into the 4th century. The earliest deposition date seems to be mid-3rd century, and could well be much later.

The possibility must remain that this is a vessel of Roman date, brought back from the 'Grand Tour' and subsequently lost, but there seems good reason to believe this is a genuine Roman site find, bearing in mind

the glazed mortarium (Fig.158, No.717), originating probably in Pannonia, coin hoard (No.1) put together in much the same area, and the presence of soldiers (see also the helmet from Burgh Castle: Johnson, S. 1983, 70, fig.31).

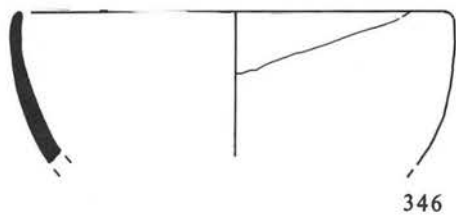
On the continent, finds of steatite vessels are more common, but seem to be confined to Upper Germany, Switzerland and the Danubian frontier. Geologically two different types of steatite are known in the Alps and although the source of the Caister vessel has not been defined, this use of steatite seems to be a central European custom continuing into the early 20th century. The softness of the stone, making it easy to work, perhaps combined with its function in that area (for cooking and storage vessels) led to little typological change with ensuing difficulties in precise dating. The stone was exploited for vessels from the 1st century AD, and some forms cannot be dated closer than 1st to mid-3rd century. The fragmentary nature of the Caister vessel precludes precise parallels with the Central European finds, but it is unlikely to have reached Caister before the early 3rd century (it might, however, have been of earlier manufacture and, equally, could have arrived, been broken and disposed of, much later). SF 4596, EIX, LB 954, rampart spill; SF 4594, FVII, LB 69, upper refuse.

*Pewter*  
by David Gurney  
(Fig.65)

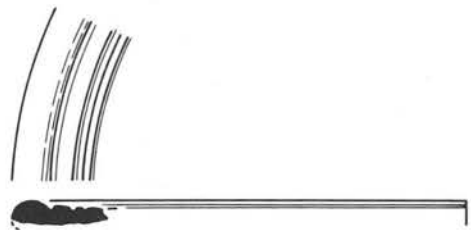
352. Shallow **dish** of rim Type 4b (Peal 1967, fig.4). The illustration includes a restored profile. SF 1528, DVII, LB 1693.

353. Unillustrated. Fragment, probably also from a shallow dish of rim Type 4b. SF 1434, EVI–VII, LB 1637.

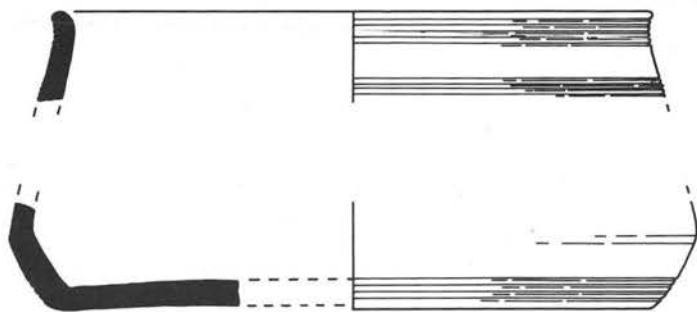
These two pewter finds are associated with pottery of mid- to late 4th-century date. There is no reason to suggest that they cannot be dated to the same period, although close dating of the various forms is, at present, lacking.



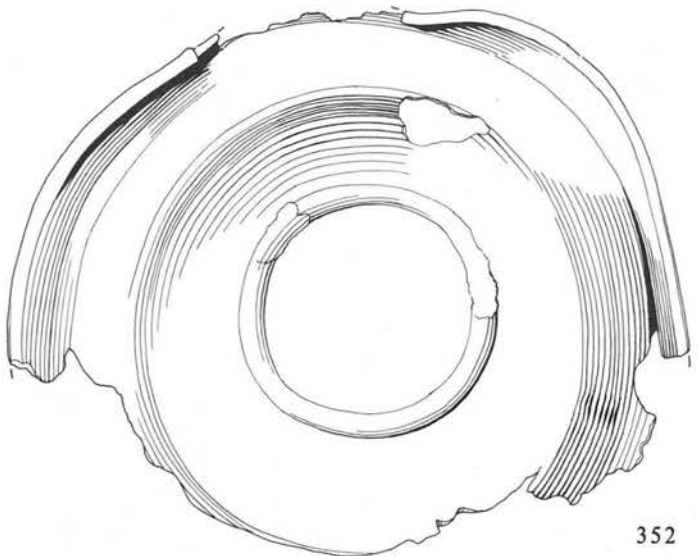
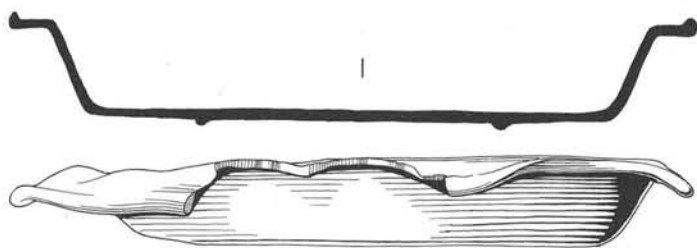
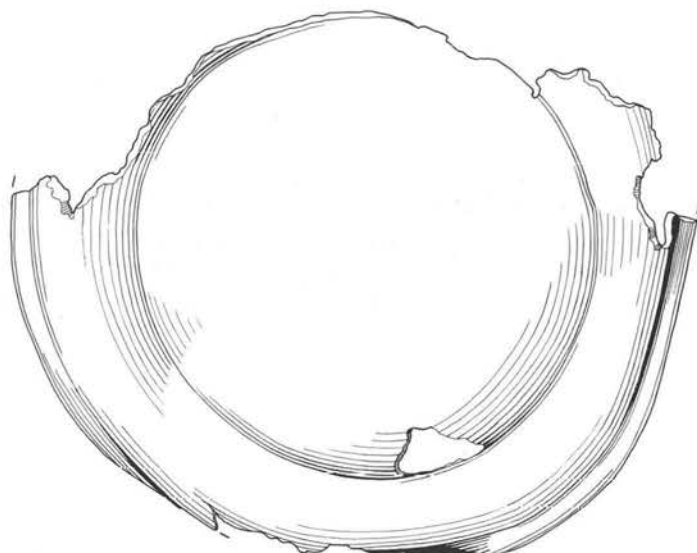
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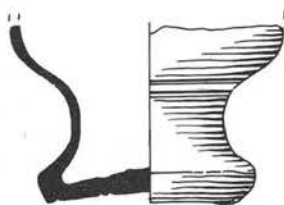
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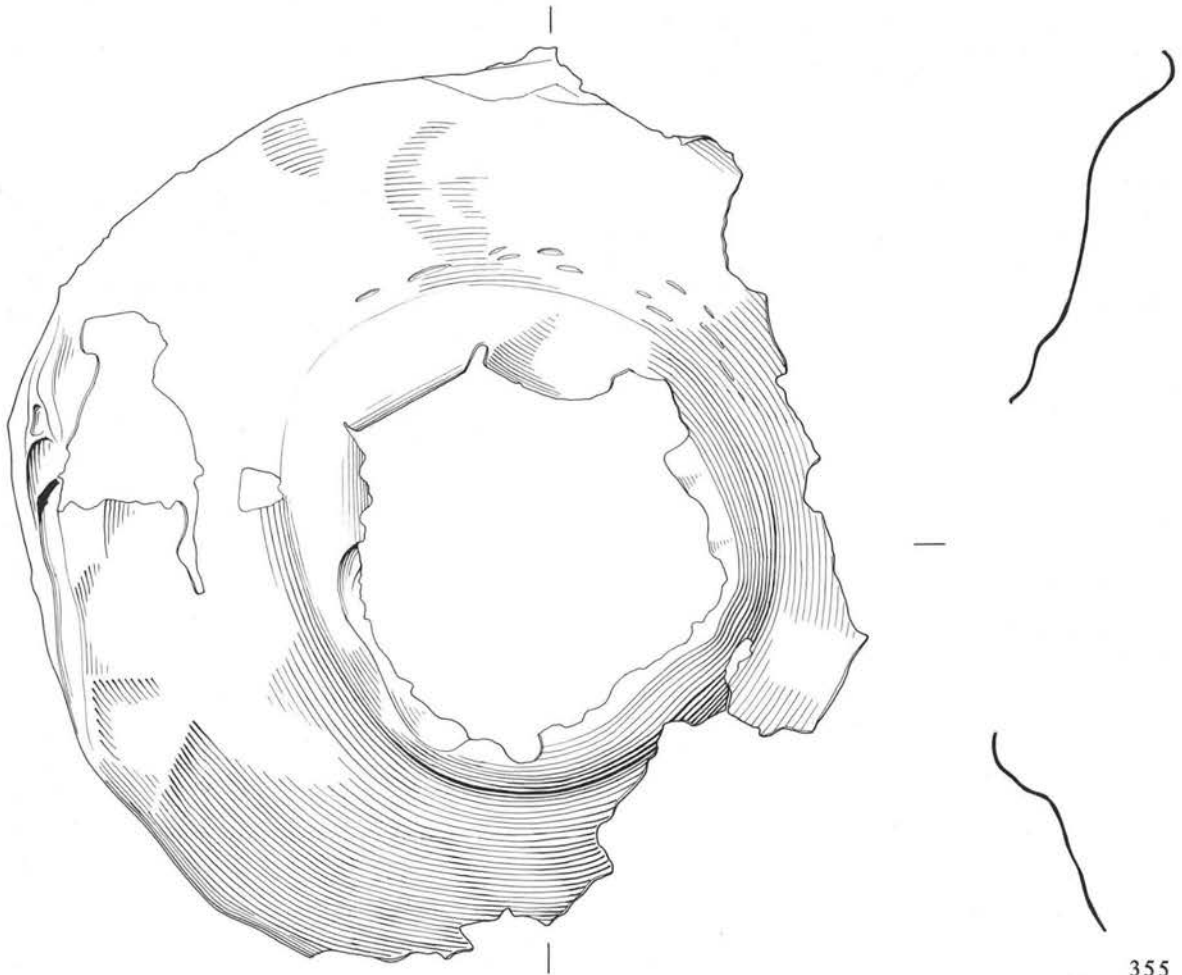


352



354

Figure 65 Vessels: shale (346-347), stone (351), pewter (352) and copper alloy (354). Scale 1:2.



355

Figure 66 Vessel, copper alloy. Scale 1:2.

#### Copper alloy

(Figs 65, 66)

354. Fragmentary base of a small ?vessel; incised lateral lines decoration; concentric incised circles on base (or ?top). SF 1786, BCIV, LB 1921, post-Roman.

355. Damaged sheet fragment, perhaps from a bowl. SF 3228, DEVI, LB 3166, Room 1 upper floor.

#### Pottery

Unillustrated. Samian stopper or lid, No.356; see microfiche.

#### Quernstones

(Fig.67; microfiche)

357. Fragment, lower grinding stone, of medium grained sandstone from Lower Cretaceous, possibly Greensand (contains glauconite); not of local origin; outcrops known in Cambridgeshire, Kent and Sussex. From By-pass excavations.

Numerous fragments of lava quernstones were found, mostly very crushed and showing no features of interest. These are likely to have been imported from the Mayen quarries in the Eifel region of Germany (Hörter *et al.* 1951; Crawford and Röder 1955; Röder 1972); although the trade

in querns from this area stopped at the end of the Roman period, it resumed in the Middle to Late Saxon period, and it is therefore questionable whether the finds from Caister, mostly from the ploughsoil or unsealed deposits, are Roman, later, or a combination of the two occupations. The total quantity from the excavations amounted to 9.536kg, of which 7.803kg came from Area 1 (Area 2: 0.405kg; Area 4: 1.038kg; unprovenanced 0.290kg).

The only useful information to be gained from these fragments lies in their distribution across the site, which might indicate areas of rubbish disposal. They were therefore weighed, and percentages plotted to grid squares. The distribution pattern does show a comparative absence from the main Building 1, virtually none from the area of the large refuse deposit on the rear of the rampart, and the bulk of the finds occurring in the open areas west of the road, which were also areas of post-Roman activity.

It is interesting that the only fragments of quern found in the area of the fort are from lava querns, in view of the suggestion of McIlwain (1980, 132) that their importation was specifically related to the army. Since most Roman trade in lava querns is thought to have occurred in the 1st and 2nd centuries (Peacock 1980, 50) and no definite evidence of late importation is known (although presumably some could have come in the same shipments as the Mayen Ware pottery vessels), either these are residual, survivals in use from the initial occupation of the fort, or they more properly belong to the Middle Saxon settlement.

**Domestic objects of iron**  
by Quita Mould  
(Fig.68)

358. Square sectioned tang and flat, slightly dished shoulders of bowl. Probable **spoon fragment**. SF 3126.

359. Large **ladle** with broken hemispherical bowl and rectangular-sectioned handle. SF 2946, DIX-X, LB 3190, Room 5.

Unillustrated. Nos 360-363; see microfiche.

364. Square-sectioned rod with hooked terminal, probable **bucket handle**. SF 966, EX, LB 1154, refuse.

Unillustrated. Nos 365-369; see microfiche.

370. Lamp hanger/latch lifter. Rectangular-sectioned shank with hooked terminal and suspension ring. The other end is bent to three right angles forming a square, and ends in a pointed tip. SF 869, GV-VII, LB 753, post-Roman.

371. Small **socketed candlestick** on three legs of rectangular section. One leg is complete and terminates in a flattened oval foot. SF 2191.

Unillustrated. No.372; see microfiche.

373. D-sectioned **binding** flattening and expanding into a lozenge-shaped decorative terminal pierced by a square nail hole. Similar to No.459 (from the same area) and comparable with the binding from the angle of a wooden box from Fishbourne (Cunliffe 1971, fig.62, nos 61-2). SF 2858.

Unillustrated. Nos 374-378; see microfiche.

**Discussion**

Ladle No.359 is comparable with a Roman example from Portchester (Cunliffe 1975, fig.131, no.251) and a late 3rd/early 4th-century scoop from Shakenoak (Brodrigg *et al.* 1968, 105, fig.35, no.33). Fragments of a second hemispherical bowl, possibly handled (No.360; microfiche)

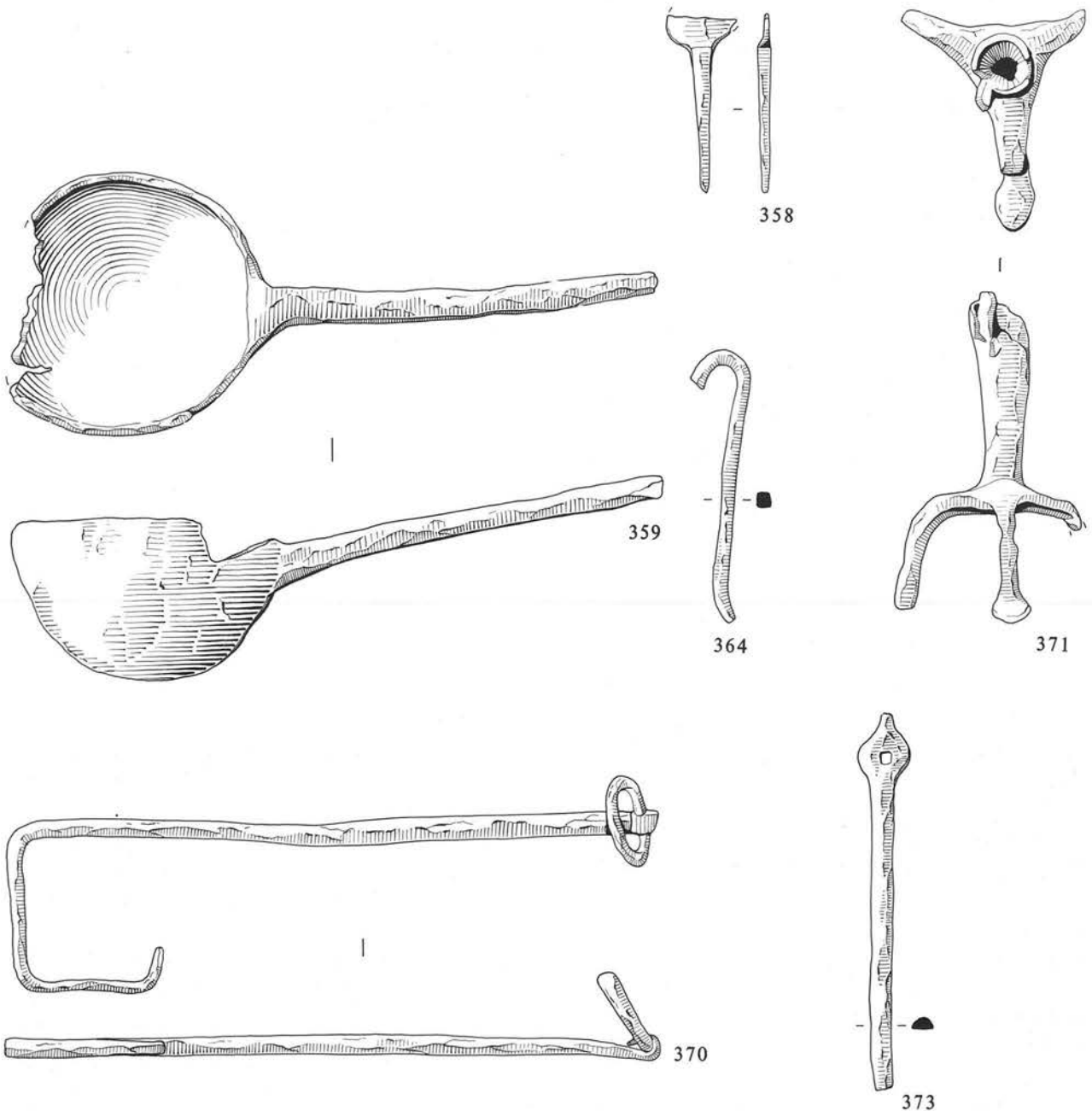


Figure 68 Domestic objects, iron. Scale 1:2.

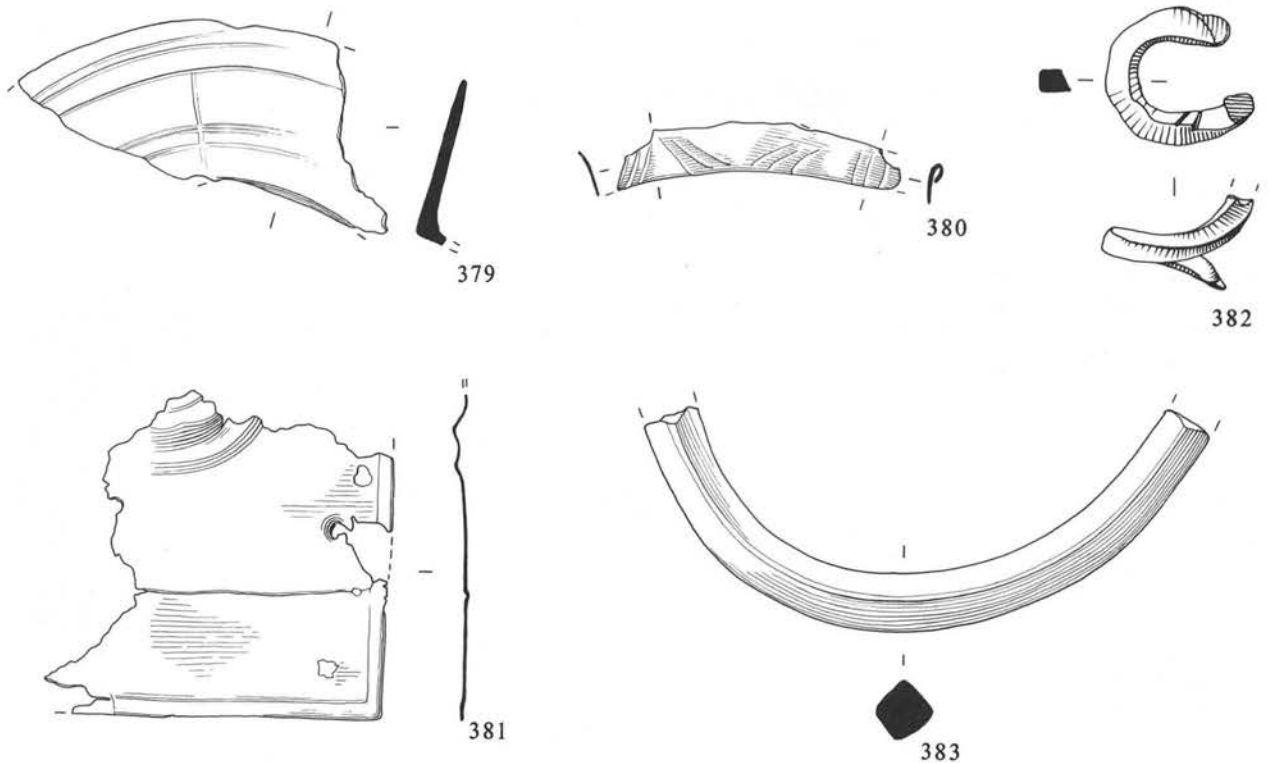


Figure 69 Box fittings, copper alloy. Scale 1:1.

could have had a number of uses; unfortunately no traces of the bowl's former contents were detected.

No.360 was found with a length of twisted stem with a hooked terminal. Along with the two similar spirally twisted stems found it may have been the decorative handle from a variety of implements. Spirally twisted handles often occur on tools associated with fire but they are also found on knives, ladles (Cunliffe 1971, 135, fig.60, nos 43, 55) and lamp hangers (Curle 1911, pl.LXXIX, fig.7). The small length of iron rod sheathed in a sheet of copper alloy apparently joined by lead solder (No.369; microfiche) is also likely to be part of a handle. Of the other handle fragments found, two may come from small buckets (No.364; No.365, microfiche) for which four handle straps were recovered. Smaller round-sectioned stems of curved profile are from drop loop handles.

No.370 was probably a lamp hanger as it does not seem sufficiently robust to suspend a cooking pot. The hooked end, however, is similar to that on a Saxon example from Portchester (Cunliffe 1976, fig.130, no.8) which is described as a latch lifter. In order to function as a latch lifter the terminal should be U-shaped, although it is possible that the third bend on this example is accidental.

No.371 is likely to be of Roman date. With the exception of the plain rather than twisted legs it is not unlike an example from Lydney Park (Wheeler and Wheeler 1932, 93, fig.23, no.191).

#### Box fittings, copper alloy

(Fig.69)

379. Fragment of curved plate with concentric line decoration, the inner curve sharply bent down at right angles and broken. Perhaps part of a box decoration? SF 35.

380. Thin sheet fragment with incised decoration, with finished edge on the inside of the circle. ?Box decoration. SF 2448, CIX-X, LB 2667.

381. Corner fragment of thin sheet, tinned. Border and circular moulding in repoussé technique. Possibly a mounting for a casket, as at Richborough (Bushe-Fox 1949, pls XLVII, XLVIII). SF 1005, EX, LB 1175, refuse.

382. Curved square-sectioned bar fragment, perhaps part of a handle for a casket or furniture. SF 2491.

383. Fragment of lozenge-sectioned curved bar, perhaps part of a handle for a helmet (Robinson 1975, fig.76) or, more likely, a drawer or casket. See Richborough (Cunliffe 1968, pl.XLIV, no.186); South Shields (Allason-Jones and Miket 1984, nos 3.425, 3.426); Colchester (Crummy 1983, fig.85, no.2134). SF 3125.

#### V. Objects used for recreational purposes

(Figs 70, 71)

##### Die

(Fig.70)

384. Bone, with numerals marked by double 'ring-and-dot' symbols; opposite faces add up to seven. SF 2393, ABIX, LB 2450, Room NW3/4.

##### Counters

(Figs 70, 71)

##### Bone

(Fig.70)

385. Square, made from the long bone shaft of cattle/horse, the surface decorated with incised decoration of lines and dots surrounded by two concentric rings. The upper surface polished, the underside is rough inner bone. SF 3246, DVIII, Late find from Room 3, 'below top floor'.

386. Oval with bevelled edge, deeply grooved concentric circles and dot on the polished top, the underneath left rough. Possibly antler rather than bone. SF 2086, Area 2, MI, LB 2308, ?gully.

387. Plano-convex, with central dot on top, well polished. SF 1240, BX, LB 1100, spill.

388. Plain with countersunk upper surface. SF 99.

389. As No.388. SF 2888, EVI-VII, LB 3113, portico lower cobbles. Unillustrated. No.390; see microfiche.

#### Discussion

Dice, as No.384, are fairly common on Roman sites, and the counters (Nos 386, 388, 389) are of Kenyon's types A and B of wide date range. The counters from the fortress baths at Caerleon have shown that Caerleon type 2 (= Kenyon type A) became the commonest type in the late 2nd to early 3rd century. Caerleon type 3 (= Kenyon type B) was a less common later Roman type. No.387 is a rarer type; parallels at Shakenoak (Brodrick *et al.* 1971, fig.45, no.138), Leicester (Kenyon 1948, fig.91, no.18), Colchester (Crummy 1983, fig.94, no.2281) and Caerleon (Greep 1986, 202, fig.71, no.31B).

The square plate No.385 is broadly similar to counters from Iron Age contexts at Maiden Castle (Wheeler 1943, fig.106, nos 1-4), but the identification as a gaming piece is uncertain since it could have been part of a box decoration, some of which were stuck on rather than tacked (Richborough: Bushe-Fox 1949, pl.LVII) (Caerleon: Greep 1986, fig.73, no.8).

#### Glass

by Jennifer Price and H.E.M. Cool (Fig.70)

Three opaque dark blue plano-convex counters were found (Nos 391-393). Such counters were in use throughout the Roman period and it is not possible to date individual examples more accurately.

391. Plano-convex, circular. Opaque dark blue. Base worn. SF 2952, DIX-X, LB 2571, Room 5 hypocaust.

Unillustrated. Nos 392-393; see microfiche.

#### Pottery

(Fig.71)

394. Fine red-brown grey-cored body sherd, burnished or possibly slipped externally; edges ground smooth. SF 660.

395. Micaceous black-surfaced grey body sherd, probably from a bowl, burnished on both surfaces, edges roughly shaped. SF 1190.

396. Roughly-shaped grey body sherd with burnished exterior. SF 2981, DVIII-IX, I.B 2051, upper mortar floor Room 3.

Unillustrated. Nos 397-402; see microfiche.

#### Tile

(Fig.71)

403. Sub-rounded. SF 680.

404. Round, well smoothed edges. SF 770, GV-VII, LB 920, ditch.

405. Roughly chipped. SF 442, EIX, LB 535, refuse.

Unillustrated. Nos 406-408; see microfiche.

These discs appear to have been cut from *tegulae*. Whether used for gaming or for some other purpose cannot be decided (see Crummy 1983, 93 for discussion) but, if for gaming, their relatively large size suggests an outdoor game, perhaps played on the ground, rather than a board game. Although they could have been used as lids, they would only fit narrow-necked vessels and chipping a tile disc for such a purpose seems unnecessarily laborious.

#### Stone

(Fig.71)

409. Flat, shaped to a square; fine-grained micaceous sandstone. Although suitable stone for a hone, there is no evidence for this use. Possibly used as a gaming counter. SF 1104, AVI, LB 67, refuse.

410. Roughly chipped; a coarse-grained igneous stone, an olivine basalt, lava flow material; it could have originated in the Midlands or Scotland. SF 1169, EVII-VIII, LB 164, refuse.

411. Oval of medium-grained sandstone. Although suitable for honing, this shows no evidence for use, and probably derived from glacial or post-glacial deposits. Perhaps used for some outdoor game, as the tile counters. SF 348.

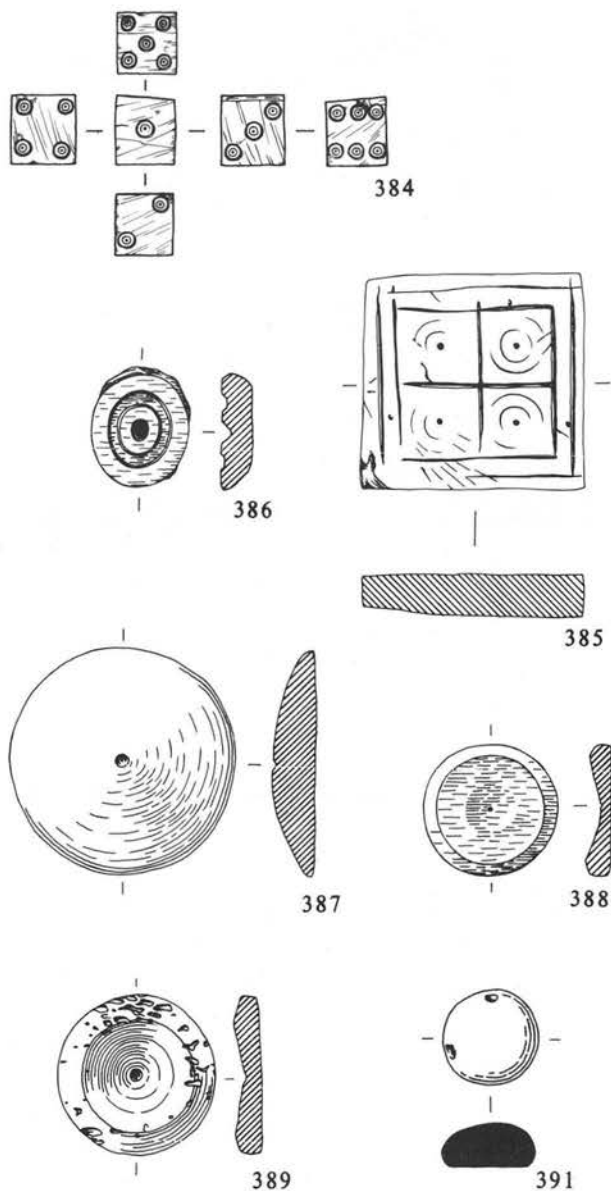


Figure 70 Die (384), bone. Counters; bone (385-389) and glass (391). Scale 1:2.

## VI. Objects employed in weighing and measuring (Figs 72, 73)

### Steelyard hooks (Fig.72)

#### Copper alloy

412. Small round-sectioned, showing some wear and broken at the end. Possibly a steelyard weight hook. SF 853, DVII-IX, LB 1002, Room 3 refuse.

413. Small, with twisted wire shank, attached to a T-shaped bar. Possibly part of a steelyard. SF 1825. Area 2, MI, LB 1824, refuse.

#### Iron

### by Quita Mould

Unillustrated. No.414; see microfiche.

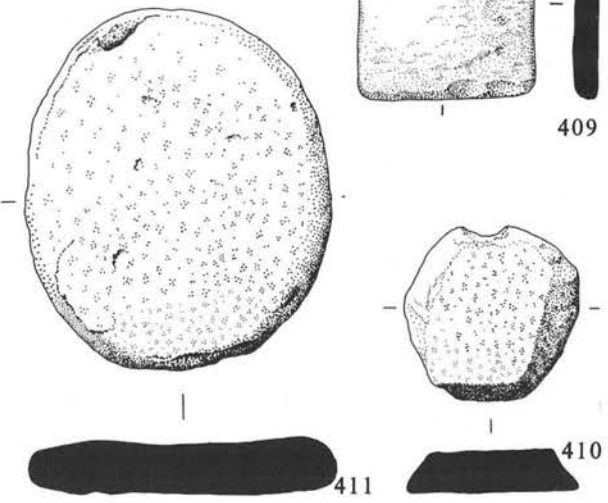
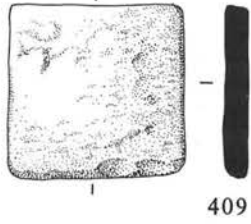
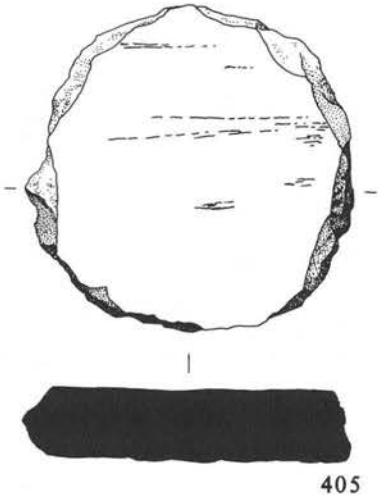
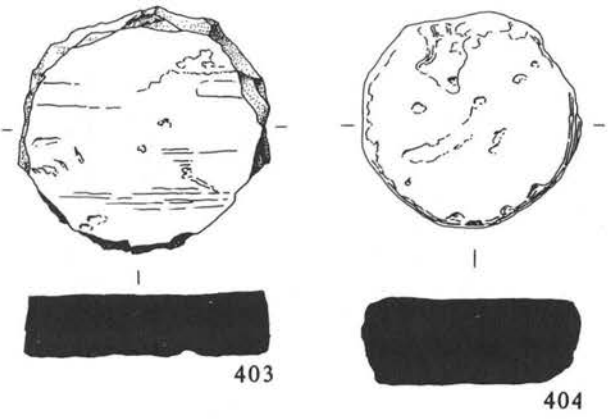
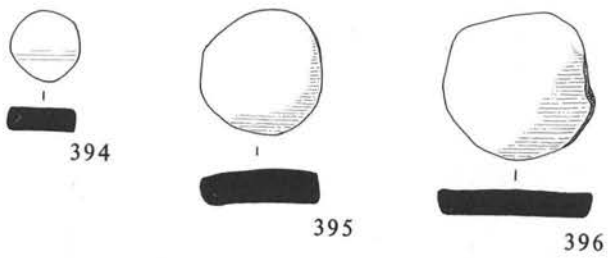


Figure 71 Counters: pottery (394-396), tile (403-405) and stone (409-411). Scale 1:2.

**Weight, lead**  
(Fig.72)

415. Round, with remains of iron insert. Weight 495gm (1.5 Roman pounds). SF 353, EVI, LB 383, spill.  
A further lead weight (casual find 1976) is pear-shaped with the remains of an iron loop at the top, and weighs exactly the same.

**Dividers, copper alloy**  
(Fig.73)

416. Dividers, lacking part of one leg and points. The spindle at the head has a slot which originally held an iron wedge (reconstructed on illustration). The dividers are finely made and would appear to have been for use by a surveyor rather than a craftsman. SF 3138.  
Iron dividers are known from Gadebridge (Neal 1974, fig.69, no.352) and examples occur in Caerwent and Reading Museums, but copper alloy dividers with iron points were found in a destruction level at Fishbourne (Cunliffe 1971, fig.53, no.186), and similar dividers from Baldock (unpublished, inf. G.R. Burleigh) and others from the continent (Boucher 1971, 195, nos 551-3), show the placement of a wedge through a slot in the spindle at the head, which made it possible to fix the legs at any desired distance. The wedges seem to be usually of copper alloy.

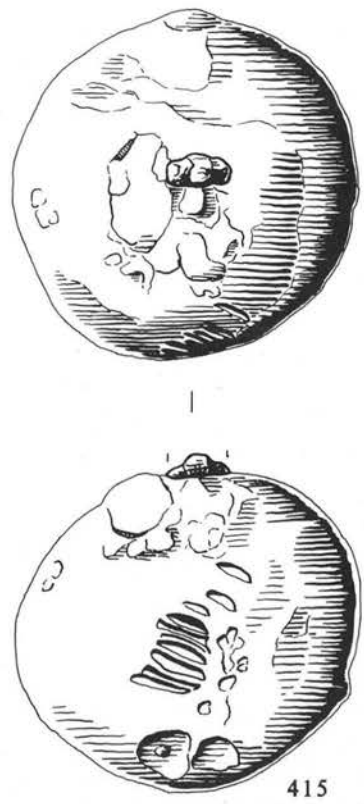
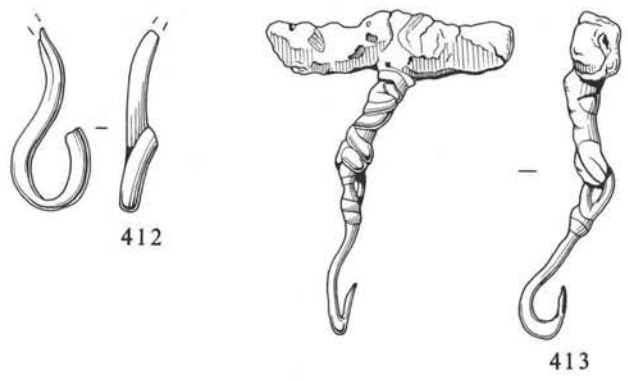


Figure 72 Steelyard hooks, copper alloy (412, 413). Weight, lead (415). Scale 1:1.



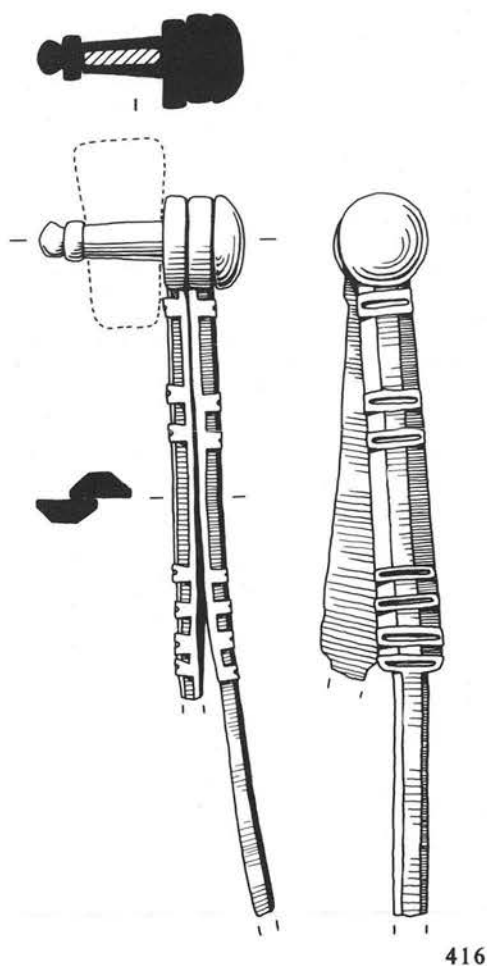


Figure 73 Dividers, copper alloy. Scale 1:1.

## VII. Objects used for or associated with written communication

(Figs 74, 75)

### Styli

#### Copper alloy

(Fig.74)

417. Rectangular-sectioned bar with decoration of the type found on bracelets, spoons and styli of late Roman date. While this is certainly not a spoon fragment, the possibility of it being part of a stylus remains, although since it is broken at both ends, it may have been part of a decorated toilet instrument. A stylus with similar decoration is known from Lydney (Wheeler and Wheeler 1932, fig.19, no.88). SF 865.
418. Round-sectioned pointed stylus with incised lattice decoration below the spatulate flat head/rubber. A similar stylus is known from South Shields (Allason-Jones and Milet 1984, no.3.430) but this seems more likely to be a post-Roman stylus with a close parallel at Whitby (Peers and Radford 1943, fig.15). SF 1011.

#### Iron

by Quita Mould  
(Fig.75)

419. Small stylus with round-sectioned stem and simple eraser. Undecorated. Class I (Manning 1976, 34). SF 1832, Area 2, DI, LB 2009, ?spill.

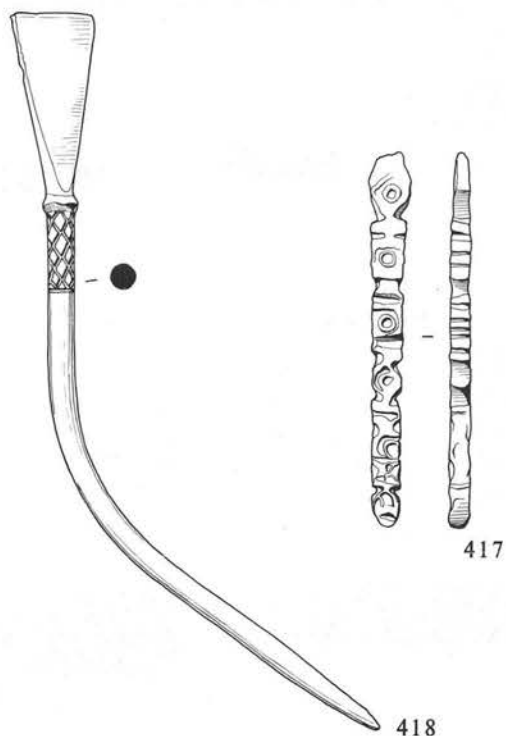


Figure 74 Styli, copper alloy. Scale 1:1.

420. Stylus with round-sectioned stem, 'waisted' eraser and a distinct point separated from the stem by a shoulder. Undecorated. Class III (Manning 1976, 34). SF 2095, Area 2, HI, LB 2321, pits, ?late occupation.
421. Stylus with round-sectioned stem which expands into a distinct shoulder above the point. Tip and eraser missing. SF 1540, AVIII, LB 1724, ?ditch F5.
422. Stylus, round-sectioned stem with distinct tapering point and simple eraser. Stem decorated by bands of inlay: a spiral band of five loops of brass on the shoulder with two simple bands above. Between the eraser and the first inlaid band and between the second band and the spiral, the stem further decorated by a series of tiny incised lines. Class IV (Manning 1976, 34). SF 584, DVI, LB 694, clay over Wall 2 footings.

Unillustrated. Nos 423-429; see microfiche.

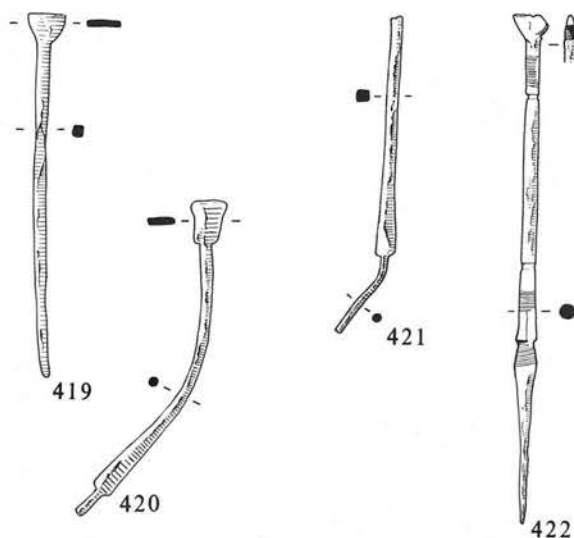


Figure 75 Styli, iron. Scale 1:2.

### Discussion

The eight complete examples range from the purely functional to the elaborately decorated. No.419 is of the simplest form whilst Nos 420 and 421 are of better workmanship having distinct shouldered points and No.420 a 'waisted' eraser. Three styli have decorative transverse mouldings on the stem (Nos 423, 424, 429; microfiche), one with an inlaid copper band, two examples were found to have bands of inlaid brass (Nos 422, 425; microfiche). Stylus No.422 must have been highly prized being ornamented by inlaid brass bands and a series of tiny incised grooves, a technique also found on a stylus from Baines Farm, Catterick (AML 8111198).

## VIII. Objects associated with transport

(Figs 76, 77)

### Spurs

#### Copper alloy (Fig.76)

430. Fragment of rivet-spur with plain hook, prick missing. The arm of rectangular section with a central rib on the exterior. The heel plate shows slight traces of ornamental moulding as examples from Chedworth and Corbridge (Short 1959, fig.2, no.4; fig.3, no.8). Although from a distinctive Romano-British group of spurs, originating with an example at Richborough dated to the 2nd century, many of the known examples are from 3rd- and 4th-century contexts. SF 2009, Area 2, G1, LB 2224, pit.
431. Rowel spur lacking its iron rowel, the arm having elaborate ends with twin holes. Medieval. SF 931.

#### Iron

by Quita Mould  
(Fig.77)

432. Small prick spur with rectangular-sectioned looped arms, one broken. Loop of complete arm is turned inward. Shank flattens and expands at the heel to form a simple heel plate with a small prick in the centre. SF 1281.

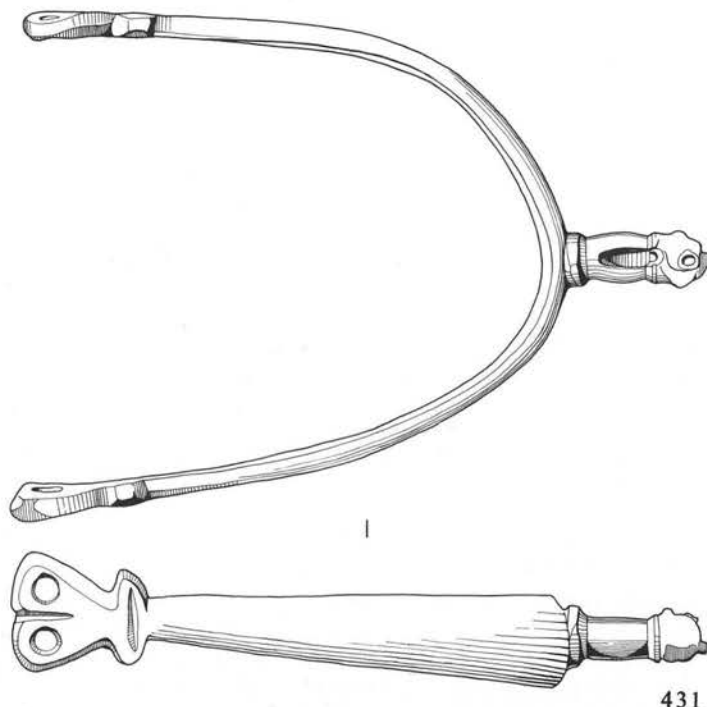
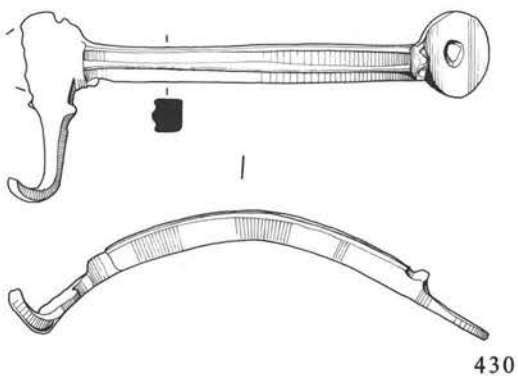


Figure 76 Spurs, copper alloy. Scale 1:1.

### Horseshoe, iron

by Quita Mould  
(Fig.77)

433. Branch of lobate-profiled horseshoe with three countersunk round nail holes, two containing fiddle-key nails, and small turned over calkin. SF 3082, LB 3248, Area 4, Grave 41.  
*Unillustrated.* Nos 434-437; see microfiche.

### Harness, iron

by Quita Mould  
(Fig.77)

438. Rectangular-sectioned stem curled over at the terminal to form a suspension loop. Possibly **snaffle bit link or ring-headed pin**. Flaking section, possibly originally round. SF 1350, CVIII, LB 653, spill.  
*Unillustrated.* Nos 439-444; see microfiche.
445. Round-sectioned ring with round-sectioned arm articulating; ring is worn on one side. Either a **broken buckle or a small cheek piece and broken link from a snaffle bit**. SF 2793, Area 4, KVIII, LB 3035, top of ditch.
446. Small **ring**, rectangular section. SF 2211, EVII, LB 2448, Room 2.
447. Fine **ring**, rectangular section. SF 2683.
448. Large square-sectioned **ring**. SF 2004, Area 2, HI, LB 1809, spill.

### Discussion

No.432 is unusual in that the terminal loops turn inward, and is comparable with the simple hook spur (but with outward turning arms) from Corbridge which has been typologically dated to the 3rd century (Short 1959, fig.3, no.6).

No.433 in the fill of Grave 41 was thought not to be intrusive and is likely to date to around the 9th century. The remaining four horseshoes were from ploughsoil.

A broken snaffle bit link (No.439; microfiche) was recovered and a further three shanks with looped terminals (No.438) (Nos 440-442; microfiche) may be from horse bits or ring-headed pins. The ring with articulating arm (No.445) found with Saxon pottery may also be from a snaffle bit or harness buckle.

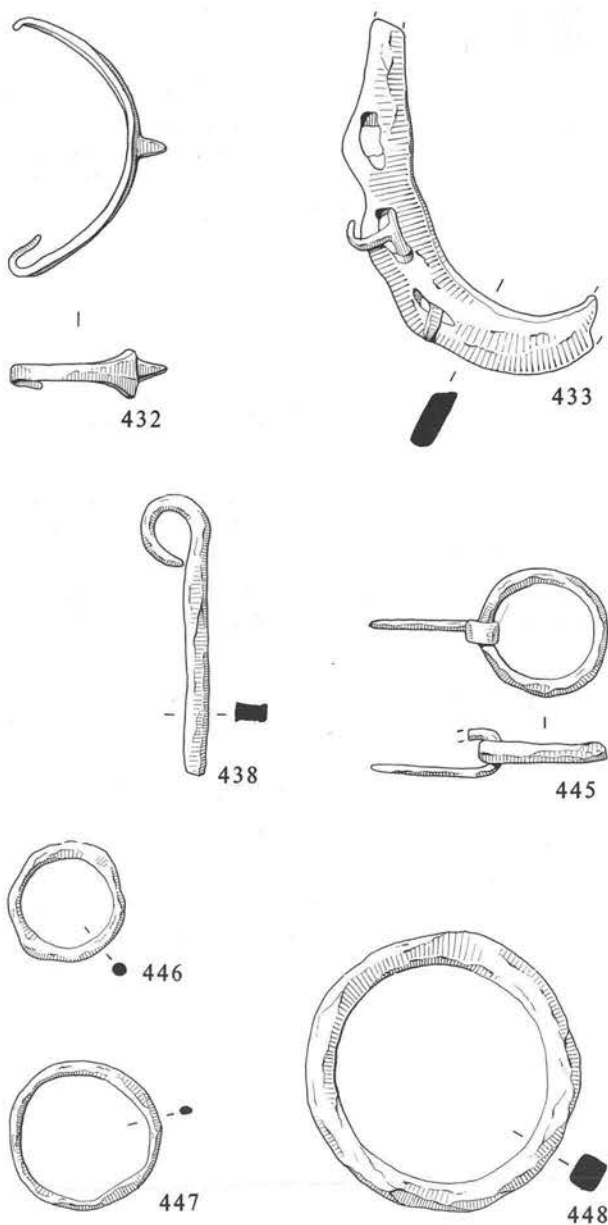


Figure 77 Spur (432), horseshoe (433) and harness (438, 445-448); iron. Scale 1:2.

Ten square/rectangular-sectioned rings were found in various contexts ranging in diameter from 34 to 98mm (Nos 446-448). They could have performed a number of functions including the cheek pieces of snaffle bits and various points of attachment and suspension.

## IX. Buildings and services

(Figs 78-87, Tables 12-17)

### Structural fittings, iron

by Quita Mould

(Fig.78, Tables 12-13, microfiche)

**449. L-shaped wall hook.** Organic remains on longer arm lie in two opposing directions, possibly jointing? but too disintegrated to identify. SF 2324, ABIX, LB 2450, Room NW3/4.

*Unillustrated.* Hinges, bindings and spiked loops, Nos 450-475; see microfiche.

**476. Joiner's dog** of rectangular section, tips of both arms broken. SF 2884.

*Unillustrated.* Joiner's dogs and staples, Nos 477-489; see microfiche.

**490. Timber nail** with long rectangular shank and large conical head, type IV. SF 902, CX, LB 1068, spill.

*Unillustrated.* Nails and T-staples, Nos 491-498; see microfiche.

**499. Clench nail.** SF 2822.

**500. Cleat** with two straight-sided straps held one above the other by a round-sectioned shank at each end, the distance between the straps c. 25mm. SF 3145, Area 4, MII, LB 3404, Grave 116.

### Discussion

*Wall hook* (No.449): This is similar to one from Gadebridge (Neal 1974, fig.74, no.521).

*Hinges* (Nos 450-458): Two types of hinge mechanism are represented:

- i) the drop hinge, for which L-shaped hinge staples and a U-shaped binding were found,
- ii) the loop hinge, for which nailed arm straps were recovered.

*Binding* (Nos 459-466): Many fragments of binding strap occur, several with nail holes, occasionally with the nails still in place.

*Spike loops* (Nos 467-475): Nine split spiked loops were found and two size groups are apparent:

- i) split spike loops of usual size with arms from 55 to 76mm in length,
- ii) three examples are much smaller being 35 to 37mm in length and comparable with those from Shakenoak (Brodrigg *et al.* 1968, fig.35, nos 60, 61).

*Joiner's dogs* (Nos 476-486): These range in length from 42 to 131mm.

*U-shaped staples* (Nos 487-489): These have arm lengths between 55 and 72mm.

*Nails* (Nos 490-494) (Table 12; microfiche): Some 1939 timber nails were recovered from beneath the originally recognized ploughsoil. Of these 1235 are complete and 704 are fractured. Five types of nail are recognizable; types Ia, Ib and II corresponding to the classification proposed by Manning (in Frere 1972, 186; Manning 1976, 41).

type Ia: timber nail with square/rectangular-sectioned shank and a domed round/sub-rectangular head.

type Ib: timber nail with square/rectangular-sectioned shank and a flat round/sub-rectangular head. A sub-type of Ib has the head asymmetrically placed on the shank. 18% of type Ib nails belong to this sub-type.

type II: timber nail with square/rectangular-sectioned shank which expands in width at the top to form a triangular head.

type III: small T-headed timber nail with square/rectangular-sectioned shank and a flat, rectangular-shaped head, sometimes placed asymmetrically on the shank.

type IV: large nail with round-sectioned shank and large conical head, slightly flattened by hammering (No.490).

The four type IV examples found are similar to those used in the carvel-built construction of the 2nd-century Roman ship at Blackfriars (Marsden 1966, 16, pl.4B). Three were found in building collapse in Room 5 and may derive from a re-used boat timber.

The total length and maximum head diameter/length of complete nails were measured and the results are shown in Table 12 (microfiche).

As might be expected a wide size range is found within the length and head measurements of types I-III, reflecting the varying uses to which the nails were put. Only types II and IV exhibit an appreciably greater average length indicating a more specific function securing the larger timbers.

Of the nails and shanks, 10% are clenched. The average length from head to the bend is 35mm, although individual examples show a large size range from 12mm to 110mm.

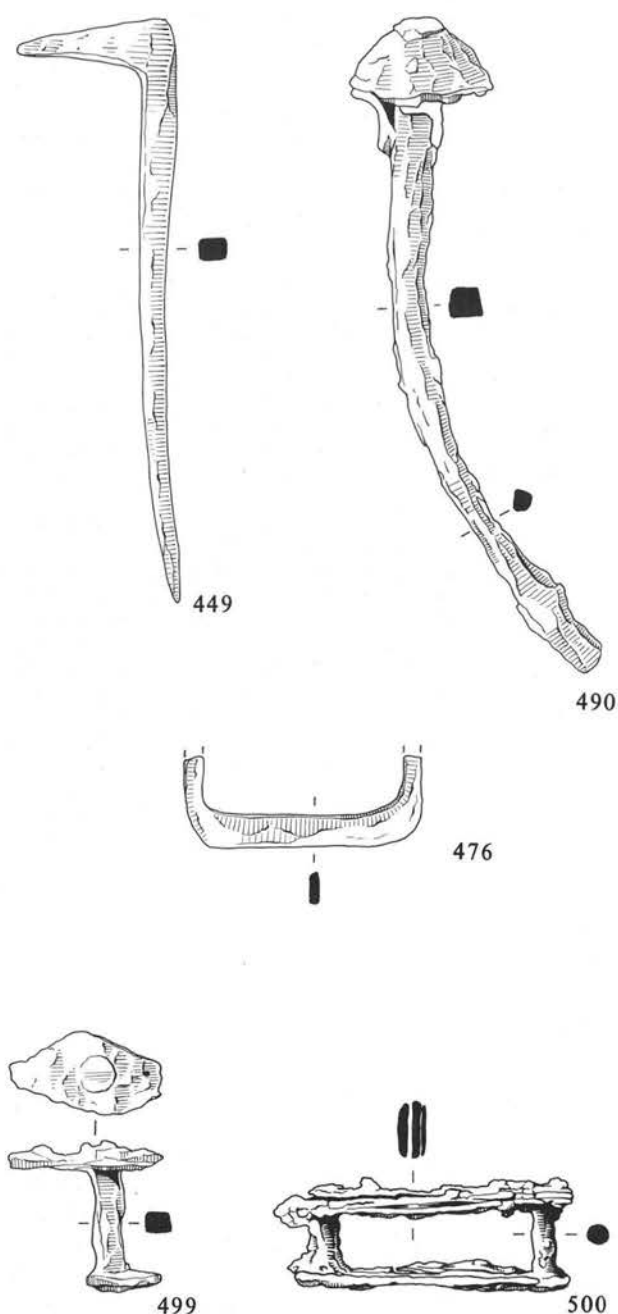


Figure 78 Structural fittings, iron. Scale 1:2.

The 150 timber nails recovered from recognized Saxon contexts have an average length of 56mm and average head length of 18mm, varying little from the Roman examples. They show no distinct characteristics and it is likely that many are residual.

Small square/rectangular shanks expanding in width slightly away from the tip were found occasionally in Roman and Saxon deposits. They may represent horseshoe nails or, more probably, the tips broken from timber nail shanks. Due to this uncertainty they are omitted from the calculations.

*T-staples* (Nos 495–498): Only four T-staples were recognized, however it is probable that many of the larger shanks belong to fragmentary T-staples, particularly those encrusted in plaster or *opus signinum*.

*Roved and clinched nails* (No.499) (Table 13; microfiche): Thirteen of the graves contained roved and clinched nails with short square-sectioned shanks terminating in a flat, round head at one end and a large, flat, lozenge-shaped plate at the other, through which the shank can be seen to protrude slightly. The 167 nails occurred in variable quantities from single examples to thirty-seven in Grave 67 and twenty-seven in Grave 124. Sixty-five are complete. The shank length (*i.e.* distance between the head and the plate), the diameter of the round head and the length of the lozenge-shaped plate of the complete examples have been measured and the results are given in Table 13 (microfiche). 76% of the shanks measure between 28 and 38mm in length indicating that they were used on relatively thin planks.

For further discussion of burials with clenched nails see the report on the Area 4 cemetery (Chapter 3.II).

*Cleat* (No.500) (cf. Pl.XXVIII): The only other coffin fitting found is the cleat from Grave 116 comprising two rectangular straps joined to one another by a long round-sectioned rivet at each corner. It was found on the north side of the grave in a vertical position, the lower end resting on the bottom of the grave (Pl.XXVIII). It was recorded that distinct traces of carbonized wood, probably from the coffin, occurred on the same side of the burial but no remains were found on the object.

#### Baked clay

(Fig.79, microfiche; Table 14, microfiche)

501. Fragment of coarse clay with flints, burnt to tile-like hardness, with timber impressions vertically, and chamfer at the bottom. From the ?doorway in Room 2. SF 2196, EVII, LB 1665.

502. Fragment of daub with wattle impressions. SF 423.

503. Fragment of burnt daub showing wattle impressions crossing at right angles. From 1972 excavation, Site 2.

Unillustrated. Nos 504, 505; see microfiche.

#### Discussion

(Table 14; microfiche)

17.712kg of daub with wattle impressions, mostly burnt, is preserved amongst the site finds. Since over 66% came from the ploughsoil with a further 18% from the unsealed spill layers, its stratigraphic occurrence, apart from a concentration on the floor of Room 1 (Table 14), is uninformative.

The spatial distribution across the site was, however, uneven, with a heavy concentration (35.3%) in DX and a smaller amount in the adjacent DXI (16.5%) overlying Rooms 5 and 6. The only other concentrations of note are in the area of Room 1 (DVI/EVI) which produced 10.8%, and CXII with a notable quantity (13.7%) in view of the small extent of excavation in that square. The main occurrence was therefore in the area of Building 1, and the absence from Building 2 is interesting.

12.857kg can be loosely associated with Building 1, of which 7.897 kg (61%) came from the ploughsoil, mostly from DX (6.115kg). The main concentrations are in the area of Room 5 (48.6%), Room 6 (22.2%) and Room 1 (14.8%). The western three rooms (Rooms 5–7) account for 75.9% of all the daub from this building which, with the quantity in Room 1, accentuates the rarity of daub from the middle of the building (Rooms 2–4). The daub from Room 1 would appear to have come from the partition Wall 5. Since post-Roman disturbances which could have affected the distribution of daub are fairly evenly spread, the rarity of daub from Rooms 2–4 is surprising, and may

reflect the state of the building in the late Roman period, ?ruinous.

No daub came from the area of Building 2, and only 0.234kg came from the refuse, although the 0.256kg from the 'spill' in EVII could have equally derived from Room 2 or the refuse dump.

Daub was found in large quantities on Musty's Site 2. Three fragments were selected for publication. It had been formed from a smooth clay and fired hard to a light red-brown colour.

The wattle impressions clearly show in the individual fragments of daub and can be seen to cross at right angles on No.503. The impressions are extremely smooth, suggesting that the bark had been removed from the twigs. Those on No.505 (not illustrated) are not as smooth though a true bark impression is not visible under the microscope. The twigs average 15mm in diameter, and no trace of them remains adhering to the daub. No.504 (not illustrated) shows finger or knuckle marks, and No.505 (not illustrated) smearing marks.

### Plaster

(Fig.80)

506. Fragment of moulded plaster, possibly part of a cornice. SF 351, GV, LB 403, post-Roman.

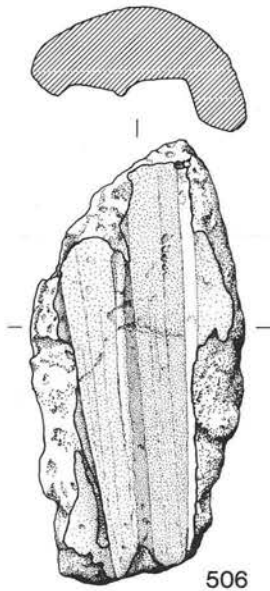


Figure 80 Moulded plaster. Scale 1:2.

### Painted plaster

(Figs 81-3; Tables 15 and 16, microfiche)

All decoration was painted on a white-cream base.

507. Panel design, ?formalized floral in shades of green and red, in panels delimited by vertical yellow-orange-red stripes beneath angled horizontal upper part painted red; presumably from upper part of a wall immediately below the cornice.

The site records suggest that this may have been a discrete deposit dumped into the ditch in the immediate area of the gate. It was associated with late 4th-century pottery. Probably also from the same deposit are Nos 508 and 509. SF 3829a, GV-VII, LB 753, ditch fill.

508-509. 508: with part of ?vertical panel of shaded green and red stripes; 509: vertical ?leaf-like motif in shades of red. Green noted that one or two pieces showed that fresh plaster had been applied over a painted surface.

This deposit is noted as silt below hearth (i.e., post-Roman hearth), and appears to have overlain the rapid silting in the channel at the base of the ditch. Fragments of *opus signinum* were also found in these silt layers, and the fragment of a possible cornice moulding, No.506 above, came from a disturbed adjacent layer (LB 403). A

Constantinian coin (No. C95) was found in the lower silt of the ditch. SF 3828, GV-VII, LB 920, ditch fill below spill.

510-511. 510: pink painted ?foliage motif and fragment with black stripe. 511: fragment with striped panel in red shades. SF 3985, ABIX, LB 2559, upper fill of hypocaust channels, F10.

512. Fragment with stripes of green and black on white. SF 3970, ABIX-X, lower plough.

513. Fragment with curvilinear design painted in yellow on white. SF 3699, FVII, plough.

514. Fragment with orange wavy line on white. SF 3994, CIX-X, LB 2628, indeterminate occupation.

515-534. 515-517: fragments probably from the same wall showing border of stripes of red shades and black enclosing panel motif in shades of blue and brown. 518-526: fragments from similar panelled design, the borders being stripes in shades of yellow to red, enclosing floral motif of stylized flower buds in shades of blue, on yellow ground, surrounded by blue and brown. All probably from same wall. 527-528: fragments of medallion ?surrounded by ribbons, in shades of yellow to red, possibly part of spoke design. Probably from ceiling. 529: part medallion in shades of red and black, with part of further motif. 530: part of the border of a panel of yellow to red stripes with curving black and red ?pendant arc. 531: fragments with black and orange, possibly related to 530. 532: part medallion in black and brown enclosing motif in red. 533: part of border of panel in black and brown, with splodges of same colours in field. 534: three joining pieces of white wallplaster, with graffito scored across surface. This is certainly complete at the end, and is probably complete at the beginning, unless it continued across a black vertical strip or panel at the extreme left hand edge of one of the pieces. There are various other marks and scorings, including a number of short scratches running left to right across some of the letters of the graffito. This reads MINIISVT. Traces of orange and red paint occur; the scorings, perhaps also seen on No.530 may relate it to 530, 531. The 'plaster pit' F73 pre-dated the so-called 'hut 2' which appeared to have been a Roman rubbish pit of late 4th century date with a few intrusive Thetford Ware sherds. The pottery from the pit was of mid- to late 4th-century date. Mortar fragments from a roof structure underlay the plaster.

535. Number not used.

### Discussion

(Tables 15, 16; microfiche)

#### Distribution of wallplaster

Apart from a large deposit of wallplaster fragments in F73 (CVI), amounting to 32.235kg, fragments occur in most grid squares, but when quantified by weight, notable concentrations are obvious. The distribution of 81.931kg of wallplaster is detailed in Table 15 (microfiche; apart from a scatter in the ploughsoil and unspecified spill layers), which shows over 39% in the general area of Building 2, against 25% from the main part of Building 1. Unlike the finds of burnt daub, plaster also occurred relatively commonly in the refuse (17.8%), and the earliest stratified finds were from the gully F58.

When the quantities found in Building 1 are allocated to individual rooms (see Table 16, microfiche), nearly half the total came from Room 1, with the remainder spread relatively evenly over Rooms 2-4. Under 3% was found in Rooms 5 and 7.

Apart from a scatter in the ploughsoil and unspecified 'spill' layers, the only other concentrations are in the fill of the inner ditch (9.2%), ABVIII (5.7%) and CVI-VIII (4.5%).

Thus the distribution of wallplaster over the whole site, and that related to individual rooms in Building 1 shows a pattern which is mutually exclusive of the similarly quantified burnt daub, none of which was found in ABIX-X and which is concentrated in Building 1 in Rooms 5 and 6, with a lesser amount in Room 1. The remains of wallplaster *in situ* in Building 1 leaves little doubt that all the rooms were so plastered; the amount of post-Roman disturbance, al-

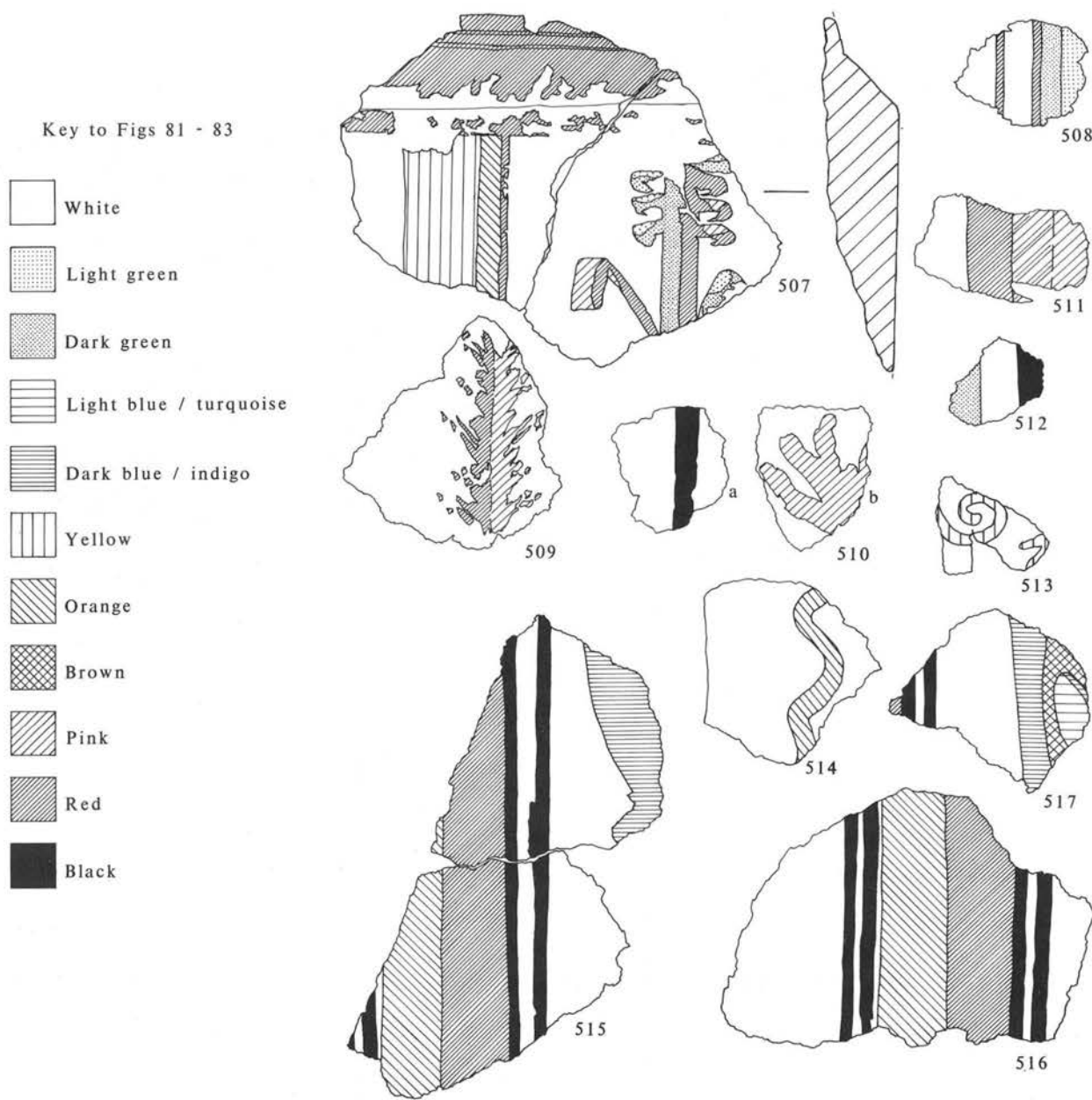


Figure 81 Painted plaster. Scale 1:3.

though not precisely definable, seems to have been evenly spread over the building; Room 1 for instance appears to have several areas of disturbance, although the absence of Wall 2 above its footings for large sections of Rooms 2 and 3 would have a bearing here.

Since the distribution of building materials should indicate the destruction/decline of the building, the distribution of window glass is also relevant, and there is again a clear difference between Building 1 and the area of Building 2 in the types of glass present, and a similar sparsity of finds from the middle rooms of Building 1 with the finds from the west end (from the backfilled hypocaust and drain F34) being stratigraphically unrelated to the final fate of the building.

The distribution of burnt daub (and charcoal) may indicate which areas/rooms suffered fire damage, and it may be assumed that Building 2 escaped, the daub of the upper walls reverting to clay (probably the many confusing clay 'floors' distinguished by Green in that area). Although lack of burning in the middle rooms of Building 1 may account for the comparative absence of burnt daub, this would not explain the sparsity of wallplaster and window glass. The quantity of wallplaster in Room 1 may well have come principally from one partition wall, Wall 5; if so, a considerably larger quantity should have occurred in Room 3, unless there is substantial post-Roman disturbance to account for its removal, or the building was partially demolished/derelict in the late Roman period.

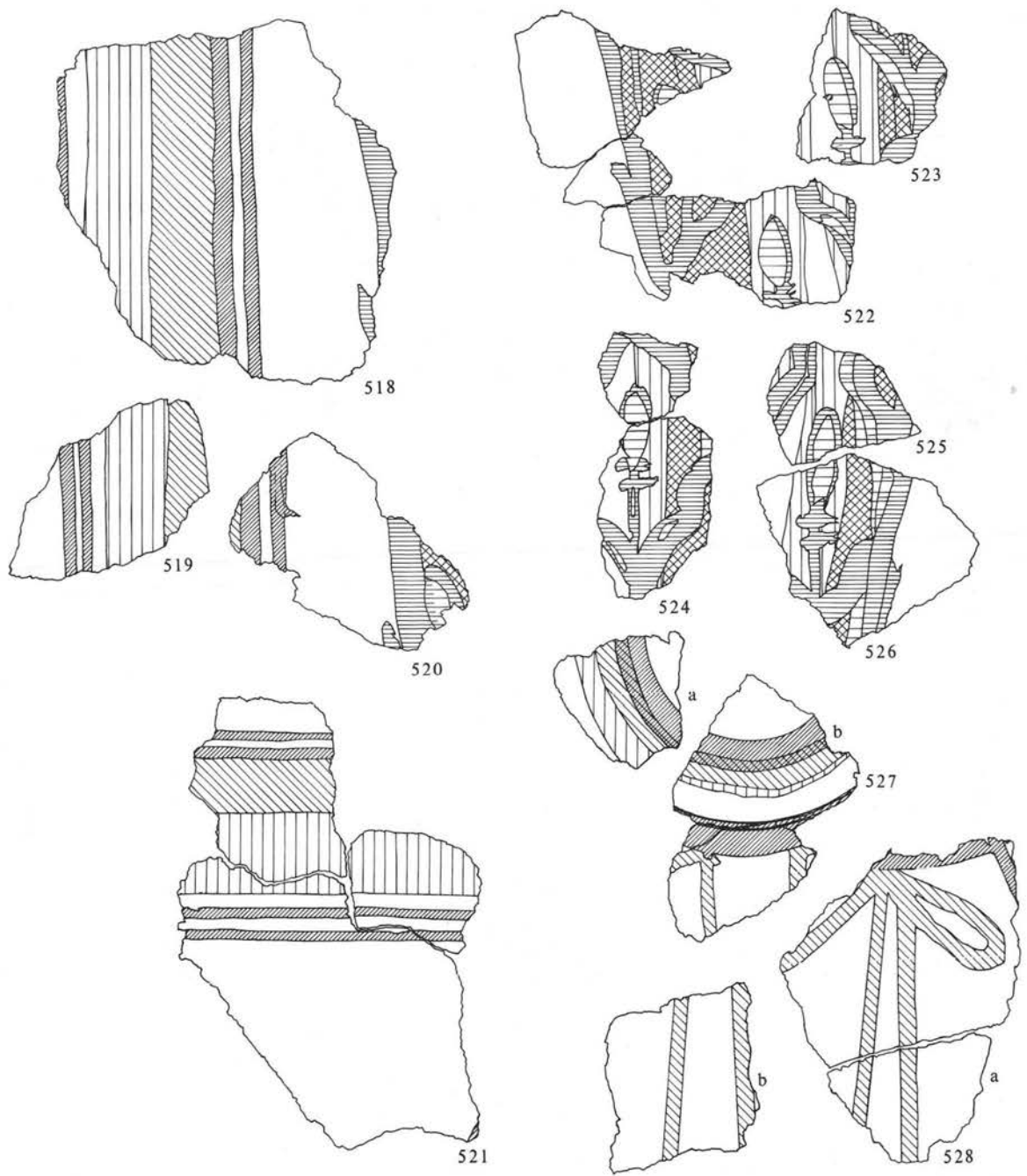


Figure 82 Painted plaster. Scale 1:3.

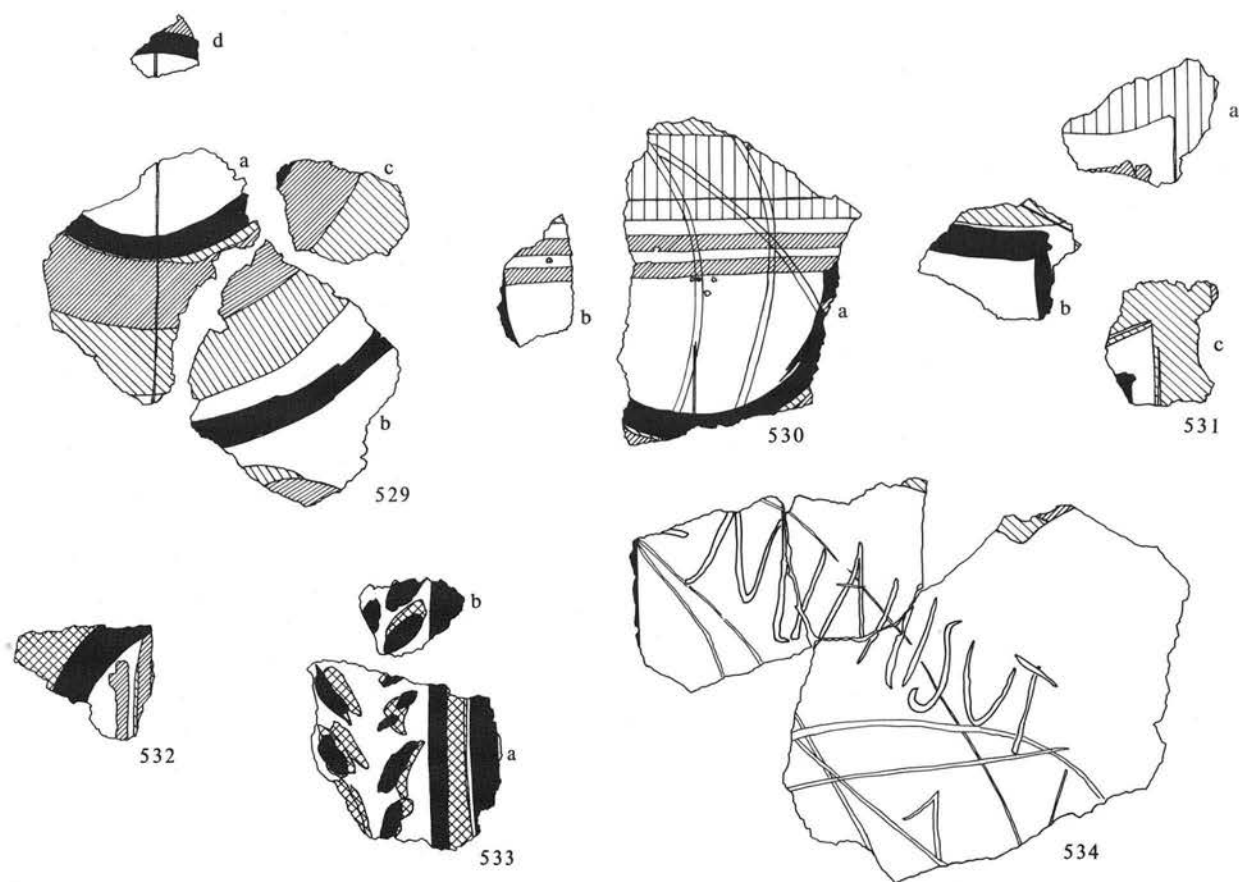


Figure 83 Painted plaster. Scale 1:3.

The comparative absence of Middle to Late Saxon pottery from Building 1 gives no certain indication of pit-digging of that period, although non-ceramic rubbish may have been the reason for any pits of that period. Although ploughing would have removed some wallplaster, since plough damage was largely above the level of the dwarf walls, this seems unlikely to account for much loss. Excavation in comparatively modern times may have been the cause of some of the disturbances and might account for a higher rate of loss, although there is no record of substantial excavation and this would be difficult to prove from the site records.

The possibility must remain that Building 1 was comparatively derelict at the end of the Roman period, perhaps due to fire damage in the latter part of the 4th century. The question of the coin hoards from the building should be considered in the light of this possibility. Moreover this would limit any conclusions to be drawn about the nature and duration of the late occupation of the fort; evidence from the area of an unused building need not reflect occupation elsewhere in the fort.

#### Tiles

(Figs 84–6; microfiche)

##### *Tegulae*

(Fig.84; microfiche)

536. Context unknown.

537. SF 4636, FVII, LB 69, refuse.

##### *Imbrex*

(Fig.84; microfiche)

538. Context unknown.

##### *Combed flue tiles*

(Figs 85–6; microfiche)

539. SF 4630, ABX, LB 666, spill.

540. SF 4641, NCM 36.57.

541. SF 4638.

542. SF 4635, EVIII, LB 207, spill.

543. SF 4634.

544. SF 4632.

545. SF 4642, NCM 36.57.

546. SF 4633.

547. SF 4640, AVI, LB 67.

548. SF 895, CVII–IX, LB 1056, Room 9.

549. SF 4631, DIX, LB 562, spill.

550. SF 4639.

551. SF 4637, DVII, LB 343, spill.

##### *Animal footprints on tiles (unillustrated)*

Nine fragments have impressions: one calf, two sheep/goat and six dog.

#### Discussion

Although quantities of tile, predominantly roofing tile, were found during the excavations, most was discarded. No distinctively different fabrics are apparent (except for No.548) and the clay with flint inclusions suggests a relatively local source.

A notable feature of the site is the regular use of *tegulae* as building tiles, the space between the upstanding flanges being filled with mortar; these are also used, broken to size, as *pila* tiles in the north and west wall channels of the



channelled hypocaust in Room 5, and in the sides of the flue through Wall 10 of Room 5. *Imbrices* were also used as building bricks, notably in the added Wall 12, but are less common. Many of the walls contain fragments of combed flue tiles; all preserved fragments have been examined and virtually all show signs of internal sooting. It seems clear that the tiles used in the walls came from the debris of an earlier building, perhaps a more important building with heated rooms nearer the centre of the fort, or a bath-house.

### Window glass

by Jennifer Price and H.E.M. Cool  
(Fig.87; Table 17, microfiche)

*Unillustrated.* Nos 552–553; see microfiche.

**554.** Corrugated blown window glass. Seven fragments with rounded edges (largest illustrated) and twenty-four 'body' fragments, all probably from same pane; several sets of joining fragments. Pale greenish colourless; many small bubbles; iridescent surfaces. Plain zone glass borders rounded edge for a depth of c. 25–30mm. Beyond this the pane has diagonal, slightly curved corrugations on upper surface only; under surface is flat. The corrugations are in high relief adjacent to the plain border but on some (unattached) body fragments the corrugations are shallow and dying out. Bubbles elongated parallel to corrugations except in plain border where they are elongated parallel to rounded edge. Junction between plain border and corrugated body marked in places by thick irregular rib running parallel to edge. Depth of plain border not constant around all sides of the window pane as some rounded edge fragments have a depth of 40+ mm and do not show any sign of corrugations. SF 1435b, 1443, 2911, 2914, EVI–VII, LB 1637, 1638, 3166, 3169, Room 1 rubbish over floor, lower refuse, upper floor, drain F54.

### Discussion

Eighty-eight fragments of cast matt/glossy window glass (No.552) and 158 fragments of blown window glass (Nos 553 and 554) were found. In the majority of cases the cast window glass is of the normal blue/green colour but there are also three fragments (Nos 552, ae and al) which are colourless. Also noteworthy amongst the cast window glass are the two fragments Nos 552 ah and am. Both of these retain one of the original rounded edges of the pane and these edges show a great deal of wear as if they were not held stationary in their frames but were regularly moved from side to side. This wear is most unusual. Blown window glass is very occasionally known as early as the 1st century, for example fragments were found in a context dated to AD 80 at Exeter (Charlesworth 1979, 229) but it

is most common on late Roman sites. The ridged blown window glass (No.554) is very unusual but has previously been noted at Fifehead Neville, Dorset and Great Casterton villa (Harden 1959, 12).

### Distribution (by MJD)

(Table 17; microfiche)

Nearly all fragments of window glass came from Area 1. Apart from one fragment, all the corrugated blown window glass was found in the area of Room 1, much of it from rubbish on the floor which also produced quantities of joining pottery sherds.

Examination of the distribution of the two main types of window glass shows that, despite a general scatter, there are concentrations of each type, the matt/glossy type being dominant in the area of Building 2, grid ABIX–X (26% of all finds) and the blown window glass is more concentrated in Building 1 (59% of all finds), particularly in Rooms 2 and 5. The only finds of matt/glossy type from Building 1 which can be isolated to individual rooms are three fragments from Room 1, and one each from Rooms 2, 3 and 4. There is thus no evidence to suggest that Building 1 had windows with this type of glass. The concentration in ABIX–X, the north-west range, is more difficult to assess since the finds come from unsealed layers (none from the fill of the hypocaust channels), but this may suggest that windows of this type existed in this range.

The concentration of blown window glass in Building 1 suggests that Rooms 1 and 2 may have had windows of this type, although the finds of ridged glass from Room 1 suggest this glazed one or more windows. The sparsity of finds from Rooms 3 and 4, and the stratification of finds from Rooms 5–7 is difficult to interpret, and may relate to a similar paucity of daub, particularly from Rooms 2–4. The fill of the hypocaust in Room 5 contained Constantinian coins and a major deposit of late glass vessels; the two fragments from Room 2 were deposited before the latest occupation there, below hearth F23.

Window glass from the rampart refuse deposit (18.6% of all blown; 20% of matt/glossy) comes from only the E grid squares; the only finds from the F squares which produced slightly earlier refuse are one sherd of each type, both from the ploughsoil in FX.

## X. Tools

(Figs 88–96)

### Tool handles

(Figs 88–90)

#### *Bone, antler and ivory*

- 555.** Bone/antler clasp knife with iron blade secured by copper alloy mount. Handle extensively carved. SF 724.
- 556.** Broken cylindrical haft, flaring at one end, probably pig femur shaft, with band of incised lattice. SF 3165, CDVI–VII, LB 3043, courtyard.
- 557.** Hollow handle, ?antler, tapering end decorated with incised diagonal lines, the other with hole surrounded by incised circle, and double ring- and-dot. Slight traces of iron inside. SF 159.
- 558.** Broken haft with bands of incised lines, a riveted copper alloy collar at one end and remains of iron implement of flattened section. SF 287, FVII, LB 69, refuse.
- 559.** Highly polished fragment with incised lines, giving moulded effect. SF 220, EVII, LB 154, spill.
- 560.** Small haft of rectangular section hollowed at one end. ?Instrument handle rather than knife. SF 3016.

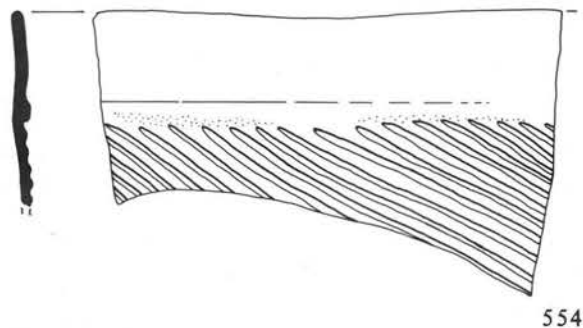


Figure 87 Window glass. Scale 1:2.

561. ?Handle. Sheep, L metatarsal, proximal end cut neatly, with extra cuts on surfaces; interior hollowed to form circular tube; distal end chewed. SF 4035, CVI, LB 1447, post-Roman.
562. ?Handle. Cattle. L metatarsal shaft, fairly neatly sawn across both ends, ridges on anterior surface cut off partly to produce flatter side. SF 4034.
563. Ivory. Cylindrical haft, one end hollowed with remains of round iron tang. ?Post-Roman. SF 394, EVI, LB 383, spill.
564. Red deer antler. Part tine, cut at broad end, ?sawn very roughly at narrow end, much of surface whittled, and square socket cut into narrow end of hafting. SF 1660, BIX-X, LB 1401, spill.
565. Red deer antler knife haft, broken with remains of iron ?knife tang. SF 1784.
566. Antler handle with ?oval section iron tang; roughly trimmed. SF 4623.

*Unillustrated.* Nos 567–568; see microfiche.

## Discussion

A close parallel for No.555 occurs at Icklingham, Suffolk (West 1976, fig.39, no.23), and a similar example was found at Shakenoak (Brodribb *et al.* 1971, fig.52, no.138). The other decorated handles, Nos 556–559 find parallels on Roman sites and where from datable contexts, appear to belong to the later Roman period.

Although a similar, but much larger, handle to No.560 occurs at Portchester (Cunliffe 1975, fig.118, no.114), this may be of post-Roman date and could be comparatively modern, as is probably the case with No.563.

Handles made from barely-worked bones, as Nos 561, 562 and unillustrated in microfiche catalogue (Nos 567, 568) are also known from Portchester (Cunliffe 1975, fig.118, no.110) and their rarity in publications is probably due to lack of recognition.

Since the site produced a quantity of antler, its use for making handles is not exceptional; No.564 is rather short for a knife handle, and is similar to a haft from a 3rd- to 4th-century context at Colchester (Crummy 1983, fig.110, no.2916), although the nature of the socket differs.

## Iron tools

by Quita Mould  
(Fig.91)

### Awls

569. Fine tapering point and round-sectioned tang with minerally replaced organic remains of bone or ivory. SF 2558, DX-XI, LB 2571, Room 5.
570. Tiny square-sectioned with slightly expanded shoulder, curving up slightly at the point. Wood on tang is hazel (*Corylus* sp.). SF 2106A, BV, LB 2339, post-Roman.  
*Also* (same context), a tiny square-sectioned awl with broken point (unillustrated). Minerally replaced organic on tang identified as willow (*Salix* sp.). SF 2106B.

*Unillustrated.* Nos 571–578; see microfiche.

### Woodworking

*Unillustrated.* No.579; see microfiche.

580. **Scriber/awl.** Pointed implement of oval section with tapering rectangular-sectioned tang, with minerally replaced willow/poplar (*Salix/Populus* sp.). SF 1748.
581. Heavy, round-sectioned shank tapering gradually to a point. Lack of battering at head suggests use as a carpenter's **punch**. SF 585, DVI, LB 694, clay over Wall 2 footings.

*Unillustrated.* Nos 582–587; see microfiche.

### Smith's tools

588. Round-sectioned **punch** with flat head slightly burred by hammering, the other end fractured. Probably a smithing tool. SF 2851.

*Unillustrated.* No.589; see microfiche.

### Miscellaneous

590. **Chisel.** Shank of round section which curves slightly in profile toward the flattened blade. Possibly a small hot chisel. SF 2442, CIX-X.
591. Large flat **chisel** with flat head and sub-rectangular faceted stem which flattens and expands into the straight edged blade. SF 1423, EVI-VII, LB 1638, debris on floor Room 1.

*Unillustrated.* Nos 592–594; see microfiche.

595. **Tracer.** Rectangular-sectioned stem with bevelled end, the other end squared off but may be broken. The bevelled edge suggests a tracing tool. SF 2066, BCV-VI, LB 1396, post-Roman.
596. **Point.** Two lengths of rectangular-sectioned stem/shank tapering to a point. SF 2893, Area 4, PVII, LB 3147, road.
597. Shouldered **point.** Long, square-sectioned shank which expands to a slight shoulder before gradually tapering to a point. The flat asymmetrical head probably formed by repeated blows. SF 1271, AX, LB 666, spill.
598. **Point.** Round-sectioned, pointed stem. SF 469, CVII, LB 575, spill.

### Textile working

599. **Netting needle.** Long, thin, round-sectioned stem which divides at each end into two curving arms which almost meet to form a ringed or hooked terminal. Fractured. The flaking section now appears square. SF 2092, Area 2, EI, LB 1942, spill.

*Unillustrated.* Nos 600–601; see microfiche.

## Discussion

By far the largest group of tools appear to be awls, pointed implements for piercing leather. They were originally inserted into an organic handle by means of a tang, the only exception being the solid-handled awl found in Area 4 (No.576; microfiche) which is similar to a Flavian example from Newstead (Curle 1911, 281, pl.LIX, no.16). Of the three Roman awls No.569 is unusual in having the remains of a bone or ivory handle preserved on the tang. Four awls were found in Saxon contexts, one (No.574) coming from the fill of Grave 37. The two unusually small examples were found together in a post-Roman cutting, the complete awl measuring just 44mm, originally had a hazel wood handle (No.570), the second (see note under No.570) possessed a handle of willow as did the remaining Saxon awl (No.571) which was of more usual dimensions.

A fifth pointed implement (No.580) which may also be of Saxon date has a willow/poplar handle and an oval section suggesting the blunter tip of a carpenter's scriber rather than the sharp point of an awl.

A variety of other woodworking tools including a gouge, centre bit, bradawl, chisels and axe blades were found in the ploughsoil. The long, round-sectioned punch of Roman date (No.581) shows no signs of battering at the head and is likely to have been used by a carpenter to drive nail heads below the surface of the wood.

Two stouter punches found (No.588; No.589, microfiche) were probably used by a smith. Similarly No.590 from a late Roman context may have been used as a small hot chisel. The large flat chisel (No.591) is a heavy tool of a type used by a smith or a mason, the former being the more likely as it lacks the heavily battered head which characterizes stone working implements.

The small rectangular-sectioned stem with a bevel edge (No.595) found in 'hut' F71 is best interpreted as a tracing tool.

A notable feature of the ironwork is the occurrence of a number of slender tapering points in both Roman and Saxon contexts. The sixteen square/rectangular-sectioned stems which taper to a round-sectioned point (No.596) range in length from 60mm to 170mm, with an average length of 114mm. They may represent incomplete shanks from ring-headed pins, shouldered points (No.597) or

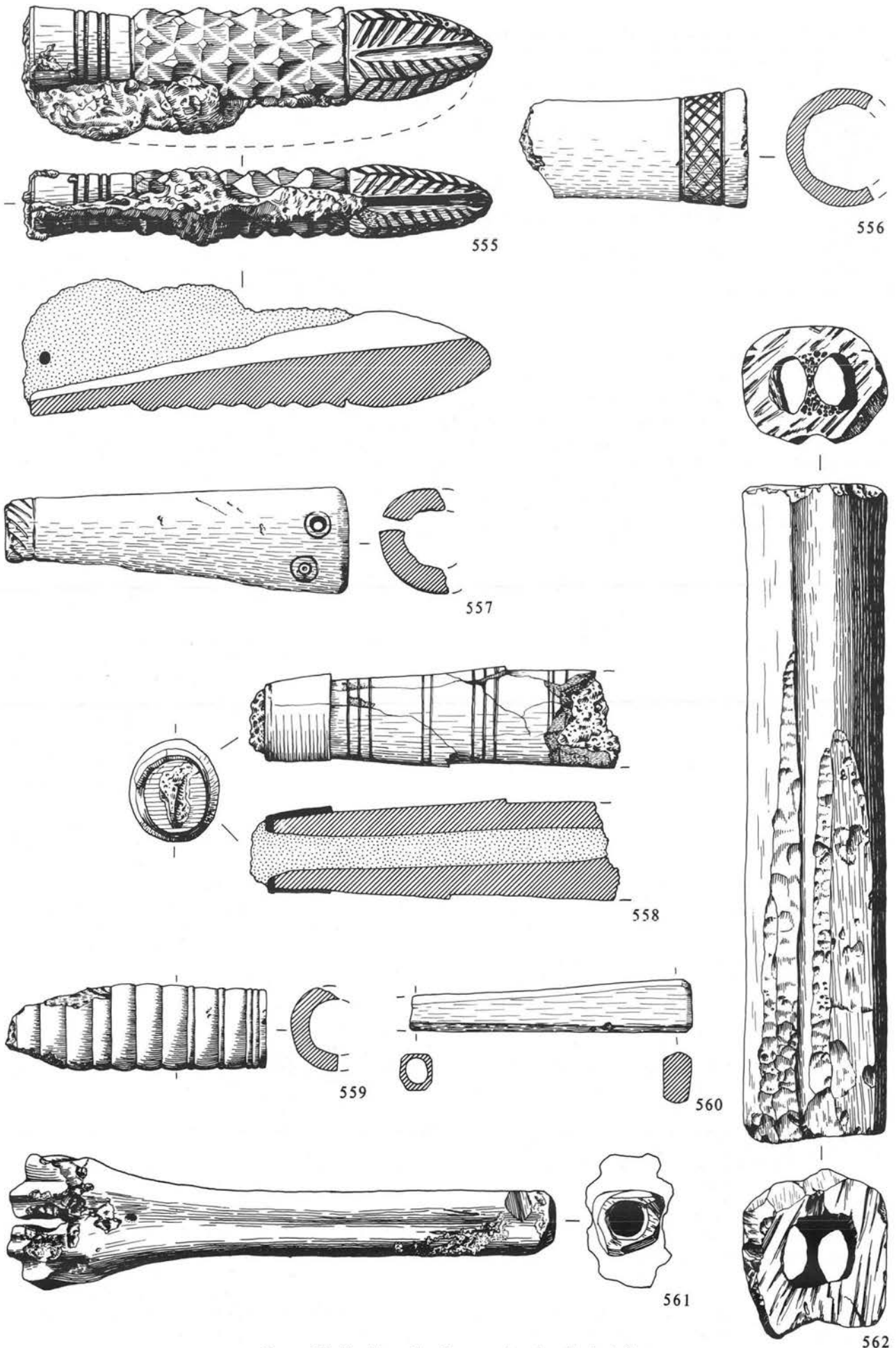
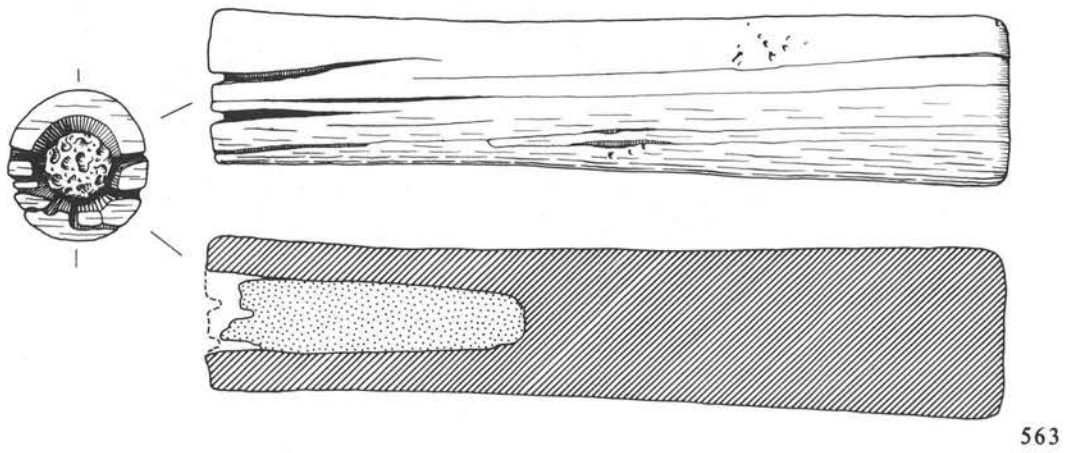
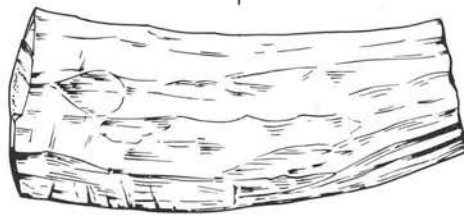
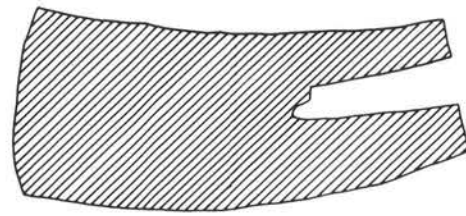


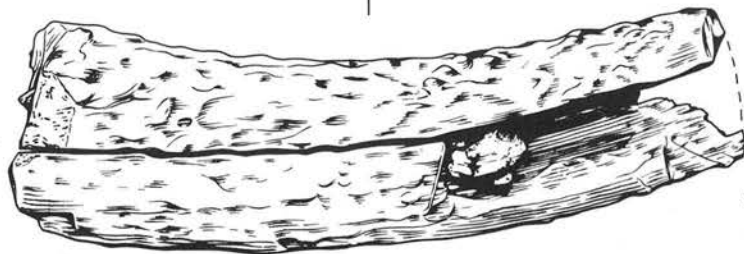
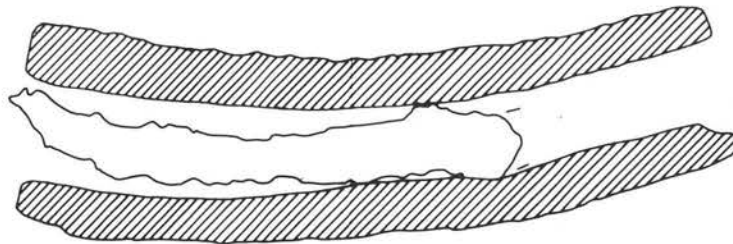
Figure 88 Tool handles, bone and antler. Scale 1:2.



563

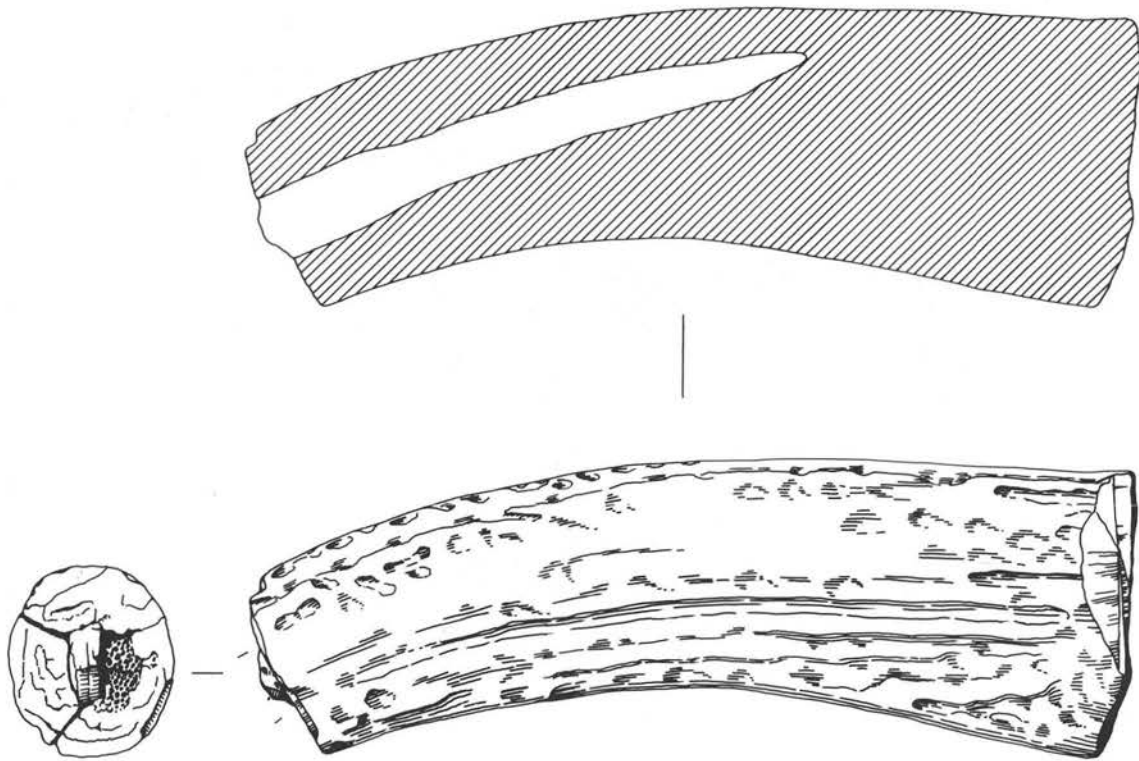


564



565

Figure 89 Tool handles, ivory and antler. Scale 1:2.



566

Figure 90 Tool handle, antler. Scale 1:2.

nails. A further fifteen stems are round-sectioned for their total length and are shorter, between 62mm and 102mm with an average length of 87mm, and more slender, average diameter 5mm. In appearance and size range the round-sectioned points resemble those found at Shakenoak (Brodrribb *et al.* 1972, fig.51, nos 296–310) which have been interpreted as the individual teeth from a linen heckle (Brodrribb *et al.* 1973, 134). Little evidence supports this theory for the Caister examples, however. The individual teeth of a linen heckle or wool comb would have been set in a wooden handle originally, yet no minerally replaced organic remains occurred at the ends of the round-sectioned points, although remains have been preserved on a number of other objects from the site. The points were not found in the same vicinity but were scattered. Although the explanation of individual heckle or comb teeth cannot be dismissed, the points are as likely to be rough-outs for styli, pins or other simple piercing implements.

The large needle with an oval eye (No.600; No.646, microfiche) and the pair of long armed tweezers are likely to be of Roman date, as is the more unusual netting needle (No.599) which is similar to examples found at Wroxeter (Bushe-Fox 1914, fig.5, no.9; Atkinson 1942, pl.55B, nos 3, 4). The needles were used in the manufacture and working of textiles, as may some of the points discussed above.

#### Netting needles, bone (Fig.92)

602. Part of long bone shaft (cattle/horse), one end pointed and polished, other broken. SF 1883.  
603. Part of long bone shaft, ?tibia (cattle/horse/deer). Crudely worked point, polished. SF 2622, DXI, LB 2816, drain F34.

#### Iron knives, shears and tweezers

by Quita Mould  
(Fig.93)

##### Knives, with tang midway between back and edge

604. Leaf-shaped blade with central tang, slightly arched back and convex edge. Commonest form of Roman knife. SF 919, DX, LB 1010, spill.  
605. Blade with central tang expanded slightly at terminal. Straight back and edge, edge worn to give triangular shape to blade. In X-ray distinctly-formed sloping shoulders can be seen. SF 1728.  
606. Blade with long centrally-placed tang and straight back and edge, worn. SF 1006, EX, LB 1175, refuse.  
607. Blade with straight edge and slightly curved back which drops steeply to tip. Wood on tang is ?maple (*Acer* sp.). SF 1743.

##### Knives, with tang on line with back

608. Narrow blade with tang on line with straight back. SF 3195.  
609. Blade with tang on line with sinuous back. Curved edge, tip missing. SF 1243.  
610. Blade with tang on line with slightly curving back, which drops to meet straight edge at pointed tip. SF 1062, EX, LB 1182, rampart spill.  
611. Blade with tang on line with curved back and straight edge. Organic remains on tang identified as bone. SF 1545, DVI, LB 420, spill.

##### Knives, of Saxon type

612. Thin blade with central flat tang and straight back and edge. In X-ray parallel 'weld' lines visible on blade. SF 531.  
613. Thin blade with central tang and straight back and edge. Back drops to meet edge at tip. SF 1838.  
614. Fine blade with central tang with bent terminal and straight back and edge, worn. SF 1755, BCIV, LB 1921, post-Roman.  
615. Tiny blade with kicked back and straight edge. ?From sewing or toilet set. SF 2104, BV, LB 2339, post-Roman.

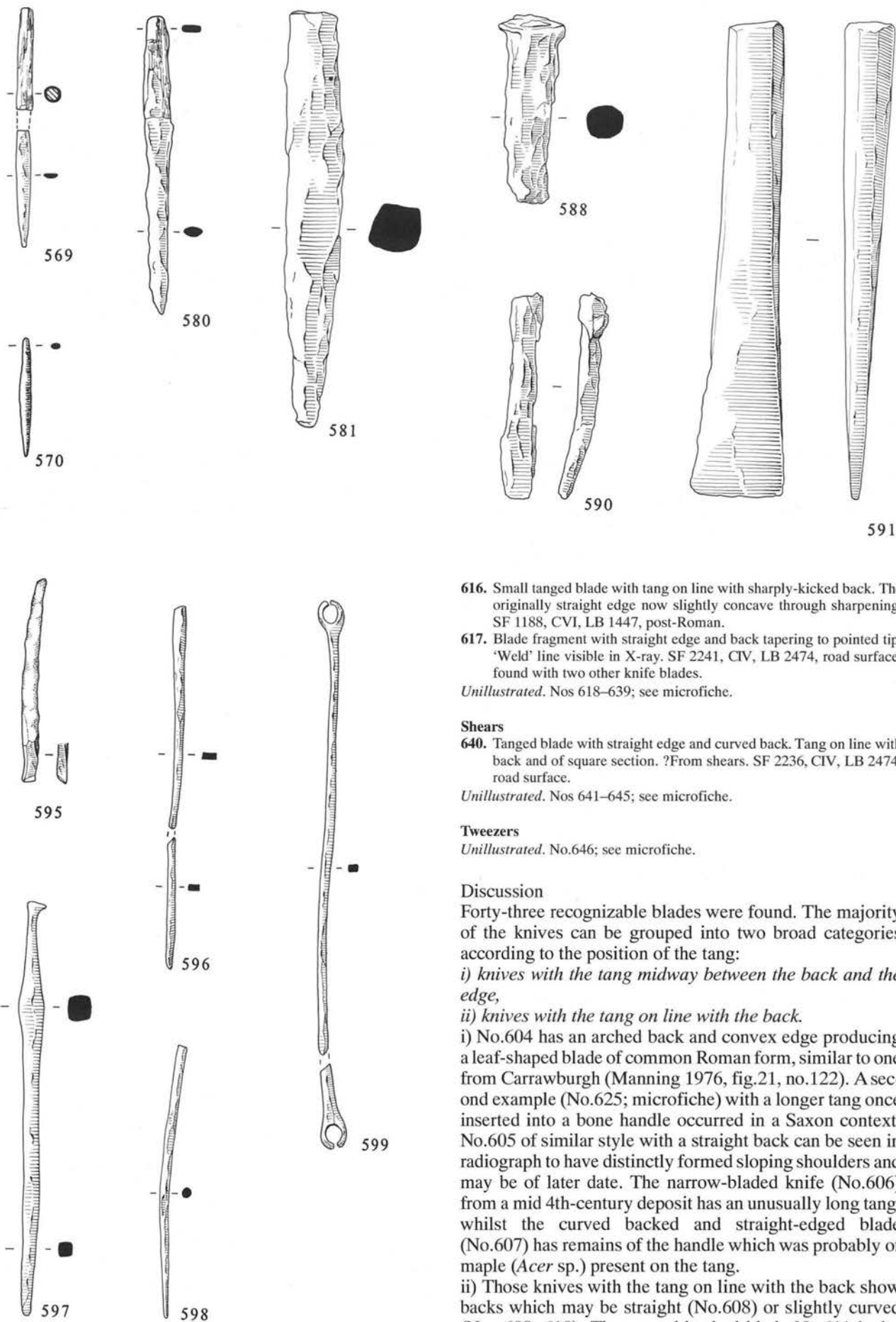


Figure 91 Tools, iron. Scale 1:2.

**616.** Small tanged blade with tang on line with sharply-kicked back. The originally straight edge now slightly concave through sharpening. SF 1188, CVI, LB 1447, post-Roman.

**617.** Blade fragment with straight edge and back tapering to pointed tip. 'Weld' line visible in X-ray. SF 2241, CIV, LB 2474, road surface, found with two other knife blades.

*Unillustrated.* Nos 618–639; see microfiche.

#### Shears

**640.** Tanged blade with straight edge and curved back. Tang on line with back and of square section. ?From shears. SF 2236, CIV, LB 2474, road surface.

*Unillustrated.* Nos 641–645; see microfiche.

#### Tweezers

*Unillustrated.* No.646; see microfiche.

#### Discussion

Forty-three recognizable blades were found. The majority of the knives can be grouped into two broad categories according to the position of the tang:

*i) knives with the tang midway between the back and the edge,*

*ii) knives with the tang on line with the back.*

*i)* No.604 has an arched back and convex edge producing a leaf-shaped blade of common Roman form, similar to one from Carrawburgh (Manning 1976, fig.21, no.122). A second example (No.625; microfiche) with a longer tang once inserted into a bone handle occurred in a Saxon context. No.605 of similar style with a straight back can be seen in radiograph to have distinctly formed sloping shoulders and may be of later date. The narrow-bladed knife (No.606) from a mid 4th-century deposit has an unusually long tang, whilst the curved backed and straight-edged blade (No.607) has remains of the handle which was probably of maple (*Acer* sp.) present on the tang.

*ii)* Those knives with the tang on line with the back show backs which may be straight (No.608) or slightly curved (Nos 609, 610). The curved-backed blade No.611 had a bone handle. Fragments of two heavy knives or cleavers were found, one with a socketed blade (No.638; micro-

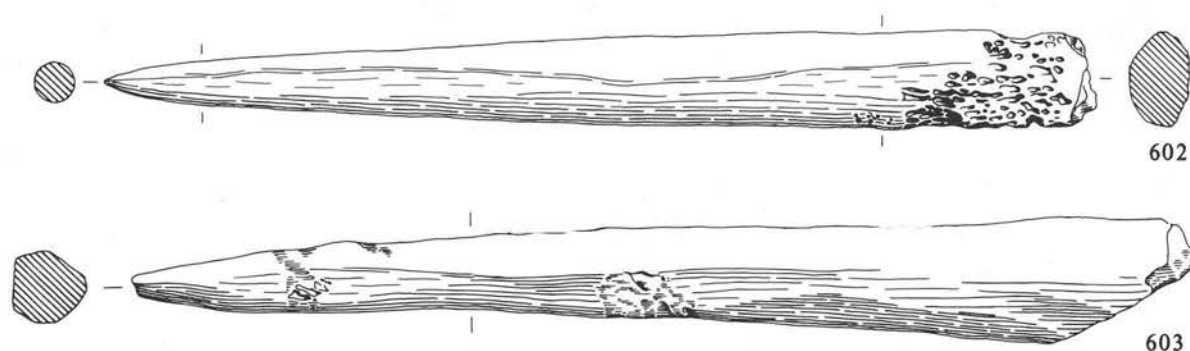


Figure 92 Netting needles, bone. Scale 1:2.

fiche), the other, from a deposit pre-dating the main rampart, with a large square-sectioned tang (No.621; microfiche).

Whilst only five knives were found in definite Saxon levels, eight others deriving from possible late Roman deposits or ploughsoil exhibit Saxon characteristics. The majority are thin, centrally-tanged blades with a straight back and edge (Nos 612–14), comparable with those found at Shakenoak (Brodrigg *et al.* 1972, figs 37–8 particularly no.158). The stratified Saxon knives include No.614 and two unusually small examples (Nos 615, 616) with a kicked back and straight edge. The smallest knife found (No.615), measuring only 51mm in length, was recovered from a post-Roman cutting, as were the two tiny awls remarked on above (Nos 570, 572). It is possible that they represent part of a miniature tool kit or sewing set.

In radiograph three of the blades can be seen to have fine 'white lines' running through the blade parallel to the edge and back (the position of these lines are indicated in the illustrations of two of the examples, Nos 612 and 617). The presence of these 'weld lines' suggests that carbon steel was incorporated during manufacture in order to produce a blade with a hardened cutting edge of steel and a softer but more flexible back of wrought iron.

The four possible shears blades have curving backs and straight edges (No.640). Three came from apparently Roman contexts, the unusually slender example (No.642; microfiche) having 'weld lines' present in the blade visible in radiograph.

#### Toothed terminal, copper alloy (Fig.94)

647. Rectangular plate, cut from sheet, with the remains of six teeth on one short side. Apart from the broken teeth, the edges still show signs of manufacture. Perhaps related to leather-working. SF 982, EX, refuse.

Similar plates have been found at Silchester (Boon 1957, 195), Chalton, Hampshire (Frere 1957; Roes 1958), Portchester (Cunliffe 1975, fig.115, no.79), *Verulamium* (Goodburn 1984, fig.23, no.219), Chedworth (in the site museum), and Ivy Chimneys, Essex (unpublished).

Attention has been drawn to similar objects on the continent (Dorow 1826; Jacobi 1897; Roes 1958) of both Roman and later date, but these differ from the British examples in being socketed plates. The most recent discussion is of a socketed toothed terminal from Saalburg (Wild 1984/85). Moreover, since the metal combs from early medieval deposits (Roes 1958) are decorated and have curved toothed blades, the function of the socketed examples may differ.

The six 'combs' from Chalton consist of two types, two smaller rectangular plates, and four considerably larger, with rounded corners at the opposite end to the teeth. The absence of wear on the edges of the Caister example and the occurrence of six plates together at Chalton, suggest that these were mounted into a tool or handle. The example from Portchester has a hole near the centre of the opposite side to the teeth and adjacent notches cut into the two longer edges, while that from *Verulamium* appears to have a grooved surface.

There seems to be no evidence to suggest that these were used in weaving (Wild 1984/85). The only other suggested function is that they are leather pricklers, used for marking out seams to facilitate regular stitching.

#### Bone tools (Fig.95)

##### ?Tool

648. Long bone shaft from ?cattle. Shaped end with shallow cut 'teeth'. Perhaps a tool for decoration, on ?pottery. SF 4040, BV, LB 2339, post-Roman.

##### Points

649. Fragment of long bone shaft (cattle/horse) with point, very highly polished. SF 1555, DVI, LB 1743, Room 1.

650. Fragment of long bone shaft (cattle/horse) pointed one end, broken the other, roughly whittled to round section. SF 201.

651. Roe deer L metatarsal shaft, part proximal end, distal end broken off obliquely, forming a point which has been used. SF 4042, CDVI, LB 2352.

*Unillustrated.* Nos 652–656; see microfiche.

#### Hones

by Malcolm Fenton (Fig.96)

##### *Fine-grained sandstones with a siliceous cement:*

(Ellis: types II and III; Moore: 'Coal Measures Sandstone Types')

657. Fragment, rectangular-sectioned, in fine-grained micaceous sandstone, broken one end, the other worn. SF 400.

658. Fragment, rectangular-sectioned, in fine- to medium-grained micaceous sandstone with abundant dark minerals. SF 1815.

*Unillustrated.* Nos 659–660; see microfiche.

##### *Fine-grained sandstones with a calcitic cement:*

(Ellis: type IV?; Moore: 'Sandy limestones')

661. Fragment, round-sectioned pointed, in fine-grained micaceous sandstone, broken one end. SF 384, BVII, ploughsoil.

*Unillustrated.* Nos 662–665; see microfiche.

##### Unidentified

666. Stone fragment of unidentified type, with fine planar fabric, or bedding, of rectangular section with rectangular projection on the

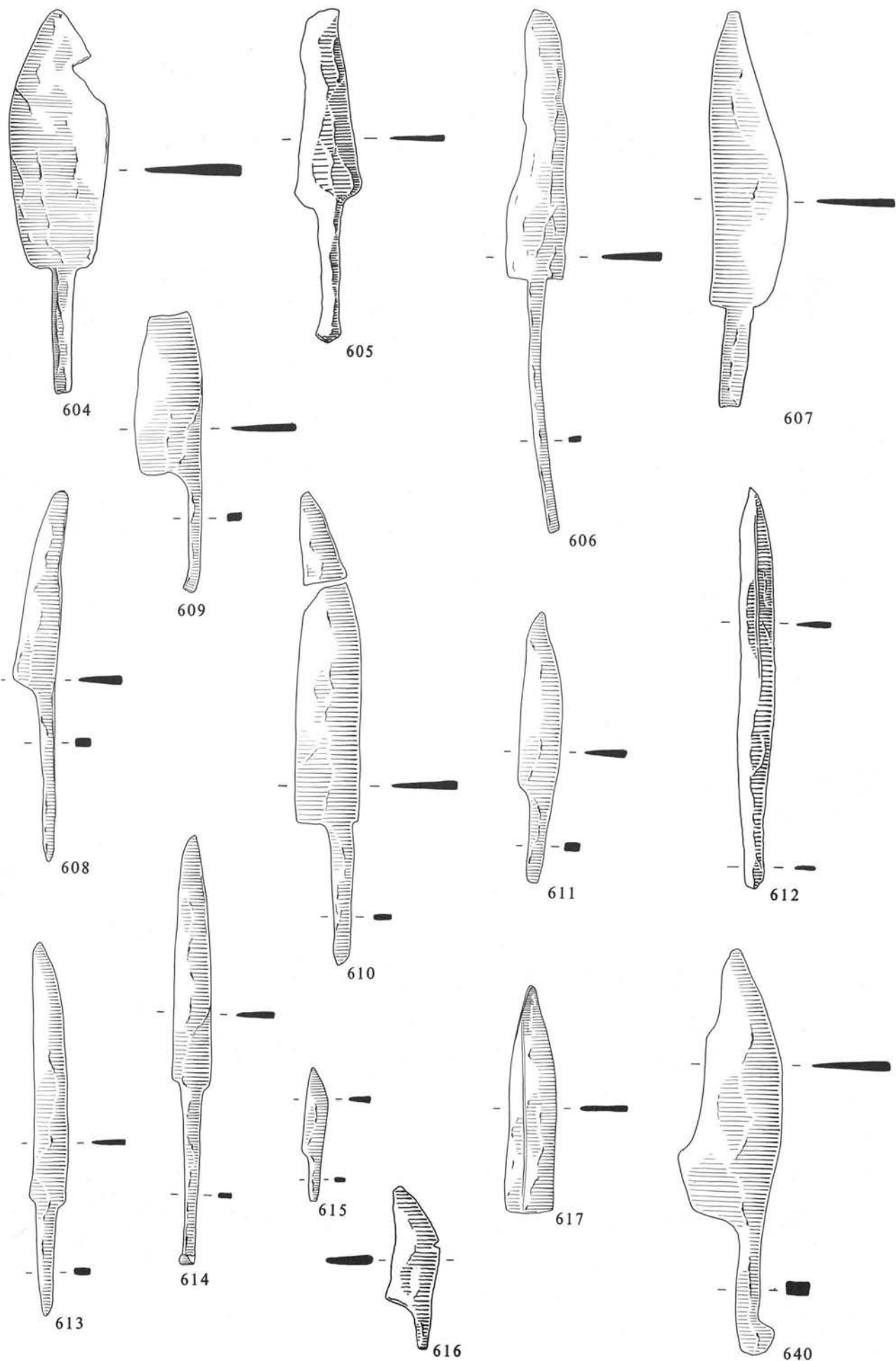
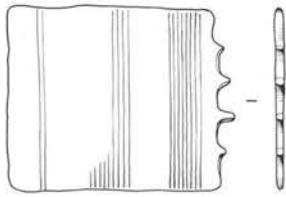


Figure 93 Knives and shears, iron. Scale 1:2.





647

Figure 94 Toothed terminal, copper alloy. Scale 1:1.

underside. There are no traces of extensive wear on the surface, and the stone itself is not ideal for sharpening, containing many dark, soft minerals. Possibly not used as a hone; function unknown. SF 1819, Area 2, MI, LB 1824, ?refuse.

#### Discussion

All the stones positively identified as honestone fragments were fine-grained sandstones, usually micaceous. These are subdivided into two groups on the basis of their cementing medium (silicate or calcitic). Without the aid of thin sections further subdivision is not possible. Although the approximate equivalents of these two types in previous classifications (Ellis 1969; Moore 1978) is indicated, these should be taken only in the widest sense.

Without thin sections, identification of the sources of these stones is necessarily tentative. They are, however, unlikely to be from glacial deposits. Those stones with siliceous cement may be from carboniferous sandstones in

the Midlands and the North. However, there are numerous potential sources nearer to Norfolk, and there is no reason to assume these were not exploited.

## XI. Fastenings and fittings

(Figs 97–101)

### Copper alloy

(Figs 97, 98)

#### Leather ornament; for harness, cuirass?

**667.** Thin repoussé disc (diam. 37mm) with plain raised border, and remains of two (originally three) curvilinear motifs in the centre, with two thin copper alloy strips attached to the back face. SF 56, FVII, LB 69, refuse.

Plate brooches with similar debased Celtic designs occur at several sites (Brough under Stainmore: British Museum 1964, 22, fig.11, no.39; Silchester: Boon 1957, fig.19, no.2; Richborough: Bushe-Fox 1949, 139, pl.XLV, no.170; South Shields: Allason-Jones and Miket 1984, 118, no.3.148; Caerleon: Zienkiewicz 1986, fig.54, no.9; and Vindolanda: Bidwell 1985, fig.39, no.1). In view of the examples from Brough where local metalworking is known in the 2nd century, a 2nd- to 3rd-century date may be assumed. Most of these examples differ in detail from No.667, and it is questionable whether some of the other detached discs, hitherto assumed to come from disc brooches, are not in fact similar plaques, presumably for attachment to leather (as at Colchester: Hull 1958, 117, fig.47, no.7; and *Verulamium*: Waugh and Goodburn 1972, 118, fig.31, no.24).

The technique and style of decoration derives from the late Iron Age, and several examples are discussed in the publication of the Dowgate plaque from London (Megaw and Merrifield 1969) and it is clear that repoussé decorative plaques were used on many different objects, probably over a long period.

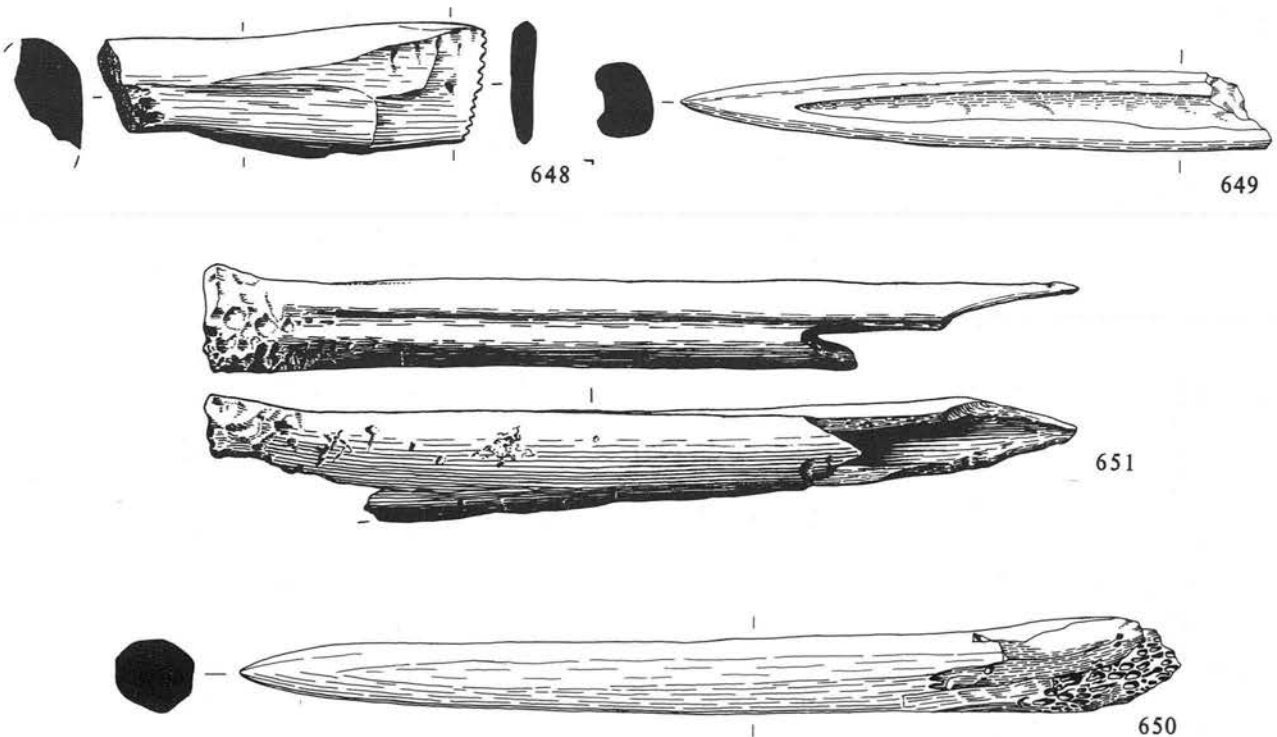


Figure 95 Tools, bone. Scale 1:2.

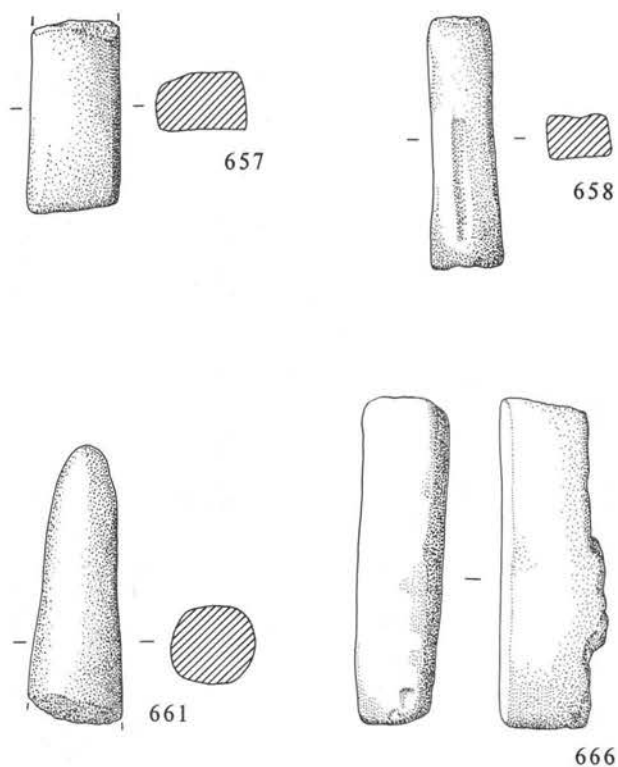


Figure 96 Hones, stone. Scale 1:2.

The disc seems too insubstantial for a mount on harness and would be unparalleled as such. The only other discs with repoussé decoration commonly found are those used to decorate military aprons, as at Caerleon (Zienkiewicz 1986, fig.60, no.134), and catalogued on the continent by Ulbert (1969, 278–97), but these seem to be smaller, usually imitating coins and attached with rivets. The unusual thin copper alloy ‘ribbons’ on this disc are unparalleled, and it is difficult to see how they could be used to fasten the disc or for what material such an attachment would be suitable.

668. Moulded knobbed **head**, ?decorative fastening for furniture. SF 2347.
669. Small rectangular-sectioned **nail**, head projecting on only one plane. Similar to Manning’s type II, suitable for punching in as hidden nailing. Copper alloy nails would be an advantage with fine carpentry. SF 3010.
670. Round **stud/nail head**, part of round-sectioned shaft. SF 2230, ABIX, LB 2450, Room NW3/4.
671. Small square-sectioned **eyelet**, broken end. SF 3221, Area 4, MII, Grave 116.
672. Rectangular-sectioned **angle-bracket** with two nail holes in the lower arm, the supporting arm having a slightly expanded end. Cast. SF 2243, CIV, LB 2474, road.
673. Thin **strip** with two rivets. SF 2366, DX–XI, LB 2548, Room 5 hypocaust.
674. Thin sheet **?hinge** with two rivet holes each side; possibly related to armour. SF 2242, CIV, LB 2474, road.
675. Double-headed **rivet**; the upper head has a raised moulding around its edge and a small central hollow moulding; the lower head has the rivet showing and is plain. SF 983, EX, LB 1167, refuse.
676. Two shaped pieces of thin **sheet** secured by two rivets, the one nearer the point being shorter. Broken ends. SF 2627, DXI, LB 2756, spill.
677. Small **strip** bent double and secured by a rivet. Similar to a hinge from Arnsburg to hold a pendant (Oldenstein 1976, taf.30, no.205). SF 1518.
678. Convex **disc** with central hole. SF 3203.
679. Flat circular **disc** with central hole. SF 1092, EVII, LB 1049, refuse.
680. Lozenge-shaped **sheet** with central hole. SF 1145, BIX, LB 1402, spill.
681. **Strip** with rivet holes, both ends broken. SF 1493.
682. Circular **disc** with rectangular loop attached on the rear which shows signs of tooling; the face is plain. Perhaps a harness mount: Newstead (Curle 1911, pl.LXXIV, no.1); South Shields (Allason-Jones

and Miket 1984, no.3.958); *Verulamium* (Goodburn 1984, fig.22, no.198); and Gestingthorpe (Henig 1985b, fig.14, nos 102–3 with bosses). SF 666, FVI, LB 735, refuse.

683. Bell-shaped bronze **stud**; trace of a square-sectioned rivet on the underside. SF 1478.
684. Similar **stud/mount** with iron nail protruding. SF 1858, EXI, LB 2045, refuse.  
These bell-shaped mounts are relatively common finds on both military and civilian sites, and while some may be lock-pins, others may be decorative mounts. Both the above can be paralleled in an extensive range from South Shields (Allason-Jones and Miket 1984, nos 3.889–910).
685. Small **boss** decorated with repoussé dots; the central hole may be caused by damage or, alternatively, may be an original hole subsequently chipped. Similar bosses at Leicester (Kenyon 1948, fig.88, no.7); Portchester (Cunliffe 1975, fig.114, no.73); and a much larger example from *Verulamium* (Frere 1972, fig.38, no.102). SF 949.
686. Small **boss** with concentric mouldings; the central hole not certainly original. Similar boss from Leicester (Kenyon 1948, fig.88, nos 14, 15); Rudston (Stead 1980, fig.66, no.54); Caerleon (Zienkiewicz 1986, fig.56, no.14); *Verulamium* (Goodburn 1984, fig.17, no.151); and also from the German forts (Oldenstein 1976, taf.52, nos 607, 611–13). SF 3250, late find, marked ‘rampart filling’.
687. Small **boss** with concentric mouldings. Similar to the above. SF 2250.
688. **Stud** with square-sectioned pin, and thin circular head. SF 1262, AX, LB 666, spill.
689. Small plain **boss**, compare Goodburn 1984, fig.18, no.154. SF 3209. *Unillustrated*. Nos 690–694; see microfiche.

### Locks and keys (Figs 99–101)

#### Copper alloy

695. **Key handle** in the form of a sleeping lion, the body emerging from a square mount with acanthus leaf ornament, with a round socket. The underside of the casting has a knob immediately below the lion’s head. Similar lion handles are known from Fishbourne (Cunliffe 1971, fig.50, no.144), Wall, Staffordshire (Webster 1960, fig.8, no.225), and *Verulamium* (Goodburn 1984, fig.18, no.165) and these may be likened to an example from Silchester in the form of a panther (Boon 1974, 204, fig.23, no.6) and a recent find from Brampton, Norfolk, where the lion is shown devouring a man (*Britannia* 15 (1984), pl.XVIII, C). The same feline model is sometimes used for clasp knife handles as one of a tiger in bone from Wroxeter (Bushe-Fox 1914, 22, pl.X, fig.1) but several examples have been found on the continent with iron keys *in situ* (Espérandieu and Rolland 1959, pl.LI, nos 163–7). SF 1004, EX, LB 1175, refuse.
696. **Ring with key** for a casket. Where from dated contexts, these appear to be of the later Roman period. SF 1907, EX–XI, LB 2102, gully F59.
697. **Ring with key**, as No.696. SF 2599.
698. Hollow cylindrical **?handle**, lead filled, with moulded ring and solid knob at one end, the other **?broken**. Similar handles with keys are known on the continent (Boucher 1971, 190, nos 522–5) although a mirror handle is another possibility. 1935 find.

#### Iron

#### by Quita Mould (Figs 100, 101)

699. **Barb-spring box padlock** with rectangular case secured by six rivets. Interior heavily corroded but appears to have two sets of leaf-springs lying one above the other in opposite planes. An L-shaped arm from the lower bolt fits into one of the two round holes present in the lock bolt protruding from one end of the case. SF 1574, DVI, LB 420, spill.
700. U-shaped **bolt of barb-spring padlock** with one leaf of the spring fractured. Similar to Brodrribb *et al.* 1971, fig.51, no.93. SF 1772, BCIV, LB 1921, post-Roman F69.
701. **Barb-spring padlock key** with flat, slightly tapering strap stem ending in a rolled loop terminal. Square bit is broken. SF 2237, CIV, LB 2474, road surface.
702. Rectangular strap stem with small broken bit and scrolled hook terminal. Small **key** for a barb-spring padlock. SF 1472.

*Unillustrated*. Nos 703–705; see microfiche.

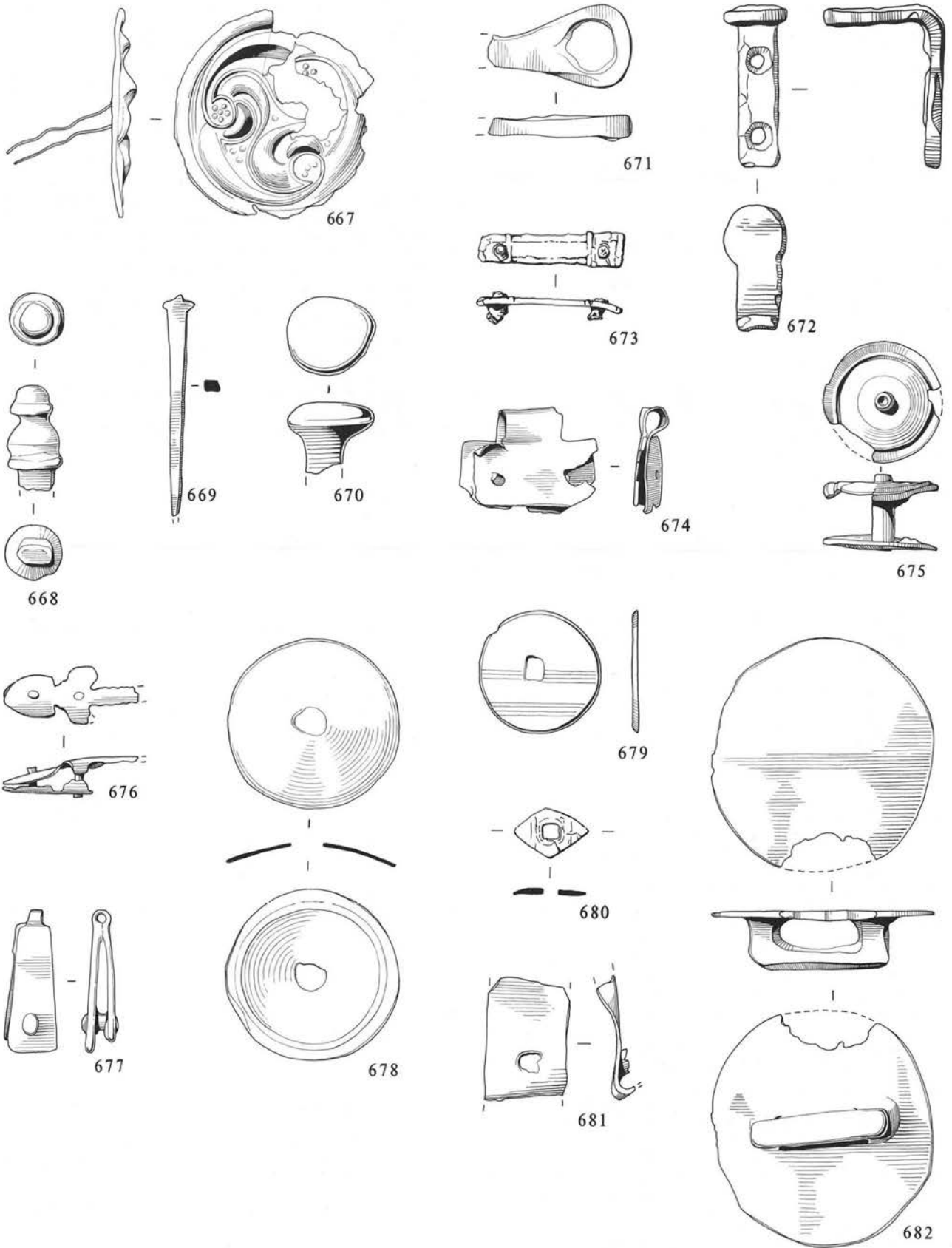


Figure 97 Fastenings and fittings, copper alloy. Scale 1:1.

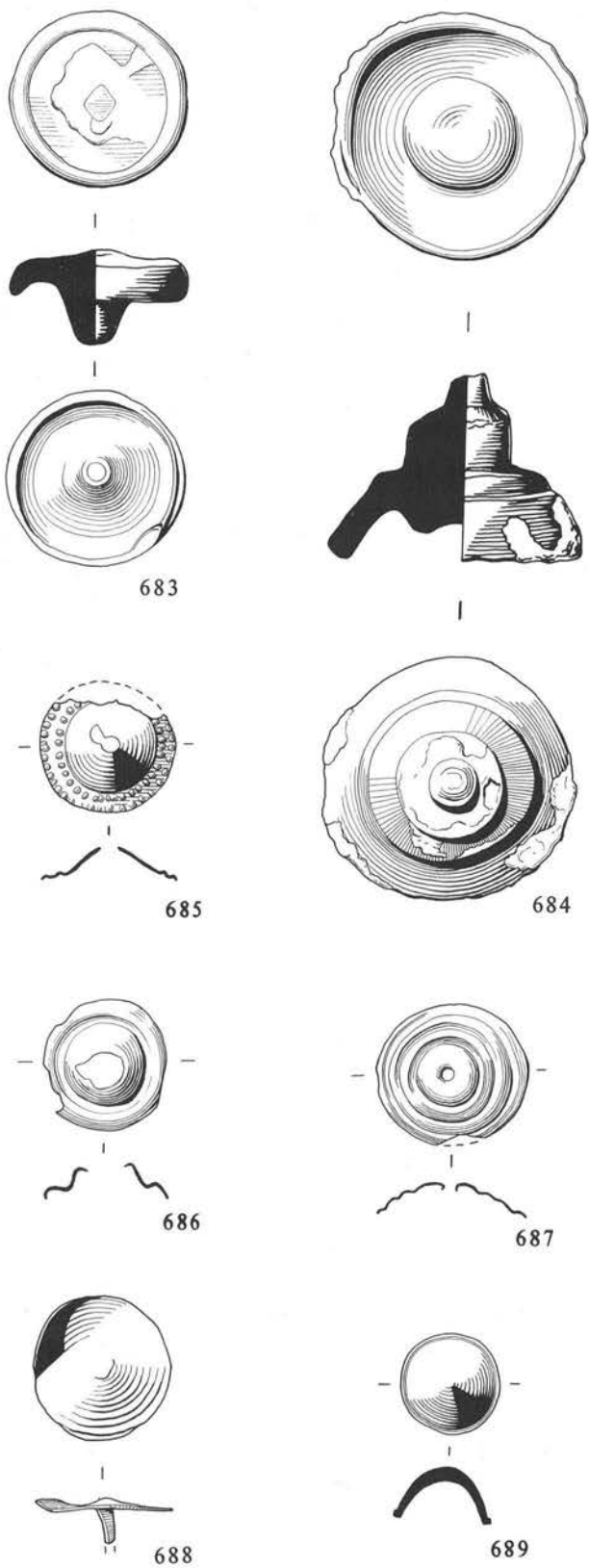


Figure 98 Fastenings and fittings, copper alloy. Scale 1:1.

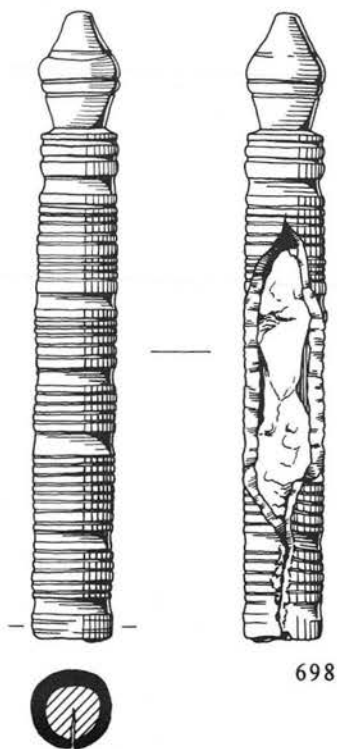
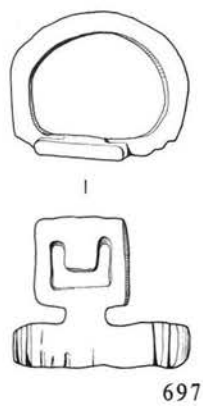
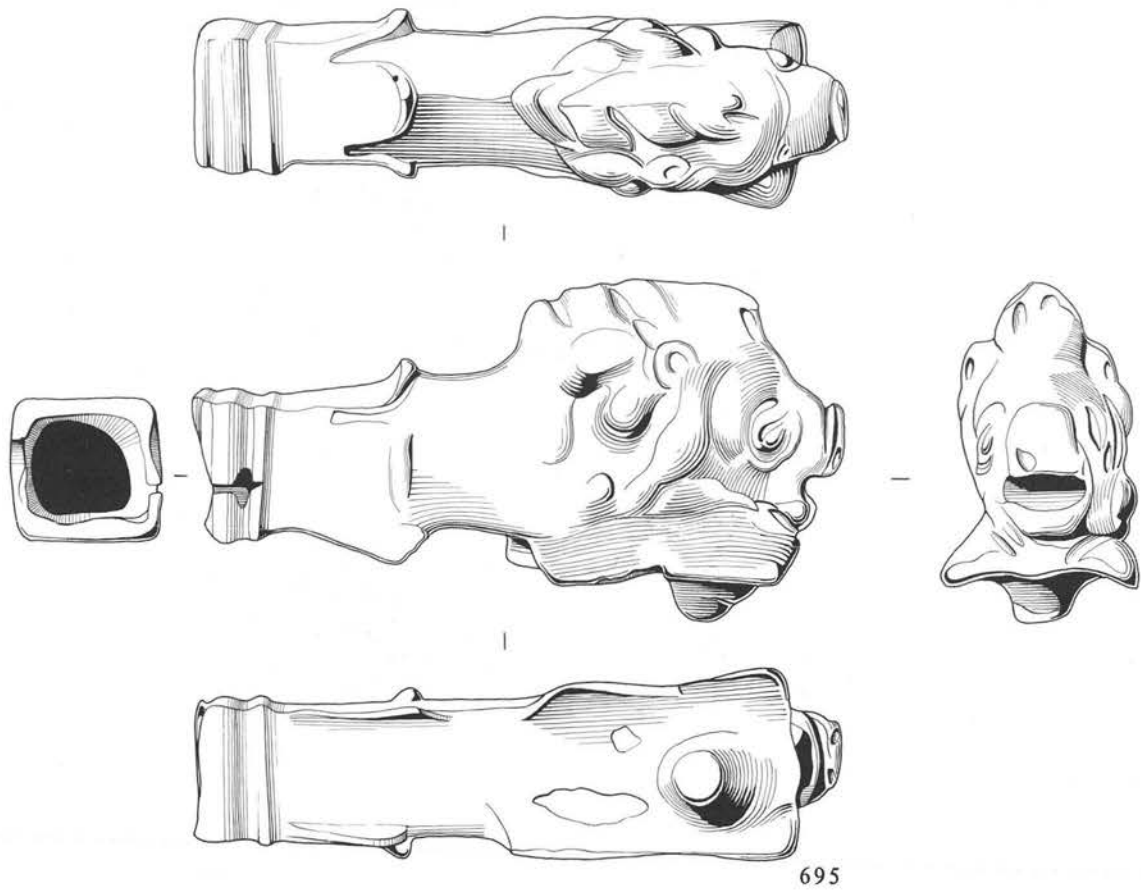
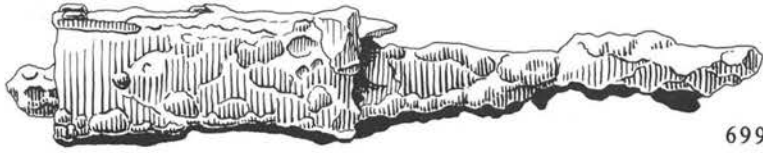
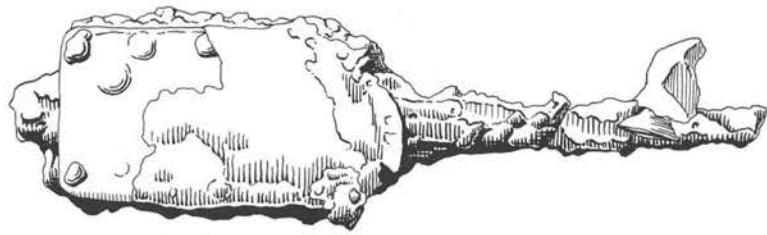
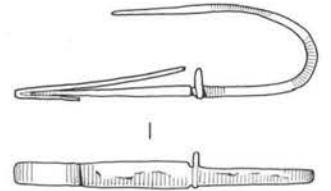


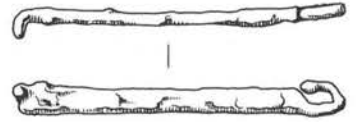
Figure 99 Keys and key handles, copper alloy. Scale 1:1.



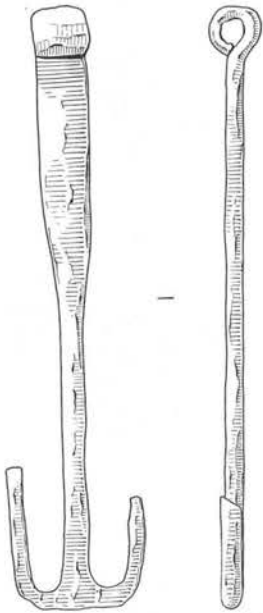
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700



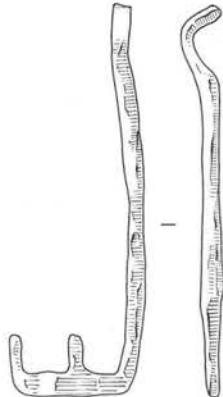
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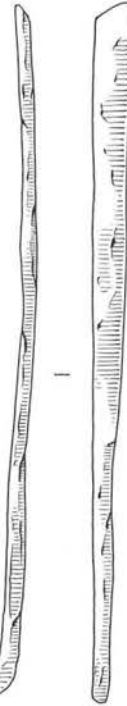
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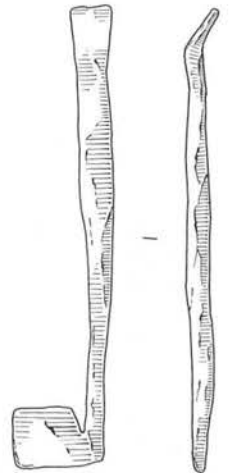
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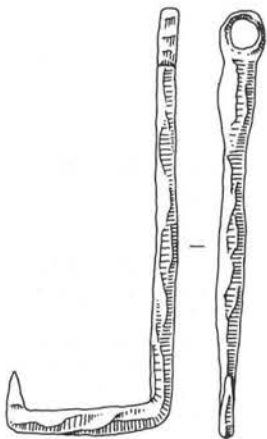
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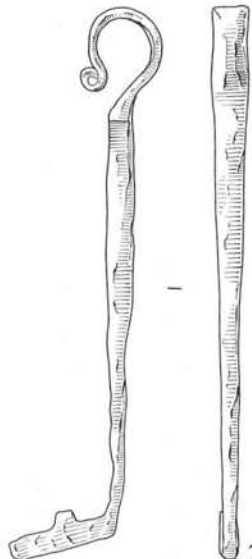
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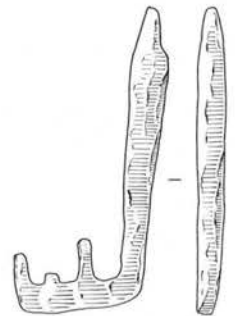
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Figure 100 Padlocks and lift-keys, iron. Scale 1:2.

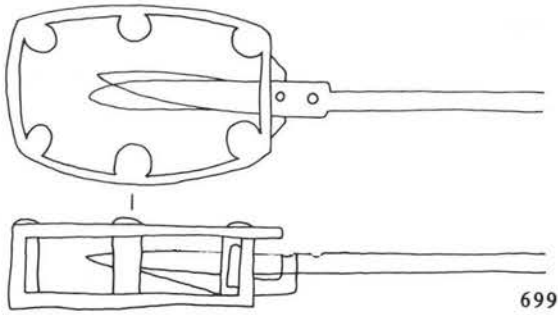


Figure 101 Sketch of padlock No.699 from x-ray.

706. T-shaped **tumbler-lock lift-key** with rolled terminal and shouldered stem of square section. SF 2868.

#### L-shaped tumbler-lock lift-keys

707. Square-sectioned stem, remains of hooked terminal and a bit with two teeth. SF 1177, BCV-VI, LB 1421, post-Roman.

708. Long flat stem and three toothed bit, terminal missing. SF 639, CVIII, LB 653, spill.

709. Square-sectioned shouldered stem and curled terminal. The bit is solid, possibly a blank. SF 723.

710. Rectangular-sectioned stem with curled ring terminal, tapering to a large bit with a single tooth remaining. SF 1096.

711. Square-sectioned stem with decorative scrolled hooked terminal and bit with remains of one tooth. SF 3166, EVI, LB 3166, debris on floor, Room 1.

712. Square-sectioned stem terminating in a short tang, presumably for a copper alloy or organic handle. The bit has remains of three broken teeth. SF 2671.

*Unillustrated.* Nos 713–729; see microfiche.

## XII. Objects associated with agriculture, horticulture, animal husbandry and fishery (Fig.102)

### Copper alloy

730. **Rumbler bell.** Medieval. SF 1085.

731. **Barbed fish-hook.** Examples from Portchester (Cunliffe 1975, fig.114, no.63); Fishbourne (Cunliffe 1971, fig.51, nos 149, 150); and Wroxeter (Bushe-Fox 1916, pl.XXI, fig.2, no.5). SF 2959, DVIII-IX, LB 2563, Room 4, clay under tiles.

### Iron

by Quita Mould

732. **Spadeshoe.** Type I c/d of Manning's classification (1969, 21). SF 3570.

*Unillustrated.* Nos 733–737; see microfiche.

## XIII. Military equipment and weaponry (Figs 103–11)

### Copper alloy (Figs 103–5)

#### Earlier period (Fig.103)

738. Half of **reinforce from auxiliary cavalry helmet** of type E with high conical mounts for attachment (Robinson 1975, 90, figs 115, 116; pls 258–62). The reconstruction sketch shows how it interlocked with another transverse reinforce. An example from Newstead (Curlie 1911, pl.XXXV, no.8) is discussed with others from the continent by Robinson (1975, 90). Probably Antonine or later. SF 2136.

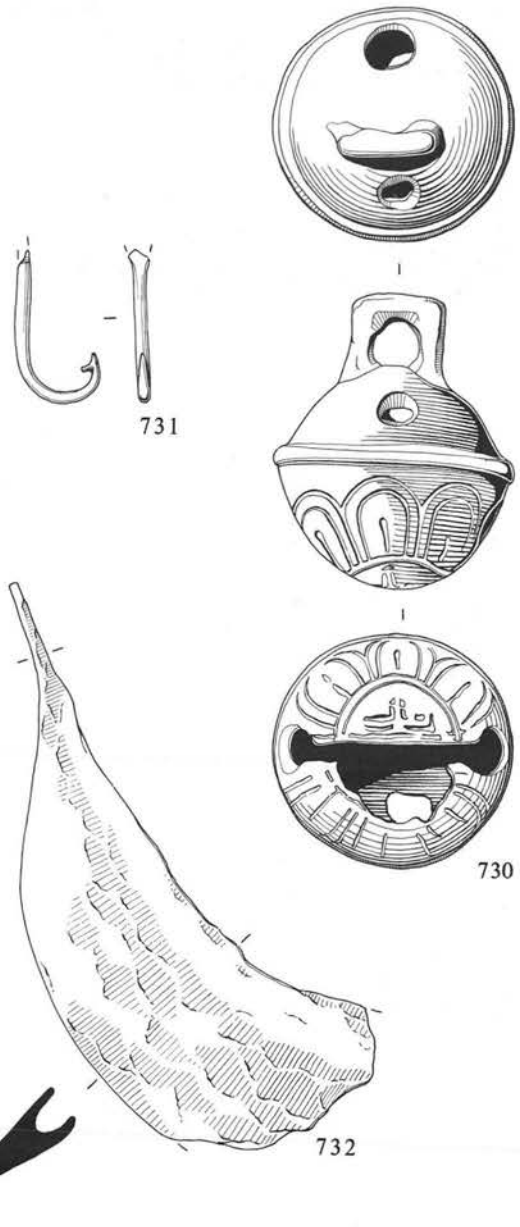


Figure 102 Rumbler bell and fish-hook (copper alloy, scale 1:1) and spadeshoe (iron, scale 1:2).

739. **Strap/belt-end fitting.** See examples in Oldenstein (1976, taf.37, nos 337–40) and South Shields (Allason-Jones and Miket 1984, nos 3.593–5). SF 1979b, Area 2, LI, LB 2213, spill.

740. **Strap binding** with decorative openwork. These seem common throughout the Roman period for military decoration. Oldenstein publishes a range (1976, taf.37, no.326; taf.41, nos 398–402), and a similar mount was found at South Shields (Allason-Jones and Miket 1984, no.3.811). SF 3236, DXI, LB 3542, Room 6, lowest level on natural.

741. **Ansate plate** with three rivet holes, the surface probably tinned. Similar plates were used by the army often punched with names, etc. (Oldenstein 1976, taf.60, nos 758–62). SF 1637, BIX, LB 1401, spill.

742. **Small hook** broken from plate; possibly part of pendant, as Oldenstein 1976, taf.29, no.192. See also pendant from Colchester (Crummy 1983, fig.157, no.4241). SF 228.

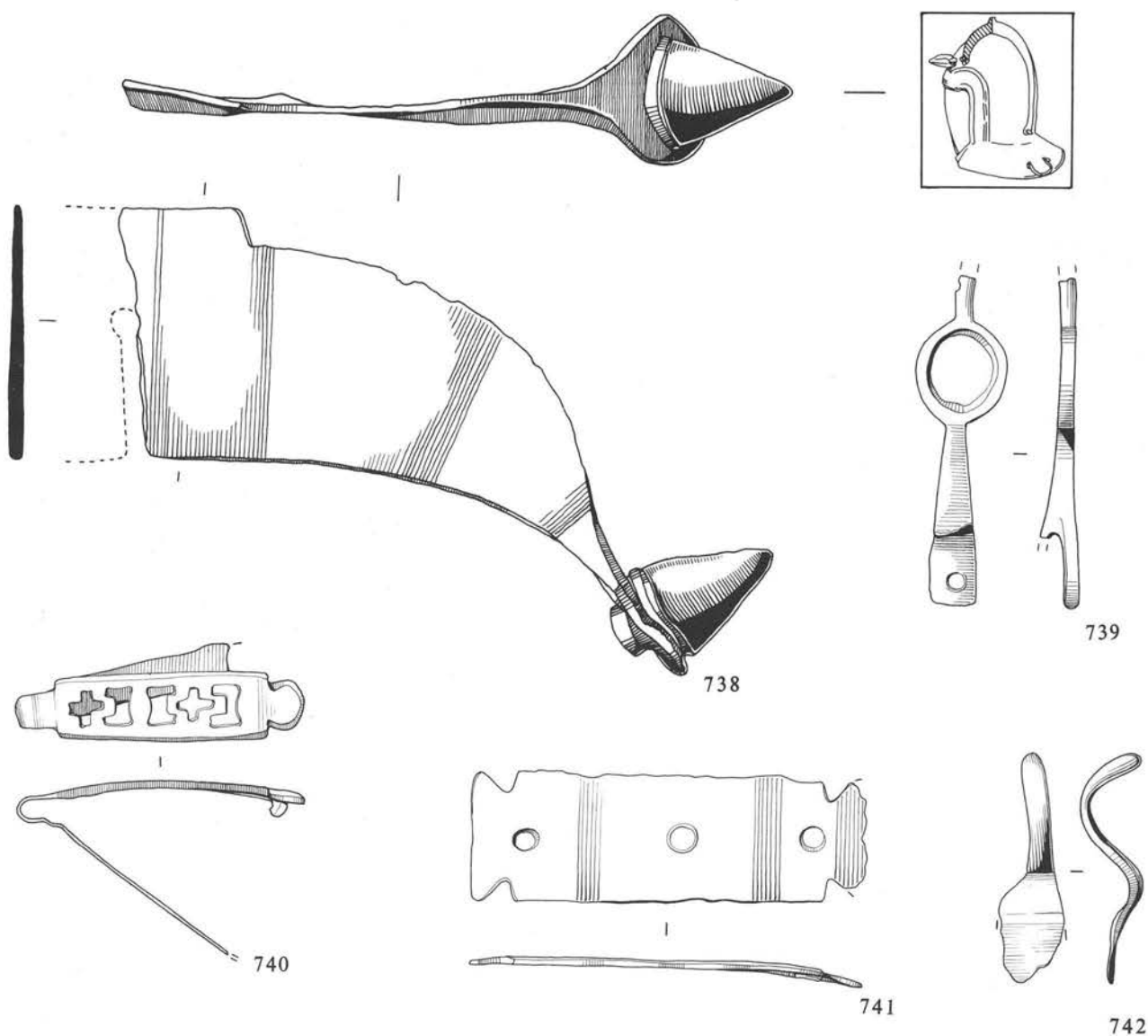


Figure 103 Military equipment (earlier period), copper alloy. Scale 1:1.

*Later equipment*  
(Fig.104)

**743. D-shaped buckle** of Simpson's (1976) Group II with buckle-loop of lozenge-shaped section, the hinge formed by double-leaf plate secured by two rivets, the tongue decorated at base and tip with chip-carving, and with roughly semi-circular section. From a single strap belt, part of the official *cingulum militiae*. Simpson's discussion of these buckles of Groups I and II indicates that the buckle-loops were of square or, less frequently, round section, and that many have single leaf plates; double-leaf plates are seemingly more common on the Rhine-Danube frontier (Simpson 1976, 193). The British examples listed by him (plus, from Colchester: Crummy 1981, fig.15, nos 1 and 2 with strap-ends; fig.14, no.4; fig.18, no.4) seem to have double-leaf plates, and only occasionally lozenge-sectioned loops. Double-leaf plates with a loop of lozenge-shaped section occur at Oudenburg (Mertens and Van Impe 1971, pl.XLVI, no.2), and other fragmentary buckles are known with the same loop section (Mertens and Van Impe 1971, pl.XLIV, no.2; XVII, no.4). Such technical differences indicate different workshops and cast doubt on Simpson's conclusion (1976, 204) that many of these buckles were made in the state factories of Pannonia or Illyricum. Similar variations occur with strap-ends (Clarke 1979, 286 ff). SF 811, DVII, LB 988, Room 2.

**744. Tongue** with some chip-carving at base, probably from a similar buckle. SF 1933.

**745. Belt loop** of sheet with lozenge-shaped centre, expanded terminals and three holes. A common late Roman belt fitting (Bullinger 1969, abb.7, no.4; abb.24, from Oudenburg; abb.29 from Cuxhaven). SF 2781, BCVIII, LB 1391, spill.

**746. 'Propeller-shaped' belt reinforcement.** Numerous examples on the continent (Bullinger 1969, abb.8, 14, 16, 18, 29, 41, 43, 60, tafs XXVII, XXX, XXXI); also known from Richborough (Bushe-Fox 1928, pl.XXXI, 52; 1949, pl.LIII, no.209); Camerton (Wedlake 1958, fig.58, no.12); Wood Eaton (Kirk 1949, fig.7, no.6); Maryport (Brown 1976, fig.21); Ickham (Young 1981, fig.5, no.10); and Vindolanda (Bidwell 1985, fig.41, no.28). SF 3245. Found late in the excavations, marked 'DVIII Room 3 below top floor'.

**747. Small strap-end** of 'Tortworth' type, with single rivet (flattened) at right angles, bifurcated point, crescentic protrusions at waist and faint incised decoration consisting of border of small crescent impressions delineated by incised lines enclosing central motif of small bird. Bullinger publishes a similar strap-end (1969, abb.38). The rivet with its flattened end suggests a strap-end rather than nail-cleaner but this form of attachment differs from other examples which divide into three broad types: hinged, split-butt and double-leaf (very common at Lankhills). There is no sign on the reverse of



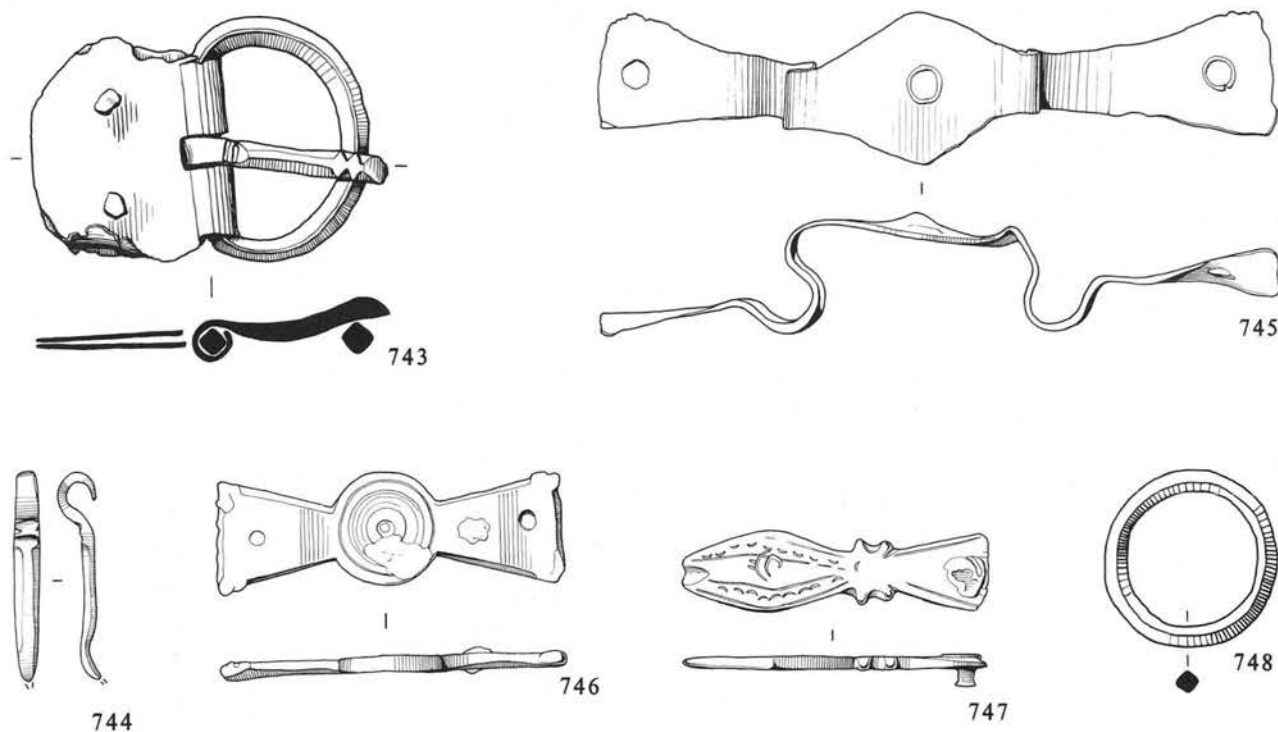


Figure 104 Military equipment (later period), copper alloy. Scale 1:1.

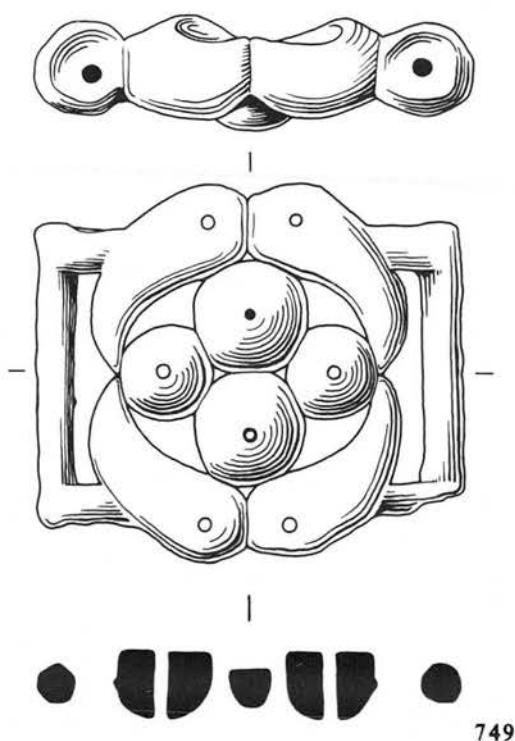


Figure 105 Strap-junction, copper alloy. Scale 1:1.

No.747 of a split-butt, and slight wear on the reverse towards the point argues against it having been part of a double-leaf strap-end, as does its thickness. The absence of a plate to secure the rivet on the other side of the strap would lead to an insecure fixing; it is possible that a small sheet washer may have been used. The closest stylistic parallels are an example from Richborough (Bushe-Fox 1949, pl.XXXVI, no.125) and a fragment from Rivenhall (Hawkes 1973, fig.3, no.3) decorated with peacocks and the tree of life, similar to the Tripontium buckle (Hawkes 1973, pl.22) of Type IB. A fragmentary beltplate decorated with a peacock closely similar to the buckles from Tripontium and Stanwick has been found at Thetford (unpublished, private possession). No.747 is also very similar to a nail-cleaner from Orton Longueville, decorated in the same manner but with a peacock (Hawkes 1976), and a strap-end or nail-cleaner of the same type from Beadlam villa, Yorkshire, has a fish motif (Stead 1971, fig.5, no.2). The inner borders of running lazy-S spirals on the Tripontium buckle also occurs on a Tortworth-type strap-end from Richborough (Bushe-Fox 1928, pl.XIX, no.34) with a Quoit style ?animal. The punched crescents border appears on a hinged type strap-end from Woodeaton (Kirk 1949, fig.6, no.10) and, associated with ring-and-dot decoration, on a split-butt strap-end from Silchester (Boon 1959, pl.III, A1). These punched crescents seem to be an attempt to emulate the running lazy-S spirals seen on other belt plates probably of type IB (Hawkes 1973, 146; Hawkes and Dunning 1961, fig.15, n and o), and may indicate a similar mid- to late 4th-century date. Mrs Hawkes has drawn attention to the symbolism as being crypto-Christian, and all examples appear to date to the latter half of the 4th century. SF 859.

748. Ring with lozenge-shaped section, which possibly belonged to a rosette attachment from a late Roman military belt. Similar rings at Colchester (Crummy 1981, fig.13, no.2 particularly; Crummy 1983, fig.162, nos 4253-4). Four rings with sub-rounded section occurred at Lankhills with a buckle of British Type IIA (Clarke 1979, fig.100, nos 604-7). SF 1649, Area 2, MI, LB 1824, refuse.

**Strap-junction**  
by Graham Webster  
(Fig.105)

749. This is a version of a basic rectangular junction-mount for holding the ends of two straps or traces in the same alignment. The object has been subjected to very heavy cleaning which has removed all the surfaces and any decoration there may have been. The main decorative features are six circular studs pinned to the object through 2mm holes. The studs are mounted on a pair of opposed crescents or horn-like features, and on four circular bases at the centre, the two conjoined being larger than the other two. These strap-junctions vary considerably; from the twenty illustrated from Northern Britain by MacGregor (1976, ii, nos 19–36), there are no two alike, and none quite like this. The Caister junction is very unusual in not having the usual projecting loop at the back for the strap, and to accommodate this, the back of the mount is normally flat, but this is not the case with this example, as the curves of the decorative features continue on both sides. The strap-ends must therefore have been attached to the two side bars. The only other example of this type known to the writer is a very small one from Arundel Park, Sussex, dated to the late 1st century BC to early 1st century AD (British Museum 1953, 60 and pl.XI, no.1).

Where there is a single loop or pair of loops at the back the object may not have been at a junction, but only a decorative mount on a strap or trace passing freely through it. It appears therefore that the form and function of the Caister and Arundel Park pieces could have been different from the so-called strap-junctions. Without the studs and any surviving decoration it is impossible to suggest a date.

These objects began as products of late Celtic workshops, and at the conquest became, like other Celtic horse-gear, much prized by the horsemen of the Roman army, as the Seven Sisters hoard appears to demonstrate (Davies and Spratling 1976).

The popularity of these brightly coloured pieces continued, since most of the pieces from Scotland came from Roman forts, some of them of the Antonine period. How long after this these objects

continued to be made and used is by no means certain. The Caister piece could belong to any time from the late Iron Age to the mid-2nd century, or later. NCM 76.94.

**Bone**  
by S. Greep  
(Fig.106)

750. Flat-sectioned rectangular object cut from the shaft of a cattle or horse long-bone. Complete in length but broken longitudinally. SF 293, EVIII, LB 207, spill.

This is a **slide from the back of a box scabbard chape**. These forms are characterized by their sub-rectangular shape, being wider at the top of the chape. Their front section decorated typically with pelta-shaped cut-outs and a series of cuts along the upper edge, are the most readily identifiable of the two elements. The reverse, or slide, is typically plain and this has undoubtedly led to many remaining unrecognized (e.g. Hinchliffe with Green 1985, fig.37, 121). The complete arrangement of front and back is rarely found (cf. Crummy 1983, fig.158, no.4242 – where the full assembly is demonstrated). About one half the width of the Caister slide is lost. The closest complete parallels are from Caerleon (Nash-Williams 1932, fig.43, 1 and 5), Wroxeter (unpublished), Brancaster (Hinchliffe with Green 1985, fig.37, no.121) and Dover (Philp 1981, fig.43, no.242).

Bone scabbard chapes are common finds of the mid-Roman period. They are particularly numerous on the Rhineland forts abandoned in the mid-3rd century (e.g. Oldenstein 1976, tafs 25–8). In Britain they have been recorded at both military and civil sites throughout the province. The earliest example from Britain comes from the *Classis Britannica* fort at Dover from deposits of c. AD 163/5–208 (Philp 1981, fig.43, no.242). Of the remaining, dated, pieces there is a group from 3rd-century contexts at Caerleon (Nash-Williams 1932, fig.43) and two from Reculver (Allason-Jones and Miket 1984, 47) also of the 3rd century. None of the further British examples necessarily conflict with the late 2nd–mid-3rd century date suggested for these forms by Oldenstein (1976). An example from *Verulamium* (Frere 1984, fig.30, 262) from deposits of c. AD 360–400 and the Caister find from contexts with mid–late 4th-century pottery are both probably residual.

751. Curving D-shaped section of bone, cut from a metapodial or radius of a cattle or horse. SF 2784, BXI, LB 2976, spill.

This is part of a **sword hilt guard**. It is too fragmentary to show the rectangular slot cut through upper and lower surfaces to allow the tang of the hilt to pass through, and the pieces used to block the medullary canal are lost. Such bone guards are not common, a fact which may be explained by the suggestion that whilst handles were often manufactured in bone, pommels and guards were usually made in wood (cf. Greep forthcoming).

Few bone guards are dated but the majority would appear to belong to the early Roman period. The closest parallels to No.751 from Britain are from London (Smith 1859, pl.XXIV, 1 and 3), one decorated with v-shaped lines similar to an example from Rheingönheim (Ulbert 1969, abb.6, 1). There are two similar examples at Vindonissa (unpublished, Vindonissa Museum, Brugg) which should be 1st century. No.751 should typologically belong to the earlier Roman period and probably is therefore residual in this context.

**Iron**  
by Quita Mould  
(Figs 107–10)

**Spearheads**  
(Fig.107)

752. Small spearhead with narrow, leaf-shaped blade of lentoid section and hefty, round-sectioned socket. SF 1030, FX, LB 1200, refuse.

753. Small, angular blade with split socket. Now flat in section, ?originally lentoid. SF 3064, Area 4, MVI, LB 3323, Grave 63.

754. Large, conical, split socket, probably from a large spearhead. SF 3099, Area 4, LVI, LB 3358, Grave 86.

755. Small, flat, lozenge-shaped, angular blade with thin split socket and very thin neck. SF 1444, EVI–VII, LB 1638, Room 1 debris on floor.

*Unillustrated.* No.756; see microfiche.

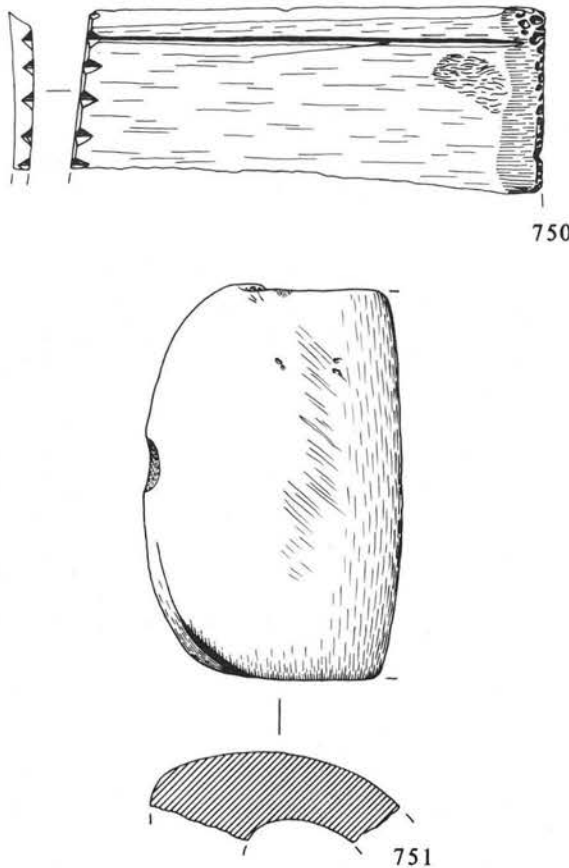


Figure 106 Chape slide and hilt guard, bone. Scale 1:2.

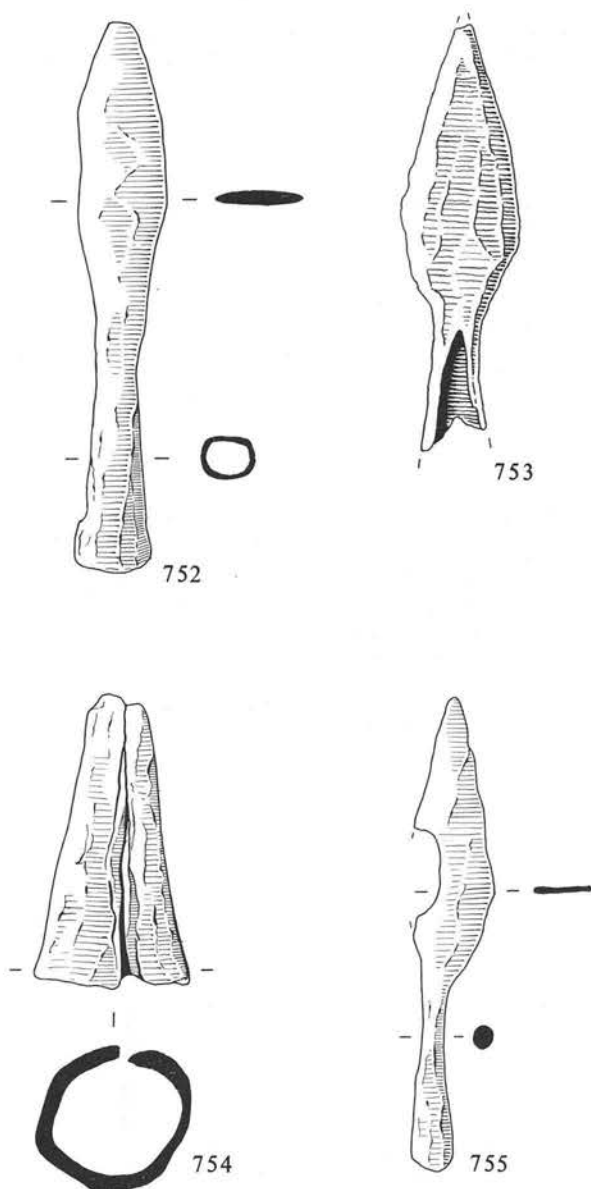


Figure 107 Spearheads, iron. Scale 1:2.

#### Arrowheads (Figs 108, 109)

757. Leaf-shaped blade of lentoid section and apparently round-sectioned tang. Both surfaces of blade covered in organic remains, probably poplar (*Populus* sp.). Arrowhead/small spearhead. SF 1717, DVIII, LB 1895, post-Roman.
758. Small, flat blade with open socket formed by folding over the two side flanges, socket is nailed. SF 593.
759. Flat blade with open socket, nailed. SF 1064.
760. Triple-ribbed arrowhead with remains of broken tang. Tip is slightly sinuous. SF 382, EVI, LB 383, spill.
761. Quadruple-ribbed arrowhead with distinct barbs, and split socket. SF 1059.
762. Arrowhead with square-sectioned head and round-sectioned fractured neck broken above start of socket. Originally quadruple-barbed. SF 1698.

Unillustrated. Nos 763–766; see microfiche.

767. *Pilum* head? Square-sectioned, tapering head separated from the fine square-sectioned tang by a distinct shoulder. Possibly an awl. SF 2905, EVI, LB 3166, refuse on floor, Room 1.

768. **Artillery bolt head.** Square-sectioned head with long round-sectioned neck and socket. SF 2023, Area 2, GI, LB 1999, ?spill.

Unillustrated. Nos 769–774; see microfiche.

#### Ferrules (Fig.109)

775. Conical ferrule with round socket and square-sectioned tip. Socket in X-ray appears split. SF 2854.

776. Small conical ferrule with split socket tapering to rectangular-sectioned point. SF 1431 (1403), BIX, spill.

Unillustrated. Nos 777–786; see microfiche.

#### Shield boss (Fig.110)

787. Fragments of large hemispherical shield boss originally 186mm in diameter with a flange 35mm wide, the bowl rising to a height of 47mm. Largest fragment pierced by round nail hole diam. 8mm, with second smaller nail hole close to it nearer the edge; possibly a realignment of nail holes caused by repair. SF 1216, CVI, LB 1478, post-Roman.

#### Discussion

A relatively wide range of weapons was found, the majority being of recognizably Roman form although some appear to be of later date.

*Spearheads:* No.752 is of a common military form comparable with those from Richborough (Bushe-Fox 1949, pl.LVIII, nos 277–8). The three other spearheads found, however, are less easy to determine. No.753 was found in Grave 63. Saxon blades of this shape occur during the early phase of settlement (Swanton 1973, 79), but without a complete socket a more detailed identification is uncertain. A split socket (No.754) occurred in Grave 86.

The two small spearheads (Nos 755, 756) with flat, lozenge-shaped blades connected to narrow split sockets by what appear to be rather impractically thin necks are also difficult to date. The shape of the flat blade resembles that of a Roman spearhead found at Portchester (Webster 1975, fig.124, no.178), and a small spearhead from Colchester (Crummy 1981, fig.25) dated 5th to mid-6th century (Swanton 1973, type C1).

*Arrowheads:* The arrowheads fall within two distinct groups:

- i) those with flat-bladed heads,
- ii) those with ribbed heads.

i) Any distinction drawn between a small spearhead and a large arrowhead is arbitrary; however, the presence of the tang suggests that No.757 comes from a large arrowhead. Alternatively, this may be a rather small example of the long-shanked thrusting spear current in the 6th century (type D3 Swanton 1973, 71). This explanation is less likely, however, as no other examples are known from East Anglia. It is always possible that the blade and tang are unconnected although found together.

The remaining three flat-bladed arrowheads are socketed. The small bladed arrowhead (No.758) is of the type associated with the military phases of the mid-1st century and is comparable with those from Maiden Castle (Wheeler 1943, fig.93, nos 4–13) and Hod Hill (Brailsford 1962, pl.VI, B86). The other flat-bladed arrowheads are likely to be Roman, particularly No.759 which has a nail hole opposite the split in the socket.

ii) Two types of ribbed arrowhead were found. The first is represented by No.760, the second by two quadruple-ribbed and barbed arrowheads (No.761; No.765, microfiche). A further example has lost much of the head detail through flaking (No.762); however, the original label which accompanies the object states it to be quadruple-barbed and there is no reason to think otherwise. Two

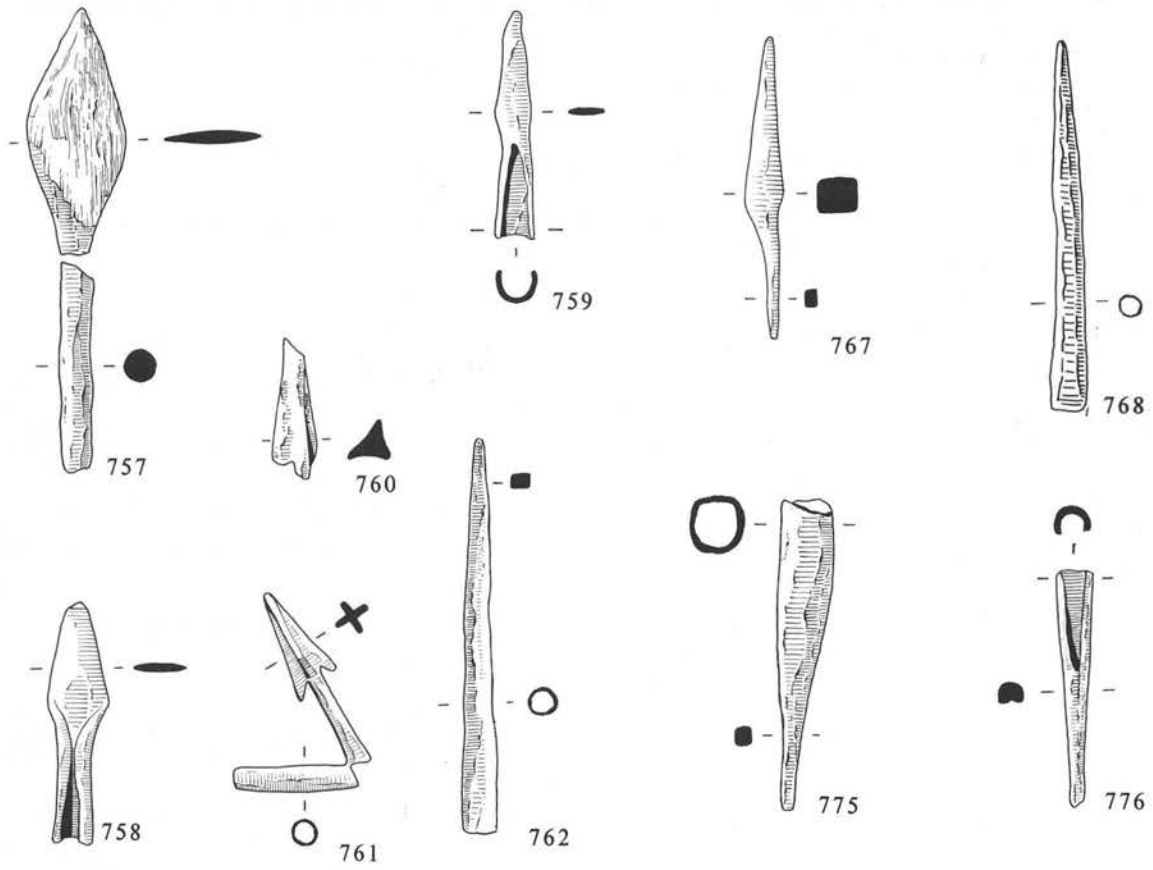


Figure 108 Arrowheads, iron. Scale 1:2.

Figure 109 *Pilum* head, bolt head and ferrules, iron. Scale 1:2.

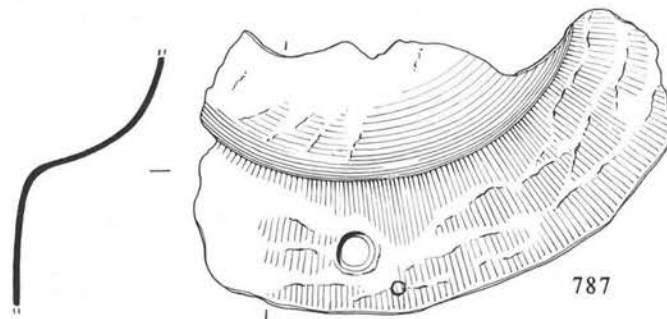


Figure 110 Shield boss, iron. Scale 1:2.

socketed arrowheads (Nos 764, 766, microfiche) are of similar dimensions and appear to have barbs faintly visible in radiograph so that they may also represent highly corroded examples. No.766 (microfiche) has remains of the maple (*Acer* sp.) haft preserved in the socket.

The origins and dating of the triple-ribbed arrowhead have been fully discussed by Davies (1978). They seem to have been used by the Roman army from the Claudian to the Antonine period. Davies (1978, 264) has suggested that the quadruple-barbed arrowhead is a later variant of the triple-ribbed type. The quadruple-ribbed examples from Caister are comparable with the socketed arrowheads found at Corbridge (Richmond and Birley 1940, 112, pl.XI), where they occurred in a Severan context sealed by a 4th-century stone-flagged floor.

*Pilum* head No.767 can also be paralleled there (Richmond and Birley 1940, 112, pl.XI). It must be said, however, that this object could equally well represent an awl (see Tools above) from which published examples of *pilum* heads appear indistinguishable (Webster 1960, fig.7, 219 for example).

The group of seven socketed projectiles with tapering heads of square section are best interpreted as artillery bolt heads (No.768). The four complete examples measure between 92mm and 98mm in length, socket diameter 8–10mm.

*Ferrules*: Thirteen conical ferrules were found and, with the exception of two ferrules with a sub-triangular section, all have square or rectangular sections near the tip (Nos 775, 776). Conical ferrules could have been used to tip any hafted implement and cannot be regarded as exclusively associated with weaponry. One example being comparatively long and slender may have been the tip of a fork prong.

*Shield boss*: No.787 is a common type coming from an auxiliary shield and dating between the 1st and the 3rd centuries (James 1980).

## Flint

by J. Wymer  
(Fig.111)

788. Broken laurel leaf **arrowhead**. Neolithic. Of very elegant, skilful workmanship, made on a flake (of which one surface partly remains on the right side as figured). There is some reworking on the broken end which appears to be ancient and suggests that the arrowhead may have been re-used.

The reconstructed shape is convincing as the thinness at the lowest extremity shows that it could not have been barbed or much longer. SF 3243.

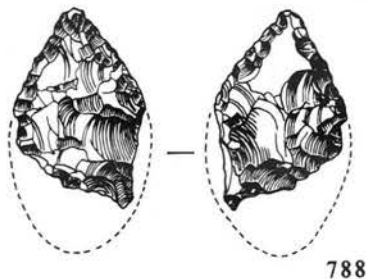


Figure 111 Arrowhead, flint. Scale 1:1.

## XIV. Objects associated with religious beliefs and practices

(Figs 112–14; Pls XXXI–XXXII)

### Pipeclay

#### Figurines

(Fig.112; Pl.XXXI)

789. Concave base, feet and part of a ?robe, probably Venus. SF 2916.

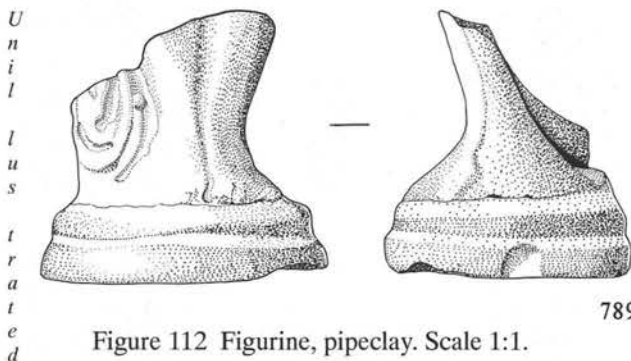


Figure 112 Figurine, pipeclay. Scale 1:1.

790. This is likely to be a fragment of the *Dea Nutrix*, a Mother Goddess, probably with two infants, seated in a wicker chair, similar to one from London (Toynbee 1963, 187, no.146, pl.175). SF 4629, CX, ploughsoil.

Both the above would have been imported from the Allier district of France, and are more commonly found on civilian sites in Britain.

791. See Pl.XXXI. Figurine in light red brown clay, variously painted, of a ?female in a green under-tunic with a short pleated skirt, confined at the waist (?by a belt with a clasp), long sleeves ending in gold wrist bands, and a high neck with a round gold ?brooch just under the chin, covered by a cloak, originally ?blue draped over the head and shoulders, apparently arranged as follows: one curved end starts on the left hip, passes up, under the belt, below the left lower arm, is carried over the left shoulder so as to cover the back, and is drawn over the head, while the other end is brought forward like a cape over the right shoulder and across the chest, and thrown over the left shoulder so as to fall down the back. This would suggest an arm-hole in the first length of the cloak. The figure holds a square object by a ?handle in the left hand. It consists of three structural parts, (a) head and torso, (b) legs separately made and pushed into the torso, attached by iron pins to (c) the base which is round and concave underneath. The clay seems to have been covered with a white slip, and the colours painted over that. The figurine is worn, slightly burnt and the feet have been chipped. SF 1534, GVIII, unstratified.

The late Professor Jocelyn Toynbee examined this figurine in 1952, and commented on it at length in a letter to Charles Green. Neither she, nor any expert she had shown it to could place it in the Roman period or in the 17th century, and the conclusion was that it must be quite modern, perhaps 18th or 19th century (an opinion also held now by Dr Martin Henig, pers. comm.).

### Copper alloy

(Figs 113–14)

792. Cast **Mercury**, who stands in a relaxed posture with left leg slightly bent, the purse held in his right hand; presumably a *caduceus* would have been in the left hand. The stand to which the figure would have been attached is missing. For type see Pitts 1979, nos 22, 32, and examples from France (Boucher 1976, 103–10, figs 179–81). The workmanship is competent and this is probably from a British workshop. Old collection.

793. Hollow cast bust filled with lead. Despite its feminine appearance, this bust depicts a youthful **Bacchus** and can be closely paralleled by a head from Benwell (*Archaeol. Aeliana* 4, V (1928), 72–3, pl.22, fig.2), and another from Carlisle (Green 1978, pls 2 and 5, mis-identified as Mercury). The features, hairstyle and workmanship are closely similar (although not identical) on these three heads, all of which are crowned with leaves and berries, although the latter resemble horn-buds. There is also a small bust attached to a plaque from the Thames (Green 1976, pl.IV, i, mis-identified as a horned



Plate XXXI Figurine No.791. Height 98mm.

Mercury) with very similar features and technique. Attention may also be drawn to heads from France (Espérandieu and Rolland 1959, pl.XLIX, no.155; pl.L, no.156) of Silenus, his bald head having a crown of ivy leaves and berries (again, appearing rather like hornbuds). The workmanship of all these heads is remarkably similar in the treatment of hair, eyes, etc., and the juxtaposition of a youthful Bacchus with Silenus is common. It seems likely that these heads were either made in the same workshop or in the same milieu, probably in Gaul. The French heads are considered to have been decorative mounts on furniture. The Caister head has no evidence for attachment and could either have been attached by solder to a large copper alloy vessel or, as with the Carlisle head, may have had an iron emplacement with pin to attach it to some piece of furniture perhaps. Found in 1855 during construction of the reservoir to the north of the defended area (Haverfield 1901, 294). NCM 76.94.

794. Cast wolf or jackal on base plate attached to circular mount with round socket. Probably a sceptre-head for use in religious ceremonies (Henig 1984, 141). Although a wolf could be connected with the cult of Mars, all the evidence suggests that the animal is a jackal and therefore related to the cult of Isis. A sceptre-head with a hound identified as Anubis has been published from Clermont-Ferrand (Boucher *et al.* 1980, 131, no.741) which shows similarities to the Caister beast, but an identical Egyptian figure of Anubis makes the identification certain (Roeder 1956, 454, pl.61, 1, no.7793). Although an old find, there seems little doubt that it came from Caister (Haverfield 1901, 294). NCM 76.94.

795. Sub-triangular plaque with a cast relief of a young male figure soldered to it; the figure leans with crossed legs on a staff or inverted torch, his left arm hanging down beyond this and possibly holding a rectangular object. The reverse of the plaque is rough as cast. No clear parallels have been traced for either the object or the figure depicted, but a Cupid with crossed legs leaning on an inverted torch occurs on embossed sheet copper alloy at Woodeaton (Kirk 1949, fig.9, no.2). Cupids appear frequently in funerary contexts (tower-tomb at Ksar el Ahmar, Algeria, with mourning Cupids with reversed torches: Toynbee 1971, 116; tomb at Celeia in Noricum with similar mourning Cupids: Toynbee 1971, 173, pl.61; square altar-like pillar-tomb at Aquileia of Claudian date also has Cupids decorating two sides: Toynbee 1971, 315, no.660; *Antiq. J.* 44 (1969), 127, pl.30); and in connection with the death of Dido, a cupid is shown on the Low Ham villa mosaic with crossed legs and reversed torch (Toynbee 1963, cat. no.200, pl.235). Both the stance and the reversed torch are typical of the Mithraic Cautopates who appears with Cautes in a similar position to the Cupids on a tower-tomb near Tarragona (Toynbee 1971, 165, pl.56). There is also a cameo from a grave at St Leonards, Sussex, depicting a pair of mourning Cupids looking similarly dejected, leaning on torches with crossed legs (Henig 1977, 347, pl.15.1:a). Although it is unclear what the plaque would have been soldered to, the connection with death seems certain. SF 2976, DVIII-IX, LB 2051, Room 3 upper mortar floor.
796. Miniature sickle with suspension ring at right angles to the blade. Similar objects are known from London (Wheeler 1930, pl.38, no.10); *Verulamium* (Frere 1972, fig.35, no.76), and Colchester (Crummy 1983, fig.66, no.1939) where they have been identified as possibly either toothpicks or nail-cleaners. This object does not seem suited for either purpose, and may be an amulet. SF 140.
797. Fragment of decorated copper alloy sheet. Although too small for certain identification, this could be part of a religious object. SF 2126, CVI, LB 2352, post-Roman.

### Watercolour (Pl.XXXII)

This bronze of the **Capitoline wolf** was found in 1852 associated with the foundations of the priory at Yarmouth. If of Roman date, this could have come from either Burgh Castle or Caister. The object was on display in Yarmouth during the last war, when the building in which it was housed was bombed. It was not recovered. An old sepia photograph (without scale) also exists. The watercolour in the Rolfe Collection (NCM; Misc. Vol. p.1099) is annotated that it 'measures 12 inches from the point of the nose to the tip of the tail' and weighs 2lb 1oz. This was clearly a high quality casting, and would have been originally on a mount with Romulus and Remus. The figure was complete apart from the front legs.

The probability is that this was an object perhaps brought back from the Grand Tour rather than a genuine find from a British Roman site. It was remarkably similar to the earliest known hollow-cast bronze from Central Italy, a Capitoline Wolf, made perhaps in the early 5th century BC, particularly in its treatment of the hair on the neck and back (Rasmussen 1983, 18, ill.6).

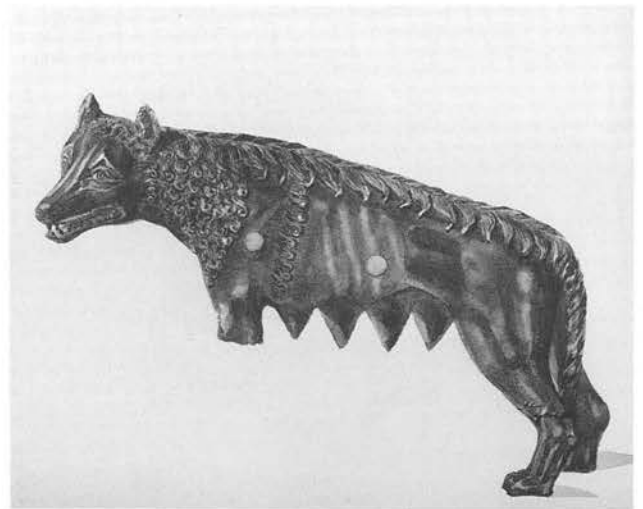


Plate XXXII Watercolour of Capitoline wolf bronze.

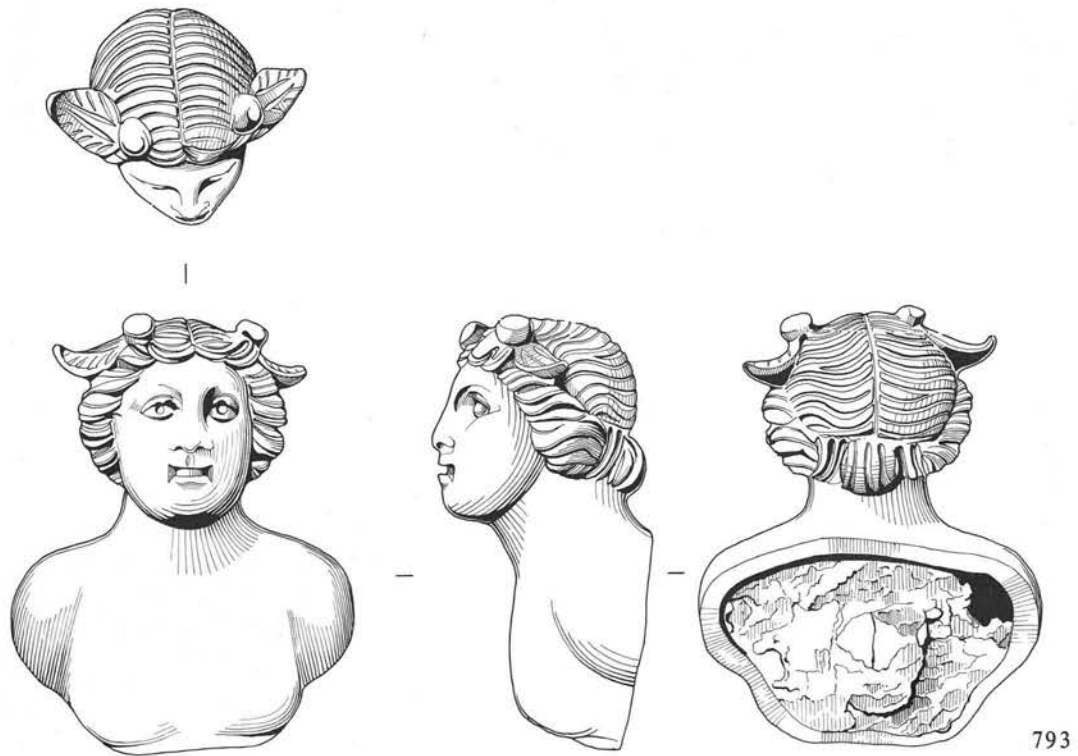
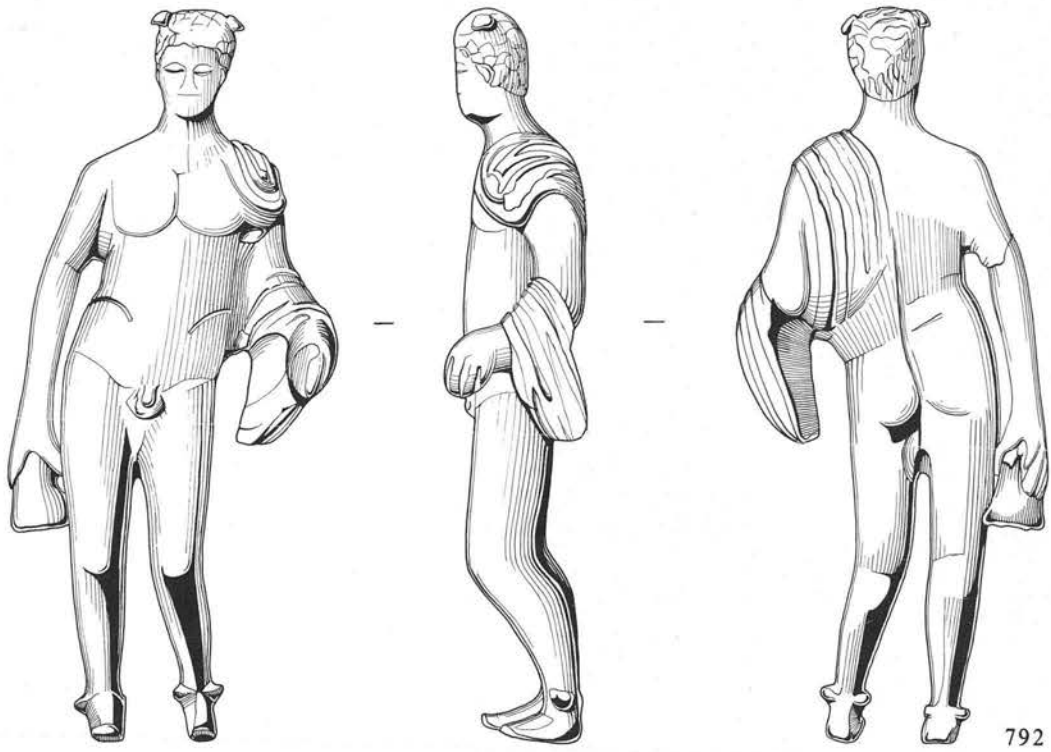


Figure 113 Mercury and Bacchus, copper alloy. Scale 1:1.

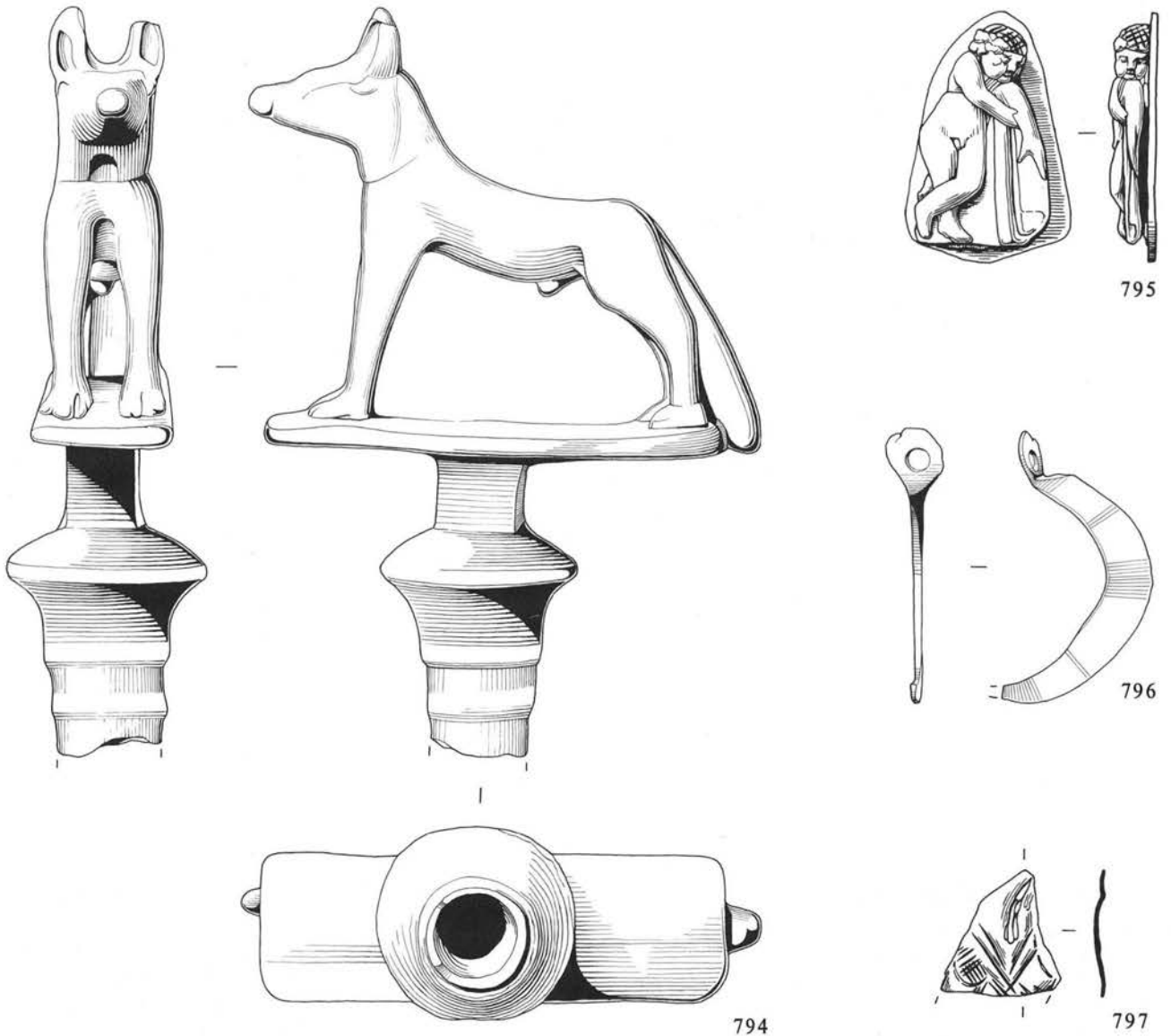


Figure 114 Sceptre-head, plaque, miniature sickle and decorated sheet fragment: copper alloy. Scale 1:1.

**XV. Objects and waste material associated with metalworking**  
(Fig.115)

**Copper alloy**

- 798. Curved repair plate with rivets. SF 3116.
- 799. Repair plate, rivet holes. SF 3198.
- 800. As above. SF 2791, Area 4, KVIII, LB 3035, top of ditch.

**Crucible**

*Unillustrated*

- 801. Stamford Ware crucible rim.  
(For full details of this and other crucible fragments see 'The Slag and other Technological Finds' by Justine Bayley on microfiche, a report combining the information contained in AML Reports 4150 and 4755.)

**Summary of the evidence for metalworking**

by Justine Bayley  
(for full report see microfiche; Table 18, microfiche)

Evidence for both ferrous and non-ferrous metalworking survives. All the slag (about 40 kg) could have been produced in a blacksmith's hearth. Most of it is smithing slag, some of it in the form of plano-convex 'buns' that had collected at the bottom of the smith's hearth. This quantity of slag is what one would expect to find on any reasonable-sized settlement of this period.

The evidence for non-ferrous metalworking is sherds from crucibles and solidified pools and dribbles of molten metal. All these pieces were analyzed qualitatively by energy-dispersive X-ray fluorescence (see microfiche for the individual results) which demonstrated that silver and a range of copper alloys were being worked. At least one of the crucible sherds is post-Roman (No.801).



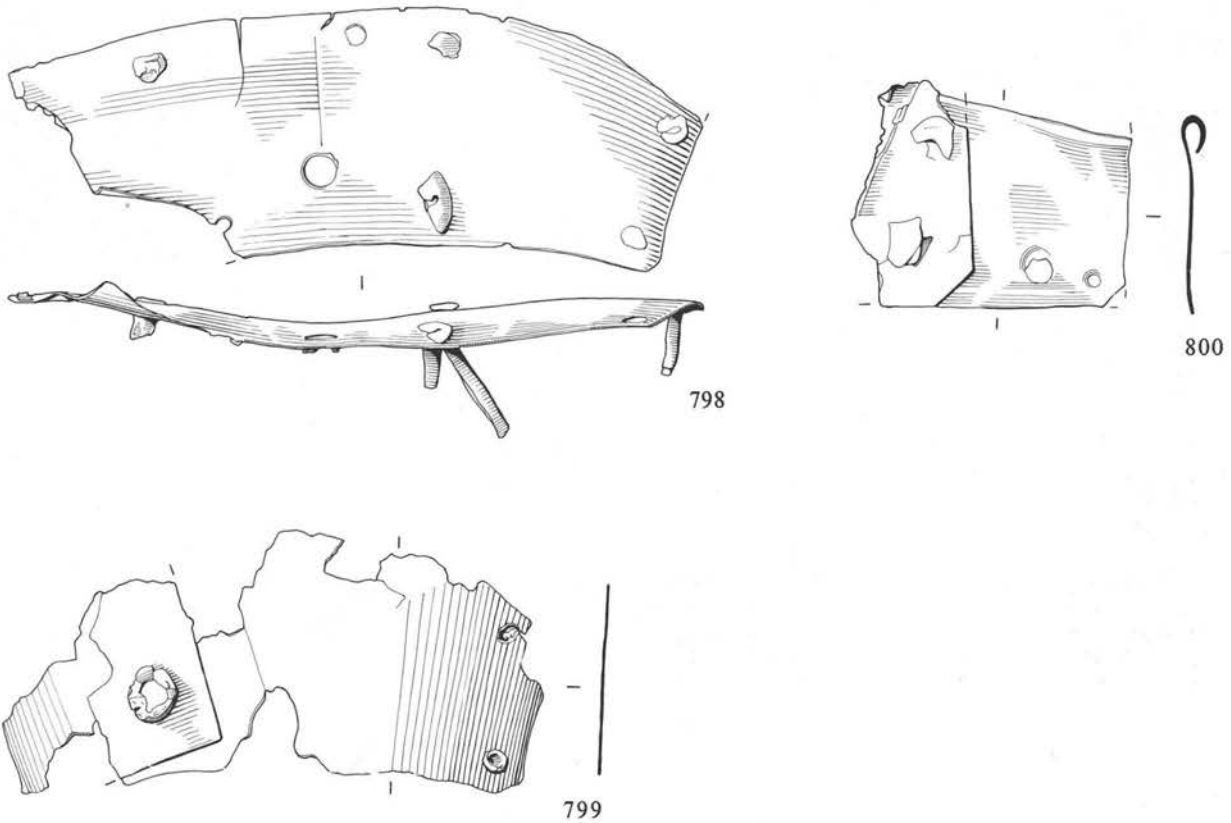


Figure 115 Repair plates, copper alloy. Scale 1:1.

#### The distribution of slag (by MJD)

Slag finds amount to about 40.5kg, and the overall distribution shows a major concentration in CDVI and a lesser group in EIX. Otherwise there is a general scatter across the site, except for the defences area, where finds mostly occur in the late ditch fill and unsealed layers.

Virtually all the slag is rubbish from smithing work elsewhere in the fort. No evidence was found of industrial activity in the excavated area. A few possible fragments of slag from bronze working occur, and one fragment of tap slag.

The major concentration in the baulk area CDVI derives from the large quantity in a pit adjacent to the so-called 'hut' F72. Records of the baulk removal are equivocal, and most bags containing slag have been phased upwards into the ploughsoil. In view of the Roman rubbish content of F72, and despite the Thetford Ware sherds, the slag pit probably belongs to the Roman occupation. Notably few finds of slag come from post-Roman contexts, except for the ditch fill.

The smaller concentration in EIX derives almost exclusively from the main refuse deposit, from both upper and lower layers. A small quantity of slag was found in the later rampart gully F58 in FVI-FVII.

Slag from the upper layers, the spill and the ploughsoil, was plotted quantitatively, and the distributions (unillustrated) are found to be almost mutually exclusive. That from the spill shows an even distribution diagonally across the site from ABIX to DEVI. Most of the slag from EVI-VII comes from the area of the refuse deposits on the rear

of the rampart; very little comes from the same deposits further west.

Only just over 1kg comes from Building 1, of which 0.475kg comes from the west side of Room 3, where it is concentrated in the debris over the floor which also produced Constantinian coin hoards Nos 4 and 5 and several complete, or nearly complete, pottery vessels. 0.5kg came from Room 5.

Slag from Area 4 amounts to only 1.295kg, mostly from LVI, occurring in grave fills (Graves 37, 38, 45, 51, 78 and 80) and general graveyard levels. As this was the area of the harbour road, the slag may have been used as patching. Finds from the ploughsoil over the road inside the fort and from the upper road surface and central gutter may reflect the same practice.

#### Provenance of coal samples

by A.H.V. Smith

(For full details see National Coal Board, Yorkshire Regional Laboratory Report YRL 17781, on microfiche; Tables 19, 20, microfiche.)

#### Summary

Very few of the eight samples submitted are usefully stratified, most coming from layers associated with the collapse of Building 1, from layers disturbed by post-Roman occupation and from the ploughsoil. One sample from the hypocaust room, Room NW5 in Building 2 is probably reliably assigned.

The evidence of the microscopical analyses shows that the coals originated from two widely separated sources. The coals from Room NW5 are lower in rank than coals from other locations on the site, and could have originated from one of several South Pennine coalfields. The remaining coals could have originated from the Durham coalfield, although the Yorkshire and Northumberland coalfields are possible sources of all but the highest rank coals. There is one difference from the Brancaster results (Smith 1985), namely the presence of a very low rank coal which could not have originated from the Durham coalfield.

#### *Distribution (by MJD)*

The total quantity of coal recovered is 2.29kg, and the coal finds from the spill and the ploughsoil have been plotted (unillustrated). The hypocausted room in AIX (Room NW5, Building 2) produced coal from the hypocaust channels, and there is a concentration in the spill in AX. It seems probable that the hypocausted room here was heated with coal. There are also concentrations in the spill in CVIII and EVI. The ploughsoil distribution shows a concentration in the area of the so-called 'Saxon hut' F72, where quantities of smithing waste were found, and the association of coal and smithing slag suggests that most of the coal was possibly used industrially.

### **XVI. Objects and waste material associated with antler and bone working**

(Figs 116–18; microfiche)

#### **Bone and antler**

- 802. Fragment of **plate**, two edges neatly sawn. SF 4049.
- 803. Fragment of **plate**, very probably cattle scapula blade, neatly sawn to shape. SF 4050.
- 804. Fragment of **whale bone** with three sawn edges. Three other pieces of whale bone were found, only one of which appears to have been sawn (SF 550, AX, LB 666, spill; 1238, CVI, LB 1447, post-Roman; 2522, CIX–X, LB 2628). SF 4052, EVI, LB 383, spill.
- 805. **Plate** sawn out of an antler, front and back both sawn. All edges sawn except for long top edge; several saw marks. ?An offcut from manufacturing. SF 1687.
- 806. Red deer antler, section of beam with large antler. Cut off (sawn, fairly neatly) just below brow tine, which is also sawn off, bay tine is broken off; upper end of piece is sawn. Several deep cuts all along side of main beam opposite tines, the cuts going through into the cancellous antler along part of their length. No evidence for use. At least eighteen finds of similarly worked antler occurred (see microfiche). SF 4120, EVII–VIII, LB 1049, refuse.
- 807. Large cattle horn core, sawn off above base using several cuts, two further parallel saw cuts around circumference. Saw cuts 2.5 to 2.8mm wide. SF 4110.
- 808. First phalanx of horse with doodling incised on the anterior surface. SF 4051.
- 809. Sheep, metacarpal L complete with at least five examples of ring-and-dot decoration on posterior surface; also two lines across posterior surface, towards proximal and distal ends. A ?practice piece. SF 4047, AVI, LB 67.
- 810. Red deer antler; upper end of antler, cut off quite neatly, one small tine branching off about half way along length, ending in two small tines. Several pick axe dimples. Few whittle marks on lowest tine and curve between it and upper half piece; unintelligible ?graffito between two tines at upper end. SF 4119, CVIII, LB 653, spill.

*Unillustrated.* Nos 811–848; see microfiche.

### **XVII. Objects and waste material associated with shale working**

(Fig.119)

- 849. Large badly-laminating fragment possibly cut from a circular object, with a central right-angled cut, perhaps half of an original square hole, and with small circular holes (stepped profile) by the middle

of each side of the ?middle hole. The underside is badly flaked, and its present thickness is c. 12–13mm. SF 1084.

- 850. Flaked and badly-laminating fragment, with traces of a possible central square hole. This could be from the underside of the above object (from the same grid square) or from another similar object. Present thickness c. 9mm. SF 1338.

The above fragments, if restorable as circular objects with central square holes, resemble waste cores from the production of armlets (Calkin 1955, figs 4 and 5), but the square holes in armlet cores are between 10 and 20mm square, whereas the minimum size on these fragments would be 23 and 27–28mm square. Moreover, no cores are known with both square and round holes together. No factory sites for the production of shale vessels are yet known, and the chucks used for turning bowls and platters could be of a heavier and different design (Lawson 1975, 260). There is also the possibility that these are fragments of furniture using mortise and tenon construction, or that they were parts of bases, perhaps to hold small statues (as Lawson 1975, 270, fig.14, nos 97 and 102; no.98, not illustrated, is noted as having a square depression for the drive mandrel).

- 851. Large fragment, badly-laminated but with upper and lower surfaces present, in the form of a tapering curve with chamfered edges and notches cut on both curved edges on the top. While this may be a fragment from a finished object, its tapering curved shape precludes identification. The present thickness of 25–30mm is largely caused by extensive splitting, and it must have originally been much thinner, perhaps c. 20mm. It is possible that this was part of a table leg but no surviving examples have a similar tapering curve. SF 1658.
- 852. Large curving fragment, laminating, with flat bottom, cut sloping sides to a sloping top of varying width, ranging from 9mm to 20mm in thickness. Probably working waste. SF 1083.

*Unillustrated.* Nos 853–859; see microfiche.

#### **Discussion**

Although Kimmeridge shale outcrops in Norfolk, there is no evidence to suggest it was ever worked. The shale objects from Caister could have been brought from Dorset (together with BB1 pottery), but the fragments of worked shale, much of it probably waste from manufacturing with the possibility of Nos 849 and 850 being parts of cores with chuck emplacements, raises the question of whether shale was being worked at Caister.

No quantified distribution of shale finds in Roman Britain has ever been prepared but the quantity of shale from Caister would seem, in comparison with other published material, comparatively large. This may be due not only to its coastal location but also to its late Roman date. Although the occasional shale object is known outside the production area earlier, the most widespread distribution does not seem to occur until the 3rd and 4th centuries (Lawson 1975, 248, referring to armlets). Since, however, vessels and trays are known from Colchester in contexts of the 1st and 2nd centuries (Crummy 1983, figs 74, 75), the more widespread later distribution of armlets may merely reflect a late Roman fashion as seems to be the case with jet. Items such as the shale box in the Thetford hoard (Johns and Potter 1983, 33, 131, fig.45) could be regarded as curiosities which could travel widely at any date.

### **XVIII. Miscellaneous clay objects**

(Fig.120; microfiche)

#### **Fired clay, ?fire-bars**

These objects are all hand-made from similar sandy clay with mica, fired in oxidizing conditions resulting in surface shades of red-brown to light brown.

- 860. Fragment with roughly triangular-shaped section. SF 4601, AVI, LB 67.
- 861. Fragment, section probably sub-square or rectangular. SF 4602.
- 862. Two fragments. SF 14.
- 863. Fragment with roughly square section. SF 4600, FVIII, LB 49, refuse.

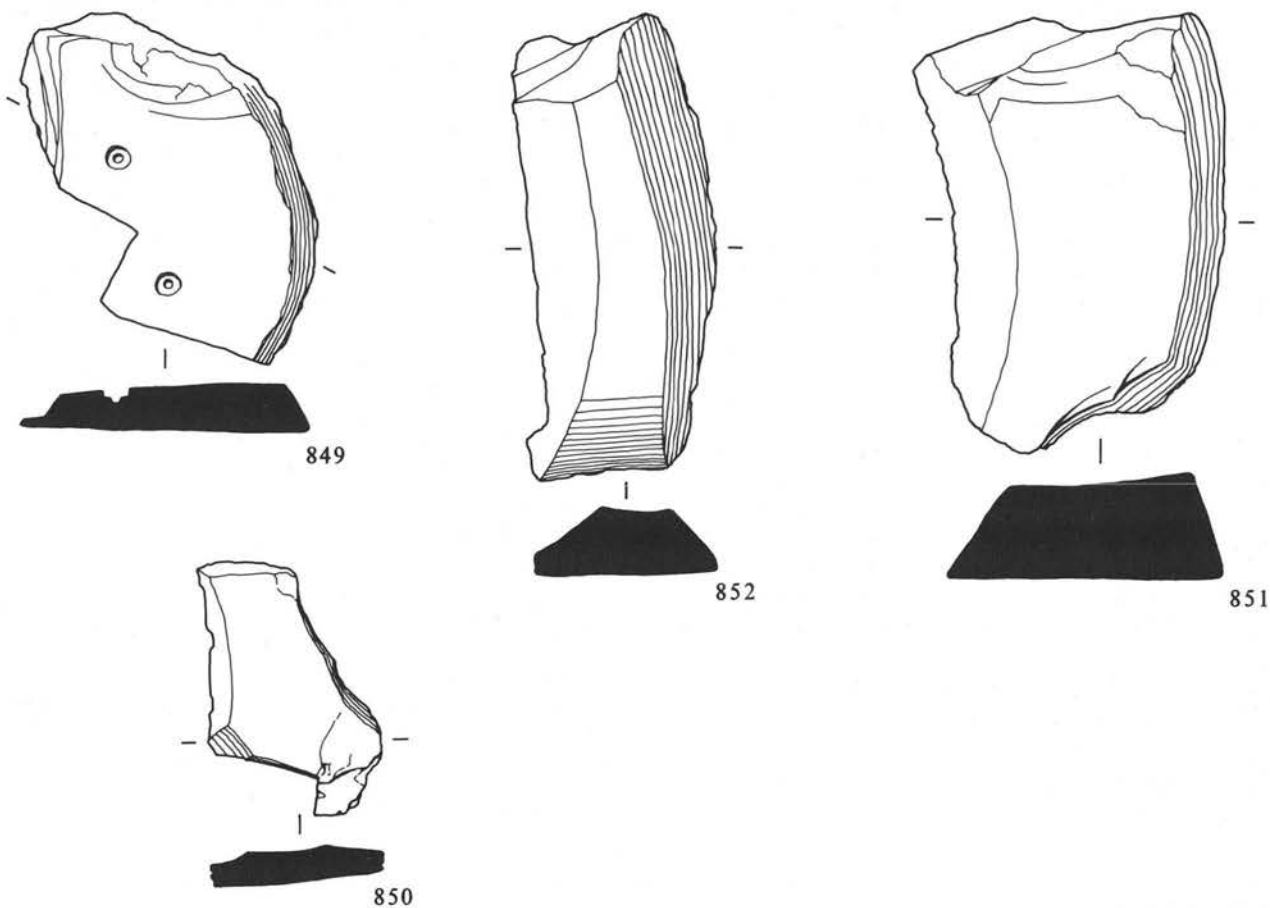


Figure 119 Worked fragments of shale. Scale 1:2.

864. Fragment with sub-round section. SF 4597, FVII, LB 1346, pit F68.

865. By-pass.

866. By-pass.

#### Baked clay, unknown use

867. Wedge-shaped fragment of baked clay of varying thickness, with part of a hole pushed through it; the underside has traces suggestive of timber grain. Burnt. SF 2362, ABIX, LB 2589, fill of cavity Wall 20.

#### Discussion

Five fragments of objects which may have been some type of fire-bar were found. None of these would appear to have been fired at a high temperature, the mica in the clay being still visible. Although pottery kilns are known to have existed south-west of the fort (Swan 1984, fiche 4.509 and 510), these are thought to have had solid-clay vent-holed floors. The 'wasters' from these kilns, and many of the vessels occurring on the site likely to have come from them, are fired at very high temperatures.

It seems unlikely that these are fire-bars from pottery kilns, and a more feasible identification would be that they derive from some form of food oven.

A similar fragment, No.865, together with other fragments of burnt clay, No.866, came from By-pass excavation (see Chapter 2.V), loosely associated with earlier pottery of mid-late 1st-century date.

### XIX. Objects the function or identification of which is unknown or uncertain (Figs 121–28)

#### Copper alloy

(Figs 121, 122)

#### Report by Sarnia Butcher on brooch-like object of unknown use

868. Bronze/gunmetal. Flat parallel-sided strip of metal given a P-profile and coiled into one-piece spring at head. Half only of the spring survives and this was of five turns. No crossbar and no moulding at waist. Upper strip decorated with two longitudinal grooves and below the waist cross grooves divided by faceted side panels and notched edges as in some crossbow brooches. No trace of catchplate. Lacking this, it could not have functioned as a brooch and it does not look like a stage in manufacture since the one-piece spring is quite out of character with the P-profile and faceted bow. SF 871, CVII-IX, LB 575, spill.

#### Other copper alloy

869. Strip decorated with ring-and-dot and incised lines. ?Part of a toilet set. SF 3054.

870. Rod. Perhaps part of an instrument. SF 1665.

871. Similar rod, grooved. SF 2468, CIX-X.

872. Long round-sectioned rod with eyelet. SF 2162. 873. Round-sectioned pointed rod. SF 3058.

874. Rectangular-sectioned rod with flattened end. SF 1054.

875. Cast ?handle. Probably not finished object as casting debris not smoothed off. SF 716.

876. Thin sheet fragment. SF 1519.

877. Heavy broken terminal. Possibly post-Roman, perhaps from a drop handle. SF 715.

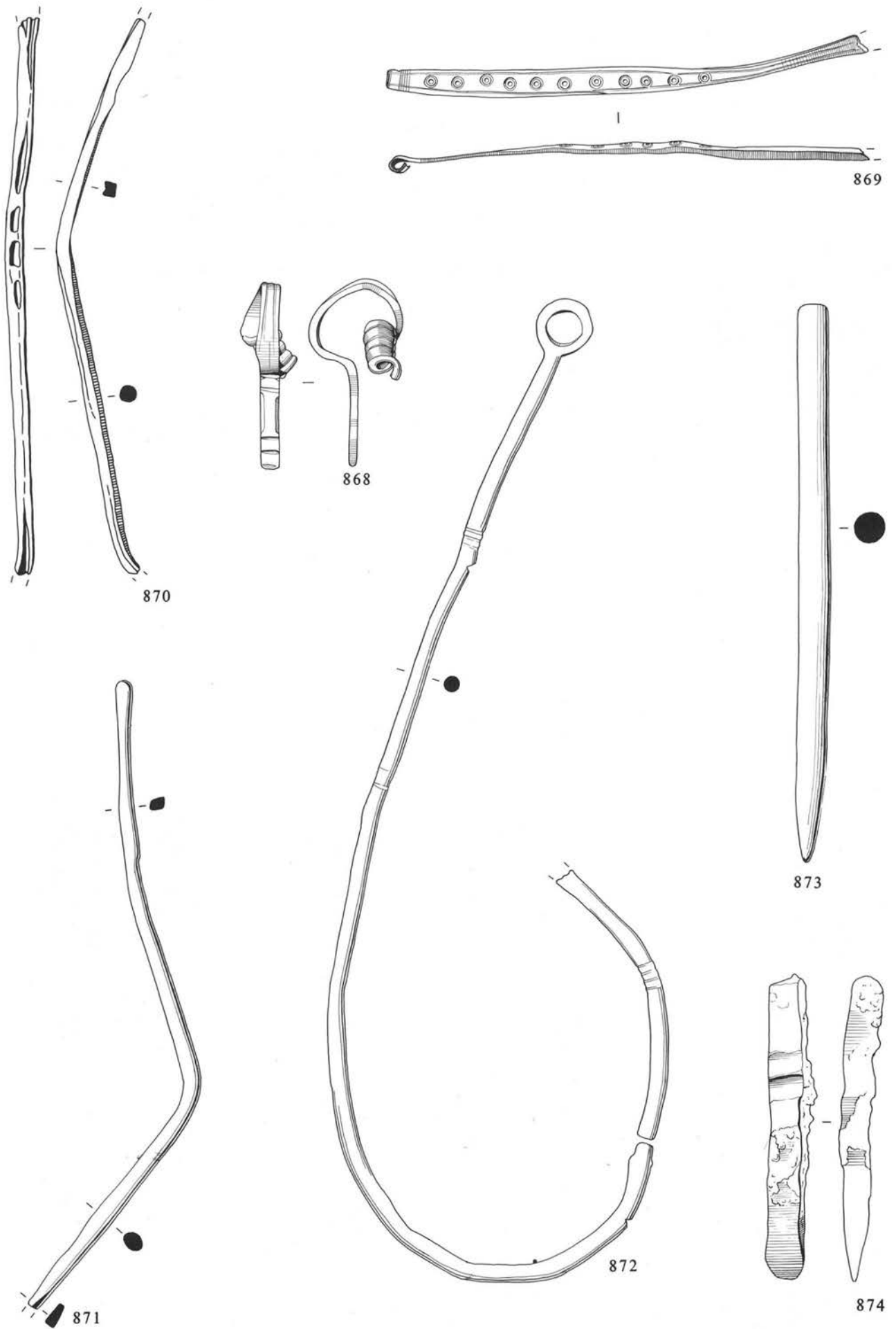


Figure 121 Miscellaneous copper alloy objects. Scale 1:1.

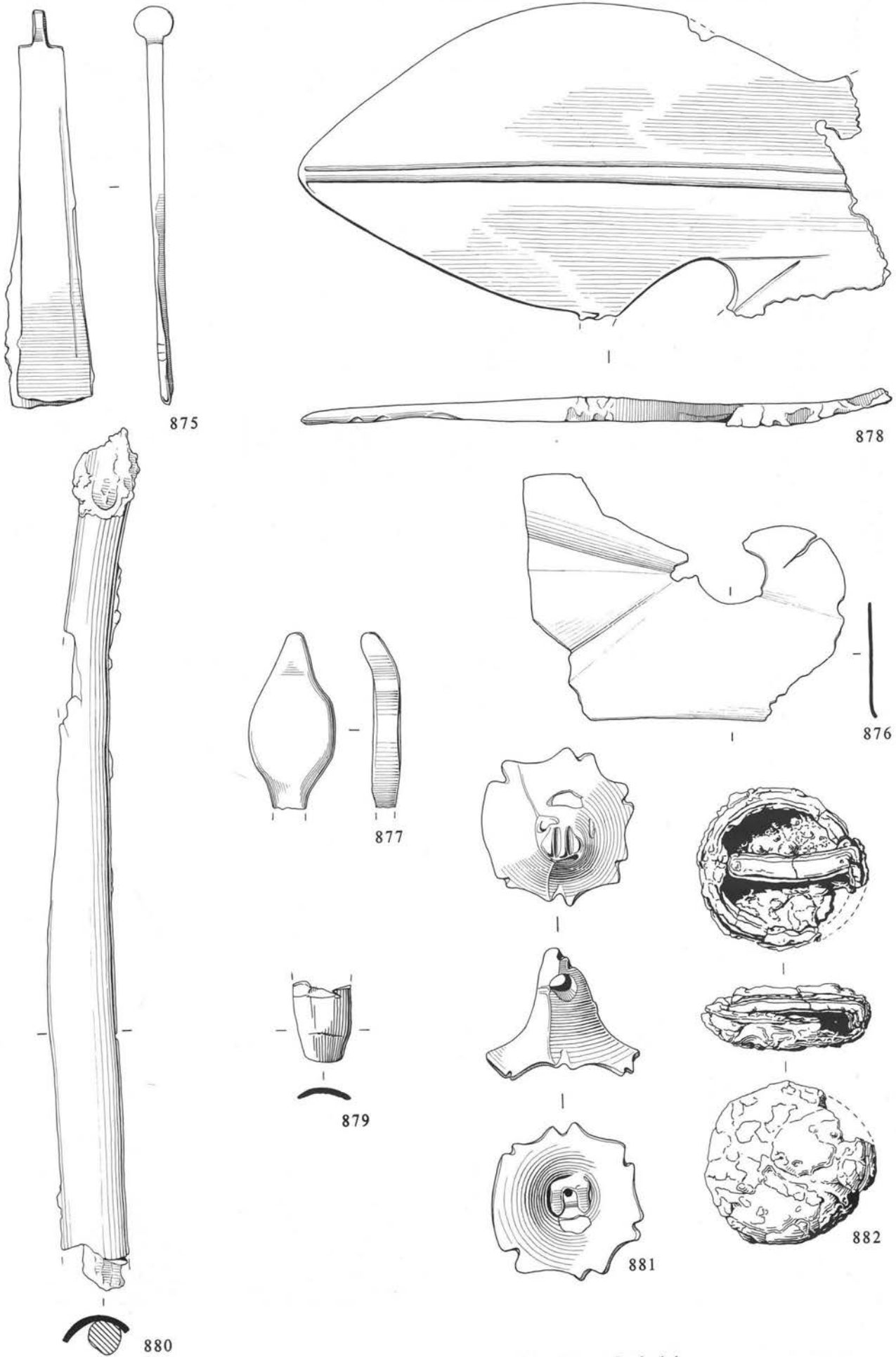


Figure 122 Miscellaneous copper alloy objects. Scale 1:1.

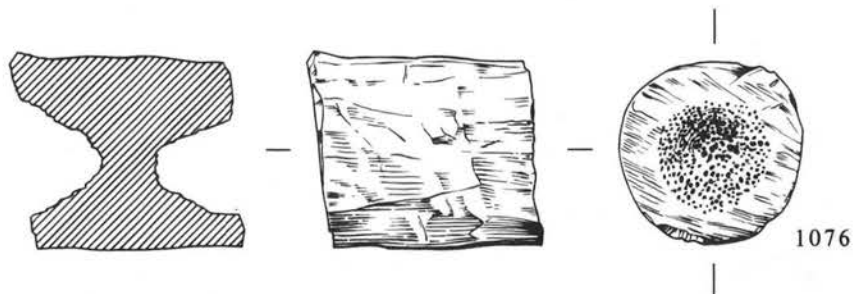
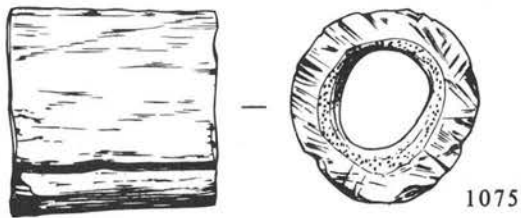
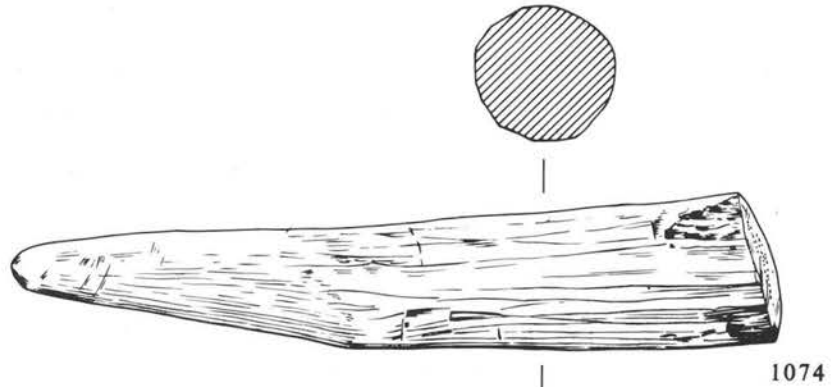
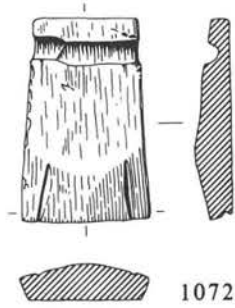
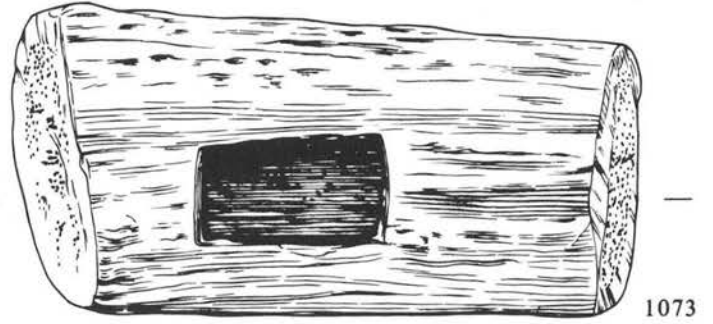
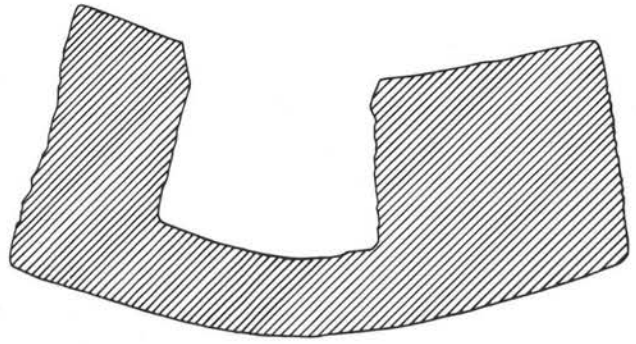
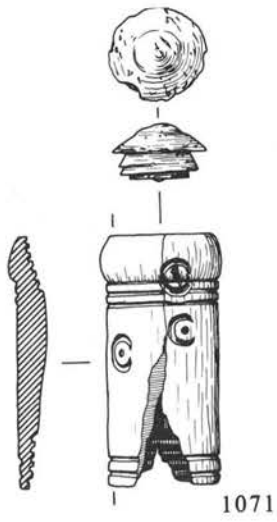


Figure 127 Miscellaneous bone objects. Scale 1:2.

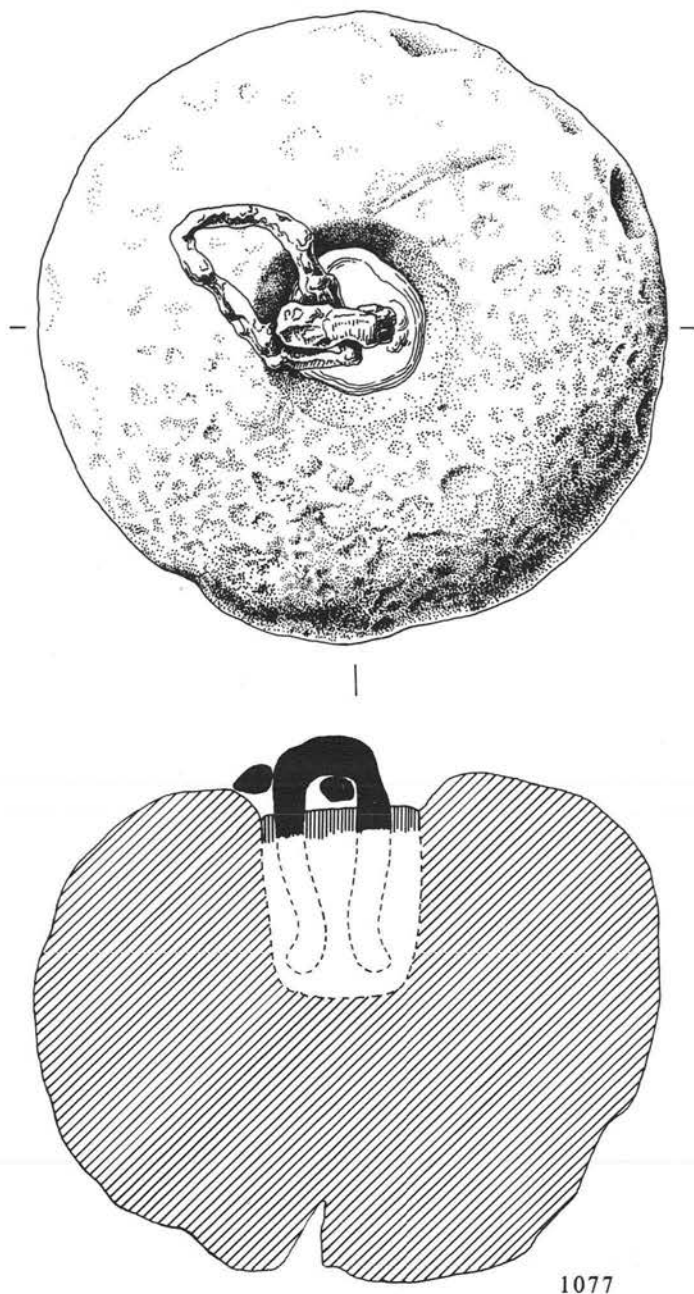


Figure 128 Miscellaneous stone object. Scale 1:2.

- 878.** Heavy **plate** forming asymmetrical 'leaf-shape', broken at end and lower edge, with central moulding on face, and unfinished (rough) casting underneath, apparently to be applied or inset. Perhaps post-Roman. SF 816, EIX, LB 954, base of rampart.
- 879.** Small **sheet** fragment, possibly tip of instrument or *ligula* blade. SF 2863.
- 880.** Round iron **rod** sheathed with thin copper alloy sheet. SF 449, EIX, LB 535, refuse.
- 881.** Small cast object, noted as a **possible bell** by Green. Most bells known from Roman Britain are of a distinctive form and are substantially larger than this object. Probably post-Roman, and may come from post-medieval furniture. SF 3071.
- 882.** Hollow round ?boss, edges curved inwards on underside to which is attached a transverse rectangular-sectioned strap. Not certainly Roman. SF 3248.

*Unillustrated.* Nos 883–983; see microfiche.

**Iron**  
by Quita Mould

*Unillustrated.* Nos 984–1034; see microfiche.

**Lead**  
(Figs 123–6, microfiche)

- 1035.** Sub-rounded plate, countersunk central hole, flanked by countersunk hole and pierced hole. Rough cross incised, and two shallow scoops. Weight 1.030kg (3.15 *libra*), suggests it was not used as a weight. SF 728, BIV–VII, LB 810, spill.
- 1036.** Wedge-shaped plate, pierced by three rectangular holes, surrounded by impressions of ?washers. Occasional deep cut-marks on face. SF 1233, BX, LB 1100, spill.

1037. Fragment with curved outer edge, bent and hammered over. A similar circular plate at Colchester (Crummy 1983, fig.208, no.4696) was considered possibly the lid from a small lead burial canister. SF 1398, EVI-VII, LB 1616, post-Roman.

*Unillustrated.* No.1038; see microfiche.

1039. Fragment of ?ring, wedge-shaped section. A ring handle of similar size was found at Colchester (Crummy 1983, fig.208, no.4703). SF 2122, CDVI, LB 2352, post-Roman.

1040. Square-sectioned rod, with spatulate flattened end, notches cut in at one end. SF 972, AIX, LB 1154, refuse.

1041. Irregular ?flashing, sinuous outline, and traces of mortar on reverse. SF 861.

1042. Fragment cut from sheet. SF 717.

1043. Distorted strip, rolled at one end. SF 137, FIX, LB 216, refuse?

1044. Fragment of sheet, with at least two holes. SF 112, FVII, LB 69, refuse.

1045. Irregular strip cut from sheet. SF 2942, DIX-X, LB 2571, Room 5 hypocaust.

1046. Strip of sheet with cut edges. SF 1111, EVII, LB 1049, lower refuse.

1047. Rectangular sheet, with one square hole and one edge rolled. SF 161.

*Unillustrated.* Nos 1048-1070; see microfiche.

## Bone

(Fig.127)

1071. Cylinder with screw threads at ends, one with screw top with convex top, decorated with incised transverse lines and ring-and-dot. No parallels have been found for this container; since the end with the lid is dissimilar to the other plainer end, this may be a fragment of a more composite object. Post-Roman. SF 2.

1072. Oblong panel with deep groove parallel to narrow end, two short incised lines at right angles to wider end and slight depression from these to groove (thumb sized). Wider end cut almost through then broken. SF 2118, CDVI, LB 2352.

1073. Red deer antler. Portion of beam or large tine with slight curve, sawn across both ends, with very neat rectangular hole cut at right angles to long axis on inner side of curve. Although this resembles a hammer head, no wear to indicate function. Similar object (antler) from Shakenoak (Brodrigg *et al.* 1973, fig.72, no.120). SF 2950, DIX-X, LB 3190, Room 5 hypocaust.

1074. Red deer antler, lower half of tine whittled so roughly faceted. SF 1199, CVI, LB 1447, post-Roman.

1075. Red deer antler, part tine, sawn across ends to form short tube. SF 1170, EVII-VIII, LB 1049, refuse.

1076. Red deer antler, part tine, sawn across ends to form short cylinder, both ends slightly hollowed. Possibly tube (as No.1075 above) in the making. SF 2811.

## Stone

(Fig.128)

1077. Roughly spherical stone ball, slightly flattened top and bottom, iron staple and link plugged with lead into round depression on top. Almost certainly of Spilsby (Lincolnshire) sandstone. Weight: 5.395kg (11.89lb). SF 2328, Area 2, MI, LB 2316.

## Discussion

Although this could have served as a weight, the fragment of chain suggests use to retain something in position. The weight would hamper the movements of a small animal but, quite apart from the iron chain, this would be an unusual tethering method. It could have functioned as an anchor for a small river craft.

A range of similar objects were found at Danebury, mostly stratified in Iron Age pits, where they have been tentatively identified as weights (Cunliffe 1984, 408, figs 7.50-52). Type W1 is closest to the Caister find, but it is noticeable that the Danebury weights are not spherical, having flattish bottoms, and all weigh considerably less, the estimated range being from 642.6 to 4342gm. The Caister ball equals *c.* 17.5 'Celtic' pounds; if related to the Roman *libra* of 327.45gm, it equals *c.* 16.5 Roman pounds. Neither seem very convincing multiples, and its spherical shape lends more credence to a function such as a boat anchor.

## XX. The Clay Pipes

by Karen Parker  
(unillustrated)

(Summary of report: details in archive and report on microfiche.)

The site produced a total of 659 17th- to 19th-century clay tobacco-pipe fragments consisting mainly of small pieces of plain pipe stem. None of the pipes are complete, and there are only twenty which have bowls, parts of bowl or decorated stems which give some indication of date, the rest being too fragmentary to date reliably. A small number of overfired and heavily burnt fragments, together with pieces of rolled clay, are probably waste from a kiln. Comparison with pipes from London shows very few pipes which correspond to those forms. Most appear to have been the work of local east Norfolk pipe makers.



# Chapter 6. The Vessel Glass

by Jennifer Price and H.E.M. Cool

This report was submitted in February 1984. References were revised in July 1988. The following catalogue is of the illustrated fragments. A catalogue of the unillustrated glass is on microfiche. Where there is additional information in the microfiche catalogue relating to an illustrated fragment with printed catalogue entry, *mf* has been added as an endnote.

## Catalogue

### Colourless (Fig.129)

1. Body frag. Occasional tiny bubbles; flaking clouded iridescence. Cylindrical body. Exterior ground away to form narrow horizontal cordon. SF 3178, Area 4, LV, LB 3475, Grave 142.
2. Rim frag., beaker, narrow mouth. Some small bubbles; clouded iridescent surfaces. Out-turned rim, edge cracked off and ground; body expanding to rounded carination. Pair of narrow abraded horizontal bands on upper body, second pair above carination and possibly third pair below carination — only one band remains above break. SF 2451(a), ABIX, LB 2664, lower fill hypocaust flue F10.
3. Rim frag., beaker or bowl. Clouded surface. Vertical rim, edge cracked off and ground. Cylindrical side tapering in slightly. Narrow horizontal abraded band below rim. SF 886, CVII-IX, LB 575, spill.
4. Rim frag., hemispherical bowl. Small bubbles; iridescent surfaces. Curved rim, edge cracked off and ground; constricted neck; convex-curved body. One wheel-cut line below rim and similar line on upper body; band of vertical rice grain facets below separated from band of circular facets by eight horizontal wheel-cut lines. SF 119.
5. Two body frags., hemispherical bowl. Occasional medium bubbles; iridescent surfaces. Constricted neck; convex-curved body. Horizontal wheel-cut line on upper body with abraded scratches either side; band of vertical rice grain facets below separated from band of circular facets by eight horizontal wheel-cut lines. The rice grain facets narrower and more widely spaced, and the band of eight wheel-cut lines wider than No.4. SF 415(a) and 430(a), EIX, LB 535, refuse.
6. Rim and joining body frag., hemispherical bowl. Small bubbles; iridescent surfaces. Curved rim, edge cracked off and ground; constricted neck; convex-curved body. Narrow wheel-cut line below rim and similar on upper body. Below a band of wheel-cut lozenges outlined by thick lines and infilled by narrower, shallower, diagonally cross-hatched lines; horizontal rice grain facet above and below junctions between lozenges; below lozenges thick wheel-cut horizontal line and tips of close-packed rice grain facets probably in radial pattern around centre base. SF 2508 and 2527, DXI, LB 2720 and 2728, Room 6, post-Roman and occupation.
7. Base and side frag., bowl. Occasional small bubbles; iridescent surfaces; strain cracks. Very gently convex-curved. One horizontal rice grain facet on side separated from large oval facet by two horizontal wheel-cut lines. Many wear scratches inside and outside. SF 667, FVI, LB 735, refuse.
8. Body frag. Small to medium bubbles; iridescent surfaces. Convex-curved side. Band of elongate vertical rice grain facets above pair of horizontal wheel-cut lines with spaces between infilled with horizontal abraded lines. SF 627, EVIII, LB 708, refuse.
9. Body frag. Small bubbles; iridescent surfaces; strain cracks. Convex-curved side. Two staggered rows of vertical rice grain facets with part of one similar but horizontal facet below. SF 2740, CXI, LB 2934, post-Roman F75.
10. Body frag. Small to medium bubbles; patches of flaking iridescence. Convex-curved side covered by parts of six closely-set oval facets. SF 2995(a), DXI, LB 2690, spill.
13. Body frag. Clouded surface. Convex-curved body. One oval facet and part of rice grain facet. SF 3403, Area 2, GI, LB 1999, spill.
17. Neck frag. Streaky weathering. Cylindrical neck. Horizontal band of wheel-cut lines. SF 2735, CIX, *mf*.
18. Three joining body frags. Many small bubbles; patchy iridescence. Indented body; two serpentiform, scored, opaque white trails. SF 138, FIX, LB 216, refuse.
19. Body frag. Clouded surface. Convex-curved body. Two pairs of trails pinched together at intervals to form spectacle pattern. SF 2967, DVIII-IX, LB 2563, Room 4, clay under tiles, *mf*.
21. Rim frag., cylindrical cup. Occasional small bubbles; dulled surface. Fire thickened vertical rim; cylindrical body. SF 525, CVII, LB 575, spill, *mf*.
22. Rim frag., cylindrical cup. Some small bubbles; patchy iridescent surfaces. Fire rounded out-turned rim, vertical side. SF 1191.
24. Rim frag., bowl. Some small bubbles; dulled iridescent surfaces; strain crack. Fire rounded, out-turned rim; straight side tapering inwards. SF 2451(b), ABIX, LB 2664, hypocaust channel F10.
25. Base frag., cup. Clouded surface. Wide lower body, mainly broken away; tubular pushed-in base ring; low concave base; thick circular trail showing pontil scar applied centrally to underside of base. SF 1953, FIX, LB 2123, refuse.
26. Base, cup. Some small bubbles; patchy iridescent surface. Solid pushed-in base ring; slightly convex base; thick elliptical trail showing slight pontil scar applied off-centre to underside of base. Side grozed. SF 568, FVIII, LB 49, refuse.
27. Base frag., cup or jug. Clouded iridescent surfaces. Side sloping steeply to base; solid pushed-in base ring; concave base with central kick. SF 1897(a), DVI, LB 2069, lower refuse.
28. One side and two base frags (all joining). Clouded surface. Convex-curved side sloping into small flat base. SF 1764 (b), BX, LB 1907, ?spill.
29. Base. Small bubbles; iridescent surfaces. Side sloping in shallowly to thick flat base with small circular pontil scar off-centre. Base much worn. SF 3019.
30. c. 15 frags and several chips (many joining), small two-handled flask. Clouded surfaces. Cylindrical neck; rounded shoulder; possibly straight side. Attachment scars show presence of handles. Extant handle fragments have blob-like lower attachment at shoulder and small return trail running down handle from (missing) upper attachment at neck. SF 2426, ABIX, LB 2559, hypocaust channel F10, *mf*.

### Blue/Green (Fig.130)

36. Base frag., jug or jar. Small bubbles; iridescent on lower surface. Central part of base has central applied pad to support pontil producing visible thickening on upper and lower surfaces; base bends down at edges and must originally have had some form of pushed-in base ring. Pontil scar on underside of central thickening. SF 74, FVII, LB 69, refuse.
37. Complete rim and neck, flask. Some small and occasional large bubbles; iridescent surfaces. Asymmetrical funnel mouth with unevenly rolled-in edge that appears fire rounded; slightly waisted neck sloping out towards body. SF 700, BVI-VII, LB 813, Wall 12 footings.
38. Rim frag., unguent bottle. Small to medium bubbles; patchy iridescent surfaces. Markedly out-turned rim with edge rolled in. SF 2867(b).
46. Square bottle base frag. Many small bubbles; cloudy iridescent surfaces. Corner of base with raised bar in corner outside raised circular moulding. SF 1019(a), EX, LB 1182, rampart spill.

### Greenish Colourless, etc. (Figs 130-2)

48. One rim and one body frag. (not joining), segmental bowl. Pale greenish colourless; small bubbles; iridescent surfaces. Curved rim, edge cracked off smoothly but not ground; shallow convex-curved body. Two bands of horizontal abraded lines, one at rim edge, one on upper body. Outer surface has free-hand engraved design intended to be viewed from inside vessel. Outstretched back legs and tail of dog (?) running right, one leg and tail infilled by short lines at angles to outline. Ground line below hind paws indicated by diagonal line with pendant vertical lines. Similar ground line and traces of

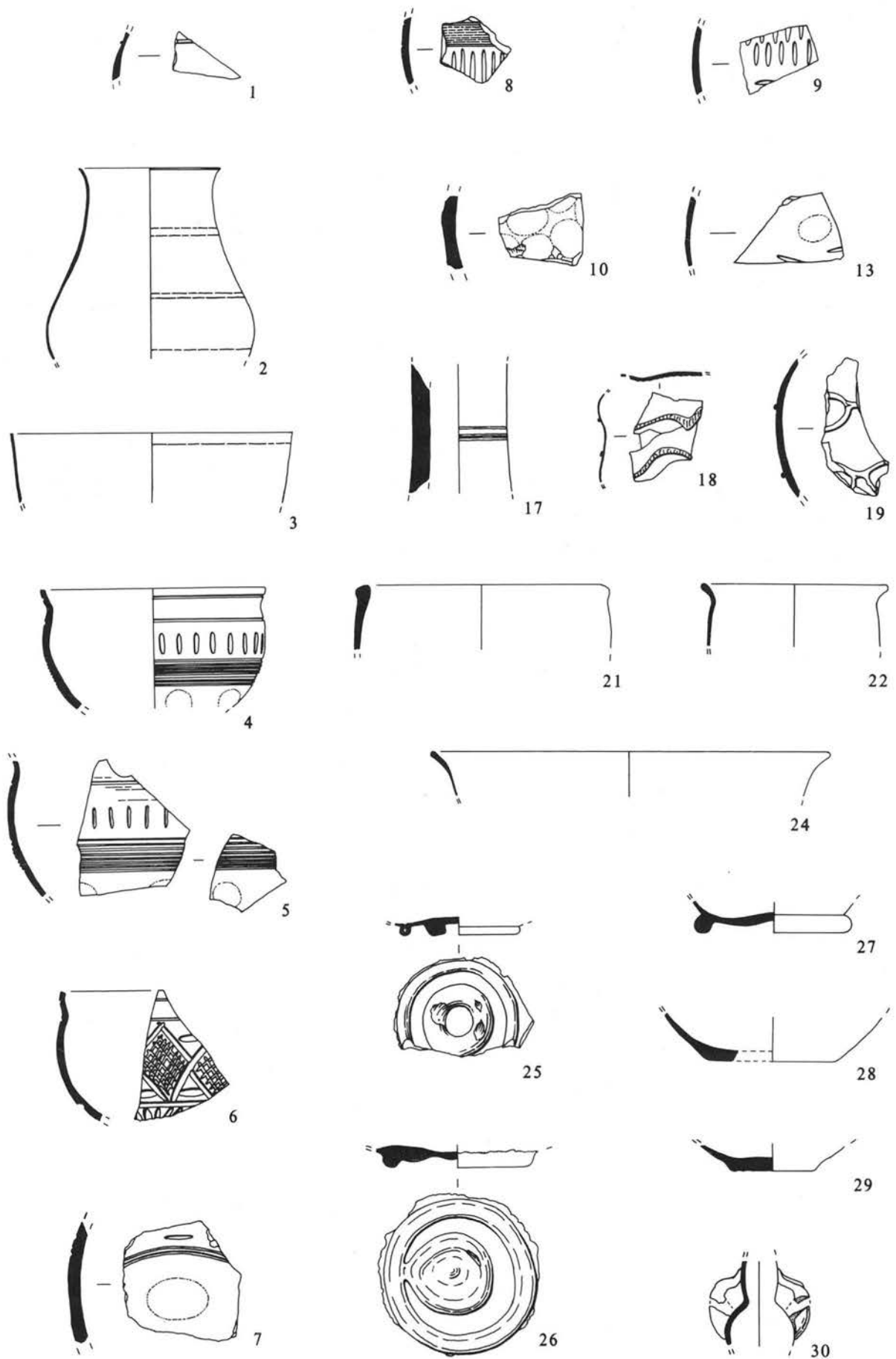


Figure 129 Vessel glass, colourless. Scale 1:2.

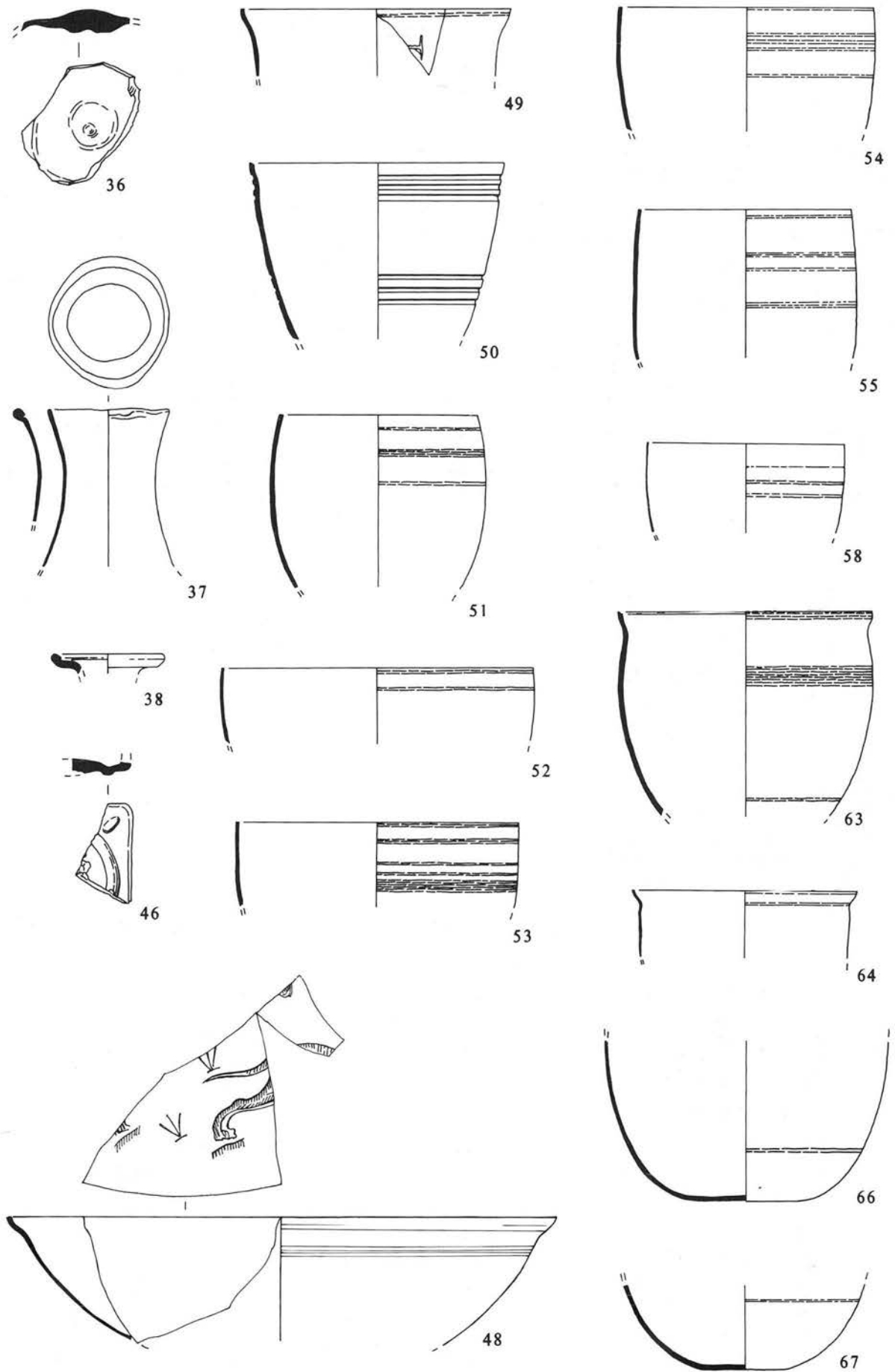


Figure 130 Vessel glass, blue/green Nos 36-38, 46 and later material. Scale 1:2.

- paws of second animal behind first. Two stylized grass tufts each of three lines in 'V' shape with horizontal line below, placed between the two animals. Small body frag. has part of two engraved designs, one edge of figure with short line infilling; the second unidentifiable. All engraved lines on both fragments have pitted appearance. Also small body frag. with similar engraved ground line. Probably part of this bowl but very heavily weathered. SF 2360, 2956, 167, DX–XI, DVIII–IX, DVIII, LB 2571, 2547, Room 5 F32, Room 4 plough.
49. Rim frag., conical beaker. Green tinged colourless; small bubbles. Curved rim, edge cracked off smoothly but not ground; straight side tapering inwards. Horizontal abraded band at rim edge. Careless abrasions on upper body forming part of upper cross stroke of serifed letter 'E' or 'T'. SF 2429, EXII, LB 2614, refuse.
  50. Rim frag., conical beaker. Green tinged colourless; occasional small bubbles. Slightly curved rim, edge knocked off and ground; slightly convex-curved body tapering inwards. Horizontal abraded band at rim with three wheel-cut grooves below, three similar on body. SF 229.
  51. Rim frag., hemispherical cup. Pale greenish; many small to medium bubbles; iridescent surfaces. Vertical rim, edge cracked off smoothly but not ground; convex-curved body. Three horizontal abraded bands below rim. SF 2941(d), DIX–X, LB 2571, Room 5 hypocaust F32.
  52. Rim frag., hemispherical cup. Colourless; occasional small bubbles; cloudy iridescent surfaces. Vertical rim edge cracked off ground and polished; convex-curved body. Two narrow horizontal abraded bands below rim. SF 1975, FIX, LB 2123, refuse.
  53. Rim frag., hemispherical cup. Pale greenish colourless; many small to medium bubbles; cloudy iridescent surfaces. Vertical rim, edge cracked off smoothly but not ground; slightly convex-curved side. Traces of abrasion at rim edge and three horizontal abraded bands on upper body. SF 2557(a), DX–XI, LB 2571, Room 5 hypocaust F32.
  54. Four rim and four body frags (all but one rim frag. join), hemispherical cup. Pale greenish colourless; occasional tiny bubbles; iridescent surfaces. Vertical rim, edge cracked off smoothly but not ground; convex-curved body. Horizontal abraded band at rim edge and four similar on upper body. SF 1580, 1616(b), DVI, LB 420, 1798, spill, Room 1 drain F21.
  55. One rim and one body frag. (not joining), hemispherical cup. Pale yellowish/greenish colourless; many small bubbles; iridescent surfaces. Vertical rim, edge cracked off and ground; slightly convex-curved body. Horizontal abraded band at rim edge, three very narrow horizontal abraded bands on upper body. DIX–X, LB 2571, Room 5 hypocaust F32.
  58. Rim frag., hemispherical cup. Colourless; many small and some larger bubbles; iridescent surfaces; wall thickness uneven. Vertical rim, edge cracked off smoothly but not ground; convex-curved body. Three horizontal abraded bands below rim. DIX–X, LB 2571 as No.55.
  63. Two joining rim frags, hemispherical cup. Pale greenish colourless; some small bubbles; iridescent surfaces. Curved rim, edge cracked off smoothly but not ground; convex-curved body. One horizontal abraded band at rim edge, one similar thick band on upper body and narrow band on lower body. SF 2290, 183, EVIII, LB 2518, 207, Room 3 ?disturbance, spill.
  64. Rim frag., (probable) hemispherical cup. Colourless; small to medium bubbles; clouded surfaces with flaky iridescence. Markedly curved rim, edge cracked off smoothly but not ground; straight-sided upper body. Two narrow horizontal abraded bands below rim. SF 2219, EVII, LB 2436, Room 2.
  66. One base and three body frags (all join), hemispherical cup. Pale greenish colourless; small bubbles; iridescent surfaces. Convex-curved body; very slightly concave base. Narrow horizontal abraded band on lower body. Surface has many wear scratches. SF 2557(a), DX–XI, LB 2571, Room 5 hypocaust F32.
  67. Base frag., hemispherical cup. Pale green; many bubbles; flaking iridescent surfaces. Convex-curved body; flat base. One narrow horizontal abraded band on lower body. SF 1551(a), DVI, LB 420, spill, *mf*.
  70. Body frag., hemispherical cup. Pale greenish colourless; many small bubbles; flaking iridescence. Convex-curved body bending in to base. Horizontal abraded band approximately marking side/base junction. SF 920(a), DX, LB 1010, spill.
  72. Eleven edge of base and side frags (four join), hemispherical cup. Slightly yellow-tinged colourless; small to medium bubbles; iridescent surfaces. Convex-curved side tapering to small base, centre missing. Narrow horizontal abraded band on lower body. SF 1424 (b), EVI–VII, LB 1638, lower refuse.
  73. Three joining base and side frags, hemispherical cup. Pale greenish colourless; many small bubbles; clouded surfaces with flaking iridescence. Convex-curved body tapering to small concave base. Thick trail in festoon pattern on side. SF 2788, Area 4, KVIII, LB 3035, top of ditch.
  74. Body frag., hemispherical cup. Pale greenish; many small bubbles; flaking iridescent surfaces. Convex-curved body bending into base. Thick trail in festoon pattern on side, lower part of festoon in very shallow relief. SF 2648(a), EXI, LB 2045, refuse.
  75. Body frag., bowl. Pale greenish colourless; occasional small bubbles. Convex-curved body bending into base. Part of thick trail in tight 'U'-shape curve – base of festoon pattern. SF 1564, DVI, LB 420, spill.
  76. Two joining base and two body frags. Pale green; many small bubbles; iridescent surfaces. Convex-curved body with slight concavity in side above flat base. Both body frags have three narrow horizontal abraded bands and one frag. retains part of curved trail below abraded bands. SF 2326, DX–XI, LB 2548, Room 5 hypocaust F32.
  78. One rim and one joining body frag., convex-sided conical beaker. Pale greenish colourless; occasional small bubbles; clouded iridescent surfaces. Vertical rim, edge cracked off smoothly but not ground; body tapering inwards. Horizontal abraded band at rim edge, four similar on upper body and one on lower body. SF 2557(a), DX–XI, LB 2571, Room 5 hypocaust F32.
  79. Rim frag., conical beaker. Colourless; thick flaking iridescence. Vertical rim, edge cracked off and lightly ground; straight side tapering inwards. Two narrow horizontal abraded bands below rim. SF 467(b), EIX, LB 535, refuse.
  80. Rim frag., conical beaker. Green tinged colourless; small bubbles; flaking iridescence. Vertical rim, edge cracked off but not ground and now much chipped; straight side tapering inwards. Two narrow horizontal abraded bands below rim. SF 656, FVI, LB 735, refuse.
  82. Rim frag., conical beaker. Pale greenish colourless; small to medium bubbles; iridescent surfaces. Slightly flexed rim; edge cracked off smoothly but not ground; straight side tapering inwards. Slight abrasion at rim edge and four horizontal abraded bands below. SF 1679.
  85. Rim frag., conical beaker. Pale greenish colourless; many small bubbles; iridescent surfaces. Curved rim, edge cracked off smoothly but not ground; straight side tapering inwards. Two horizontal abraded bands at rim edge and two similar on upper body. SF 2322, EVIII, LB 2524, ?post-Roman.
  87. Rim frag., conical beaker. Colourless; small bubbles; clouded iridescent surfaces. Curved rim, edge cracked off and now chipped; straight side tapering inwards. Horizontal abraded band at rim edge and three similar on upper body. SF 528.
  89. Rim frag., thick-walled conical beaker. Pale yellowish green; some small to medium bubbles. Curved rim, edge cracked off but not ground; straight side tapering inwards. Horizontal abraded band at rim edge; two similar on upper body. SF 1699, CIX–X, LB 469, spill.
  90. Rim frag., conical beaker. Colourless; some small bubbles; flaking iridescent surfaces. Curved rim, edge cracked off smoothly but not ground; straight side tapering inwards. Narrow horizontal abraded band on upper body. SF 1884.
  93. Two rim and two body frags (all join), conical beaker. Pale green; many small to medium bubbles; iridescent surfaces; strain cracks. Curved rim, edge cracked off smoothly but not ground; straight side tapering inwards. Three horizontal abraded bands on upper body. SF 1457, EVII–VIII, LB 1653, Room 2, refuse.
  97. Complete base (two frags), conical beaker. Pale greenish colourless; many small to medium bubbles; flaking iridescent surfaces. Straight-sided body tapering into very gently concave small base. SF 1927(b), DVIII, LB 2051, Room 3.
  98. Base and side frags, convex-sided conical beaker. Pale green; occasional small bubbles. Side tapering into small, slightly concave base. Horizontal abraded band on body. SF 2478.
  99. Rim and three body frags (all join), convex-sided conical beaker with coloured blobs. Pale greenish colourless; many small to medium bubbles; flaking iridescence; streaky weathered surface. Curved rim, edge cracked off smoothly but not ground; straight side tapering inwards. Three small dark blue/green blobs arranged in triangle on upper body. SF 1184, GIX, LB 1424, post-Roman.
  100. Body frag., conical beaker with coloured blob. Green tinged colourless; some small bubbles; iridescent surfaces. Straight side. Large pale blue oval blob. SF 1596, DVI, LB 420, spill.
  101. Body frag. with coloured blobs. Yellow/green tinged colourless; small bubbles; iridescent surfaces. Straight side. Three small oval mid-blue blobs in triangle. SF 1219, GX, LB 1308, berm.

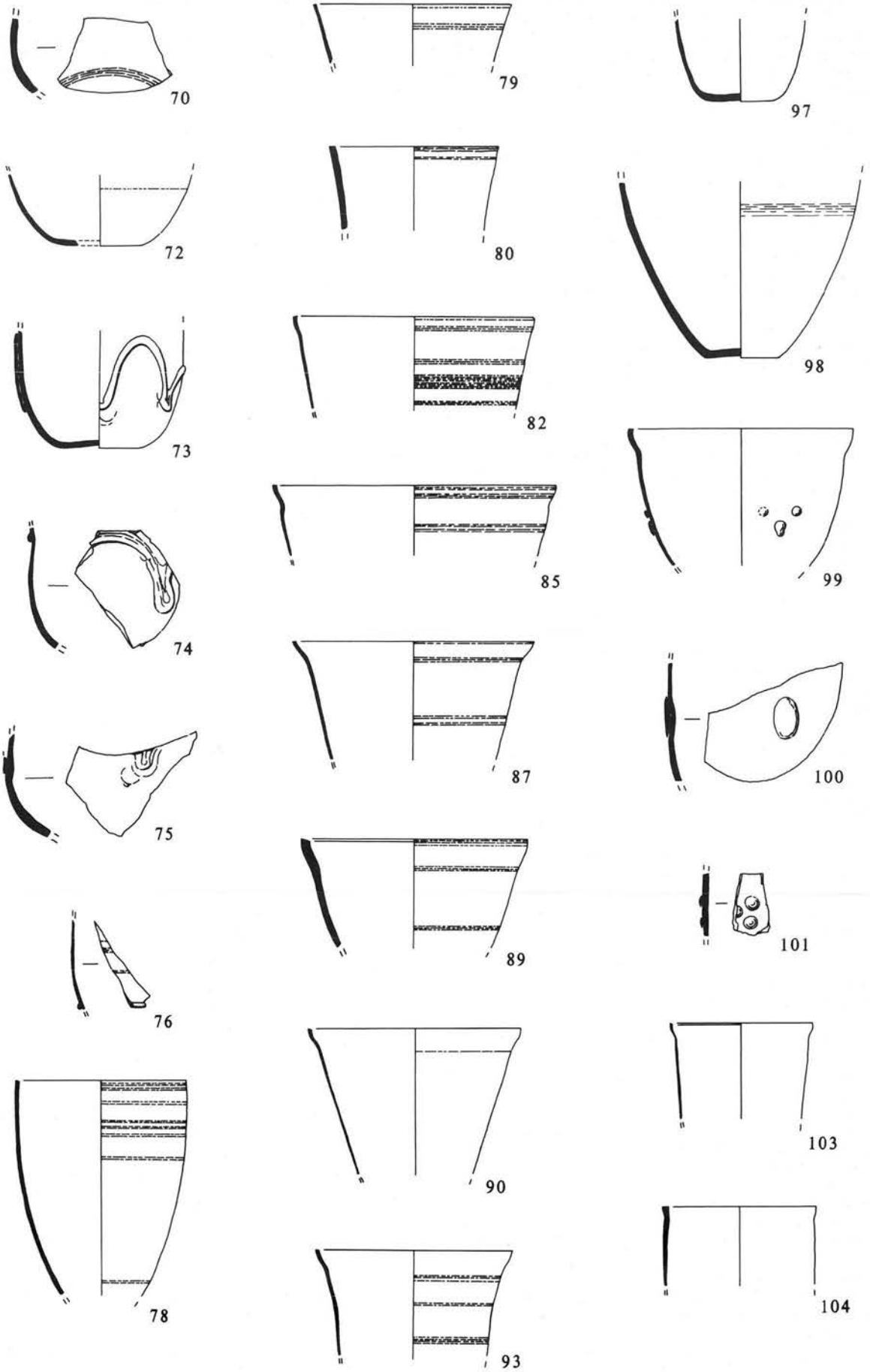


Figure 131 Vessel glass, later material. Scale 1:2.

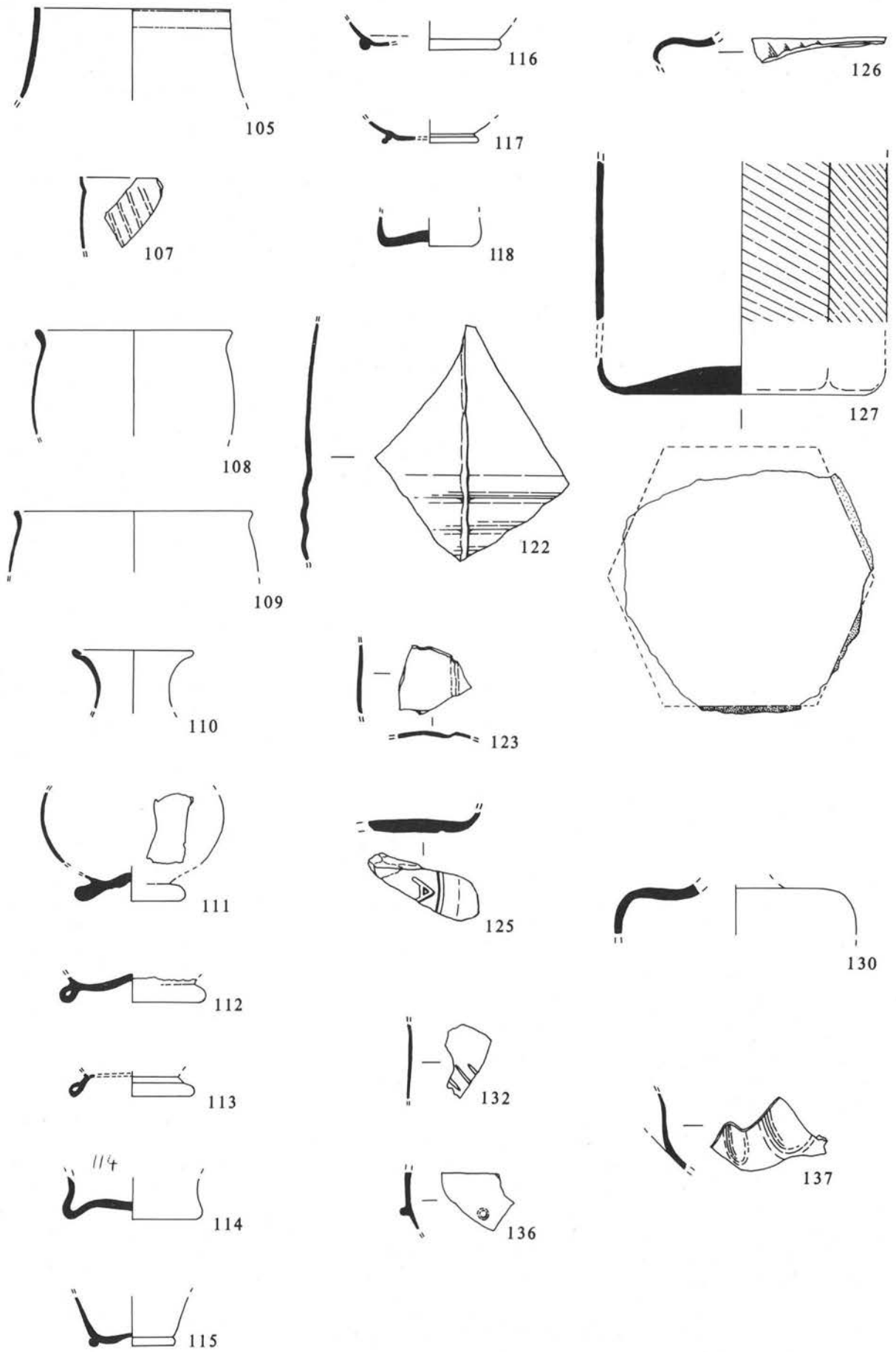


Figure 132 Vessel glass, later material. Scale 1:2.

103. Three rim and one body frags (all join), conical beaker. Colourless; many small bubbles; heavily weathered, iridescent surfaces. Curved rim, edge cracked off smoothly but not ground; straight side tapering inwards. SF 298(b), EVII, LB 164, refuse.
104. Rim and body frag. (not joining), cylindrical beaker. Green tinged colourless; small bubbles; weathered, iridescent surfaces; strain cracks. Slightly curved rim, edge cracked off smoothly but not ground; straight, cylindrical side. SF 1506, DVII, LB 1680, post-Roman.
105. Rim frag., (?) beaker. Pale greenish colourless; small bubbles; patchy iridescence. Vertical rim, edge cracked off smoothly but not ground; straight side tapering outwards. Traces of abrasion at rim edge with narrow horizontal abraded band on upper body. SF 3143(b).
107. Rim and joining body frag., hemispherical cup or conical beaker. Blue/green; many small bubbles; iridescent surfaces. Curved rim, edge cracked off smoothly but not ground; slightly convex-curved body. Optic blown. Shallow wide diagonal corrugations dying out below rim. SF 2331(a), 2334(b), DIX-X, LB 2547, Room 4.
108. Rim and joining body frag., cup. Pale greenish colourless; many small bubbles; patchy iridescent surfaces. Fire thickened, out-turned rim; convex-curved body. SF 1758, AX, LB 666, spill.
109. Rim frag., cup. Colourless; many small bubbles; clouded iridescent surfaces. Fire rounded, out-turned rim; slightly convex-curved body. SF 389(a).
110. Rim and body frag. (not joining), (?) beaker/flask. Pale green; many small to medium bubbles; patchy iridescent surfaces. Out-turned rim with rolled-in edge; funnel mouth beginning to curve out to body. SF 1972, EIX, LB 1872, refuse.
111. Two joining base frags, beaker/flask. Pale green; many small to medium bubbles; patchy iridescent surfaces. Side (almost completely broken away) slopes into base at very low angle; low out-splayed tubular pushed-in base ring; concave base with central kick; circular pontil scar on underside. Base ring worn. SF 1972, as No.110.
112. Base frag., jug or bowl. Pale yellow tinged colourless; small bubbles; flaking iridescent surfaces. Tubular pushed-in base ring; flat base with central kick. Side broken, possibly deliberately grozed. SF 2616, DVI, LB 1743, Room 1.
113. Base ring frag. Colourless; small bubbles; iridescent surfaces. Pushed-in base with junction between two layers of glass forming side and base elongated to produce low, out-splayed footstand with ring at end. SF 2538, DXI, LB 2745, Room 6 F35.
114. Base, jug, jar or beaker. Pale green; many small to medium bubbles; flaking iridescent surfaces; strain crack. Open pushed-in base ring. SF 2652, EXI, LB 2127, refuse.
115. Base frag., beaker or bowl. Pale greenish colourless; small bubbles; iridescent surfaces; strain crack. Straight side tapering into concave base with trailed-on base ring. SF 389(b).
116. Base frag., (?) bowl. Pale green; small to medium bubbles; iridescent surfaces; strain crack. Convex-curved body sloping into concave base with trailed-on base ring. SF 2900.
117. Base frag., (?) bowl. Colourless; heavily weathered iridescent surfaces. Convex-curved body sloping into flat base with trailed-on base ring. Base ring of two trailed rings, one on top of other. SF 1302, AX, LB 1519, F12.
118. Base frag., beaker (?). Pale greenish colourless; many small bubbles; cloudy iridescent surfaces. Straight side (mostly broken); concave base with circular pontil scar on underside. SF 1387, EVI-VII, LB 383, spill.
122. Six body frags (not joining), cylindrical ribbed bottle. Pale greenish colourless; small bubbles; clouded iridescent surfaces. Mould blown. Cylindrical side with at least four horizontal corrugations on lower body; prominent vertical mould mark. One frag. distorted by heat. SF 1557, DVI, LB 420, spill.
123. Body frag., cylindrical ribbed bottle. Pale greenish colourless; many small bubbles; iridescent surfaces. Mould blown. Cylindrical body; prominent vertical mould seam. SF 2355, DIX-X, LB 2547, Room 4.
125. Base frag., cylindrical bottle. Blue/green; small bubbles; iridescent surfaces. Mould blown. Flat base with moulded letter 'A' in shallow relief inside very shallow circular groove. Base worn. SF 467(c), EIX, LB 535, refuse, *mf*.
126. Shoulder frag., cylindrical bottle. Pale green; many small bubbles; flaking iridescence. Mould blown. Horizontal, slightly concave shoulder; horizontal corrugation on upper body with diagonal corrugations. SF 505, EVII, LB 154, spill.
127. Nine joining base frags and four body frags, hexagonal bottle. Pale greenish colourless; many small to medium bubbles; iridescent

surfaces. Mould blown. Straight sides with diagonal optic blown corrugations (bubbles elongated parallel to corrugations); flat base with central thickening. SF 1405, EVI-VII, LB 1624, ?post-Roman.

130. Five shoulder and body frags (two pairs joining), cylindrical bottle. Pale greenish colourless; many small bubbles; cloudy iridescent surfaces. Flat shoulder curving down to cylindrical side. SF 1566, 1644, DVI, LB 420, 1743, spill, debris.
132. Body frag. Colourless; many small bubbles; patchy iridescence. Straight side with three diagonal wheel-cut rice grain facets. SF 323(a), EVII, LB 164, refuse, *mf*.
136. Body frag. Colourless; many small bubbles; flaking iridescent surfaces. Convex-curved body. Small pinched-up blob. SF 904, GV-VII, LB 920, ditch.
137. Body frag. Pale yellow/green; some small bubbles; iridescent surfaces. Convex-curved body. Elongate vertical indentations. SF 918, DX, LB 1010, spill, *mf*.

## Discussion

583 fragments of Roman vessel glass were found. Of this total 13.5% of the fragments are of good quality colourless glass (Nos 1-30); 14.5% are of blue/green glass (Nos 31-47) and 71% are of bubbly colourless to pale greenish glass (Nos 48-138). This latter variety was the typical glass of the 4th century, whereas good quality colourless and blue/green glass was mainly in use during the 1st to 3rd centuries. It is clear just from this evidence therefore, that the assemblage from Caister is predominantly late. This conclusion is strengthened by the fact that the good quality colourless fragments whose vessel forms can be identified are mainly of 3rd-century date; and also by the comparative scarcity of blue/green prismatic bottles (Isings Form 50). This is a 1st- and 2nd-century form and fragments of such bottles dominate the glass assemblage on any site occupied during that time. Here they are represented by only thirty-two fragments or 5.5% of the vessel glass. Thus the glass assemblage from Caister was clearly accumulating during the late 3rd and 4th centuries and as such is another valuable addition to current knowledge of the types of glass in use in Britain during the 4th century. As well as forms of vessels found relatively frequently elsewhere on Romano-British 4th-century sites, Caister also has rarer forms such as the optic blown hexagonal bottles (Nos 127-129) and the fragments of a Wint Hill type bowl (No.48). A fragment of a 7th to 9th-century vessel was also recovered.

The assemblage is dominated by cups and allied forms. Over 70% of the fragments with identifiable forms are beakers or cups. Bottles account for about 10% of this, but all other forms such as flasks, unguent bottles, jugs, etc. are rather poorly represented.

One of the earliest vessels is No.2, a carinated beaker of good quality colourless glass decorated with pairs of wheel-cut lines. It clearly belongs to the range of colourless cylindrical or carinated beakers with ground rims in use during the mid-2nd century. Examples of these have been found at Harlow with samian likely to have been deposited AD 160-170 (Price 1987, fig.2, nos 8-11, 13); Towcester with samian of AD 155-165 (Price 1980, fig.14, no.4) and in contexts dated to AD 150-155/60 at *Verulamium* (Charlesworth 1972, fig.77, nos 43-4). The very narrow mouth of No.2 is unusual in this type of beaker and is not closely paralleled elsewhere. The precise form of the vessel from which the small rim fragment No.3 came is not clear but the ground rim, wheel-cut decoration and good quality glass all suggest that it could also have come from the same range of beakers as No.2.

During the 2nd and 3rd centuries there was a long tradition of decorating good quality colourless glass bowls with a combination of wheel-cut lines and facets. The best

known types are probably the deep hemispherical or bag-shaped bowls decorated with quite elaborate zoned patterns such as the seven bowls from early 4th-century contexts at *Verulamium* (Charlesworth 1972, fig.78, nos 48–53). These are 3rd-century forms and are especially common in the lower Rhineland around Cologne where they were probably made (Fremersdorf 1967, pl.55, 57, 60–2, 66, 67). In the 2nd century a combination of horizontal wheel-cut lines and oval or circular facets set *in quincunx* tended to be preferred and the bowls were generally not so deep. Examples of these include a shallow bowl from Ospringe dated AD 140–190 (Whiting *et al.* 1931, pl. XXXII, no.340) and a deeper bowl from the mid-2nd-century pit at Towcester mentioned above (Price 1980, fig.14, no.1). The four bowls (Nos 4–7) and the thirteen body fragments (Nos 8–16) clearly belong to this tradition. Most of the fragments are too small for the exact form or style of decoration to be suggested but where they retain complex arrangements of lines and facets in close proximity (*e.g.* Nos 14, 15), it is likely that they came from the generally deeper zoned bowls of the 3rd century. Nos 4–6 are all small hemispherical bowls with curved rims. In form they are closest to 2nd-century bowls such as the example from Towcester but their complex zoned decoration suggests that they are probably of 3rd-century date. Nos 4 and 5 are not identical but their similarity must be deliberate. It is clear that bowls of this type were used in matching sets. At *Verulamium*, for example, three or four bowls had linked though not identical designs (Charlesworth 1972, fig.78, nos 48–51) and it is likely that Nos 4 and 5 are the remains of such a set. Bowls decorated with similar patterns to Nos 4 and 5 have been found at various sites including York (Harden 1962, fig.88, no.HG 205.1), Corbridge (Charlesworth 1959, fig.3, no.6), and Woodcutts (Pitt-Rivers 1887, pl.XLIV, no.7). Bowls which include the cross-hatched lozenge design of No.6 are not uncommon, see for example a bowl found in London (Wheeler 1930, fig.42, no.1), but close parallels for No.6 are harder to find. The most relevant appears to be a small fragment found at Poundbury, Dorchester, which retained part of a similar design of cross-hatched lozenges with rice grain facets above and below the junction between each lozenge (Price forthcoming). Although the precise form of No.7 cannot be identified, the large facets on the underside of the base are similar to those on the bowls from Towcester and Ospringe and it is likely to be of 2nd-century date rather than later.

The main late 2nd- and 3rd-century drinking vessel in Britain and the other north-west provinces is a cylindrical cup with fire-rounded rim (Isings Form 851; Price and Cool 1986, 46). At Caister the form is represented by Nos 21–26. All are in colourless glass. Two of the rim fragments (Nos 21 and 21b) are vertical; the other two (Nos 22, 23) have out-turned rims.

Three fragments from a segmental bowl of Isings Form 116 were found (No.48). This bowl had a free-hand engraved, figured scene on its outer surface designed to be viewed from the inside of the vessel. The style of the engraving, outlines infilled with pendant lines, shows that it is a member of a group of bowls often called Wint Hill bowls after the example found at Wint Hill, Banwell, Somerset (Harden 1960, fig.1). These are all thought to have been made at one workshop probably located at Cologne. They are decorated with vigorous, if rather crudely drawn, scenes of the hunt or with ones depicting Biblical, Christian or Pagan episodes and they often have

inscriptions around the rim. The hunting scenes general depict a hunter, usually on horseback, and two hounds pursuing a hare as on the Wint Hill bowl; or a boar as on the bowl from Jacobstrasse, Cologne (Harden 1960, fig.16); or a stag as on another bowl from Cologne (Harden 1960, Fig.21); or, much less commonly, a bear as can be seen on a fragmentary vessel from Nettersheim (Kleeman 1963, abb.1). The rural setting of the hunting scenes is indicated by tufts of grass and a tree and the ground beneath the feet of the figures is shown as a horizontal line with pendant shorter vertical ones. No.48 clearly came from a bowl with a hunting scene. The largest of the fragments shows the hind legs and tail of one dog, traces of the rear paws of a second dog and the typical arrow-like representation of tufts of grass. The closest parallel for this precise configuration is on a bowl found at Bonn where two hounds and a mounted huntsman are shown pursuing a hare into a net (Harden 1960, fig.10). It is interesting to note that the Bonn bowl was not inscribed, and it seems likely that neither was the bowl from Caister. Had it been inscribed, the surviving portion of the rim is amply sufficient for the preservation of at least one letter.

Harden (1960, fig.72) has shown that the Wint Hill group of bowls were probably decorated at one workshop within a fairly short period of time though possibly by more than one person. He suggested that they were probably being made during a period centred on AD 320–330. This supposition has since been strengthened by the discovery of new bowls in well-dated contexts such as the fragments found at a villa in Bad Durkheim with pottery from the second quarter of the 4th century (Bernhard 1981, abb.49, nos 2 and 4).

When Harden published his account of the Wint Hill and related bowls in 1960, only three examples were known in Britain. These were the hare hunt from Wint Hill; a fragment showing a mounted horseman from Chesters (Harden 1960, fig.28) and fragments with an unidentified scene from Great Staughton, (formerly) Huntingdonshire, found in a context dated to the third quarter of the 4th century (Harden 1960, fig.29). Since then several other bowls have been identified (Price 1978, fig.59). At Barnsley Park, Gloucestershire, there was a fragment showing the hind quarters of a leaping animal (Price 1982a, fig.59, no.4) and at Shakenoak there was a small fragment showing a (?) bear's right hind leg (Harden 1973, fig.52, no.213). At Villa 2 Chilgrove, fragments of an inscribed bowl with pagan scenes set in roundels including a depiction of Silenus on a donkey were found (Down 1979, fig.56, no.7). Fragments have also been recovered at Cirencester (*J. Roman Stud.* (1968), 210, no.37), Gloucester (Charlesworth 1974, fig.29, no.16) and Binchester (unpublished). Similarly additional finds are now known from the continent including the bowl from Bad Durkheim mentioned above (Bernhard 1981, abb.49, nos 2 and 4); the bear hunting bowl from Bonn (Harden 1960, fig.10); the second bowl from Krefeld-Gellep Grave 2711 depicting Adam and Eve and dated to the period shortly before the middle of the 4th century (Pirling 1979, taf.63, no.2ab); fragments with an unidentifiable Biblical, Pagan or Christian scene found in a grave at Oudenburg (Mertens and Van Impe 1971, abb.64) and three fragments with a hunting scene from Eis Munts, Altenfulla, Tarragona (Price 1981a, fig.39). There is also a bowl with a stag hunting scene from a grave of the second half of the 4th century in Denmark at DalagerÅrd, Sønder Vissing, Central Jutland (Fischer



1981, fig.7). It is becoming increasingly evident, therefore, that the workshop producing the Wint Hill bowls must have been a very prolific one.

The commonest drinking vessels of the 4th century in Britain as on the continent were hemispherical cups (Isings Form 96) and conical beakers (Isings Form 106). Both of these forms are represented at Caister and together they form the bulk of the vessels found there, especially when it is realised that it is likely that many of the plain bubbly body fragments catalogued under No.138 came from this sort of vessel. The assemblage from Caister makes it clear that there are not just the two strictly-defined types — the curved hemispherical cup and the straight-sided conical beaker. Both of these are found (for example Nos 51–71 are hemispherical cups and Nos 49, 79–97, 100 and 103 are straight-sided conical beakers), but there is also a great deal of minor variation. Thus there are variants of hemispherical cups which have convex sides curving abruptly into flat bases (Nos 72–77); conical beakers with convex sides (Nos 50, 78, 98, 99); a cylindrical beaker (No.104) and even a beaker whose sides taper outwards (No.105).

In this assemblage there are slightly more conical beakers and variants of conical beakers than there are hemispherical cups and their associated variants (20 examples as opposed to 15). The ratio of conical beakers to hemispherical cups varies from site to site in Britain. At Barnsley Park, for example, hemispherical cups were dominant (Price 1982a, 177) and this was also the case at Towcester (Price and Cool 1983, 116). At Frocester Court, by contrast, there were many more conical beakers than hemispherical cups (Price 1979, 41). At present the state of knowledge about 4th-century glass in Britain is insufficient for us to be able to draw any conclusions as to whether this variation is fortuitous or perhaps has some chronological or regional significance.

The rims of conical beakers and hemispherical cups can either be upright or slightly curved. Among the vessels from Caister the hemispherical cups tend to have upright rims while those of the conical beakers were curved. The rim edges are cracked off. Here, as in most cases, the rims are left in their cracked-off state. This does sometimes result in a very uneven edge, for example on No.89, but usually the edges are quite smooth. In a few examples from this site, however, the edge has been worked after it was cracked off. This is seen on Nos 50, 52, 55, 60, 63, 65 and 79 and the treatment varies from a light smoothing with a wheel as on Nos 60 and 63 to the very carefully ground edge on No.50.

Hemispherical cups and conical beakers are almost invariably decorated with horizontal bands of lightly abraded lines. These bands tend to be concentrated at the rim and on the upper body and they may also be found on the lower body. The near universality of abraded bands on these vessels is well demonstrated at Caister where the only vessels identified as conical beakers or hemispherical bowls which do *not* have abraded decoration are Nos 71, 73–75, 81, 97, 99 and 103, and in none of these cases can it be shown that the vessel never had such decoration. Nos 71, 73–75 and 97 are base and lower body fragments and may have had abraded decoration on their upper body fragments. Nos 99 and 103 are very heavily weathered and No.81 has been affected by heat so that in all cases the existence or absence of abraded lines cannot be proved. In one example, the convex-sided conical beaker No.50, the abraded bands have been replaced by sets of carefully

wheel-cut grooves. This is most unusual. Although there can be no doubt that this is a 4th-century vessel, it shows workmanship of much higher quality than is usually seen on vessels of that date. Not only does it have wheel-cut grooves and a carefully ground rim, but it is also made of good quality pale greenish colourless glass with only occasional bubbles. It is difficult to find a parallel for this vessel. Similar wheel-cut grooves occur below the rims of conical beakers from Frocester Court (Price 1979, fig.16, no.4) and at Kingsholm, Gloucester (Price and Cool 1985, fig.20, no.89); and grooves on the body are found on a truncated conical beaker with a very small foot found at the Palais Kasselstadt, Trier (Goethert-Polaschek 1977, taf.43, no.314) and on a hemispherical cup in a grave at Eisenburg with coins up to AD 395–402 (Bernhard 1981, abb.62, no.7). We are not aware, however, of any vessel that combines wheel-cut grooves on the body with the short convex-sided conical form as seen here.

Other forms of decoration occur much less frequently on hemispherical bowls and conical beakers and they are generally applied in addition to the abraded lines. No.49 is a conical beaker with an abraded band at the rim edge and an inscription on the upper body of which all that remains is the upper stroke of an 'E' or a 'T'. When complete the vessel may have looked like the beaker found in a grave at Besseringer, Krs. Merzig-Wachen, which had the inscription VIVAS TUIS [FAV]STINE between two horizontal abraded bands (Goethert-Polaschek 1977, taf.43, no.295). In Britain similar beakers with inscriptions are known from Southampton and Dorchester, Dorset. A rim fragment with the letters 'LA' was found in a late 4th- or 5th-century context at Southampton (Harden 1958, fig.13, no.29); while at Dorchester one rim fragment with 'ET' was found at Poundbury (Price forthcoming) and another with a 'C' was found at Colliton Park (unpublished).

Nos 73–76 are convex-sided cups with flat bases which have self-coloured trails applied in a festoon pattern around the sides. On the one example where part of the upper body is preserved (No.76) it is obvious that part of the vessel above the trails was decorated with horizontal abraded bands. The body fragment No.77 also combines abraded bands and trails and is likely to have come from a similar cup. This type of decoration on hemispherical cups, which has not often been found in Britain, has been discussed in connection with the examples found at Towcester (Price and Cool 1983, fig.46, nos 19–22).

There are also several, probably four, vessels which have been decorated with coloured blobs of glass (Nos 99–102). Nos 99 and 100 were definitely conical beakers; the vessel form of Nos 101 and 102 cannot be identified with certainty. Two of the vessels, Nos 99, 101, have small blobs arranged in a triangle; No.102 had larger blobs of dark blue/green glass varying in size and arranged in close proximity to each other, and No.100 had one large isolated blue blob. In all cases the vessels themselves are made from greenish colourless glass. Coloured blob decoration is not uncommon on both hemispherical cups and conical beakers in the Rhineland (Fremersdorf 1962, taf.1–21 (conical beakers) and taf. 22–23 (hemispherical cups)). An increasing number are known from British sites. At Barnsley Park there were at least three vessels with this decoration, one of which was a conical beaker with emerald green and purple blobs (Price 1982a, fig.59, no.2). At Portchester a possibly hemispherical cup was decorated with a row of large isolated blue blobs (Harden 1975,

fig.198, no.10c). Piercebridge produced two vessels including a conical beaker with abraded bands and blobs of dark blue glass (Price and Cool forthcoming). Elsewhere coloured blobs have been found at Corbridge (Charlesworth 1959, fig.8, no.2 — dark green blob on olive green vessel), Frocester Court (Price 1979, fig.16, no.3 — dark blue blob on colourless vessel), Ilchester (Price 1982b, fig.112, no.23 — dark green blob on yellowish green vessel), and Wroxeter (Harden 1975–6, fig.6, no.1 — blue blobs and wheel incisions). A cup fragment with three small blobs arranged in a triangular pattern like Nos 99 and 101 has been found at Carrawburgh (Charlesworth 1959, fig.50) and this pattern is not uncommon on vessels found in the Rhineland (Fremersdorf 1962, taf.4, 9 and 41).

There are two joining fragments (No.107) which are too small for the form to be identified with certainty but which probably come from a conical beaker. This vessel has been optic blown, i.e. a partially inflated gob has been blown into a ribbed mould and then free blown or blown into a plain mould. This produces the diagonal corrugations. It is not unusual to find 4th-century optic blown body fragments on British sites but they are usually too small for the form of the vessel to be identified. No.107 is unusual in that it is of blue/green glass instead of the pale greenish colourless glass characteristic of the 4th century.

The use of hemispherical cups and conical beakers from the earliest years of the 4th century is demonstrated by fragments which have been found in securely stratified contexts. At *Verulamium* for example, hemispherical cup fragments were found in contexts dating to AD 280–315 and 300–315 (Charlesworth 1972, fig.79, no.61), and at Portchester a conical beaker fragment was found in a well filling where the latest coins were those of Constantine I dated to AD 308–317 (Harden 1975, fig.198, no.11). It is likely that both types developed in the last years of the 3rd century.

Before concluding the discussion of the conical beakers we may note the presence of two base fragments Nos 114 and 115. In neither case is much of the body retained but both could have come from conical beakers. Open pushed-in base rings such as that of No.114 are more usually associated with jars, bowls and jugs of the 1st and 2nd centuries (for example Isings Form 32, 35, 52 and 55) but conical beakers with such bases also exist and one was found with an inhumation of late Roman date at Glaston (Webster 1950, fig.1, no.5). As No.114 is made of typical 4th-century bubbly glass it is more likely to have come from such a beaker than one of the earlier forms with this type of base. It must be admitted, however, that a diameter of almost 50mm is rather large for this sort of vessel. No.115 appears to be the lower body and base of a conical beaker to which has been added a trailed base ring. This is not a very common feature of these vessels in Britain but it has been noted at, for example, York (Harden 1962, pl.66, no.HG 144) and Barnsley Park (Price 1982a, fig.59, no.25). There are two other base fragments with trailed base rings, Nos 116 and 117. In neither case can the form of the vessel be suggested but No.117 is interesting because instead of the usual single thick trail forming the base ring, it is composed of two very slender ones.

There are two examples of cups with convex-curved bodies and fire-rounded out-turned rims in typical 4th-century bubbly glass. These were never as common as cups with cracked off rims but there is an increasing amount of evidence to show that they were in use by the middle of the

4th century. They occur, for example, at Towcester in contexts dating from AD 330–70+ (Price and Cool 1983, fig.47, nos 40–4). It is noteworthy that very few of the 4th-century vessels from Caister had their rims finished in any other way than by being cracked off. There are only these two cups, the vessel catalogued as Nos 110 and 111 and discussed below, and the base fragment No.118. The form of the vessel this latter fragment came from is not known, though its lower body appears to have been cylindrical but it must have had a fire-rounded or possibly rolled rim as it retains a pontil scar from having been held on a pontil while the rim was finished.

The only other type of 4th-century bowl whose presence can be suggested at Caister is the wide indented truncated conical bowl of Isings Form 117 such as the example found at Hucclecote, Gloucester (Clifford 1933, fig.10). This seems to be the most likely source for the body fragment No.137.

As we have already noted vessels such as jugs, flasks and unguent bottles form only a small proportion of the assemblage. As the majority of such fragments as can be identified are made of the blue/green glass more characteristic of the 1st to 3rd centuries, the relative scarcity of 4th-century examples is especially marked. Most of the blue/green fragments from these vessels are small making the form of the vessel impossible to identify with certainty and the only secure indication of their date is generally provided by the colour of the glass. A jug is definitely represented by the blue/green ribbed handle fragment No.44 and probably by the pushed-in colourless base fragment No.27. The blue/green tubular pushed-in base fragments Nos 33 and 34 could also have come from jugs, although the cylindrical cup Isings Form 85 had this type of base and was occasionally made in this colour glass. It is not certain whether the blue/green base fragment No.36 had an open or a tubular pushed-in base ring. As already noted the open pushed-in base occurs on a variety of jugs, jars and bowls of the 1st and 2nd centuries. No.36 is an interesting piece because it shows the use of a technique that has not often been noted on Roman glass. This is the application of a pad of glass to the centre of the underside of the base to which the pontil iron was attached while the rim was being finished in order to protect the thin base of the vessel from damage when the iron was detached. This has resulted in a localized thickening on both the upper and lower surfaces of the base. The two blue/green fragments (Nos 35 and 35b) from the centres of high-domed bases with central kicks are also most likely to have come from a jug though they could have come from a flask.

Flasks are represented by the rim and neck fragment No.37. This piece is noteworthy not only because it is by far the largest fragment of blue/green glass to survive, but also because of the combination of rim finishing it shows. There appears to have been an unsuccessful attempt to roll the rim edge in which was then 'tidied up' by being fire-rounded. The whole piece looks very carelessly made. There are also two small neck fragments (Nos 39 and 39b) and three concave base fragments (Nos 40, 40b and c) that probably came from flasks. Unguent bottles are represented by the rim fragment No.38 which is likely to have come from a candlestick unguentarium of Isings Form 82 which was in use during the 2nd and early 3rd century; and by the four base and one lower body fragments (Nos 41–43) which could have come from tubular unguent bottles

(Isings Form 27) which were mainly in use during the early Roman period.

Suggesting a date for the tiny two-handled flask No.30 is difficult because even in its very fragmentary state it is obviously an uncommon form. It may have been a miniature copy of a two-handled amphorisk (Isings Form 60). This form has occasionally been found in dated contexts ranging from the 1st to 4th centuries. The good quality of the colourless glass might suggest that it was most likely to have been made in the earlier Roman period.

Jugs and flasks which are of 3rd- or 4th-century date are only represented by Nos 17, 28, 29, 110–113 and 119–121. The colourless neck fragment with wheel-cut line, No.17, might have come from a globular bodied flask of Isings Form 103 such as the example from York (Harden 1962, pl.67, no.HG 33). These are a mid-3rd- to mid-4th-century form. The thickness of the glass of this fragment, however, is much greater than normal. The very thick colourless bases Nos 28 and 29 could also have come from flasks. Two similar thick bases were found at Piercebridge, one from a 3rd-century context (Price and Cool forthcoming). Both the Piercebridge bases and a third example from York (Charlesworth 1978, fig.30, no.177) differ slightly from the ones here in that they have a dimple on the underside of their bases which the Caister examples do not have. The pale greenish colourless handle fragment No.119 came from a 4th-century jug of Isings Form 120–4. The colourless base fragments Nos 112 and 113 may also have come from this range of jugs but it is possible that they came from beakers or bowls.

Quite what type of vessel is represented by the fragments Nos 110 and 111 is not known. They are likely to be part of the same vessel as the glass seems to be identical and they were found together; but they have been provisionally catalogued separately because we know of no form that would accommodate all three fragments. If only one vessel is represented it would have had a narrow funnel mouth with a rolled-in edge, a small globular body and a tubular pushed-in base ring and must presumably have been some form of flask. The quality of the glass makes it certain that it is of 4th-century date and individual elements of the vessel are not hard to parallel amongst 4th-century vessels. For example, the tubular pushed-in base ring is found on both beakers of Isings Form 109 and jugs of Isings Forms 120–5.

Four different types of bottles were found at Caister. Blue/green prismatic bottles are the earliest type (Isings Form 50). They are represented by thirty-two fragments (Nos 45–47) which include a base and angle fragments (Nos 46 and 47e, f and g) which show that both square and hexagonal bottles were present. Blue/green prismatic bottles came into use in the mid-1st century. They are primarily a very common 1st- and 2nd-century form although they may have continued in use into the 3rd century. The one base fragment (No.46) retains a circular moulding with a diagonal bar outside it in the corner of the bottle and may originally have had a moulded design inside the circle, perhaps a cross as on a similar base from Fordcroft, Orpington, Kent (Tester 1969, fig.12a).

Ribbed bottles of Isings Form 89 and 128 are represented by Nos 122–126. Although the type is known to have originated in the 1st century, they were mainly in use during the 3rd and 4th centuries. They occur in both a one-handled form (Isings Form 89) and a two-handled form (Isings Form 128) with the former being the earliest,

but there is no indication of which type the Caister bottles belonged to. These bottles are often called Frontinus bottles because that name, and to a lesser extent others, often occurs as part of a moulded design on the base. The base fragment No.125 retains the letter 'A'. This letter does not often form part of the base inscription on these bottles but Chassaing (1961, 7 and fig.3, nos 6 and 11) has recorded it occurring in FRONTINIANA, ASIAC and EQVALVPIO. The occurrences in Britain of inscribed base fragments has been discussed in connection with the example found at Towcester (Price and Cool 1983, 117). No other base with the letter 'A' has yet been found in Britain. No.125 is also noteworthy because it is made of blue/green glass while the other examples of this type from Caister are made of typical 4th-century greenish colourless bubbly glass. Elsewhere in Britain Frontinus bottles in blue/green glass have been found at Piercebridge (Price and Cool forthcoming) and Manchester (Price 1974, fig.48, 89). No.126 is a fragment from the shoulder of one of these bottles. In addition to the main horizontal corrugations, it appears to have shallower diagonal corrugations. This is a most unusual feature for which we have not been able to find a parallel.

An increasing number of these ribbed bottles are being found on late Roman sites in Britain but they were not as common as the prismatic bottles, such as Nos 46 and 47 were in the 1st and 2nd centuries.

The third type of bottle found at Caister is a hexagonal bottle with diagonal corrugations (Nos 127–129). This is a rare form of late Roman bottle. When found complete as at Krefeld-Gellep (Pirling 1974, tafn. 40, no.9a, b and 103, no.5) these bottles have dolphin handles and plain necks and are clearly variants of Isings Form 100. Their rarity is demonstrated by the fact that Isings did not note their existence, although Morin-Jean (1913, 66) described them as his Form 18. The bottles from Krefeld-Gellep were both found in graves of the first half of the 4th century. In Britain at least two bottles of this type were found at Barnsley Park and some of the fragments came from a context dated AD 275 to 315 (Price 1982a, fig.60, nos 44 and 47). A minimum of two of these bottles is also represented by the twenty-six fragments found at this site with Nos 127 and 128 possibly having come from the same bottle.

The fourth type of bottle is represented by the shoulder fragments No.130. They came from a cylindrical bottle whose precise form is not known. The pale greenish colourless bubbly glass suggests however that it was of 4th-century date. This is also the case for the handle fragment No.131.

We have now discussed all the fragments of vessel glass for which forms can be suggested with any degree of certainty. There remain a number of body fragments which are worthy of note because of their decoration.

No.1 is the only fragment of glass from Caister which has been ground and polished. It is of good quality colourless glass and retains a raised cordon. This decoration, combined with the straight-sided curve of the body, suggests that the fragment might have come from a facet-cut beaker (Isings Form 21) like, for example, the two found at *Verulamium* (Charlesworth 1972, fig.77, nos 41 and 42). These were in use during the late 1st and 2nd centuries; but No.1 is so small a fragment that a certain identification cannot be made. It is worth noting, however, that it is likely to be one of the earliest fragments of glass found at Caister.

No.18 came from a colourless indented vessel with opaque white snake thread decoration. This type of glass

was in use in the late 2nd and early 3rd centuries in many parts of the Roman Empire but it is not very common on British sites. The snake thread fragments with coloured trails have recently been discussed in connection with the glass found at Whitton (Price 1981b, fig.154, no.5). Snake thread glass with opaque white trails has come from Whitton (Price 1981b, fig.66, no.8), Aldborough (Charlesworth 1959, pl.III, no.4), Caerleon, Colchester, Old Penrith and Carlisle (all unpublished). All of these fragments had the opaque white threads combined with blue threads. At Silchester they were combined with yellow threads (Boon 1974, 232).

No.32 is a blue/green body fragment with close set shallow, optic blown ribs. This type of ribbing is common on 1st- and 2nd-century jugs (Isings Form 52) and tubular ribbed bowls (Isings Forms 44).

No.132 is a bubbly colourless fragment decorated with rice grain facets. The style of cutting is similar to that seen on 4th-century conical beakers with geometric wheel-cut designs like the one from Grave 2253 at Krefeld-Gellep (Pirling 1974, taf.103, no.4) deposited during the first half of the 4th century. The combination of this style of cutting and the straight side of the fragment make it possible that No.132 came from such a beaker but again the fragment is too small for there to be any certainty about this.

No.139 is made of turquoise glass with marvered opaque white trails. Unfortunately the fragment is far too small for the type of vessel it came from to be identified and the colour is very unusual. This and the pattern of marvered opaque white trails can be seen on another fragment from the York Minster site (pers. comm. Professor Vera Evison) and the glass seems to have come into England between the 7th and 9th centuries.

The other decorated body fragments all have types of decoration which were in use throughout the Roman period and the only indication of their date is provided by the quality of the glass. The good quality colourless glass of Nos 19 and 20 and the blue/green glass of Nos 31 and 138b suggest they were of 1st- to 3rd-century date, while all the other fragments include two examples with spectacle trails (Nos 19 and 19b) and three with straight trails (Nos 134, 135); eight fragments with indented decoration (Nos 20, 31, 137 a-d); a fragment with a pinched-up blob (No.136) and one fragment with a simple wheel-cut line (No.133).

#### Distribution (by MJD)

The distribution of vessel glass (based on count) was examined for any information relating to the occupation; glass came from the following main deposits: **Area 1:** Unsealed 'spill', collapse of buildings; 159 (27.3%). Debris on floors, Building 1; 146 (25.0%). Plough *etc.*; 77 (13.2%). Rampart refuse deposit; 76 (13.0%). Late group, hypocaust Room 5, Building 1; 66 (11.3%). Area of Building 2; 24 (4.1%). **Area 2;** 8 (1.4%). **Area 4** cemetery, harbour road; 25 (4.3%). **Area 5;** 2 (0.3%).

In Area 1, 52% therefore came from late deposits, 'spill' and rubbish in Building 1. The distribution in Building 1 is as follows: Room 1 48.6%, one earlier sherd; Room 2 26.7%, five earlier sherds, four from a post-Roman disturbance through floor levels; Room 3 11.0%, three earlier sherds; Room 4 7.5%, three earlier sherds; Room 5 0.7%, one sherd *outside* hypocaust fill; Room 6 5.5%.

Thus most finds were from Rooms 1 and 2, grid squares DEVI-VII. This concentration is similarly reflected when the finds from the 'spill' are examined. Apart from a scatter in A-C squares, 122 sherds of the 159 total came from D squares, and a further fifteen from E squares overlying both building and rampart refuse. There is a large quantity from DVI-VII of 100 sherds (63% of all glass from the 'spill') overlying Rooms 1-2. If the quantities from the floors and in the 'spill' are combined, approximately 69% (of the total 305) came from the area of Rooms 1-2. Only four sherds of earlier glass came from the 'spill' in D squares (4%) against eight from the relatively small amount in A-C squares (36%).

The total quantity from Building 2 including finds from the plough and 'spill' came to only thirty-eight sherds; although twenty-six were of earlier glass, this is qualified by the inclusion of fifteen sherds being from the flask, No.30, from the hypocaust fill, which also produced the early beaker, No.2, and bowl, No.24. The earlier date of the glass finds from the hypocaust is also reflected by the pottery from the same layers (including a Chalk amphora, Fig.142, No.174), which can be dated to the 3rd century.

The seventy-six sherds from the rampart refuse deposit divide evenly between earlier and later types (thirty-six early, forty late), a similar division to that occurring in the window glass. The higher percentage of later refuse in E squares is evident (thirty-six later sherds of total of sixty-one), against F squares (four later sherds of total of eleven). The 'spill' in E squares (covering both refuse deposit and part of the building) produced fifteen sherds of which ten were of later types.

The lowest part of the refuse, the rampart spill, produced only three finds, all of the earlier types (Nos 39, 47, 47m).

Since glass would have been collected for re-use, the quantity of late glass from the site is not surprising, although the concentration in Rooms 1-2 is notable, as is the unusual deposit in the north hypocaust channel of Room 5. This deposit is particularly difficult to understand; close examination of the site records led to the conclusion that the four separate coin hoards (all of Constantinian date) specified by Green were probably the dispersed remains of one or two hoards, together with the other finds of Constantinian coins scattered through the fill of the channels. There is reason to suspect more post-Roman disturbance in this room than was recognized during excavation. The glass deposit (Nos 51, 53, 55, 58-60, 66, 68, 71d, 71e, 77d, 102, 106a, 106ab, 129, 137c, 138am) came from the north channel and the adjoining northern part of the central north-to-south channel and is complicated by being directly associated (in the same finds bag) with the only sizeable quantity of pottery from the channel fills. Only 203 sherds (3.7kg) came from the fill, of which 103 sherds (2.3kg) came from the lower fill (LB 2571), most of it found with the glass vessels. The sparsity of pottery and animal bones from the rest of the hypocaust channel fills suggests that the deposit in question of glass and pottery vessels occurred separately; the records do not provide sufficient information to tell whether this post-dated or preceded the main backfilling of the hypocaust. Later Roman disturbance of that corner of the room cannot be discounted

# Chapter 7. The Pottery

This section is divided into four:

- I. Prehistoric
- II. Roman
- III. Middle and Late Saxon  
Stamford Ware
- IV. Early medieval to 19th century

## I. Prehistoric

### The Collared Urn

by Andrew J. Lawson and Frances Healy  
(Fig.133)

**Collared urn.** Eight joining sherds. SF 2794, Area 4, KVIII, LB 3035, 'dark filling' at top of outer defensive ditch.

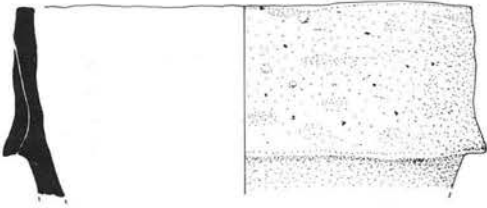


Figure 133 Collared urn. Scale 1:3.

These sherds form part of an Early Bronze Age Collared Urn. Its coarse, fairly soft fabric is tempered with grog, some fragments of which project from the surface, while others have fallen out. Some sand is also present. Coil-building is reflected in a slightly sinuous profile. Grog is the normal temper of Collared Urn pottery in southern Britain (Tomalin 1983, 6). The lack of decoration and the fragmentary state of the vessel make it difficult to classify further, although its slightly peaked collar suggests that it may fall relatively late in the schemes of both Longworth (1984) and Burgess (1986). The Collared Urn tradition as a whole seems to have been current from c. 1800–1250 bc in radiocarbon years, or c. 2200–1500 BC in approximate calendar years (Burgess 1986).

Collared Urns have been found at some thirty sites in Norfolk, thirteen of which are barrows. Plain Collared Urns are known from three other locations in the county: Castle Acre (Site 4029), Cawston (Site 7424), and Keswick (Site 9710), all without associations and hence no more closely datable than the Caister vessel. Although some Collared Urns are apparently from domestic contexts (Longworth 1984, ch.5), the majority are from funerary deposits and are normally associated with barrows. A large number of what may be former barrow sites, marked by crop-mark ring-ditches, are known from the Isle of Flegg (Lawson 1986, 114 and fig.98). Whatever the circumstances in which the Caister urn was originally deposited, it is the first artefact of the Early Bronze Age to be found in the immediate area, south-east Norfolk being generally poor in contemporary

pottery and metalwork (Lawson 1984, fig.6.6; Longworth 1984, fig.42).

Indeed, despite the obvious presence of man in the area, the only artefactual evidence throughout the Bronze Age has so far consisted of Late Bronze Age metalwork in the form of a gold hoard found to the south of the Anglo-Saxon cemetery (Hawkes and Clarke 1963), a bronze hoard from West Caister (Lawson 1979), and a number of stray metal-detector finds made along the line of the Caister By-pass (Lawson 1979, 178). Because of this dearth of evidence, the current find makes a valuable, if meagre, contribution to our knowledge of the Bronze Age in Flegg.

### Iron Age pottery

(unillustrated)

Thirteen sherds of Iron Age date were recovered from Area 1 (AVIII pl/soil, AIX, BXI spill, CVIII spill, DVII, FVIII refuse and GXII). There is a fairly wide range of fabrics, from coarse grey hand-made with flint gritting to finer thin-walled sherds. This small collection of scattered material does not resemble the material from the By-pass site (see below) of mid-1st century date. No clear evidence of Iron Age occupation has been found in excavation, but most collections have at least a sherd or two of Iron Age date, and it seems likely that somewhere in the vicinity of the fort there was pre-Roman occupation.

## II. The Roman Pottery

with contributions by Joanna Bird, Brenda Dickinson, Kay Hartley and D.F. Williams  
(Figs 134–64; Tables 21–39)

### Introduction

Approximately 1 tonne of pottery was excavated. Its importance, as with the finds, rests in the relatively restricted date range of the site, covering the last two centuries of the Roman period, with little or no earlier material. This is an archaeological rarity of importance regionally and nationally.

The date and style of excavation, with records strongly biased towards finds, and the bag number system used, both influenced and limited the work on the pottery. The grouping of bags into possible layers (= Layer Bag, LB numbers) from the site records was followed by examination of the pottery from each individual bag, and a listing of small finds from each context. Any doubtful bags were phased upwards.

The very large quantity of pottery and the quality of the records led to the decision to record and quantify (for count, EVEs and weight) only a limited amount. The absence of computer facilities and the necessity to extract data manually has restricted use of the resulting records to only a few groups, the most important of which are the rampart spill, the successive layers of refuse above this, and the rubbish from Building 1. Relatively late in the work, it became apparent that there had been unrecognized post-

Roman disturbances across the rampart, which limited the use of the large refuse deposit.

A large type series covering some 200 years was not felt to be useful or necessary. The compromise solution was to extract the earliest identifiable group, the rampart spill, and a late group, the rubbish from Building 1, to illustrate and examine the beginning and end. Regrettably neither was very large, and the bulk of the 'stratified' pottery came from the later refuse dumping on the rampart. This deposit contained pottery of the full date-range, but despite disturbances, could be used in a limited way to chart changes in the pottery assemblage. This was based on the grid lines which were fortuitously usefully located, and is discussed below.

A large amount of pottery came from the unsealed 'spill' layers overlying the collapsed buildings. These were recorded at a lower level, omitting EVEs. Pottery from similar contexts, the trial trenches of Area 2, the cemetery Area 4, *etc.* were recorded very basically on count and weight for fabrics, the forms being noted, and the information that can be extracted is restricted. Although all samian from such contexts was examined, no extensive work was undertaken. All mortaria and amphorae were extracted and reported upon.

Very few contexts were significant for dating and any view of the date of the initial occupation must rest on the pottery and finds in the rampart spill, representing the earliest rubbish. Occasionally contexts were isolated in the hope of being able to date the buildings, but these were of little or no use either because the contents were indeterminate or due to stratigraphic uncertainty. A major aspect of the site is the absence of any significant clearance to 'natural'; the occasional 'sondage' was excavated, sometimes below the footings of walls, but the finds from these were both sparse and mixed. Evidence of possible structures below Building 1 were not investigated, and excavation in the area of the north-west range virtually stopped at the indeterminate 'occupation' layers below the spill. The amount of post-Roman disturbance in the open yard and road areas was considerable.

The pottery report consists of:

- Samian
- Fabrics
- Catalogue divided into three sections:
  - i Rampart spill group, the earliest rubbish on the rampart.
  - ii Rubbish from Building 1, representing the last occupation.
  - iii Type series from all other contexts, arranged:
    - a Amphorae
    - b Fine wares, including various cream fabrics
    - c Coarse wares
- Mortaria, fabrics, catalogue and discussion
- Miscellaneous decorated sherds, graffito *etc.*
- Discussion: Various vessels and wares
- Discussion: Pottery related to the site.

Due to the presence of several fabric groups, individual descriptions are included in the catalogue where necessary. Parallels are seldom quoted as there are few published sites of significance for, or comparable to, Caister. All illustrated vessels from the main Area 1 can be related to their site contexts and associated finds by the quoted site codes, the absence of which indicates that the vessel was unstratified.

#### Abbreviations

Cam.	<i>Camulodunum</i> (Hawkes and Hull 1947)
EVE(s)	estimated vessel equivalent(s)
Gose	Gose 1950

G / Gillam	Gillam 1957
pl/soil	ploughsoil
PR	post-Roman [context]
Rm	Room [of Building 1 or 2]
Roberts	Roberts 1982
RPNV	Howe <i>et al.</i> 1980
samian F	samian Form
sh(s)	sherd(s)
trit.	trituration
Young	Young 1977
and in the samian report:	
CG	Central Gaulish
EG	East Gaulish
SG	South Gaulish
Had.	Hadrianic
Ant.	Antonine
D.	Déchelette 1904 [figure-type in]
O.	Oswald 1936-7 [figure-type in]
R.	Rogers 1974 [motif in]
S. & S.	Stanfield and Simpson 1958
Superscript 1	Stamp known from the pottery in question
Superscript 2	Stamp not known from the pottery in question, but other stamps of the potter recorded there
Superscript 3	Assigned to the pottery on form, fabric, <i>etc.</i>

#### The samian ware

by Brenda M. Dickinson

#### Introduction

The earliest samian in this collection consists of a few 1st-century or early 2nd-century sherds from La Graufesenque, none of which is pre-Flavian. There is also a small quantity of pre-Antonine or early-Antonine ware, including one vessel from Les Martres-de-Veyre, one from Trier Werkstatt II and one each probably from Banassac and La Madeleine. All the rest are from Lezoux.

The bulk of the assemblage is late-Antonine and 3rd century. The proportion of EG ware is abnormally high for Britain as a whole, being approximately three times that of the Lezoux ware. This is not unprecedented in eastern England, however, on sites which formed part of the Saxon Shore system, and the same applies to the unusually high proportion of Trier to Rheinzabern ware. Given the date range of the bulk of the samian, it is not surprising that there are only four vessels from the Argonne factories.

Particularly noticeable are the large quantities of both EG and CG gritted mortaria and of bowls of F38, which could be used as if they were mortaria. These forms were as popular here in the late 2nd and 3rd centuries as the common dish and cup Fs 31, 31R and 33, and together with them make up the bulk of the plain samian. Other plain forms represented are 79, 79R, 80, Ludowici SMb and the Trier Massenfund F8b. None of these will be earlier than c. AD 160 and the last two are almost certainly 3rd century.

The decorated ware (see Figs 134, 135) includes bowls in the styles of later Lezoux potters, such as Banuus, Caletus, Do(v)eccus i, Iullinus ii, Iustus ii, Mercator iv, Paternus v, Priscus iii and Servus iv. Three of these bowls, in the styles of Caletus (No.22), Paternus v? (No.8) and

Servus iv (No.16), though decorated in standard Lezoux style, are almost certainly in Rheinzabern fabrics, perhaps suggesting that moulds were acquired and used by Rheinzabern potters, since there is no evidence that the potters involved ever worked there. A link between the two potteries has previously been noted at Rheinzabern, in the form of a poinçon with figure-types at both ends and stamped on both sides by the Lezoux potter Paterclinus, and several of the figure-types used at Rheinzabern are based on Lezoux originals.

EG ware is notoriously difficult to date closely, in the absence of more than a handful of well-dated groups, but much of the EG ware from this site is likely to be 3rd century, since Rheinzabern and Trier are not known to have outsold Lezoux in Britain in the 2nd century and only came into their own here when Lezoux stopped exporting, *c.* AD 200. One of the makers of decorated samian represented, Dubitatus/Dubitus of Trier (No.10), is dated *c.* AD 225–245 by Bird in her report (1986) on the samian from New Fresh Wharf, London. This is the latest datable piece from Caister, though there is no reason why samian should not have continued to reach the site up to the end of the export period, in the third quarter of the 3rd century.

#### *Distribution and sources (by MJD)*

(Tables 21, 22; microfiche)

The distribution of samian (1525 sherds, weighing over 26kg) by area is shown in Table 21. Detailed reports were not considered useful for Areas 2, 4 and 5, or the plough of Area 1 (the sources for the Area 1 plough were analyzed). No samian occurred in Area 6. All samian was checked, and notable sherds are included under decorated wares and stamps. Quantification was limited to count and weight.

The sources of the samian from the Area 1 stratified layers, including the spill representing the collapse of the buildings and PR contexts are detailed on Table 22, which shows the predominance of EG wares at 66.6% count and 70% weight. The table also details the breakdown of sources of sherds from Area 1 plough, where the percentage of EG wares increased to 85.5% and 89.2% respectively. This contrasts with the 11kg recovered from Brancaster, where only 38% from the 1977 excavations was from EG, although this increased dramatically to over 70% in the small quantity from the 1974 excavations (Dickinson and Bird 1985, 74). No information is published from Burgh Castle where '... there is virtually no samian pottery' (Johnson, S. 1983, 89).

#### *Stratigraphic occurrence*

Over 50% (figures based on weight unless stated otherwise) of the CG sherds came from the main refuse dumping on the rampart, where CG wares represented over 30% of the samian. The earlier rubbish of the rampart spill produced only fifty-two sherds, of which only 20% were CG. The only other group of layers producing any quantity of CG sherds were those comprising the collapse of the buildings, the spill, where 25% of the samian was CG.

Samian in the spill layers was concentrated in the E squares, overlying the refuse on the rampart and to the north of Building 1, A–C squares, whereas the spill overlying Building 1 produced few sherds. A check of the spatial distribution showed large quantities along the rampart, with a notable concentration in FVI, the grid square covering the rampart, *etc.*, adjacent to the gate.

The samian proportion of the assemblages studied quantitatively may be summarized (based on weight): Rampart spill 5.3; Refuse F squares 6.5; Refuse E squares 2.1; Rubbish in Building 1 0.5; Spill 1.3. The proportional decline in the later assemblages validates those groups.

#### *Samian mortaria*

Apart from the high proportion of EG wares, there is an unusual number of samian mortaria, particularly from EG where they represent 33.4% (weight); bowls as Fs 38 and 44 account for a further 6.6%. This may be contrasted with the proportions of CG wares accounted for by mortaria, at 14% and by Fs 38, *etc.*, at 3.7%.

The EG mortaria figures contrast with those from Brancaster (presumed to be based on vessel count) where mortaria represented 16% of the EG vessels, and only 4.4% CG. A rough vessel count for Caister yielded comparative figures, with mortaria in EG fabrics at 31.8% of 296 vessels; in CG fabrics at 12.5% on 128 vessels.

Both sites contrast with the samian from St Magnus House, London (Bird 1986), where the summary of identified samian forms based on sherd count show that mortaria accounted for 5.8% of the samian from CG and 8.4% from EG. The Caister results therefore appear exceptional, but more evidence including directly comparable quantification is needed for other sites, particularly as the overall proportions of CG to EG are the reverse of those from St Magnus House, where EG wares account for 28.5% on sherd count (against between 67 and 85% count or 70–89% weight of all samian at Caister).

#### *SG and earlier CG wares*

The few SG sherds occurred in the refuse dumping on the rampart, apart from one sherd in the ditch fill and one from a test hole in CVI cut down to natural. One of the few sherds from the outlying trial-trenches in Area 5 was a SG F37 of Flavian-Trajanic date; an early mortarium (No. 718) also came from this area. The Hadrianic or early Antonine sherds were scattered both spatially and stratigraphically.

#### *Summary Catalogue*

##### *Stratified layers, Area 1*

Unless otherwise noted, all the CG ware is Ant., mainly after *c.* AD 160, and the EG ware is late 2nd or early 3rd century.

##### *Rampart spill*

**EVIII 833** CG F31, EG F31, see stamp No.24. **EIX 954** CG Fs 31, 37 (see Decorated No.11), and a dish, EG Fs 30 or 37, 31 (4), 33 (2), 38 (2), 45, a jar, a gritted mortarium and three scraps. **EIX 2172** CG F37, see No.12, EG F38 or 44 (?). **EX 1182** CG Fs 31 (2) and 37 (see Decorated No.7) joining **FIX** (2123) below, EG Fs 18/31R (?), 30 or 37 (2), 31, 33 and 45 (2). **FVIII 925** EG Fs 31R, 33, 45, Curle 21, a gritted mortarium and a dish or bowl. **FIX 2131** CG F72, EG scrap. **FX 1202** CG Fs 31 (burnt) and 31R, EG Fs 30 or 37 and 45.

##### *Gully F58*

**EVI 1554** EG F30 or 37. **FVI 781** EG F37 and a scrap. **FVII 959** EG F33 and a footing.

##### *Early gully F59*

**FVI 1266** CG F31, perhaps from Les Martres-de-Veyre, and Had.-Ant. **FVIII 977** EG scrap.

##### *Cobbles, etc: Portico*

**EVI 946** EG Fs 31 and 45. **EVI 1587** CG F31R and a scrap. **EVIII 919** EG mortarium footing. **EX 1187** CG F33, EG F45 (2).

### Refuse on the rear of the rampart

(the refuse deposit is split on the basis of Green's records)

#### a) Upper refuse

**EVII 164** CG F30, EG F38 and a scrap. **EVIII 708** SG or CG scrap, late 1st or early 2nd century, CG Fs 27, 33 (2) and two scraps, some Had. or early Ant., EG Fs 31 (2), 31R, 45 and three scraps. **EX 1154** EG Fs 31 (4), 31R (2), 32 etc., 33 and 37. **EXI 2045** CG Fs 31, 33, 45, 79 or Ludowici Tg and a jar, EG Fs 31, 45, an inkwell and a scrap. **EXII 2614** CG Fs 31 and 37 (see Decorated No.1). **FVI 735** SG F29 basal zone, corded motifs c. AD 50–70, CG Fs 31 (2), stamps Nos 16 and 19, 37 (4) (see Decorated No.2) Curle 15 or 23 and three scraps, CG or EG pedestal jar, Ant. or later, EG Fs 31 (5), 31 or 31R (2), 31R (4), 32, 32/40, 33 (3), 36, 37 (4), 38, 43, 45 (8), gritted mortaria (5) and five scraps. **GVI 3529** SG(?) F37, perhaps 2nd century Banassac ware, CG F31R, EG F45 and a scrap. **FVII 69** SG inkwell and cup, Flavian, CG Fs 31, 31R (2), 37 (2) (see Decorated Nos 4, 5) (and stamp No.2), 45, 46, 68? (black samian) (see No.3) and 72 (?), EG Fs 31 (2), 31R, 33 (2), 37 (2), 38, 45 (2), gritted mortaria (2), Lud Sb and several scraps, one F37 from the same bowl as Decorated No.7 from FIX (2123) below; other joins Decorated No.10 from FVII (936) below. **FVIII 49** None of the material is before c. AD 160, and much of it is probably 3rd century, CG Fs 31 (2) (stamps Nos 6 and 23), 31R, 37 (2), 38 or 44 (stamp No.10), 72 and a scrap, EG Fs 31 (2), 31R (3), 32, 33 (8), 37 (2) (see Decorated No.6), 30 or 37, 38 (3), 45 (3), gritted mortaria (2) and two scraps. **FIX 216** CG scrap, EG Fs 31 and 45 (2). **FIX 2123** All the samian falls within the range c. AD 160–260, and most of it is probably 3rd century, CG Fs 30, 31 (3) and 37 (3), see No.7 joining EX (1182) above, Dech. 72, EG Fs 30 or 37 (rim), 31R (3), 32 etc., 38, 45 (2), a jar, a gritted mortarium and two scraps, also a variant of F44 (with another sherd in EVII (154) below), like F8b in the Trier Massenfund, but typologically earlier (Rei Cretariae Romanae Fautores Acta XIII (1971), 25). **EIX 535** CG Fs 36, 37 (2) (see Decorated No.9), and 45, EG Fs 30 or 37, 31, 31R, 37 (see Decorated No.8), 38 (2), 79, 43 or Curle 21, Ludowici Tb(?), a mortarium and two scraps. **FX 1200** CG F31.

#### b) Lower refuse

**EVII 600** The material ranges from the Flavian period to the early 3rd century, SG F18, CG Fs 31 (2), 45 (2), 80 (?) and a scrap, EG Fs 31, 31R, 33 and a scrap. **EVIII 1049** CG F33 and a jar, EG Fs 31R, 33, 36 and 38 (2). **EVIII 895** CG F31, EG Fs 30 or 37, 33 and 45, and a bowl, approximately F37 (Argonne Ware) rouletted. **EIX 937** EG Fs 31R and 38. **EIX 1872** CG F31R, EG Fs 30 or 37, 37 (stamp No.5), and 45 (2). **EX 1167** EG Fs 33, 45 and a gritted mortarium from the same vessel as EX 1175 below. **EX 1175** CG F31, EG Fs 30 or 37, 31 (stamp No.12), 38 and a mortarium (from the vessel as in EX 1167 above), a stamp fragment on a F37 is recorded from this layer, but is missing (see stamp No.4). **EXI 2069** EG F31 (see stamp No.14), 33 and a mortarium. **FVI 3431** CG F31 (2) (see stamp No.3), 31R and 38, EG Fs 30 or 37 and 45. **FVII 936** SG F33 (?) and a scrap, CG Fs 31 (2), 33 (stamp No.20) and a scrap, EG Fs 31 (3), 31 or 31R, 31R (3), 37 (see Decorated No.10), 45 (2) and a scrap, the 37 joins FVII (69) above. **FIX 2164** CG two joining frags of F37, c. AD 160–200.

#### Defences area

**GV–VII 920** ditch fill below wall spill, CG Fs 18/31R (Had. or Ant.), 31, 31R, 38 or 44 (2), 45, 72 and Curle 15 or 23, EG Fs 38, 45 (?), with heavily-worn footing, two gritted mortaria (one Argonne fabric) and a body sherd. **GV–VII 1037** rapid silt in ditch, CG F31 (2), EG mortarium. **GIX 1459** earth over berm and 'palisade' trench F66, CG F31R, heavily-worn footing, EG F31R. **GVI–XI 1463** fill 'palisade' trench F66, EG gritted mortarium, burnt.

#### Main building

**DVI 690** CG F30 or 37 rim. **DVI 1743** EG scrap. **DVI 2823** CG(?) F45, heavily burnt. **DVII 988** EG Fs 31 (Argonne Ware), 36 and closed form, see Late samian flagons, below. **DVIII 2051** CG F30 or 37, EG Fs 30 or 37, 40, and 45 heavily worn inside. **DVIII 1883** CG scrap. **DX 2548** 1 sherd, missing. **DXI 3542** CG F31. **BVII 3537** CG F33, Had. or Ant. **BVII 1820** CG scrap, CG(?) F79R or Ludowici TgR, burnt. **CXI 2927** CG F43 or 45. **CXI 2901** EG F33.

#### Road layers

**AIV 2390** CG F30 or 37 rim. ?Had. **CV 2334** EG gritted mortarium. **EV 1546** CG Fs 30 or 37 (base), 45 and a scrap, EG F45 and two bowls. **FVI 1343** CG F37, from the same bowl as Decorated No.2 from FVI (735) above, EG Fs 32 etc. (?), 45, a gritted mortarium and four scraps.

#### Miscellaneous layers/features

**AV 102** pit F1 CG F31R mid-Ant., EG F37. **AVI 1474** top fill, corn-drier F3, EG inkwell. **AVI 1482** possibly pre-construction corn-drier F3, CG F18/31R (?), Had. or Ant. **AVI 67** indeterminate rubbish spread, CG F30 or 37 rim Had., EG Fs 30 or 37 (rim), 33, 45 (2) and 43 or 45. **AIX 1622** F7, EG gritted mortarium. **AIX 2453** lowest layer on natural, CG jar, barbotine decoration. **AX 1519** fill gutter F12, CG F79 etc. R. **AX 2649** clay on mortar ?floor, CG or EG gritted mortarium, burnt. **BXI 3002** clay ?occupation below spill, EG F33 burnt. **BXI 3007** dark earth below 3002, ?gullies, EG F31 (Ludowici Sa) probably mid-Ant. **CVI 2352** 2 hearths down to natural, SG dish, CG burnt scrap, EG F31. **CDVI 3043** clay, EG Fs 36, Lud Sa or Sb, later 2nd century.

#### Spill

**ABIX 1579** CG Fs 31 probably Had.-Ant. and 45, EG gritted mortarium and two jars, one in Argonne fabric. **AX 666** CG scrap, EG Fs 38 (2) and 45. **BVI 810** CG gritted mortarium, EG F31 (2), a gritted mortarium and a scrap. **BIX 1403** EG F33, stamp No.22. **BX 1100** CG or EG scrap, EG F31. **CVII 575** CG F31, EG Fs 31R, 33, 38 and 45 (2). **CVII 653** EG Fs 37, see Decorated No.13, 38, a gritted mortarium and a scrap, also closed form, as in LB 988, see Late samian flagons, below. **CIX 469** CG F37, see Decorated No.14, EG F31. **CXI 2891** CG F18/31 Had.-Ant. **DVI 420** CG F45 (from the same vessel as EVI (383) below). **DVIII 315** CG F33, EG F45. **DX 1010** CG F30 or 37 rim. **DXI 2756** CG jar, EG F31 and a bowl, approximately F37 (Argonne Ware), with rouletted decoration. **EVI 383** CG Fs 31R, 33, 45 (from the same vessel as DVI (420) above), and two scraps. CG or EG mortarium and a scrap. EG Fs 31, 31R, 37, gritted mortaria (2), a footing and a scrap. **EVII 154** CG F37 (2), see Decorated No.15, joining CVII pl/soil, EG Fs 31R, 44 variant (see EIX 535), 45, three gritted mortaria and scraps. **EVIII 207** CG F31, EG Fs 31, 31R, see stamp No.25, two gritted mortaria and three scraps.

#### Post-Roman contexts

**AVII 1387** EG F32 etc. **BIV 1921** CG F33 and a dish. **BIV 2342** CG F33(2), EG Fs 37, 38 and a gritted mortarium. **BV 2339** EG Fs 37 and 45. **BCV–VII 1421** CG Fs 30 or 37 and a dish (?), CG or EG F Curle 21 burnt, EG F37 and two scraps. **BCV–VII 1396** CG three flakes, CG or EG F Curle 21, heavily burnt, EG Fs 31, 38, a pedastalled vessel and a dish. **BXI 290** CG F38. **CVI 1447** CG gritted mortarium, EG Fs 36, 37 (burnt) see Decorated No.17, a dish and a gritted mortarium. **CVI 1460** EG F31R, burnt and very worn, and a mortarium. **CXI 2934** EG F37 probably Rheinzabern and 3rd century. **DXI 2722** CG scrap, EG gritted mortarium. **GV 403** EG Fs 31 (2, burnt) and 37, see Decorated No.18. **GV–VI 753** SG(?) F15/17 variant (?), CG Fs 35 (Had. or Ant.), 31, 33, 37, see Decorated No.19, and 45, EG Fs 31 (3), 45, Curle 21, two gritted mortaria and several scraps. **GV–VII 835** CG scrap, EG Fs 31 and 32. **GV–VII 1034** EG Fs 31 (Ludowici Sa), 33 and a pedastalled vessel (heavily worn inside). **GVIII 1682** EG jar. **GVIII 611** CG scrap, EG gritted mortarium. **GIX 1424** CG F30, see Decorated No.20, EG Fs 18/31R, 38, 40, a gritted mortarium and two scraps. **GX 1301** CG F72 etc., EG F31R.

#### Samian stamps

(Illustrated: No.2 (Fig.134, No.5), No.5 (Fig.135, No.27) (for an explanation of superscript numbers, see Abbreviations, above). The stamps are listed in alphabetical order of potter.

1. Augustio 4a F31 (?)  $\Lambda V G V [S T I O]$  retrograde, Rheinzabern.<sup>3</sup> A minor EG potter, whose forms include 32. His stamps have been recorded at Holzhausen and Niederbieber. Late 2nd or early 3rd century. SF 2089. Area 2, LB 2316.
2. (Fig.134, No.5). Cantomallus 1b F37  $C \bar{A} W T O M A L L [I M]$  retrograde, Lezoux.<sup>1</sup> in the decoration. The stamp was used on the dish Fs 18/31 and 18/31R but also, rather more often, on the mid- to late-Ant. Fs 79, 79R and 80. It also appears on F37 from a group of late-Ant. samian from St Magnus House, London (Bird 1986, 151, 2.21). c. AD 155–185. LB 69 refuse.
3. Cintusmus i la F31  $C I N T V S M I X$  Lezoux.<sup>2</sup> Cintusmus's site record includes Pudding Pan Rock and an early-Ant. pottery shop at Castleford. This is probably one of his latest stamps, since it occurs on Fs 31R and 79R, while his earlier ones are on F27. c. AD 155–180. SF 3167. LB 3431, 'early clay, outside "Portico"'.<sup>3</sup>
4. Coventio? F37  $C O V V$  retrograde in panel. Rheinzabern.<sup>3</sup> Missing stamp, identified by Charles Green. There is no other evidence that Coventio made decorated ware. SF 1003, LB 1175 refuse.
5. (Fig.135, No.27). Iulius viii 5c F37  $I V L [I V S F]$  retrograde. Rheinzabern.<sup>1</sup> The single medallion containing a kilted figure wearing a lion's-head mask (Ricken and Fischer 1963, M109) is on a bowl in his style from Rheinzabern (Ricken and Ludowici 1948, taf 153,



- 9). Much of Iulius's work belongs to the 3rd century, but the decoration on the bowls with this stamp looks rather earlier than that associated with his other common label-stamp, and a range of c. AD 180–220 is likely. SF 1970. LB 1872 refuse.
6. Iustus ii 2f F31. **IVSTIMA** Lezoux.<sup>2</sup> No other examples of this stamp have been noted. The form of this dish seems even later than the F31s from Pudding Pan Rock, where one of his stamped vessels occurs. It is closer to the EG F Ludowici Sa than to Dr 31, and is not likely to be earlier than c. AD 170, or even 180. SF 795. LB 49 refuse.
  7. As No.6 above, F31R. SF 3229.
  8. Macrinus iii 7a F33 **MACRINVS** Lezoux.<sup>1</sup> The forms recorded with this stamp include 27 and an early version of F79. In general the later forms outweigh the earlier. His site record includes Chesters, Halton Chesters and the Wroxeter gutter. c. AD 150–165. SF 2840. Area 4.
  9. Marcellinus ii 2a F31 **MARCEL[LI]NIVS** Lezoux.<sup>1</sup> There are numerous examples of this stamp from a dump of wasters at Lezoux belonging to the period c. AD 170–185. It also occurs at Pudding Pan Rock. The forms include 31R and 80. c. AD 160–200. SF 3047. Area 4.
  10. Maximinus i 2a F38 or 44 **M·A·X·W·I·M·I·** Lezoux.<sup>2</sup> This stamp has been recorded at Sompting, Sussex, in a grave group with other stamped vessels, including ones from Rheinzabern, and a scarcely-worn coin of Geta as Caesar (*Britannia* 5 (1974), 312). Another of his stamps comes from Cramond, where it presumably belongs to the Severan occupation. c. AD 170–200. SF 761. LB 49 refuse.
  11. Motucus i 4a F33 **MOTVCF**. This potter is known to have worked at Trier, but his distribution and some of his fabrics strongly suggest that he also worked in the Argonne. The fabric and glaze of this particular piece and the other recorded example of the stamp (F32 in Reims Museum) point to use of the die there. The chronology is not clear, but the F32 at Reims suggests a late 2nd-century date. SF 3230. Area 1, rampart base (late find).
  12. Natalis iv 2b F31 **NATALIS** Rheinzabern.<sup>1</sup> The stamp comes from a die made, by surmoulage, from a stamped vessel. Both dies were used on F32 and 2b was used on F Ludowici Tb. A stamp from it occurs at Niederbieber. Late 2nd- or early 3rd-century. SF 1000. LB 1175 refuse.
  13. Patruinus ii 1a F31(Sa) **[PATR]VINVSFE** Trier.<sup>1</sup> A minor EG potter who made Fs 32 and 36. The form of the Caister piece suggests late 2nd- or early 3rd-century date. SF 2286.
  14. Primus vii 3f F31 **PR·MVS** Avocourt.<sup>2</sup> There is no dating evidence for this particular stamp, but his others occur on Fs 27, 32, 40 and 80. The die originally gave PR·MVS. Antonine. SF 1905. LB 2069 refuse.
  15. Quadratus iii 1b F33 **QVADR[ATI]** Lezoux.<sup>2</sup> Quadratus's work occurs on Hadrian's Wall and his forms include 79, 79R and 79/80. This particular stamp occurs on Fs 31R and Ludowici Tg. c. AD 160–190. SF 3254.

#### Unidentified:

16. Illiterate on F31(Sa). **[A·W·I]·X·**. This stamp has been recorded at the Trier kilns. The form suggests a late 2nd- or early 3rd-century date. SF 669. LB 735 refuse.
17. Illiterate on F33, **M·T·I·I·X·I**. CG, Antonine. SF 1090.
18. F15/17 or 18, **J·I·I·**, SG. Flavian. SF 750.
19. F31, **J·I·I·**, perhaps illiterate, CG. Antonine. SF 4124. LB 735 refuse.
20. F33, stamp illegible, CG. Antonine. SF 817. LB 936 refuse.
21. F31 R **J·A·L·L·O**. CG or EG. Antonine or later. SF 2834. Area 4.
22. F33, **SV·I·J·A·S**, EG. Late 2nd- or early 3rd-century. SF 1639. LB 1403, spill.
23. F31, stamp illegible, EG. Late 2nd- or early 3rd-century. SF 796. LB 49 refuse.
24. As No.22 above. SF 4643. LB 833 rampart spill.
25. F31R, stamp illegible, EG. Late 2nd- or early 3rd-century. SF 4644. LB 207 spill.
26. F31, stamp illegible, CG. SF 4645. Area 4, Grave 54.

#### Decorated samian

by Brenda M. Dickinson, with contributions by Joanna Bird (JB)  
(Figs 134, 135; illustrated: Nos 2, 5–8, 10, 15, 16, 19, 21–23, 27)

1. F37, CG. The decoration includes a medallion (Rogers E8) and a Cupid (D.282). These elements suggest either Do(v)eccus i or

- Caletus of Lezoux, probably Caletus, to judge by the large, square beads in the panel border. c. AD 165–200. LB 2614 refuse.
2. F37, CG. In the style of Mercator iv of Lezoux. The details are: ovolo (Rogers B258), festoon (Rogers F2), small and larger double medallions, dolphin to left (O.2394), large dolphin to right (not in D. or O.), small dolphin to right (D.1050), bird (D.1011), sea-horse (smaller than D.35), small rosette (not in D. or O.), altar (not in Rogers) and astragalus borders. For stamped bowls with some of these elements, see S. & S. 1958, pl.145, 4, 6, 9. Both the bead-lip and the plain band above the decoration are unusually deep. c. AD 160–190. LB 735 refuse. There are other sherds from this bowl in LB 1343 road, FVI pl/soil and CX pl/soil.
  3. CG. Thick fragment of black samian from an enclosed vessel with a rouletted band, presumably F68. The piece is likely to belong to the latest examples of the form, such as those made by Paternus v and his associates in the mid- to late Ant. period. LB 69 refuse.
  4. F37, CG. In the style of Servus 2. For ovolo, wavy line and dolphin, see S. & S. 1958, pl.131, 3. LB 69 refuse. (JB)
  5. F37, CG. Faint mould-stamp **CANTOMALL[IM]**, retrograde, in the decoration. Cantomallus of Lezoux, Dic 1b. The stamp was used on the dish F18/31 and 18/31R but also, rather more often, on the mid- to late Ant. samian from St Magnus House, London (Bird 1986, 151, 2.21). c. AD 155–185. LB 69 refuse.
  6. F37, EG, Trier. The rosette in the basal wreath occurs on stamped and signed bowls of Maiiaaus and Tordilo, respectively, from Arntsburg, and on an unstamped bowl from there (Fölzer 1913, taf.XX, 6). The leaves in the zone above (taf.XXXI, 775) are on an unstamped bowl from Vechten (taf.XX, 8). Late 2nd or early 3rd century. LB 49 refuse.
  7. F37, CG. Probably in the style of Priscus iii or Clemens ii of Lezoux, who seem to have been associates of Advocisus at some point in their careers. The decoration includes the ovolo Rogers B103, a caryatid (O.1207A), Venus (D.193), Apollo (D.55) and Cupid (D.259), in a double medallion. The rosette (Rogers C64?) is on a mould from Lezoux (Roanne Museum), stamped by both Priscus and Clemens. c. AD 160–190. LB 2123 refuse joining sherd in LB 1182 rampart spill.
  8. F37, EG. In the style of Paternus v of Lezoux, or an associate, but, like Nos 16 and 22, apparently in Rheinzabern fabric and from a much-used mould. A small bowl, grooved for riveting, with a repeated panel containing a single medallion, with a dolphin (not in D. or O.) and rings, over a column (not in Rogers). The vertical borders of rhomboidal beads suggest some connection with the Paternus v group, though none of the potters involved is known to have used the ovolo (Rogers B15?). Many CG small bowls have non-standard motifs and figure-types, as well as more familiar ones, and tend, on the whole, to be late 2nd century. This piece, in view of its origin, may be slightly later. LB 535 refuse.
  9. F37, CG. With ovolo (Rogers B153), festoon and crab (not in D. or O.), all used at Lezoux by Banuus. Cf. S. & S. 1958, pl.140, 14. A sherd with a dolphin (D.1050) may also belong to this bowl. c. AD 160–190. LB 535 refuse.
  10. F37, EG. In the style of Dubitatus/Dubitus of Trier. All the details are attested on stamped moulds or bowls from Trier, and the spear motif occurs also on a stamped mould from Rheinzabern (but probably made at Trier). The ovolo is Fölzer 1913, taf.XXXII, 938. c. AD 225–245. LB 936 refuse joining fragments in LB 69 refuse.
  11. F37, CG. With a rosette and Cupid (D.229), as used at Lezoux by Banuus. Cf. S. & S. 1958, pl.140, 8, 10. c. AD 160–190. LB 954 rampart spill.
  12. F37, CG. Probably with one of Iustus ii's ovolos (Rogers B40). He also used the zig-zag border. c. AD 160–190. LB 2172 rampart spill.
  13. F37, EG. With an ovolo used at Trier by Amator, Attillus and Pussosus. Cf. Oelmann 1914, taf.6, 27,30. Late 2nd or 3rd century. LB 653 spill.
  14. F37, CG. With a panel containing two leaves (Rogers H134), joined by an astragalus. Cf. a bowl from Corbridge, in the style of Do(v)eccus i (S. & S. 1958, pl.150, 42). c. AD 165–200. LB 469 spill.
  15. F37, CG. In the style of Servus iv of Lezoux (S. & S.'s Servus 2). The ovolo (Rogers B27), arcade supported by tripods (Rogers Q16) and Diana with hind (D.66) are all on a stamped bowl from Castor (S. & S. 1958, pl.131, 1). c. AD 160–190. LB 154 spill. Sherds also from CVII pl/soil.
  16. F37. In the style of Servus iv (S. & S.'s Servus 2) of Lezoux. The panels contain: 1) an arcade, supported by tripods (Rogers Q16), as on S. & S. 1958, pl.131, 1, containing a figure. 2A) A large, double festoon; 2B) a stag to left (O.1822N?). 3) Venus on a mask (D.179a),

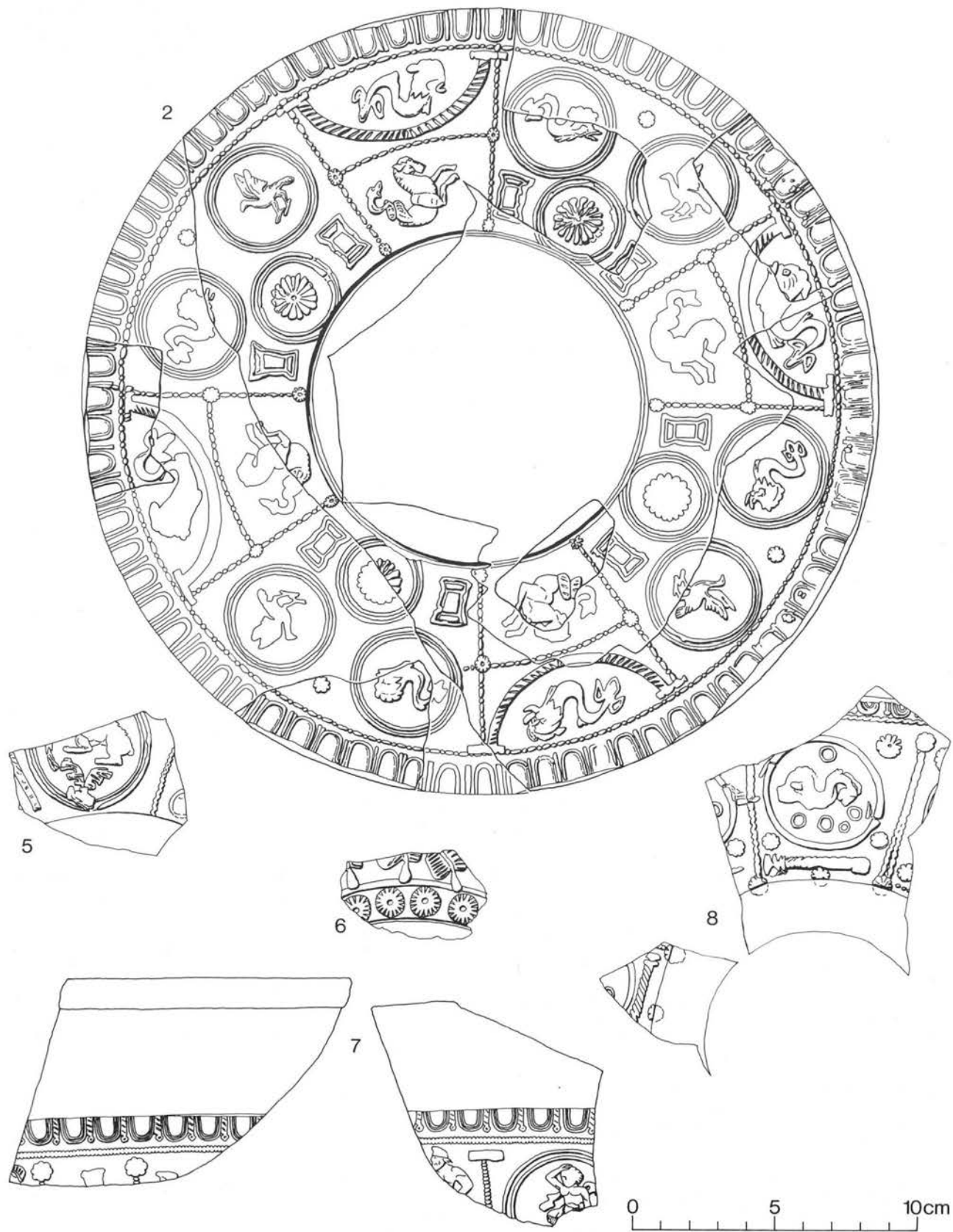


Figure 134 Decorated samian. Scale 1:2.

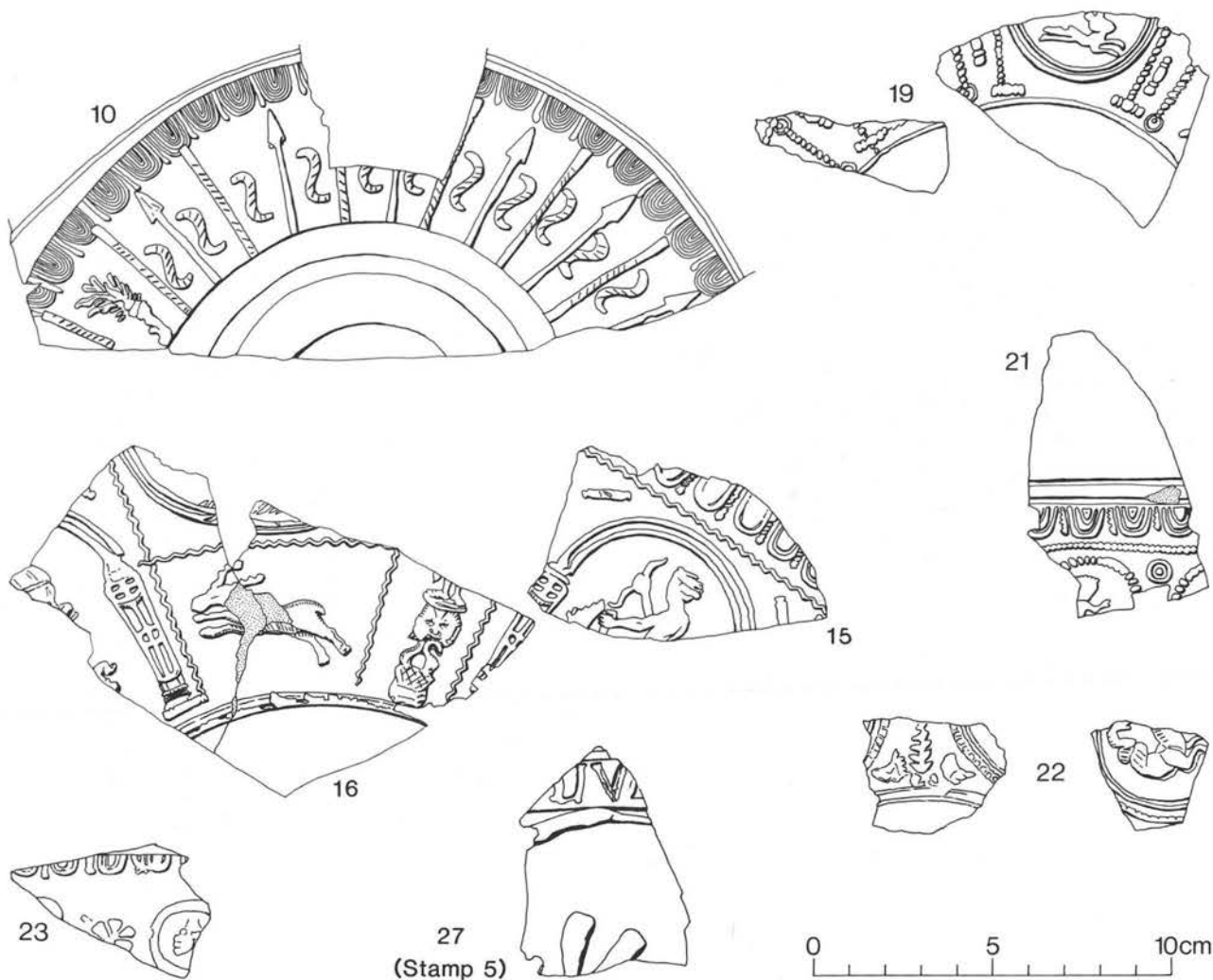


Figure 135 Decorated samian. Scale 1:2 except No.27 (1:1).

- over dolphins on a basket (Rogers Q59?). Both these are known for Servus iv. The ovolo is Rogers B27. Though in his standard Lezoux style, this bowl is almost certainly in Rheinzabern fabric (cf. No.22), and so is presumably from a mould acquired by that factory, since there is no evidence that he ever worked there. His range at Lezoux is c. AD 160–190, so this bowl is likely to belong to the last decade of the 2nd century, or to the early 3rd century. CVII pl/soil.
17. F37, EG. In Rheinzabern style, cannot be assigned to a potter, but is probably 2nd century, rather than later. LB 1447 PR.
  18. F37, EG. With an ovolo used at Trier (Fölzer 1913, taf.XXXII, 953). Late 2nd or 3rd century. LB 403 ditch PR.
  19. F37, CG. With alternate wide and narrow panels, the latter containing astragali, impressed vertically. The wide panel has a double medallion with a stag (O.1732A). All the details, including the horizontal astragali and the rings are on a bowl from Wroxeter in one of the styles associated with Priscus iii. c. AD 160–190. LB 753 ditch PR; another sherd from B VII-VIII pl/soil.
  20. F30, CG. With panels: 1) A lozenge (Rogers U31?), in a medallion with beaded outer border (Rogers E8); 2) The same medallion, and an astragalus, placed horizontally. The medallion was regularly used by Do(v)eccus i, and the lozenge is on a stamped bowl in Compiègne Museum. c. AD 165–200. LB 1424 PR wall spill.
  21. F37, EG, Trier. In the style of Werkstatt II, with ovolo (Fölzer 1913, taf.XXXII, 944), arcade (taf.XXXI, 815) and Cupid (taf.XXIX, 543). All the details are on bowls from Borg and Trier (taf.XXII, 21–2). Probably mid-2nd century. Area 2, LB 1824 refuse.
  22. F37. Two fragments, in the style of Caletus of Lezoux, though almost certainly in Rheinzabern fabric (cf. CVII pl/soil, No.16 above). The decoration includes a double medallion with a sea-horse (D.35). The other sherd shows two panels with a zig-zag divider (Rogers P5). Both panels have medallions with beaded borders (Rogers E4) and leaves (Rogers H167). This piece is not earlier than c. AD 170 and may be early 3rd century. Area 4.
  23. F37. Rheinzabern. In the style of Severianus. The details are: ovolo E 17, medallion K 14, rosette O.50 (all Ricken and Fischer 1963); the other motif in the medallion is not certainly identifiable, possibly a leaf. For similar bowls, see Ricken and Ludowici 1948, taf.250, nos 1, 6, 7. Despite lack of much dating evidence, probably one of the latest Rheinzabern potters, working towards the mid-3rd century. (JB)
  24. F37. EG. Very abraded sherd with swallow-tail rivet hole. The ovolo, probably E 3 (Ricken and Fischer 1963), was shared by B.F. Atto and Cerialis VI, but the fabric and shallow relief suggests the re-use of an old mould. The figure type is not certainly identifiable. Early to mid-3rd century. (JB)
  25. Approximately F37, Argonne ware, rouletted. Sherds from LB 895 refuse, AX, CXI, DVIII (base sherds, used in reconstruction drawing). See Fig.141, No.258.
  26. F29. SG. Basal sherd with corded motifs, c. AD 50–70. LB 735 refuse. (JB)
  27. F37. EG. Rheinzabern, stamp No.5. LB 1872 refuse.

*An unusual samian mortarium sherd, recorded by P.E. Rumbelow*  
(additional note by MJD)  
(Fig.136)

Mr P.E. Rumbelow recorded details of finds at Caister, both structural, sherds and small finds. He compiled, as noted elsewhere, not only a magnificent illustrated manuscript volume on the site, but also various illustrated scrapbooks. His drawings show every sign of care and accuracy, both finds and sherds being identifiable. It is, therefore, of interest that one of the samian sherds he illustrates is a relatively rare type of F43, decorated on the downturned flange in barbotine. The examples from Rheinzabern and Niederbieber published in Oswald and Pryce 1920 (pl.LXXIII, nos 7 and 8) show a stag and leaf motif. The fragment drawn by Mr Rumbelow (item 14 on p.357 of the scrapbook) shows the head of a bird, a ?duck, and is illustrated on Fig.136.

*Late samian flagons*  
by Joanna Bird  
(Fig.136, No.206)

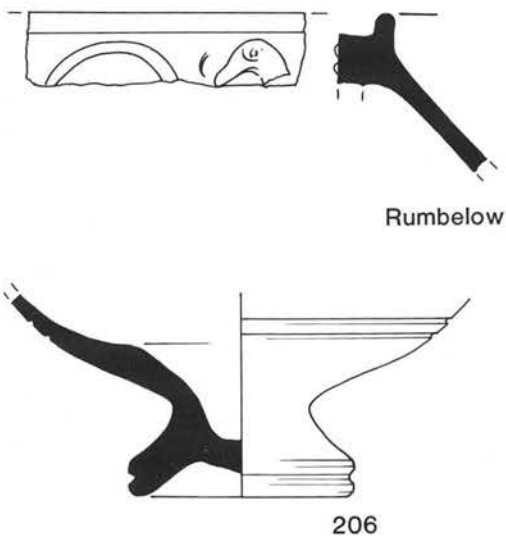


Figure 136 Samian: mortarium and flagon. Scale 1:2.

1. (Fig.136, No.206). Joining sherds, the foot and base of the wall from a late EG closed form. The absence of slip on the interior indicates a narrow-mouthed flagon (rather than a jar, e.g., Oswald and Pryce 1920, pl.77, no.5; pl.79, nos 7, 8, where the slip normally reaches the base), and the most likely form is the conical-mouthed flagon (Oswald and Pryce 1920, pl.83, no.11), which combines this foot form and grooves at the base of the wall. Both sherds are worn and lightly burnt; the body sherd shows that the vessel was slightly distorted. 1976 excavation, joining LB 988, Rm 2. Base alone illustrated Fig.143, No.206.
2. Unillustrated. Two EG sherds, probably from the same vessel, a flagon with grooved shoulder; the smaller sherd would fit with the rim of a conical-mouthed flagon, as Oswald and Pryce 1920, pl.83, no.11. LB 653, spill.

Although these sherds probably belong to the same unusual form, there are slight differences in fabric colour and in the quality of the potting between the two pairs of sherds which suggest that they come from two vessels. The fabric of both indicates origin at Trier rather than Rheinzabern, and the conical-mouthed flagon form was clearly manufactured at Trier (Huld-Zetsche 1971, abb.6, no.17a; abb.7, no.17b). The details of the form vary slightly, and most of the examples have a straight rim rather

than the concave one shown by Oswald and Pryce, which would fit the Caister sherd better.

The available dating evidence indicates a date in the 3rd century for this form, probably starting in the second quarter of the century. It occurs at Niederbieber (Oelmann 1914, taf.1, no.27: the vessel shown by Oswald and Pryce), in the fort at Holzhausen, probably occupied to AD 259/260 (Pferdehirt 1976, taf.11, A1268), in the mid-3rd century 'Massenfund' group at Trier (Huld-Zetsche 1971, abb.6, no.17a; abb.7, no.17b), and in contexts of the mid- to late 3rd century at Trier (Gose 1950, type 177). A body sherd restored as this form was present among the residual late samian in the building levels of the Trier Kaiserthermen, c. AD 300–320 (Hussong and Cüppers 1972, taf.1, no.14), while heavy undecorated late versions occur in the Krefeld-Gellep cemetery (Pirling 1966, typentaf.2, nos 20, 21). This evidence, taken with recent evidence for late samian imports into Britain (Bird 1986), would suggest a date around the middle of the 3rd century for the Caister pieces.

### Fabrics

The pottery was recorded using numerical codes, which were subsequently changed to mnemonic letter codes (used in the catalogue below) for ease of manipulation of data. Both types of code are listed to facilitate use of the records in the archive. Illustration numbers are added to each fabric entry, except GREY.

Fabrics are listed in the sequence: light coloured oxidized, cream, *etc.*; mainline colour-coated wares, Nene Valley *etc.*; other fine wares and later colour-coated wares; imports; miscellaneous oxidized wares; reduced wares; finer reduced fabrics; shell-tempered fabrics. Amphorae and mortaria are discussed below, pp 205 and 198 (details of recording codes are in the archive).

### *Cream, flagons, etc.*

**CR 1.** Cream, flagons, *etc.* fairly fine to fine.

**CRA 1a.** Cream surfaced light red-brown coarser fabric.

**CR2 2.** Cream, flagons. Rough, fairly heavily tempered.

**CR2A 2a.** Cream, very hard, rough feel, but few inclusions. Cream sherds of little distinction occurred so sparsely that the separate codings were otiose, and no significant fabrics could be consistently isolated. Where illustrated, the fabrics are described, and vessels in identical or similar fabrics noted.

Two sherds of particular interest are Nos 301 and 302. The fabrics, although not identical, are similar and unique. The distinctive knob of No.301 finds a possible parallel with a 1st-century ?lid at Ilchester (Leach 1982, fig.68, no.63), and the rouletting on No.302 is also unusual, although squared rouletting appears on Brockley Hill wares. The knob is extremely unusual; although illustrated as a lid, such a knob is unparalleled, but it resembles the truncated foot found on some amphorae (as Gose 442); the fabric resembles that of the large flagons/amphorae at New Fresh Wharf (Green 1986, 1.21–1.24), thought to be from the Rhineland. The vessel form is thus very uncertain. Other vessels in the same fabric at Ilchester (Leach 1982, fig.68, nos 60–70) include unusual forms which are possibly imports. Despite the disparity in dates, the evidence suggests that both sherds were imports.

Two body sherds from a large flagon or small amphora are in a distinctive greenish-cream (2.5Y 6/6) fabric with common quartz, red and black iron ore, softish rounded pink inclusions, and mica; one basal sherd has an unusual

recurved form, as if curving to a spike rather than a footring. Illustrated: 1, 184–188, 226–228, 233, 275, 301–302, 307, 700–701.

**NVPA** 4. NV Parchment Ware, see RPNV, for forms; variable fabric. Very rare. Illustrated: 281, and ?233, ?275.

**OXPA** 7. Oxon Parchment Ware. Only found in Area 4 plough, fragment of a plate/bowl, probably as Young (1977) type P15.

**OXCS** 12. Cream-slipped. More than one fabric involved (undistinctive with common sedimentary inclusions), mostly closed forms, but including a possible tazza with painted stripes (cf. Andrews 1985, type 165), and a shallow bowl with a notched cordon at the rim, slipped inside and out, the interior showing traces of burnishing (from 1986 excavation). See also oxidized RBSAN fabric, below. Illustrated: 303.

#### *Mainline colour-coated wares*

**NVCC** 20. Nene Valley Colour-Coated Wares. See RPNV. Nearly all the colour-coated wares are probably from the Nene Valley, although certainty is impossible with the more variable late fabrics. Some of the vessels recorded as RCC may well be late atypical Nene Valley products. 20A code was used to record occasional greyish fabric sherds thought to be from the Nene Valley. 21A code was similarly employed for much sandier white/cream colour-coated sherds. Illustrated: 2–4, 79, 82, 87, 89, 91, 92, 178–181, 191, 193, 194, 196, 197, 199–203, 205, 229–232, 234, 268, 269, 273, 274, 282–289, 291, 294, 297, 298.

**OX28** 28. Fine sandwich fabric, half light brown, half grey, sparse quartz, iron ore, white streaks and inclusions; slipped and fired grey. The quality of the slip verges on that of colour-coated wares, and this is possibly a late Nene Valley product. Only one vessel recorded, the jar, No.377.

**RCC** 25. Reddish fabric, colour-coated. This is a fabric group, encompassing all fine colour-coated vessels where the red-brown fabrics were not certainly from the Nene Valley, although some could be atypical NVCC due to the variable nature of late fabrics. No certain Colchester colour-coated vessels were identified. Illustrated: 5, 77, 78, 80, 192, 195, 198, 204, 295.

**RCCOA** 26. As RCC, but coarser sandy fabric; a fabric group rather than a discrete fabric, and rare. Sandy red-brown fabric with common quartz, black iron ore, white calcareous inclusions, dark brown matt slip, as box No.296. Fragments of two beaker bases occurred in this group of the rare type known at Colchester with ribbed base (as No.204; cf. Hull 1963, type 404), but the wall of one rises more vertically from the base, akin to the sigillata form (Hull 1963, fig.47, no.11), although without the footring. The ribbing is formed by grooves creating flat 'false cordons'. The fabric is fairly micaceous hard sandy red-brown with common sub-rounded quartz, sparse red iron ore, some flint; slipped red-brown on exterior only. Illustrated: 296.

**NFCC** 29. New Forest Colour-Coated (see Fulford 1975a). Very rare, but including the folded beaker base, No. 80; plain dish sherds are possibly from the New Forest. Illustrated: 80.

#### *Other fine wares and later colour-coated/fine wares*

**MICA** 35. Fine red-brown fabric, scatter of quartz, sparse red iron ore, occasional tiny white inclusion, small voids in fabric; gold micaceous slip on exterior. The fabric is not sufficiently distinctive to suggest a source, although Col-

chester is a possibility (see Marsh 1978, 123). Illustrated: 299.

**RBSL** 17. More than one fabric was recorded under this code: (a) light softish red-brown fabric, greyish core, with fairly common red earthy inclusions, sporadic quartz, fairly micaceous; slipped darker red-brown. The bowl No.86 is decorated with pinkish-cream paint. Sherds of the same fabric but from a closed form, slipped externally only, came from Room 1; the fabric, slip and finish resembles the hemispherical bowl No.612. Rare, and probably late 4th century. (b) Another similar fabric was used for a hemispherical bowl, No. 267, with common to abundant sub-rounded quartz, sparse black and red iron ore, and possible flint, with a similar quality red-brown slip. A solitary body sherd in a similar fabric and slip is from a closed form, slipped externally with dribbles internally. The two fabrics are distinct but both have similar fugitive matt slip, and produce hemispherical bowls and closed forms. Source unknown. Illustrated: 86, 267, 612.

**OXON** 50. Oxfordshire Red Colour-Coated (Young 1977). It is possible that the Oxfordshire fabrics were more varied than usual. Uncertain sherds were placed in the Hadox category, see p.211. The ware is discussed in more detail, p.209. Illustrated: 88, 259–264, 270–272, mortaria 762–764.

**HADOX** 51. Similar to Oxfordshire Red Colour-Coated Ware or Much Hadham oxidized products. A group of fabrics which are neither Oxfordshire or Much Hadham but have similarities of form, fabric or finish to both. This is discussed, p.211, and vessels are individually described. Illustrated: 265, 266, 276–279, mortaria 768, 769.

**MHAD** 10. Much Hadham (MHADR: reduced ware; MHADA 10a: oxidized but with more tiny black inclusions). See Harden and Green 1978, 174, fn 33. The classic examples from Caister are those referred to as 'romano-saxon' vessels (see p.210). Some reduced vessels have more finely burnished dark-grey to black surfaces; the fabric colour was usually brownish-grey. Mortaria were also found in coarser oxidized fabrics, with trituration of mainly quartz with some flint. Illustrated: 20, 76, 83, 84, 93, 182, 213–215, 217–225, 235–242, 246–256, 290, 336, 607, 649, mortaria 765–767.

#### *Imports*

**ARG.** Argonne Ware. Only one vessel. Illustrated: 258.

**NGCR** 3. North Gaulish cream-pink beaker fabric. North Gaulish vessels from London have been published (Richardson and Tyers 1984; Richardson 1986, 107). The oxidized beakers were separately recorded, and the wide-necked flagons, Nos 176, 177 and jug, No.190, were found to be in virtually identical fabric (cf. Andrews 1985, type 42 from Brancaster). The fabric of the other folded jug No.189 differed, although a similar source area is probable. Hard pinkish-cream to very light brown fabric, with common to abundant clear and rose sub-angular quartz, and fairly common iron ore; slipped externally and rouletted, the necks and base smoothed and burnished, often dragging grits across the surface. These beakers vary enormously in size (compare Nos 41, 42 etc. with No.50), the larger versions showing their derivation from the earlier butt-beaker (see also from Caister, Higgins 1972, fig.3, no.11). In addition to the flagons and jug, the bowl, No.90, seems related to these North Gaulish wares. Fragments of three beakers occurred at Brancaster (Andrews 1985, type 98). Illustrated: 41–49, 90, 176, 177, 189, 190.

**NGCRa 3a.** Similar fabric, unusual cylindrical vessel No.700.

**NGGW 105.** North Gaulish grey wares; see Richardson 1986, 106. Hard, light grey fabric, darker surfaces, with abundant tiny well-sorted sub-angular quartz, and rare black iron ore; slipped externally and decorated with individual burnished lines, the 'bandes lustrées'. The sherds have a characteristic harsh feel (see also from Caister, Higgins 1972, fig.2, nos 1-3; Brancaster, Andrews 1985, type 121). The 1986 excavation (see Appendix 4) produced a tiny fragment of a 'double-lipped jar', as Richardson 1986, type 1.56-1.57 (with parallels in Picardy, Bayard 1980, pl.11, nos 43-4). A coarser very hard dark grey fabric with a lumpy surface; thin-sectioning showed moderate rounded quartz (0.3-1.0mm), abundant angular quartz (up to 0.2mm) and a large sub-angular flint fragment (1.5 by 0.5mm).

These North Gaulish imports were most common in the rampart spill and the earliest refuse on the back of the rampart, and are illustrated together on Fig.135. The occasional sherd escaped, and No.451, a jar or bowl, is almost certainly North Gaulish, albeit in a darker grey fabric with more abundant quartz inclusions; also the deep dish, No.651, in an atypical sandier fabric (see Richardson 1986, type 1.51). More doubt attaches to the tripod leg, No.698. The fabric differs texturally, but the slipped burnished interior, the form and the 'feel' suggest this is probably an import from the same area, although not necessarily the same kilns.

The platter, No.75, of *Camulodunum* 16 type, may also be North Gaulish, although its fabric does not closely resemble the other vessels. A number of simple hemispherical bowls, as Nos 620 and 621, from the same layers as much of the North Gaulish coarse wares raise a practical difficulty. Although the type is a North Gaulish form (appearing as a colander, Tuffreau-Libre 1980a, fig.15, no.11), the fabric is undistinctive and there could well be other vessels in similar indeterminate grey fabric unrecognized. Types similar to the unusual jars Nos 429-431 occur in North Gaul (Tuffreau-Libre 1980a, fig.25, no.3).

The evidence from the New Fresh Wharf site in London is crucial; the infill of the quay was probably deposited in the early to mid-3rd century (although containing earlier pottery) and the evidence agrees with that from Caister, where these imports occurred early in the occupation. The only vessel from an appreciably later context is the bowl, No.90, possibly from a similar area in Gaul. Its North Gaulish origin is uncertain, and it may be largely unrelated to the earlier beakers and bowls. Many of the Gallic types were made over a long period with little typological change.

It is possible that this pottery indicates the involvement of the *Classis Britannica*, particularly in view of the distribution (Richardson and Tyers 1984, fig.3); this is discussed, p.241. Illustrated: 50-75, ?451, 651, 698.

**CGBL 30.** Rhenish. Central Gaul. (Greene 1978; Richardson 1986, 115). Very rare.

**MOSL 31.** Rhenish. Trier. (Greene 1978; Richardson 1986, 118). Most of the Rhenish ware is from Trier. Illustrated: 207-212.

**EPON 32.** Céramique à l'éponge (Raimbault 1973; Fulford 1977; for analysis of the fabric see Richardson 1986, 130). A source between the Loire and Gironde is suggested. This ware is generally considered to date to the late 3rd and 4th centuries; a bowl recently found in a wreck from St

Peter Port harbour, Guernsey, was associated with eighty coins of c. AD 275-286 (information Dr J. Monaghan).

All the sherds are from the same bowl form, as No.280, of Raimbault form 6 derived from the samian Form 38. On the basis of widely separated find spots, size *etc.*, a minimum of eleven vessels are represented, and are important evidence of trading connections, beyond the usual southern England distribution. No marbled wares from Germany were found. Illustrated: 280.

**MICCC 27.** Three sherds, probably all from closed forms with the pedestal foot; these have been identified by Joanna Bird as from late samian flasks from Trier, see p.160. Illustrated: 206.

**PRW 41.** Pompeian Red Ware, Peacock (1977d, fabric 7); a base sherd is light grey with a narrow brown cortex. Sherds are known from Richborough, Colchester and Belgium, and a source in west Flanders is possible. The fabric of the Caister vessels is similar to that used for the oxidized-North Gaulish beakers, *etc.* Platters of the same type are found on North Gaulish sites (Tuffreau-Libre 1980, fig.86, no.4; Bayard 1980, pl.12, nos 6, 7; 19, no.5; 20, no.4; 23, no.4), and the two vessels from Caister may have been in the same shipments, perhaps from Boulogne. A Pompeian Red Ware platter was found at Brancaster in Peacock's fabric 3, very similar to fabric 7, but softer, finer and invariably micaceous (Andrews 1985, type 72). At least two vessels, illustrated: 292, 293.

**EIFL 501.** Eifelkeramik including Mayen, Speicher and similar Rhenish Wares. Only jars are represented, with varying fabrics, which are individually described. Although from the same sources as the vessels found at New Fresh Wharf, the Caister sherds are markedly thicker and coarser, and probably arrived later in the Roman period. All have sooting indicative of use as cooking vessels. Although most were unstratified or from unsealed spill layers, No.468 came from a feature with Roman finds. Examination of the sherds suggests a minimum of nine to thirteen jars, important evidence of contacts with the Rhineland in the later 4th century. Illustrated: 468-472. I am particularly grateful to Beth Richardson for her help with these sherds.

#### *Oxidized wares*

**OX 15.** Miscellaneous oxidized wares; OXF (15a) finer fabrics; OXC (15b) coarser fabrics. Indeterminate oxidized fabrics occurred relatively rarely; no fabrics could be consistently isolated, and vessels are individually described. Illustrated: 30, 40, 137, 216, 257, 300, 304, 305, 308, 309, 312, 348, 365, 373, 396, 702.

**OX16 16.** Miscellaneous oxidized, medium coarse sandy fabric, fairly micaceous, often used for bowls *etc.* Illustrated: 109, 121, 311, 362, 522, 679, 699.

**PKGR 5.** Fine light brown to pinkish fabric with common ill-sorted red iron ore; well burnished grey brown surfaces. Wide-mouthed bowls, illustrated: 122, 124.

**RBSAN 11.** Fine sandwich fabric, virtually grit-free, occasional iron ore, and red earthy inclusions; sherds probably from flagons or other closed forms (a body sherd had a rounded strong carination). Fairly micaceous, red-brown exterior half, grey interior. Some sherds from a closed form show a complex surface treatment, linking this fabric to OXCS above, consisting of a thin fugitive cream slip, over which a further but strong cream slip had been applied, and then finely burnished. An unusual rouletted unslipped base is the only drawable sherd. Illustrated: 694.

**OX13** 13. Red-brown fabric, fairly common black and red iron ore, largish cream inclusions and streaks. Only one vessel, the handled face pot, illustrated: 375.

**RBRID** 18. Hard red-brown ridged, close texture but common sub-rounded quartz; only the occasional tiny sherd, usually very thin-walled, 2–3mm (thicker sherds were classified with the ribbed amphorae), ribbed externally, with traces of a creamish surface, not necessarily slipped. Some rilled sherds also occurred, in hard greyish fabrics. Vessel forms unknown. No illustrations.

**TILE.** Two unusual vessels in a tile fabric are illustrated. A fragment of a base (diameter *c.* 14–15cm) with the wall rising almost vertically was also found; this is not definitely from a vessel since tile-fabric lamp chimneys also occur (Lowther 1976). A number of tile-fabric vessels are known from Lincoln, some fragments having curious features, which await further research, and curiosities from Gestingthorpe may be related (Draper 1985, fig.44, nos 525–7). Illustrated: 473, 705.

#### *Reduced wares*

**BB1** 100. BB1, see Farrar (1973, 1977) and Williams (1977). Most are bowls and dishes, with very few cooking pots. More appears to have arrived late in the occupation, most of the better examples coming from late contexts, including the rubbish on the floors in Building 1, and unsealed spill *etc.*, see p.217. Illustrated: 37, 129, 148, 149, 346, 448–450, 452, 546–551, 673–677.

**BBIG** 101. Very gritty sherds similar to BB1. These were rare and invariably from late or unsealed contexts. The illustrated beaded bowl with stubby flange is in a dark grey fabric, brownish cortex, very like BB1 but almost certainly wheel-thrown and containing some flint. The fabric of a superficially similar bowl is characterized by abundant sub-rounded quartz and common soft red ?iron ore; slipped over the rim and internally, the slip firing partially white; fine internal burnish, trimmed/smoothed only externally; probably wheel-thrown. Two thin body sherds from a cooking pot appear to be the same fabric. Illustrated: 565.

**BB2** 102. BB2, see Farrar (1973, 1977) and Williams (1977); see also finds from New Fresh Wharf (Richardson 1986, 127). Definition of BB2 vessels was problematical, and is discussed on p.207. The fabric codes in the catalogue entries indicate the degree of certain identification, as BB2, BB2?, and BB2G, the last being atypical forms and/or fabrics. Illustrated: 22, 25, 32, 35, 38, 98, 101, 125, 156, 157, 329–331, 366, 372, 443–445, 454, 455, 476, 499, 500, 504, 513, 523, 526, 532–535, 540, 544, 545, 552, 577, 580, 586–589, 595, 637–648, 655, 656, 660.

**MICG** 121. Particularly micaceous grey wares; a fabric group, although it would seem that only two sources were possibly involved, see p.208. Illustrated: 11, 26, 153, 155, 442, 569, 578, 590, 604, 663, 665, 671, 672.

**NAR** 110. Nar Valley gritty fabric, probably from the Shouldham area of Norfolk (see Andrews 1985, 89; Gurney 1986, 83). An exceptionally harsh gritty dark grey fabric with abundant quartz inclusions, mostly appearing as jars, although the occasional bowl occurred. The incidence of this fabric is discussed, p.218. Illustrated: 107, 108, 386, 412, 414, 415, 421, 622.

**NVGW** 111. Nene Valley Grey Ware. Rare. Illustrated: 527.

**AHF** 125. Alice Holt-Farnham. A possible product from this kiln area is a cooking pot in a coarse sandy fabric with occasional large flints, slipped cream and with traces of burnishing. Illustrated: 437.

**GREY** 130. All undifferentiated grey wares were recorded under this fabric group. Any vessels with notable fabrics are individually described; otherwise it may be assumed that the fabric contains moderate quantities of sub-angular/sub-round quartz, and little else of distinction.

**COGR** 126. Coarse light grey fabric, hand-made, poorly mixed clay, coarse open texture, with black iron ore, burnt out vegetable tempering, occasional flint, smoothed surfaces, as dish, illustrated: 159.

**COAR.** Coarse poorly mixed clay, with black carbonized ?vegetable matter, ?grog; burnished surfaces; hand-made. Only two bowls, conceivably the same bowl. Unknown source. Illustrated: 438, 505.

**FLINT** 160. Only two sherds were found with predominantly flint inclusions, a wheel-thrown grey sherd probably from a jar, and a hand-made coarse body sherd with fingermarks internally, probably prehistoric. A thin rim fragment with flint inclusions from the outlying Area 6 is probably also prehistoric, see p.41. No illustrations.

#### *Finer reduced wares*

**GRSAN** 112. Light grey sandwich fabric, very fine, common but minute black specks, with darker silky smooth surface, very finely rouletted beaker of exceptional quality. Although separately recorded, fabrics GRSAN and GSA113 could be from the same source. Illustrated: 340.

**GSA** 113. Similar fine sandwich fabric to GRSAN, and confined to rouletted beakers, as illustrated: 13, 342.

**GRF** 120. Fine grey fabric. A fabric group used to separate fine fabrics, not necessarily from the same source; vessels are individually described. Illustrated: 325, 341.

**RBGR** 122. Finely granulated red-brown fabric, softish, with dark grey-black finely burnished/polished surfaces. Beaker, illustrated: 333.

**RBGR3** 123. A grittier RBGR. No illustrations.

**BLKP** 124. Fine pale brownish-grey, black polished surface, hardly any inclusions, and similar to such fabrics as 'parisian' and 'london' wares. A small base from a closed form, beaker or flask is also known, and a sub-rounded handle fragment (size 18 by 22mm). Illustrated: 105, 520.

#### *Shell-tempered wares*

**SHEL** 150. Shell-tempered ware is almost exclusively jars of the common South Midland type, except for one late bowl. Illustrated: 115, 116, 461–467, 570.

**SHDW** 151. Shell-tempered Dales Ware. Rare. These are also known from Brancaster (Andrews 1985, fig.58, type 108) but are not figured amongst the pottery from Burgh Castle where a late lid-seated shell-tempered jar, uncommon for East Anglia, was found (Johnson, S. 1983, fig.43, no.209). Illustrated: 114, 460.

#### **Catalogue**

Catalogue entries include fabric abbreviation and form details where required. Context data is at the end.

*Rampart spill*  
(Fig.137)

1. CR Flagon or honey pot. Softish cream-brown fabric, sparse quartz, fairly common mica. Also a non-joining grooved body sherd.
2. NVCC.
3. NVCC.
4. NVCC.
5. RCC possibly late Nene Valley.
6. GREY probably local, overfired and distorted.
7. GREY cream fabric, grey-brown surfaces; sparse quartz, cream inclusions; unique fabric; smoothed externally.
8. GREY sandy, probably folded form.
9. GREY brownish fabric, dark grey-black surfaces; finely granular fabric, common but very small black inclusions, some mica; burnished decoration in reserved zone.
10. GREY fairly micaceous, with very small quartz inclusions; no string mark; curious surface defect, arising from ?trimming; similar to No.11.
11. MICG similar fabric to No.10 but more micaceous; incised decoration; no string mark.
12. GREY Beaker or bowl base, dark grey fabric, with red-brown cortex; abundant quartz inclusions; burnt internally.
13. GSA113 fine grey sandwich fabric, hardly any inclusions; smoothed externally, finely rouletted, with neat groove on underside of base. Probably related to rouletted beakers Nos 342, 340, in the same fabric.
14. GREY finely granulated red-brown fabric with grey-brown surfaces, smoothly burnished. Possibly related to jug neck in slightly coarser fabric, No.310.
15. GREY brown grey-cored fabric, grey surfaces; hard finely granulated fabric; burnt on rim; notably thin walled.
16. GREY brown fabric, grey surfaces; hard finely granulated fabric, some mica; deeply cut rouletting.
17. GREY Jar, probably local fabric.
18. GREY brownish fabric, dark grey surfaces.
19. GREY sandy, grooved on rim edge.
20. MHADR? Jar or bowl rim, finely granular, carbonized vegetable and black iron ore, slipped externally, burnished on top of rim with groove at interior edge.
21. OXC very sandy grey fabric with red-brown cortex, brown to grey surfaces; finger-frilling on rim.
22. BB2? Wide-mouthed jar or bowl with lid-seated rim; finely granulated fabric with common tiny black ?iron-ore and small quartz; self-slipped with traces of slip running inside, and exterior surface burnished and fired to a reddish sheen as BB2 finish.
23. GREY sandy red-brown, dark grey core and surfaces, common quartz; burnished.
24. GREY decorated with burnished line in reserved zone. ?Local.
25. BB2G? red-brown grey-cored fabric, common quartz, grey to brown burnished surfaces with red colouration; decoration as No.24.
26. MICG Wide-mouthed jar or bowl, finely granular fabric with common mica, burnt.
27. GREY finely granular, abundant tiny quartz, slightly micaceous, burnished externally.
28. GREY.
29. GREY finely granular fabric, slight burnish on rim.
30. OXC sandy red-brown fabric, unburnished.
31. GREY sandy red-brown fabric with greyish surfaces, smoothed rather than burnished.
32. BB2 finely granulated fabric, grey-brown surfaces.
33. GREY traces of burnish externally.
34. GREY fairly micaceous.
35. BB2.
36. GREY fine, fairly micaceous fabric; probably originally burnished inside.
37. BB1.
38. BB2.
39. GREY Cheese-press. SF4159.
40. OX Wheel-thrown tube? Undistinctive moderately sandy light red-brown (grey cored) fabric, the top sharply cut with traces of probable string marks, and knife trimmed on the interior. Four separate rim fragments occur (others from AX (666) spill, AXI pl/soil, GV pl/soil), all very similar but not necessarily from a single object (the only other measurable diam. is 1-2cm smaller). Function unknown.

*Imports from north-west Gaul*  
(Fig.138)

Since these beakers and bowls mainly occur in the rampart spill and the earlier refuse layers above, they are illustrated together here. Other imports from either the same area or elsewhere in northern France occur below, but are less certainly of the earlier occupation.

41-49 beakers NGCR

50-74 NGGW

Base sherds which could be identified as from bowls or beakers are all of the same type, so that separate bases cannot be securely attributed to vessel class. The form is distinctive.

74. NGGW Fragment from a tripod bowl, well slipped and burnished internally. Probably from a handled bowl (see Richardson 1986, 1.61-3) showing both handles and the characteristic thumb-indent.

75. NGGW? Platter of the same form as the terra nigra Camulodunum form 16. The fabric is very close to that of the beakers and bowls decorated with 'bandes lustrées' and probably came from the same area. A single example.

**Provenances**

*Rampart spill:*

FVIII 925: 1, 6, 8, 12, 13, 14, 15, 24, 27, 35, 36, 51, 65. FIX 2131/2154: 30, 32. FX 1202/1208/1240: 3, 21, 26, 31, 34, 36, 44. EIX 954: 4, 5, 9, 10, 17, 18, 20, 22, 25, 28, 59. EX 1182: 11, 19, 33, 38, 39, 40, 71. See also mortaria 712, 731, 733, 770; decorated samian Nos 11, 12; samian stamps 11, 24.

Early gullies: F58 781/959: 16, 23, 37, 41, 45. F59 977/1262/2102: 2, 7, 29; also mortarium No.730; graffito No.8.

*Later contexts producing North Gaulish wares:*

Refuse layers: FVI 735/3529: 46, 48, 49, 55, 56, 58, 66. FVII 69/936: 50, 53, 57, 63, 72, 75. FVIII 49: 52, 70. FX 1200: 54. EVII 9: 60. EVIII 708: 64. EIX 535: 73. EX 1154: 68. EXI 2045: 43.

Spill: DVI 420: 67. CVII 575: 47.

Post-Roman and Area 4: 2628: 42. 3132: 61.

*Pottery from Building 1*  
(Figs 139-41)

76. MHAD.

77. RCC dark grey-brown fine fabric, few inclusions beyond black iron ore particles; iridescent dark grey colour coating, 60% of rim and much of body.

78. RCC similar grey-brown fabric, marginally more inclusions of quartz, black iron ore; iridescent dark grey colour coating. Burnt. 30% of rim and much of body.

79. NVCC.

80. NFCC hard fine light grey fabric, light red-brown cortex, sparse black iron ore; deep reddish-brown lustrous colour coating on exterior and most of interior. Almost certainly from the New Forest potteries.

81. RCC light red-brown fabric, virtually as fine as samian, colour-coated externally only. Probably an import, source unknown.

82. NVCC dark brown colour coating.

83. MHAD Myres 1956, fig.4, no.7; Roberts A32.4.

84. MHAD notably thin-walled. Roberts A20.12.

85. GREY sandy grey fabric with abundant but tiny quartz and flint, some larger rounded quartz grains; the fabric and finish is as No.243; source unknown. Myres 1956, fig.4, no.8; Roberts B33.1.

86. RBSL pinkish-cream painted design on rim. As Oxfordshire form, Young C48, AD 270-400. Sherds from what appears to be the same fabric but from a closed form, slipped externally only, came from Rm 1; the fabric, slip and finish is also similar to the hemispherical bowl No.612.

87. NVCC.

88. OXON Young type C68 or 81, both 4th century.

89. NVCC burnt on base and rim.

90. NGCR? heavily burnt post-fracture. The fabric has sparse to common quartz, occasional white inclusion; the self-slipped surfaces show the individual facets of the burnishing. The fire damage precludes certainty on the fabric, but while it appears to have been originally cream, the similarity of the fabric to the grey North Gaulish beakers and bowls (closer than to the cream beaker fabric) suggests it came from the same area, and is of the type found at New Fresh Wharf (Richardson 1986, 1.58-1.60) where a source in north-west France was suspected. Although this bowl came from the unsealed spill layer, the number of sherds, fresh breaks and the burning characteristic of other vessels found in the debris on the floor



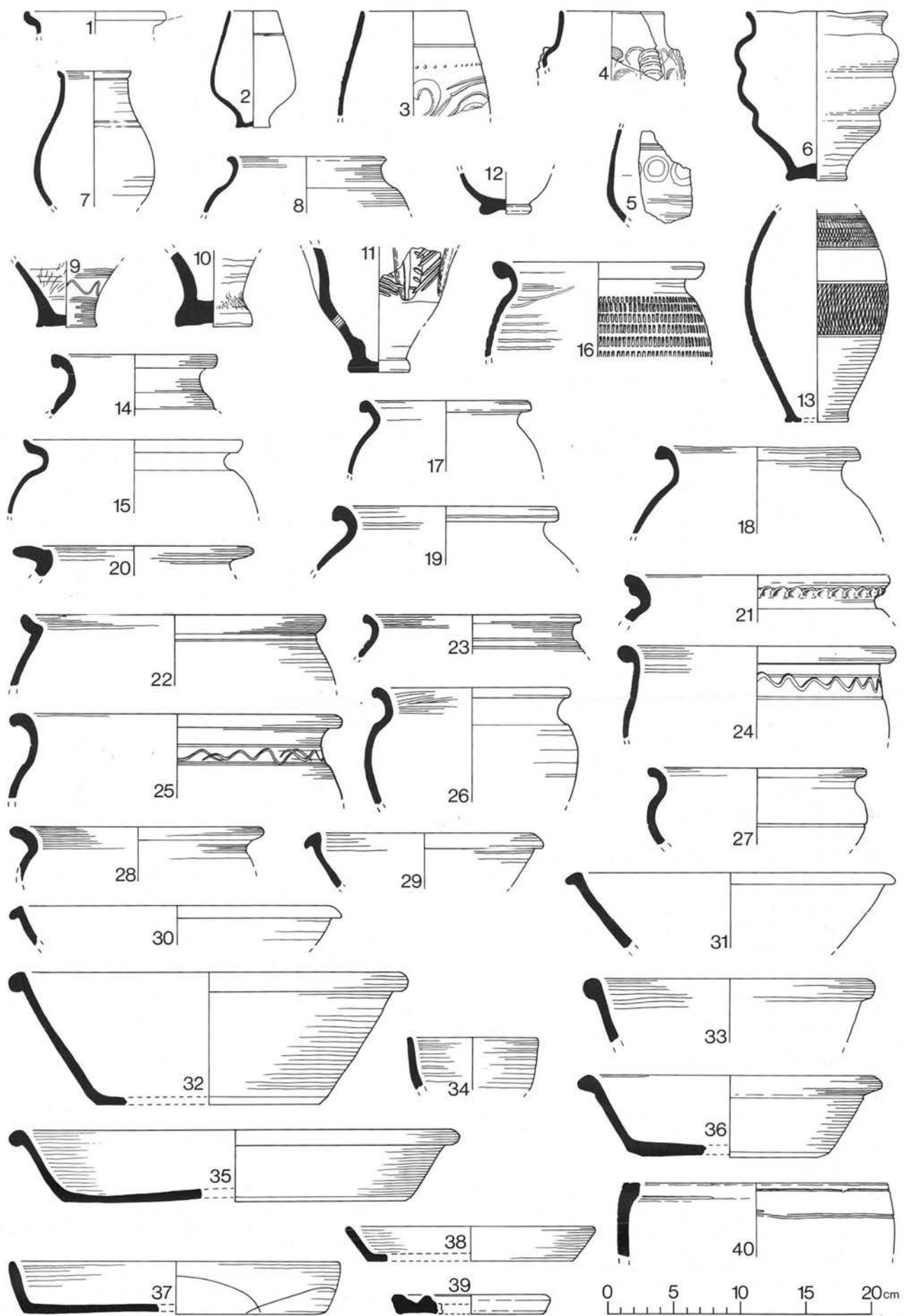


Figure 137 Roman pottery from the rampart spill. Scale 1:4.

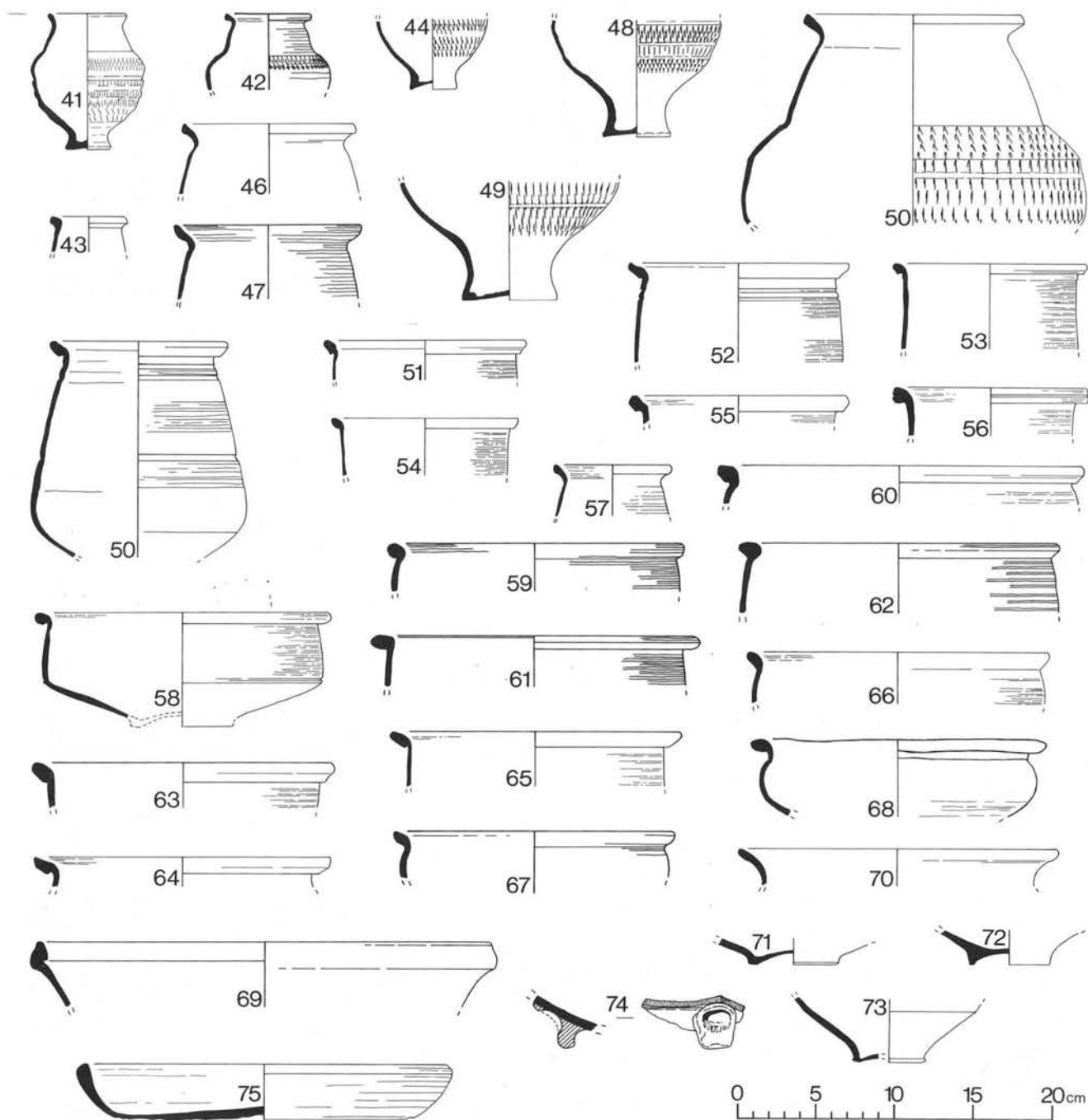


Figure 138 Roman pottery: imports from north-west Gaul. Scale 1:4.

of Rm 1, suggests that it was disturbed from there. This would suggest a later date than seemed apparent for the beakers and bowls decorated with 'bandes lustrées'.

91. NVCC.

92. NVCC.

93. MHAD from a closed form, with lime-scale internally; burnt.

94. GREY fabric with ill-sorted rounded quartz, calcareous inclusions; slipped and highly burnished.

95. GREY Flagon/flask body, brown finely granulated fabric with dark grey exterior surfaces, burnished; offset on underside of base.

96. GREY medium sandy fabric.

97. GREY ?local fabric.

98. BB2G? finely granulated sandy, exterior burnish silvery, with traces of red colouration.

99. GREY coarser fabric, cross incised on base post-firing.

100. GREY sandy fabric, ?local.

101. BB2? fairly fine light grey fabric with dark grey cortex, highly burnished inside rim and externally; all surfaces have a reddish colouration as often seen on BB2 vessels. The rim form is as used by the north Gaulish potters, and the fabric is similar to that used for the grey bowls and beakers (see Nos 41-75); the finish differs. Another rim Area 2.

102. GREY sandy grey fabric, burnished. Drawn from non-joining sherds.

103. GREY finer grey fabric with scatter larger quartz, well burnished.

104. GREY fine grey fabric, flint inclusions, rim notched with a tool.

105. BLKP fine brownish fabric, highly polished black surfaces, the notches on the rim show impressions like wood-grain.

106. GREY sooted surfaces, wiped.

107. NAR coarse fabric, abundant sub-rounded quartz. Lime-scale inside, burnt pre- and post-breakage.

108. NAR same coarse fabric as 107.

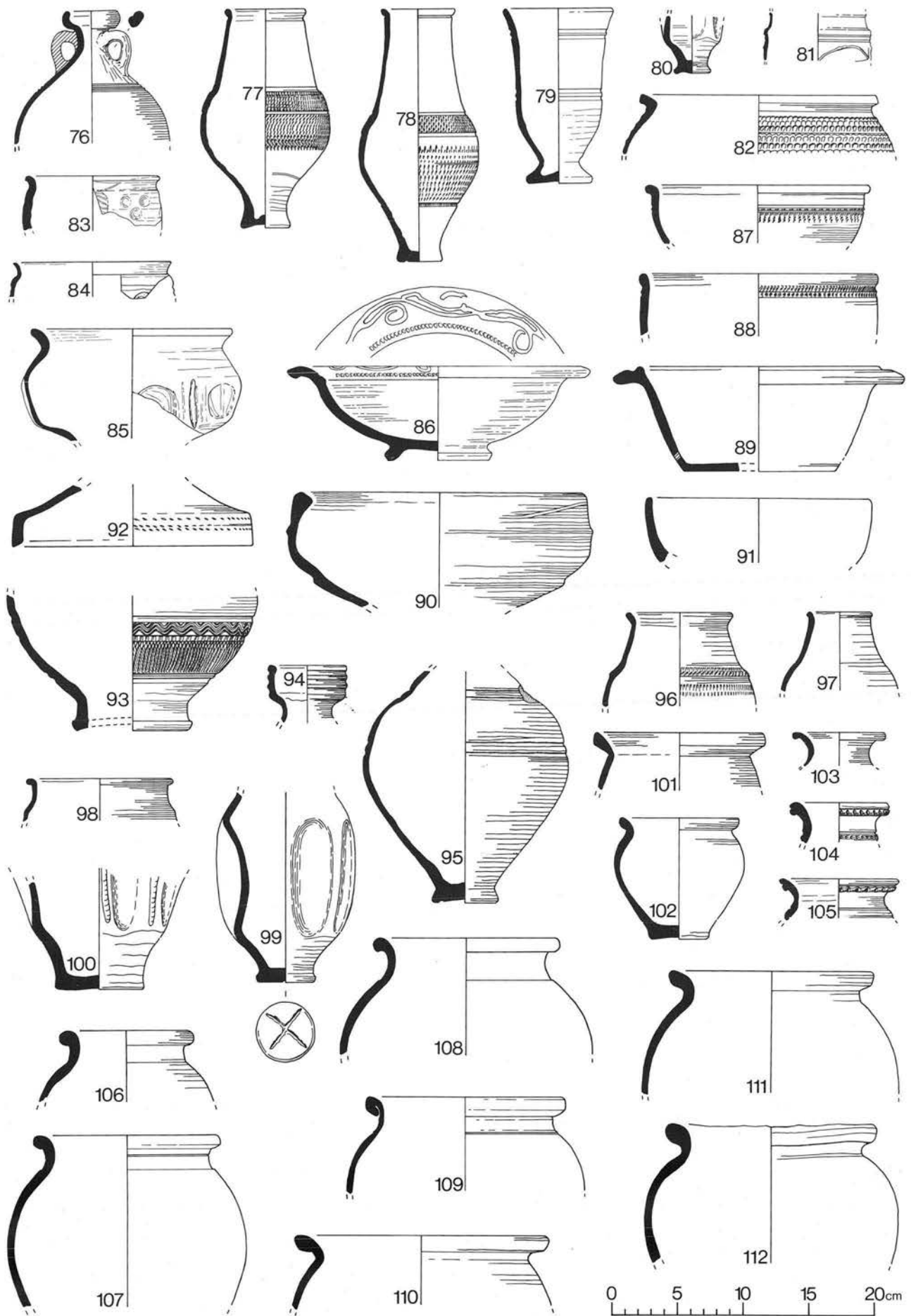


Figure 139 Roman pottery from Building 1. Scale 1:4.

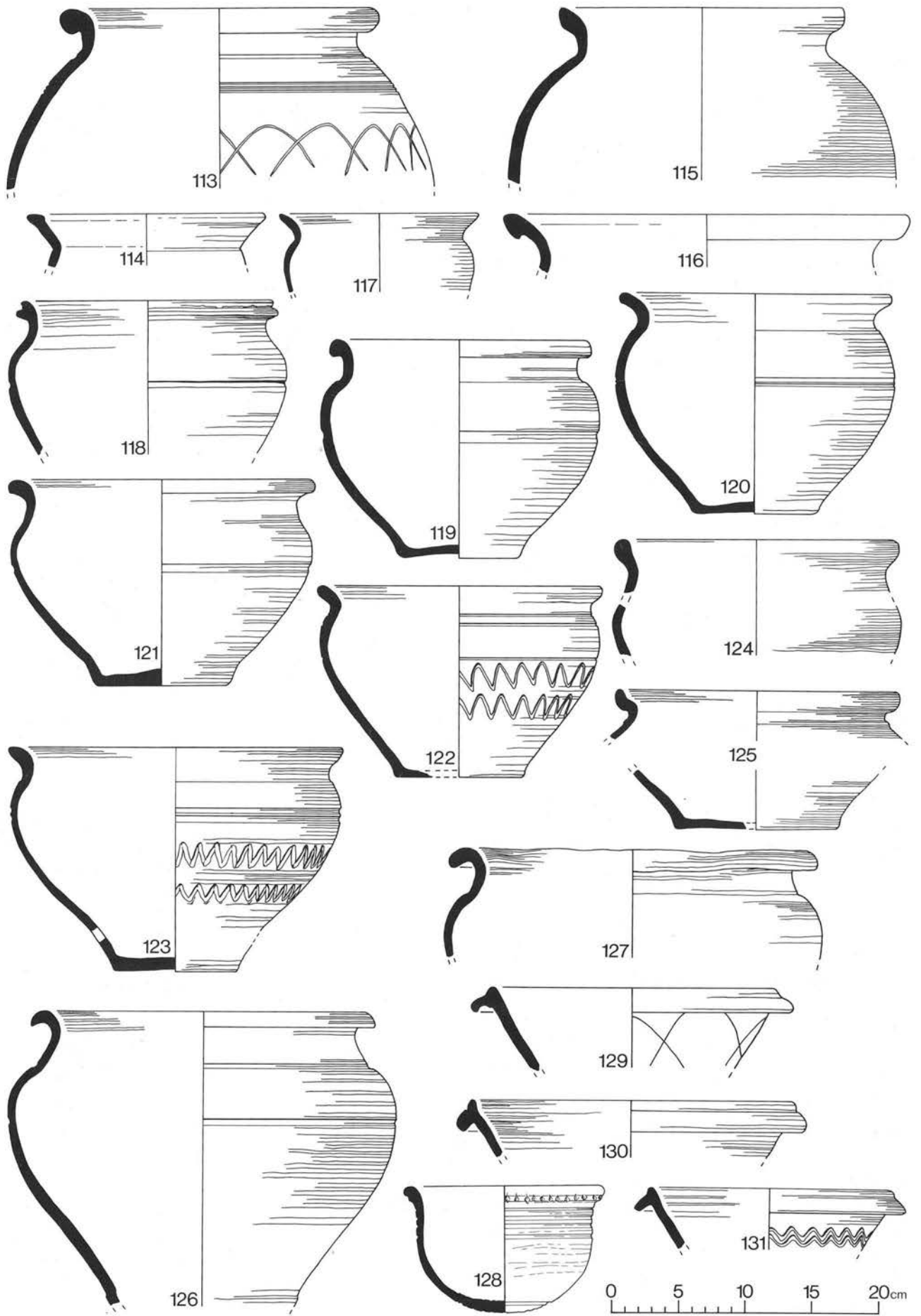


Figure 140 Roman pottery from Building 1. Scale 1:4.



Figure 141 Roman pottery from Building 1. Scale 1:4.

109. OX16 sandy bright red-brown, lime-scale internally.  
 110. GREY sandy, body sherds almost certainly from the same jar have Icenian rustication.  
 111. GREY lime-scale internally.  
 112. GREY very hard fired and distorted, dark blue-grey, probably local kiln product.  
 113. GREY sandy, burnished shoulder, burnished line decoration.  
 114. SHDW.  
 115. SHEL red-brown blackened externally.  
 116. SHEL as 115.  
 117. GREY red-brown fabric, probably slipped and burnished grey surfaces.  
 118. GREY.  
 119. GREY virtually complete, well-burnished.  
 120. GREY virtually complete, as 119.  
 121. OX16 substantial part, similar to 119, 120, grey-brown fabric may be due to burning post-breakage.  
 122. PKGR substantial part, similar to 121, colour may be due to burning, probably post-breakage; burnished line decoration.  
 123. GREY substantial part, as 122, dark grey; fairly deep burnished line decoration.  
 124. PKGR fine light brown fabric with common ill-sorted red iron ore; well burnished greyish surfaces (not inside rim).  
 125. BB2? finely granulated grey fabric, red-brown cortex, dark grey surfaces, highly burnished including inside lid-seated rim and underside of base.  
 126. GREY.  
 127. GREY very distorted rim, ?waster from local kilns.  
 128. GREY grey sandy fabric with flints, darker surfaces; greenish discolouration, from drain contents?  
 129. BB1.  
 130. GREY.  
 131. GREY common to abundant quartz.  
 132. GREY virtually complete. Evidence for burning, not certainly post-breakage.  
 133. GREY.  
 134. GREY.  
 135. GREY over 50% rim, fine fabric.  
 136. GREY.  
 137. OX sandy grey-cored with light brown cortex/surfaces.  
 138. GREY burnt post-fracture.  
 139. GREY dark brown-grey fabric, black surfaces, abundant quartz.  
 140. GREY.  
 141. GREY complete, burnt post-fracture.  
 142. GREY.  
 143. GREY sandy fabric.  
 144. GREY three lines scored across rim post-firing.  
 145. GREY brownish finely granulated fabric.  
 146. GREY finer than usual fabric.  
 147. GREY brownish fabric, dark grey-black surfaces, abundant quartz, all surfaces burnished, the interior base possibly having a more elaborate ?wavy line burnishing.  
 148. BB1 30% rim.  
 149. BB1 27% rim.  
 150. GREY.  
 151. GREY.  
 152. GREY.  
 153. MICG red-brown sandy micaceous fabric, burnished black surfaces, burnt probably post-breakage.  
 154. GREY.  
 155. MICG brown-grey fabric with abundant quartz, surfaces almost certainly given a micaceous slip, and burnished; rim grooved and notched. Another sherd, possibly from same vessel, with less evidence of mica on the surface from CVII spill.  
 156. BB2.  
 157. BB2 similar fabric to 156.  
 158. GREY brownish fabric with a scatter of rounded quartz, ?flint, red earthy grains, ?grog; dark grey-black surfaces.  
 159. COGR coarse hand-made.  
 160. GREY from bowl or dish; sandy red-brown fabric, black surfaces.

#### Provenances

**Room 1:** rubbish on floor, many joins between layers: **1637/1638/3166:** 78, 92, 95, 100, 109, 111, 116, 119, 122, 126, 127, 131, 143, 150, 152, 159, 160. See also mortaria 706, 762, 763. Features: **1798 drain F21:** 102. **3167 drain F53:** 110, 151. **3169 drain F54:** 126. **Disturbed layers: 1670:** 109. **1624:** 124, 159. **Spill 383/420:** 79, 84, 85, 87, 90, 98, 104, 112, 114, 118, 121, 136, 140, 142, 146, 153, 156. See also mortaria 715, 743, 806, miscellaneous sherd B (Fig. 163) and graffito sherds nos 13 and 14. **Room 2:** rubbish on floor: **988/1653:** 81, 97, 133, 134, 144, 155. **Spill 343:** 88,

93, 158. **Room 3:** rubbish on floor: **1002/2051:** 83, 106, 120, 123, 125, 132, 141, 154, 157. Dark soil below upper floor **1884:** 137, 145. Lower clay floor **1885:** 125 join with LB 2051, 130. **Room 4:** upper floor **2547:** 115. **Room 5:** hypocaust upper fill **2548:** 77 joining 3190. Middle fill **810** joining 1010 spill. Lower fill **2571:** 76, 86, 91, 94. See also amphora No. 168. Flue **F33 2738:** 138. **Room 6:** rubbish on floor **2728:** 101, 103. Below floor **3542:** 117, 129, 149. **Rooms 6/7 drain F34 2816/3236:** 80, 82, 96, 99, 105, 107, 108, 113, 128, 135, 139, 147, 148.

#### Type series

(Figs 142–59)

#### Amphorae

(Fig. 142)

**161.** DR20 Area 2, LB 2009 spill.

**162.** DR20.

**163.** PE47, dark cream fabric, lighter surfaces, with sparse sub-angular small quartz, fairly common white ?limestone, sparse iron ore. LB 708 refuse. Another identical rim LB 3529 refuse.

**164.** PE47, cream fabric and surfaces, slightly more common quartz, red and black iron ore, no obvious white limestone inclusions. LB 69 refuse. A fragment of a similar but smaller rim in the same fabric LB 464 spill.

**165.** PE47, dark cream fabric as 163, common and larger quartz, sparse white ?limestone, red and black iron ore. A plain surfaced body sherd in identical fabric came from the same context, but the two-ribbed handle, although superficially similar, is in a relatively sandy fabric with sparse but larger inclusions of soft red ?iron ore, and does not belong with the rim. Area 4.

**166.** PE47, dark cream fabric, sparse quartz, common linear black streaks and voids, sparse to common mica, less evident in the above sherds; smoothed externally. LB 993, post-hole F65, for ?bridge.

**167.** PE47? a variant of the Pelichet 47 range; red-brown fabric and interior (5YR 5/8–6/8), dark cream exterior surface, scatter of sub-angular quartz, soft red, sparse black iron ore and limestone. Body sherds from the same vessel are ribbed. The same basic fabric despite colour difference as Nos 164 and 165. LB 690 below spill DVI north of Wall 2, joining LB 383 spill EVI; sherds of the same vessel from FX pl/soil including base, DVI LB 420 spill, DVIII LB 315 spill, CVI LB 1460 'plaster pit' F73, LB 1447 PR, BIV pl/soil. Identification of the widely separated sherds was facilitated by the distinctive fabric, colour, etc.

All the above were identified as varieties of Pelichet 47, Peacock and Williams Class 27. Rim No. 163 appears to differ both in form and fabric. Nos 164, 165 and 167 are of the same type as found at New Fresh Wharf (Green 1986, 1.25–1.29) probably from northern France. Body sherds with rounded ribbing occur in fabrics compatible with Nos 164–167, and a wide handle with a central furrow and indentation at the base also occurs, although in a much finer fabric with few inclusions. The small two-ribbed handle figured with No. 165 is an outsider.

**168.** MAURET?, relatively fine limey red-brown fabric (near 2.5YR 6/6), cream salt-surfacing, common limestone ooliths (some apparently enclosing red iron ore?), soft red sandstone and sparse black iron ore and quartz. Thin-sectioned, see report by D.F. Williams on microfiche, No. 8. Despite the resemblance to the Mauretian Dressel 30 (Keay type IB), the fabric differs, and this is either from a different amphora type or region. LB 2571, lower fill, hypocaust, Rm 5.

**169.** MAURET? identical fabric to No. 168. Other sherds from LB 1872 refuse, 1387 AVI PR, pl/soil Area 4, LB 3087, AVI and IX.

**170.** KAPII, Kapitan II, Peacock and Williams Class 47. Red-brown fabric (2.5YR 4/8–5/8), darker surfaces, common quartz, sparse iron ore, limestone.

**171.** KAPII, same fabric. GV–VII, LB 835, PR.

**172.** KAPII same fabric. LB 3208, Rm 6. A ribbed body sherd in the same fabric occurred in LB 1182, rampart spill, and a similar sherd from AX pl/soil. These amphorae are usually considered to be current in the 3rd and 4th centuries.

**173.** BIV Body, small amphora, micaceous red-brown fabric (5YR 5/6), lighter brown surfaces (near 7.5YR 6/6), very fine friable fabric; ribbed on upper wall only. The hole in the wall seems ancient. This is probably from a micaceous vessel of the type described by Peacock (1977a), Peacock and Williams Class 45. LB 49; 735 refuse.

**174.** CHALK Chalk type 6, Peacock and Williams Class 50, light red-brown fabric (2.5YR 6/6), cream exterior surface, close textured fabric with scattered inclusions of quartz, limestone, sparse red, black iron ore, occasional rock, ?granite. LB 2664, lower fill hypocaust FX joining LB 666, overlying spill; other sherds possibly from the same vessel came from adjacent spill, LB 1579, 1990, and a

shoulder sherd from AVII pl/soil; more outlying sherds, possibly from other vessels from DVI LB 420 spill, Area 4, LB 3470, Grave 134, both handle fragments.

175. GAZA Ribbed body sherd, Gaza wine jar, Peacock and Williams Class 49, red-brown sandy fabric (2.5YR 5/4–5YR 5/4) with sparse limestone and small black inclusions. LB 1682, GVIII, spill from wall, PR; a further sherd from Area 4, LB 3307.

#### Fine wares, including cream fabrics

(Figs 142–5)

176. NGCR?. Pinkish-cream fabric very similar to that used for the pentice moulded beakers from north-west Gaul, although the texture of the fracture is slightly different. LB 2649.
177. NGCR? As No.176, slightly laminated fracture. LB 1100 spill. Body sherds from wide-necked closed vessels in the same fabric, originally identified as fabric 3 (as with the north Gaulish cream beakers), from LB 735 refuse and LB 575 spill. The jug, No.190 below is in the same fabric.
178. NVCC Area 4.
179. NVCC Area 2.
180. NVCC evidence for white painted decoration on body. Area 4, LB 3467, joining LB 3465, with fresh break (Graves 132, 135).
181. NVCC spout missing, handle damaged, rouletted; cf. RPNV No.68. A small sherd from a rare type of colour-coated jug with a folded spout in NVCC came from the pl/soil. The closest parallel is the relatively common type at *Verulamium* in cream fabrics, as Wilson 1984, fig.83, no.1976, with a moulded rim and ridges on the neck (white fabric, light red-brown slip), dated c. AD 130–200.
182. MHAD see also No.215. LB 1167, refuse.
183. GREY? grey fabric with a scatter of larger quartz, occasional ooliths; slipped black surfaces, highly facet-burnished, vertically on neck. Despite the burnishing characteristic of the Much Hadham potters, the fabric differs substantially; neither does it resemble that used for the grey 'romano-saxon' bowls. SF 2569.
184. CR, fine dark cream fabric and surfaces, dense texture with few visible inclusions beyond red iron ore grits and specks.
185. CRA? unique fabric. Dark cream, fairly fine fabric with red-brown streaks, red and black iron ore, occasional white inclusion and mica. LB 1037, silt, ditch.
186. CR?, light brown-pink fabric, cream surfaces, with common quartz, some rose quartz, black iron ore, white ?calclitic. See also Nos 187 and 188.
187. CR Flagon, unusual shape without footring or moulding. Fabric similar to Nos 186, 188, but not clearly the same.
188. CR very similar fabric to 186 and close to 187, with ooliths visible.
189. NGCR?. Very hard cream fabric similar to that used for the north Gaulish pentice moulded beakers, with fewer inclusions, and an unusual knobbly surface belying the paucity of inclusions. Exactly the same fabric occurs as sherds and a further jug rim from LB 1343, upper road surface. Both have the same simple handle form and are burnt unusually on the lip.
190. NGCR? same fabric as Nos 176 and 177, as used for the north Gaulish cream beakers.
191. NVCC LB 2123 refuse.
192. RCC? red-brown fabric, darker slip. LB 1343 road, upper.
193. NVCC? light red-brown fabric (sparse white inclusions, occasional flint), dark brown slip, barbotine scroll decoration. Probably Nene Valley (although fabric seems atypical); slight line below barbotine in section suggests beaker was slipped both before and after decoration. LB 1401 spill.
194. NVCC barbotine dolphin; three diagonal lines in adjoining zone, unidentified ?figure. LB 2123 refuse.
195. RCC fine grey fabric, black iron ore, occasional white including a large fragment resembling grog. Slightly metallic brownish slip. LB 67.
196. NVCC.
197. NVCC LB 2540 joining LB 2664, ABIX–X, fill hypocaust chamber and channels.
198. RCC bright red-brown fabric, fairly common tiny quartz, ?flint; dark red-brown slip. Area 4.
199. NVCC ?Beaker sherd. LB 1919 spill.
200. NVCC non-joining body sherd has evidence for white painted decoration. LB 2649.
201. NVCC? pink-cream fabric, mid red-brown streaky slip which has been cut by the lines of rouletting. The exterior seems burnished, the interior retaining a matt surface. LB 3529 refuse.
202. NVCC Area 4 LB 3315, Grave 60.
203. NVCC Beaker body sherds, with plant motif painted cream between lines of rouletting. LB 2628.
204. RCC light red-brown fabric, darker slip externally and partially on interior. An uncommon base, perhaps a Colchester product. LB 1049 refuse.
205. NVCC pedestal base, ?beaker; string-marked flat base. EVII LB 154, spill.
206. MICCC Identified as late Trier samian, see Late samian flagons, below. During cataloguing a join was found with a sherd extracted as an unusual fabric from LB 988, Rm 2, showing the wall curving outwards like the belly of a flask, with a false cordon of two grooves above the base. A rare example of a small flask/flagon from Trier (Gose 1976, taf.12, no.176; Oswald and Pryce 1920, pl.LXXXII–LXXXIII). EX 1976 excavns.
207. MOSL LB 69 refuse.
208. MOSL LB 69 refuse.
209. MOSL LB 3529 refuse.
210. MOSL thick white barbotine decoration. LB 735 refuse.
211. MOSL beaker body sherd, with thick cream barbotine decoration delineating a zone with rouletted lines and the letter 'A' and a serif from the following letter, both in thinner cream slip. SF 294. LB 315 spill.
212. MOSL same type of beaker, same differing thicknesses of slip for the decoration, also the letter 'A'. SF 1280. LB 666 spill.
213. MHAD small notched cordon on shoulder. SF 3018.
214. MHAD vertical burnishing on upper wall, horizontal above and below; (cf. Toller 1985, fig.44, no.516). SF 977. LB 1154 refuse.
215. MHAD face-neck flagon, with applied vertical fingered-strip, as at Burgh Castle (Johnson, S. 1983, fig.39, no.46). A fragment of neck with an applied non-functional four-ribbed handle was also found (SF 1632, Area 2). See also Nos 221, 222 and discussion of Much Hadham Wares below for a sherd apparently copying an Oxfordshire type. SF 1830.
216. OX Beaker?, fairly sandy red-brown fabric. Non-joining sherds almost certainly from the same vessel show a rounded profile towards the base. LB 735 refuse.
217. MHAD SF 1823, 2038. Area 2 LB 2009 spill.
218. MHAD SF 1358, LB 1579 spill.
219. MHAD SF 951.
220. MHAD SF 1578.
221. MHAD jar with face of pinched clay applied below rim. Typical of the Much Hadham potters (Braithwaite 1984, fig.8). SF 2045. Area 2, LB 2274.
222. MHAD Neck, narrow-necked vessel; a round area has been pushed slightly inwards, and within the roundel, parts have been pushed out, the finger-marks showing inside. The design is obscure on the surviving fragment, but most resembles part of a face, with left cheek, possibly the edge of a brow line, the lower knob representing the chin? Neck burnished vertically, horizontally below the roundel above two cordons on the shoulder. Published in Roberts 1982, pl.33, C 40.3; the lower boss does not have a groove surround as stated. See also Nos 215, 221 and discussion for another probable representation of a face on Much Hadham Ware. SF 1060.
223. MHAD applied fingered-strip below rim, with non-functional 'handle'; vertical burnishing on neck, horizontal below 'handle'; non-joining body sherds show two false cordons formed by grooves on the shoulder, and a continuous curve towards the belly. SF 1615, 1636, 2098, all from Area 2, LB 1709; 1809 spill; 2321 pit.
224. MHAD moulded base, closed vessel. LB 575 spill.
225. MHAD? Base with slight mouldings, an offset on the underside, burnished externally; from a bowl form, a detached body sherd showing a rounded carination leading up to a ?convex upper wall. LB 653 spill.
226. CRA light brown fine fabric with scatter of quartz, iron ore, white ?calcareous inclusions; creamish surfaces. Fragment of applied clay at the fracture, possibly part of a face-mask. Probably only two-handled (45–50% rim). LB 2559, upper fill hypocaust F10.
227. CR very similar fabric to the two-handled vessel, No.188 above. LB 535 spill.
228. CR finger indent at base of handle; light brown fabric with streaky greyish core, cream-brown surfaces, fairly common white ?calcareous inclusions, iron ore, scatter of quartz; painted with red-brown zig-zags on neck above cordon. Area 4, LB 3111.
229. NVCC LB 936 refuse.
230. NVCC.
231. NVCC.
232. NVCC triple-grooves on upper body, interrupted by an area with finger-marks internally, and traces of barbotine decoration at the fracture. The fingering inside suggests bossed decoration (cf. Roberts 1982, pl.38, D24.1). See Miscellaneous pottery below for stamped NVCC sherd. LB 1546, upper road.

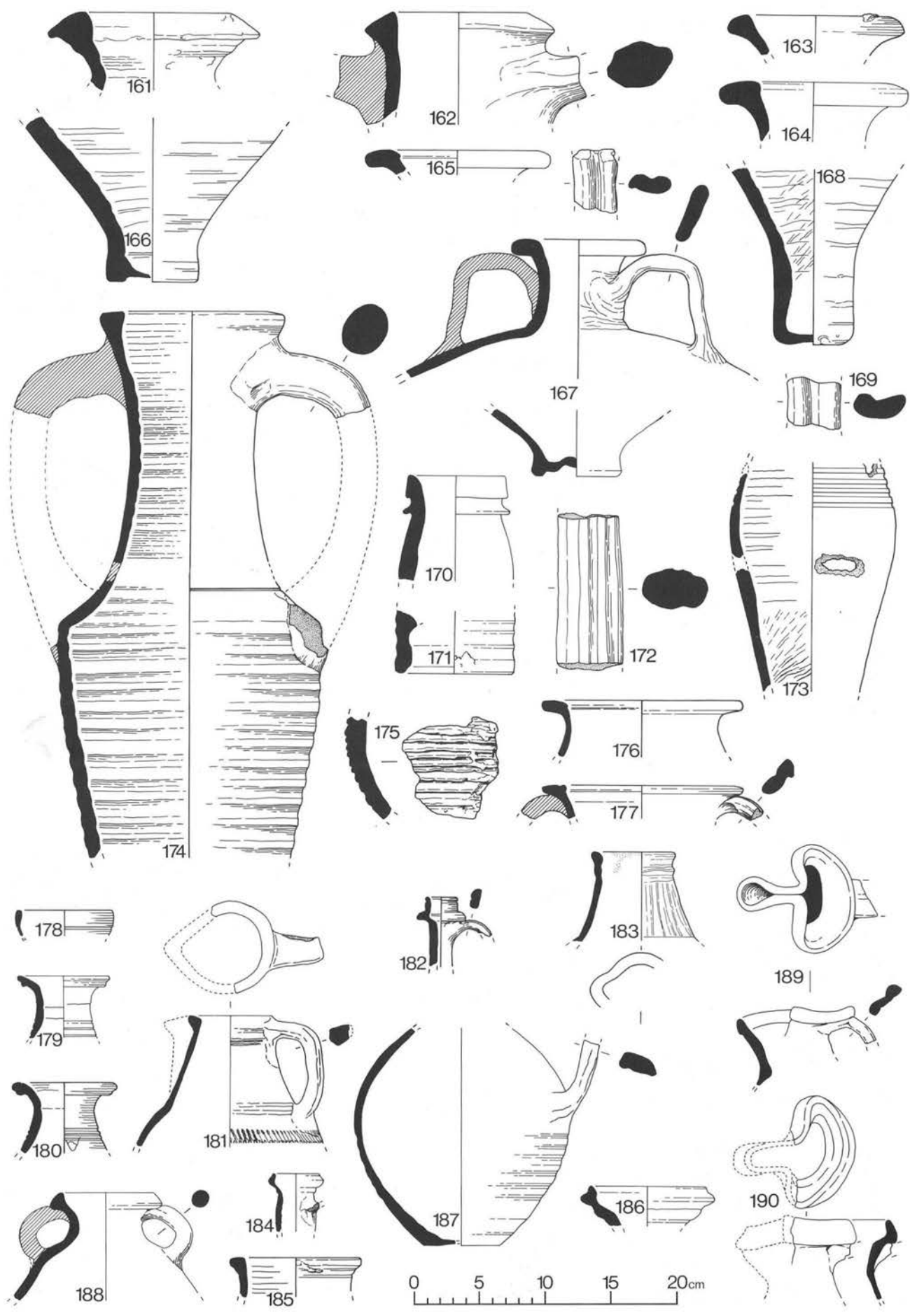


Figure 142 Roman pottery: type series. Scale 1:4.



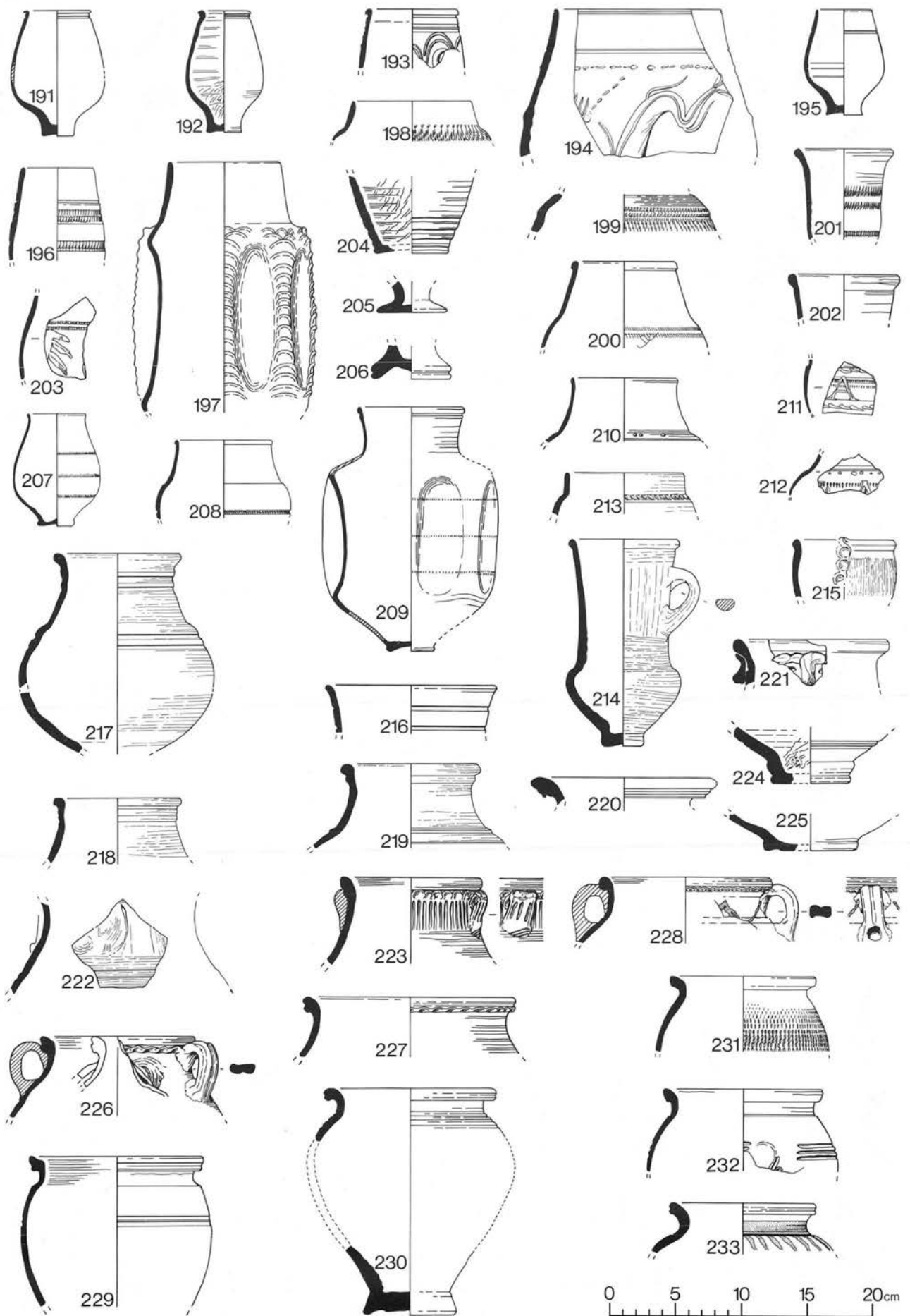


Figure 143 Roman pottery: type series. Scale 1:4.

233. CR fine cream fabric, similar to Nene Valley, burnished inside rim and on shoulder, red painted decoration. Area 4.
234. NVCC.
- 'Romano-saxon' vessels are discussed below
235. MHAD no evidence for bosses. Myres 1956, fig.5, no.11; Roberts A1.10. SF 1186, ?1226. LB 1447 PR.
236. MHAD Myres 1956, fig.5, no.3; Roberts A7.1. This was incorrectly typed by Roberts, on the basis of a supposed third slash, caused by damage at the edge of the sherd; this should therefore be his type A5. SF 1124.
237. MHAD Myres 1956, fig.5, no.4; Roberts A3.18, 3.19; the two vessels illustrated by Roberts are almost certainly the same vessel. SF 1822; 2049. Area 2, LB 2009 spill.
238. MHAD Roberts bowl A9.3 and jar C11.2, almost certainly the same vessel. LB 575 spill, same vessel in 1447, PR.
239. MHAD as 238. Mis-identified by Roberts as a jar C11.1 with the sherd illustrated (pl.20) upside down; Roberts type A9.
240. MHAD as Roberts bowl type A9. LB 653 spill.
241. MHAD similar to No.83 above, Roberts type A32.
242. MHAD ring stamp. Roberts A21.4. SF 3174. Area 4, LB 3315, Grave 60. See a similar thin-walled bowl, No.84 above.
243. GREY sandy grey fabric with common to abundant sub-rounded quartz; burnished externally and over rim with visible individual facets; with oval indentations decorated with a burnished leaf motif, the intervening areas being vertically burnished, all below a slight cordon with irregular notches. Both fabric and finish align this bowl with that from the building, No.85 above, of Roberts type B33. Myres 1956, fig.6, no.2; Roberts A31.1. SF 1775.
244. GREY similar sandy grey fabric and decoration, without the notched cordon, and possibly self slipped, the exterior having a more silvery finish; not certainly from the same source as No.243. Roberts A31.2. SF 3256.
245. GREY grey sandy fabric, with alternating round indentations and bosses, with burnished line decoration, and intervening crosses. Myres 1956, fig.6, no.1; Roberts A28.1, 2 and 3; the three separate vessels noted by Roberts are one. Fabric and finish suggest this came from the same source as Nos 243 and 85. SF 1696, 2278, 2307; LB 2532 joins with 1872, 464, 535 all EIX refuse and spill.
246. MHADR bowl body sherd with evidence for a boss defined by angular burnished lines; exterior surface highly burnished black. Probably as Roberts type A20. LB 1401 spill.
247. MHADR? bowl body sherd with boss and wavy line decoration in a groove demarcated zone. Roberts A29.1. SF 1038.
248. MHADR bowl body sherd; same fabric as No.246 above. Probably same type as No.235, Roberts A1. SF 1037.
249. MHAD closed form body sherd with the oval stamps decorating a wider cordon, above a decorated zone with a boss in a ring; usual oxidized fabric. The stamps with their deep curved indents, almost like fingernail impressions, are unparallelled. The boss below may have been a complex boss, perhaps with a central dimple; surface damage precludes certain identification. Roberts C20.15. SF 2821.
250. MHAD closed form body sherd, notched cordon; a similar sherd from LB 469 spill SF 3033. Area 4, LB 3279 Grave 47.
251. MHADR closed form body sherd, evidence for a burnished line decoration in a zone below a shoulder groove; same fabric as Nos 246, 248 above; see also rim No.336. Roberts C9.1. SF 2804. Area 4, LB 3055 outer ditch.
252. MHAD SF 1727. LB 1894 upper road surface.
253. MHAD SF 1631. Area 2.
254. MHAD SF 1635. Area 2, LB 1809 spill.
255. MHAD SF 1193. LB 1447 PR.
256. MHAD Area 2.
257. OX red-brown fabric (2.5YR 5/6) with lighter brown surfaces (5 6/6); common tiny quartz, sparse red and black iron ore, and oolitic inclusions. Smoothed externally, and coated with a micaceous cream slip covering the base and wall to just below the rim; a red painted ?stripe is visible at the bottom of the rim sherd. Unique vessel of unknown origin, possibly an import. Area 4.
258. ARG body sherd from EVIII LB 895 refuse and base from DVIII pl/soil are almost certainly the same vessel (non-joining sherds). AX pl/soil.
259. OXON Young type C77, painted; a non-joining body sherd shows a sharp moulded carination; LB 653 spill.
260. OXON Young C75.
261. OXON Young C71?. Area 2, LB 2251.
262. OXON variation on Young C81, unusually undecorated. Drawn from non-joining sherds; LB 1447 PR.
263. OXON probably Young C81, undecorated. LB 67 refuse.
264. OXON probably Young C68, LB 1447 PR.
265. HADOX hard red-brown fabric with sparse ill-sorted sub-angular quartz, possible flint; burnished self-slip (poorer finish internally), decorated with a narrow zone of rouletting. A raised diagonal line below the rouletting may indicate some applied decoration, but could be a potting flaw. The interior surface is slightly pimply. Unique sherd. Although the form is known to appear in the range of Pevensey Ware (Fulford 1975b), the description of the fabric is quite dissimilar. LB 1387 PR.
266. HADOX Finely granular red-brown fabric with specks of black and red iron ore, and few other visible inclusions; self slipped and burnished interior/exterior; decorated with thickish cream paint; ?extra clay accidentally added to interior rim before slipping. A body sherd from the same vessel (LB 1665, Rm 2) shows a carination. The same fabric and decorative painting occurs as copies of the samian F38 below, Nos 277/278. Possibly from the Much Hadham potters but atypical fabric and finish. As Young C82. LB 164 refuse.
267. RBLS not same as No.612 below. As Young C55. LB 2045 refuse.
268. NVCC LB 1015, Rm 9.
269. NVCC LB 154 spill.
270. OXON Young C45. LB 1049 refuse.
271. OXON Young C46.
272. OXON Young C46. LB 2756 spill.
273. NVCC variation in rim illustrated. LB 67.
274. NVCC.
275. CRA light brown fabric, painted light red-brown; fine streaky fabric, slightly laminated, with red iron ore and cream streaks; probably a Nene Valley product. LB 1154 refuse.
276. HADOX finely granulated red-brown fabric, darker greyish-brown core, red burnished slip, decorated with cream paint. Probably an atypical Oxfordshire product, with rather more tiny black iron ore inclusions than usual, the fabric resembling fine Much Hadham Ware, although oolitic specks also occur. Not particularly micaceous. See also No.279 below. As Young C52. Area 2, LB 2039 spill.
277. HADOX same fabric as bowl No.266 above, possibly from the Much Hadham potters. The colour of the slip varies from very dark red-brown to light red (10R 5/8). Painted cream on flange. The internal slip is ?worn away unusually on the vessel side rather than base. As Young C52. LB 1872 refuse, joining sherds from LB 3529.
278. HADOX As No.277, Young C52. LB 164 refuse. Due to stacking during firing, surface colour of interior, rim and flange of bowls 277 and 278 is dark red-brown; the intended bright red-brown colour occurs only below the flange.
279. HADOX similar fabric to No.276 with a greyish core, more black iron ore inclusions than usual, but probably an atypical Oxfordshire product. As Young C51. LB 835 ditch, PR.
280. EPON Bowl, céramique à l'éponge. LB 2649.
281. NVPA LB 1872, refuse.
282. NVCC LB 49 refuse.
283. NVCC LB 735 refuse.
284. NVCC.
285. NVCC LB 1579 spill.
286. NVCC diam. 170mm LB 1579 spill.
287. NVCC LB 1424 PR.
288. NVCC diam. 125mm. LB 1579 spill.
289. NVCC traces of burning on lower wall. LB 1579 spill.
290. MHAD heavily burnt exterior. LB 653 spill.
291. NVCC rouletted internally; cf. Oxfordshire type C40, probably 4th century. Area 4.
292. PRW Pompeian Red Ware platter, slip on interior and over rim (10R 5/6). Peacock's (1977) fabric 7. A further rim sherd probably from the same platter was found in LB 954, rampart spill, in the adjacent grid square EIX. EVIII LB 708 refuse.
293. PRW As No. 292, the base from another platter, virtually identical except that the fabric is light grey with a narrow beige cortex; the exterior unslipped surface has been smoothed, apart from a narrow band immediately above the base moulding, that on the underside of the base dragging grits across the surface. There is no evidence for burning as is commonly found on Pompeian red ware platters. Area 4, LB 3408, gutter.
294. NVCC RPNV type 71-2. LB 535 refuse.
295. RCC light red-brown fabric, grey core, dark red-brown matt slip, probably Nene Valley. LB 735 refuse.
296. RCCOA sandy red-brown, dark brown matt slip. LB 69 refuse.
297. NVCC ?box or bowl, groove on underside at edge of base.
298. NVCC? Base, light brown fabric, red-slip slip, burnt darker on underside; crude tooling marks on wall; sagging base (centre survives). Unknown vessel form. LB 666 spill.
299. MICA flask?, gold micaceous slip externally. LB 735 refuse.
300. OX unknown vessel or ceramic object. Re-examination showed that the sherds shown as non-joining on the illustration did join. Over

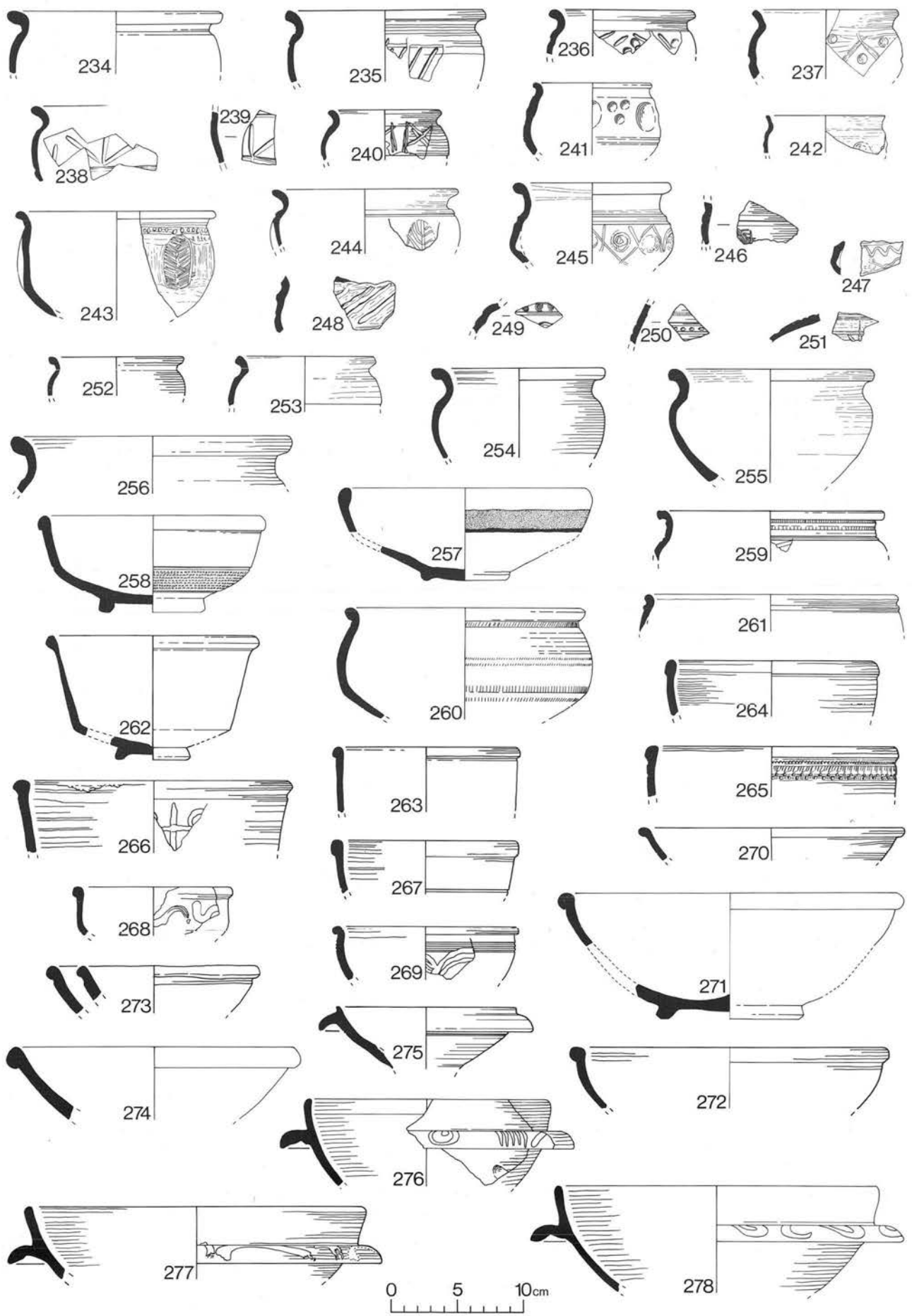


Figure 144 Roman pottery: type series. Scale 1:4.

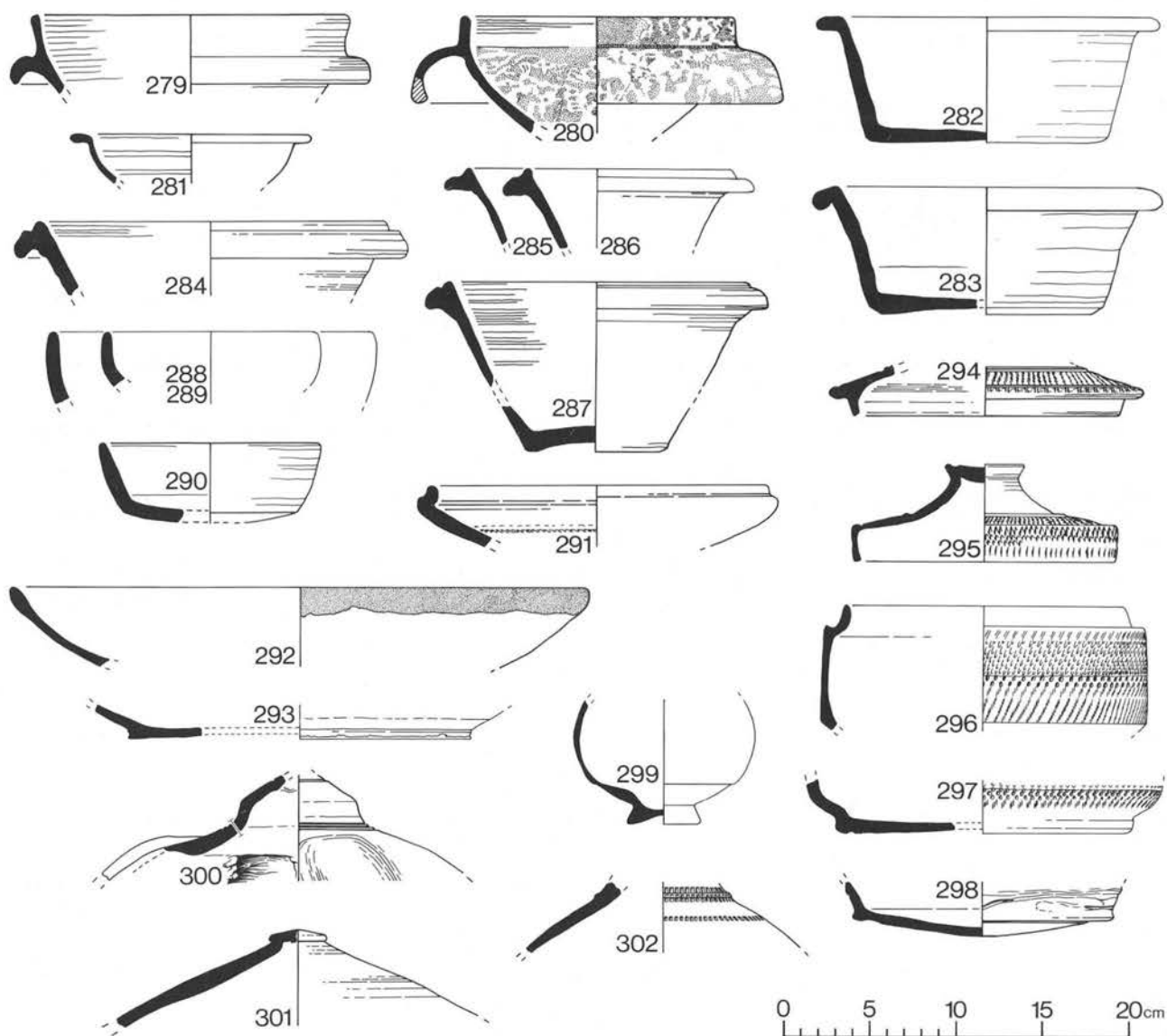


Figure 145 Roman pottery: type series. Scale 1:4.

20% of the angle at the top survives to give the small diameter. Sandy red-brown fabric, wheel-thrown, with a sub-rectangular 'boss' applied over what appears to be a rectangular cut opening in the wall. The interior surface shows signs of burning, particularly at the top; exterior is untreated except for vertical smoothing on the 'boss'. SF 1729. LB 1401 spill. While the main 'sherd' was included in a survey of 'romano-saxon' wares (Roberts 1982, 88, pl.27, C20.6) as from a jar with bosses, the nature of the 'boss' and the smoke staining and burning internally suggest this is not necessarily a vessel, and may be related to the objects known as 'lamp chimneys' or finials (Lowther 1976). The only possible local parallel is an amphora-type vessel from Brampton (Green 1977, fig.32, no.115); this had no boss features and was burnished.

- 301.** CR2? Body sherd, hard sandy dark cream fabric, common quartz, red iron ore, occasional white. The knob is unusual for a lid, but the same type was found at Ilchester (Leach 1982, fig.68, no.63), in fine fabric of similar description (Leach 1982, 140), apparently found in 1st century and later contexts. The identification as a lid is questionable, and it may be from a lesser known amphora. Both this knob and the fragment, No.302, are unique at Caister, and a foreign source is suspected. LB 69 refuse.

- 302.** CR2 Body sherd, hard sandy pinkish fabric, cream surfaces. Similar to No.301 but more abundant quartz, and some flint, harsh feel; decorated with distinctive regular oblong rouletting. Either from a closed form or possibly a decorated lid. LB 69 refuse.

**Main coarse wares**  
(Figs 146–57)

- 303.** OXCS similar to Oxfordshire ware, fairly micaceous, slipped cream.  
**304.** OX red-brown fabric, cream-brown cortex/surfaces, dense texture, sparse quartz.  
**305.** OX red-brown grey-cored fabric, common quartz. LB 2976 spill.  
**306.** GREY LB 708 refuse.  
**307.** CRA light red-brown fabric, cream surfaces, fairly common quartz, iron ore, occasional cream. LB 810 spill.  
**308.** OXF red-brown fabric, light brown surfaces, fine, red iron ore, sparse white, vesicular fracture. Similar to No.304. LB 154 spill.  
**309.** OX hard grey fabric with red-brown cortex/surfaces, sparse quartz; ?self-slipped and burnished on rim. LB 835 PR.  
**310.** GREY sandy red-brown fabric, grey external surfaces. LB 1820.  
**311.** OX16 red-brown sandy fabric with common quartz and flint; decorated in barbotine with a hunt scene.

312. OX Beaker sherds, brown fabric with sparse scattered quartz, decorated with barbotine, ?self slip. LB 2664, hypocaust fill.
313. GREY sandy fabric. LB 1820.
314. GREY. LB 1037 ditch, rapid silt.
315. GREY burnished except in folds. LB 67.
316. GREY (NCM 620.965).
317. GREY (NCM 193.961).
318. GREY fairly fine fabric with scattered quartz, occasional white calcareous inclusions; slipped on upper body only and inside rim, the slip firing to a whitish-grey, and burnished; occasional streaks of slip on the lower body. LB 69, joining LB 735, both refuse.
319. GREY sandy grey fabric, probably local. Area 2, LB 2216 refuse.
320. GREY Folded beaker sherd, sandy grey fabric (noticeably rounded quartz), burnished neck/shoulder, with graffito post-firing. LB 1403 spill.
321. GREY Folded beaker base, red-brown fabric, grey surfaces, darker and probably self-slipped externally; vertical burnishing on the outer folds. LB 2540, hypocaust F9 fill.
322. GREY Beaker, graffito 'AD' scratched post-firing. LB 49 refuse.
323. GREY red-brown fabric, grey surfaces, burnished externally; the base more crudely burnished, including the underside. Burnt. Area 4.
324. GREY 450 LB 207 spill.
325. GRF probably poppy head form; fine open textured red-brown grey-cored fabric with occasional quartz, cream inclusions; dark grey surfaces, finely burnished externally and just over rim, with a reddish colouration similar to BB2. LB 735 refuse.
326. GREY grey cored red-brown fabric, fairly common quartz, iron ore and occasional flint, brown grey surfaces highly burnished, visible burnishing facets, a finish very close to BB2. Area 4, LB 3254, Grave 33.
327. GREY fairly fine fabric. Area 2, LB 2232.
328. GREY fine light grey fabric, dark grey core, highly polished black surfaces; scatter rounded and angular soft brown inclusions. LB 666 spill.
329. BB2G LB 2045 refuse.
330. BB2G Area 2, 1942 spill.
331. BB2G LB 2069 refuse.
332. GREY finely granulated fabric. LB 1447 PR.
333. RBGR LB 735 refuse.
334. GREY fairly fine fabric, graffito on neck post-firing. SF 4183. LB 1872 refuse.
335. GREY fairly fine fabric. LB 1579 spill.
336. MHADR? finely burnished black. LB 3389, Area 4, Grave 62.
337. GREY fairly fine fabric. LB 653 spill.
338. GREY fairly fine fabric. LB 3529, refuse.
339. GREY fairly sandy fabric. LB 1401 spill.
340. GRSAN very fine, almost grit-free sandwich type fabric with darker core; finely burnished and rouletted. LB 67.
341. GRF fine fabric, very finely rouletted. LB 535 refuse.
342. GSA113 very fine almost grit-free sandwich type fabric as No.340, see also No.13; fine rouletting. LB 2352, hearths.
343. GREY Area 2, LB 1942 spill.
344. GREY sandy red-brown, dark grey surfaces. Area 4, LB 3035.
345. GREY Beaker or jar sherd, fairly fine fabric with scatter of rounded quartz, barbotine diagonal stripes. LB 810 spill.
346. BB1 LB 2069 refuse.
347. GREY fairly sandy, polished surfaces. LB 666 spill.
348. OX orange-brown fairly fine fabric, self-slipped and burnished externally, not unlike Much Hadham Ware.
349. GREY sandy fabric. LB 1872 refuse.
350. GREY finely granulated with common red and black iron ore specks. LB 1154.
351. GREY sandy fabric, ?local. Area 2, LB 2232.
352. GREY Area 2.
353. GREY. Area 4.
354. GREY Area 4, LB 3336, Grave 75.
355. GREY fairly fine fabric.
356. GREY Probably a tankard, fairly fine fabric with evidence for a ?handle at the fracture. Area 4.
357. GREY Similar flaring rim form, but the wall appears to change angle at the fracture; finely granulated fabric, not the same as No.356. Area 2.
358. GREY finely granulated fabric, fairly micaceous, burnt externally and over rim. LB 1167 refuse.
359. GREY red-brown cortex, black surfaces, burnished externally, groove around edge of burnished underside of base. LB 708 refuse.
360. GREY. LB 2664.
361. GREY finely granulated with abundant tiny quartz black fabric, burnished, grooves and offset on underside. LB 1167 refuse.
362. OX16 sandy fabric, burnished, offset on underside, burnt externally. LB 1167 refuse.
363. GREY light brown fabric, fired to grey external surface. Fabric similar to flagon No.95. LB 1820.
364. GREY Beaker or narrow-necked vessel, red-brown fabric, grey burnished surfaces. LB 2614 refuse.
365. OX red-brown fabric, light brown surfaces; burnished on rim. LB 2960, PR.
366. BB2G LB 810 spill.
367. GREY LB 810 spill.
368. GREY sandy fabric, black burnished surfaces; burnished decoration, the vertical lines more deeply impressed. LB 69 refuse.
369. GREY finely granulated fabric. LLB 1154 refuse.
370. GREY sandy fabric, burnished decoration. LB 1872 refuse.
371. GREY 1935 find.
372. BB2?, LB 653 spill.
373. OX sandy red-brown fabric, burnished surfaces, notched on edge of rim, lid-seated.
374. GREY LB 1872 refuse.
375. OX13 red-brown fabric, fairly common black and red iron ore, cream inclusions and streaks; frilled rim, applied pseudo ring-handle and attachment; in the middle of one side (45% rim) an applied pellet, the wall of the neck being pushed outwards at the break, almost certainly part of a face. LB 1049 refuse.
376. GREY light grey fabric, very similar to NGGW used for the beakers and jars, notched moulded rim, burnished. LB 69 refuse.
377. OX28 slipped and fired grey, the quality more of colour-coated wares. LB 936 refuse.
378. GREY coarse fabric with ill-sorted rounded quartz, flint, some white; limescale internally, sooted exterior. LB 813.
379. GREY hard, fairly finely granulated, unburnished. Area 4, LB 3325, Grave 67.
380. GREY brownish fabric, sparse quartz, thin walled. LB 69 refuse.
381. GREY similar to 380, some flint inclusions. LB 207 spill.
382. GREY heavily burnt. LB 464 spill.
383. GREY LB 810 spill.
384. GREY red-brown fabric, dark grey surfaces, rilled on shoulder. LB 207 spill.
385. GREY fairly sandy fabric. LB 936 refuse.
386. NAR. LB 666 spill.
387. GREY hard fired sandy fabric, probably local. LB 1820.
388. GREY thin-walled, distorted, second or waster. LB 535 refuse.
389. GREY hard-fired sandy fabric, ?local. LB 69 refuse.
390. GREY fairly sandy fabric, burnished lines on neck and burnished shoulder, below a notched/stabbed cordon. LB 2491, Rm 2, PR disturbance.
391. GREY finely granulated brown grey-cored fabric with varied red-brown and grey surfaces due to burning (most of vessel survives). Area 5.
392. GREY hard-fired sandy fabric, Icenian rustication; slightly distorted, ?local. LB 1175 refuse.
393. GREY brown finely granulated fabric. LB 67.
394. GREY finely granulated fabric. LB 1154 refuse.
395. GREY hard-fired sandy fabric. ?local. LB 67.
396. OXC softish red-brown with abundant quartz, burnt grey externally. LB 154 spill.
397. GREY hard-fired sandy fabric, ?local. LB 810 spill.
398. GREY LB 164 refuse.
399. GREY LB 1820.
00. GREY light grey sandy fabric, burnished bands on neck above a notched/stabbed cordon. LB 920 ditch.
401. GREY LB 1872 refuse.
402. GREY LB 895 refuse.
403. GREY LB 69 refuse.
404. GREY brown-grey fabric, abundant quartz, occasional larger grains, and flint inclusions. From kiln found in 1965 (NCM 620.965).
405. GREY hard-fired sandy fabric, ?local. LB 1820.
406. GREY sandy with abundant quartz, Icenian rustication. LB 1110.
407. GREY LB 164 refuse.
408. GREY slashed on shoulder. LB 69 refuse.
409. GREY LB 1907 spill.
410. GREY stabbed shoulder. LB 3529 refuse.
411. GREY slightly distorted rim. LB 3529 refuse.
412. NAR? Icenian rustication. LB 1154 refuse.
413. GREY thin-walled sandy, nearly complete. LB 67.
414. NAR LB 708 refuse.
415. NAR Icenian rustication. LB 2045 refuse.
416. GREY fairly sandy red-brown grey-cored fabric. LB 920 ditch.
417. GREY fine clay with scatter of relatively large rounded quartz, flint; ribbed shoulder. LB 154 spill.

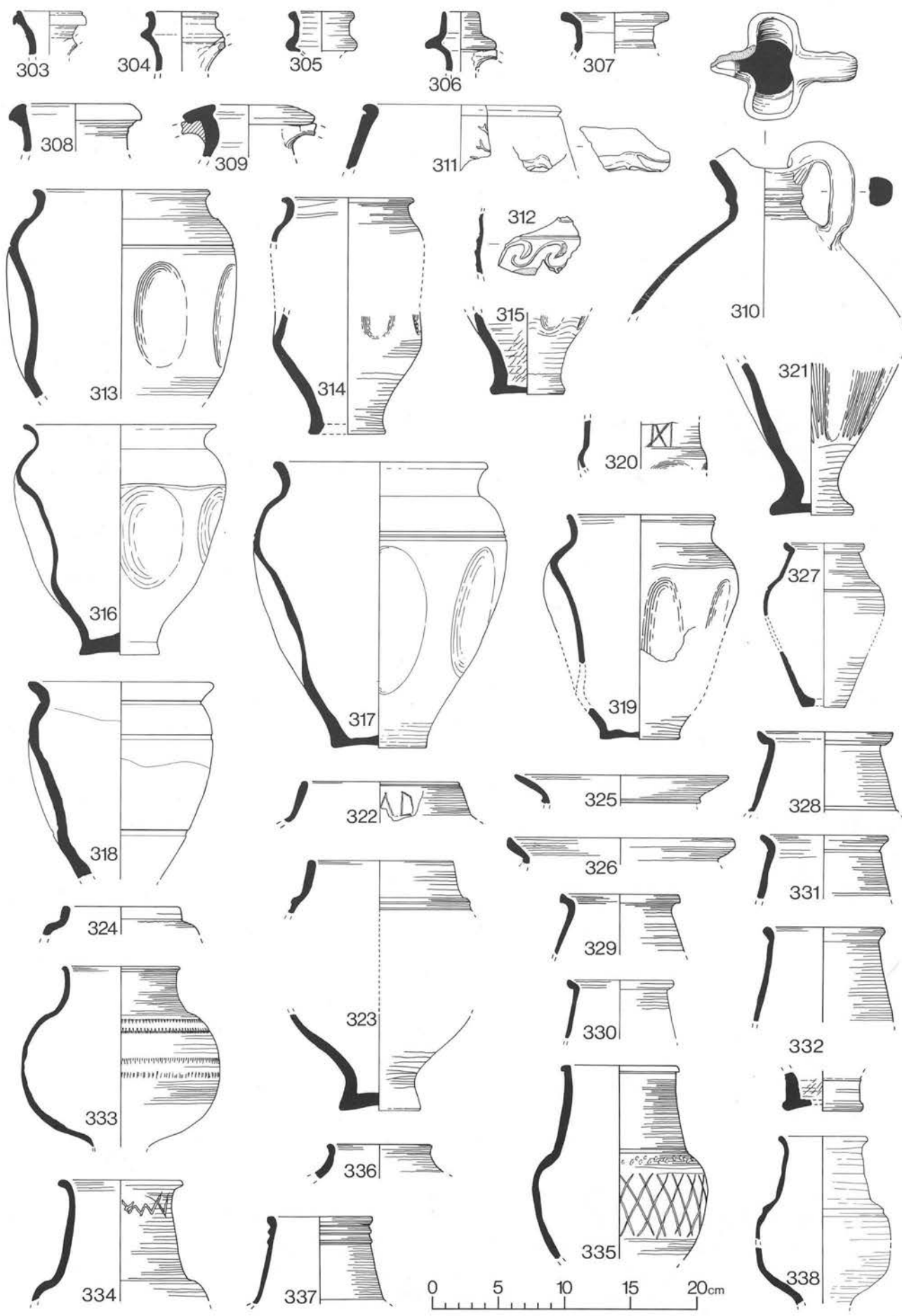


Figure 146 Roman pottery: type series. Scale 1:4.

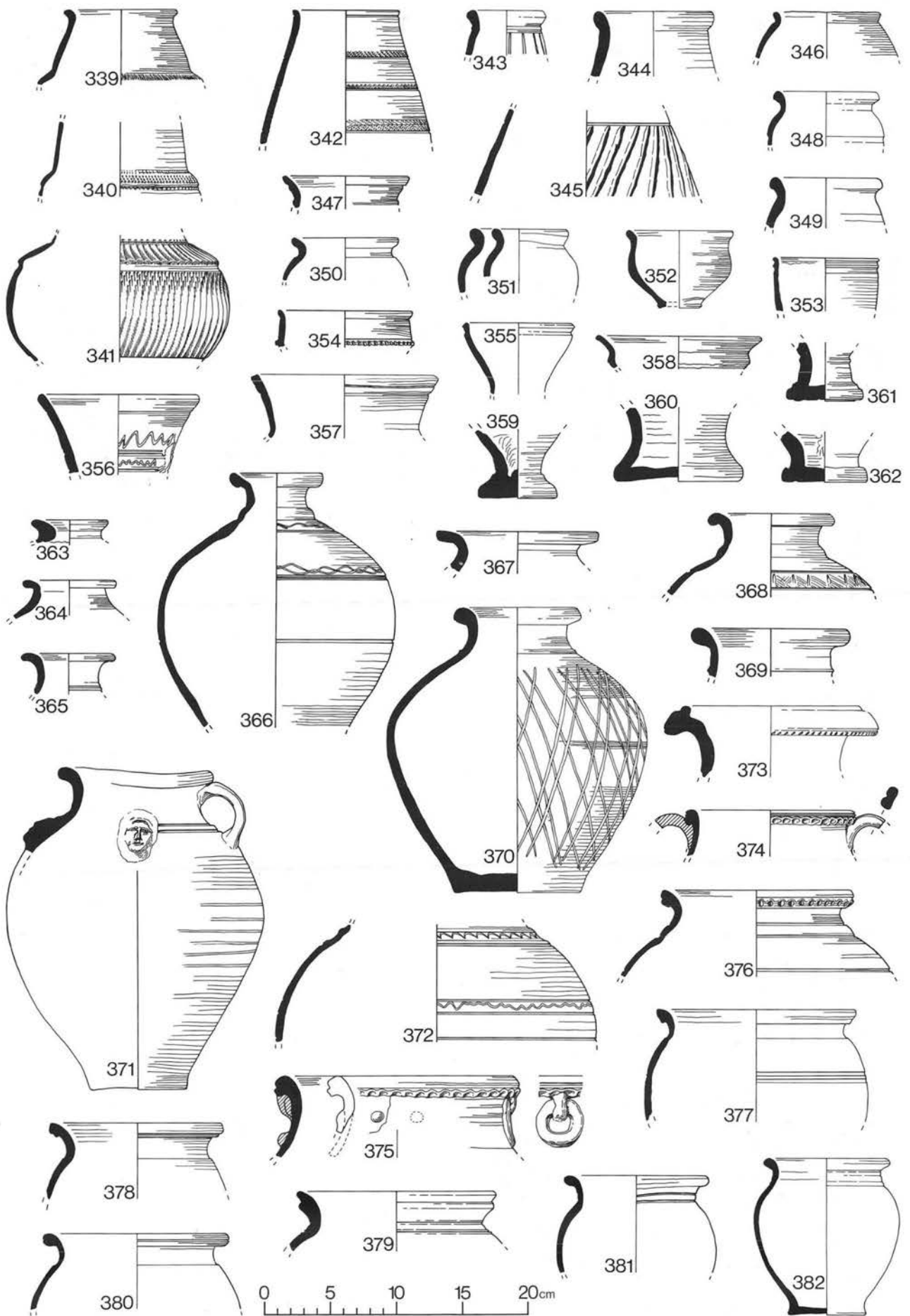


Figure 147 Roman pottery: type series. Scale 1:4.

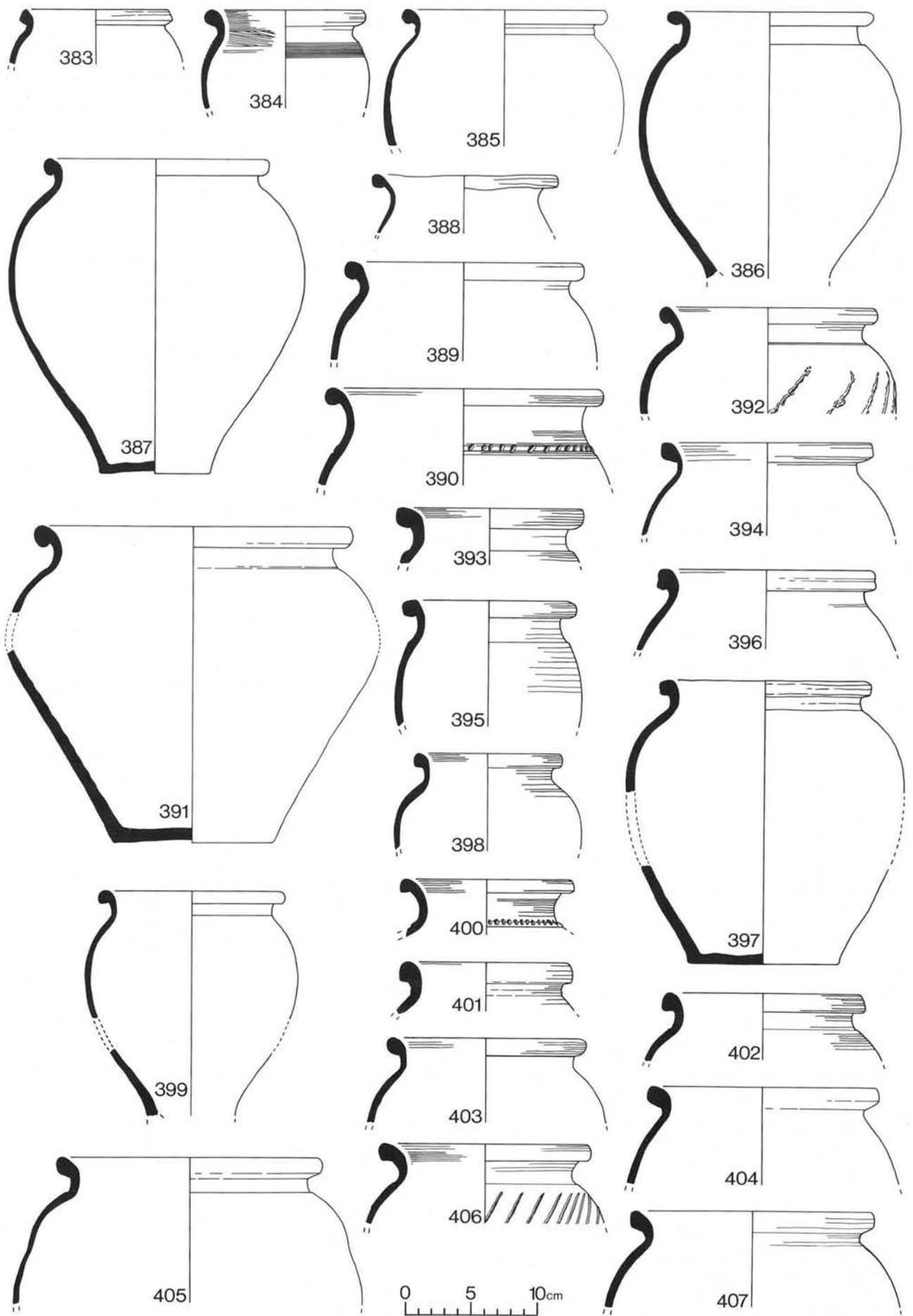


Figure 148 Roman pottery: type series. Scale 1:4.



418. GREY finely granulated fabric. LB 735 refuse.
419. GREY, very sandy fabric, burnished diagonal lines. LB 154 spill.
420. GREY LB 753 ditch. PR.
421. NAR Icenian rustication. LB 1474, upper fill, corn-drier.
422. GREY rouletted. Area 4.
423. GREY distorted waster, hard-fired sandy, ?local. LB 1154 refuse SF 4154.
424. GREY burnished bands. LB 67.
425. GREY LB 895 refuse.
426. GREY brownish sandy fabric, traces of burnishing. LB 1872 refuse.
427. GREY fairly fine fabric. LB 694.
428. GREY very hard-fired sandy fabric, ?local. LB 164 refuse.
429. GREY finely granulated fabric, stabbed decoration. Area 2, LB 1999 spill.
430. GREY hard fired, stabbed decoration. LB 69 refuse.
431. GREY burnished wavy line decoration. LB 69 refuse.
432. GREY hard-fired sandy fabric, ?local. LB 666 spill.
433. GREY fairly fine fabric with only occasional quartz, sparse tiny white inclusions. LB 2628.
434. GREY LB 1509.
435. GREY sandy fabric, Icenian rustication. LB 67.
436. GREY fairly fine fabric, sparse quartz, flint, occasional white; slipped black and well burnished. Area 2, LB 1744 spill.
437. AHF? coarse sandy fabric with occasional large flint inclusions; slipped cream, traces of burnishing. LB 207 spill.
438. COAR coarse hand-made; see also No.505. SF 1633.
439. GREY sandy light grey fabric, burnished shoulder and inside rim. LB 535 spill.
440. GREY deep incisions on shoulder cordon, burnished neck and inside rim. LB 2756 spill.
441. GREY finely granulated fabric with occasional larger quartz, red iron ore inclusions; burnished inside rim and on shoulder, coarse ?rouletted decoration. Area 2, LB 1824 refuse.
442. MICG LB 653 spill.
443. BB2 LB 535 refuse.
444. BB2 LB 2123 refuse.
445. BB2 fairly fine granulated fabric, grey surfaces with reddish colouration. LB 1476, lower fill corn-drier, F3.
446. GREY finely granulated, occasional flint. LB 3529 refuse.
447. GREY sandy fabric. LB 67.
448. BB1 fettled interior. LB 735 refuse.
449. BB1 As No.448. LB 916.
450. BB1 As Nos 448 and 449, most of vessel, joining with pl/soil. LB 666 spill.
451. GREY very sandy with abundant quartz, thin walls. LB 2069 refuse.
452. BB1 LB 653, spill.
453. GREY light grey, burnished externally.
454. BB2? LB 207 spill.
455. BB2? LB 1907 spill.
456. GREY coarse fabric, abundant angular quartz, thumb-frilled rim, burnished inside, and on angular cordon, brownish surfaces. Area 2.
457. GREY finely granulated fabric, thumb-frilled rim, burnished. LB 1010 spill.
458. GREY 1935 find.
459. GREY coarse clay, black iron ore, occasional flint. LB 67.
460. SHDW Dales Ware jar. LB 1519 fill, gutter, F12.
461. SHEL grey-black, wiped exterior. LB 1447 PR.
462. SHEL dark grey fabric, red-brown surfaces, wiped externally, contained coin hoard No.1. LB 535 joining LB 1862, refuse.
463. SHEL brown, discoloured grey, wiped exterior. LB 1167 refuse.
464. SHEL grey-brown wiped exterior. LB 1391 spill.
465. SHEL black, wiped exterior. LB 207 spill.
466. SHEL grey fabric, red-brown surfaces. LB 3529 refuse.
467. SHEL As No.466. LB 1447, PR.
468. EIFL although almost certainly Mayen Ware, the fabric does not match exactly any in the DUA collection. Red-brown fabric with discoloured surfaces, containing a lot of augite, volcanic glass, very fresh feldspar and pumice. Far less highly fired than usual. Area 2, LB 1825.
469. EIFL Grey laminar fabric, grey-brown surfaces; contains more volcanic inclusions than No.468, and although not as coarse as the sherds in the DUA collection, is probably Mayen Ware.
470. EIFL Fabric as No.469.
471. EIFL Fabric as No.469. Other sherds of the same fabric were: rim from the 1976 excavation, topsoil; rim from GVII pl/soil; body sherds from DVI (420) spill, BIV (2342) PR, CIV (1447) PR, LV (3264) Grave 37. A further rim sherd of the same form came from CIV pl/soil which was in a different fabric, cream with blue-grey surfaces. Inclusions of rounded quartz, large pieces of rounded iron ore, hardly any volcanic inclusions and nodules of slate, set in a laminar fabric. This is identical to a fabric from New Fresh Wharf (Richardson 1986, 109, nos 1.64–1.68) where it was ascribed to Speicher/Trier.
472. Rhineland exceptionally hard pimply dark grey fabric, with red-brown surfaces. Abundant rounded quartz inclusions, iron stained, granitic rock fragments of quartz and feldspar, and sparse large grains of black iron ore and fine white mica. This fabric is identical to the DUA fabric SVW 2096, used for a jar of a different type (Richardson 1986, 122, 1.151). The mineral inclusions are consistent with a lower/middle Rhineland source. LB 753. Other sherds came from LB 562, LB 383 spill; DVIII pl/soil.
473. TILE hand-made, red-brown tile fabric, traces of burning. LB 575 spill. See also No.705.
474. GREY fairly fine fabric, sparse quartz, irregular voids; burnished line decoration. LB 69 refuse.
475. GREY sandy, burnished line decoration. LB 67.
476. BB2? LB 810 spill (above three bowls all different).
477. GREY fine fabric with scattered quartz. LB 895 refuse.
478. GREY LB 1167 refuse.
479. GREY LB 1474, corn-drier, F3, upper fill.
480. GREY sandy fabric. LB 535 refuse.
481. GREY hard sandy clay, ?local. LB 1166 refuse.
482. GREY as 481. LB 629, blocking ?door, F49.
483. GREY as 481. LB 1154 refuse.
484. GREY LB 207 spill.
485. GREY LB 67.
486. GREY Bowl, cross scored on body post-firing. Area 2, LB 2224, pit.
487. GREY LB 67.
488. GREY more frequent black iron ore. LB 1447, PR.
489. GREY as 488. LB 164 refuse.
490. GREY fine fabric, scattered quartz. LB 164 refuse.
491. GREY burnished wavy line. LB 1167 refuse.
492. GREY hard sandy, ?local. LB 3529 refuse.
493. GREY as 492. LB 154 refuse.
494. GREY sandy. LB 164 refuse.
495. GREY LB 1154 refuse.
496. GREY brownish fabric, dark grey surfaces. LB 2532 refuse.
497. GREY hard sandy, ?local. LB 1447 PR.
498. GREY red-brown fine fabric with scattered quartz, dark grey surfaces. LB 2559, fill hypocaust F10.
499. BB2? LB 708 refuse.
500. BB2G brownish fabric. LB 3529 refuse.
501. GREY fine texture, irregular voids. LB 1460, plaster pit F73.
502. GREY hard fired, sandy, ?local.
503. GREY sandy. LB 164 refuse.
504. BB2G LB 666 spill.
505. COAR coarse, same fabric as jar No.438, not certainly wheel-thrown. Area 2, LB 2224 pit.
506. GREY brownish fabric. LB 575 spill.
507. GREY as 506. Area 2, LB 2217.
508. GREY hard fired sandy, ?local. LB 315 spill.
509. GREY brownish fabric as 506. LB 1862 refuse.
510. GREY brownish sandy fabric, fingered frill. LB 666 spill.
511. GREY brown-cored fabric, similar 510, fingered frill. LB 469 spill.
512. GREY cream streaks and inclusions. LB 67.
513. BB2? (drawn from non-joining sherds). LB 600 refuse.
514. GREY hard sandy fabric, notched cordon. Area 2, LB 2213 spill.
515. GREY sandy. LB 67.
516. GREY brownish fairly sandy fabric, dark grey surfaces, burnished bands on exterior and interior. LB 2741 PR.
517. GREY hard fired sandy, light grey. LB 67.
518. GREY brownish fabric, fairly common black iron ore. LB 895 refuse.
519. GREY sandy. LB 315 spill.
520. BLKP? finely granulated fabric with ?slipped highly burnished black surfaces, rouletted decoration. LB 3529 refuse.
521. GREY sandy, groove on top of flange. LB 315 spill.
522. OX16 sandy red-brown. LB 936 refuse.
523. BB2? Area 2, LB 1999 spill.
524. GREY LB 1820.
525. GREY sandy, ?self-slipped. LB 3537, footings Wall 12.
526. BB2? LB 1476, fill corn-drier F3.
527. NVGW LB 753 PR.
528. GREY brownish fabric. LB 49 refuse.
529. GREY LB 708 refuse.
530. GREY as 528. LB 3529 refuse.
531. GREY LB 1872 refuse.
532. BB2 LB 69 refuse.
533. BB2 LB 735 refuse.

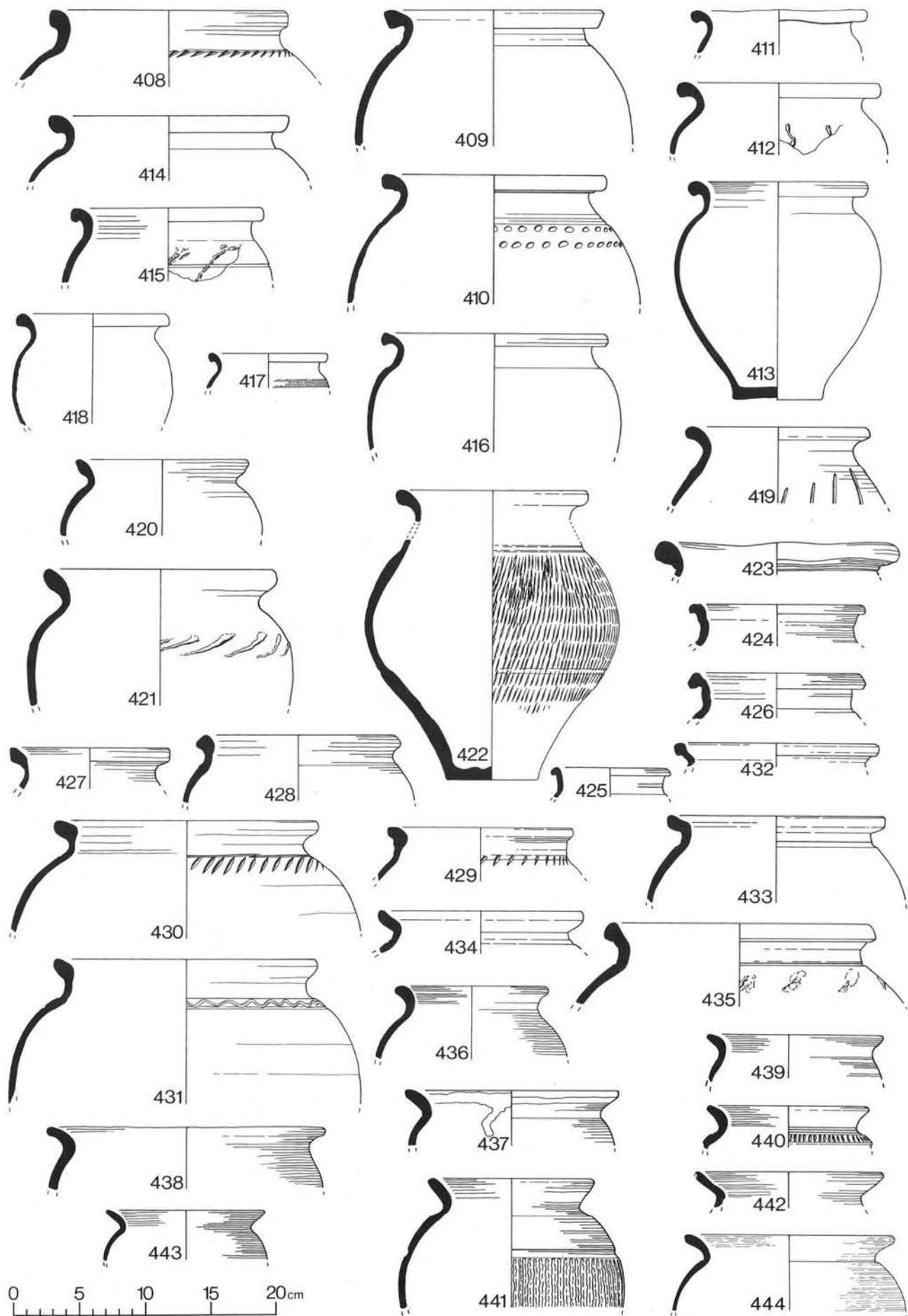


Figure 149 Roman pottery: type series. Scale 1:4.

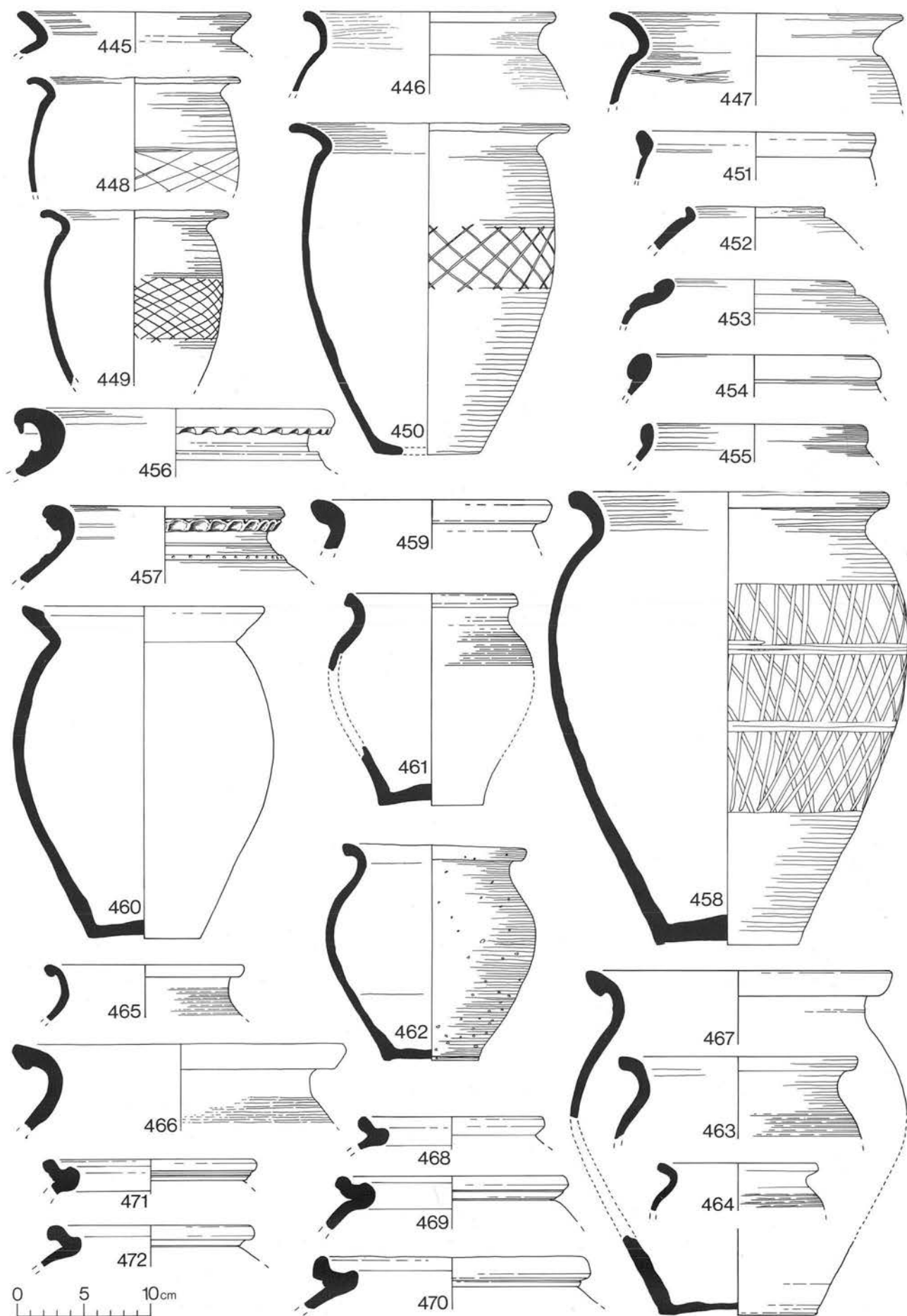


Figure 150 Roman pottery: type series. Scale 1:4.

534. BB2 LB 69 refuse.
535. BB2 two cross-strokes incised across rim. LB 936 refuse.
536. GREY LB 49 refuse.
537. GREY coarse sandy fabric, much yellowish quartz, black well-burnished surfaces. Another example from LB 1670, PR disturbance in Rm 2. LB 666 spill.
538. GREY as 537. LB 1519, fill gutter, F12.
539. GREY sandy, cream streaks/inclusions, groove on top of rim. LB 49 refuse.
540. BB2? groove on top of rim. LB 1049 refuse.
541. GREY finely granulated fabric. Area 2, LB 2216 refuse.
542. GREY LB 67.
543. GREY as 541. LB 1154 refuse.
544. BB2 grooved on top of rim. LB 810 spill.
545. BB2? LB 164 refuse.
546. BB1 LB 1037, ditch silt.
547. BB1 burnt post-fracture. LB 67.
548. BB1 graffito on exterior. LB 67
549. BB1 LB 67.
550. BB1 LB 403, ditch, PR.
551. BB1 LB 69 refuse.
552. BB2G LB 164 refuse.
553. GREY flange grooved. LB 575 spill.
554. GREY brownish sandy fabric. LB 895 refuse.
555. GREY sandy fabric, black burnished surfaces, burnished lines in reserved zone. LB 666 spill.
556. GREY 85% rim.
557. GREY separate burnished lines externally. Area 2, LB 1824 refuse.
558. GREY LB 1154 refuse.
559. GREY over-fired hard sandy fabric, twisted second/waster, ?local. LB 164 refuse.
560. GREY similar fabric to 559. LB 708 refuse.
561. GREY LB 164 refuse.
562. GREY LB 164 refuse.
563. GREY LB 895 refuse.
564. GREY nearly complete. Area 2, LB 2224.
565. BB1G similar to BB1, probably wheel-thrown. LB 916.
566. GREY brownish grey-cored. LB 164 refuse.
567. GREY LB 708 refuse.
568. GREY LB 1872 refuse.
569. MICG? LB 1167 refuse.
570. SHEL burnished. Area 2, LB 2039 spill, 1703.
571. GREY LB 1579 spill.
572. GREY hard fired sandy, ?local. LB 154 spill.
573. GREY sandy. LB 164, 1049, both refuse. EVII, 1670 PR disturbance in Rm 2.
574. GREY very sandy fabric. LB 1049 refuse.
575. GREY LB 1579 spill.
576. GREY hard sandy, ?local; burnished wavy line on flange. LB 1447, PR.
577. BB2G combed wavy line on flange. LB 1445, PR.
578. MICG burnished wavy line on flange. LB 67.
579. GREY coarse sandy, superficially like BB1, decorated burnished lines on flange. LB 895 refuse, joining 207 spill, both EVII.
580. BB2G comb stabbing on flange, marked turning ridges. LB 464 spill.
581. GREY separate burnished lines on interior and exterior, burnished flange. Area 2, LB 2039 spill.
582. GREY as 581. LB 1308, earth on berm.
583. GREY occasional shell fragment in fabric, facet-burnished on exterior and rim only.
584. GREY brownish fabric, frilled flange. LB 600 refuse.
585. GREY light grey, darker cortex, common quartz, flint, black iron ore. LB 67.
586. BB2 LB 1167 refuse.
587. BB2 LB 67.
588. BB2 LB 708 refuse.
589. BB2? LB 936 refuse.
590. MICG LB 67.
591. GREY finely granulated dark fabric, self-slipped, separate burnished lines internally, burnished wavy line in reserved zone externally. LB 1599 ?gully F6.
592. GREY LB 1068 spill.
593. GREY common ill-sorted quartz, brownish cortex. Area 4.
594. GREY LB 164 refuse.
595. BB2? LB 67.
596. GREY sandy. LB 1894, upper road.
597. GREY fine texture, scatter of quartz. LB 164 refuse.
598. GREY coarse black fabric, common ill-sorted quartz, iron ore, highly burnished. LB 164 refuse.
599. GREY brown fabric, nearly complete. LB 154 spill. EVII.
600. GREY brown sandy. Area 4, LB 3388, Grave 96.
601. GREY sandy. Area 2, LB 2039 spill.
602. GREY LB 1010 spill.
603. GREY Area 4, LB 3035.
604. MICG LB 1391 spill.
605. GREY slipped surfaces. LB 653 spill.
606. GREY fairly sandy fabric; decoration shows row of sub-round shallow impressions cutting burnish. The decoration not dissimilar to No.665. LB 1447 PR.
607. MHADR? finely granulated sandy brownish, black surfaces, scored combed wavy line decoration. Area 4.
608. GREY brownish cortex, finely sandy, burnished wavy line on burnished zone, above burnished scroll in reserved zone. LB 67.
609. GREY burnished wavy line internally. LB 1387 PR.
610. GREY sandy, rouletted. LB 3112 portico cobbles.
611. GREY fine, scattered quartz. LB 164 refuse.
612. RBSL cf. No.86 above. LB 2045 refuse; sherd of same bowl in EXII pl/soil.
613. GREY sandy red-brown, brown-grey surfaces. Area 2, LB 1824 refuse.
614. GREY LB 164 refuse.
615. GREY red-brown, fairly common quartz, red iron ore; wide flat cordon with juddered decoration. LB 1778, road gutter F19.
616. GREY as 615. Area 4.
617. GREY brownish fairly sandy fabric. LB 164 refuse.
618. GREY sandy, exterior almost rilled. LB 69 refuse.
619. GREY sandy, separate burnished lines below groove. Area 2.
620. GREY? LB 3529 refuse.
621. GREY? as No.620 LB 69 refuse.
622. NAR LB 708 refuse.
623. GREY hard fired, scattered quartz, separate burnished lines externally. LB 1907 spill.
624. GREY sandy fabric, common quartz, red and black iron ore; well burnished black exterior, large dimple in decorative zone. Fabric unlike any of the 'romano-saxon' sherds. Area 2, LB 2232 ditch.
625. GREY sandy, angular quartz; less burnish below cordon, possibly indicating decorated zone. LB 1391, joining 653 both spill.
626. GREY finely granulated fabric, smoothed rather than burnished surfaces. LB 154 refuse.
627. GREY sandy. LB 1403 spill.
628. GREY coarse sandy fabric (?Nar), harsh feel, burnished wavy line; rivet holes. SF 2300. LB 207 spill.
629. GREY coarse sandy with larger flint inclusions, nearly complete. LB 810 spill.
630. GREY sandy. LB 1396, PR.
631. GREY not same fabric as 630. LB 1579 spill.
632. GREY Area 2, LB 1824.
633. GREY brown sandy, lid-seated. Area 2.
634. GREY red-brown core, fairly fine, scattered quartz; finely rouletted upper wall. LB 49 refuse.
635. GREY abundant quartz inclusions, very like BBI but probably wheel-thrown. LB 2127 refuse.
636. GREY finely granulated, scatter larger quartz. LB 708 refuse.
637. BB2 LB 936 refuse.
638. BB2 LB 2140, earth on berm.
639. BB2 LB 69 refuse.
640. BB2 mis-shapen 'second'. LB 67.
641. BB2 LB 1154 refuse.
642. BB2 LB 3431 refuse.
643. BB2 LB 810 spill.
644. BB2 LB 2123 refuse.
645. BB2 LB 67.
646. BB2 LB 535 refuse.
647. BB2 LB 920 ditch.
648. BB2.
649. MHADR? cross burnishing on interior base. LB 102, pit F1.
650. GREY groove above carination. LB 2045 refuse.
651. GREY cream fabric, abundant well-sorted angular/sub-angular quartz, red iron ore; silver grey surfaces, harsh feel. ?Import.
652. GREY finely granulated with scattered larger iron ore inclusions. LB 67.
653. GREY black fabric and surfaces, sparse to common quartz; graffito 'OVN[']'. SF 1112 LB 1049 refuse.
654. GREY sandy fabric, half brown and grey, abundant quartz, much reddish. LB 2540 fill hypocaust, F9.
655. BB2G LB 164 refuse.
656. BB2G as 655. LB 600 refuse.
657. GREY finer fabric, sparse quartz. LB 1391 spill.
658. GREY LB 3529 refuse.
659. GREY sandy. LB 1445, PR.

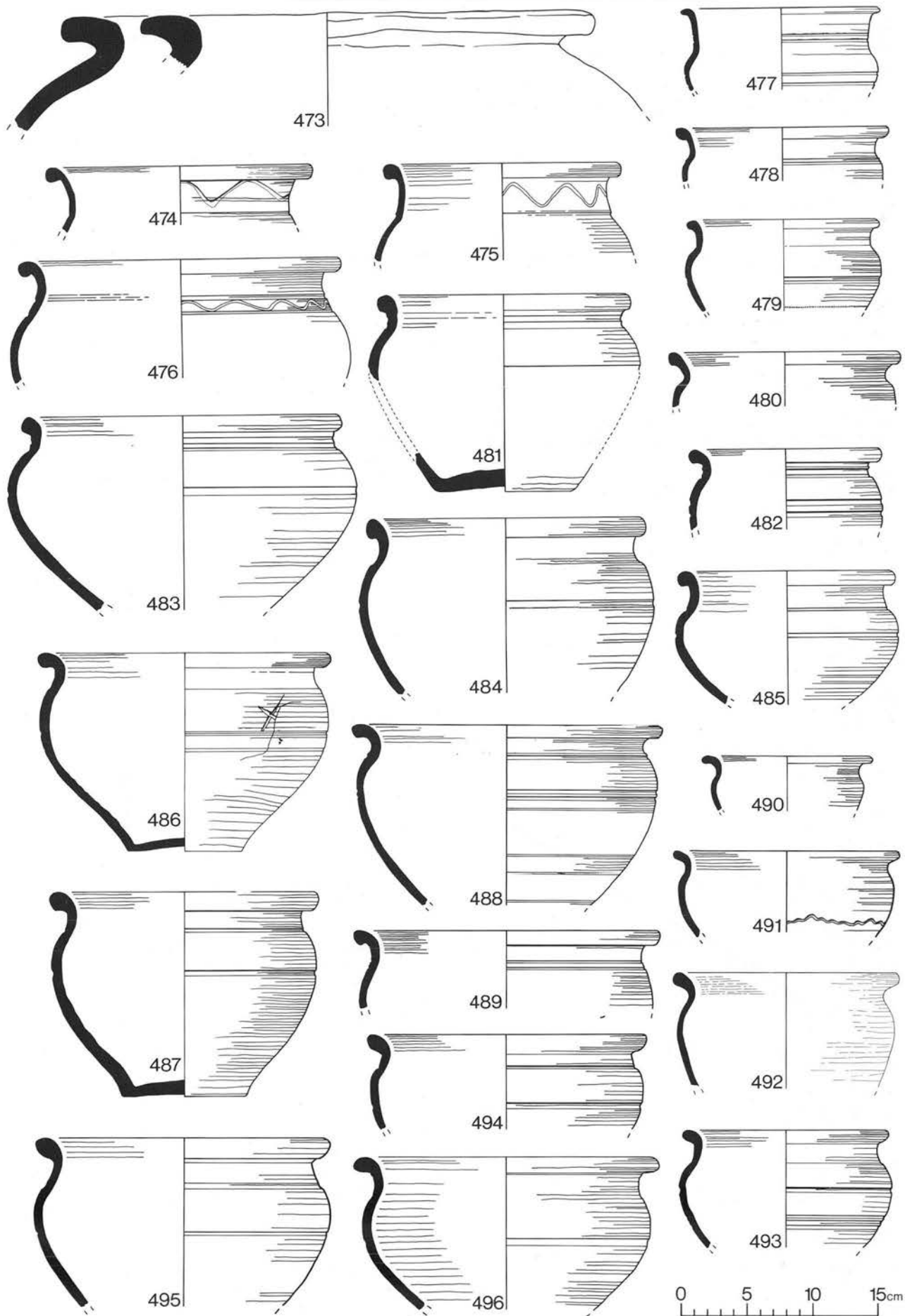


Figure 151 Roman pottery: type series. Scale 1:4.

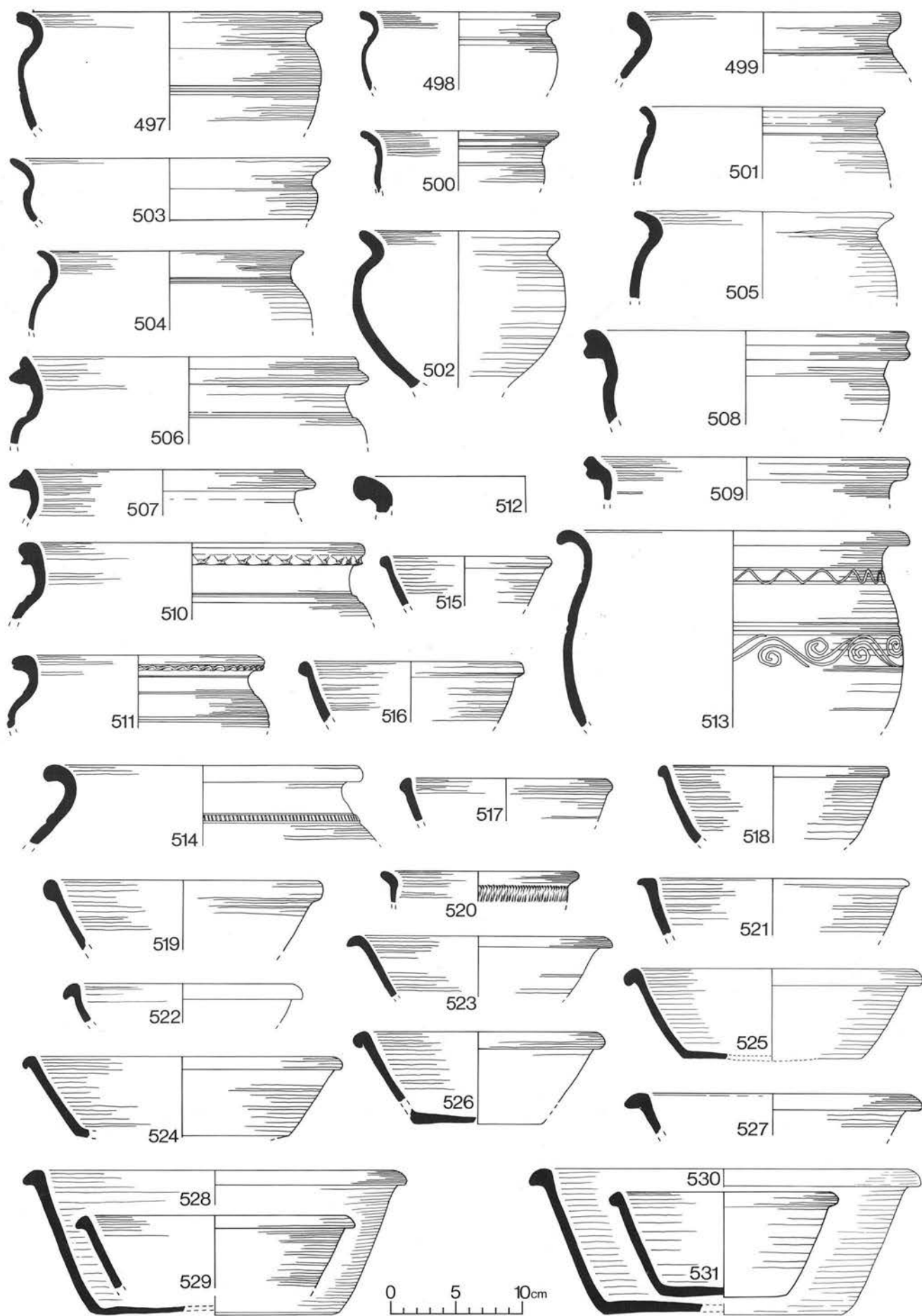


Figure 152 Roman pottery: type series. Scale 1:4.

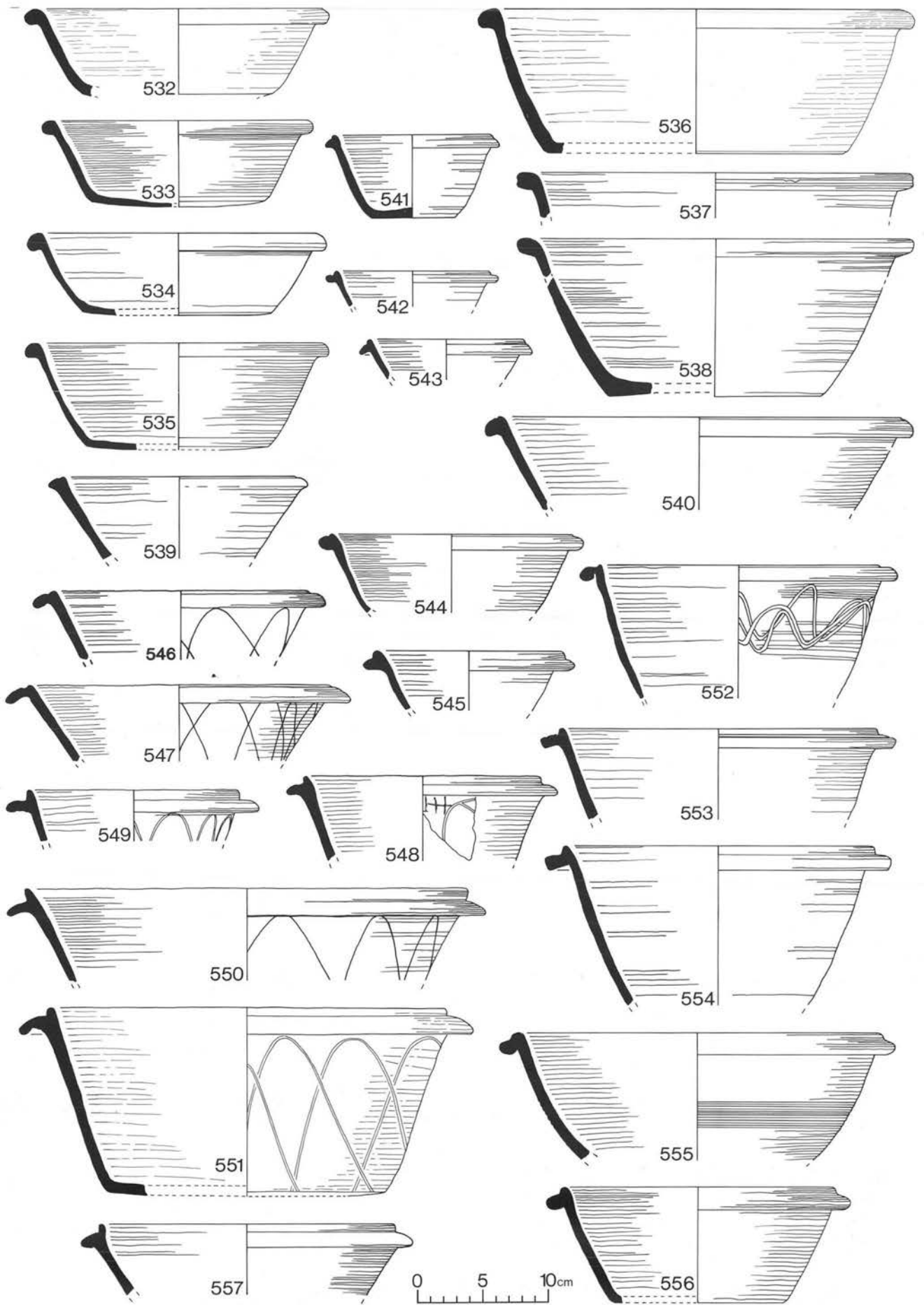


Figure 153 Roman pottery: type series. Scale 1:4.

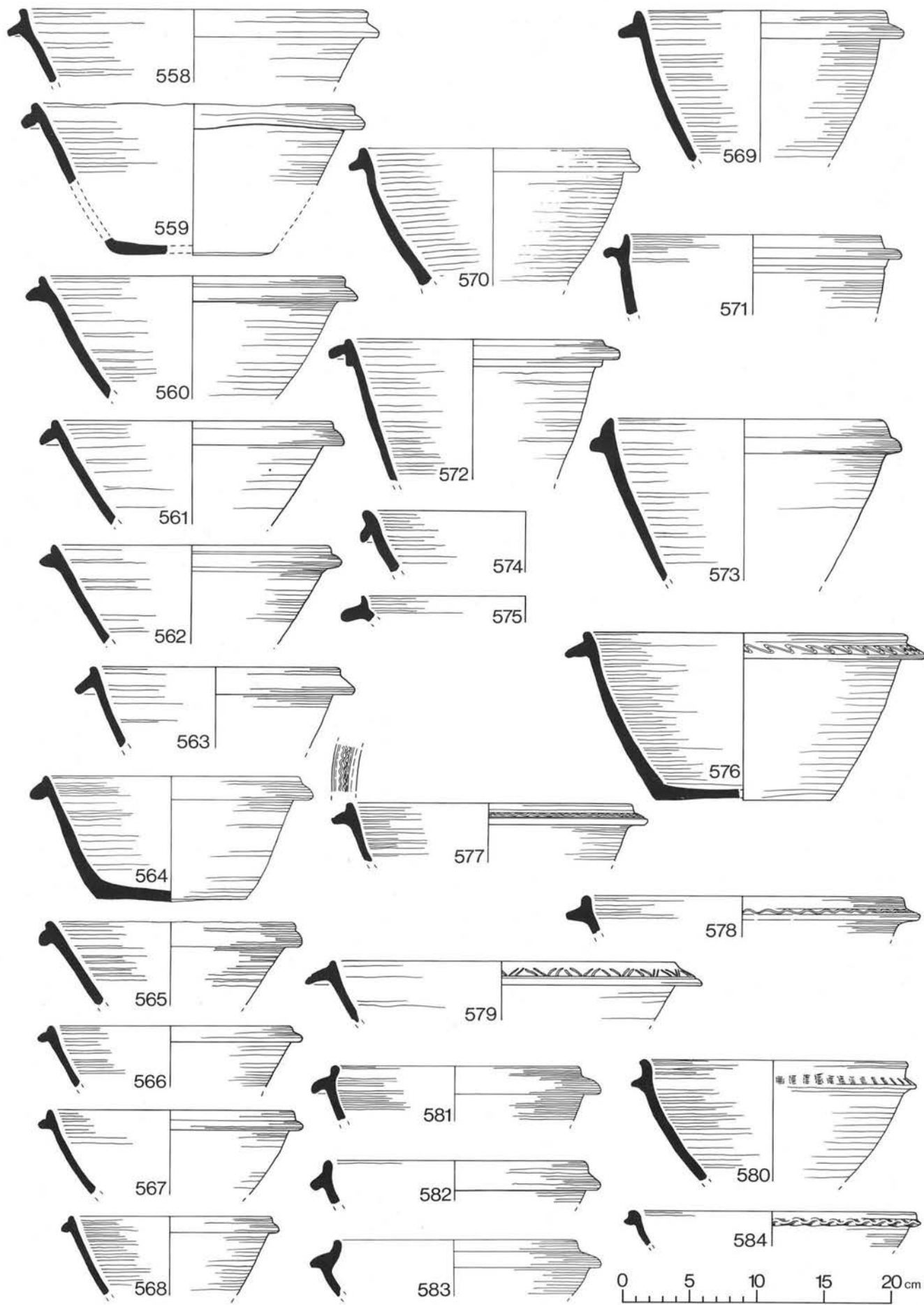


Figure 154 Roman pottery: type series. Scale 1:4.



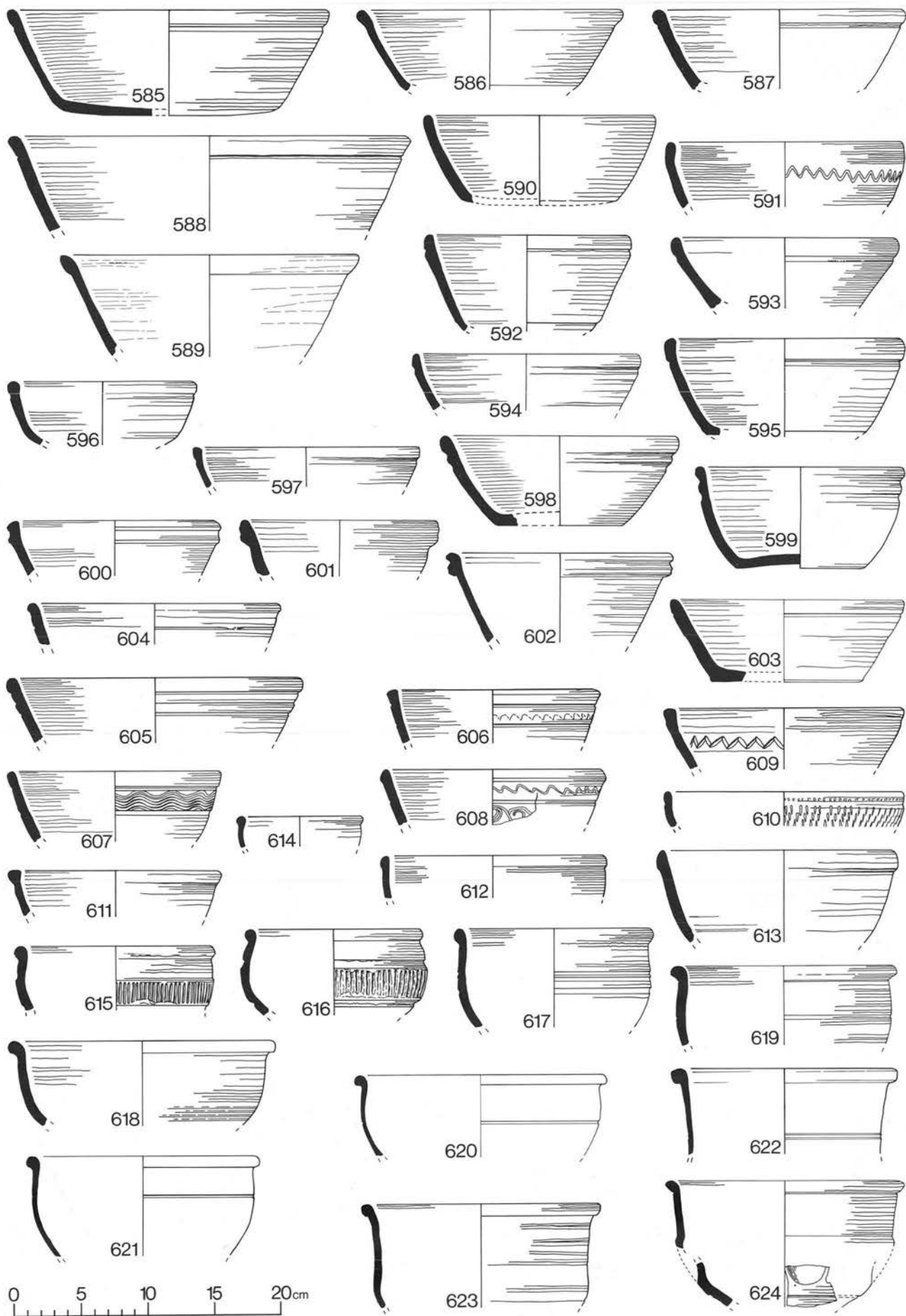


Figure 155 Roman pottery: type series. Scale 1:4.

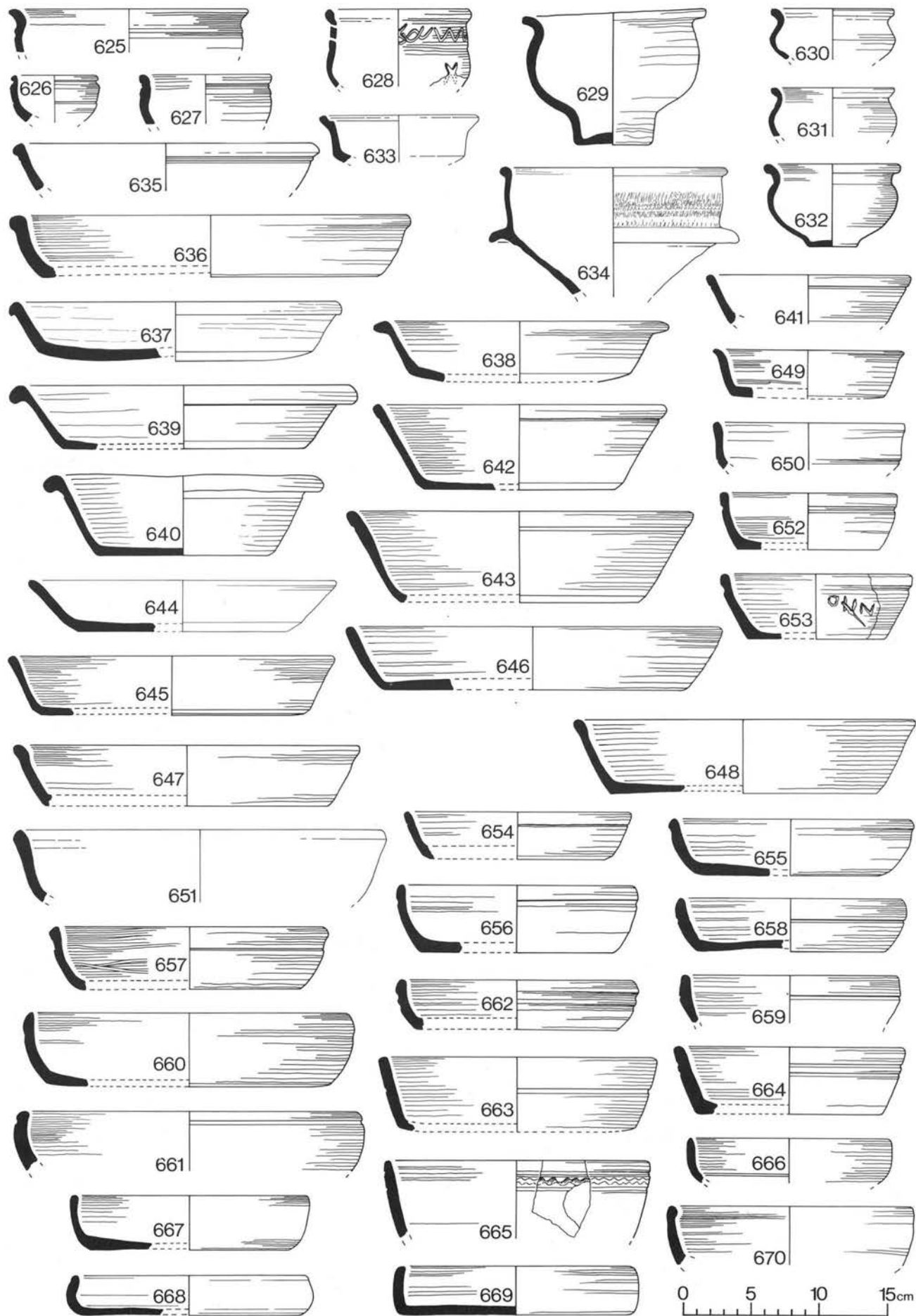


Figure 156 Roman pottery: type series. Scale 1:4.

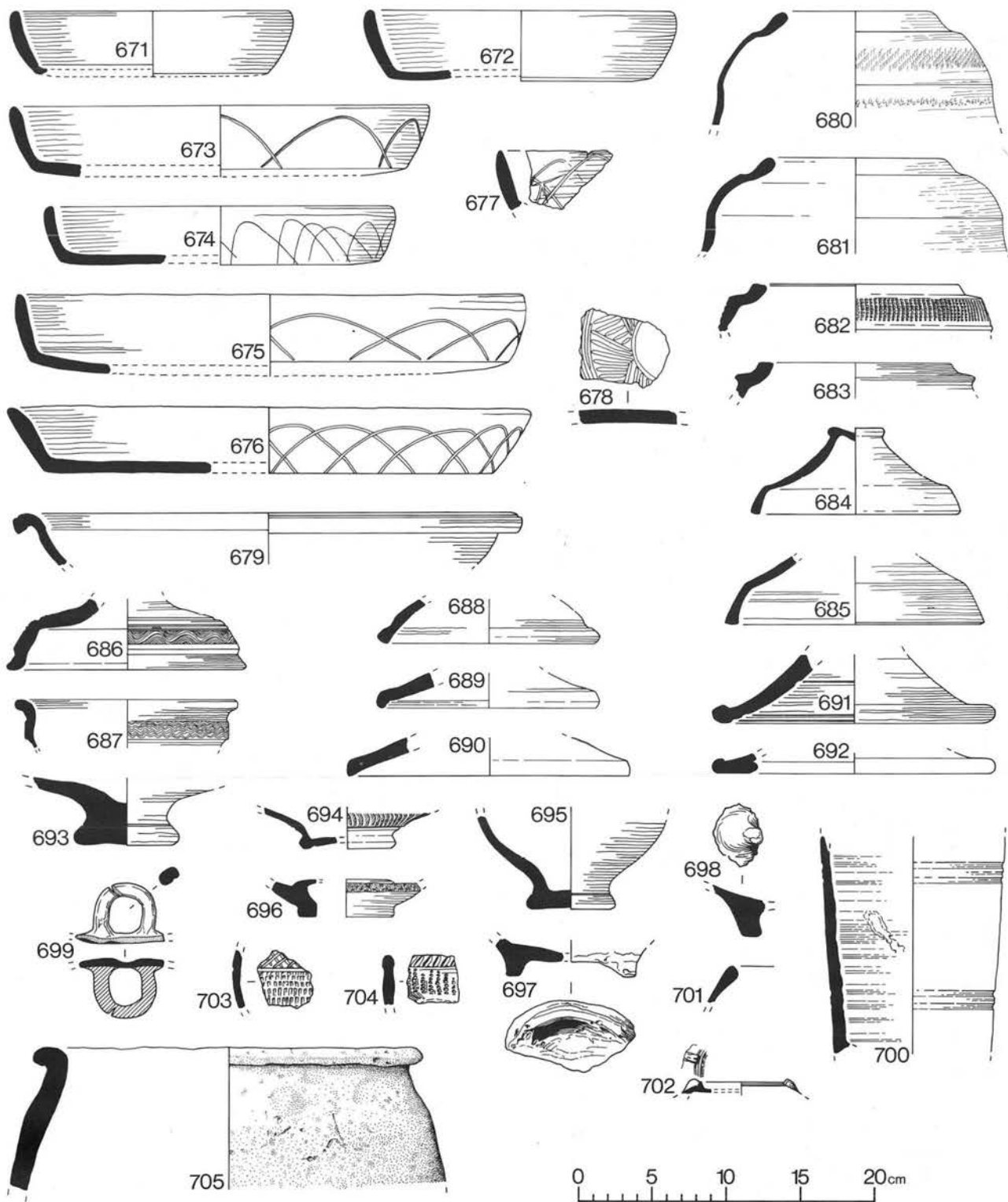


Figure 157 Roman pottery: type series. Scale 1:4.

660. BB2G LB 1919 spill.
661. GREY brown fabric, scattered quartz, black surfaces. Area 4, LB 3357, Grave 85.
662. GREY sandy fabric, abundant angular quartz. LB 1175 refuse.
663. MICG Area 4.
664. GREY sandy fabric. LB 916.
665. MICG unusual wavy line scored decoration, similar to No.606. LB 1872 refuse.
666. GREY sandy. LB 67.
667. GREY LB 67.
668. GREY sandy dark grey, common quartz, burnished roughly externally, traces of burnished scribbling on interior base. LB 2690 spill.
669. GREY sandy. LB 1872 refuse.
670. GREY red-brown fairly sandy. LB 3529 refuse.
671. MICG LB 666 spill.
672. MICG as 671. LB 708 refuse.
673. BB1 LB 49 refuse.
674. BB1 LB 3529 refuse.
675. BB1 LB 67.
676. BB1 LB 67.
677. BB1 graffito 'A' without cross-stroke. SF4146. LB 653 spill.
678. GREY dish or bowl base, coarse fabric, common rounded and sub-angular quartz, burnished decoration on upper surface. LB 810 spill.
679. OX16 sandy red-brown fabric, burnished surfaces. LB 708 refuse.
680. GREY finely granulated; burnished, rouletted. LB 49 refuse.
681. GREY as 680, undecorated. LB 49 refuse.
682. GREY finely granulated brownish, decorated comb stabbing. Similar clay to 680 and 681, but different finish. See also decorated body sherd, No.704. LB 810 spill.
683. GREY ?box, hard sandy, ?local.
684. GREY fabric as 680 and 681. LB 708 refuse.
685. GREY fabric as 680 and 681. LLB 69 refuse.
686. GREY incised combed wavy line decoration; burnt rim as in use as lid. Area 4, LB 3325 Grave 67.
687. GREY similar 686 but sandy brownish fabric, no burning. These could obviously serve also as shallow bowls, as illustrated. Area 2.
688. GREY fine texture, scattered quartz, flint. LB 464 spill.
689. GREY brownish sandy fabric, burnt on rim as usual. Area 5.
690. GREY sandy, usual burning. LB 575 spill.
691. GREY coarse, common rounded quartz, larger flint inclusions, burnished both surfaces, deeply grooved on underside. LB 2394 road gutter, F19.
692. GREY possibly a lid. Burnished surfaces. LB 2394, road gutter, F19.
693. GREY Pedestal base, fairly finely granulated, form unknown. LB 49 refuse.
694. RBSAN Base, fine virtually grit-free fabric, dark grey with red-brown cortex on exterior surface only; rouletted above groove; offset on underside of base. Form unknown. LB 600 refuse.
695. GREY Base, sandy fabric, burnished externally, form unknown but possibly wide-mouthed bowl. LB 1872 refuse.
696. GREY Unusual base, with curious sharply cut underside and footing; burnished interior and exterior surfaces, from a ?bowl. LB 937 refuse.
697. GREY Object, sandy fabric. The interior suggests that this is a base, to which clay has been added on the exterior, and worked into a lug-like foot; interior is roughly burnished and has traces of burning, although these could be post-breakage; judging from fracture, not certainly wheel-thrown. Form and function unknown. LB 2069 refuse.
698. NGGW?? Leg from ?tripod vessel; white to light grey sandy fabric, abundant tiny well-sorted quartz, occasional larger flint inclusions; darker external surface due to burning and/or slip; interior surface thickly slipped black and smoothed. Almost certainly an import. LB 2756 spill.
699. OX16 Ring handle, sandy red-brown fabric, with darker internal matt slip. The throwing lines internally suggest either fragment of lid, with which the internal slip seems inconsistent, quite apart from the absence of parallels for such handles on lids, or more likely a closed cylindrical vessel, perhaps similar to a costrel. LB 49 refuse.
700. CR3A? Cylindrical object/vessel, pinkish-cream fabric similar to Nene Valley cream ware, red iron ore flecks and inclusions; dusty untreated surfaces, brownish fugitive deposit on interior; grooved exterior, some burning towards ?base; 'feels' as if just above base at lower fracture. LB 1460, 'plaster pit', F73.
701. CR2 Small vessel with intumed rim, insufficient to give accurate diam.; sandy light red-brown, abundant sub-angular and rounded quartz and flint. Although it resembles a crucible, there is no evidence for such usage. LB 666 spill.

702. OXF Lamp discus? Fine light red-brown fabric, occasional quartz, red iron ore, white calcareous inclusions; smoothed upper surface, rough unfinished lower; applied small lug. LB 753, PR.
703. GREY Body sherd, fairly sandy fabric with squared rouletting and burnished latticing; probably a jar or large beaker. LB 1579 spill.
704. GREY Body sherd very similar to No.682, with same comb stabbing and slashed cordon. LB 653 spill.
705. TILE Crudely hand-made large vessel; cf. No.473. LB 154 spill.

## Mortaria

### Fabrics

**MONV.** Lower Nene Valley. Hard white-cream fine fabric, sometimes with grey or pink-brown core, sparse red iron ore; a darker slip is common. Trituration of black iron. The main non-East Anglian supplier; the commonest form represented is as Nos 727–734 and variations. Illustrated 720–744.

**MOOX.** Oxfordshire white ware. Mostly a fine cream-white fabric, occasionally pinkish, with sparse sub-angular and rounded quartz, red iron ore, and elongated voids; sometimes slipped. Sandier versions of the fabric are noted. Trituration grit of rounded opaque and translucent quartz, with much rose quartz (Young 1977, 56–79). The commonest form is as Nos 751–758. Illustrated 747–759.

**MOOXW.** Oxfordshire white slipped mortaria. Red-brown sandy fabric, sometimes grey cored, iron ore, occasional larger chalk inclusions, often micaceous, slipped white (Young 1977, 117–22). Illustrated 760, 761.

**RHINE.** More than one fabric is involved, and the sherds were divided into nine groups; these are not necessarily discrete fabrics as some may be merely variations. The illustrated mortaria as grouped are: 1) No.715; 2) No.713; 3) Nos 712, 714; 4) No.716; 8) No.708, possibly Rhenish. The fabric groups are:

1. Clean fabric with scattered inclusions quartz etc., quartz trituration. Illustrated: No.715; unillustrated: a similar but small rim and two body sherds.
2. Sandy fabric, common-abundant quartz; rounded quartz (much rose) trituration; exterior deeply ridged. Illustrated: No.713; unillustrated: rim fragment, burnt.
3. Fine fabric, varying quartz inclusions, densely packed quartz, much rose, and flint trituration. Illustrated: Nos 712, 714 only.
4. Not a close group, but similar fine cream fabrics, dense quartz, some rose and flint trituration. 716 differs from other sherds. Illustrated: No.716; unillustrated: two separate rims of the same form with groove on top of rim, ribbed exterior, sparse quartz, red iron ore inclusions, and a base sherd with quartz trituration.
5. Yellowish clean fabric with scattered but fairly common sub-angular quartz, sub-angular quartz trituration; large hook rim, same form as No.715 above. Unillustrated rim only.
6. Light red-brown body sherd from A6 Plough, cleanish fabric, limey with scattered sub-angular quartz; quartz trituration.
7. Miscellaneous group, unillustrated only: one rim with a grooved top, clean fabric, scattered quartz, and quartz trituration; similar rim in a brownish fabric with more quartz, trituration, quartz. Both above form as No.712 above; four other body sherds, with quartz trituration where surviving.
8. Single vessel, illustrated: No.708, fine brownish-grey fabric, cream surfaces, with sparse ill-sorted red inclusions, grog and iron ore?, quartz trituration.

9. Single unique sherd; light brownish-grey, streaky with fairly common mostly rounded inclusions, dark brown-grey to dark red-brown ?sandy rock particles.

These mortaria were imported early in the occupation, all types being of the date-range ending in the mid-3rd century (see Brancaster: Hartley 1985, fig.65; and Burgh Castle: Johnson, S. 1983, fig.44, no.246).

**GB/RH or RH/GB.** Imported mortaria, source not precisely known, Gallo-Belgica or the Rhineland (the order indicates the likeliest source first), individually described, illustrated 706, 707.

**EA/RH or RH/EA.** As with the above, the source is not definitely known, and could be either atypical Rhenish or an East Anglian potter working in the same tradition in similar fabrics. A range of similar mortaria occurred at Brancaster (Hartley 1985, fig.65). Characterized by similarity of fabric and, where surviving, flint trituration grit. Two broad types, with or without groove on rim top (A and B); same fabric used for both, although a redder variant fabric only occurs as the second type. Basic fabric: cream to dark cream, speckled with tiny inclusions and scattered larger quartz, flint, black iron ore, ooliths, specks of red iron ore; a little streaky with elongated voids, some mica. Illustrated 709-711. Details are:

A. Illustrated: Nos 710 and 711. Three further vessels with grooved tops are unillustrated.

B. Illustrated: No.709. Unillustrated: Two joining rims of the same form, with a larger, less internal bead; a further rim with projecting spout, finer fabric as No.711 but otherwise same form although virtually no internal bead, the wall curving up to the rim, exterior ?ribbed; a rim in a more oxidized red brown fabric, broadly same form, less marked internal bead, ribbed exterior.

C. Unillustrated: body sherds only.

**COLCH.** Colchester mortaria, only No.718.

**VERUL.** Verulamium mortaria, only No.719.

**MOG.** Grey mortaria. Undistinctive fabrics, usually with flint and quartz trituration, occasionally iron slag. Probably the commonest later mortaria, discussed below. Illustrated 779-815.

**EA.** Oxidized, variable colour. These occur in varying fabrics, mostly unique and have been divided into three groups more on the basis of the derivation of the types than the fabrics, although the fabrics generally fit the type groups. The three groups are:

A. Nene Valley related, oxidized fabrics but more creamish and often streaky fabrics and reeded rims. Eleven vessels have surviving trituration, six having iron slag, sometimes densely packed, with or without admixture of quartz or flint, four have mixtures of quartz and flint, and one solely quartz, the varying trituration indicating differing sources. Three rim fragments are reeded types, while four resemble No.738. Total Group A: 47 Eves, 27 sherds, 1.745kg. Illustrated: No.741.

B. Similar but with an Oxfordshire connection. Only one other rim fragment similar to the illustrated examples, and no surviving trituration grit. The fabric is broadly similar to that in Group A. A sub-group included fragmentary rims, both of which probably copy the Oxfordshire type Young M22, both with iron slag trituration, one mixed with some quartz and possibly flint. The illustrated No.776 resembles mortaria from Pakenham in Suffolk. Total Group B: 30 Eves, 7 sherds, 320g. Illustrated: Nos 773 and 774.

C. Miscellaneous sandy red-brown varying fabrics and forms. The illustrated vessels are individually described; unillustrated rims are similar to grey types as Nos 782-4, and Nene Valley type as No. 738. Of the eight unillustrated vessels, trituration survived on only four, three having iron slag and one flint. Illustrated 771, 772, 775, 777, 778. Total Group C: 70 Eves, 21 sherds, 1.430kg.

A sub-group of Group C (four sherds), includes a thick heavy wallsided rim, a footing base (different vessels), and a copy of the Oxfordshire red colour-coated type 100. The fabric is sandy red-brown, with external burnishing and flint trituration, the footing having quartz mixed with the flint. These differ from Much Hadham mortaria with predominantly quartz trituration, but as the Hertfordshire kilns are widely spread and little known, a source in the area cannot be excluded, particularly as the Hadham kilns show Oxfordshire influence. See also Burgh Castle (Johnson, S. 1983, fig.44, no.250). Total ?Hadhamish: 14 Eves, 4 sherds, 170g.

Reeded rims of types common in the Nene Valley occur in all groups; oxidized mortaria with black iron slag trituration grits are known from kilns at Pentney, Norfolk (inf. T. Gregory). A number of different sources are involved, spread over a wide date-range, and more research is needed to understand the apparent proliferation of small kilns producing mortaria for a local market. The strong Nene Valley influence and the iron slag gritting, suggests sources to the west. It is possible that some of these mortaria were produced by migrant potters from the Nene Valley, and the commonest types are reeded rim types also produced in grey ware.

**NVCC.** Nene Valley Colour-Coated Ware. Illustrated 745, 746.

**OXON.** Oxfordshire Red Colour-Coated mortaria (Young 1977, 123-184). Illustrated 762-764.

**MHAD.** Much Hadham. Standard fabric with occasional coarser sherds. The trituration is quartz, occasionally with some flint. Unillustrated sherds include a footing base, probably from No.767, which had been rivetted, and other sherds apparently from wallsided vessels. See examples from Burgh Castle (Johnson, S. 1983, fig.44, nos 241, ?250 and 251). Illustrated 765-767.

**HADOX.** Mortaria which are not conclusively Oxfordshire Red Colour-Coated or Much Hadham Ware, individually described. Illustrated 768, 769.

**MOGLAZ.** Glazed mortarium, No.717.

**IMPORT?** A red-slipped mortarium, No.770, with angular quartz trituration, unlike other red-slipped vessels. Origin unknown, possibly an import.

#### *Grey mortaria*

Grey mortaria are little known East Anglian oddities, those from Caister being the only large group available in Norfolk. Grey mortaria are known to have been produced in Suffolk at Homersfield, and sherds in Essex are likely to have come from kilns in that area. Most of the Caister sherds probably came from kilns in Norfolk, including possibly the kilns outside the defences (Nos 789, 793, 795, 797 resemble the Caister kiln vessels), although more than one source was involved, over an extended date-range. Nos 802 and 814 differ significantly on the basis of trituration grit, and may come from a more distant source.

The site evidence suggests they probably appeared in the later 3rd century and continued to be made until the end

of the Roman period, the form of some suggesting a very late date (as Nos 811–815). The earliest stratified example is a rim of the type of Nos 782–784, one of the commonest types, found in the rampart spill. More common are the bead and slightly hooked flange types, as Nos 779, 780, 785, 789, merging into 791, 793 etc., with 781 seemingly a variant on the same type. Apart from variations on the bead-and-flange/hammerhead theme, the only other recurrent type is the wallsided, as Nos 805–810. The main influence appears to have been the potters in the Nene Valley; apart from the wallsided form, also made in the Nene Valley, no forms resemble Oxfordshire or Colchester vessels. The reeded rim types as Nos 782–784 also occur in oxidized red-brown fabrics of East Anglian origin (see also No.778 with No.795).

The fabrics are all undistinguished, with varying proportions and sizes of common inclusions, quartz and black iron ore. Several vessels are of seemingly significantly different fabrics (as Nos 783, 786, 788, 792, 796, 799, 800, 802–804, ?807, 814, 815), some of which also differ in finish. All are individual; no obvious fabric groupings occur.

Trituration grit is usually quartz and flint, with very occasional black iron slag, and variations in the quantity or predominance of one or other seem insignificant. The flint is noticeably burnt on several, probably to facilitate crushing (Nos 788, 799, 803, 811–813), and the density and/or extent of the trituration is notable on Nos 798, 806. The only different trituration grit is black iron slag, fairly smooth, on Nos 802 and 814, that on No.802 being also unusual in extent and application, with striations across the surface.

Burnishing is common, frequent on the rims, occasionally on the upper part of the interior, and to varying degrees externally, some having burnished lines, others a more overall finish. No.788 is unusual amongst the earlier types, with burnishing both inside and externally, as extensive burnishing is only common on the seemingly later vessels (No.799 onwards). The rim fragment, No.792, is burnished on the body and decoratively on the flange. Otherwise decoration is rare, and individual (Nos 800, 808, 810).

#### Other finds

**Brancaster.** Two grey mortaria are illustrated (Hartley 1985, 98, fig.66, nos 194.1, 195, in fabric M9), with no surviving trituration grit, although two base sherds (Hartley 1985, 99, fabric M18) had mostly quartz trituration. Neither type occurs at Caister.

**Burgh Castle.** Three are illustrated (Johnson, S. 1983, fig.44, no.237), an unusual burnished bead-and-flange type, considered to be a copy of a later 4th-century Lower Nene Valley type; a type as Caister Nos 779, 780 (Johnson, S. 1983, fig. 4, no.249), and an extraordinary vessel, not listed amongst the mortaria (Johnson, S. 1983, fig.44, no.231), without description of the trituration.

**Other Norfolk sites.** Grey mortaria have been noted by the author in the Norwich Castle Museum collection, coming from a number of sites, mostly scattered in the area to the north and west of Norwich. At least three are wallsided forms, and the other fragments range from the reeded type to bead-and-flange and hammerhead types, all copying Nene Valley types.

**Kilns.** Stamped mortaria are known from the Hevingham kilns, and reeded rims and body sherds with flint grit occur amongst the unpublished material (Swan 1984, 499); kiln IV is of 4th-century date. Although most of the Hevingham products were grey wares, it is uncertain if mortaria were made in the later period. The 3rd/4th-century kilns at Pentney and Shouldham produced reeded rimmed mortaria, but only oxidized (Swan 1984, 503, 504, and inf. T. Gregory and Mrs K.F. Hartley).

The Brampton kilns do not seem to continue much after the early 3rd century, and there is no certain evidence that grey mortaria were produced. A number of grey mortaria

are, however, known from the site (unpublished, excavations by Dr A.K. Knowles). More than one fabric is involved, and the date-range may be relatively wide. Several are fairly close copies of Nene Valley reeded-rim types, as Caister Nos 782–784, etc., but two appear closer to either Colchester or Oxford types, with grooved beads. A collared form, while similar to a Brancaster mortarium (Hartley 1985, fig.66, no.195), is closer to Colchester types 499 or 501 (the trituration was mostly flint, some quartz and black iron ?slag). The related Oxfordshire types with grooved beads (Young 1977, M14) are more wallsided than collared, and are considered to stop by c. AD 240. Another vessel resembles Colchester types 504/505, with the grooved bead (flint trituration). These are common 4th-century types, and appear amongst the products of Colchester kiln 32, of mid-3rd-century date. A similar vessel with a more strongly curved flange, possibly a local product, has been published from Brampton (Green 1977, fig.36, no.236, flint trituration). Another Brampton mortarium (Green 1977, fig.35, no.203) is burnished, and resembles some of the Caister types.

Understanding the unusual production of grey mortaria in Norfolk and elsewhere in East Anglia is impossible until unpublished kiln material and casual finds have been examined. Although Nene Valley mortaria are common, some areas of Norfolk may have been less accessible, necessitating local production. The predominant fabric at Caister, shows little change between the earlier and later vessels, and is similar to that from the local kilns. A relatively local source would explain the large numbers from the site.

#### Catalogue

(Figs 158–62)

Catalogue entries sequence: illustration no; fabric code and description, if needed; Layer Bag no.; type of context; any noted joins/same vessels.

#### Imports, continental (incl. queries)

- 706.** GB/RH Fine pink-brown fabric and surfaces, sparse sub-rounded quartz, red iron ore, mica, occasional white calcareous and flint; trit.: mostly rounded quartz, some rose, ?flint. AD 80–150. cf. Burgh Castle (Johnson 1983, fig.44, no.246). LB 3166 Rm 1.
- 707.** RH/GB? Fine dark grey fabric, cream surfaces, with occasional ill-sorted red iron ore, very tiny quartz; trit.: ?quartz. AD 150–250 781 Area 4.
- 708.** RHINE? Fine brownish-grey fabric, cream surfaces, with sparse ill-sorted red inclusions, grog and iron ore? Trit.: quartz. AD 150–250. Probably Rhineland.
- 709.** RH/EA(B)? Fine cream fabric, sparse sub-rounded quartz, ill-sorted black iron ore; some red, ?grog; trit.: flint. Either Rhineland or East Anglia. AD 160–260. LB 2394 Road.
- 710.** EA/RH(A)? Fine greenish-cream fabric, with sparse quartz, red and black iron ore. Trit.: little surviving, but probably flint. AD 140–250. Either Rhineland or East Anglia.
- 711.** EA/RH(A)? Fine cream fabric, very sparse quartz, common but tiny red iron ore; trit.: mostly worn off, but probably flint. AD 140–250 46 FVIII LB 49 refuse.
- 712.** RHINE Fine cream fabric, sparse ill-sorted quartz, tiny red iron ore; trit.: densely packed crushed quartz, much rose, and flint. AD 150–250. LB 1202 rampart spill.
- 713.** RHINE Grey-cored pinkish-brown fabric with common to abundant sub-rounded well-sorted quartz, occasional flint; trit.: rounded and pinkish quartz. Exterior surface and rim well smoothed, with strong ridges in wall. AD 150–250. LB 2960 PR.
- 714.** RHINE Light pinkish-cream fabric with common but tiny sub-rounded quartz, sparse red iron ore and white clay streaks; possibly some flint. Surfaces appear to have been originally slipped and neatly smoothed. The interior surface is much decayed, but trit. was probably quartz. AD 150–250. LB 2123 refuse.

715. RHINE Grey-white to cream fabric, sparse quartz, occasional grey ?grog inclusion; trit. heavily worn quartz and flint. AD 150–230.
716. RHINE Fine cream fabric, very sparse quartz, tiny red flecks; trit.: densely packed quartz, some rose, and flint. AD 150–250. Area 2 LB 1942 spill.

#### Glazed mortarium

717. Much of this vessel (55% of the rim) was found broken and burnt post-fracture in several finds bags, allocated to the spill LB 420 over Room 1 due to possible post-Roman disturbance; it is probable that the vessel was disturbed from the debris overlying the floor, including the burnt grain and Constantinian coin hoard No.2. Its incompleteness may have been due to post-Roman disturbance, including the pipe-trench which bisected the room. The fabric is brownish-grey, probably darkened by burning; fine textured virtually grit-free apart from scattered oolitic inclusions, occasional sub-rounded brown earthy particles, probable black iron ore and mica. Trituration was white quartz (probably applied before glazing; traces of glaze beneath a grit in a fresh fracture may be due to fire damage). The green-brown lead glaze was applied to the interior, over most of the upper rim, and occurred as occasional spots on the exterior wall. There is little evidence of wear, although the burning makes assessment difficult. 4th century. LB 420 spill, Rm 1.

This vessel was thin-sectioned (Arthur and Williams 1978; Arthur and Williams 1981, 481, fig.30.1, no.1.1), and found to be similar to a glazed mortarium from Aquileia; an east Alpine source was tentatively suggested. Although regarded by the authors as a possible article of trade, this seems unlikely in the light of the coin hoard No.1, almost certainly put together in the area suggested as the source of this vessel, Raetia in Pannonia, and it probably came in personal baggage. The fragments of a steatite vessel (Fig.65, No.351) may have come from a similar central European area. The distribution map published by Arthur and Williams (1981, fig.30.7) has Caister as the farthest outlier, the nearest other site being, significantly, Krefeld-Gellep, with its late cemeteries and official metalwork of the same type as found at Caister. Other glazed mortaria occur as single site finds at Richborough and Cirencester.

#### British non-locally produced vessels

718. COLCH Greenish-cream dense textured fabric, with scattered quartz and flint; trit.: flint. Heavily abraded remains of a herring-bone stamp. AD 130–170, Colchester. Area 5.
719. VERUL Light red-brown fabric, common sub-rounded well-sorted quartz, occasional white calcite?, tiny black iron ore; slightly open-textured fabric; trit.: quartz and flint. AD 140–200. LB 936 and 735 refuse. A further mortarium rim with a closely similar fabric and form came from LB 420, spill Rm 1.

#### Nene Valley:

Dating: 720–722 AD 180–250. 723–725 Probably 3rd century. 726–730 AD 230/240–300/330. 731–736 Late 3rd or 4th century. 737–740 AD 230/250–400. 741–746 Probably second half 4th century.

- 720–721. Area 2 LB 1999 spill.
722. LB 666 spill.
723. Area 2 LB 2009.
724. LB 535 refuse.
725. Area 2 LB 1824 refuse.
726. As Young M17/8.
- 727–728. LB 600 refuse.
729. LB 535 refuse.
730. LB 1262 gully F59.
731. LB 954 rampart spill.
732. LB 2394 road.
733. LB 1182 rampart spill.
734. LB 1037 ditch.
735. LB 920 ditch.
- 736–738. LB 813.
739. Area 4.
740. LB 2394 road.
741. EA/NV brown to red fabric.
742. LB 1447 PR.
743. LB 383 spill Rm 1.
- 744–745. NVCC.
746. NVCC.

#### Oxfordshire:

Dating: 747–750 Young types M17–18 AD 240–300. 751–759 Young types M22 and ?M23 AD 240–400. Sandier than usual fabrics used for 747–750, 756, 758 and 759.

747. LB 164 refuse.
748. Painted.
749. LB 1100 spill.
- 750–751. LB 535 refuse.
- 752–753. LB 164 refuse.
754. LB 1447 PR.
755. LB 690.
756. LB 164 refuse.
- 757–758. Area 4.
759. M23? spout.

#### Oxfordshire white-slipped:

Young type WC7 AD 240–400.

- 760–761. Both LB 1056, Rm 9, joining LB 469.

#### Oxfordshire red colour-coated:

762. AD 300–400, C100. LB 1638, Rm 1. Sherds from probably three other Oxfordshire red colour-coated mortaria from the same layer, one of which was a plain wallsided C97. Another rim almost identical to this vessel came from Area 2 but closer to the Much Hadham fabric, including occasional flint grits, one c. 8mm size; trituration of rounded quartz, common to both production areas; this had a hole bored through the upper wall post-firing.
763. AD 240–400, C97, LB 3166, Rm 1.
764. AD 350–400?, C98, LB 653 spill.

#### Much Hadham:

Standard fabric with mostly rounded quartz trituration, some flint. Burnished. Probably 4th century.

765. As Oxon form C100. LB 2474 road.
766. Heavily burnt on the rim (as if used as a lid over a cooking vessel); little wear.
767. Rim probably from the same vessel. LB 2474, debris on upper road.

#### Hadox

768. Fabric badly burnt, but probably a Much Hadham fabric with more mica than usual; little surviving trituration of flint and a single angular quartz grit. 4th century. Area 2.
769. Grey cored red-brown fabric, not of the classic Much Hadham type, but with similar inclusions, and the occasional flint grit; trit.: crushed flint only; surfaces abraded, remains of red slip, possibly burnished. AD 300–400, as Oxfordshire form C100. Area 4 LB 3275, Grave 45.

Three unillustrated sherds deserve a note. These occurred as two body sherds (LB 67; CVIII pl/soil; perhaps from the same vessel) and a fragment from a small wallsided mortarium (LB 2339, PR). All three superficially resemble Oxfordshire Ware, but the fabric is atypical, using a laminated fracture, and the occasional flint inclusion. One sherd from the lower wall was finely rouletted externally, and appeared to be unworn.

A further vessel with an unusual fabric occurred as a body sherd and non-joining rim (probably one vessel), another wallsided mortarium (LB 988, Rm 2). The fabric is appreciably sandier with abundant larger sized quartz and flint inclusions, and worn flint trituration grit. The colour-coating is typical of Oxfordshire, and the fabric close to one of the white-ware Oxfordshire mortaria (No.749 above).

770. IMPORT? Fine red-brown fabric and surfaces, almost grit-free, with tiny voids, occasional oolitic inclusions; angular quartz trituration. Finely burnished rim, exterior and upper wall internally. The fabric, fine finish and trituration suggests that this may be an import. The fabric has a superficial resemblance to Argonne Ware including surface colour, but differs in texture and fabric colour (being more reddish-brown, 2.5YR 5/6). Probably 4th century. LB 925 Rampart spill; sherd from same vessel in LB 2129 refuse.

#### East Anglian, probably closer to the site:

##### East Anglia, oxidized:

Sandy red-brown indeterminate fabrics with varying proportions of rounded and sub-angular quartz (usually ill-sorted) with some flint inclusions for 771, 772, 775, 77 and 778. Others individually described.

Dating: 771–772 3rd century?. 773–775 AD 240–400. 776 late 3rd or 4th century. 777–778 4th century.

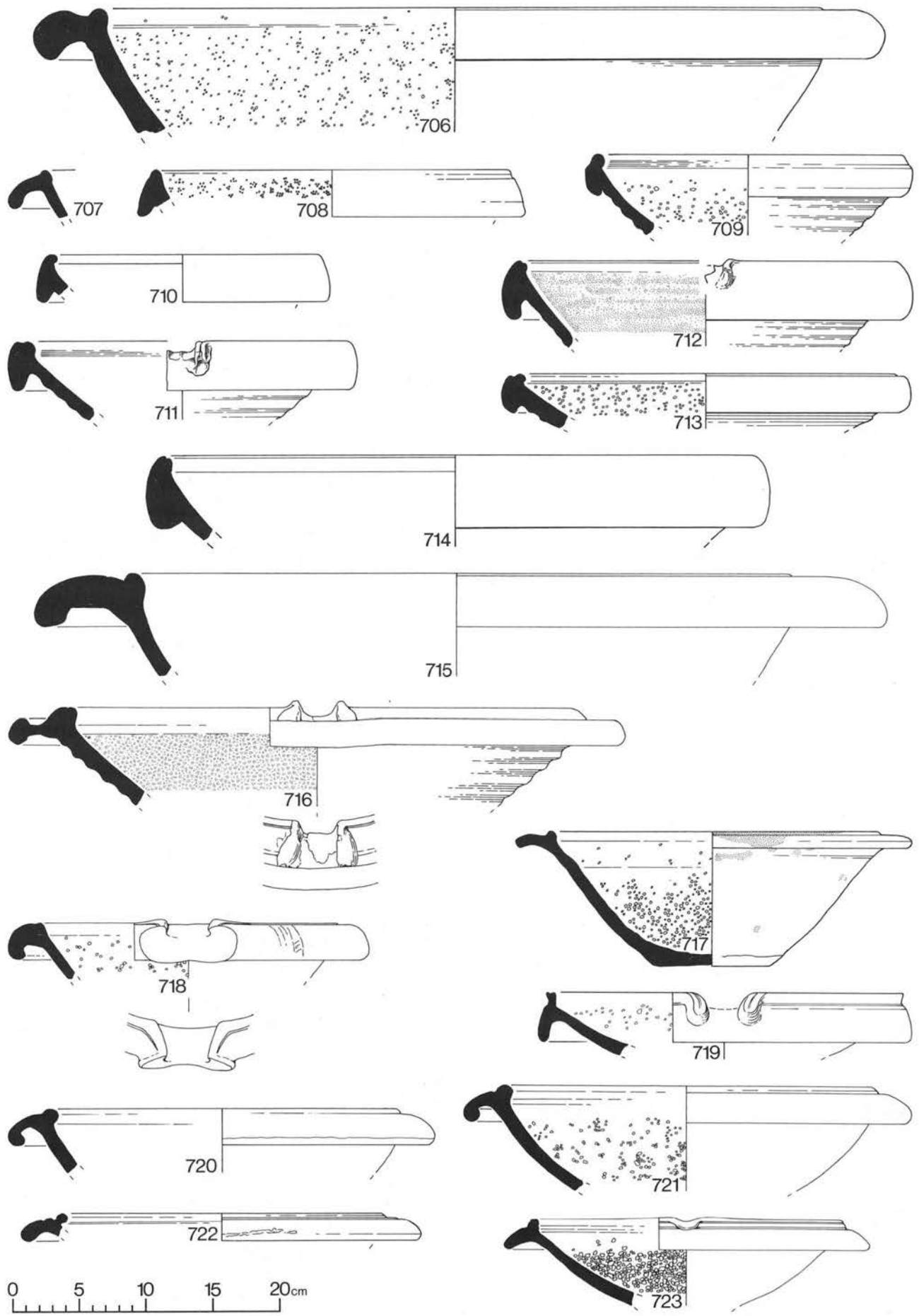


Figure 158 Roman pottery: mortaria. Scale 1:4.



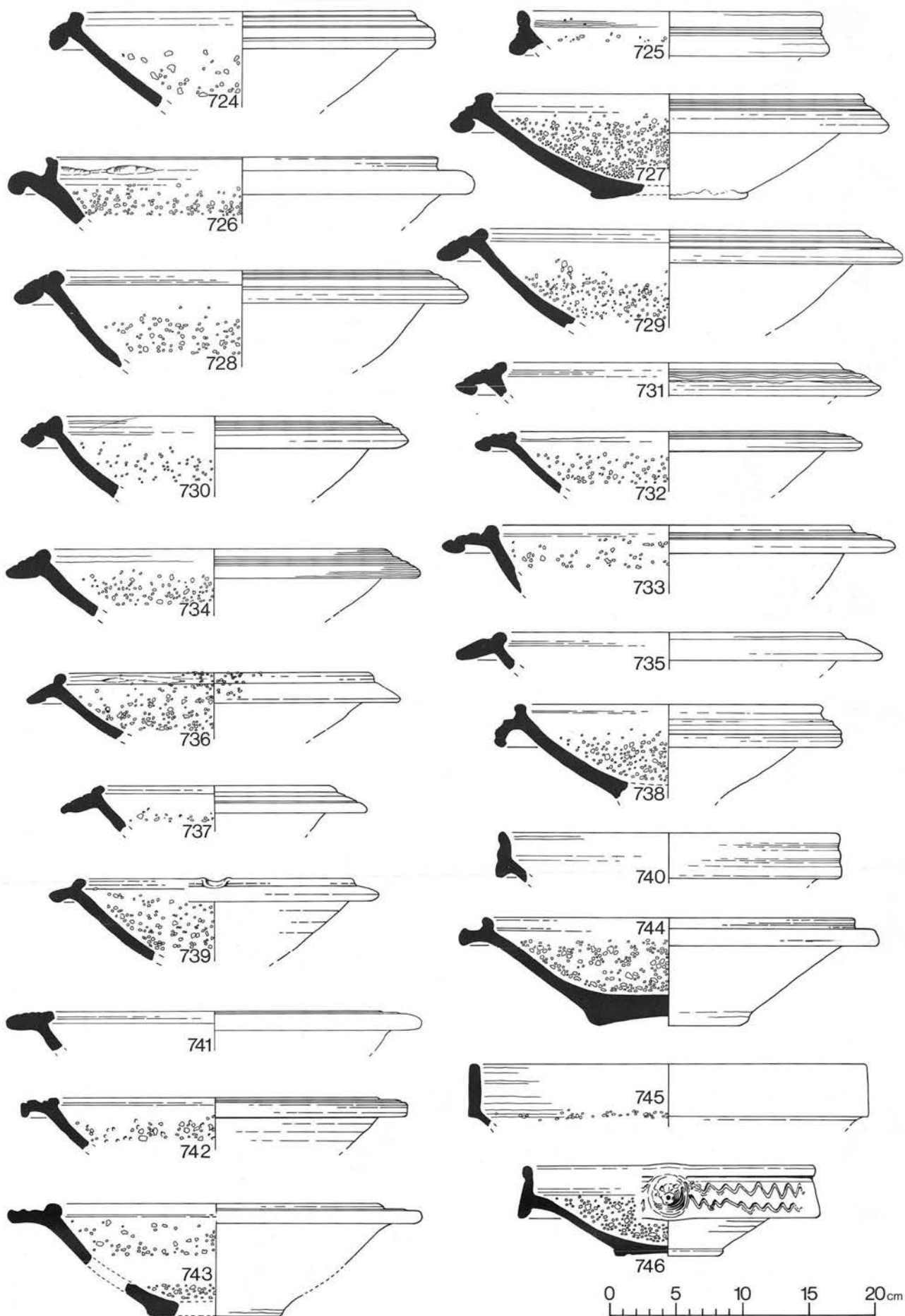


Figure 159 Roman pottery: mortaria. Scale 1:4.

771. EA(C) trit.: black iron slag and some quartz.  
 772. EA(C) LB 936 refuse  
 773. EA(B) Brownish clay streaked darker, red-brown cortex with cream streaks, light brown surfaces; sparse quartz, occasional flint. No trit. surviving. Possibly originally slipped. LB 164 refuse.  
 774. EA(B) Grey-cored red-brown fabric with light brown edges, possibly slipped, light cream-brown surfaces; sparse quartz, occasional cream earthy inclusion, and flint particle; no trit. surviving. Probably from the same source as No. 773.  
 775. EA(C) trit.: rounded quartz and flint; striations below as if grits dragged across surface. Local. LB 677, Rm 9.  
 776. EA(B) Light brown fabric, cream surfaces, common quartz, ooliths and red iron ore; trit.: flint. A Nene Valley form, similar to mortaria from Pakenham, Suffolk.  
 777. EA(C) Burnt, but originally probably light brown, partial grey core. Burnished rim. Not certainly a mortarium.  
 778. EA(C) Darker surfaces; inclusions well-sorted; trit. flint and rounded quartz. Burnt internally. Traces of burnishing on rim and exterior. Local. Area 2.

*East Anglia, reduced:*

The usual fabric is undistinctive dense textured grey with varying proportions of quartz and iron ore. Trituration mostly flint, often with some quartz although quartz predominates on some. The presence of burnishing appears to occur on the later vessels, usually on the rim and exterior, as on Nos 788, 790, 792, ?794, 796, 799–801, 803–814. Mortaria with fabrics similar to the local kiln products are Nos 789, 793, 795, 797. String-marking occurs on Nos 790 and 794. Vessels differing from the norm, asterisked, are described individually.

Dating: 784, 799 3rd century?. 780–783, 785–789, 791 AD 240–400. All others probably 4th century.

779. LB 2045 refuse, joining LB 2614.  
 780. LB 810 spill.  
 781–782. LB 708 refuse.  
 783. LB 535 refuse, joining LB 1872.  
 784–785. LB 164 refuse.  
 \*786. Finer fabric with few inclusions, sparse ill-sorted red, ?iron ore; trit.: little surviving, quartz, rounded. Area 2.  
 787. Area 4 LB 3339 Grave 51.  
 \*788. Red-brown grey cored fabric, grey surfaces, with sparse quartz, some larger rounded grains, more black iron ore, occasional flint; trit.: mostly flint, some burnt. Crudely burnished on rim, exterior, and the upper part of the interior, with visible individual facets. A different source. Many sherds. Late 3rd or 4th century. Another sherd, probably from the same vessel, from Area 4, LB 3099, probably a mis-mark. LB 3529 refuse.  
 789. LB 164 refuse.  
 790. LB 895 refuse, same vessel in LB 3529 refuse.  
 791–792. Dark grey dense fabric, with very tiny quartz, sparse black iron ore. Trit.: rounded flint. Burnished on rim, and exterior, the rim decorated with a burnished wavy line. Area 4.  
 793–794. Area 2 LB 1824 refuse.  
 795. Area 2 LB 2251.  
 \*796. Grey fabric with common quartz, occasional dark fibrous voids; burnished on rim and exterior. No surviving trit.. Another example illustrated.  
 797. Another example from LB 1154.  
 798. Area 2 LB 1709.  
 \*799. Dark grey fabric with red-brown cortex, grey surfaces, abundant quartz of larger than usual size; trit.: mostly rounded flint; burnished on rim and exterior. LB 1049 refuse.  
 \*800. Dark grey fabric with common larger sub-rounded quartz, occasional flint; trit.: flint, some quartz? Pimplly surfaces due to rounded quartz in fabric. Burnished line on exterior; rim edge appears to have been decorated by rouletting or ?juddering.  
 801. Neat hole pierced through upper wall post-firing, with curious red staining inside.  
 \*802. Light grey fabric, common quartz, the larger grains being rounded, flint, black iron ore; trit.: black iron slag, striations below as if grits dragged across the surface. Exterior smoothed. Different source.  
 \*803. Finer brownish fabric, grey surfaces, with sparse sub-angular quartz, many tiny voids, occasional red-brown (?sandstone) rounded and sub-rounded inclusion; trit.: sparse large burnt flint particles. Burnished rim, exterior and upper wall. Different source. LB 1921 PR.  
 \*804. Fabric with abundant quartz, occasional dark grey grog particle, and oolitic inclusions; trit.: rounded quartz and flint. Burnished on exterior of rim, and probably on interior. Area 2 LB 2213.  
 805. Area 4.

806. Trit. extending unusually to top of vessel. LB 383, spill, Rm 1.  
 807. LB 1175, joining LB 1167, both refuse.  
 808. Rim burnished and decorated with incised wavy lines. Area 2.  
 809–810. Neatly turned base. Burnt post-fracture, some sherds discoloured light brown, but almost certainly originally grey. LB 2548 Rm 5, one sherd from LB 2752, fill hypocaust flue F33, and sherds from LB 1010 spill.  
 811–813. LB 464 spill, disturbed.  
 \*814. Usual fabric, but trit. grit of smooth black iron slag. Area 4.  
 \*815. More open textured fabric with voids, mostly very small, stained black and red; sparse quartz, occasional calcitic particle; trit. largely lost, rounded quartz, probably also originally flint. Very abraded.

*Discussion*

(Tables 23–8; Table 28 on microfiche)

The quantified figures for mortaria are examined to establish the major suppliers, any chronological changes in the pattern of supply, and the significance of the minor suppliers, particularly in view of the other ceramic connections with Essex/southern East Anglia, and the continent. All mortaria sherds were counted and weighed, but EVEs were recorded only for stratified contexts in Area 1 (excluding the unsealed 'spill'), and the less common mortaria. Thus the breakdown of all mortaria found on the site rests on two measures only: see Table 23.

The three major suppliers were those making grey mortaria, probably working in Norfolk, the Nene Valley and the Oxfordshire potters. These overall figures however mask chronological changes over the approximately 200-year occupation. It is virtually impossible to split the mortaria into chronological phases due to the wide dating brackets, particularly for Nene Valley vessels of the period mid-late 3rd to 4th century, which are a major problem for Caister since they represent 58% of the identified Nene Valley types (as Nos 727, 729–32), and similarly for the little known grey vessels in the later 3rd to 4th century. It is, however, feasible to examine some periods on the basis of dated types (e.g., the Nene Valley total is split in proportion to the incidence of types for individual periods). Table 24 summarizes this subjective approach.

AD 180–250

The unusually high proportion of samian represented by mortaria, particularly from East Gaul, in comparison to other sites is noted above (see p.155). The bulk of the samian came from the refuse on the rampart, particularly from the earlier F squares refuse. Whether the use of samian and coarseware mortaria was identical is debatable due to differing size, character of spout and late manufacture of the type by the samian potters. The percentages excluding samian show clearly the considerable quantity being imported from the continent and southern East Anglia. Only 4% of Nene Valley mortaria are included (only five rims).

AD 250–300

Examination of the sources for the later 3rd century is hazardous due to the high proportion of Nene Valley types broadly dated late 3rd–4th century. 8.3% of Nene Valley types were more clearly of this period, 26% of Oxfordshire (Young types M17 and 18), and an estimate of 5% of the more local mortaria, grey and oxidized (of Group A). It seems unlikely that the Oxfordshire potters would have been taking such a large share of the market at this period, and many of the excluded Nene Valley vessels were probably later 3rd rather than 4th century. If these were included in this period, the relative percentages of Nene Valley and Oxfordshire would be 83% and 11% respectively.

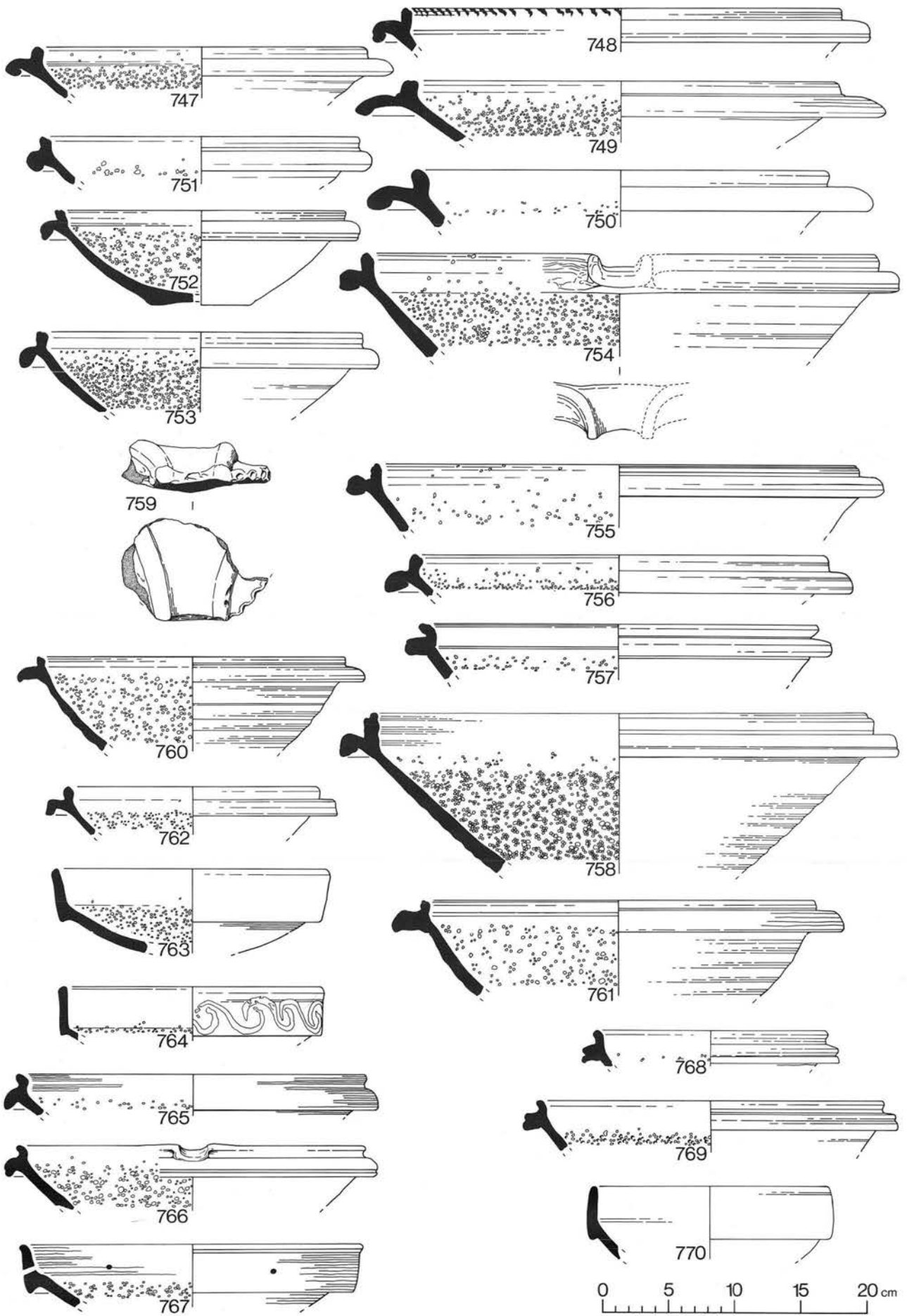


Figure 160 Roman pottery: mortaria. Scale 1:4.

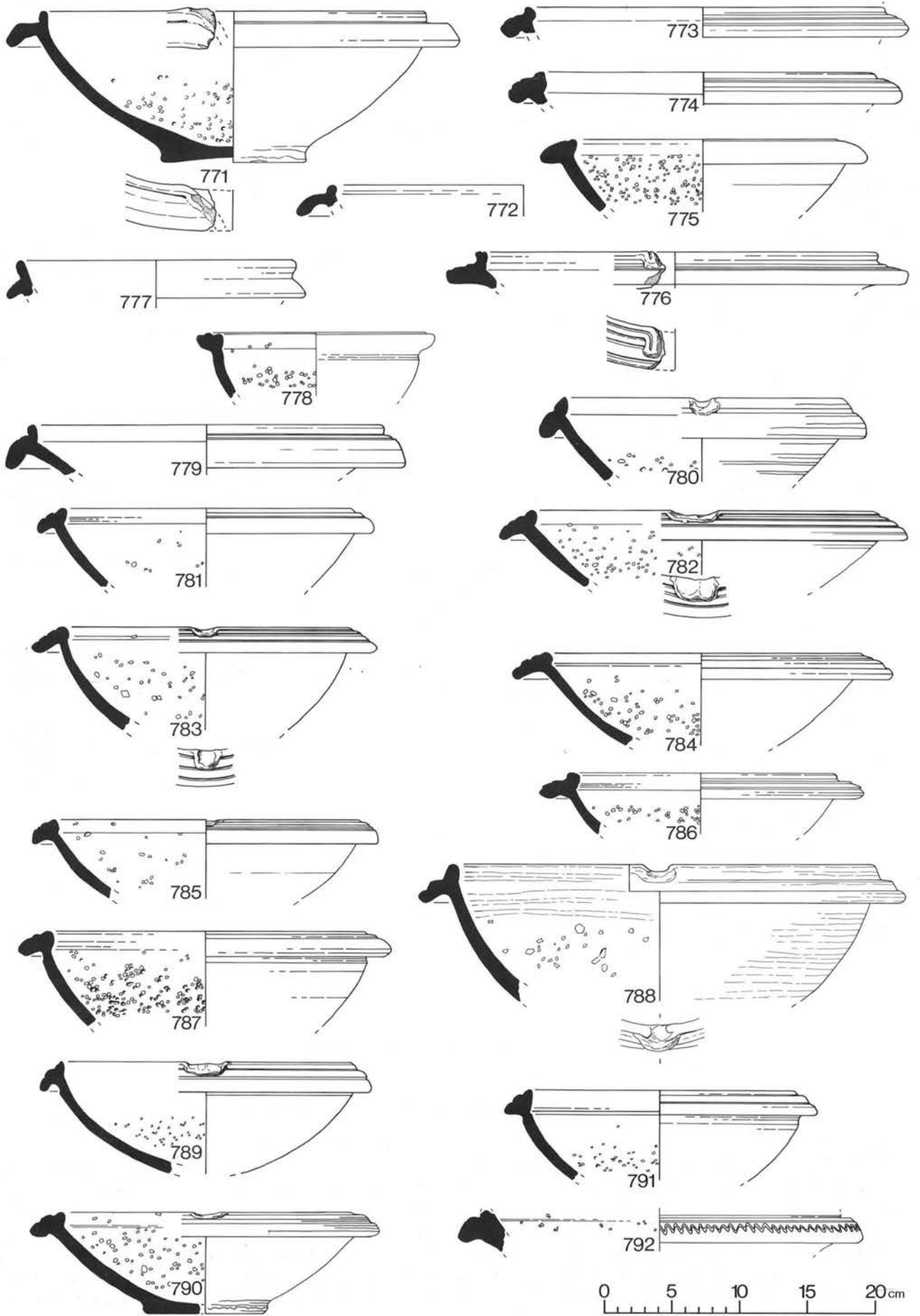


Figure 161 Roman pottery: mortaria. Scale 1:4.

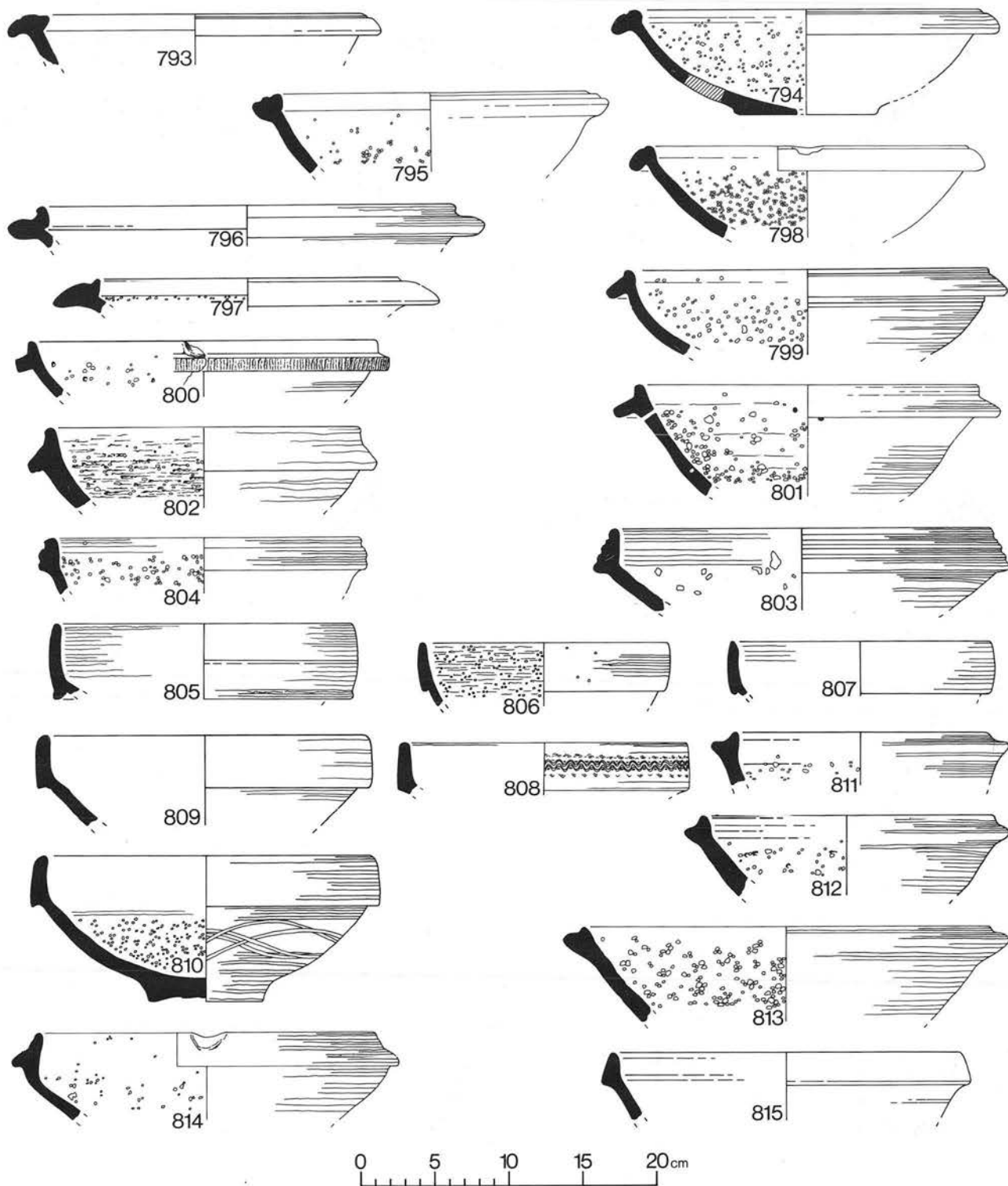


Figure 162 Roman pottery: mortaria. Scale 1:4.

### 3rd–4th century

The final group assembled by dated type is necessarily vague due to the number of mortaria dated AD 240–400 only, and includes the bulk of the three major suppliers. Approximately 66% of the Nene Valley vessels included above are types of the broad date range late 3rd–4th century, and the effect of moving these to the previous period would produce the following relative percentages for the main suppliers: Nene Valley 18%, Grey 47%, Oxfordshire 21%, East Anglian 11%. The ‘grey potters’ were probably the main suppliers in the later period. Assessment based on

weight is hazardous since the grey and East Anglian oxidized mortaria are invariably smaller, thinner and therefore under-represented at 43.4%. The same problem arises in assessing the impact of the Oxfordshire potters due to the light weight of the red slipped vessels. Evidence based on these, Much Hadham and Hadox vessels suggests that the incidence measured by EVEs is more than double that based on weight. On this basis, the Oxfordshire share may be nearer 17.5%. The 4th-century glazed mortarium is excluded from the table since its nearly complete survival would produce an unacceptable bias.

	Sherds	Weight	% on weight
Grey	390	16405	28.8
Nene Valley	374	19465	34.2
Oxfordshire cream	114	6480	11.4
Oxfordshire cream white slipped	45	1195	2.1
Oxfordshire cream red slipped	51	957	1.7
Nene Valley colour-coated	13	325	
Glazed mortarium	24	875	1.5
Rhineland	26	3975	7.0
Gallo-Belgica/Rhineland	2	660	1.2
East Anglia/Rhineland	21	1775	3.1
East Anglia A-C/Hadhamish	59	3665	6.4
Hadham	14	475	(
Hadox	8	140	(1.1
Colchester/Verulamium	5	460	
?Import red slip	2	60	
TOTALS	1148	56912	
Samian mortaria:	134	3870	

Table 23 Mortaria, sherds and weight by fabric from Areas 1, 2, 4 and 5.

	AD 180–250			AD 250–300		3rd–4th century	
	grams	%	% excl. samian	grams	%	grams	%
samian	3870	33.6	-	-	-	-	-
Rhine	3975	34.5	52.0	-	-	-	-
Gallo-Belgica/Rhine	660	5.7	8.6	-	-	-	-
East Anglia/Rhine	1775	15.4	23.2	-	-	-	-
Colchester/Verulamium	460	4.0	6.0	-	-	-	-
Nene Valley	780	6.8	10.2	1615	38.4	17070	38.6
Grey	-	-	-	820	19.5	15585	35.3
East Anglian (oxidized)	-	-	-	87	2.1	3578	8.1
Oxfordshire cream	-	-	-	1685	40.1	4795	10.9
Oxon white-slipped	-	-	-	-	-	1195	2.7
Oxon red-slipped	-	-	-	-	-	957	2.2
Much Hadham, Hadox etc.	-	-	-	-	-	675	1.5
Nene Valley Colour-Coated	-	-	-	-	-	325	0.7
Totals	11520	-	-	4207	-	44180	-

Table 24 Mortaria, by chronological phases on the basis of dated types.

The above analysis effectively imposes current dating on the material, and its validity needs examination on the basis of the stratified occurrence, bearing in mind the complication of residual pottery. The sample from the rampart spill and associated early features is regrettably only 22 sherds (1.545kg) including nine East Gaulish samian. One grey rim of the earlier type of Nos 782–784 was found, and the Nene Valley mortarium No.730, dated AD 230–300 plus came from the early gully F59. The red-slipped mortarium, No.770, was probably intrusive, with a join to the overlying refuse. No Oxfordshire mortaria occurred.

Two deposits of the main occupation may be examined, the refuse dumping on the rampart, spanning the later 3rd and 4th centuries, and the latest rubbish found on the floors of Building 1. Mortaria represented the same proportion (5.4%) of both these assemblages. The refuse was fully quantified (apart from the samian; bracketed figures include samian), see Table 25. While only 33% of the mortaria came from the earlier F squares, the differing

assemblages from the grid lines E and F are reflected by the mortaria. The percentage of samian mortaria (on weight) from F squares was 34.3% against only 8.2% from E squares. The only Oxfordshire (cream) vessels and 78% of all the grey mortaria came from the later E squares (grey sherds from F squares were from upper layers only). The smaller lighter grey vessels are under-represented by weight, the EVEs figure of 46% showing their predominance.

The group from the floors, the spill overlying Building 1 and including vessels from post-Roman disturbances (the sample from the floors alone was too small) gives the latest breakdown of stratified mortaria, and this is shown on Table 26, (the nearly complete glazed mortarium, accounting for 17.5% on EVEs, has been excluded to avoid distortion affecting assessment of the more normal supply). The EVEs of the mortaria from the spill were recorded, and these show clearly the predominance of the grey mortaria, and the increasing quantity from Oxfordshire (bracketed figures include samian).

Refuse	% sherds		% EVEs	% weight	
Nene Valley	23.1	(16.4)	22.7	34.9	(28.9)
Grey	58.5	(41.4)	46.0	40.7	(33.7)
Oxfordshire	8.8	(6.3)	10.0	8.8	(7.3)
East Anglian	4.8	(3.4)	4.4	3.3	(2.8)
EA/Rhenish	*		7.0	3.7	(3.1)
Rhineland	2.0	(1.4)	3.8	5.2	(4.3)
Verulamium	1.3	(1.0)	6.0	3.2	(2.7)
samian		(29.3)			(17.1)

based on a sample of c. 51 coarse vessels, 498 EVEs (excl. samian), 208 sherds, 10.295kg.  
\* under 1%

Table 25 Mortaria from the refuse.

	Shs	Including Samian	EVEs	Weight	Including Samian
Nene Valley	32.3	(30.5)	10.0	24.6	(23.7)
Grey	31.5	(29.8)	47.7	32.1	(30.9)
Oxfordshire	10.5	(9.9)	14.2	14.6	(14.1)
Oxon, red slip	15.3	(14.5)	16.2	7.1	(6.8)
Hadox	1.6	(1.5)	2.3	*	*
East Anglian	6.5	(6.1)	6.9	7.9	(7.6)
Nene Valley cc	*	*	2.7	*	*
Verulamium	*	*		*	*
GB or Rhineland	*	*		12.6	(12.1)
Samian		(5.3)			(3.7)

(\* = presence below 1%)

Based on a sample of 260 EVEs, 131 sherds, 5.155kg

Table 26 Mortaria from Building 1, overlying spill and post-Roman disturbances (excluding glazed mortarium).

Table 27 summarizes the stratified information, on the basis of weight alone (the glazed mortarium and a single large residual Rhenish sherd are excluded). This also gives figures from all the spill layers, extending beyond Building 1. The major change in the later period is the considerable increase in the quantity from Oxfordshire, particularly bearing in mind under-representation by weight due to the lightweight colour-coated vessels in the later groups. Apart from a sherd in the upper refuse, Oxfordshire white slipped mortaria only occurred in either plough or unsealed deposits, as did Much Hadham and Hadox mortaria, although some sherds occurred in disturbed layers on the road, and in the rubbish in Room 2.

The less common vessels, representing 19.7% of all mortaria on weight, i.e., continental imports, all oxidized East Anglian vessels and those from the Hadham area, are examined as a group (see Table 28 fiche). These divide into two groups, imports from the continent and southern East Anglia up to the mid 3rd century, and the later 4th-century vessels.

The assessment of the miscellaneous East Anglian groups A–C is more difficult. The impression is that more occurred late; the few sherds of group B came from the refuse in E squares and Building 1, both of 4th-century date. Group A, of Nene Valley type, were mostly types of 3rd- to early 4th-century date. Group C includes two possibly 3rd-century vessels (Nos 771, 772), but most, especially the sandy sherds reminiscent of coarse Much Hadham fabrics, would fit a 4th-century date.

#### Conclusions

The residual content of the stratified groups complicates assessment, and the earliest usable sample (the refuse) is heavily biased to the later refuse in E squares. The only viable assessment of the earliest sources is that based on datable types, showing an almost complete reliance on mortaria from the continent and southern East Anglia. On the same basis, the later 3rd century appears to show a strong Oxfordshire presence which is not reflected in the group from the refuse. This could be a quirk of the sample complicated by the broadly dated Nene Valley types. Consideration of the Nene Valley evidence suggests that the major trading period was the mid-late 3rd century, declining later. 46% EVEs grey mortaria from the refuse, backed up by 48% from the Building 1 group, indicates the major impact of these potters in the 4th century, possibly starting in the later 3rd century.

The only suitable comparative site is Brancaster, complicated by its differing date range and extra-mural location, and difficult to use due to lack of quantified data and non-integration of samian. A vessel count (Hartley 1985, 122) gives Nene Valley 61%, Oxfordshire 3%, Rhineland 6–7%, East Anglian 26%. Since this lacks comparable quantities of 4th century, but includes more late 2nd–3rd-century material, it would suggest a stronger reliance on ?Essex rather than Rhineland potters in the earliest period (the absence of Colchester mortaria is surprising in view of the fine wares: Andrews 1985, fig. 50), and thereafter almost total domination by the Nene Valley

	NV	Grey	Oxon	EA	Rhine	Misc.	Samian	Sample size
Refuse	28.9	33.7	7.3	5.9	4.3	2.7	17.1	10.295kg
Building/spill	26.9	35.2	23.7	8.6	-	-	4.2	4.530kg
Spill	24.2	35.2	20.9	5.5	5.3	*	8.5	6.645kg

(\* = presence below 1%)

Table 27 Mortaria, comparison by weight of the groups.

potters. Only two grey mortaria occurred, and nearly all the Nene Valley vessels fit the amorphous late 3rd–4th-century bracket. There is insufficient evidence to determine whether the Nene Valley trade declined in the 4th century as seems to be the case at Caister.

The major difference lies in the earliest period and adds to the probability that Caister received more continental imports at that time, including North Gaulish coarsewares, barely represented at Brancaster.

### Miscellaneous pottery (Fig.163)

#### A. Stamped colour-coated sherd, NVCC.

White fabric, dark grey-brown slip; the sherd is possibly from the shoulder of a jar, the wall pushed out into a mould showing a cross with pellets in each field. There are traces of other decorated bosses on either side. The condition of the sherd is unfortunately very poor, and the impression indistinct; only one roundel survives clearly, and the top portion of the cross ends so close to the curvature of the neck as to obscure the detail. AXI pl/soil.

A number of different stamps appear on late NVCC, including a three-handled jar from Stibbington well (Perrin 1981, fig.27.2, no.22; RPNV 74), with bosses spaced around the girth, the mould showing a snail-shell like motif. The 'cross-and-pellets' style of stamp was widely used, and seems to have been particularly common in York; several are conveniently collected together in his survey of 'romano-saxon' ware by Roberts (1982, D24.3, 24.6, 24.7; see also a sherd from a pit group at Chelmsford dated AD 325–360+, Going 1987, fig.31, no.356; fig.48, no.19). Neither are these stamps confined to closed forms, since a hemispherical bowl of the samian Form 37 is known from a 4th-century context at Bourton-on-the-Water, Gloucestershire, with similar, albeit smaller, stamps (*J. Roman Stud.* 25 (1935), 227, fig.26). Two different cross-and-pellet stamps of approximately the same size are haphazardly scattered across a face-pot from Burgh Castle (Myres 1956, 34, fig.7, no.5) the description suggesting a colour-coated vessel. The use of stamped bosses on face-pots is relatively common, but usually closely grouped around the face or to represent hair, head or beard.

The size of the Caister stamp is the same as those on the well-known jar from the Great Casterton villa (Corder 1961, fig.24, no.5, pl.XVIII) which was associated with a coin of c. AD 388–400 and late 4th-century pottery, and this vessel provides more information. Although it is impossible to be certain with the Caister fragment, the stamp might be either from the same die as was used on the Great Casterton vessel, or the stamp from Chelmsford (Going 1987, fig.48, no.19). The Great Casterton stamps are

grouped in a circle on the girth of the jar, the highest one just impinging on the cordon of the shoulder, *i.e.*, in the same position as the Caister example. The sherd thickness would suggest a similar vessel form, but with a different arrangement of stamps, in much the same way perhaps, as the Great Casterton jar differs from the Stibbington well jar. The Chelmsford stamp is thought to have come from a three-handled jar of the Stibbington well type.

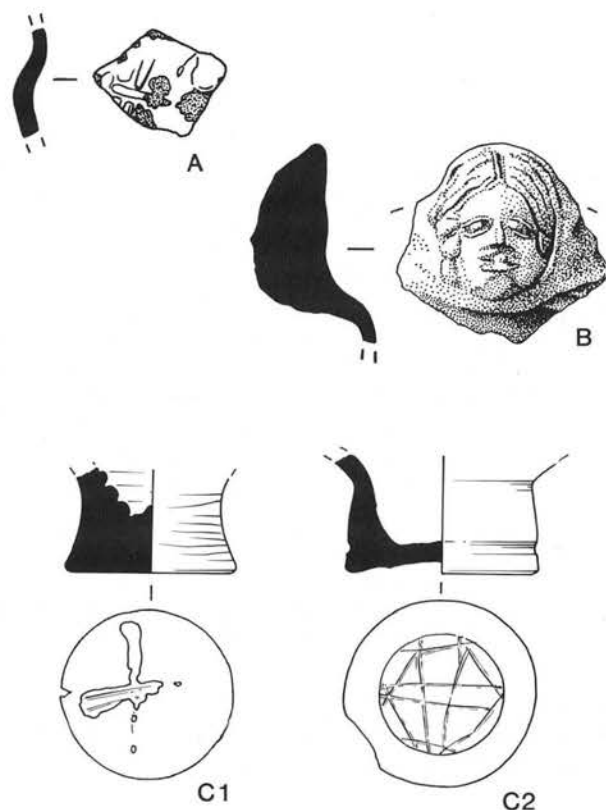


Figure 163 Roman pottery: miscellaneous. Scale 1:2.



A stamp from the same die as the Great Casterton vessel and particularly relevant to the Caister example was found at Leylands Farm, Hockwold-cum-Wilton, Norfolk, with pottery of 2nd- to 4th-century date (NCM 29.957). This was on a bowl of a form commonly used for 'romano-saxon' pottery.

It is possible that the NVCC jar, No.232, was also stamped, judging from external surface detail and finger-marks inside, but this is a much more delicate thin-walled jar differing from the vessels referred to above.

### B. Grey face-neck flagon.

Fairly fine grey fabric with a lighter core and few inclusions, some mica. The face was formed in a mould, and applied to the rim of the ?flagon. The lady has a droopy expression, hair parted in the middle, and although crude, the features are quite well defined. A sherd from the spill in the same grid square appears to be from the side of such a flagon top, as it curves upwards. This has the remains of a burnished design, probably lattice, running up to the plain rim. Although the fabric is similar, it is much darker in colour and may not be from the same vessel. SF 425, LB 383, spill.

Face-neck flagons are known from the Oxfordshire kilns (Munby 1975), and in the Nene Valley, a 4th-century date, possibly c. AD 350–400, is probable (see a probable Much Hadham face-mask flagon sherd, p.210). A more local origin for this grey example seems likely. Kiln D1 at Brampton (dated late 2nd to early 3rd century) was apparently producing vessels with applique masks, but these appear to be more akin to the jar, No.371, with the mask applied to the shoulder (also Green 1977, fig.28, no.36, considered to be a local product). It seems unlikely that face-neck flagons of this type are earlier than 4th century, and since there is no evidence to suggest pottery kilns at Brampton after the 3rd century, the origin of this vessel is unknown.

### C. Marked beaker bases:

1. Small heavy colour-coated beaker base of the type of Gillam 57, red-brown fabric, with creamish inclusions, black iron ore, metallic dark bronze slip. Marked on the underside of the base with a schematic cross, or the letter or numeral 'V', in thickish cream paint. Probably 4th century. SF 4181, Area 2, plough.
2. NVCC beaker base of the pill-box type with groove immediately above base and offset underneath (as grey beaker, No.332, or RPNV type 27). Geometrical double-cross motif incised through the colour-coat into the fabric, pre-firing. More interestingly, overlying the incised motif are haphazard blobs of cream, some encrusted with sand, which appear to be the same as the thickish slip/paint often used to decorate this type of beaker. SF 4152, pl/soil. Graffiti are relatively commonplace, scratched post-firing as ownership marks, but these are clearly marks made by the potter before firing. If that on No.1 is a sloppily drawn numeral V, this might have been a form of kiln tally mark. The design on No.2 is much more elaborate, and may be a form of ownership mark for a different reason. A fragment of sandy grey base (vessel form unknown) also had the remains of a cross deeply incised into the underside (SF 4145, pl/soil).

### Graffiti

Several appeared on illustrated vessels, and these are listed below with the unillustrated sherds.

#### Beakers, all grey:

1. No.99, cross incised on underside of base, folded beaker.
2. No.320, cross incised inside a square, neck of beaker, ?funnel neck.
3. No.322, 'AD' on rim of funnel neck beaker.
4. No.334, 'w'? on rim funnel necked beaker.

#### Unillustrated:

5. Rim NVCC funnel necked beaker, incised 'O', LB 535 spill.
6. Rim Grey funnel necked beaker, incised possibly 'AN', LB 3529 refuse.
7. Rim Grey funnel necked beaker, incised 'N', SF 4132.

8. Grey body sherd, possibly from a beaker, incised fragmentary down-stroke and 'A', LB 2102, gully F59 SF 4185.

#### Other vessels:

9. No.486, grey wide mouthed bowl, incised cross.
  10. No.548, BB1 bead-and-flange bowl, three downstrokes, crossed in the middle.
  11. No.653, grey grooved rim dish, OVN.
  12. No.677, BB1 late dish, ?letter A.
- Unillustrated:
13. BB2 bowl or dish base sherd, with cross lightly incised on underside, LB 383 spill. SF 4140.
  14. Grey body sherd, closed form, possibly a jar, with cross incised on ?lower wall, LB 383 spill. SF 4135.
  15. Grey body sherd from a bowl probably of BB type, with six-armed cross incised, LB 925, rampart spill.

None of the graffiti containing letters were complete and all the above would appear to be ownership marks. Functionally, they appear: beakers: 7 or 8; bowls/dishes: 6; jar: 1. These are precisely the vessels most commonly marked (Evans 1987, 199, fig.6). Where datable, most would fit a 3rd-century date, but the BB1 vessels are more likely to be 4th century; the only sherd to which an early to mid-3rd-century date need apply is the BB2 base, No.13, and possibly the sherd from gully F59, No.8.

## Discussion

### Vessels and wares

#### Amphorae (Table 29)

In view of the late Roman occupation, the paucity of amphora finds (22kg) was expected. Over half by weight are Dressel 20 sherds, but these weigh less than a single Dressel 20 (Colls *et al.*, 1977, 23, ranging from 23 to 28–30kg). The total weight of pottery has been estimated at 1 tonne, of which the amphorae account for only 2.2%. Sufficient featureless body sherds from all contexts suggest that the preserved finds are representative of what was found. This estimated proportion is low when compared with a large 4th-century group from Lincoln (total 74kg, of which amphorae represented 6%: Darling forthcoming b), but extremely small when compared with the equivalent figure of 31.6% from Vindolanda (Bidwell 1985), where between 79–85% of the pottery came from contexts of early 3rd century and later. The comparison with Vindolanda is surprising, in view of Caister's coastal location and other ceramic imports.

The bulk of the amphorae divide between the wine Pelichet 47 almost certainly from France, and the olive oil Dressel 20 from Baetica in southern Spain. The relative incidence of these two varieties is difficult to gauge with Pelichet 47's representing 51% on *count*, and Dressel 20's accounting for 51.5% on *weight*. Although weight is the only sensible quantification for amphorae, the considerable differences between these two types, make it deceptive unless related to an average vessel weight. Although an average weight may be estimated for the Dressel 20 form, the variable Pelichet 47 is impossible to average, especially since some of the Caister vessels (as from New Fresh Wharf, London) are not typical amphorae. On the basis of sherdage, site distribution, *etc.*, a subjective view is that vessels of Pelichet 47 species were the most common imports. The amphorae are summarized on Table 29.

Very few Dressel 20 rims were found, and Nos 161 and 162 are typical, and characteristic of the late types likely to be current in the 3rd and possibly continuing into the 4th

century, on the basis of the evolution established for finds from August (Peacock and Williams 1986, fig.66). The triangular rim of No.162 is akin to that of the smaller Dressel 23 of 3rd to 4th century date (Peacock and Williams 1986, fig.69).

Some of the Pelichet 47's sherds (Nos 163–167) may be viewed more as a flagons than amphorae. These do not resemble the amphorae from Billingsgate (Green 1980, fig.20, termed Dressel 30), but are closer to amphorae from New Fresh Wharf (Green 1986), No.163 resembling 1.23, although the fabric description is dissimilar, while the others are closer to the range 1.25–1.29 in form and fabric. An origin in northern France is suggested (Green 1986, 104). Variations are only apparent under the microscope, and the quantity recorded as Pelichet 47's from Caister encompasses more than one type and source. Clearly some of the large flagons (as Nos 176, 177) may have arrived as containers. The differences in form and fabric amongst the Pelichet 47 sherds suggests more than one source and possibly differing contents, although wine is probable.

The less common amphorae (representing 21% count, 17% weight of all amphorae) probably account for no more than about sixteen vessels, based on fabric differences and widely spaced find-spots, and their diversity, many coming from the East Mediterranean with unusually few sherds from North Africa is interesting.

The unusual foot, No.168, resembles the Mauretianian Dressel 30 (Ostia form V: Peacock and Williams Class 38) illustrated by Keay (Keay 1984, Type IB, fig.19, no.2; fig.36) thought to have carried oil, and dated 3rd–4th century. But the fabric, examined by Dr Williams (see microfiche, No.9) is quite different. The earliest context is the refuse in EIX, which contained much 3rd- as well as 4th-century pottery, but the probable later contamination in this area is relevant, particularly since No.168 came from the fill of the Room 5 hypocaust with Constantinian coins, late 4th-century pottery and an important group of late glass.

More certainly African were the four sherds of North African cylindrical amphorae (see microfiche, No.6; Peacock and Williams Classes 33–35), thought to have carried fish products or olive oil. Two vessels were represented by different types of handle, one being large with furrows externally, probably belonging in the variable late Roman

Class 35. Williams considers the main export thrust of the North African cylindrical amphorae to have come in the 3rd and 4th centuries (in litt.). The presence of only four sherds is surprising.

The Kapitan II amphora (Nos 170–172; see microfiche, No.4, probably at least three examples) is of unknown origin, although the Aegean/East Mediterranean area is likely, and its contents are unknown. Several examples are known from Britain (see Peacock 1977a, 297, fig.23.1, nos 1–2 from Chalk) and two or three examples occurred at New Fresh Wharf, London (Green 1986, nos 1.12, 1.13), one stratified in the quay deposits. Importation probably dates to the late 3rd or early 4th century. The fabric of all the examples strongly resembles tile. A ribbed body sherd was found in the rampart spill but its evidence is equivocal for dating due to possible disturbance in the area.

The micaceous red-brown Biv amphora sherds, of East Mediterranean origin (possibly Anatolia or the Aegean), were only small featureless sherds, impossible to attribute to either the early single-handled or later two-handled vessels (as found in Dark Age contexts: Radford 1956; Radford and Thomas 1959). As with the Gaza 'wine-jar' below, these are more likely to have arrived during the Roman period (see a sherd from Billingsgate, London, stratified with a Chalk 6 amphora rim, in a 3rd-century context: Green 1980, fig.40, no.376; 1986, nos 1.14, 1.15 in early to mid-3rd-century quay deposits). Most sherds occurred in the unsealed 'spill' layers or plough, and although one came from a refuse layer, the context was of 4th-century date.

The cream-brown micaceous amphora fragment, No.173, came from refuse in the F squares, and the fabric, despite colour, is very similar to the Biv sherds (see microfiche, No.3); some of the early one-handled form from Carthage were in light fabrics (Tomber and Williams 1986). No other sherds were found to elucidate form or handle arrangements. It is smaller than the oft-quoted single-handled vessel from Bath (Cunliffe 1969, fig. 60, no.9) in red-brown fabric with a different body form. A further ribbed sherd of similar micaceous cream-brown fabric with an external red-brown slip was also found, of identical fabric to a small one-handled amphora with a partial slip from a post-Roman context at Colchester (inf. R.P. Symonds). It is unfortunate that there is no evidence

	shs	kg	% shs	%
Pelichet 47 and variants (Nos 163-7)	154	7.065	51.0	31.5
Dressel 20 (Nos 161-2)	84	11.355	28.0	51.5
Gaza type amphora (No.175)	2	0.145		
North African, misc.	4	0.415		
?Mauretianian, ?Keay type I (Nos 168-9)	8	0.555		
Kapitan II, ?Aegean/East Medit. (Nos 170-2)	5	0.480		
Sandy red-brown ribbed amphorae, ?E. Medit.	5	0.065		
Finer brown-ribbed amphora	3	0.035		
Micaceous red-brown ribbed, Biv amphorae	13	0.089		
Micaceous cream-brown ribbed, ?Biv (No.173)	8	0.440		
Chalk 6 amphorae (No.174)	10	1.320		
Unknown, untyped sherds	7	0.270		
TOTAL:	303	22.234		

Table 29 Amphorae, sherds and weight by fabric (all areas).

for the number of handles to aid dating. Olive-oil residues have been identified in the Biv fabric, although other contents are possible.

The Chalk 6 amphora sherds, No.174, probably represent at least three separate vessels (see microfiche, No.5). The origin and contents of these amphorae is unknown, and they are rare in Britain, known from a late 4th-century context at Chalk, a well dated AD 250–350 at Caerleon (Peacock 1977a, 298, fig.23.1, no.5), and from an early to mid-3rd-century context at Billingsgate, London (Green 1980, 73, fig.40, no.375). A 3rd-century date would suit No.174, which came from the fill of the hypocaust in ABIX-X with other 3rd-century pottery.

The Gaza amphorae, No.175 (see microfiche, No.7) probably two vessels, may have carried the famous wine, but olive-oil and sesame oil are other possible contents, as is fish sauce, since examples with fish remains inside have been found in Israel (Zemer 1978, 61 re. forms nos 49–51). These are known from the Billingsgate bath building in London (Marsden 1980, 180–1, dated to the later 5th century) and, apart from possible finds from post-Roman Cadcong and a further find from London (Thomas 1981, 16), there are also finds from Wroxeter (from the Basilica excavations: Riley 1975, 35, n 19). The form is common in the south-eastern Mediterranean from the 4th to 6th centuries. An unillustrated sherd was unstratified in Area 4.

The sandy red-brown ribbed sherds appear to be identical to sherds from Lincoln (Darling 1984, 74, fabric 204A) where the earliest datable sherd occurred in the *colonia* rampart, dated to the latter part of the 2nd century. The fabric of these sherds resembles that of the early carrot amphorae, Camulodunum 189, but thin-sectioning has not defined the source, considered to be in the East Mediterranean (a Palestinian source has now been discounted), and this also applies to the finer light red-brown ribbed sherd (see microfiche, No.8). The contents are unknown, and the forms remarkably diverse, suggesting different production sites and contents (see Bidwell 1985, fig.73, nos 171, 172 from a late 3rd-century context; Wilson 1984, fig.81, no.1919, of which a similar example has been found at Colchester, inf. R.P. Symonds; Darling forthcoming b, from The Park, Lincoln). Three of the sandy body sherds and the finer ribbed body sherds came from refuse layers.

Apart from wine and oil amphorae from France and Spain, the remaining amphorae therefore appear to be mostly from the East Mediterranean and, discounting the Chalk vessels and Nos 168 and 169 of unknown source, possibly only two from North Africa. The contents of the East Mediterranean amphorae are unknown apart from the probability that the Gaza vessels carried wine. The small size and thin-walled fragility of Biv amphorae distinguishes them from known wine amphorae, and possibly some of the sandy ribbed amphorae contained dates, figs, etc.

Declining quantities of amphorae on later Roman sites complicates assessment of imports, and could indicate a radical change of cuisine or the use of organic containers, evidenced mainly by reliefs or wallpaintings. The paucity of olive oil containers, particularly from North Africa, is puzzling. The East Mediterranean bias may be evidence for more esoteric foods, or simply for the continued use of amphorae in that area, other imports in barrels being unrepresented.

#### BB2 and micaceous wares

One of the problems encountered with the pottery of the earliest occupation relates to BB2, when it became apparent that vessels not of accepted BB2 types occurred in the same fabrics and finishes, as seems to be the case also at Brancaster with their fabric RW11. Since the aim was to identify vessels coming from sources outside the immediate area, all drawn sherds were re-examined during preparation of the catalogue.

The problems with BB2 are twofold: variable fabrics arising from different kilns, and the accepted definition of the ware. Variations in the colour of fabric, cortex and surfaces are of dubious value; the fabric of one bowl was grey with a lighter thin cortex on one side of a sherd, but lighter grey with a red-brown thicker cortex on the other. The same surface burnishing and colouration occurs on vessels with fabrics dissimilar to the recognized range for BB2 and apparently untypical forms, such as the poppy head beaker No.325 (but see Jones and Rodwell 1975, 46, fig.11, no.131, a ?local product), the beakers Nos 98 (Jones and Rodwell 1975, fig.10, nos 101–107), 326, 328 and narrow-necked jar 366 (Jones and Rodwell 1975, fig.9, nos 88–93), while the finish and fabrics of beakers similar to 328, Nos 329–331 would fit within the range encountered with classic BB2 bowls, etc.

The first national definition of BB2 was based on vessels found on the northern frontier. This resulted in the ware being defined not only by an inevitably variable fabric, but also by fewer forms than were made by the same potters, and available in the production area. The relatively plain bowls and dishes, sometimes grooved at the rim, as Nos 585–589 and 642–648, appear in classic BB2 fabric and finish, and were obviously made in the same kilns (Jones and Rodwell 1975, fig.4, no.6; Hull 1963, fig. 93, kilns 27 and 28; Monaghan 1987, sub-types of his type 5F). On the basis of the Chelmsford evidence, Going considers these bowls/deep dishes, made at many Essex kiln sites, to have a long life, extending into the 4th century (Going 1987, 14, type B3). These were differentiated from BB2 at Brancaster as Brancaster fabric RW11, but the Caister vessels suggest the sources were the same. The rarity of these forms on the northern frontier noted by Monaghan (1987, 224) which restricted definition of the ware is apparent at Vindolanda, where vessels of classic form are noted as 'apparently in Black Burnished ware category 2' (Bidwell 1985, fig.67, nos 38, 42; fig.68, nos 68, 79). The Caister evidence supports the view that these continued to be made after the decline of 'classic' BB2 in the 3rd century, and lack of appreciation of their place in the Essex industries could lead to dating difficulties elsewhere.

To assess the impact of the Essex/Kent kilns elsewhere in East Anglia, the other forms in the same fabrics/finishes such as beakers, wide-mouthed bowls, jars, etc. must be taken into account. More information from kilns is needed to establish the range of vessels being made contemporaneously; that at the Mucking kilns (Jones and Rodwell 1975) is impressively large for the late 2nd to 3rd centuries, and continues later than the accepted floruit for the Colchester kilns.

The Caister vessels were divided into several broad fabric categories. These are subjective divisions, inevitably merging at the edges; vessels were admitted on the basis of type, fabric and finish. A minimum of two characteristics were required; vessels satisfying only one criterion, have been excluded. The groups are:

1. Fine, with abundant very tiny angular quartz, usually with different coloured cortex, fabric more often dark grey but also brownish. Nos 22, 32, 101, 125, 156, 157, 372, 444, 454, 455, 476, 499, 532, 533, 637, 639, 643, 646, 647. The beaker No.101 is identical to the bowl No.499, and close to the other bowls of similar form, Nos 22 and 125.
2. This merges into a similar fabric but with a scatter of large quartz inclusions. Nos 38, 329–331, 7513, 7523, 534, 587, 595, 640, 641, 645, 648.
3. Coarser, with common angular quartz. Nos 35, 526, 545, the only bead-and-flange bowl, 586, 588, 644.
4. An indeterminate group with some of the characteristics of the above fabrics, generally less inclusions, which without BB2 finish or type would be relegated to the undifferentiated GREY fabric. Nos 443, 445, 535, 544, 638, 642 are all basically similar; Nos 540 and 589 are both different and do not seem to fit any of the groups. The only examples of the bowl type with an incipient bead (as Jones and Rodwell 1975, fig.4, nos 15–17) occurred in this grouping.

All the above would fit the range likely to arise from a number of different sources working in essentially the same tradition within the Essex/Kent area over a period spanning the late 2nd to mid–late 3rd century, variations arising from local clays as well as changing clay preparation of such a long period. Rounded-rim bowls and dishes, and the grooved-rim plain bowls and dishes were common to all categories; the fine category encompassed more varied forms.

This still leaves, on the one hand, vessels sharing the same curious red surface colouration characteristic of so many BB2 vessels, almost certainly deriving from the firing technique (see Monaghan 1987, 191) with fabrics less certainly within an allowable range, as the beakers *etc.* mentioned above (the bowl No.25 and beaker base No.9 are other possibilities; an unburnished jar or bowl rim of a lid-seated type similar to No.15 also occurred); and on the other, vessels where the fabrics seem relatively similar, but the surface finishes are atypical (as wide-mouthed bowls 500, 504; bead and flange bowls 552, 577, 580, similar to the Brancaster decorated bowl in the BB2 look-alike fabric RW11, Andrews 1985, type 147.9; dishes 655, 656, 660). The beaker type 92.2 at Brancaster may be a further Kent/Essex product, and while the decorated bowl, No.520, could fit the fabric range, the high quality glossy burnish would be extraordinary. Another notable Essex type is the wide-mouthed bowl with burnished wavy line decoration on the neck, as Nos 24, 25, 474–476, and 513. While Nos 25 and 513 have some BB2 characteristics, the rest are in indeterminate grey fabrics, possibly from different kilns in the same area (see Chelmsford: Going 1987, 22, type E5, figs 6 and 7; Mucking: Jones and Rodwell 1975, type K, fig.7, nos 56–60). Given such variable clay sources, many more Essex/Kent products probably occurred. While the surface colouration from firing may be of diagnostic value, this does not always occur even on 'classic' vessels.

Some of the forms are clearly Essex types, such as the lid-seated bowls Colchester type 307 (from kilns 27 and 28, Hull 1963, fig.94, nos 33–5), and also type G at Mucking (Jones and Rodwell 1975, fig.5, nos 31–38) and type E2 at Chelmsford (Going 1987, 21, fig.6). These may be confused with jars with similar rims, as type F at Mucking (Jones and Rodwell 1975, nos 24–30), type G5 at Chelmsford (Going 1987, 23, fig.7), and Gillam 151 discussed recently by Bidwell (1985, 177), who notes the curious surface colouration, and dates their appearance on the northern frontier to the early 3rd century. The inturned-rimmed jars, as Nos 454, 455 (compare Brancaster: Andrews 1985, type 86.2 in RW11), are less easy, as

variants on the common long-lived and wide-spread bead-rimmed form, to parallel with certainty, but figure amongst the products of the Essex–Kent area (as Monaghan 1987, type 3G; Jones and Rodwell 1975, fig.10, nos 108–112).

The decline of BB2 in the north about the mid-3rd century is well documented at Vindolanda (Bidwell 1985), but local kilns continued working (*e.g.*, Mucking kilns III–V) and the priority in East Anglia must be to determine the extent of their trading outside the immediate production area. If it contracted, as suggested by the Caister evidence, why and is it related to the apparent decline of the flourishing Colchester potteries? Socio-economic reasons must lie at the root of these changes in pottery supply, and it is to understand these that questions must be posed about the Essex/Kent industries.

There are the noted problems of identification (the fine BB2 fabric resembles reduced Much Hadham ware), and also a quantification bias arising from the difficulty of identifying body sherds for the ware of variable fabric depending substantially on vessel type; figures based on weight or count are inevitably under-stated, particularly in comparison to BB1 (instantly recognizable as sherdage), and EVEs are the only reliable measure of the incidence of this ware.

The BB2 potters, probably in Essex, were important early suppliers to Caister, probably continuing through the 3rd century. They were only dislodged from this position later in the occupation, and the broad outline of declining quantities can be discerned from the groups examined (p.218).

#### Micaceous fabric MICG

There is also the problem of the micaceous vessels, collected under fabric group MICG. The usual fabric is at the sandy end of the noted BB2 range, and since the characteristic finish is of variable micaceousness, confusion between the two fabrics in body sherds is possible. BB2 vessels at Colchester are often micaceous, and a number of the Caister bowls contain noticeably more mica. Many of the micaceous grey vessels from Felthwell, Denver and Hockwold are classic BB2 types, including the straight-sided grooved bowl (Gurney 1986, fig.21, no.13; fig.49, no. 104; fig.51, nos 144, 148; fig.74, no.341; fig.76, nos 388–9, 398) and decorated bead-and-flange bowls (Gurney 1986, fig.50, nos 134–6), these vessels occurring alongside the same types in undifferentiated grey ware.

The forms recorded as micaceous grey at Caister are, however, distinct. More than one source is apparent, although most were in a sandy brownish fabric, with common to abundant well-sorted sub-angular quartz, sparse sub-rounded and occasional larger grains, with a black surface. Although mica occurred in the fabric, it seems probable that this was augmented by a slip of more micaceous clay. Vessels represented were: jar No.442, plain bowl No.590, bowl No.604, bowl/dishes Nos 153, 155, dishes Nos 663 (another unillustrated), 665, plain dishes Nos 671, 672 (another unillustrated), bead and flange bowl No.569. A further bead and flanged bowl, No.578, was in a similar dark grey fabric but with much finer grain quartz, the slip firing to a light red-brown. This was also decorated with a wavy line on the flange, similar to vessels from Brancaster in micaceous fabric RW4 (Andrews 1985, type 147.5), and also from Hockwold (Gurney 1986, fig.50, nos 134–136).

A different source seems implied by the two remaining vessels, a jar or bowl, No.26, and a folded beaker sherd, No.11, both of which were in light grey micaceous fabric, with no obvious slip or burnishing beyond the burnished decoration in the folds of the beaker wall, which is known at Brancaster (Andrews 1985, type 95 in RW1; folded beaker in micaceous fabric RW6, type 93), and also Icklingham (Plouviez 1976, fig.41, no. 14). The fabric was very finely granulated with silt-size sub-angular quartz.

A source in the Suffolk area may be suspected; kilns at Wattisfield produced particularly micaceous pottery (Moore 1936), and the products of Homersfield were also micaceous, to a lesser extent (Smedley and Owles 1961). The possibility of Colchester micaceous pottery is also relevant, but there is little evidence of trade between Colchester and Caister. The earliest micaceous vessels from the Fen-edge sites are from a late 2nd-century pit at Hockwold, associated with much residual 1st and early 2nd-century pottery (Gurney 1986, fig.48, nos 80–91), and the imitation of Gallo-Belgic forms (Gurney 1986, particularly fig.51, no.147) indicates an early date. The appearance of bead-and-flange bowls illustrates continued use of the micaceous clay, and work on fabrics associated with forms and finish is needed (decorative techniques may be useful, as the combed wavy lines, seen also on a BB2-like RW11 jar from Brancaster, Andrews 1985, type 101.1), together with more evidence from the Suffolk kilns to elucidate this regional pottery.

Pottery identifiably from Suffolk kilns is barely represented at Caister. Much of the ordinary coarse ware is more likely to have come from the local and other Norfolk kilns, and coarse wares from outside the region probably arrived via coastal trade, predominantly from Essex/Thames estuary in the 3rd century, but with increasing quantities from Dorset later. The pottery evidence poses questions as to the nature of the ships' principal cargoes and their ultimate destination.

#### Oxfordshire Red Colour-Coated Ware

(Fig.164, No.1)

Oxfordshire Red Colour-Coated Ware was relatively rare, particularly when compared with Much Hadham vessels. None appeared in the rampart spill or the slightly earlier refuse from F squares, and the sherds in the refuse from E squares and the deposits in Building 1 accounted for less than 1% of the pottery. The only stratified Oxfordshire red colour-coated mortaria came from Building 1 rubbish. Most of the sherds came from the plough, spill or post-Roman layers. Only two beakers are definitely known from the site, the rest being bowls, about twenty-three examples.

The earliest possible vessels are the unpainted copies of samian F38, Young C51, represented by the Hadox bowl, No.279 and a bowl found during Higgins' excavations (1972, fig.6, no.49, incorrectly listed by Young as his type C45). The two Hadox examples, Nos 276 (painted) and 279, may be atypical Oxfordshire products, and that from Higgins' excavations is not close to any of Young's illustrated types. This was found with late 4th-century pottery, including a beaker (see below). Although these could have arrived in the 3rd century, the fabrics of Nos 276 and 279 suggest they were contemporary, and therefore of 4th-century date.

The only other bowl which could have arrived in the 3rd century is No.270 of Young's type C45, from refuse on

the cobbles of the portico, but this was associated with a Constantinian coin and other late 4th-century pottery.

In the absence of certain evidence for decoration, several 4th-century vessels are assigned to the basic forms, but if decorated, particularly painted, a later 4th-century date is required. Bowls for which Young assigns a 4th-century starting date, either AD 325 or 340/50 are more common. The only beaker from Green's excavations was the base of a Young type C38 (the break carefully smoothed as if for use as a ?counter); that from Higgins' excavations (1972, fig.6, no.50) is catalogued by Young as his type C38, but resembles his undated type C37.3.

Stamped sherds were rare, and a less common bowl Young type C83 or 84 of probable mid- to late 4th-century date is illustrated (Fig.164, No.1) with a complete rosette stamp (similar Young 1977, fig.39, 15) inside a larger rosette ring, with intervening vertical comb stamps, probably enclosing further decoration.

The evidence from Caister, both in terms of the types represented and their occurrence on the site, strongly suggests that Oxfordshire Red Colour-Coated Ware did not arrive until the 4th century, and probably the latter part. This agrees with the evidence from Brancaster (Andrews 1985, 72) where the quantity of the ware increases from less than 1% from the 1977 area to 25% in the later material from the 1974 area. The quantity from Burgh Castle is impressive (based on Johnson, S. 1983, figs 38–9, nos 27–41, and vessels listed by Young 1977, 286–336), with

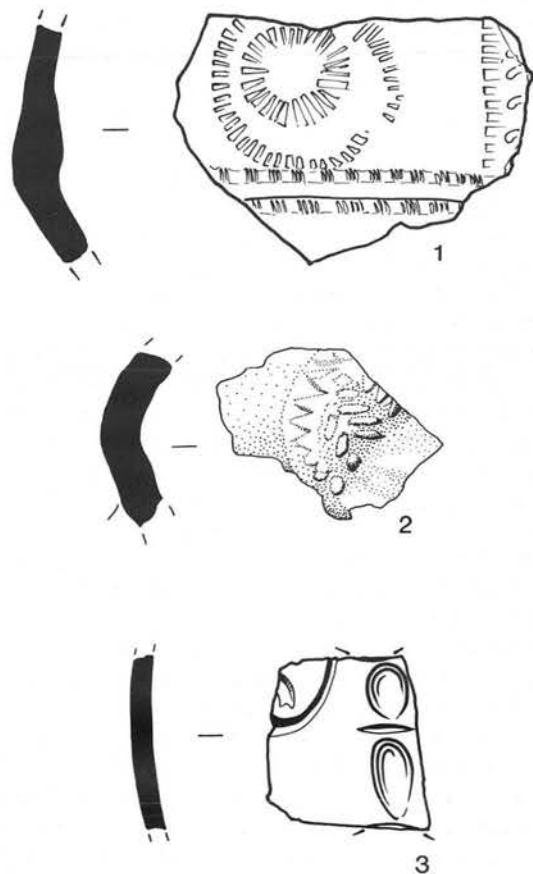


Figure 164 Roman pottery: Oxford, Hadham and Hadox sherds. Scale 1:2.

far more types represented, but again with the emphasis on 4th-century, particularly late, types; only a few vessels of Young types C45, 47, 49, and the beaker C27 could have arrived in the 3rd century, and these are swamped by the quantity of later bowls.

Vessels represented by unillustrated sherds are: C38, C51 or 52, probable C68, possible C77 painted, C82 or C84 painted C83 stamped, C84 (identified from Rumbelow's scrapbook), a carinated bowl and two bowls of unknown type.

#### **Much Hadham and 'romano-saxon' vessels** (Fig.164, No.2)

Most of the 'romano-saxon' ware, as defined by its decoration, from Caister came from the Much Hadham kilns, and consisted mainly of small bowls, with occasional closed forms. References to Roberts' Classes refer to his classification (1982), based on 'the shapes of the vessels and their decorative schemes'. The basis of this classification is of debatable value, and various errors are corrected here.

The presence of 'romano-saxon' ware at Caister has no relevance to the presence or absence of Saxons or barbarian troops (Gillam 1979); its importance lies in the evidence it provides for the import of pottery from Hertfordshire and possibly Essex in the mid- to late 4th century.

#### **Closed forms:**

Narrow-necked vessels, as Nos 217–219 (two unillustrated) often have typical decoration (cf. Caister, Higgins 1972, fig.8, no.60, not in Roberts' survey; Burgh Castle, Johnson, S. 1983, fig.40, no.76, and on several vessels in Roberts amorphous Class C), but these could equally be undecorated. Evidence for other closed forms is very fragmentary; the base No.224 is very similar to the highly-decorated jar from Caister (Higgins 1972, fig.8, no.60), which resembles the vessel from Enfield, Roberts D38A.1 (Gentry *et al.* 1977, fig.21, no.16); the notched cordon of No.250 is a common decoration not confined to 'romano-saxon' vessels (another sherd from a closed form and a bowl flange with a decorated cordon also occurred), and the stamped decoration on No.249 is unparalleled, but its positioning on a cordon is a classic Much Hadham trait. An unillustrated sherd (Roberts C22.21) is also from a closed form probably from the Much Hadham area, although the fabric and finish are atypical. Two fragments (Roberts C20.14) were probably from a jar with an upright rim as Roberts C14.11 and 14.12. Attention should also be drawn to the vessels published by Higgins (1972, figs 7–9), one of which is decorated with complex bosses, possibly with a frilled rim (Higgins 1972, fig.7, no.55, rim no.54). Colour descriptions of this important late deposit of Hadham vessels are misleading due to heavy burning.

Reduced Much Hadham vessels were much rarer, and closed forms are represented by No.251, a body sherd (Roberts X20.10) and the rim No.336 not necessarily be a 'romano-saxon' type. Other closed vessels of this type from Caister include the wide-girthed jar found in 1935 (Clarke 1949, fig.3, no.2; Myres 1956, fig.3, no.3; Roberts C14.4), a relatively common type, also known from Brancaster (unaccountably published as a bowl sherd, Roberts A20.17) and Burgh Castle (Johnson, S. 1983, fig.40, no.94).

The most curious sherd of Much Hadham Ware is a small body sherd (Fig.164, No.2), probably from a closed vessel, which has been pushed out into a mould, the finger-marks inside making the alignment impossible to

determine. This was published by Roberts (1982, X24.3) as an 'oval boss with molded zig-zag decoration'. As can be seen from the illustration, this is more complex, and bears a superficial resemblance to the radiate crowned heads on coins; the 'frondy' decoration ends within the sherd, but is broken at the top. Higher relief areas (unstippled) to the right of the decorated part suggest this is only part of a more complex mould. Whichever way it is viewed, it does not resemble part of a feline (common on Much Hadham figured vessels, Roberts D38 for instance), and it is probably part of a face, the 'fronds' representing the hair. The Much Hadham potters used two technically different means for portraying faces, more commonly formed by applied clay features (see No. 221 and Braithwaite 1984, 110, fig.8, nos 5–6), but moulded faces appear on double-handled vessels as at Burgh Castle (Johnson, S. 1983, fig.39, nos 43, 46). There is also a jar from Enfield (Gentry *et al.* 1977, 148, fig.21, no.16; Roberts 1982, pl.41, D38.1a) decorated on the girth with alternating bosses and a moulded female face, albeit of smaller size. If part of a face-necked flagon, it would closely resemble the example from Toot Baldon (Munby 1975, pl.XI, no.1), consistent with the common copying of Oxfordshire forms by the Much Hadham potters.

#### **Bowls:**

The bowls in Much Hadham Ware are all relatively common types, with rare reduced ware examples (Nos 246, 248, and an unillustrated small rim with a solitary dimple (Roberts A21.5). Bowls Nos 238 and 239 were mis-identified by Roberts as being from closed forms, and illustrated upside down (Roberts C11.1 and 11.2). The unillustrated sherds are illustrated in Roberts (1982, A14.11, A30.9, A32.8 the same as Nos 83 and 241, A40.5).

#### **Non-Much Hadham products:**

The grey bowls, Nos 85, 243–245, are unusual and unique 'romano-saxon' vessels. These are not Much Hadham products, differing in both fabric and, more critically, in decorative design and technique. No.85 is unhappily grouped by Roberts with his bowls of Class B, mostly the regional type for Lincolnshire, which differ in having smaller, finger-sized, depressions and no evidence for slashes. The use of larger round depressions interspersed with vertical slashes is reminiscent of late NVCC beakers (Howe *et al.*, 1980, fig.5, no.52), although derivation from an Oxfordshire Red Colour-Coated bowl, Young C79, is more likely. The beaker connection is not, however, irrelevant when the bowls (Roberts A31) Nos 243 and 244 are considered. The only other possible example is the body sherd published by Roberts from Ipswich (A31.3) which, without examination, is possibly from a folded beaker rather than a bowl. Beakers with burnished decoration are not uncommon in East Anglia, as Caister No.11 in a micaceous fabric, possibly from Suffolk (cf. also from Brancaster, Andrews 1985, fig.55, no.95; Icklingham, Plouviez 1976, fig.41, no.14).

The remaining bowl, No.245, is both unique and more complex (the three vessels published by Roberts, 1982, A28.1–28.3, are joining sherds of one vessel). The unique characteristic of this bowl is the alternation of equal sized bosses and indentations, and the circular burnishing of the indentations. Analysis of Much Hadham decoration makes it clear that when bosses are used with dimples, it is with small dimples arranged in groups (as Nos 83 and 241). The bosses on this bowl are not decorated, whereas many of the

Hadham bosses are formed by pushing the wall out into a ring or mould. On the other hand, the intervening depressions are decoratively burnished in contrast to the usually plain Hadham depressions or dimples (sometimes with cross burnishing if large and shallow, as on Nos 83, 241) or, if decorated, formed by the impression of a stamp. Thus the decorative techniques employed on this bowl differ from those used by the Much Hadham potters.

On the basis of the above, it is improbable that these bowls came from a workshop closely related to Much Hadham. A source somewhere in Essex or perhaps Suffolk is possible. The fabric includes flint, which although not diagnostic, is in keeping with that area; burnishing of indented areas is probably a Suffolk trait, and the possibility of kilns in the Mucking area, producing extraordinary vessels, with a strong resemblance to folded beaker forms (Roberts 1982, C35; although production in the area is discounted by the excavator, Roberts 1982, 162) is another factor.

#### Dating:

Although no 'romano-saxon' ware occurred in the earliest group, the rampart spill, the jar/bowl rim No.20 in reduced Much Hadham fabric was found in EIX (but may have been intrusive, see below), and three small oxidized sherds were found in the earlier refuse from the F squares. The evidence from Chelmsford indicates that a black-surfaced ware, probably from the Hadham industry, was circulating earlier than the more common oxidized bowls, *etc.*, first occurring *c.* AD 200/210–250/260 (Going 1987, 7, fabric 35; 113, table 9). Although Roberts considered No.245 (not from Much Hadham) to be the earliest example of the East Anglian stylistic group (Roberts 1982, 151), sherds of this bowl came from various refuse and overlying spill layers, all in EIX grid square, associated with Constantinian coins (including Hoards Nos 6 and 7), and with post-Roman glass, indicating post-Roman disturbance, unrecognized during excavation. The suggested early date cannot be sustained.

The appearance of Much Hadham pottery can be measured as a percentage of the weight of all fine wares; under 1% from the F squares refuse; 16.2% from E squares refuse (less certain 'Hadox' bowls (Nos 266, 277–8) account for a further 3.3%) and 12.2/14.8% (including 'Hadox' sherds) from the rubbish in the building. Most of the 'romano-saxon' sherds were from unsealed spill or plough layers. They were usually associated with the rarer Oxfordshire Red Colour-Coated Ware, and it is probable that neither arrived at Caister much if at all before the mid-4th century. While they probably occur in earlier contexts near the kilns (as at Braintree, Drury 1976, 52, fig.28, no.83), the evidence from Caister is consistent with that of the bowl containing the Water Newton gold coin hoard, which closed *c.* AD 350 (Johns and Carson 1975).

Finally it is of interest to note that what appears to be a Much Hadham globular jar, broadly similar to Roberts C20.2, was found in a late grave at Westerwanna (Röhre-rtl 1971, taf.29, Urnengrab 2391). Parallels with brooches and late Roman metalwork are common in such late cemeteries on the continent, and late pottery from the Mayen area is less rare than had been thought. One can only speculate whether the grave contained the remains of a soldier once part of the garrison in Britain.

#### Other late red-slipped wares

(Fig.164, No.3)

Certain identification of Oxfordshire and Much Hadham Wares is problematical, the fabric of the former being more diverse than usual, and the latter suffering from lack of knowledge of the range of fabrics and finishes, particularly apparent with the mortaria, see p.195. The Hadox category covers sherds which could not be allocated to one or other with certainty.

Of the illustrated sherds, all bowls, two hemispherical, and four copying the samian Form 38, both forms common in Oxfordshire Red Colour-Coated Ware, two of the flanged bowls and one hemispherical are closest to Much Hadham Ware (Nos 266, 277, 278), while the other two flanged bowls are probably atypical Oxfordshire Red Colour-Coated Ware. The remaining hemispherical bowl, No.265, differing appreciably in fabric and finish, is of unknown source.

A notable sherd is from a thin-walled beaker (Fig.164, No.3), light orange-brown fabric and surfaces; well-sorted common but very tiny quartz, black iron ore and occasional cream streak; red-brown slip on both surfaces surviving well in the cut-glass incised decoration. While superficially like Oxfordshire, the fabric differs too much (kindly confirmed by Miss S. Green), and only one example of cut-glass decoration is known from the kilns (Young 1977, 131; the type is not stated).

One unillustrated sherd is important due to its stratification. This is a tiny red-slipped body sherd from the pit below portico cobbles, F57: finely granulated red-brown fabric with a sandwich effect in the middle showing pinkish on either side of a cream-brown core; very tiny inclusions of quartz and black iron ore; strong colour-coating on both surfaces, similar to that on Oxfordshire Red Colour-Coated Ware, or even Pompeian Red Ware. The fabric would be very atypical for Oxfordshire, and the finish unusual for Hadham. The form is unknown.

The other unillustrated sherds appear to be from closed forms, both from Area 2, MI LB1824, and consist of a small moulded base, probably from a flask (grey fabric, grey-brown interior, red-brown external cortex and surfaces; fine-grained fabric with few visible inclusions beyond fairly common black iron ore; exterior burnt but appears to have been self-slipped and probably then burnished; a line of rouletting is visible at the fracture), more likely to be from Much Hadham than Oxfordshire; and a footring base (fairly fine textured red-brown fabric with a scatter of quartz, slipped externally), unlike Much Hadham Ware.

The fabrics of the above sherds differ from the illustrated vessels, and different sources must be involved. See also the possible imported mortarium, No.770.

#### Pottery and the site

##### Quantification results

(Tables 30–9)

Full quantification was, as noted above (p.153), restricted to specific groups to examine changes in the assemblage and supply during the occupation of the site. Use of the results is restricted by the lack of figures from similar sites, and much of the following represents data for future comparative use. Although data is published from Brancaster (Andrews 1985), the pottery came from extra-mural areas occupied before Caister, the figures encompassing over 200 years without chronological subdivision. Figures from

Burgh Castle would have been valuable, but none were published, and no data is available from the Reculver excavations.

Apart from the early rampart spill and late building group published separately above, the largest group came from the refuse dumped on the rampart. As discussed above, division of this large deposit based on the excavation grid lines suggested that it could be used quantitatively. The absence of computer facilities and economic necessity led to a compromise: (i) examination of the early and late groups (the rampart spill and rubbish from the building group) with the main refuse deposits for incidence of fabrics only; and (ii) more detailed examination of the incidence of forms and individual types from the early and late groups.

Mortaria and amphorae are excluded from all tables, and occurred (as percentages of all pottery) as shown in Table 30. Colour-coated wares are divided between 'main-line' and 'later', the former being Nene Valley and similar wares, mostly beakers, but including flagons, jars, bowls, dishes, boxes, *etc.* and the latter the later colour-coats from Oxfordshire, Much Hadham, and Hadox. Figures for the two colour-coated groups cannot therefore be directly compared due to the greater weight of the later colour-coats, but show their relative position in the assemblages. Samian was not quantified for EVEs.

A broad picture of the changing assemblages can be discerned from the fabric percentages, based on the measures of EVEs and weight (full details are in the archive) in Table 31.

Given the vagaries of quantification measures and sample sizes, the various wares/fabrics perform quite satisfactorily, the samian, flagons, mainline colour-coated wares and North Gaulish cream/grey beakers and bowls declining, later colour-coats and shell-tempered wares gradually appearing, *etc.* At least three Oxfordshire colour-coated mortaria were found in the building which, if included, raises the EVEs percentage to 7.3%. The interaction of BB1 and BB2 is of interest, as is the increasing quantity of Nar Valley Ware, virtually all jars. Although miscellaneous oxidized and grey wares (the latter covering any distinctive grey wares) are minor parts of the assemblages, their increasing incidence is curious, and reminiscent of the pottery from Brancaster, where the later coarse wares seemed to derive from more varied sources. These are, however, crude measures based on fabric alone, and it is useful to examine the occurrence of the principal forms.

#### Examination of forms

The following is based on recorded identifiable sherds, regardless of fabric. The quantities involved for the two groups are shown in Table 33. This shows proportional

decline of jars and, more dramatically, of beakers in the building. On the other hand, bowls and dishes both increase, although the latter on EVEs only which more than double. This is difficult to understand, although more dish sherds (more base than rim/wall) are likely to have been included in counts/weights for the undifferentiated bowl/dish category excluded from the figures. The lower proportion of bowls in the rampart spill must be viewed in the light of the quantity of samian in the early rubbish, although these are unlikely to increase the figures significantly.

A more detailed examination, based on percentages of individual classes, aims to identify specifically early and later types, and changes in the assemblages.

#### Beakers

Table 34 analyses all the beaker sherds for each group, and it is noticeable that the rampart spill contained a greater variety of types, contrasting greatly with those from the building debris, where the late pentice-moulded type is ubiquitous with few other types. The relative quantities of scaled decorated to plain folded beakers may be the explanation for their poor showing in the later building group, but it is clear that both were superseded by the pentice-moulded type. Cornice rimmed beakers are rare overall. Grey beakers from the rampart spill included one with a plain rim (No.7), a curved-rim type with constricted wall (No.6), a curved-rim folded type (No.8), and body sherds from folded beakers; two sherds from oxidized folded beakers also occurred.

North Gaulish beakers in cream and grey fabrics were a major part of the beaker assemblage in the rampart spill, accompanied by bowls and untyped body sherds, and occurred only as residual sherds in the building group.

#### Jars

Jars were generally less useful due to difficulty in the consistent definition of rim types, and the inevitable confusion between small bowls and wide-rimmed jars, see Table 35. As with the beakers, there is less variety in the building deposits, with a decline in the simple-rimmed jars, a rise in the more everted type, and a more significant increase in the undercut type, both of the latter appearing in both sandy and shell-tempered fabrics. Narrow-necked jars and those with some form of lid-seating or hollow-rim slightly increase later. Fewer BB type cooking pots occur in the building group, largely due to the decline in BB2, coupled with the emphasis on bowls and dishes from the BB1 area.

#### Bowls

The standard early bowls as Gillam 222/225, many of BB2 ware, together with the associated straight-sided grooved-

	Rampart		F sqs		E sqs		Building 1	
	EVEs	Weight	EVEs	Weight	EVEs	Weight	EVEs	Weight
Mortaria	4.1	5.5	1.6	2.7	3.2	6.1	1.9	3.7
Amphorae	-	1.0	0.4	1.5	0.3	0.4	-	3.7
Total samples	2297	23.901	8276	81.558	11475	108.982	3961	50.383

Table 30 Mortaria and amphorae expressed as percentages of all pottery from the rampart spill, refuse from F squares, E squares and Building 1.



	Rampart		F sqs		E sqs		Building 1	
	EVEs	Weight	EVEs	Weight	EVEs	Weight	EVEs	Weight
Samian	-	5.0	-	6.8	-	2.4	-	0.7
Cream fabrics	4.8	1.5	0.6	1.8	0.6	1.1	-	0.7
North Gaulish	5.8	2.1	7.1	2.8	1.0	0.6	0.9	0.1
Mainline colour-coats	11.3	7.6	16.5	9.9	5.1	4.9	8.7	3.7
Later colour-coats	-	-	-	0.1	1.3	1.3	6.3	2.7
BB1	0.5	1.7	4.0	4.4	2.1	1.9	5.4	6.4
BB2	9.4	7.3	12.1	10.2	6.7	4.9	2.3	1.5
Nar Valley	0.5	1.0	4.1	4.7	4.6	3.8	9.2	7.0
Grey	65.8	70.0	53.8	56.6	75.4	75.8	59.5	61.8
Misc. oxidized	1.1	2.0	1.0	1.8	0.9	0.8	3.9	4.4
Misc. grey	0.9	1.9	0.5	0.5	0.1	0.3	2.4	2.0
Shell-tempered	-	-	0.4	0.4	2.1	2.3	1.4	9.0
Sample sizes	2203	22.296	8109	78.138	11084	101.892	3869	46.598

Table 31 Fabrics: weight and EVEs percentages for the rampart spill, refuse from F squares, E squares and Building 1.

	EVEs	Rampart Spill Group		EVEs	Building 1	
		Sherds	Weight		Sherds	Weight
Samian	-	4.3	5.0	-	0.5	0.7
Cream fabrics	4.8 <sup>1</sup>	1.7	1.5	-	0.7	0.7
North Gaulish	5.8	3.7	2.1	0.9	0.4	0.1
Mainline colour-coats	11.3	14.1	7.6	9.4	7.6	3.7
Later colour-coats	-	-	-	5.8 <sup>2</sup>	2.3	2.7
BB1	0.5	1.0	1.7	5.4	3.6	6.4
BB2	9.4	4.3	7.3	2.3	1.5	1.5
Nar Valley	0.5	1.3	1.0	9.2	7.4	7.0
Grey	65.8	65.4	70.0	59.5	67.2	61.8
Misc. oxidized	1.1	2.9	2.0	3.9	3.6	4.4
Misc. grey	0.9	1.4	1.9	2.4	1.1	2.0
Shell-tempered	-	-	-	1.3	4.0	9.0
Sample sizes:	2203	1389	22296	3869	2594	46598
Av. sherd weight:			16.1g			18.0g

Notes: 1. Flagon sherds score on VEs due to strength of rim form.

2. Includes a complete imit. 36 bowl in fabric RBSL from Rm 5.

Table 32 Fabrics: comparison of groups from the rampart spill and Building 1.

	EVEs	Rampart Spill			EVE	Building		
		%	Wt	%		%	Wt	%
Jars	999	43.5	2575	10.8	1238	31.3	9420	18.7
Beakers	433	18.9	2840	11.9	445	11.2	1638	3.3
Bowls	518	22.6	2715	11.4	1455	36.7	12130	24.1
Dishes	143	6.2	1365	5.7	531	13.4	3247	6.4
Total	2993	91.2	9495	39.8	3669	92.6	26435	52.5

Table 33 Overall vessel classes from the rampart spill and Building 1.

rim bowls, virtually vanish in the later group, to be replaced by quantities of bead and flange bowls, mostly of the high-beaded latest type (see Table 36). The only type found in the rampart spill was the early low-beaded type.

The increase in the quantities of wide-mouthed bowls may be related in some way to the decline in the number of jars overall in the later group. On the other hand, this may reflect a bias in the rubbish on the floors of the building, the bowls being serving rather than cooking vessels. Curved-wall bowls with moulded rims (as Nos 598, 599) only occur in the later group, and are the only other quantitatively significant type.

#### Dishes

There is little variety amongst the dishes in either group (Table 37) although the commonest types are reversed. The decline of Gillam 313 and the absence of Gillam 328 in the later group is linked to the decline in BB2 coming into the site (as shown in the fabric figures above). The predominant dishes in the later group from the building are plain-rimmed dishes, many of which are of the latest recognizable BB1 type, with a bulge in the wall; BB1 accounts for over 75% of these dishes on EVEs, of which 64% are of the late type. The dishes with grooved rims are all in grey fabrics.

Analysis of the bowls and dishes and the quantity of BB1 suggests late imports from Dorset, and the forms in the building group are detailed in Table 38. A similar breakdown of BB2 from the rampart spill is shown in Table 39. The main imports from both were bowls and dishes, the latter being the commonest BB1 form. There is more possibility of confusion between bowls and dishes on the basis of rims in BB2 wares, but the quantities appear almost equal.

#### Pottery from the rampart spill

The rampart spill represented the earliest rubbish dumping on the rampart, and due to the impossibility of identifying the original rampart from the records, any sherds which might have been incorporated in it. Underlying the rampart spill, delimiting the original rampart, is the gully F59, and to the north, a further gully, F58, apparently underlying the cobbling of the portico, which presumably marked the extent of the rampart at a later stage. Gullies F60 and 61 and the pit F57 also underlay the cobbling, together with the enigmatic post-trenches, F41–48, under Wall 4, which seems best interpreted as a retaining wall for the rampart, rendered obsolete by further rubbish dumping. The cobbling of the portico has been taken as the dividing line between the rampart spill and the main refuse dumping, and the contents of the gullies F58 and F59 have been amalgamated with the rampart spill for quantification purposes. Their contents are discussed first.

#### Features below the rampart and portico cobbles, gullies, F59, 58, 60, 61, 57

##### Gully F59:

Illustrated sherds are: Nos 2, 7, 29 and 730. The beaker No.2 is a relatively plain form probably of early to mid-3rd-century date; the unusual form of No.7 is difficult to date. The bowl, No.29, would fit a late 2nd- to early 3rd-century date, and the Nene Valley mortarium, No.730, is of a type dated *c.* AD 230–300. Unillustrated colour-coated sherds included fragments of an indented scaled beaker of unknown rim type, and more than one rouletted beaker, possibly from a type as Gillam 87; a BB2 bowl as Gillam 225 and a North Gaulish cream beaker base also occurred. The dating rests largely on the mortarium, and an early to mid-3rd-century date is likely for the other sherds.

	Rampart Spill				Building Group			
	EVEs		Weight		EVEs		Weight	
North Gaulish types	110	25.4	271	9.5	35	7.9	38	2.3
Cornice rimmed types	-	-	5	*	20	4.5	15	*
Plain rimmed types	72	16.6	225	7.9	-	-	-	-
Plain rim with bead	-	-	-	-	20	4.5	10	*
Folded curved neck	30	6.9	80	2.8	-	-	-	-
Folded funnel neck	110	25.4	190	6.7	40	9.0	77	4.7
Folded scale dec. funnel	9	2.1	120	4.2	-	-	-	-
Folded scale decorated	-	-	14	*	-	-	6	*
Folded with bead on rim	32	7.4	31	1.1	-	-	65	4.0
Folded type body sherds	-	-	421	14.8	-	-	592	36.1
Beaded funnel neck	25	5.8	15	*	64	14.4	78	4.8
Pentice moulded type	-	-	-	-	236	53.0	422	25.8
Grey, miscellaneous	45	10.4	305	10.7	30	6.7	10	*
Misc. and body sherds	-	-	1162	40.9	-	-	315	19.2
	433		2840		445		1638	

\* = presence below 1%

Table 34 Types of beaker expressed as percentages of all beakers from the rampart spill and Building 1.

	Rampart Spill				Building Group			
	EVEs		Weight		EVEs		Weight	
Round/square rims	571	57.2	1075	41.8	503	40.6	1185	20.0
More everted, as No.111	77	7.7	110	4.3	150	12.1	490	5.2
Undercut, as No.116	68	6.8	250	9.7	264	21.3	5175	54.9
Narrow-necked, various	50	5.0	85	3.3	105	8.5	120	1.3
Lid-seated	15	1.5	55	2.1	30	2.4	175	1.9
Cooking pots, BB types	75	7.5	225	8.7	55	4.4	210	2.2
Misc. and body sherds	143	14.2	755	30.1	131	10.6	1365	14.5
	999		2575		1238		9420	

\* = presence below 1%

Table 35 Types of jar expressed as percentages of all jars from the rampart spill and Building 1.

	Rampart Spill				Building Group			
	EVEs		Weight		EVEs		Weight	
Gillam 222 types	139	26.9	905	33.4	22	1.5	275	2.3
Gillam 225 types	52	10.0	435	16.0	23	1.6	130	1.1
Wide-mouthed types	196	37.8	790	29.1	693	47.6	6265	51.7
Bead & flange, low bead	10	1.9	25	*	10	*	45	*
Bead & flange, mid-high bead	-	-	-	-	384	26.4	2650	21.9
Hemispherical as No.620	46	8.9	120	4.4	12	*	25	*
Grooved rim as No.585 etc.	45	8.7	250	9.2	17	*	65	*
Moulded rim as No.598/9	-	-	-	-	110	7.6	640	5.3
Dr 36 imitation	-	-	-	-	100	6.9	735	6.1
Dr 37 and 38 imitations	-	-	-	-	25	1.7	175	1.1
Coarse hand-made bowl No	-	-	-	-	30	2.1	515	4.2
Romano-Saxon	-	-	-	-	20	1.4	20	*
Misc. types & body sherds	30	5.8	190	7.0	21	1.4	615	5.1
	518		2715		1455		12130	

\* = presence below 1%

Table 36 Types of bowl expressed as percentages of all bowls from the rampart spill and Building 1.

	Rampart Spill				Building Group			
	EVEs		Weight		EVEs		Weight	
Gillam 313, BB2 form	74	51.8	670	49.1	19	3.6	85	2.6
Gillam 328, BB2 form	39	27.3	180	13.2	-	-	-	-
Plain rimmed types	30	21.0	405	29.7	278	52.3	2027	62.4
Grooved rim dishes	-	-	5	*	229	43.1	1130	34.8
Misc. types	-	-	105	7.3	5	*	5	*
	143		1365		531		3247	

\* = presence below 1%

Table 37 Types of dishes expressed as percentages of all dishes from the rampart spill and Building 1.

	EVEs	Shs	Weight
Bowl, low bead	22	2	155 as No.129
Bowl, high bead	15	2	100 as No.133
Plain rimmed dish	62	13	490 as No.147
Late plain rimmed dish	110	22	1100 as Nos 148-9
Bowl or dish	-	37	985
Cooking pots	-	4	50
Cooking pot sherds	-	7	55 obtuse lattice
Total	209	87	2935

Table 38 Pottery quantification; analysis of the bowl and dish forms in BB1 in Building 1.

	EVEs	Shs	Weight
Bowls G222/225	81	20	560
Bowl as Nos 585+	20	3	80
Bowl, low bead	10	1	25
Dish G313	52	9	520
Plain rimmed dish	10	1	25
Bowl or dish	-	16	285
Cook pots	35	9	130
Total	208	59	1625

Table 39 Pottery quantification; breakdown of BB2 from the rampart spill.

*Gully F58:*

Illustrated sherds are: Nos 16, 23, 37, 41, 45. Unillustrated sherds included fragments of a Nene Valley reeded rim mortarium, BB2 bowl as Gillam 225, a wide-mouthed bowl with burnished wavy line decoration on the neck (as Nos 24, 25 *etc.*), Nar Valley sherds from Icenian rusticated jars, colour-coated beaker sherds from funnel necked indented forms as Gillam 54, and several sherds from coarse grey indented beakers. A mid-3rd-century date at the earliest is suggested by the beaker sherds.

*Gully or gullies, F60 and 61:*

F60 contained only seven sherds, including a BB2 dish or bowl as Gillam 225. F61 had only two sherds, a fragment from a probable BB2 bead-and-flange bowl, with a very low bead, and a thick colour-coated base from a bowl or dish, for which a later 3rd-century date is probable.

*Pit F57:*

Only five indeterminate grey sherds including a heavy jar rim occurred, together with a very tiny red-slipped sherd of unidentified form or source. This is discussed (p.211, Hadox).

*Post-trenches, F41-48:*

Very few sherds occurred in these peculiar features, mostly scraps, but including sherds of an East Gaulish samian mortarium, colour-coated beakers, including one with barbotine decoration, Castor box lid, North Gaulish grey and cream beakers/bowls, and more importantly, a Nene Valley Colour-Coated bowl. Unfortunately the rim type is unknown, but this would again suggest a later 3rd-century date.

**Discussion of the overall assemblage**

Although identification of the earliest layers of refuse on the rampart is difficult, and intrusions from above are to be expected, the pottery is markedly different in fabric and type from that in later contexts (see p.217). This is a period of considerable change and many dating difficulties; the coarse pottery from these layers and the succeeding refuse, particularly in F squares, was associated with 5.0–6.8% samian on weight, and while East Gaulish wares predominated, late 2nd-century sherds occurred. Although samian occurred in the same proportions at Brancaster, the relative proportions of Central to East Gaulish wares are reversed. The latest decorated samian (Fig.135, No.10) of c. AD 225–245 came from early refuse in F squares.

The colour-coated vessels are fully 3rd-century types as are the cornice-rimmed types occurring elsewhere. This may reflect lack of imports from the Nene Valley when the site was first constructed. Continental imports may have filled the demand initially, and it is relevant to note that at Chelmsford, Nene Valley beakers do not seem to have arrived in appreciable quantities much before the mid-3rd century, possibly filling the vacuum left by the decline of the Colchester potters who had previously supplied Chelmsford (Going 1987, 113). Late arrival for similar reasons affects the dating of the coarse pottery, dependent on the more volatile fine wares. The apparent absence of Colchester Colour-Coated Wares may be related to that industry's decline (Colchester Wares had diminished to less than 1% c. AD 200/10–250/60 at Chelmsford: Going 1987, 116).

Beakers Nos 2–4 are probably of early to mid-3rd-century date, No.4 being an early example of the type, but the latest beaker may be No.5, with its painted decoration, although this is not necessarily an exceptionally late trait (Howe *et al.* 1980, 20). The grey beaker No.6 copies a less common colour-coated type, and is undoubtedly a product of the local kilns, for which a 3rd-century date seems probable (based largely on their production of folded beakers), and No.8, probably a folded beaker, is of similar date. No.7 is interesting as it seems to be a copy of a glass vessel rather than a colour-coated type (see glass Fig.129, No.2; see also Fig.139, No.97, probably a local product); a similar beaker was found at Brancaster (Andrews 1985, fig.55, no.92.2) in fabric RW11 resembling BB2. This Caister beaker does not resemble BB2, whereas the fabric of the base, No.9, is similar to BB2, and burnished line decoration is common at the Essex kilns (see a beaker from Mucking, Jones and Rodwell 1973, fig.10, no 107). A number of finely rouletted beakers from unknown sources were found, as No.13, and below, Nos 340, 342. The fine fabrics preclude identification of sources, and the forms indicate 3rd- and 4th-century dates. A source in Suffolk is suggested by the micaceous fabric, type and decoration of No.11 (see Brancaster, Andrews 1985, fig.55, no.95 in grey fabric; no.93 folded beaker with a curved rim in micaceous fabric; Icklingham, Plouviez 1976, fig.41, no.14), and also the jar/bowl No.26.

The jars are notably thin-walled, with neatly-finished often angular rims. Nos 15 and 16 are exceptional vessels, both unique, No.16 being broadly similar to a jar from a late Roman group at Scole (Rogerson 1977, fig.80, no.164) although the decoration is technically different. The lid-seating of No.15 also appears in the bowl, No.22 in a BB2 type fabric (see also Nos 125, and vessels in a similar fabric, Nos 101 and 499), of type G made at Mucking

(Jones and Rodwell 1973; Chelmsford, Going 1987, type E2; see Brancaster, Andrews 1985, fig.60, no.123.2 in the BB2 type fabric RW11 and type 124 in fabric RW14). Another bowl or jar of little known type, No.20, is reminiscent of Mucking type M. The fabric of this latter vessel is, however, identical to the reduced Much Hadham Ware, and is the earliest stratified Much Hadham sherd. Evidence from Chelmsford indicates wide distribution of some products of the Hadham area earlier than the better known 'romano-saxon' and other oxidized vessels (Going 1987, fabric 35, in phase 5, early to mid-3rd century).

Wide-mouthed bowls from the rampart spill are notably thinner-walled, decorated and often in fabrics either of BB2 type or very similar. Nos 24 and 25 are types very common in Essex (see also Fig.148, Nos 474–476; Fig.149, No.513; Jones and Rodwell 1973, fig.7, type K; Chelmsford: Going 1987, type E5), and also occur at Brancaster (Andrews 1985, fig.59, no.114.16 in RW11 BB2 type fabric, and 114.22, Brampton fabric). Similar bowls were also produced at the Nene Valley Stanground kilns of early to mid-3rd-century date.

It is noticeable that several bowls and dishes have little or no burnishing (as Nos 29–31). BB2 was well represented in the rampart spill and in the earlier overlying refuse (F squares), but declined rapidly in the later refuse (E squares), and barely occurred in the late building group. This agrees with evidence from Essex (Going 1987, 114). On the other hand, BB1 is fairly uncommon in these earliest layers; the dish No.37 is a common late 2nd to early or mid-3rd-century type (Gillam 1976, no.77). The gritty Nar Valley sherds, mostly from jars, were barely represented at 1% of the assemblage on weight, under 1% on EVEs.

North Gaulish beakers and bowls (Fig.135) are important components of the early assemblage. These imports form a significant part of the pottery from the quay structure at London's New Fresh Wharf site, dated to the second quarter of the 3rd century. They occurred mainly in the rampart spill and the overlying refuse, particularly in the F squares (discussed, p.214), both groups also producing most of the Rhenish Ware from Trier. A sherd of Pompeian Red Ware from northern France/west Flanders was also found, see Nos 292, 293.

Only thirteen sherds of coarse mortaria were found, of which five were from the Nene Valley, and one grey sherd, but since these all came from grids IX–X where disturbance is suspected, the evidence is equivocal. Samian mortaria represented 23% of all samian, an exceptionally higher quantity than found at Brancaster (see above, p.155). The red-slipped mortarium, No.770, may have been an import, and was probably intrusive. Apart from the jar/bowl No.20, no Much Hadham Ware occurred, no Oxfordshire, either mortaria or red-slipped, and no shell-tempered.

#### Summary

The rampart spill produced 1430 sherds, 22.97 EVEs, 23.9kg, a small group unfortunately in comparison to the main refuse dumping (11,823 sherds, 197.51 EVEs, 190.5kg), and on which to assess the earliest pottery supplies. Neither can the group be used to date the construction of the defences, despite being the earliest identifiable rubbish.

The earliest supplies appear to have come from very varied sources, with a heavy reliance on imports from abroad and from the southern part of East Anglia, probably

Essex. Assessment of the Essex evidence is difficult due to the considerable changes in the pottery of that area now being recognized (Going 1987, 113). Too few mortaria occurred, but judging from other site finds, it seems probable that many of the earliest mortaria were either imported from the Rhineland and East Gaul or coming from potters in ?Essex working in a similar tradition. The Nene Valley potters may not have contributed significantly until the later 3rd century, and many of the colour-coated beakers both from the rampart spill and the rest of the site would fit a similar date. Samian Form 33 cups, North Gaulish and Trier imports probably filled much of the demand for drinking vessels.

The contribution of potters probably working in Essex was considerable, the pottery perhaps coming by sea with continental imports. The virtual absence of identifiable Colchester vessels is interesting, contrasting with Brancaster where they represented 13% of the fine ware group (Andrews 1985, fig.50). There is little evidence for pottery coming from Suffolk, although this may be due to our lack of knowledge of the Suffolk kilns. The date of the local kilns is difficult to determine on the few known vessels, but an early to mid-3rd-century date seems probable and the products tentatively identified suggest little or no production far into the 4th century. The evidence is however very slight, and the forms produced not closely datable.

Thus, it may be suggested that the earliest occupation depended very largely on imports from the continent and elsewhere in East Anglia, but by the mid-3rd century, local kilns and trading links with the Nene Valley had been established. No evidence for trade with the Oxfordshire potters came from the rampart spill or from the overlying refuse in F squares. Oxfordshire whiteware mortaria (types dated c. AD 240–300) first occur in the E squares refuse, suggesting a later 3rd-century arrival, competing with the Nene Valley potters. Coarse ware kilns in Norfolk, such as Brampton, may well have supplied vessels in the earliest period, but the sources of grey ware are unknown and, on present evidence, unknowable. The implications of the pottery for the early occupation of the site are considered below, pp 240–242.

#### Later pottery

The excavations gave no stratigraphic basis upon which to examine changes in the pottery assemblages from the later 3rd century to the end of occupation. Hints from the incidence of sherds exclusively in the plough or disturbed layers form the only basis for any division of the 4th-century pottery, but the resulting view is very similar to that formed independently by Going based on the Chelmsford evidence (1987, 117, ceramic phases 7 and 8). There are also strong resemblances with late vessels from Burgh Castle (Johnson, S., 1983), although unfortunately no details of quantities were published to enable full use of the ceramic evidence.

The pottery from Building 1 was selected to illustrate the latest pottery from the site, much of it probably representing the rubbish from late occupation in the area which included several complete or nearly complete vessels. Most of the pottery was found on the floors, but all the rooms were disturbed by post-Roman activities including the 1935 pipe-trench, complicating identification of complete vessels. Room 1 had numerous joining sherds throughout its fill, which could indicate rubbish dumping but, in view of the extensive disturbances, could equally

arise from late occupation. Room 3, on the other hand, had at least two complete vessels, in the north-west corner away from identified disturbances. Room 5 was extensively disturbed, probably in the Middle Saxon period, which may account for a concentration of pottery, glass and finds in the north hypocaust channel, contrasting with relatively few finds in the backfilling of the other channels. Despite difficulties, the resulting pottery from these ill-defined contexts represents the latest occupation, with comparatively little residual material.

This is a comparatively small group with 39.61 EVEs, 50.4kg. Many of the types are represented in the large refuse group from the rampart and the unsealed spill layers overlying the building. A late group from Caister would seem to be characterized by the appearance of Oxfordshire Red Colour-Coated, Much Hadham, and shell-tempered wares, none of them particularly common; the evidence for both the Oxfordshire and Much Hadham industries at Caister and their suspected late appearance in the 4th century is discussed on pp 209–210.

Nene Valley Colour-Coated Ware and the red fabric colour-coated wares, some of which are probably atypical Nene Valley products, were most common in the refuse from F squares, and their declining incidence in the later E squares refuse and the building group suggests decreasing trade from the Nene Valley. This also seems to be the case with the mortaria, presumably giving way to competition from the Oxfordshire potters and the more local potters making grey mortaria, who would have the competitive edge. Late beakers, bowls, *etc.*, however, demonstrate continuing trade until the end of the occupation, although the decline in beakers in late contexts noted at Lincoln (Darling 1977, 24) is also evident at Caister.

BB2 bowls and dishes of the rounded-rim type (as Fig.137, Nos 32, 35) are rarely seen outside the rampart spill and the slightly later refuse in the F squares. Bowls and dishes with plain or grooved rims (as Fig. 155, Nos 585–589), however, continue in BB2 and related fabrics, judging from their appearance in the E squares refuse (also common in the latest ceramic phase at Chelmsford, Going 1987, 116, type B3.2), but having represented 3.7% on VEs of all vessels in the rampart group, they are barely represented in the building group. This may not be of chronological significance for the type, reflecting more the termination of supplies from Essex or Kent. There are considerable numbers of bead-and-flange bowls in ordinary grey wares as well as BB1 (Figs 153–4). The building group suggests that BB1 ware became commoner late in the occupation, although since it is well represented in the refuse from F squares, this may be a quirk of the building deposit. There is, however, no sign of any exceptionally late BB1 vessels as found in late Roman deposits at Dorchester (pers. comm. G. Andrews) or at Ilchester (Leach 1982, figs 75–6, nos 365, 369–70), likely to be more confined to the production area.

The increased incidence of Nar Valley jars, similar to the shell-tempered jars, in the building deposit suggest an increased supply from that area. Shell-tempered wares, almost exclusively jars, often with rilling, do not form a major part of even the late assemblages, but always occurred in late or disturbed contexts, one being the container for the Constantinian hoard No.1 (Fig.150, No.462). More than one source is probable; apart from the kilns at Harrold, Bedfordshire, the quantity of late shell-tempered wares known in the Nene Valley suggests another possible source

(Howe *et al.*, 1980, 10). A flanged bowl, Fig.154, No.570 resembles an example from Chelmsford (Going 1987, fig.2, B5/3.1), but very few sherds from bowls or dishes occurred. A few examples of Dales Ware jars were found, again only in late or disturbed contexts.

Imports appear to be almost non-existent in the later period, the occasional Mayen jar probably coming in as personal baggage (also at Burgh Castle: Johnson, S. 1983, fig.38, nos 4–6), as was probably the case with the glazed mortarium. The bowl of possibly North Gaulish origin, No.90, associated with the rubbish from Room 1, may be another personal import.

No hand-made pottery which might indicate 'household' production was found. Neither was any conclusively Pagan Saxon pottery found, and the site seems to have quietly crumbled after its abandonment, until reoccupied in the Middle to Late Saxon period. The late pottery is in agreement with the finds, the late brooches, glass, *etc.*, and must be viewed in the light of the trickle of late coins, discussed below, p.250.

### Conclusions

The large pottery assemblage is important for the same reason as the other finds, namely the restricted later Roman date of the occupation. It starts with Central Gaulish samian in an inauspicious ceramic period, late 2nd–early 3rd century, bedevilled by dating difficulties, not the least of which is the reconciliation of samian and coarse ware dates, and leads into a time of considerable change in pottery manufacture, the early to mid-3rd century, where dating is similarly problematical. Despite the fact that only one small group can be isolated for the earliest occupation, a reasonable amount of information can be gained, indicating an unusual assemblage relying on imports from the continent and southern East Anglia. While similarities to the pottery from Brancaster occur, particularly in the earliest material, some contrasts are notable although it would be premature to draw conclusions until more is known from the Brancaster fort. Lack of quantified data from Burgh Castle limits comparative use of the pottery.

There are no discernible gaps chronologically in the pottery series and therefore no evidence to indicate any changes in the occupation when Burgh Castle was constructed in the later 3rd century. Clearly more excavation of earlier levels at Burgh Castle and at Caister to investigate the features under the stone buildings, would aid understanding of the two related sites, and their role in the coastal defences. Once Burgh Castle was constructed, both sites were occupied contemporaneously, their late pottery assemblages showing the same sources.

## III. Middle and Late Saxon Pottery

by Carolyn Dallas  
(Fig.165)

### Introduction

The Middle Saxon pottery of mid-7th to late-9th century date mostly comprises the grey sandy pottery made on a turntable or 'slow wheel' known as Ipswich-type ware but a few hand-made sherds were found in association. The Ipswich-type wares are of fairly certain identification but there are some other less certain sherds which have not been considered here; these are noted in the Level III archive, they are less convincing and have little significance as they are from the same contexts as the certain

Ipswich-type sherds. A few rims which are difficult to classify precisely have been placed between the Middle Saxon and Saxo-Norman sections and at the end of the catalogue.

There seem to be at least twenty-two hand-made sherds which are Anglo-Saxon, probably Middle Saxon, in date (sherds with harsh protruding grits which are likely to be prehistoric have been excluded). Of these, six come from Area 4 and sixteen from Area 1.

The hand-made pottery can be divided into the following fabrics:

- a) (fourteen examples, Fig.165, No.1). Sandy, with fine irregular quartz particles. Usually black, but sherds often have brown or red external surfaces. Two examples have burnished external surfaces.
- b) (one example). Very fine sandy with occasional calcite. This contains rounded quartz and may be intermediate pimply Ipswich-type ware (see below), but the one pink and grey bodysherd (from Area 4, LVII) is too abraded to be certainly identified.
- c) (three examples). Gritty, with inclusions of 1–3mm. These are dark grey to black, and one (from EVI pl/soil) resembles the sandy fabrics. The other two (from Area 4, Grave 132 and EVIII pl/soil) have large sparse grits and heavily burnished exteriors.
- d) (three examples, Fig.165, No.2). Organic tempered. Rim No.2 and two bodysherds (from AIV pl/soil) and AV pl/soil) are black.
- e) (one example). Sandy with fine silver mica. The one bodysherd (from EVII Room 2 upper floor) in this category is red and black.

The forms of the hand-made vessels are probably all jars. There are three rim sherds, all from small jars (Fig.165, Nos 1 and 2, and one unillustrated plain upright example in fabric a), and two flat bases (both in fabric a)).

A few sherds of Ipswich-type ware were found in Brooke Avenue, and there are 408 sherds from the excavations. Of these, seven were found in Area 2, eighty in Area 4, and the rest are from the main excavations in Area 1.

The Ipswich-type ware can be divided into four fabrics:

- i) Fine sandy (199 examples, 48.8% of Ipswich-type ware) few particles visible to the naked eye.
- ii) Coarse sandy (42 examples, 10.3%) sand particles of various sizes, shapes, and colours including iron ore.
- iii) Intermediate pimply (92 examples, 22.5%) less quartz than iv).
- iv) Pimply (75 examples, 18.4%) temper of predominantly rounded quartz grains which protrude from the surfaces.

The coarse sandy sherds ii) are extremely difficult to distinguish from grey wares of other dates and the sherds noted in the Level III archive which may be Middle Saxon are mostly of this type. It is noticeable that some sherds contain a greater quantity than usual of fine silver mica, but this has not been treated as a separate fabric type as it can occur in more than one of the above types and is only a relative density. Likewise, burnished surfaces (fifteen examples) occur on different fabrics (particularly fine sandy i) and intermediate pimply iii)) and have not been treated as a separate group even though they often represent pitchers.

Except for one handle in intermediate pimply fabric iii), and two larger jars (Fig.165, Nos 22, 23), the Ipswich-type ware forms are all small jars or 'cooking pots' which are

often sooted on the rim, base and sometimes shoulder. The ninety-six rims (very few of which are from the same vessels) can be divided into twenty-one variations. There is only one example of West Group II (internal hollow and pointed top; Fig.165, No.3) and only eleven can be related to West Group III (with external beading) (West 1963, 248). This last-named type does not occur in the pimply fabric iv) at Caister although there are two intermediate pimply iii) examples and nine are fine sandy i). They usually seem to have small diameters and long or pronounced necks (Fig.165, Nos 5–7). Similar forms have been found at Ipswich in Suffolk (West 1963, fig.46, P11 L3 39), and in Norfolk at Sedgeford (Hurst with West 1957, fig.2, no.1), Congham (NCM 153.971), and Great Bircham (inf. John Smallwood). Five sherds, all pimply iv), were found of the closed-mouth jar forms of the type made at Broomeswell Heath in Suffolk (Fig.165, No.8; cf. Hurst with West 1957, 39, fig.5). The rest of the rims (except for Nos 22–3) can be related to West Group I as they are upright or everted. One example was found of a very simple upright rim (Fig.165, No.4): as it is uneven it was originally classed as hand-made but it is probably Ipswich-type. A similar form in a larger vessel has been found in Ipswich (Ipswich Museum, unprovenanced). The other rigidly upright rims (about three examples) have rounded (Fig.165, No.9) or squared (Fig.165, No.10) tops. Most of the rims of this class (at least sixty-two vessels) incline outwards, have tops of various shapes, and occur in all fabrics (Fig.165, Nos 12–21). Rim No.13 is unusually thin-walled and may represent only one vessel. Rim No.18 is extremely uneven and was originally classed as hand-made but is probably Ipswich-type (cf. No.4). Jar No.21 is of slightly larger size and may be a storage jar. No.22 is also likely to be a storage jar and can be paralleled at Ipswich (West 1963, fig.45, P11 L3 11). No.23 seems to be Middle Saxon in character although it is not a large enough fragment to be fully informative: it may be a storage jar or possibly a pitcher. A hand-made vessel of similar form has been found at Rudham in Norfolk (King's Lynn Museum, A142).

A total of at least ninety-six sherds of Saxo-Norman (late 9th to late 12th century) Thetford-type ware were found (some dubious sherds are not included). Of these, twenty-seven are from Area 4, one is from Area 2, and the rest (sixty-nine sherds) are from Area 1.

The Thetford-type wares are sandy and usually grey. Fabrics range from fine sandy to coarse sandy with white inclusions, and some sherds (especially two flat bases) with protruding rounded quartz grains may belong to this group. A few sherds (e.g., lid No.31) contain some fine silver mica. Out of fifteen Thetford-type rims, nine are jars or 'cooking pots' (Fig.165, Nos 32–4), three are bowls (not illustrated), one is the cup of a ring vase (Fig.165, No.30), and two from the same vessel seem to be a lid (Fig.165, No.31). There is also one bodysherd from a round-bodied costrel. The jars or cooking pots are of common types with everted rims, usually with an internal hollow. The bowls comprise one inturned example, one with external beading, and one large bowl with an expanded rim top which may have had upright D-shaped handles. Only two possible sagging bases were found and these were from a thick-walled ?jar which was not very large. The other twenty-three bases were flat, a phenomenon which seems to occur in Norwich and the eastern side of the county. One fragment of a plain handle was found which probably represents a pitcher or a storage jar but it was too irregular

and remains of uncertain identification. The only decorated sherds are one rouletted jar (Fig.165, No.32) and one stamped sherd (Fig.165, No.29).

There are a further eight rims of jars or cooking pots which may be Saxo-Norman (Fig.165, Nos 35–37). They are all in exceptionally fine fabrics and have not been included in the Thetford-type ware totals above as they may be imports.

## Catalogue (Fig.165)

### Middle and Late Saxon

Nos 1 and 2 hand-made, both jars.

1. Fabric a), sandy. Black. External surface sooted and possibly originally burnished. KVIII, LB 3035, top of ditch.
2. Fabric d), organic. Black. BX, SF 496, pl/soil.

### Nos 3–23 Ipswich-type ware

All forms are jars and all colours are grey unless stated otherwise.

3. Pimply. Diameter uncertain. Soot on top of rim. DXII, pl/soil.
4. Fine sandy. Originally classed by Green as hand-made as rather uneven and may have been externally burnished but heavy sooting makes this hard to establish. DXI, SF 2602, pl/soil.
5. Fine sandy. Partial red margins. External soot. BV–VI, CV, LB 1396, F71, 'Hut 1'.
6. Fine sandy, some fine silver mica. Rim heavily sooted both interior and exterior. BCIV, pl/soil.
7. Fine sandy, some fine silver mica. Margins red in places. Soot on top and exterior of rim. AVII, layer 4.
8. Pimply. Soot on top of rim and interior of body (cf. Broomeswell Heath; Hurst with West 1957, fig.5, nos 10–12). GV–VI, LB 753, PR ditch.
9. Fine sandy. Soot on exterior of rim and shoulder. BV–VI, LB 1396, F71, 'Hut 1'.
10. Pimply. No soot on this small fragment. Area 4, MV, LB 3307, pl/soil.
11. Intermediate pimply. Some soot on top of rim exterior. BV–VI, LB 1396, pl/soil/F71, 'Hut 1'.
12. Pimply. No soot on this small fragment. Area 4, MV, LB 3307, pl/soil.
13. Pimply. Slight exterior soot. AVIII, pl/soil.
14. Fine sandy. Some soot on exterior at top of rim. BV–VI, CV, LB 1396, F71, 'Hut 1'.
15. Fine sandy. Some soot on exterior at top of rim. BV–BCV, 'Hut site'.
16. Fine sandy, some fine silver mica. Heavy sooting on exterior, especially rim and shoulder, and lower part of body interior. BV–VI, LB 1396, 2309, F71, 'Hut 1'/rubble west of road.
17. Fine sandy. Soot at top of rim and on exterior of neck (possibly burnt). BV–VI, as 16.
18. Fine sandy. Originally classed by Green as hand-made because irregular but is probably Ipswich-type. Orange core, exterior sooted. DXI, EXII, lower pl/soil.
19. Fine sandy. Soot on rim interior and exterior, and neck and shoulder exterior. AVII, LB 1387, ?hut/working hollow.
20. Pimply. Some soot on body exterior. AVII, as 19.
21. Intermediate pimply, some fine silver mica. Light grey and red core. Some light sooting on rim. AVII, as 19.
22. Storage jar? Coarse sandy, some fine silver mica. Core dark red in places. No soot. BVI, BCV–VI, LB 1396, 2297, F71, 'Hut 1', F72 hollow.
23. Unusual form but seems to be coarse sandy Ipswich-type ware, high content of fine silver mica. Medium grey core, dull red margins, dark grey surfaces. Diameter uncertain. BXI, LB 2960, PR cutting.

### No.24 Middle Saxon pitcher

24. Pitcher. Interior uneven horizontal smoothing so that any wheel marks are not discernible, exterior burnished, rather laminated appearance in fresh fracture. Red core, black surfaces. Fine sandy fabric with some fine silver mica, occasional iron ore and grit particles up to 1mm. Stab decoration in band on shoulder. This vessel may be a Black Ware from north France (Class XIV) but Dr R. Hodges is now of the opinion that its unusual form and rough finishing indicate that it is an English imitation of such wares, and

that it could be as early as 7th century in date (Hodges 1981, 41–2). Area 2, CI, SF 1579.

### Nos 25–28 Probable Middle Saxon pottery

25. 'Pimply' quartz sand temper, made on a 'fast wheel'. Orangish-red margins, rest dark grey. Soot on rim top and exterior of neck. Area 4, MVI, LB 3306, pl/soil.
26. Possibly pimply Ipswich-type ware, but the quartz is covered by clay and does not show on the surface, which is unusual. Unusual form, possible import. AVIII, ABVII, pl/soil.
27. Coarse sandy fabric, grey throughout. External soot. Area 2, CI, LB 1704, pl/soil.
28. Coarse sandy, grey throughout. CVII, pl/soil.

### Saxo-Norman

Nos 29–33 Thetford-type wares. Medium grey unless stated otherwise.

29. Stamped bodysherd, probably from a pitcher or storage jar. Light brown margins. Stamped directly on wall of pot, with no applied strip. Area 2, CI, LB 1704, SF 1588, lower pl/soil.
30. Cup of a ring vase. Sandy fabric, similar to Norwich and Thetford types. Some traces of burning at rim top on interior and exterior. EVII, LB 1670, Rm 2, PR disturbance.
31. Lid. Fine sandy with fine silver mica. Dark grey. Heavy soot, especially near edge, and a few small exterior patches. CVI, LB 1447, F 72, 'Hut 2'.
32. Fine sandy, grey. Some soot on exterior of rim. Area 4, LVI, LB 3087, pl/soil.
33. Sandy. Soot on exterior and top of rim. EVI–VII–?VIII, LB 1653, 1670, Rm 2, refuse on floor/PR disturbance.

### Nos 34–37 Probably Saxo-Norman

34. Jar. Probably Thetford-type. Grey, quartz sand temper. Some soot on rim and exterior. Area 4, LVI, LB 3087, plough.
35. Jar. Possibly Thetford-type. Some quartz sand temper but very fine fabric. Red core, grey surfaces. External soot. DXI, LB 2756, Rm 7, disturbed spill.
36. Jar. Form as Saxo-Norman Thetford-type wares, but unusually fine in a hard dense fabric which sparkles with fine quartz sand and silver mica. Light grey core and red surfaces. Some soot on exterior. BCVII, LB 1820, mixed earth on upper floor of ?corridor.
37. Jar, six sherds from the same vessel. Made on a 'fast wheel'. Quartz sand temper with some protruding rounded quartz grains. Mostly dark grey to black, with dark red core and margins in some places and part of rim top. Soot on rim and exterior. Possibly an import. DVI–VII–IX, LB 343, 2390, spill.

## Discussion

It is noticeable that the hand-made sherds seem to come from different vessels and were scattered quite widely, mostly in the ploughsoil. The only stratified contexts seem to be a ditch in GV–VI, Grave 132 in Area 4, and Room 2 floor. These sherds occur invariably with Middle Saxon Ipswich-type wares. This, and the absence of Early Saxon stamped sherds, would indicate that these vessels are Middle Saxon in date and were in use, or perhaps overlapped, with the Ipswich-type wares. They only constitute 5% of the Middle Saxon pottery and are in a minority compared to the Ipswich-type wares. It is not clear at present whether these hand-made sherds represent a 7th-century overlap period or whether they could also date to the 8th and 9th centuries. The latter is possible as hand-made pottery in association with Ipswich-type wares is noticeable in the larger collections of Middle Saxon pottery in Norfolk, such as Burgh Castle (Dallas 1983, 105), North Elmham (Wade 1980, 416 and 419), Bircham (Dallas 1978, 40), Congham (NCM 153.971) and Sedgeford (Hurst with West 1957, 35).

Ipswich-type ware is now to be expected on Middle Saxon sites in East Anglia, but unfortunately there is little to add at present (1988) on east Norfolk as no new excavations have taken place. In recent years the sherds at Witton (Lawson 1983, 71) and Winterton Ness have been sup-



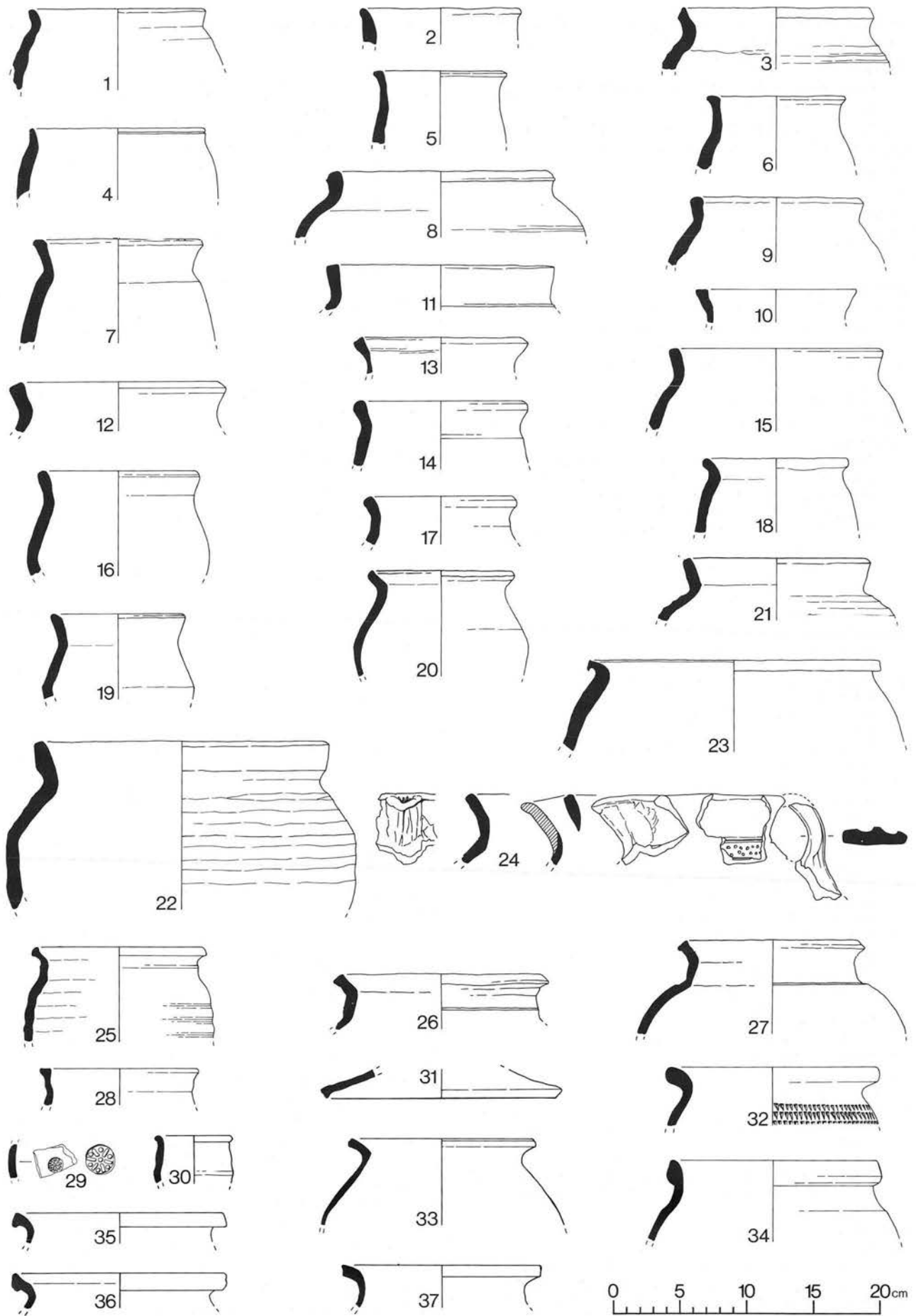


Figure 165 Middle and Late Saxon pottery. Scale 1:4.

plemented by a few surface finds from the parishes of Somerton, Martham, Dilham, South Walsham and Loddon. The site at Burgh Castle is comparable to Caister, but the latter has produced a more numerous and varied collection. A longer period of occupation seems the most likely explanation for this. It is disappointing that contexts have been of little help on either site as much of the Middle Saxon pottery is unstratified.

The only kiln sites known for Ipswich-type ware are Ipswich (Smedley and Owles 1963) and Broomeswell Heath nearby (Hurst with West 1957, 39). Sherds from both sources seem to be present at Caister, and in this instance water-borne trade from Ipswich is highly likely. Further inland, there are sufficient findspots of Ipswich-type ware to suggest that there must be undiscovered Middle Saxon kilns in Norfolk. For such a volume of trade to come all from Ipswich seems untenable and the social implications are unprecedented, especially when compared with the scatter of at least five known Late Saxon production centres (Norwich, Thetford, Lanhale, Bircham and Grimston).

There are far fewer Late Saxon than Middle Saxon sherds at Caister, probably indicating a reduction in or shift of occupation in the late 9th to 10th centuries. Occupation would seem to have continued however, as, as well as Saxo-Norman material in some of the graves in the cemetery, there are sherds from vessels broken in antiquity in Area 1; notably fourteen body sherds from the same pot in CVI 'Hut 2' (F72). Also, many of the Thetford-type sherds are sooted (usually on the rims and exterior surfaces of the cooking pots), indicating that these vessels may have been used in the vicinity before breaking.

There are a number of sherds which seem to be post-Roman but which are difficult to parallel and are unusual in form and/or fabric. These are drawn as a group (Fig. 165, Nos 25–28). Rim No. 28 is possibly an unusual Ipswich-type vessel in a coarse sandy fabric (if it is not later in date). The slightly larger jars Nos 25–27 have rim forms that resemble Late Saxon Thetford-type wares but the long neck with pronounced angles at the top and bottom would again be unusual. The nearest Middle Saxon pottery in such

a style is probably that of Yorkshire and Durham (Hurst 1969, fig. 25; Hurst 1976, fig. 7.9) and it is not impossible that material from the north-east of England could have been traded down the coast. As well as mercantile trade, such connections might also have been ecclesiastical or royal (Whitelock 1972, 2–3). (Note: perhaps this was also the origin of an unusual sherd at Burgh Castle: Dallas 1983, 106, fig. 45, no. 23 (wrongly captioned).) There are therefore at least three possibilities for these unusual pots:

- 1) East Anglian pottery not previously or often found (so little is known about the ceramics on the eastern side of the county and local variations may not be recorded).
- 2) Middle Saxon pottery imported from north-east England.
- 3) Continental imports. The pitcher once thought to be an import may be a local imitation (Fig. 165, No. 24), although some imported pottery is to be expected on a coastal settlement occupied over several centuries.

#### *Stamford Ware* (unillustrated)

1. SF 3023, Area 4, LV, LB 3523, Grave 32, top filling of grave cut.
2. SF 3066, Area 4, LVI, LB 3324, Grave 40, from grave fill.

These sherds, it should be noted, both come from graves assigned to the final phase (Phase 4) of the Area 4 cemetery. Both were examined by Kathy Kilmurry, and identified as her Type G6, dated to c. AD 1020 onwards (Kilmurry 1980, 163). Kilmurry also notes sherds of Stamford Ware from Caister found by Ellison, and sherds at Great Yarmouth (1980, 226). The ware was absent at Burgh Castle (Dallas 1983, 106).

#### **IV. The pottery dating from the early medieval period to the 19th century**

by Sarah Jennings  
(unillustrated)

See microfiche.

# Chapter 8. Zoological and Botanical Evidence

## I. The Animal Bones

by Mary Harman

(Tables 40–56; 47–54 on microfiche) (Pls XXXIII–XXXV) (Figs 166–7, microfiche)

### Discussion

All of the bones recovered during Charles Green's excavations were examined, and in addition, a small group found during the removal of a pylon in 1976.

The bones generally are in good condition. There is no indication in the records as to whether all the bones from the site were kept, nor is this clear from the nature of the bone groups. The work was carried out by a few men with considerable excavation experience, who recovered some quite small bones such as those from cat, dog, fox and badger, and a number of small bird bones, suggesting that recovery was thorough. On the other hand there are surprisingly few unidentifiable fragments, and the proportions of different species are unusual: a high proportion of cattle compared with sheep/goat and pig, suggesting that large bones were noticed and kept more frequently than small ones, though the number of horse bones is not great. There is a surprisingly large number of complete bones. In one or two instances a group of bones appears to represent the major part of a skeleton, but is lacking the vertebrae and ribs, suggesting that these were not always kept. The number of bones from wild animals is unusually large; it seems unlikely that the excavators would identify and discriminate between wild and domestic animals of similar sizes, and the unusual number of bones from fairly small wild animals, together with the number of roe deer bones compared with those from sheep/goat and pig, and red deer bones compared with cattle, indicates that the comparatively high proportion of wild animals is real and not a result of selection during excavation.

However, the possibility of deliberate selection of whole bones and the accidental overlooking of small bones remains a problem, which must be borne in mind particularly when considering the relative proportions of large and small species.

All of the bones identified were listed: summaries of these lists, organized according to the major chronological phases and area of the site or type of deposit, are on microfiche. Copies of the lists are in the site archive.

The ages of the animals have been assessed as far as possible from the state of tooth eruption and wear and from the state of epiphyseal fusion, using the criteria published by Silver (1963). The state of eruption and wear on cattle and sheep/goat mandibles was recorded using the system developed by Ewbank *et al.* (1964).

All complete bones and complete ends of adult bones were measured. Lists of measurements are in the archive. The presence of several goat horn cores shows that goats

are represented among the sheep/goat, but probably only in small numbers.

There are over 9000 identifiable bone fragments from the site, excluding loose teeth, vertebrae and rib fragments. Almost half are from the ploughsoil, but are worth some consideration as the bulk of the pottery from the ploughsoil is Romano-British or Anglo-Saxon, and of the bones from stratified deposits, 80% are from Romano-British contexts, and 20% are from post-Roman and Middle Saxon contexts, so that perhaps half or more of the bones in the ploughsoil are probably derived from Roman deposits. There is only one — a single rabbit bone — which is clearly intrusive from the medieval or later periods, and while rabbit bones are small and more easily missed than many others, this scant representation of a post-Norman conquest introduction supports the idea that there is probably not a lot of later medieval and post-medieval bone amongst the 'plough'.

Table 40 gives a brief summary of total numbers of bones from different species represented on the site, in the different phases and types of deposit. This shows clearly that the great majority of the bones are from domestic animals: cattle, sheep/goat and pig, with some from horse and dog, but nearly 6% are from wild species. There are not many bones from the early occupation, so the relative proportions of cattle, sheep/goat and pig may not have been quite as shown, but throughout both the Roman and Middle Saxon occupation, cattle appear to have been considerably more important numerically than either sheep/goat or pigs, and this emphasis is so great that even if the bones from cattle have been noticed and retained more frequently than the smaller bones of sheep/goat and pigs, cattle were almost certainly more important numerically than either, and in terms of meat yield would have been many times more important than both. There is a suggestion that there was a slight decline in the importance of cattle from the earliest Roman occupation to the Middle Saxon occupation, the proportion of cattle bones to the other major meat-producing domestic animals dropping gradually from over 80% to about 63%, and this slight decline is reflected by a rise in the importance of sheep/goat, which contribute less than 10% of the bones in the early phases, but nearly 25% in the post-Roman/Middle Saxon phase, a greater change relatively than the decline in the proportion of cattle. The proportion of pig bones, relative to those of sheep/goat and cattle combined, is roughly similar throughout the Roman and Saxon periods, so that in the early and main Romano-British occupation, they were more numerous than sheep/goat bones, but by post-Roman times, they are less numerous.

Horse and dog are represented poorly by comparison with the other domestic animals. There are few cat bones, which may be from either wild or domestic cats.

Amongst the wild animals, there are more bones from red deer than any other single species, and more than from either horse or dog, which is very unusual. The other two

Phase	Cattle	Sheep/goat	Pig	Horse	Dog	Cat	Red deer	Roe deer	Hare	Fox	Badger
Early	116	6	16	1	4	-	4	3	-	2	2
	<u>84%</u>	<u>4%</u>	<u>12%</u>								
Main	891	75	190	6	15	-	48	11	32	8	2
	<u>77%</u>	<u>7%</u>	<u>16%</u>								
Late:											
Spill	775	165	202	29	33	4	45	31	32	22	5
	<u>68%</u>	<u>14%</u>	<u>18%</u>								
Late:											
Road	221	16	3	7	-	-	9	-	1	-	-
	<u>92%</u>	<u>7%</u>	<u>1%</u>								
Late:		*								*	
Defences	125	14	17	2	9	1	5	-	-	5	7
	<u>80%</u>	<u>9%</u>	<u>11%</u>				*			*	
Late:			*								
Room 1	34	15	28	-	-	-	-	-	1	-	1
Room 2	145	5	14	-	-	-	8	-	5	2	-
Room 3	17	26	4	-	-	-	-	1	-	-	-
Room 4	10	4	3	-	-	-	-	-	2	-	-
Room 5	36	11	17	-	-	-	1	2	2	-	-
Room 6	29	2	8	-	1	-	3	-	4	-	-
Total	271	63	74	-	1	-	12	3	14	2	1
	<u>67%</u>	<u>15%</u>	<u>18%</u>								
Late:											
Building 2	93	30	26	-	7	-	12	1	2	-	-
	<u>62%</u>	<u>20%</u>	<u>18%</u>								
Late:											
Misc.	80	32	8	-	-	-	1	-	-	-	-
	<u>66%</u>	<u>27%</u>	<u>7%</u>								
Post-Roman:											
Room 2	76	21	31	-	-	-	4	1	2	-	-
LB 1421/1445	155	75	25	8	-	1	3	-	1	-	-
Other:	12	2	-	1	1	-	-	-	-	-	-
Total	243	98	56	9	1	1	7	1	3	-	-
	<u>61%</u>	<u>25%</u>	<u>14%</u>								
Mid-Saxon:											
F71	96	66	33	5	-	8	5	-	-	5	-
F72	115	14	29	-	-	-	4	1	1	1	-
Other	94	28	15	3	7	-	4	-	-	-	1
Total	305	108	77	8	7	8	13	1	1	6	1
	<u>62%</u>	<u>22%</u>	<u>16%</u>								
Post-Roman/ mid-Saxon	159	52	27	4	18	1	13	1	-	3	1
	<u>67%</u>	<u>22%</u>	<u>11%</u>								
'Plough'	2974	528	392	79	37	3	112	21	19	21	3
	<u>76%</u>	<u>14%</u>	<u>10%</u>								

Table 40 Animal bones. Total numbers of fragments (excluding loose teeth, vertebrae and ribs) found from different species in different phases and areas of the site.

	Cattle		Sheep		Pig			
	L	R	L	R	L	R		
Skull	13	13	-	-	2	3	-	1
Maxilla	14	-	12	-	1	15	-	7
Mandible	16	-	52	6	9	30	-	27
Tooth	-	172	-	-	7	-	-	61
Vertebra	-	39	-	-	2	-	-	-
Rib	-	85	-	-	22	-	-	5
Scapula	11	4	12	-	1	6	2	4
Humerus	15	4	16	4	-	4	-	6
Radius + Ulna	29	3	21	2	-	1	4	1
Metacarpal	41	51	39	3	1	7	8	-
Pelvis	8	2	6	-	-	1	1	-
Femur	8	17	7	2	2	2	6	-
Tibia	21	3	20	4	-	8	5	1
Astragalus	13	-	15	-	-	1	2	-
Calcaneum	11	-	10	2	-	2	1	-
Scapho-cuboid	5	-	1	-	-	-	3	1
Metatarsal	41	57	54	4	1	4	3	1
Phalanx 1	61	-	60	1	-	-	2	-
Phalanx 2	21	-	18	-	-	-	-	-
Phalanx 3	18	-	11	-	-	-	1	-
Total (excluding loose teeth, vertebrae, ribs)		891			75			190

Also: Horse: Tooth: 2, femur: R, metatarsal: L, 1, phalanx 3: 1

Dog: maxilla: R, mandible: L, R, R, tooth: 1, vertebra: 5, humerus: R, R, R, radius: L, pelvis: L, R, femur: L, L, R

Red Deer: antler: 4, skull: 1, maxilla: R, mandible: R, R, scapula: R, R, humerus: L, L, R, R, radius: L, L, R, 2, metacarpal: L, L, 1, pelvis: R, femur: L, L, L, R, R, R, 1, tibia: L, L, L, R, R, astragalus: R, R, calcaneum: L, metatarsal: 3, phalanx 1: L, L, R, R, phalanx 2: L, phalanx 3: R, R

Roe Deer: mandible: L, L, L, L, humerus: L, metacarpal: R, R, R, R, metatarsal: R, phalanx 1: L

Hare: mandible: L, R, tooth: 1, humerus: L, L, L, L, L, L, R, R, R, R, radius: L, R, R, R, metacarpal: 5, femur: L, tibia: L, R, calcaneum: L, metatarsal: 8

Fox: skull: 1, mandible: L, R, ulna: R, metacarpal: R, R, tibia: R, R

Badger: maxilla: R, femur: R

Table 41 Animal bones: Main occupation; numbers of fragments from different species.

obviously edible species, roe deer and hare, were also exploited, and their bones occur in unusually large numbers, mainly in the Romano-British deposits. Bones from fox and badger were also found. Some of the bones described as dog are within the size range of wolf.

It was assumed initially that most of the bones were food refuse, but it became apparent that most of the bones left in the rooms of Building 1 in the last phase of the Romano-British occupation were probably slaughtering waste, as were probably some of the cattle bones from the main and last phases in other areas of the site.

A small number of bones can be attributed to the early occupation, most of them cattle bones. All parts of the animal are represented, most of the bones being from mature animals.

In the main phase of occupation, nearly all the bones are from the 'refuse' deposits, about 7% being from other contexts. Table 41 shows the number of different types of bones from different animals. The dearth of sheep/goat bones is particularly marked in this group. Also noticeable is the high proportion of cattle metapodials compared with the other limb bones, there being more than twice as many pieces of metacarpal and metatarsal, and this is not because they were more broken, as the numerous measurements of complete bones shows. There is also a surprisingly small number of fragments from the pelvis and femur. Tables 45

and 46 show that most of the bones are from mature cattle. While there are not enough phalanges to go with the metapodials, there are large numbers, perhaps more phalanges and tarsals than might be expected to accompany the numbers of other limb bones.

A reasonable explanation for the variable frequency of the different bones might be that cattle were gathered here, slaughtered, the extremities removed and discarded, and a certain amount of butchering done, most of the prime joints (particularly the rump) going elsewhere; either to another part of the site or being exported from the site altogether — inland or overseas. Though the practice of cutting off the feet at 'wrist' and ankle before flaying is quite common, the feet may be left attached to the skin, so an alternative explanation is that the large number of metapodials represent slaughtering waste indirectly, being primarily waste from hide-processing, possibly tanning or some intermediate stage involved in the import or export of hides. This would not explain the discrepancy in the meaty parts of the beasts, though it is possible that the inhabitants favoured beef and procured mainly forequarters, or, indeed, they may have both slaughtered cattle here and carried out some preliminary dressing of the hides, removing the feet at that stage. The whole tanning process may have been done here, or the hides may have been exported 'green'. There are numerous mandible fragments, but comparatively few

	Cattle			Sheep			Pig		
	L	R	R	L	R	R	L	R	
Skull	16	9	12	2	2	1	3	-	2
Maxilla	13	-	5	1	-	2	14	-	10
Mandible	28	1	37	13	-	16	41	-	34
Tooth	-	186	-	-	20	-	-	72	-
Vertebra	-	44	-	-	8	-	-	6	-
Rib	-	87	-	-	51	-	-	-	-
Scapula	6	4	7	2	-	2	1	-	2
Humerus	21	3	21	7	-	11	11	-	9
Radius + Ulna	26	-	26	7	2	6	4	1	3
Metacarpal	39	30	32	12	1	13	5	1	3
Pelvis	4	3	8	1	-	3	2	-	1
Femur	9	21	6	2	6	4	3	2	1
Tibia	29	1	16	12	1	10	7	-	7
Astragalus	22	-	18	2	-	-	1	-	-
Calcaneum	9	-	11	1	-	3	1	-	1
Scapho-cuboid	4	-	6	-	-	-	-	-	-
Metatarsal	37	21	31	5	2	9	3	2	11
Phalanx 1	70	-	57	3	-	1	5	2	7
Phalanx 2	20	1	19	-	-	-	-	-	-
Phalanx 3	6	-	14	-	-	-	1	-	1
Total (excluding loose teeth, vertebrae, ribs)		775			165			202	

Also: Horse: tooth: 9, vertebra: 1, humerus: L, L, radius: L, L, L, L, R, metacarpal: L, pelvis: L, femur: L, L, R, tibia: L, L, R, astragalus: L, R, metatarsal: L, L, R, 1, phalanx 1: 4, phalanx 2: 2, phalanx 3: 2  
 Dog: skull: R, maxilla: R, mandible: L, L, L, R, R, R, R, tooth: 1, vertebra: 7, scapula: L, humerus: R, radius: L, R, 2, metacarpal: 9, femur: L, L, R, tibia: R, R, metatarsal: 4  
 Cat: humerus: L, R, femur: L, metatarsal: 1  
 Red deer: antler: 4, skull: R, R, maxilla: L, R, mandible: L, L, R, R, R, R, tooth: 6, vertebra: 6, humerus: L, L, R, radius: R, metacarpal: L, L, R, 1, femur: R, R, tibia: L, R, R, R, astragalus: L, L, R, R, R, R, R, R, R, R, R, R, calcaneum: L, scapho-cuboid: R, metatarsal: R, 1, phalanx 1: R, phalanx 2: L, phalanx 3: R, R  
 Roe deer: antler: 1, maxilla: R, mandible: L, L, L, L, L, L, R, R, R, R, R, tooth: 3, scapula: R, humerus: R, radius: L, L, L, metacarpal: L, tibia: R, metatarsal: L, L, R, R, 1, phalanx 1: L, R  
 Hare: mandible: L, R, R, R, vertebra: 1, humerus: L, L, L, R, R, radius: L, L, L, R, R, R, R, 1, metacarpal: 4, pelvis: L, L, femur: L, L, L, L, L, R, R, 1, tibia: L, R  
 Fox: mandible: L, R, tooth: 3, radius: R, metacarpal: 4 L + 4 R tibia: L, L, R, metatarsal: L, L, R, R, R, phalanx: 2  
 Badger: humerus: L, R, femur: L, tibia: L, phalanx: 1  
 Dog/Fox: radius: L, pelvis: R, metatarsal: R

Table 42 Animal bones: Late occupation; spill; numbers of fragments from different species.

pieces of maxilla or the remainder of the skull, and possibly the mandible was detached, perhaps during removal of the tongue, and the rest of the skull went elsewhere, either as waste or for further processing, for instance the removal of the horn: there are some horn cores in the 'refuse' deposit but not enough to go with the mandibles and foot bones.

The fairly small number of sheep/goat bones in the 'refuse' are from animals most of which had died before reaching full maturity; Tables 45 and 46 show that most of the mandibles are from young animals, of a few months old only, and more than half the bones have unfused epiphyses. Similarly, most of the pig jaws are from animals which had not reached full maturity: there are only two which have the final molar fully in wear, and most of the bones have unfused epiphyses, particularly those in the 'late' fusing group, so that very few animals survived beyond about three years, and few died within the first few months though there are some jaws and limb bones from very small piglets, probably casualties, being barely big enough to be worth cooking. The predominance of pig mandibles is

difficult to explain, though if the rest of the animal was consumed and discarded on site, dogs may have been responsible for the total disappearance of some of the limb bones, easier to reduce to splinters and more succulent than the tough jawbones with their knobby teeth.

There are large numbers of bones from red and roe deer, and hare. The red deer bones are derived from all parts of the animal, while most of the roe deer bones are 'waste': the jaws and feet. The hare bones are mostly from the body but include parts of head and feet. It is in the 'refuse' that one badger bone of particular importance was found: a femur from a young but well grown badger with three cuts at the proximal end such as might occur in jointing a carcass, *i.e.* removing the leg at the hip. Such a cut, deep in the body, would not result from skinning, and it is suggested that badger may have been eaten, as it has been in the more recent past in Britain: Freethy notes (1983, 183-4) that in Ireland it was cured like bacon.

The late occupation material is summarized in several different groups: the 'spill', layers associated with the road

	Cattle		Sheep		Pig		
	L	R	L	R	L	R	
Skull	1	-	2	-	1	-	1
Maxilla	1	-	1	-	-	2	-
Mandible	4	-	6	1	4	11	-
Tooth	-	24	-	-	-	-	10
Vertebra	-	9	-	-	1	-	-
Rib	-	34	-	-	11	-	-
Scapula	1	-	1	1	-	2	-
Humerus	4	-	3	1	-	1	-
Radius + Ulna	1	-	3	1	-	1	-
Metacarpal	11	9	8	3	-	1	-
Pelvis	-	-	1	-	-	1	-
Femur	4	12	7	1	-	1	-
Tibia	3	-	5	1	-	2	1
Astragalus	-	-	2	-	-	-	-
Calcaneum	-	-	2	-	-	1	-
Scapho-cuboid	1	-	-	-	-	-	-
Metatarsal	12	4	3	1	-	1	-
Phalanx 1	29	-	22	2	-	1	-
Phalanx 2	25	-	17	-	-	-	-
Phalanx 3	10	-	6	-	-	-	-
Total (excluding loose teeth, vertebrae, ribs)		221			26		45

Also: Red Deer: scapula: 1, humerus: R, radius: L, R, tibia: R, R, astragalus: R, calcaneum: L, scaphocuboid: R, metatarsal: R, 1, phalanx 2: R

Roe Deer: radius: R

Hare: mandible: L, vertebra: 4, humerus: L, radius: L, metacarpal: R, R, R, tibia: 1

Fox: maxilla: L + R

Table 43 Animal bones. Late occupation; Building 1 Room 2 and post-Roman disturbances; numbers of fragments from different species.

and with the defences, and with the two buildings. There are several other minor deposits, which are grouped under 'miscellaneous'.

The deposit described as 'spill' (Table 42) is very similar in character to the 'refuse' of the main occupation, though there are more bones from some of the minor species: horse, dog, roe deer and fox particularly, and the proportion of sheep/goat bones relative to cattle and pig has doubled. Apart from these differences, there is the same pattern of distribution in the cattle bones, with an emphasis on mandibles and metapodials; the lack of bones from the hind quarters is less marked but is present in the figures for sheep/goat. In this group pig mandibles again predominate. The ranges of age at death for all these animals are very like those in the 'refuse' deposit.

The only outstanding differences then, between the refuse of the main occupation and the spill of the late occupation is the greater importance in the latter of sheep/goat, horse, dog and some of the wild species: roe deer and fox, and the first appearance of cat bones, albeit in insignificant numbers. The greater numbers of bones from dog and fox are partially explained by remains from only two animals; eighteen bones representing most of the front half of a puppy a few months old, and fourteen bones, mainly paw bones but including the lower part of the right forelimb, these bones being cut through; this collection is probably from a pelt: either a discarded pelt or paw bones removed in dressing a pelt.

There are fewer bones in the other groups of deposits, but the pattern already described as characteristic of 'refu-

se' and 'spill' is repeated in the material associated with the road (microfiche Table 48), Building 1 (microfiche Table 50) and the miscellaneous deposits outside the building. Those associated with the defences (microfiche Table 49), though they show the common predominance of cattle bones, have no emphasis on lower jaws and feet; this is also true of those in Building 2 (microfiche Table 51): here sheep/goat bones are commoner though still in a minority compared with those of cattle. It is noticeable that the bones associated with the road are not particularly battered or crushed and are unlikely to have been used as metallurgy.

The bones in the individual rooms of the main building are of some interest.

In Room 1 there is no emphasis on cattle feet, but ten of the sheep bones, the forelimbs and hind feet, are from a single immature animal, aged probably between nine months and two years. There are bones from at least three piglets of varying size but all fairly small.

Most of the bones inside the main building were found in Room 2. A group considered stratigraphically to be from a post-Roman disturbance are probably residual and in Table 43 have been added to the bones attributed to the last occupation phase in this room (bones from deposits described as upper floor and refuse layers lying on the floor). Tables 43, 45 and 46 show that the majority of the bones are from cattle, and most of them are whole bones from mature animals; there are also a number of fragments of femur. A few of the metapodials have had the distal end cut off. In the post-Roman disturbance are left and right metacarpals and metatarsals, probably from a single sheep, fully

	Cattle			Sheep			Pig		
	L	R	R	L	R	R	L	R	
Skull	4	2	2	-	-	1	1	-	-
Maxilla	-	-	-	-	-	-	-	-	-
Mandible	7	-	5	2	-	4	3	-	2
Tooth	-	29	-	-	9	-	-	3	-
Vertebra	-	27	-	-	13	-	-	2	-
Rib	-	17	-	-	14	-	-	-	-
Scapula	5	1	4	5	1	3	2	2	1
Humerus	8	1	7	6	-	7	2	-	-
Radius + Ulna	3	1	6	4	-	5	1	-	1
Metacarpal	4	3	3	4	2	1	1	-	-
Pelvis	6	-	8	7	-	3	1	-	1
Femur	1	5	1	3	1	-	-	-	-
Tibia	4	1	6	6	-	6	3	-	2
Astragalus	6	-	5	1	-	-	-	-	-
Calcaneum	6	-	4	1	-	-	-	-	-
Scapho-cuboid	1	-	2	-	-	-	-	-	-
Metatarsal	6	3	2	1	1	-	-	-	-
Phalanx 1	6	-	9	-	-	-	-	-	2
Phalanx 2	2	-	3	-	-	-	-	-	-
Phalanx 3	1	-	1	-	-	-	-	-	-
Total (excluding loose teeth, vertebra, ribs)		155			75			25	

Also: Horse: tooth: 1, mandible: L, ulna: R, metacarpal: L, pelvis: R, R, femur: 1, tibia: L, phalanx: 1

Goat: horn core: 1

Cat: femur: R

Red Deer: mandible: L, L, radius: R

Hare: vertebra: 1, ulna: R

Table 44 Animal bones. Post-Roman occupation; LB 1421 and LB 1445; numbers of fragments from different species.

grown but not quite mature, of a similar size to the one in Room 1. There are a number of fragments of pig mandible and other pig bones, some of them from small piglets.

Room 3 contained few bones: most of the cattle bones are from the feet; there is an unusually large number of sheep/goat bones, but most of these represent the partially complete skeleton of one old sheep, with worn teeth. Small cuts on the condyles of the skull may result from cutting the throat or the blood vessels; the left forelimb and almost all of the thorax are missing; the last may have been present but not collected though this seems unlikely. One metatarsal may belong to this animal, otherwise the feet are missing. This is a curious group of bones: the feet (waste) are mostly missing, so is most of the neck, saddle and one shoulder, but some of the meatiest parts remain; perhaps it was a slaughtered animal which for some reason was abandoned after only some joints had been removed.

Room 4 contained few bones, but this includes a surprising number of rib fragments: thirteen of cattle and eleven of sheep/goat size. In Rooms 5 (hypocaust) and 6 again there were few bones, mostly from cattle, mostly from ankle and foot.

The corn-drier contained very few bones and has been added to the 'miscellaneous' group of deposits; but it is worth noting that it was in this feature that the only polled sheep frontal bone was found; one of eleven frontal bones from the Roman deposits, there being twenty in all from the site.

Some of the bones found in Room 2 in disturbances dated to the post-Roman period are so similar to the bone

group found in that room and ascribed to the late occupation that they have been considered with those deposits, above. Almost all of the other bones from this post-Roman period were found in LB 1421 (ironworking area near F71) and LB 1445 (ditch F70), as Table 40 shows. Table 44 gives a more detailed list of the bones found in these two features. This shows that there is a marked change from the earlier periods in respect of the relative numbers of cattle and sheep/goat bones, there being twice as many cattle as sheep/goat bones, rather than three or four times as many. Most of the cattle bones are from mature animals, and in this group there is no emphasis on bones from the feet, all parts of the body being fairly equally represented. This is not true of the sheep/goat bones; there is only one skull fragment though there are several mandibles and similar numbers of most of the limb bones, except for metatarsals, which together with ankle and toe bones are almost absent — an odd partial absence of waste bones. Though most of the mandibles are from mature animals, the evidence from the bones shows that perhaps half are from animals dying in their second or third years. The few pig bones are mostly mandibles and limb bones from young animals. There are several fragments of horse bone but few from any wild animals.

Most of the bones attributed to the Middle Saxon period were found in F71 and F72, and all the Middle Saxon features probably contain an unknown proportion of redeposited Roman bones. The contents of the two features show some differences (microfiche Tables 52 and 53). The numbers of pig bones in relation to cattle and sheep/goat



are similar in both, but in F71 there are many more sheep/goat bones than there are in F72, and the numbers of cattle bones are slightly different, so that in F71 they are about one and a half times the number of sheep/goat bones, while in F72 they are just over eight times as numerous. In F71 there are cattle bones from all parts of the body, while in F72 the distribution is reminiscent of the 'refuse' of the main period of the Roman occupation: more mandible than skull fragments, a large number of foot bones, and a lack of bones from the rump. The unusually large number of sheep/goat bones in F71 is from a number of different animals, mostly mature, and there is a lack of foot bones compared with the rest of the body. There are very few sheep/goat bones in F72. Pig bones from all parts of the body and mostly from immature animals were found in both; in F72 there is some emphasis on mandible fragments, again reminiscent of the major refuse deposits of the Roman occupation. In F71 there are bones from horse, several from one immature cat, and a few from red deer and fox. In F72 there are several bones from red deer and single ones from roe deer, fox and hare.

Identification of F72 as a Roman pit contaminated by post-Roman finds post-dated the work on the bones, and it is clear that the bones from this feature belong with the main refuse phase. This then gives a clearer picture, in the post-Roman group and F71, of a steady decrease in the importance of cattle with a corresponding rise in the importance of sheep/goat, with no particular evidence of cattle slaughtering waste.

There is a small number of bones which are post-Roman and likely to be Middle Saxon. There is nothing remarkable amongst these, nor would the character of the group alter any of the observations made above.

There are some deposits on the site which cannot be dated by their contents or by their relationship to other layers or features: such deposits are few and contain few bones, but there are two pits which are worth mentioning although they cannot be dated. Pit F15 (LB 945) contains a cattle skull, and nearby, Pit F14 (LB 944) contains only cattle bones: a lower jaw, part of an oxtail, several hind leg bones, some if not all from the same animal of about four years, and a mandible and most of the limb bones from a calf so small that it may have been unborn and belong with the mature cattle bones, which represent much of the hind end of a beast.

The 'plough' — upper and lower ploughsoil from all areas of the site — contains nearly half the bone from the site. Table 40 shows that the high proportion of cattle bones is similar to the Romano-British groups of bones; while the relative numbers of sheep/goat and pig bones are more like the post-Roman groups, sheep/goat being more numerous than pigs. There is a clear emphasis in the cattle bones on fragments of mandibles and foot bones, as in the Romano-British deposits. All of the other animals already noted as occurring on the site are represented in the 'plough', in proportions roughly similar to those in the stratified deposits: horse and dog are scant compared with the other domestic animals; there are a very few cat bones; and of the wild animals, those that are obviously edible are the most numerous. A single rabbit bone is almost certainly intrusive: rabbits were introduced to Britain after the Norman conquest. As there is only a small quantity of medieval and post-medieval pottery in the 'plough' (less than 5% of volume), it seems reasonable to suggest that most of the

bone is derived from the Roman and early post-Roman occupation.

#### *Notes on individual species, incorporating Dr J.R. Baker's notes on abnormal bones*

##### **Cattle**

There are 170 pieces of cattle frontal from the site, all from horned beasts; there is no evidence of polled cattle. Many of the pieces have been chopped or sawn off the rest of the skull, presumably so that the horn could be used. Of 133 parts of mandibles with the area of the second premolar present (normally the first tooth in the row of cheek teeth), ten have this tooth congenitally absent, and of 463 lower third molars found, seven were reduced in size, having the small third pillar absent or reduced. The significance of these anomalies is not known, but cumulative evidence from a number of sites may show if they are important. There is no indication that the size of the cattle changed during the occupation of the site: calculations of the shoulder height from the total lengths of sixty-seven metacarpals and sixty-six metatarsals, using Matolski's formulae for cows (Driesch and Boessneck 1974, 336) give average figures of 1.17m and 1.15m respectively, with ranges of 1.08m–1.26m and 1.05m–1.29m. Evidence from the teeth and bones suggest that many of the cattle were kept well into maturity and this is supported by some of the bones exhibiting evidence of disease or injury. One animal had severe periodontal disease in the lower jaws; a thoracic vertebra was affected by spondylosis; three foot bones were affected by osteoarthritis; in one this probably resulted from a severe sprain type injury (Pl.XXXV, H); one young beast had a small area of osteitis on a metatarsal, and another had periostitis with small abscesses after infection of the soft tissue. Four foot bones and two toe bones show evidence of sprain-type injuries, and another toe bone has changes suggesting an injury such as dislocation (Pl.XXXIV, D). Another metatarsal has a swelling from repeated trauma (Pl.XXXIII, A), and two more have swellings which are probably ossified haematomas after blows. One rib fragment has a healed fracture. Two hip bones — one femoral head and one acetabulum — both show areas of eburnation; this is often associated with animals used for traction, although in other species it seems simply to be associated with age. One metatarsal is severely affected by spavin (Pl.XXXIV, C right); another shows signs which may also result from spavin (Pl.XXXIV, C left), and an upper half of a metatarsal with a swollen shaft may represent a case of Marie's disease (Pl.XXXIII, B).

##### **Sheep/Goat**

(Fig.166, microfiche)

There are thirty-eight sheep frontal fragments from the site, one of which was from a polled sheep; the others were horned, eighteen of them of a size and shape suggesting that they were from rams. There are also four horn cores from goats. Of forty-one mandibles, two had no second premolar, this tooth being congenitally absent rather than lost before death. Comparison of the sheep limb lengths with those of Soay sheep (Fig.166) shows that the Caister sheep were a little larger; full grown Soay rams and ewes may weigh up to 36kg (80lb) and 25kg (55lb) respectively (Doney *et al.* 1974, 88), so the Caister sheep would probably have weighed a little more. The small number of sheep and the smaller proportion living to maturity is reflected in the lower incidence of injury and disease; five mandibles from old animals have periodontal disease; resulting in a slight swelling of the jaw and loosening of some of the tooth sockets; in one the two middle cheek teeth have been lost before death as a result. Two radii have exostoses at the proximal ends ('penning elbow'), injury to the joint resulting from a knock as may occur in a confined space; another radius has similar growths which may also indicate penning elbow. One pelvic fragment has signs indicating some damage to the sacro-iliac joint.

##### **Pigs**

(Fig.167A, microfiche)

As so few pigs survived to skeletal maturity it is rare to find whole bones from which height can be calculated. Figure 167A shows the width measurements of the distal ends of the humerus and tibia and the proximal end of the radius, and while this gives no indication of absolute size, it does show that the range of variation was limited. The pig bones were from animals much smaller than today's 'improved' breeds; one unusually large humerus may have been from a wild pig, though it could be from a particularly large boar. There were only two pig bones with abnormalities, both tibiae; one had a swelling towards the distal end, probably an ossified haematoma resulting from a blow; the other had an exostosis near the distal end (Pl.XXXIV, E), probably associated with an inflammatory condition of the adjacent soft tissue.





Phase	Fusion Group	Cattle		Sheep		Pig	
		F	N	F	N	F	N
Early	E	23	1	-	-	2	1
	M	8	2	-	1	-	3
	L	4	4	-	-	-	5
Main	E	166	3	5	2	7	8
	M	163	34	8	13	9	16
	L	20	28	3	8	1	34
Late (spill)	E	179	4	14	5	7	11
	M	119	33	20	20	5	24
	L	29	21	4	27	1	23
Late (road)	E	49	1	1	-	-	-
	M	33	3	5	1	1	-
	L	10	5	-	1	-	-
Late (Building 2)	E	18	-	2	-	-	2
	M	8	4	1	1	-	3
	L	2	2	-	-	-	2
Late (Building 1)	E	91	3	9	5	1	16
	M	45	5	13	12	3	17
	L	10	14	10	14	-	34
Late (defences)	E	22	-	4	-	3	-
	M	15	5	1	2	1	1
	L	6	1	-	2	-	1
Late (miscellaneous)	E	22	-	7	-	-	-
	M	12	1	-	8	1	2
	L	3	4	2	9	-	1
Post-Roman (LB 1421, 1445)	E	29	1	19	2	1	1
	M	9	4	1	10	2	1
	L	5	5	2	13	-	1
Mid-Saxon	E	41	1	13	-	6	1
	M	20	7	9	6	3	7
	L	16	7	6	1	-	6
Post-Roman/mid-Saxon	E	33	-	9	-	4	3
	M	24	6	11	F2	4	4
	L	9	5	6	4	-	5

Early fusing: humerus distal, radius proximal, pelvis (acetabulum), cattle phalanx 1 proximal

Middle fusing: tibia distal, metacarpal distal, metatarsal distal, pig phalanx 1 proximal

Late fusing: humerus proximal, radius distal, femur proximal and distal, tibia proximal

F: Fused

N: Not fused

Table 46 Animal bones. Ages of cattle, sheep and pigs at death, based on evidence of epiphyseal fusion, with numbers of fused or unfused ends of diaphyses, grouped into early, middle and late fusing bones.

one cast antler. One mandible has periodontal disease around the middle cheek teeth, and another has a rounded lump on the horizontal ramus; it affects much of the area below the cheek teeth; here the bone is swollen on both sides and on the lower edge, so that it is approximately twice its normal size in this area. There are very large numbers of holes honeycombing this mass. This is an example of lumpy jaw (possibly *Actinomyces osteitis*) (Pl. XXXV, F), which is the normal cause in cattle, although *Actinobacillus* causes similar conditions in sheep.

#### Hare

The hare bones, from all parts of the body, are all from fairly well grown animals, though some of them were not skeletally mature.

#### Fox

All of the fox bones are from mature animals; of seventeen mandibles, eight contain all the adult teeth but are scarcely worn; three are worn but not severely, three are well worn, and three have most of the teeth missing, lost after death. A pair of upper jaws have one incisor lost before death and the first two molars very worn, with exposure of the pulp cavity. Many of the bird bones found are from fowls and other poultry; foxes may have been killed as unwanted predators and there is some evidence that the skins were kept. Fox is edible, if a little strong for most tastes.

#### Badger

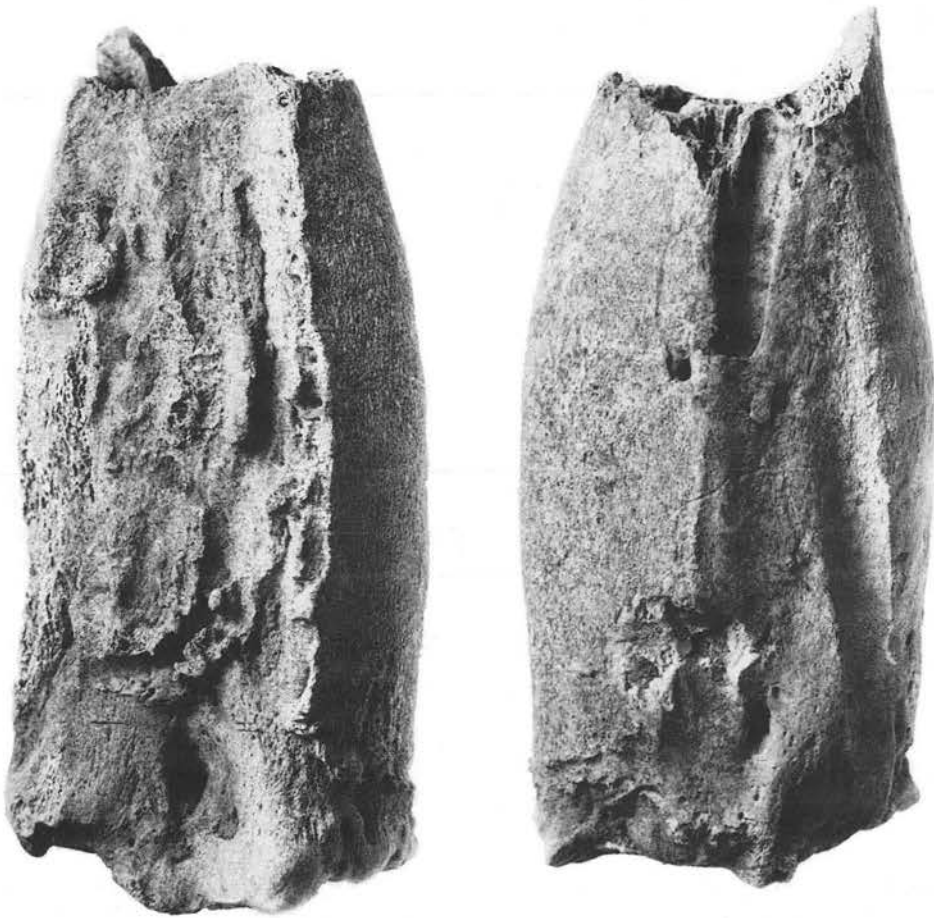
Compared with the other wild animals, there are few bones from badger, but as this animal is found rarely on archaeological sites, the small number of bones, derived from at least four adult animals and one young one, is nevertheless remarkable. There is one bone from a well grown but young animal with an unfused epiphysis. Of four lower jaws, one is from an adult badger, one from an animal aged between four and eight years, one between seven and fifteen years, and one between ten and fifteen years, using Neal's tooth wear criteria (Neal 1977, 46). There is slight evidence that the skin was removed from at least one badger, and the immature femur may provide evidence for the consumption of badger meat (which is good eating, if a little sweet), but it is difficult to think of reasons why badgers should have been hunted. Possibly they were occasionally caught accidentally in some sort of trap intended for foxes. Elderly animals may have taken to raiding poultry and become a nuisance. Perhaps deprived of the excitement of the circus in the larger towns, the inhabitants of Caister found some amusement in badger baiting.

#### Whales

Amongst the worked bones (see Chapter 5.XVI, No.804, above) are four pieces of cetacean bone, all with one or more cut surfaces, all with at least one area of original exterior bone surface. None is identifiable though it



A

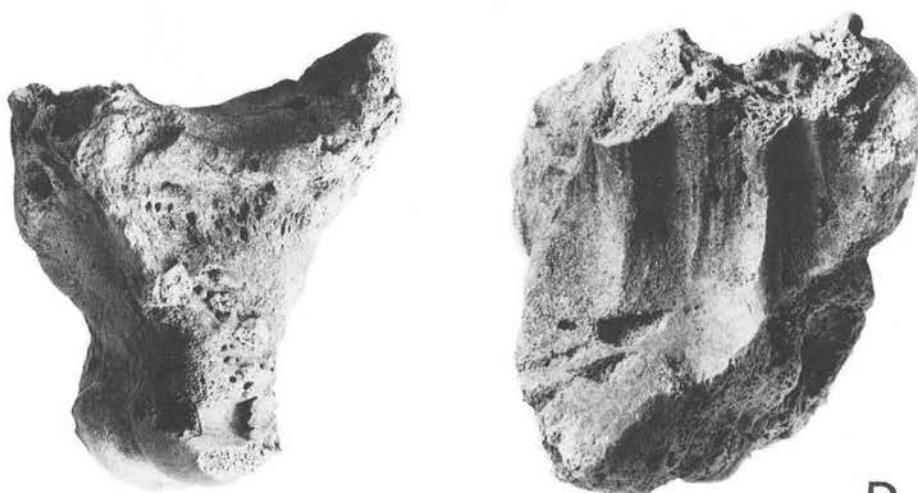


B

Plate XXXIII Animal bones. A: cattle metatarsal, showing exostosis on posteromedial aspect, probably due to repeated trauma injury by the opposite foot. B: cattle metatarsal, proximal half, anterior and posterior views, showing pronounced swelling of the shaft with channels on the anterior surface.



C



D



E

Plate XXXIV Animal bones. C: cattle metatarsal proximal ends, showing the deterioration of the articular surfaces and extra bony growth round the edges of that on the right, a severe case of spavin; that on the left is probably also spavin. D: cattle first phalanx showing mass of bony growth round the proximal end and, on the right, the eburnation of the articular surface. Probably the result of injury to the digit. E: pig tibia showing exostosis on lateral surface, probably associated with an inflammatory condition on the adjacent soft tissue.

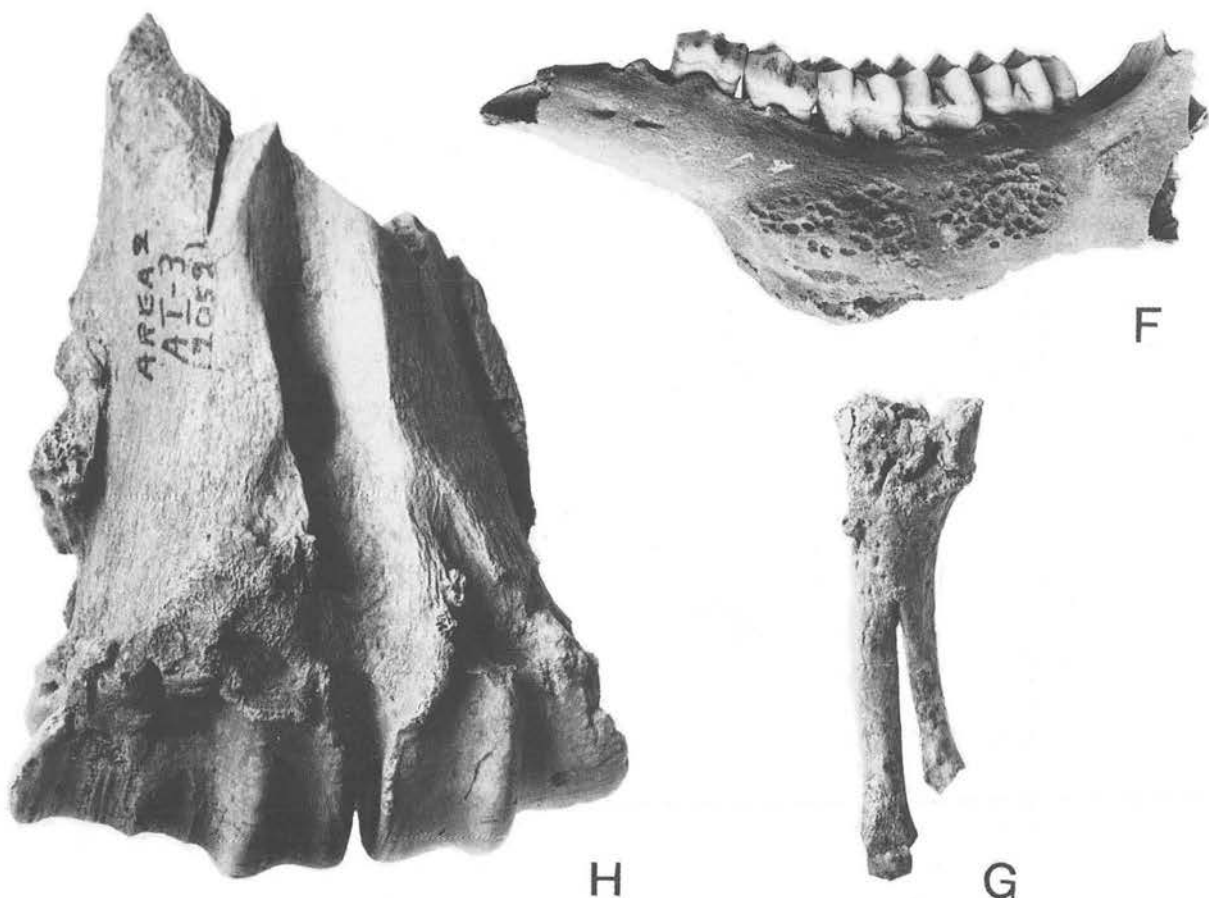


Plate XXXV Animal bones. F: roe deer mandible showing swelling of ramus; lumpy jaw (*Actinomyces osteitis*). G: dog metatarsals III and IV?, showing mass of new bone, probably resulting from severe septic arthritis. H: cattle metatarsal showing growth above condyles and eburnation of medial condyle: osteoarthritis following a severe sprain-type injury.

is possible that the piece from Room 5 of Building 1 is part of a mandible. The size of the pieces together with the lack of identifiable features in pieces this size, show that they are fragments from large whales, either baleen whales or one of the larger toothed whales such as the sperm whale or bottle-nosed whale. The pieces of bone were probably taken from stranded animals rather than providing evidence of whale hunting. Large whales are still occasionally stranded on the East Anglian coast and in earlier times were probably more common than they are now, after the extensive hunting in the last few centuries.

**The bird bones**  
(Table 55)

Table 55 shows the numbers of bones from different species found in the different phases and areas of deposition. This shows that the majority of the bones were from domestic fowl: they comprise between 60% and 74% of the total at any time. Most of the rest are from ducks similar to mallard, and geese similar to greylag, probably wild birds given the location of the site. Other water fowl are represented scantily among the bones; teal, other small ducks, possibly wigeon, barnacle goose and other small geese, swan and coot are all indicative of areas of fresh water; crane is consistent with this, though it also occurs on open ground, as do golden plover. Red shank may be associated with open ground, and fresh water or coastal flats and marshes. Areas of woodland could have provided a home for the woodcock, possibly the doves, and rooks. Both buzzard and raven are still recorded as visitors in Norfolk and nested in the 19th century in small numbers. Bones of both were found at Brancaster (Jones *et al.* 1985, 166–8). The eagle bone is perhaps more likely to be from a white-tailed sea eagle than from a golden eagle: the former have been recorded from other lowland sites in England. Most of the wild species found were probably deliberately taken for food; the raven and raptors would not normally be considered edible, and the latter may have been persecuted

as vermin. Raven bones occur in unusual numbers on many Romano-British sites: Jones *et al.* (1985) have speculated on the reasons for this.

*Comparison with other sites*  
(Table 56)

Table 56 shows the numbers of identified bone fragments from different species found on several Romano-British sites in Norfolk: the figures have been extracted from the various reports for comparison with Caister. None of these sites have produced as much bone as Caister, though Brancaster and Scole yielded large amounts.

Burgh Castle (Grant 1983, 108–12) is the obvious site to compare with Caister, but this counterpart on the south side of the estuary produced very little bone. It was excavated on a smaller scale by Charles Green, and has similar problems to Caister: the incomplete recovery and retention of the bones. Most of the bone fragments are from cattle; sheep and pig are less well represented, and there are a few bones from other domestic species. Cattle metapodials were particularly frequent. As at Caister, there is a surprisingly large number of deer bones, but Burgh Castle is remarkable for the large number of antler fragments: 153, excluding worked pieces, from red deer, though there is only one postcranial bone. The bases of eighteen cast antlers, and eleven still attached to skull fragments, indicate that though cast antlers had been collected, deer had

Phase	Fowl	Duck	Goose	Other
Early:				
Rampart	5	-	3	
Portico	3	-		Raven <i>Corvus corax</i> : 2
Main:				
Refuse	173	51	38	Mute Swan <i>Cygnus olor</i> : 2, Teal <i>Anas crecca</i> : 3, Golden plover <i>Pluvialis apricaria</i> : 1, Redshank <i>Tringa totanus</i> : 2, Woodcock <i>Scolopax rusticola</i> : 5, Gull <i>Larus sp.</i> : 2, Raven <i>Corvus corax</i> : 4
Walls	3	-	-	
Late:				
Spill	208	42	31	Mute Swan <i>Cygnus olor</i> : 1, Teal <i>Anas crecca</i> : 5, small duck: 1, Eagle, golden or white-tailed: 1, Coot <i>Fulica atra</i> : 1, plover: 1, Crow/Rook <i>Corvus corone/frugilegus</i> : 1, Raven <i>Corvus corax</i> : 2
Main Building				
Room 1	10	2	1	Teal <i>Anas crecca</i> : 3, Woodcock <i>Scolopax rusticola</i> : 2, Dove <i>Columba sp.</i> : 2
Room 2	15	5		Small goose: 1, ?Wigeon <i>Anas penelope</i> : 2, Plover: 1
Room 3	8	2	1	Teal <i>Anas crecca</i> : 1
Room 4	3	-	-	
Room 6	8	2	5	Crane <i>Grus grus</i> : 1
Interior	1	-	-	
North-west range	15	-	5	Crow/Rook <i>Corvus corone/frugilegus</i> : 1
Miscellaneous	5	-	1	
Internal tests	2	-	-	
Corn-drier	1	1	-	
Hypocaust	12	3	2	
Defences	6	-	-	Raven <i>Corvus corax</i> : 13
Occupation	13	-	4	Teal <i>Anas crecca</i> : 1
Post-Roman				
Anglo-Saxon	13	4	6	Swan <i>Cygnus sp.</i> : 1, Small goose: 1, Teal <i>Anas crecca</i> : 4, Dove <i>Columba sp.</i> : 2
Plough	140	28	53	Mute Swan <i>Cygnus olor</i> : 4, Barnacle goose <i>Branta leucopsis</i> : 1, Teal <i>Anas crecca</i> : 2, Buzzard <i>Buteo buteo</i> : 1, plover: 1, Woodcock <i>Scolopax rusticola</i> : 4, Crow/Rook <i>Corvus corone/frugilegus</i> : 1, Raven <i>Corvus corax</i> : 7

Table 55 The bird bones; numbers of pieces identified from different species.



Site and phase	Cattle	Sheep	Pig	Horse	Dog	Cat	Red Deer	Roe Deer	Hare	Other
Caister	1007	81	206	7	19	-	52	14	32	Fox: 10
	78%	6%	16%							Badger: 4
	775	165	202	29	33	4	45	31	32	Fox: 22
	68%	14%	18%							Badger: 5
	346	30	20	9	9	1	14	-	1	Fox: 5
	87%	8%	5%							Badger: 7
Burgh Castle	364	93	100	-	8	-	24	4	16	Fox: 2
	65%	17%	18%							Badger: 1
	312	54	64	10	2	3	16	7	-	
	72%	13%	15%							
	62	22	3	2	-	-	-	-	-	
	71%	25%	4%							
Brancaaster	231	47	8	20	4	-	-	-	-	
	81%	16%	3%							
	1152	498	71	80	31	-	2	2	1	
	67%	29%	4%							
	49	47	16	6	2	-	-	-	-	
	44%	42%	14%							
Scole	740	437	114	14	13	2	10	3	-	
	57%	34%	9%	-	+skel.					
	46	22	2	1	-	-	-	-	2	
Brampton	66%	31%	3%							
	132	16	7	8	-	-	-	-	-	
	85%	10%	5%							

Table 56 Numbers of identified bone fragments from different species found on various sites in Norfolk comparable with Caister.

also been killed; the presence of roe deer bones suggests that both may have been killed locally, though some red deer antlers may have been imported, as raw material. Roe deer antler does not seem to have been used to any extent.

At Brancaster, another coastal site (Jones 1985, 129–31 and Jones *et al.* 1985, 132–75) very fragmented bones were found. The results from the two different seasons are slightly conflicting: it is not clear whether there is an increase or decrease in the proportion of cattle to other domestic animals in the later period; apart from the earlier period, the numbers of bones are fairly small. However, in general cattle bones were considerably more numerous than those of any other species; pig bones occurred in very small numbers, horse bones being slightly more numerous. There were a few polled sheep. Wild animals are scarcely represented; very few deer bones compared with the numbers from Caister and Burgh Castle. Six whale vertebrae were found in the earlier Romano-British contexts; these are attributed to a stranding.

Scole (Jones 1977, 209–13) and Brampton (Jones 1977, 88–90) are both inland sites. At Scole most of the bones reported on came from deposits attributed to periods III and IV, bones from cattle being most numerous though sheep were also numerous, but pigs were relatively insignificant. There are a few bones from horse, dog and cat, and very few from deer; both red and roe deer are poorly represented, almost solely by antler fragments. There was apparently no emphasis on the cattle bones on metapodials. Two sheep skulls were from polled animals. Brampton produced a very small sample: most of the bones are from cattle, and pigs are relatively scarce. The absence of dogs is slightly surprising but not remarkable in a sample of this size.

The bone groups from Caister and Burgh Castle are quite similar; they are different from the other groups which in general have very few pig bones, and scarcely any deer bones or bones from other wild animals. Scole, an inland site, has several fragments of antler among the bones, and a smaller proportion of cattle and slightly more sheep than the coastal sites; Brancaster has a generally higher proportion of sheep than Caister or Burgh Castle. These two sites with their emphasis on cattle metapodials, may both have been involved in the import or export of cattle carcasses or hides.

#### *Environmental implications*

Roe deer do not occur in this area now; red deer can be found fairly close, a little further to the south. Foxes remain, but badgers are unknown (Arnold 1978, maps 41, 47, 52, 55).

The species of wild mammals present indicates that there must have been areas of woodland nearby; in the earliest phases, the predominance of cattle and pig and the comparative scarcity of sheep suggests woodland, but towards the end of the Roman occupation and in Saxon times there may well have been larger areas of open grazing on which sheep were supported; a reduction in woodland might also account for the smaller numbers of roe deer bones in the later phases, and perhaps fox and badger, though fox, badger and hare, together with red deer, will live in fairly open country as long as some shelter is available in copses or hedgerows. The presence of red deer bones suggests that unless venison was imported from further afield, the surrounding area was not all intensively used in Saxon times and there probably was suitable shelter

for other animals in the vicinity. The scarcity of roe and hare bones compared with the Roman period may simply reflect different hunting strategies: less hunting and concentration on the largest game.

It seems reasonable to suppose that otters were probably to be found comparatively near, and as both foxes and badgers are represented by numbers of bones, the total absence of otter is of some interest.

The shoreline and topography of the east coast of East Anglia was different during the prehistoric and Roman periods from its modern appearance, and though knowledge of the area is not detailed, enough is known to indicate that the land use and settlement patterns would have been influenced by substantial differences in the terrain.

Caister stood on the southern shore of the large island of Flegg, separated from the mainland by a wide and shallow channel, and there may well have been extensive marsh areas on either side of this channel, possibly suitable for cattle grazing. Evans (1977, 146–56) describes a family living recently on the drained marshes between the lower reaches of the Waveney and the New Cut; they tended cattle which were sent to the marshes for the summer grazing; sheep were reckoned to be too much trouble, and no other livestock was kept. A hay crop was taken off the marshes.

When Green wrote in 1960 (Green and Hutchinson 1960, 113–28) about the archaeological evidence for the great estuary and the island of Flegg, he demonstrated by a series of maps the lack of evidence for settlement or land use on the island prior to early medieval times, Caister being the exception. Though there are a few Neolithic and Bronze Age finds, the sites and monuments record still show that Flegg appears to have been sparsely occupied in Iron Age and Roman times, apart from Caister and its immediate surroundings (Gurney, pers. comm.). Green regarded the settlement as 'isolated', and the evidence still supports this: Caister would have been isolated on an island, its main communication being by sea and river.

Possibly Flegg was regarded from prehistoric times as too difficult of access to be worth attempting anything but small scale or seasonal occupation, so that in Roman times it may have been well wooded, with natural or old regenerated woodland, and extensive marshes on its southern and western shores, providing between them a good supply of game, browsing and foraging for cattle and pigs, and summer grazing for cattle. Later in the Roman period and afterwards perhaps, drainage or the destruction of areas of woodland for pasture on higher ground may have encouraged an increase in sheep keeping.

## **II. Mollusca**

by the late E.A. Ellis  
(Table 57, microfiche)

The site produced large quantities of oyster shells, of which only a sample was kept, but the following is a note by Charles Green:

At first the shells were counted until, at an early stage in the digging, the number passed 10,000, when counting was discontinued. The shell-thickness showed that these creatures had lived both close to the sea and well up an estuary. As oyster-shells are still found in the marine clays which now fill the 'Great Estuary', today represented by the marsh-pastures surrounding Breydon Water, it is fairly clear that, in Roman times, a considerable oyster-dredging industry must have existed here.

### Species found

For full details of species found and numbers, see Table 57 (microfiche).

### Summary

Marine lamellibranchs: mussel, oyster, scallop, cockle, tellin

Marine gastropods: winkle, purple, whelk, common whelk

Land gastropods: *Cochlicopa lubrica*, *Cecilioides acicula*, *Gonyodiscus rotundatus*, *Oxychilus alliarium*, *Zonitoides nitidus*, *Trichia hispida*, *Cepaea nemoralis*, garden snail

### Remarks

Of the marine species, the mussels appear to have been of good edible size; the few oysters retained as a sample are typical of English 'natives'; the scallops do not occur in the vicinity of Great Yarmouth at the present time; the cockles are fine specimens of edible size, much like those of the Wash today (not from very shallow muddy estuary); the single shaped fragment of *Tellina crassa* is interesting and was probably imported (it is not an East Anglian species and is found mainly off our west and south-west coasts). The winkles are marine rather than from brackish water. The purples are from sheltered water and are not so worn as those found typically along the East Coast now. *Neptunea antiqua* occurs in small numbers on the Ross grounds; it has a northern distribution in Britain, but is still found off Sheringham, with common whelks.

All the land snails are common here today; *C. acicula* is a burrowing species and often found with buried bones. The garden snails could have been hibernating specimens amongst masonry. I see no clear evidence that they were used for food; the last cluster suggests a typical hibernating cluster.

### III. Botanical remains

by Peter Murphy  
(Table 58; microfiche)

Several small samples of carbonized cereals, nutshells, wood and other biological remains collected during the 1952 excavations were examined.

Although the gross morphology of the wood samples is well-preserved, the cell structure is badly distorted. The walls of the surviving vessels are abnormally thick, probably as a result of the deposition of insoluble metal compounds. The unusual weight of these wood samples also indicates some metal replacement. The wood has not been identified.

Carbonized fruits and seeds identified in the remaining samples are listed in Table 58. The wheat grains in SF 1421 are from LB 1638 (lower refuse on the floor of Room 1, Building 1) and are extremely variable in shape; there is a range of forms between bread wheat-type and spelt-type grains. Complete identification of these grains is therefore impossible, though two glume bases establish the presence of spelt. The barley grains are from a six-row hulled variety.

Sample SF 2400 is from LB 2548 (upper fill of the hypocaust in Room 5, Building 1) and SF 2181 is from LB 1637 (rubbish over floor of Room 1, Building 1). These consist of clean grain and nutshell fragments with no soil, presumably collected by hand. The two remaining samples included some soil matrix when received, and are thought to give a reasonably reliable indication of the original composition of the deposits in the ground. Both of the samples consist of cleaned prime grain containing a small proportion of large impurities — rare wheat glume bases, caryopses and floret bases of *Avena* sp. (probably all wild oat), and large weed 'seeds' including *Agrostemma githago*, *Vicia/Lathyrus* sp., *Polygonum convolvulus* and *Bromus* sp. In composition they closely resemble burnt granary deposits from the Boudiccan destruction layers at Colchester (Murphy 1984). Carbonization presumably occurred during drying prior to storage or in granary fires.

# Chapter 9. Discussion

## I. Initial occupation

### Pre-fort settlement

The evidence for a pre-existing settlement in the area is extremely sparse, difficult to interpret, and insufficient to indicate a thriving community at the time the fort was constructed. It comes from the small bypass excavation and metal-detector finds to the west, from the outlying trial trenches of Area 5, and from the main excavation in Area 1. In the defended area, apart from a few uncertain prehistoric sherds, probably of late Iron Age date, finds which might indicate earlier settlement are restricted to coins and a few sherds of earlier samian; there are no coarse wares with a date necessarily appreciably earlier than the late 2nd to early 3rd century.

### The extra-mural area

The evidence for occupation to the west consists of coins and a few datable small finds, notably brooches and pottery. Early coins are very sparse and the value for dating of the brooches of the 1st–2nd century is debatable as these are relatively common on later sites, where they may have been heirlooms. The pottery from the By-pass excavation is of mid–late 1st-century date, and there is no continuity between that group and the odd sherd of Antonine samian which could have been connected with the construction of the fort. There is therefore no certain evidence for continuous occupation of that area. Neither is there evidence to show whether the settlement disappeared as a result of socio-economic changes or other factors.

There is even less evidence from Area 5, consisting of a sherd of samian of Flavian–Trajanic date and a Colchester mortarium (No.718) dated *c.* AD 130–170. Though only two finds, in such a small group they may indicate a 2nd-century settlement, perhaps indicating a shift in the settlement nucleus.

To the north of the site, the only evidence for earlier occupation is the find of a melon bead north of Croft Farm (NCM 158.1971). Although common on early military sites, these occur in later contexts and a solitary bead is of very doubtful significance.

## II. The fort

In the past the site has been viewed as a civilian port. If it was such, it is necessary to assume an incoming population with both permission and funds to construct defences of a sort unparalleled in any other civilian town in the late 2nd–3rd century, but which were stylistically virtually identical to those at Brancaster and Reculver. In addition, the site on the Island of Flegg is unsuitable for use as a port, being relatively isolated by creeks and marshes from the mainland, and with waterways navigable by small craft only.

The identification of the defended enclosure as a fort rests largely on its close structural resemblance to Brancaster and Reculver, its similar date, and the probability of military and naval reorganization at the time of its construc-

tion. While the main building has no definitely military characteristics, it was not a primary structure and the nature of the underlying building is unknown. Simple strip-buildings occur on military sites (see Reculver, traces adjacent to the south gate). The timber-framed structures of Building 2 appear to be at least partially influenced by the remains of the original underlying flint-walled building, and the possibility of clear parallels with other later forts seem improbable. Modern housing covers the area of any possible *principia*. The finds of military equipment at Caister pre-date the known occupation of Burgh Castle (where earlier coins cannot be certainly associated with a military presence rather than an earlier civilian settlement: Johnson, S. 1983, 116), and cannot therefore be viewed as having been lost by soldiers from Burgh Castle visiting a neighbouring civilian site.

### Date of construction

Evidence for the date of the construction of the fort can be divided into two groups: first, the physical finds: coins, pottery and finds (i–iii below), limited by little or no excavation of the earliest deposits; and second, interpretative consideration of the typology of the fort, its relationship to other forts in the area, and the historical context (iv–v below).

#### i) Coins

The site has produced a spread of earlier coins, mainly of 2nd-century date, which could be taken to indicate a fairly continuous period of occupation. However, twelve coins attributed to the period up to AD 192, 50% of which belong to the latter half of the 2nd century, do not prove much activity before the late 2nd century, particularly since the evidence of coin hoards indicates that currency of the first half of the 3rd century consisted largely of worn coins from Domitian through to Commodus and Septimius Severus (Reece 1972, 275). The relatively high values recorded for the period AD 192–259 may be more relevant to the date of construction of the fort (see also the abnormally high numbers for AD 192–222 recorded in the casual finds and By-pass coins).

#### ii) Pottery

The pottery presents two problems. The first is insurmountable — the absence of pottery securely stratified in construction deposits. The earliest deposit related to the defences producing datable pottery was the gully F59, filled with early rubbish from the rampart, of early to mid-3rd-century date. This provides a *terminus ante quem* for the deposition of rubbish. Early features below the cobbled portico cannot be related to the construction of the defences, but both the gully F61 and post-trench No.5, F44 contained sherds from Nene Valley Colour-Coated bowls or dishes, indicating a mid- or probably later 3rd-century date. This evidence may relate more to Building 1's replacement of the earlier timber structure than to the date of the initial occupation.

The second problem lies with the dating and interpretation of the samian, and its relevance to the coarser wares. The dating of coarse pottery in the period of the late 2nd to early 3rd century rests largely on the fine wares. Whether the non-appearance of the earliest types of Nene Valley Colour-Coated Wares is significant depends on factors affecting the supply of pottery which are problematical; there is for instance insufficient late 2nd- to early 3rd-century material from Norfolk to be certain that the potters were trading into this area that early. Moreover, North Gaulish beakers are difficult to date since only slight typological changes occurred over a considerable period. It is probable from their stratification that these were imported when the fort was constructed, filling the requirements for fine drinking vessels. Over 40% (based on EVEs) of the pottery from the construction phase dated to the early to mid-3rd century at the New Fresh Wharf site consisted of North Gaulish vessels, which would seem to connect them with the Central Gaulish rather than East Gaulish samian (and with the main concentration of BB2 vessels). One of the main functions of the *Classis Britannica* was the servicing of the army in garrison and on campaign, and its probable close connection with the early coastal forts may explain the number of North Gaulish vessels at Caister, particularly since the navy had a base at Boulogne (North Gaulish vessels from Beaufort Park (Richardson and Tyers 1984, 139), which also produced stamped *Classis Britannica* tiles from Boulogne, further supports the connection). Such a militarily-organized supply would leave little need for trading from the Nene Valley, if that was operational at this period, and the absence of early vessels from that area may therefore be of little or no dating significance.

The mortaria offer little evidence for dating the initial phase. There is, however, an imported mortarium (No. 706) dated to c. AD 80–150, found in 4th-century rubbish in Room 1, although the size and strength of the mortarium could have contributed to its abnormal survival. This is similar to a mortarium from Burgh Castle, possibly Rhenish, dated tentatively to the 3rd century. Its evidence is equivocal. A mortarium probably of 3rd-century date was found in the 'remains of the rampart' at Ellison's Site G (Ellison 1966, 51, fig.9, no.11). Since a primary rampart consisting of material from the digging of the ditches would normally be sterile, this sherd was probably from early rubbish dumping (equivalent to the rampart spill on Green's site), although it may have been deposited during construction as is suggested by Ellison's description. The virtual absence of mortaria from the Colchester potters is notable, particularly in view of the number of BB2 vessels from other kilns in Essex and the east coast distribution of Colchester mortaria, and would be surprising if occupation started appreciably before the end of the 2nd century and the decline of the Colchester industry.

Approximately 30% of the samian from stratified layers (mostly from the refuse on the rampart) was from Central Gaul; South Gaulish samian represented under 1% on weight. A late 2nd-century samian stamp was stated to be from the rampart, but its specific location is unknown, and the possibility that it came from the disturbed area cannot be excluded. Apart from this, the earliest stratified samian is an East Gaulish stamp (No.24) dated late 2nd or early 3rd century from the rampart spill. A very worn sherd of Antonine samian was found just behind the wall during Ellison's excavations (1966, 49).

It is possible that military supply arrangements to Caister may have resulted in some abnormality. While it would seem normal for London to receive imported coarse wares from North Gaul, their occurrence at sites such as Caister, South Shields, Brough-on-Humber and Beaufort Park is less explicable. It is possible that this pottery was transported by the *Classis Britannica*, with samian as part of the cargo, although the quantity of East Gaulish samian from the east coast generally suggests caution. Stockpiling of supplies is a common military trait, as with pits dating to the demolition of the legionary fortress at Wroxeter, containing complete vessels probably of earlier date, seemingly oddments cleared out of the store (Darling 1976, 84, 94, and forthcoming a). The apparently abnormal quantity of samian mortaria at Caister may also indicate a supply specifically tailored to the requirements of the site, due to its position in relation to obtaining pottery locally.

More quantified evidence from a range of sites is needed to examine not only the quantities of samian in relation to coarse wares, but also peculiarities in the forms represented. While 25–30% Central Gaulish samian could indicate a late 2nd-century starting date, if the vessels were drawn from a military store, especially with requirements for certain forms, the edges of a dating argument blur.

Since it is normally accepted that Lezoux stopped exporting c. AD 200, if an early 3rd-century date is envisaged for the construction of the fort, the question of some 200 sherds of Central Gaulish samian has to be addressed. King (1981, 63–6) has argued that the dating of the later Central Gaulish potters should be revised to allow for continued export up to c. AD 230, which would ease interpretation of quantities of late Central Gaulish samian found in 3rd-century groups. The arguments for later importation are, however, countered on detailed evidence based on named potters, moulds and stylistic changes (Bird 1986, 146, n2). A more constructive approach to the problem of diverging dates may be directed to a consideration of samian as a quality ware with a much longer 'life' than coarse wares, and to its supply, marketing and warehousing.

The New Fresh Wharf site in London has focused attention on these problems. Despite joining sherd evidence between layers of the quay infill, there are significant discrete concentrations of Central Gaulish samian and colour-coated wares and East Gaulish samian (Richardson 1986, 97). The possibility that this pottery was dumped from nearby warehouses may be the key to the problem, and the evidence cited for pottery of more widely divergent dates being found in the destruction of a depot (Rhodes 1986, 203) is instructive. Dumping pottery from a warehouse would be a messy operation; while earlier material could end up on top, jumbled loads would produce joining sherds throughout. The infill is dated by the latest pottery, agreeing with the dendrochronological dating. The presence of earlier samian is irrelevant to the date of the deposit, and its real interest lies in the evidence it provides for old stock existing in warehouses in London.

Thus, the evidence does not necessarily suggest that the samian dating is astray there or at Caister. If Caister was 'serviced', at least initially, by the *Classis Britannica* and may have had specific requirements, the presence of 2nd-century samian provides more insight into the warehouses, perhaps in Boulogne, than into the dating of the initial occupation. Much of the East Gaulish samian is dated to the 3rd century.

### iii) Other finds

The only finds which certainly pre-date the late 2nd–early 3rd century are the brooches Nos 1–3 and the cosmetic grinder No.294. The longevity of brooches as personal ornaments makes the evidence of these three, one of which came from Area 4 outside the fort, difficult to assess. Although the type of cosmetic grinder originated in the Iron Age, these are relatively common on Roman sites of much later date (as from Wanborough: Jackson 1985, 176, fig.5, no.2) and, as personal equipment, could see long service. The bone pins include none of the earliest types (Crummy 1979, types 1 and 2), most being of type 3 considered to start c. AD 200. The glass assemblage is mostly late, with very few earlier vessels, although the collection of scrap glass for recycling could inevitably create a late bias.

### iv) The typology of the fort structure

Many authors have already commented upon the early layout and type of defences of Caister, and drawn comparisons with the sites at Reculver and Brancaster, especially the latter. Mann has suggested that fort typology is not proof of date on the logical basis that the assumed original garrisons for Reculver and Brancaster simply perpetuated the architectural conservatism of the army on the northern frontier when moved south (1989, 4). Given that the evidence for dating the fort at Brancaster is equivocal, and that no evidence is published from Reculver, the argument rests largely upon Caister, particularly its proximity to Burgh Castle. The above dating evidence rules out a late 3rd-century construction; if Caister is accepted as a fort and contemporary with Reculver and Brancaster, the architectural style is consistent with an early 3rd century date, Burgh Castle being constructed at a time of architectural innovation.

### v) The relationship to other military sites in the area

While there is a possible earlier fort at Brancaster (Hinchliffe 1985, 179), the stone fort, for which there is regrettably no strong dating evidence, is probably contemporary with Caister. Finds from Brancaster suggest a thriving settlement (aligned with the possible early fort) pre-dating the stone fort, and the coins from both intra- and extra-mural areas are of debatable evidence for the date of the stone fort.

An early 3rd-century date is suggested for the fort at Reculver (Philp 1969), which resembles both Caister and Brancaster. It is unfortunate that the Reculver inscription cannot be dated more closely than 'any time in the 3rd century after the reign of Severus' (Mann 1977). The three sites seem to be part of the same east coast scheme, preceding the later forts of the 'Saxon Shore' which were probably constructed to meet different military needs.

The dating of Burgh Castle to the latter part of the 3rd century rests on the typology of its construction since the excavations in small and confined areas resulted in a strongly 4th-century picture (Johnson, S. 1983, 116). Casual coin finds suggest earlier occupation in the 3rd century, but these could be from a preceding civilian settlement.

### vi) The historical context and probabilities of the military situation

Conservatively the artifactual evidence could indicate that the fort was constructed in the late 2nd to early 3rd century. Can this be refined by our knowledge of that period, given

the paucity of contemporary sources? As early forts which later came under the command of the *comes litoris Saxonici*, their establishment as defences against barbarian sea-borne attacks is questionable. The coastal defences expanded and changed according to needs, which would differ for succeeding generations. There is no evidence from historical sources to suggest coastal raids in the later 2nd to 3rd century, although the number of coin hoards of the period AD 180–230 in East Anglia, Kent and along the south coast has suggested the possibility of disturbances, as has a number of serious fires of similar date in urban centres in Essex and area (Rodwell 1975, 93). While both may indicate troubles, neither can be taken as evidence for barbarian raids. The construction of earthwork defences around widely distributed towns in the late 2nd century seems largely irrelevant to the question of barbarian raids.

If the early coastal forts were not primarily defences against sea-borne raiding, their foundation may be due to a reorganization of both army and navy. The most likely period for this would be the Severan campaigns and the arrangements of Caracalla after the death of Severus. The vitally important role played by the *Classis Britannica* (probably combined with the fleets of Germany, Moesia and Pannonia, *Corpus Inscriptionum Latinarum*, vi, 1643) in the northern campaigns is undoubted, and the apparent running-down of the base at Dover suggests that new arrangements were made for the navy (Philp 1981, 99). A strong naval control at Dover may not have been viewed enthusiastically by the emperor after the revolt of Albinus, and a spread of smaller naval units, brigaded with other troops, on the east coast could have been more useful both in controlling routes and safeguarding shipping. Trade between Britain and the continent, particularly the mouth of the Rhine, must have been vigorous at this period (East Gaulish samian and other pottery suggesting imports which do not normally survive in the archaeological record, such as possible Gallic corn at South Shields: Bidwell and Speak 1989, 284). Brancaster would appear to be well-located for shipment of produce to the northern frontier (as would Brough-on-Humber), perhaps drawing on the Fenland.

While there can be no certainty that the *Cohors I Aquitanorum* at Brancaster and *Cohors I Baetiasorum* at Reculver were the original sole garrisons, they may indicate that coastal defence was also involved. These early forts were probably constructed for a number of related reasons, but the dating evidence suggests that they were part of the arrangements made by Caracalla before his campaigns in Germany, alongside his administrative changes and military reorganization based on the Hadrian's Wall frontier. Such reorganization may have taken some years, and it is unlikely that the construction of the fort can be dated more closely than the early to mid-3rd century.

## III. History of the fort

It is suggested below that occupation continued until the period c. AD 370–390. During the occupancy of nearly 200 years, structural changes dictated by the needs of the garrison or the nature of the occupation occurred. The identification of such changes is limited by the extent, period and nature of the excavations and, more importantly, by the death of the excavator. What follows is undoubtedly a fraction of what Charles Green recognized.

## Defences

Although an elaborate sequence of defences was postulated by Ellison who excavated extensively around the circuit, it has been suggested (p.8) that the original fort had a rampart, stone wall, probably with corner turrets (although no turret was located in the area excavated at the north-east corner, see p.15), and two ditches. The evidence for earlier defences based on the 'palisade trench' is not compelling. Apart from the cleaning of the ditches and probably some recutting, the only evidence for change is the obliteration of the outer ditch by the digging of a much wider and shallower ditch and the added structure adjacent to the north-east corner. There is no evidence for the date of this alteration from either Green's or Ellison's excavations. By analogy with town defences, the wide ditch may have been a 4th-century device.

No bastions are known at Caister, Brancaster or Reculver, or at Lincoln where a wide late ditch also occurs. The interpretation of bastions as being used specifically for artillery has been questioned (Baatz 1983), and the presence of a wide ditch without bastions suggests the two are not inter-related. The masonry addition to the wall close to the north-east corner was interpreted by Ellison as a possible *ascensus*, and its location relative to the corner and similarity to a structure at Brough-on-Humber suggests this has no relevance to the provision of artillery (see p. 15).

## Interior

Rubbish dumping on the rampart appears to have been usual from the start of the occupation. The first recognizable horizon relative to this dumping is the laying of the cobbled portico floor and construction of Wall 4, apparently to retain the rubbish. The pottery from below the cobbling suggests a mid- or more probably a late 3rd-century date. As noted above, this may date an internal rebuilding rather than the initial occupation. Rubbish, however, continued to build up, spilling over the wall into the portico and resting against the south wall of Building 1.

Whether there was any attempt to tidy up the interior by sealing this debris is unclear, although Green's view that the refuse deposit divided into two sections is pertinent. Given the difficulties of the disturbances in the crucial grid squares (above p. 13), even if the tile and clay layers in the portico were the remains of a cleansing operation (as seems to have occurred at Portchester (Cunliffe 1975, 425), their date cannot be accurately established, although the mid-4th century is possible. Post-Roman disturbances could have been responsible for the Constantinian coins in and below these layers, particularly if these coins were disturbed from the hoards in the rampart tail. These tile and clay layers were observed only in a limited area, but the make-up of refuse dumped on a rampart can vary dramatically between relatively close sections (Darling 1984, 92), and only further excavation of the rampart deposit will settle the problem.

## Building 1

Due to lack of excavation below the building and Green's practice of trenching along walls, no evidence to date the construction of Building 1 was found. Although unrelated by section to the defences, the provision of the cobbled portico suggests it was in existence by the later 3rd century. The sequence of post-trenches below Wall 4 and the cobbling indicate an earlier building in the area, the nature of

which is unknown. The short closely-set trenches, and possibly related features under Room 1 (including the unusual beams built into the lower parts of Walls 1 and 3), are impossible to interpret in the absence of clearance to natural to the north. Structurally these are reminiscent of the sub-structure of a granary. The later Wall 4, acting as a restraint to both refuse and rain-water spilling from the rampart tail, is irrelevant to any early building.

Whatever the early structure was, it was replaced by Building 1, its flint sill walls delimiting a simple strip-building. The western extent of the building is uncertain; the south Wall 3 appears to continue into Room 7, and there is slight evidence to suggest that the north Wall 2 also originally continued. The 'arched port' into Room 7 appears to be an original drain, and the limited and disturbed area excavated preclude certainty that this was originally a room in the building rather than, as Green suggests, a lean-to woodshed. Walls 11 and 16 may have been at some time a continuous wall, in which case the western range was perhaps an original part of the building or an early addition.

Tile fragments including flue tiles occur as part of the masonry indicating the demolition of an earlier heated structure. Wall 4 and the cobbling of the so-called portico appear to have been short-lived additions. The building was subsequently extended by the provision of a north corridor which would appear to have incorporated a west range, if this did not already exist. No dating evidence for the extension was excavated.

Building 1 was badly affected by the 1935 pipe-trench, its bisection of Rooms 1 and 2, coupled with post-Roman disturbances, making it impossible to relate the floor levels and in Room 1 particularly divorcing the probable latrine from the supposed 'work-bench' to the south (with which finds of a chisel, bone point and possible awl would be consistent). Some rooms could have had dual purposes, as Room 6 with a possible partition dividing the apparently original drain from the later stoking of the hypocaust. The long life of the building clearly encompassed changes of use, the painted wallplaster and the hypocaust room being at odds with signs of apparent 'industrial' use. Evidence for wallplaster occurred in Rooms 1-5, in the latter extending into the hypocaust basement which suggests this was a later insertion. It can only be surmised how these changes knitted into the extension of the building and its possible incorporation into a west range.

Despite post-Roman disturbance, certain access routes between rooms can be identified. Rooms 1 and 2, 4 and 5 were interconnected; Room 3 appears to have been isolated unless the disturbance of Wall 8 adjacent to Grave 1 destroyed a doorway. Room 2 is the only room with possible access onto the 'portico' area, and the evidence is tenuous. Three rooms opened to the north, either onto an original courtyard area or onto the 'corridor' Room 9: the probable doorway from Room 5 had been blocked in or after the Constantinian period, the doorway from Room 6 had been put out of use by the adjacent 'pedestal' in the north-west corner, leaving the opening in Room 3 as the only room where access onto the 'corridor' in the late period can be surmised. Not only was this entrance considered by Green to have been a later insertion, but the width suggests a non-domestic function, possibly related to the addition of the wide 'corridor'.

The nature of the flooring was difficult to identify due to disturbances, its probably ephemeral nature, the excava-

tion method and imprecise terminology. Rooms 1 to 3 seem to have similar remains of scrappy mortar floors, but Room 4 had fragments of a brick-mortar floor, probably linking it with Room 5 with its *opus signinum* upper floor. How these related to 'crushed brick' flooring in the 'corridor' Room 9 is unclear, but all possibly belonged to the later use of the building; the evidence is insufficient to link Rooms 4 and 5 with the west range and its similar flooring sequence. Room 6 is complicated by the duality of its apparent functions, not necessarily contemporary, having an apparently original drain (which remained open) through Wall 11, and a probably inserted hypocaust flue through Wall 10. There is evidence to suggest that Room 7 may have been continuous with Room 8 during the use of Tank 2 with a mortar flooring; disturbance precludes certainty that the rooms were connected later with the 'crushed brick'/*opus signinum* flooring.

The tile-built hearth F22 in Room 2 appears to have been relatively late in the occupation. The concentration of presumably successive hearths in this room is interesting; Room 3 had the remains of a rough hearth probably of a similar nature to those in Room 2. There is no evidence to suggest industrial usage. The occurrence of quantities of furnace slag did not indicate metalworking in the building, but probably served merely as good foundation material for hearths. An interesting feature indicating a change of use of Room 2 was the apparent sealing of hearths F22 and 23, although slag adjacent to F23 may have been another hearth, and its proximity to the doorway to Room 1 would suggest the access was no longer in use; whether this relates to the apparent fire-damage of Room 1 is impossible to know, but clearly Room 1 may have been ruinous at that stage.

Evidence for fire damage was noted in Rooms 1, and Rooms 3 and 4, the latter being in the area of Wall 8; both fires were extensive enough to bring down the roof. Constantinian coin hoards were found in Rooms 1, 3 and 5, their dating being largely irrelevant to the occupation of the building and its ultimate decay or destruction, but Hoard 2 in Room 1 was found as if it had been hidden either in, or under, a sack of corn which was burnt, presumably at the same time as the partition Wall 5. The stratification of this particular hoard could suggest that occupation of the building ceased in the Constantinian period. This would, however, disregard the nature of all the hoards which, on the basis of size of copies, divide into two groups: Hoard 2 (Room 1) with Hoards 3, 10–12 (probably all one or two scattered hoards in Room 5), separate from Hoards 4–7 (Hoards 4 and 5, Room 3, having probably been hidden in the roof; and 6 and 7 buried in the refuse adjacent to Room 3). This indicates separate areas and possibly dates of hoard concealment, complicated not only by other coins possibly, but not certainly, from the hoards (Rooms 3, 5 and in the refuse), but also by the 1935 hoard which has not been assessed for the size of its copies.

Until further work is done on these hoards, their stray coins and hopefully also the 'hoards' from Burgh Castle (Johnson, S. 1983, 116), the evidence is incomplete. Hoard 2 in Room 1 is crucial. That the corn concealing it was burnt in the same fire that destroyed Wall 5 and probably the roof of Room 1, is probable, although the fact that much of the pottery was burnt post-breakage, and that there was evidence for a fire having been lit on top of the building debris should not be overlooked. Non-retrieval of this or any of the hoards is irrelevant to the continued use of the building

— the other unretrieved hoards could have fallen into their excavated position at any time after their closing date. What differentiates this hoard is its place of concealment, specifically the sack of corn, unlikely to remain immobile for any length of time. A spread of charred corn would not necessarily impede use of the room, but the overlying destruction of Wall 5 would affect not only Room 1 but also Room 2. Continued use of that end of the building depends upon the structural extent of the destruction; the large deposits of wallplaster and burnt daub (see p.104, p.9) are also relevant. The exceptional deposit of animal bones in Room 2 may have been the result of its delapidation, the ruin serving as a handy rubbish dump. The hoard provides a *terminus post quem* for the fire which rendered this end of the building a ruin.

On the basis of the size of the copies, it aligns with the hoard/s in Room 5. These hoards may pre-date the hoards in and adjacent to Room 3, those inside having probably been concealed in the roof, and those in the refuse being irrelevant to the occupation of the building. If all the hoards came from a pool of coinage closed for some reason in 340, they could have been deposited at any time up to 354, when these coins were demonetized. The discussion of the hoards (above p.65), however, indicates a further option, that if the pool of coinage had been closed for some years, there is no reason why it should not have continued in use locally. Any interpretation of these hoards is both tenuous and premature, since the numismatic evidence needs careful examination in conjunction with other sites in the area and forts of the Saxon Shore, particularly Burgh Castle and Reculver.

Hoard 2 suggests that the building was at least partially ruinous in the later 4th century. This must be viewed with the backfilling and re-flooring of the hypocaust room with similar dating evidence (the disturbance known and suspected preclude certainty despite the late pottery and glass found in the north channel, and the Constantinian coins) suggesting continuing use. Finds from within the building include the glazed mortarium, probably of Danubian origin, found in Room 1 mixed with the disturbance of the fallen structural timbers, *i.e.*, from a similar stratigraphic horizon to Hoard 2. The concentration of hoards in the largest room (3) is notable suggesting special occupation; the room also contained, despite disturbances, evidence for several complete vessels. Notable finds from the building included a developed crossbow brooch, No.9, penannular brooches Nos 14, 16 and, from the plough, 17, the necklace No.153, pewter dishes Nos 352 and 353, late metalwork Nos 743, 746, and the mourning cupid plaque No.795.

#### *West range*

The main problem with the west range is that of structurally integrating it with the rest of Building 1, particularly roofing it. It is possible that Walls 11 and 16 originally formed an east wall to an adjoining building with a different roof line, the north wall being represented by the fragmentary Wall 17. This is, however, complicated by slight evidence that the main north Wall 2 may have continued across Room 7. In which case, assuming Building 1 to have been originally alone, subsequent additions could have been relatively complex, involving perhaps the demolition of Wall 2 across Room 7, and the extension of Wall 11 northwards (to form Wall 16), thereby forming a north-to-south aligned structure. Subsequent alterations may have included the addition of the north corridor (Walls 16 and



14 were butt-jointed), involving the removal of the section of Walls 16/11 at the west end. This is, however, only one possibility, and it is clear that in the limited and disturbed area excavated, there is insufficient evidence to interpret structural changes. The plaster on the north face of Wall 17 was noted as being 'rough', and it is assumed that that on the east face of Wall 16 was similar, both forming exterior faces. Fragments of a mortar floor were seen in the confined area between Wall 16 and the pipe-trench, but since there is no evidence further east for this area being floored, it is assumed that this is outside the buildings.

Without a structural division between the so-called Rooms 7 and 8, these must have represented at that time a single room. Tank 2, F36, at the west end of the corridor Room 9 had more than one phase, but due to post-Roman disturbance, its relationship to the use of Rooms 7 and 8 with *opus signinum* flooring is unknown. Fragments of a lower floor of mortar to both north and south of the tank may have been contemporary with its use. The *opus signinum* flooring (more than one phase) and quarter-round mouldings evident in this area differentiate it from the rest of the building, although the quarter-round moulding curving round the junction of Walls 16 and 14 indicates continuous flooring into the corridor Room 9. There are references to 'crushed brick' flooring at the west end of the corridor, and it is unclear whether this differs from the *opus signinum* seen mainly in Room 8. The location of a doorway through Wall 16 immediately adjacent to the north corridor Wall 14 is curious. The combination of flooring, mouldings and wall-side gutter indicate a specialist function.

The relationship of Tank 1, F16, to the north of the building to either Building 1 or 2 is uncertain although it was probably not contemporary with Building 2; the course of the drain from the south side was not identified.

#### North corridor

There is no evidence to date the addition of the corridor and open-fronted 'rooms' to the north, and their nature and purpose is difficult to determine. The walls concerned, 12–15, are all relatively slight, and it is questionable whether they were part of a roofed structure. The function of Room 10, apparently open-fronted, is unknown, although Green referred to it as a 'cart-shed'. This 'corridor' is exceptionally wide for a normal access, as is the wide doorway into Room 3 (the doorways into Rooms 5 and 6 may not have been functional), and the impression given is that it channels towards the west range, assuming Tank 2 was non-operational in this phase. While other interpretations are feasible, this could be interpreted as an entrance to a slaughterhouse, channelling the cattle.

No parallels have been found for this building complex and, if related to slaughtering and butchery, it is questionable whether a normal fort would have had such a building or, if such existed, that it would be inside the fort. An extra-mural site would seem more sensible, while butchery for a normal garrison would probably occur in or adjacent to the kitchen. Identification of kitchens is rare, as at Stockstadt (Johnson, A. 1983, 197, fig. 148), where the building was a bakehouse, and evidence for butchery usually comes from the bone assemblages. If the Caister fort was used to prepare and ship supplies in the late period, the scale of the enterprise could have warranted a specialist building and, if intra-mural, adjacent to a gate.

#### Summary

The original function of the building was probably domestic in view of the painted wallplaster and inserted hypocaust, although whether as accommodation or offices is unknown. Its western extent is uncertain. The drains in Room 6 with the carefully constructed 'arched port' into Room 7 are enigmatic, and probably belong to the building as originally conceived, but the pottery from the fill (F34) suggest they remained open until the 4th century, although not necessarily the last phase. At some stage a west range appears to have been created by modifications to existing walls and additional building, and the whole linked together by a north corridor of exceptional width which may not have been roofed, the east end turning to form a peculiar free-standing passageway. The west range differs in having *opus signinum* flooring associated with quarter-round mouldings and a wall-side gutter. There is no certain evidence for the date of these changes, although a Constantinian date may be applicable.

The function of the building complex in the late phase must be connected with the flooring, wall-side mouldings and gutters, and the evidence of the animal bones, particularly from Room 2 (also from the refuse on the rampart), may suggest butchery. Late occupation could have been both domestic and non-domestic in view of the hearths in Room 2 (although these may belong to domestic occupation before a radical change of use), and the complete pottery vessels in Room 3 and, less certainly, in Room 1.

There is some evidence for the destruction of part of the building by fire, notably in Room 1, and between Rooms 3 and 4. How widespread this was is unknown, but it indicates that at least part of the building was destroyed by fire, and was partially uninhabitable. Whether this was accidental damage (in view of the number of hearths) is unknown.

#### Building 2

This is even more enigmatic; plough damage was extensive, the flint-walled building surviving only as ephemeral fragments except for underfloor features. The excavated remains, incorporating differing types of construction, probably represent a palimpsest of an earlier masonry building (represented by Walls 18–20, the 'apse' Wall 22 and the hypocaust F9 and 10), partially ruined, onto which have been tacked small timber-framed rooms with *opus signinum* floors. Identification of the masonry building is impossible from what remains. The unusual Wall 20, with its internal flue and traces of flooring above it, would appear to have formed part of the hypocaust. The heated room appears either to have had a non-masonry south wall, or the wall was totally removed; traces indicative of a timber partition were found, but it is uncertain whether this was part of the original building or a later modification. Remains of coal were found extensively in the area.

The 'apse' Wall 22 was insubstantial with no foundations. The *opus signinum* flooring and wallplaster indicate that it was probably part of the flint-walled original building in the area, unrelated to the later structures.

The southern extent of the original masonry building may be indicated by the end of the flint Wall 18 which, compared with the flint walls of Building 1, is relatively slender. The area to the west appears to have been extra-mural. The post-holes set into the wall, F8 and 13, were probably part of the re-use of the wall to tie-in the timber building. If a sherd of shell-tempered pottery from F8 is

taken to date the insertion of the post, this suggests a mid-4th-century date for the re-use of the wall. The possible Wall 19 is too fragmentary for certainty of its identification.

The flint-walled building, whatever its nature and extent, seems to have been largely demolished, probably in the 4th century. No definitely 4th-century pottery came from the hypocaust, the fill of which is taken to indicate the abandonment. The concentration of matt-glossy window glass in this area may have come from the demolished building. There are references to underlying demolished walls in the area of the 'cart-shed' Room 10. Whether the contents of the 'plaster pit', F73 (finds Nos 515–533) came from this building is unknown but possible since the deposit pre-dates a late 4th-century rubbish pit, F72; the elaborate painted wallplaster would be consistent with a building furnished with hypocaust heating.

Wall 18, however, seems to have been re-used as a basis for the timber-walled rooms to the east, the posts in F8 and 13 probably being inserted to tie the structure together. Whether Wall 20 was re-used is uncertain, although the evidence suggests it formed part of the sub-structure of the late timber structure. A timber wall, apparently plastered on both sides, continues the line of Wall 18 southwards; it is not known how this was structurally tied in. There are very fragmentary traces of an eastwards return, Wall 27, terminated by a north return, Wall 28, which is aimed directly at a surviving fragment of *opus signinum* flooring floating without structural boundaries. To the north lie more recognizable structural rectangles of *opus signinum* flooring with quarter-round mouldings and traces of timber walls, Rooms NW 1 and 2.

All that can be deduced from the surviving remains is that a rectangular structure could have been based on the flint Wall 18 to the west, and the cavity Wall 20 to the east, assuming a timber extension southwards. The north limit is unknown but the southern limit may have been Wall 27 on the basis that Wall 28 was perhaps an internal partition and, in view of the damage to the west wall of Tank 1, a north return of Wall 27 further east, destroyed by post-Roman disturbances, originally joined Wall 23 and thence to Wall 20. If so, the tank was probably, but not certainly, non-functional when the timber building was constructed.

The function of this apparently flimsy timber structure is unknown. The *opus signinum* floors with quarter-round mouldings and the small size of the rooms should be relevant. The remains immediately underlay the plough-soil, and no layers or finds definitely belonging to the occupation of these rooms could be isolated. It can only be surmised that these belong to late occupation (mainly on the evidence of a single sherd in F8), and it is unknown whether this is contemporary with, or subsequent to, late occupation in Building 1.

### The 'corn-drier', F3

While this structure resembles a corn-drier, this was not Green's identification of it, and there is no evidence to indicate burning or signs of heat, even at the north end where a stoking pit would be expected. The adjacent fragment of *opus signinum* flooring is puzzling. Whatever its function, it was backfilled in the 4th century.

The sand-flecked soil surrounding the structure produced much pottery, the fresh nature of the sherds suggesting a primary rubbish dump. Although this contained some earlier sherds, the bulk of the pottery was of

4th-century date, and included Oxfordshire Red Colour-Coated and shell-tempered ware indicating late rubbish dumping. The extent of this dump is unknown, but the freshness of the late Roman sherds in 'Hut 2', F72 to the south, suggests a fairly extensive spread.

### The road

The remains of the road were heavily disturbed by post-Roman features cutting it, and it is unlikely that the upper surface was a road surface, particularly as the bones from it showed no evidence of trampling etc. (see Appendix 4). A knife of Saxon type (No.617) and an arrowhead (No. 765) came from this upper surface. The only notable feature of the road was the central gutter (as at Portchester, although only from AD 345: Cunliffe 1975, 425). It was not clearly established that the central gutter existed with the earliest road surface, and the presence of gully F58 may suggest that it originally had side gutters.

## IV. The character of the occupation

### Military

Most of the finds of military equipment are easily paralleled on military sites of the later 2nd and 3rd centuries, and include a fragment from an auxiliary cavalry helmet, various fittings and bone fragments from swords. The weaponry, including the shield boss, is of a similar date range, the latest type being perhaps the quadruple-barbed arrowheads. Finds indicating a military burial, including a sword, were found possibly south of the fort (Appendix 5). The only finds suggesting the presence of military personnel later are the belt fittings and late crossbow brooches, the evidence of which is equivocal since both were also worn, probably as insignia of office, by civilian officials. Horseshoes and harness fittings do not necessarily indicate the presence of cavalry; the paucity of horse bones from the animal bone assemblage is to be expected as these would be unlikely to be mixed with food bones. There is, therefore, little evidence for military occupation in the later Roman period.

It is clear that women, and presumably children, lived inside the fort. Hairpins, the commonest identifiable small find, are the main evidence with over 53% from the refuse deposits. While many probably came from the 4th-century occupation, they provide evidence for women inside the fort certainly in the late 3rd or early 4th century if not earlier. Close dating is impossible, but they occur mainly in the later refuse found in E squares, those from F squares coming from the upper unsealed layers with 4th-century pottery; all the pins found in the lower rampart spill came from the grid squares EIX–X, known to have been disturbed in the post-Roman period. The earliest stratified pin was No.32 (unillustrated) from the gully F59 marking the original rampart, probably of early to mid-3rd-century date. Occasional fragments of infant bones were found in unsealed and disturbed contexts; no infant burials were recorded. Other personal items used by women are beads, bracelets and rings, and while not all of these are necessarily exclusively feminine articles, most were found in late contexts, as were needles and spindle-whorls. There were, therefore, women inside the fort, probably from the early to mid-3rd century, perhaps increasing proportionately later. Infant burials were found at Portchester from c. AD 300 onwards, increasing in the period AD 325–345, and while the short initial occupation at Portchester offers little

evidence for the late 3rd century, this would be consistent with the Caister evidence. Infant burials at Malton could be of similar date.

### Industry

No metalworking hearths or furnaces were found, although quantities of smithing slag occurred as secondary rubbish, re-used in some instances to form the bases of hearths. Unusual finds of worked shale may suggest some shale working on the site, the raw materials perhaps having arrived via the coastal trade with BB1 pottery and finished shale bracelets and objects from Dorset. However, this appears to indicate trading contacts rather than local industry. A number of finds indicate bone or antler working, but these again would appear to be ancillary occupations, likely to occur on any site, the raw materials being readily to hand. The industry directly related to bones appears to be butchery.

### External contacts

Contacts with other parts of the province and empire are largely documented by pottery, much of which would have arrived as either partial cargoes or personal possessions. During the early occupation pottery came from the southern areas of East Anglia, probably Essex, and the continent, the latter possibly coming in with supply ships of the *Classis Britannica*, including samian ware from both Central and East Gaul, colour-coated wares from Trier, mortaria from the Rhineland and coarse pottery from North Gaul. The quantity of BB1 pottery was small initially, and it is probable that most of it arrived in the 4th century with the shale bracelets. North Gaulish wares also occur at more northern sites in eastern England, including South Shields, on the Tyne (Richardson and Tyers 1984, fig. 3), from whence it is possible that coal was shipped to Caister (p. 133). The Nene Valley was a major supplier of mortaria as well as fine wares, supplemented by the Oxfordshire and Much Hadham kilns. Only the occasional vessel may have come from kilns in Suffolk, but the quantities of grey mortaria suggest a regular trade with unlocated kilns probably in northern Norfolk. Jars from potteries located in the Nar Valley increased during the later occupation, and were accompanied by shell-tempered jars of the South Midlands tradition, one of which contained Hoard No.1.

Pottery from abroad in the later occupation consisted of *céramique à l'éponge* (about eleven vessels), normally confined in Britain to the southern counties (Fulford 1977; 1987), Mayen Ware (*Eifelkeramik*: Fulford and Bird 1975), found more in the area of the Thames estuary, perhaps coming in with the Mayen querns, and Argonne Ware. There is no certain evidence of continued imports of North Gaulish pottery.

As usual, amphora-borne products were dominated by the olive oil Dressel 20s from southern Spain and various probable wine amphorae of the Pelicet 47 or Gauloise types from Gaul. Surprisingly few amphorae from North Africa occurred, and most of the lesser types were from the East Mediterranean, including at least two Gaza wine jars from Egypt and Kapitän II and Biv types probably from the Aegean. At least three of the rare Chalk 6 amphorae of unknown origin were also found.

The evidence for foreigners at Caister consists most obviously of the Constantinian coin hoard No.1 (p.62) which appears to have been put together somewhere in the Danubian region and hidden at Caister before its content

of eastern-minted coins was changed by the local currency. There is also the glazed mortarium found in the debris of Room 1, which probably derived from a similar area, and may be of similar date. The steatite vessel fragments found in the refuse dump on the rampart are more difficult to date, but would have come from the Upper Rhine/Danube area. All of these seem likely to have arrived as personal possessions, and three separate items (apart from others which may not be readily identified) may suggest military personnel transferred from the area rather than merchants, for whom Caister may have had limited attractions.

### Religion

Given that the provenance of the jackal staff-head (No.794) attributed to the site may signify more for 19th-century collectors' preferences for named sites, it would not be inconsistent in view of the Bacchus head (No.793) which seems to be more authentically linked to the site. This has been identified as Anubis, related to the cult of Isis (Henig 1984, 141, although noted as a wolf). This cannot be closely dated and is merely evidence for a worshipper of the eastern cult. The god most frequently worshipped in Roman Britain, Mercury, is represented not only by a figurine (No.792), but also by an inscribed plaque dedicated by Aurelius Atticianus, the only named inhabitant of Caister (see Chapter 2.V above).

### Food

The evidence of the animal bones is particularly interesting. The main conclusion of the study of the animal bones is that slaughtering and butchery of cattle were taking place on the site with the prime joints going elsewhere (and/or hide processing, perhaps part of the same industry). The evidence for this comes from the refuse on the rear of the rampart and deposits in Building 1, suggesting that this activity dated to the later occupation. Without full excavation of a similar site, there is no way of knowing whether the meat consumption indicated by the slaughtering waste was reasonable for the community, or represented their primary occupation. One partial corner of a fort cannot provide sufficient evidence, but if, as suggested, Building 1 and particularly the west range were used for slaughtering and butchery, and taking into account the number of cattle feet, this seems a major enterprise, particularly if the garrison was very small.

Pig bones maintain a similar proportion of the food bones from all phases as a secondary meat source, and sheep bones are relatively few and from immature animals in contrast to the bones found in the post-Roman working hollow 'Hut 1', where most were from mature sheep.

The only evidence for corn grinding were fragmentary pieces of quern, exclusively of Mayen lava stone. The distribution based on weight was plotted to examine the possible re-use of fragments, and apart from an abnormal quantity in Room 3 due to a single large fragment, most were found to be scattered outside Building 1. No evidence for ovens was found either in the buildings or at the rear of the rampart, but a number of fragments of fire-bar occurred, No.864 coming from an early stratified deposit. None of these seem to be consistent with pottery production (p. 134), and they are more likely to have come from cooking ovens.

### Hunting and fishing

There was an unusually large number of wild animals, which also occurs at Burgh Castle. Some of these may be from the post-Roman occupation, in view of the higher percentage from the unsealed 'spill' associated with an abnormal increase in the proportion of sheep bones. The deer bones, however, maintain a consistent proportion of the food bones from all phases. Arrowheads were as likely to have been used for hunting as for military chases. While there are cast antlers (less proportionately than at Burgh Castle), the bones of red deer include all parts of the animal, while those of roe deer are mostly the waste, jaws and feet.

To the evidence for hunting may be added the quantities of oyster shells found throughout the excavations. These have not been quantified because, despite initial quantification of deposits, the practice was discontinued, a fact which may be significant. Despite the coastal location, fish bones are rare, probably due to poor retrieval of such bones, and the fish-hook and netting needles are negligible evidence for a food source which was probably extensively exploited. The stone ball No.1053 may have been a small boat anchor.

### Miscellaneous

Most of the other finds, gaming pieces, domestic items, tools, etc., would be commonplace on any Roman site. A number of *styli* were found, the finest iron example (No.422) coming from an exploration of the footings of Wall 2 together with sherds of 4th-century pottery. Several were found in the extra-mural Area 4 (Nos 425–429) which may be fortuitous but could also indicate an area where records relating to cargoes were prepared. Some of the finds from the site are of high quality, and the number of locks seems to reflect this, including padlocks and ring-keys to personal strong-boxes or caskets.

## V. Later Roman occupation

### Introduction

It remains to consider what information the evidence from Caister sheds on the character and duration of its continued occupation, and its relationship to the neighbouring fort at Burgh Castle and other forts on the east coast.

Of the two sites related chronologically to Caister, only minor trenches have been excavated inside the Brancaster fort, and the excavations at Reculver are unpublished; much of the evidence from the relatively small excavations at Burgh Castle was from an area close to the wall which may not be representative of the occupation. There is no evidence from the other East Anglian coastal forts of Walton Castle and Bradwell. Consideration of the late occupation at Caister is thus handicapped.

### Later third century

The appointment of Carausius is taken to indicate worsening conditions of raiding and piracy, the context for the construction of Burgh Castle, in the latter part of the 3rd century (Johnson, S. 1983, 116). The necessity for two comparatively close forts to meet the threat of Saxon raids arises from the Great Estuary (Fig. 168), a haven of secluded inlets for raiders, difficult for troops to police, Burgh providing better harbour facilities, while Caister retained its superior seaward view. The *Notitia* gives the garrison at *Gariannonum* as *Equites Stablesiani*, and cavalry finds of earlier date occur at Caister, cavalry being

perhaps suited to the terrain, as at Brancaster (there is also a fragment of a cavalry helmet from Felixstowe in Norwich Castle Museum). Both sites must have had naval personnel; whether these engaged in naval battles in the North Sea is debatable (Bartholomew 1979, 369), and their role may have been confined to scouting and shipping protection, leaving the cavalry to intercept raiders on land.

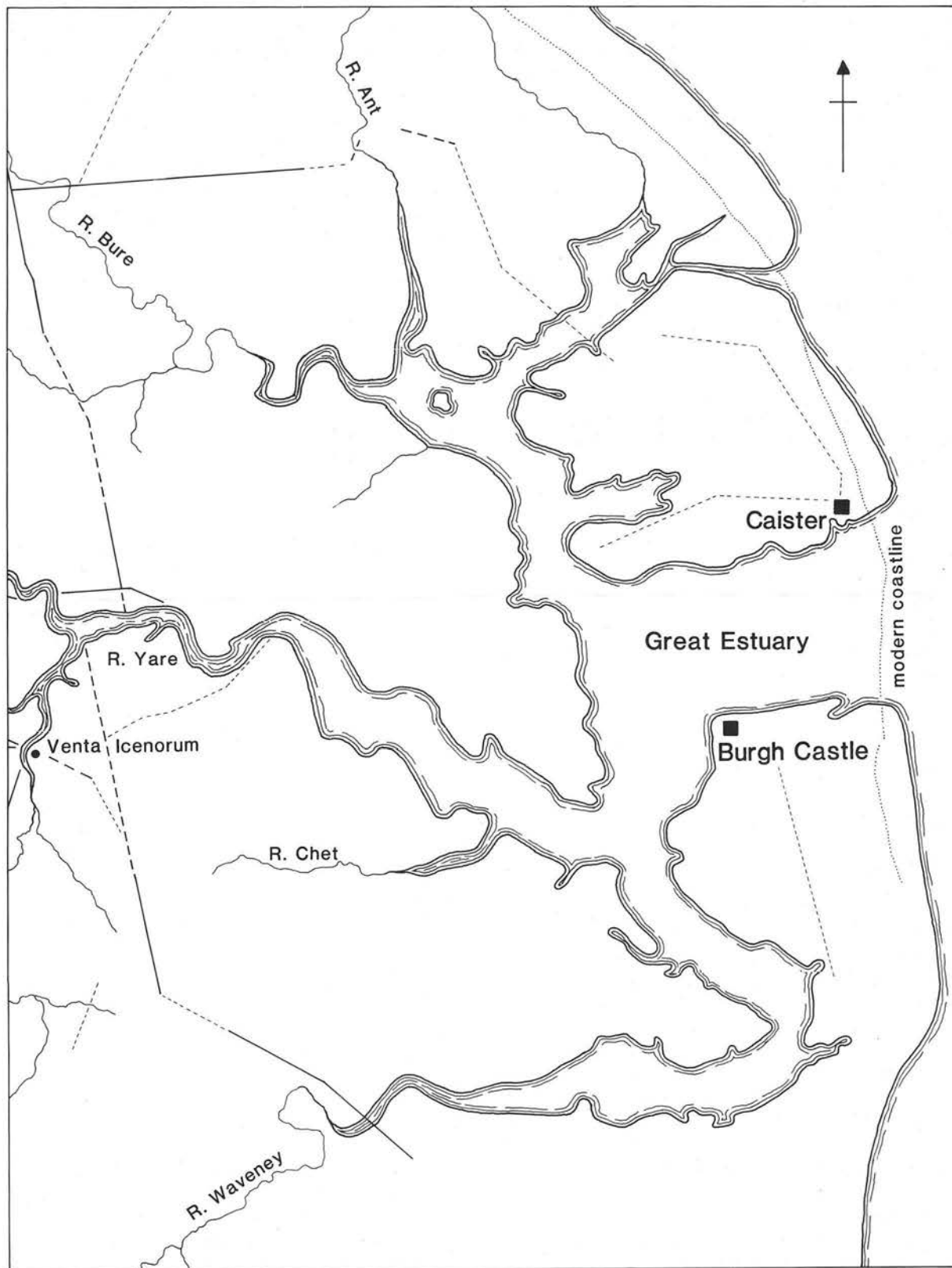
As noted above, the replacement of an earlier building by Building 1 could well date to the later 3rd century, and may reflect changes made when Burgh Castle was constructed. The chronology of Building 2 is unknown. The sharp rise in coin-loss c. AD 259–275, and high losses c. AD 275–317 are taken to indicate active occupation at this period. A large hoard (at least 847 coins) closing with a coin of Postumus was found in 1946 south of the defended area, and two small hoards, Nos 8 and 9, probably deposited c. AD 300–310 were found in the area of the northern rampart.

### Fourth century

Study of the late Roman period has been bedevilled by the Saxons and the '*barbarica conspiratio*'. Doubt has been cast on the extent of the threat to Britain of the former and the existence of the latter (Bartholomew 1984). The improbable 'conspiracy' has been elucidated as indicating a coincidence of barbarian attacks rather than a true conspiracy of geographically and linguistically widely-separated tribes (Thompson 1990, 7). This still leaves the problem of the involvement of the Saxons for which the only literary evidence comes from a corrupt text (*Ammianus Marcellinus* xxvi.4.5). Our understanding of late military sites in Britain is hampered by lack of knowledge of the late army, its nature, size and role, and by the fact that the ill-understood '*barbarica conspiratio*' has coloured views of all aspects of late 4th-century Britain. The dichotomy between the turmoil and ruin recounted in the literary record and the archaeological evidence suggesting a 'golden age' has been emphasized (Thompson 1990, 1), although how much is due to chronological and geographical generalization is unclear.

There is literary evidence for an urgent visit by Constantine over the winter of AD 343, the cause of which is unknown, although a rebellion has been suggested (Salway 1981, 349–50; Thompson 1990, 2–3). This is followed by the usurpation of Magnentius and its suppression and, conceivably, by further troubles c. AD 354–358 on the basis of the coins of Carausius II — Ammianus's silence, as Thompson points out, does not disprove the existence of the second Carausius (Thompson 1990, 4–5). In AD 360 specific reference is made to a dangerous situation caused by the northern tribes, sufficiently alarming to cause Julian to consider a personal expedition to Britain. Next comes the troubles, whatever they were, in AD 367 and the putative rebellion of Valentinus. Whether Ammianus' silence after 368–369 indicates peaceful conditions in Britain or his selection of material for inclusion in his history is uncertain, but the next recorded event is the usurpation of Magnus Maximus in AD 383. It is against this confused background that the evidence for the last years of Caister must be set.

The evidence of the *Notitia Dignitatum* is problematical, particularly for the Saxon Shore. Johnson sees it as supporting a frontier based upon the coast attacked by Saxons (although with reservations, Johnson 1976a, 10, 146–7), while Bartholomew questions its identification as



Roads

- Accepted
- - - Probable
- · · Hypothetical

0 10 km

Figure 168 The Great Estuary.

a frontier at all (1979, 370), and Hind (1980) accepts it as a frontier and argues for the 'attacked by' derivation, on the basis of the common use of the ethnic adjective in geographical contexts. He also raises the possibility that *Litus Saxonicum* could equally mean the shore of the sea commonly used by Saxons.

These are fundamental problems. Johnson takes the position that any fort not occupied would be a weak link in the chain and, if Caister was part of a system, its continued occupation relates to the life of the frontier as a whole. Another possible interpretation, however, premised on the development of a sequence of forts according to changing circumstances, sees no reason why its composition should not have changed radically for similar reasons, and that forts should be viewed geographically and not as part of a chain.

Caister and Burgh Castle both have high coin-losses in the Constantinian period, with a notable number of hoards. The common survival of quantities of Constantinian coins, many of which are copies, suggests they became of little or no value, particularly after demonetization by an edict of AD 348 (*Codex Theodosianus*, 9.23), but a survey of some of the latest hoards in Britain (AD 388–402) showed that 2.5% of the coins were minted in AD 330–345, and Constantinian coins accounted for 24–29% of two hoards, despite late closure soon after AD 388 (Reece 1974, 92, table C). While the provenance of Hoard 2 suggests that part of Building 1 was ruinous probably soon after the mid-4th century, these hoards do not necessarily indicate cessation of occupation. The location of three hoards (including the unusual Hoard 1, probably assembled in the Danubian area) in the refuse on the rampart is notable, particularly as two form a group on the basis of coin size with the hoards in Room 3, notably also the commonest size at Burgh Castle (Hammerson 1983, 69). Since this was an area of contemporary rubbish dumping, these were probably temporary hiding places, and their non-retrieval once the cause for concealment had passed suggests that the hoarders were physically removed from the scene. The division of the hoards based on the size of copies into two groups is a further complication, and may be evidence for successive crises in the mid-4th century, perhaps also affecting Burgh Castle. The 'Danubian' Hoard 1 and glazed mortarium, probably from the same area, may indicate incoming soldiers or officials at that time.

The backfilling of the hypocaust in Room 5 possibly in the Constantinian period suggests a change of use of Building 1, perhaps coinciding with the construction of the west range and north corridor. The buildings may have been turned over to some form of industrial use, perhaps related to slaughtering. No interpretation of the timber structures of Building 2, which appear to belong to the latest occupation, can be offered.

The coin series from both Caister and Burgh Castle tail off after peaks in the Constantinian period. Finds from Caister include a number of pieces of late metalwork and developed crossbow brooches, which do not necessarily indicate military occupation but suggest officials of high rank. A late helmet at Burgh Castle has connections with cavalry (specifically Stablesian cavalry, via the late helmet from Deurne: Johnson 1980, 312). Despite the sparse evidence from Burgh Castle, the late occupation of the two forts appears to have been identical in both date and character, but the paucity of late coins could suggest that either

occupation ceased shortly after the mid-4th century, or that it diminished significantly in the later 4th century.

### Later fourth century

The absence of bastions links Caister with Brancaster and Reculver, and therefore sheds no significant light on either the nature or duration of its occupation.

There seems no reason to doubt that the rubbish deposits are representative of the later occupation, although the higher proportion of late coins from the By-pass is notable. Both the refuse on the rampart and the rubbish on the floors of Building 1 produced quantities of late pottery, developed crossbow brooches (dated c. AD 360–380), metalwork, pewter etc., and while the refuse contained few coins, coins of AD 348–378 came from the building. Two coins of AD 348–364 were found in the central gutter of the road. Lack of stylistic change impedes close dating of 4th-century pottery, but it would be difficult to date the appearance of Oxfordshire Colour-Coated and Much Hadham Wares, common at both Caister and Burgh Castle, earlier than the mid-4th century, the Caister sherds being consistently stratified in late contexts. No early Saxon settlement is known.

The crux of the problem of the late occupation lies with the absence of coin evidence to prolong it beyond the period c. AD 364–378. The scarcity of late coins is notable in contrast to their abundance elsewhere, particularly in Norfolk (p. 68). The quantity of late pottery and finds could indicate continuing occupation with very few coins but, equally, would be consistent with occupation ceasing before the end of the 4th century, the two coins of Arcadius and Honorius being casual losses. The quality of both finds and pottery is noteworthy; both the pottery and the brooches and metalwork, indicative of officials, military or civilian, seem incongruous for a rural civilian settlement. The radical change of use of Building 1 and its west range noted above is also relevant.

The paucity of coins could arise from the reduction in the size of the payroll due to the radical military reforms of the later 3rd century (James 1984, 169), and the effect of the operation of the *annona militaris* (a rescript of Valentinian of AD 365, *Codex Theodosianus*, 7.4.14, referred to cash payments for only three months in a year). Rarity of late coins at Housesteads is interpreted as evidence for the payment of *annona* to that garrison (Casey 1974, 50, note 11). A change in the function and manning of the site, considered below, could have also had an effect on coin-loss.

### Related sites

If such factors were responsible for the rarity of late coins at Caister, is this consistent with the evidence from Portchester? If the period of AD 259–402 is considered, Portchester has four times the coins of AD 364–378 as were found at Caister, and nearly three times as many as at Brancaster, together with higher values for the succeeding periods. But the location of Portchester and the possibility that the main area of barbarian raiding in the later 4th century was along the Gallic coast (*Ammianus Marcellinus* xxvii.8) suggest the evidence is not necessarily applicable to east coast sites.

The extraordinary late coin losses at Richborough make comparative use of the evidence from this exceptional site problematical, and its garrison is not certainly known (Bartholomew 1984, 180). The main evidence from Brancaster

is from the extra-mural settlement, but while only one coin of AD 388–402 was found, the coins of AD 378–388 are comparatively plentiful at 2% of site finds, nearly all from the intra-mural area (Green and Gregory 1985, 193, table 30). Military equipment of 2nd–3rd-century type occurs as surface finds, and later styles are notably absent (Green and Gregory 1985, 220), although a fine late 4th-century cross-bow brooch was found (Mackreth 1985, 202, fig. 86, no. 10). 80% of the coins from Burgh Castle came from Constantinian hoards, but Theodosian coins, AD 378–402 represent 1.3% of the site finds. Recent work on late glass suggests that the date of the glass hoard may be revised to the mid- to late 4th rather than early 5th century (pers. comm. Dr H.E.M. Cool). The coins from Reculver apparently stop at AD 360 (Johnson 1976a, 48). Although the latest coin from Lympne is dated AD 367–383, Reece suggests that there is no evidence of army pay after 348 (1980, 263). The geomorphology (Hutchinson *et al.* 1985, 233) suggests that land-slip and silting are irrelevant to the abandonment of the site (Cunliffe 1980, 288). The signal station or watch tower at Shadwell was abandoned soon after AD 360 (Maloney 1983, 105). Further north, Brough-on-Humber, a significant site for any view of east coast defences, closes with a coin of Magnus Maximus (AD 383–388), and the paucity of Crambeck pottery is noteworthy (Wacher 1969).

There is also the question of the absence from the *Notitia Dignitatum*, first compiled c. AD 395, of Caister, unless the entry for *Gariannonum* covers both Burgh Castle and Caister, the evidence for the latest occupation of the two sites being identical. As noted above, the archaeological evidence suggests earlier abandonment of some of the listed sites and it is difficult to reconcile this with their appearance in this document. There is also the possibility, as noted by Hassall, that the *Stablesiani* of *Gariannonum* was possibly the same unit as that listed as serving under the command of the Count of the Britains (1977, 9).

### A changing situation?

The archaeological evidence suggests that the east coast forts were run-down, while much of that previously adduced from Ammianus' account to support raiding by Saxons in the 4th century now seems dubious (Bartholomew 1984). Our understanding of the so-called '*barbarica conspiratio*' of AD 367 (and the possible earlier troubles in AD 360), the only literary evidence of imperial campaigns or troubles in Britain to refer specifically to southern Britain (Casey 1983, 121), is deficient. If this is reinterpreted, our view of the late coastal defences needs radical re-thinking.

Further north, the evidence from Brough-on-Humber and Malton is long overdue for reappraisal, particularly of the pottery dating, and the function of the Yorkshire signal stations (probably built by Magnus Maximus rather than Count Theodosius: Casey 1979a, 75) is unclear. Evidence from the site of Horncastle, Lincolnshire, is sparse (Field and Hurst 1983, 85), resting largely upon the nature of its defences (with offset gateways similar to the east gate at Brough-on-Humber) and the presence of late pottery. Amongst so few coins, one of Arcadius suggests importance in the latest period. Given changes to the coastline, the site of Burgh-le-Marsh on the Wash would seem well-placed for a watch/signal tower (Whitwell 1982, 87); pottery from recent fieldwalking extends into the late 4th century.

Often linked with Horncastle is Caistor, Lincolnshire (Johnson 1980b, 101), but its location relative to the coast and rivers (Whitwell 1982, 76) and character differs considerably, appearing more like a walled town (3.5 hectares), whereas the walled area of Horncastle (2 hectares) is distinct from the adjacent unwalled settlement (54 hectares). It may have been a collection point for the *annona* (Whitwell 1982, 77), and the fact it was probably walled in the 4th century is paralleled at Caistor St Edmund, Norfolk, both sites inland from the coast but provided with strong late defences. To what extent these sites were para-military is unknown, but the provision of strong defences implies the manpower to man them. Whether this indicates a change to a system of defence-in-depth is unclear but integration with civilian defences would be essential, and to view military and civilian sites in isolation could mask such a system.

While it is questionable to what extent the northern part of the east coast was subject to raiding rather than piracy, one of the original functions of the coastal sites was to aid shipping. Even if Saxon raiding was mainly along the Gallic coast, the need for shipping protection probably remained.

### Function

Late occupation of Caister hinges not only upon the possibility of barbarian raids, but also on any additional function of the fort. The evidence of the animal bones from Caister suggests slaughtering at the site, with most of the prime joints going elsewhere, or hide-processing. While it is possible that the excavated area had a bias towards butchery, and that the bones from the prime joints are elsewhere on the site, this may be evidence for the assembly of cargoes of meat or hides. It has been suggested that the evidence from Brancaster may indicate that carcasses were shipped elsewhere (Jones *et al.* 1985, 174), and the frequency of metapodials at Burgh Castle is notable (Grant 1983, 109). The meat would have needed salting or smoking, and hides may have been tanned or shipped 'green'. The late use of Building 1 is difficult to interpret, but the tanks, flooring, wall-side gutters, and the exceptionally wide corridor of abnormal layout, are all suggestive.

Julian's reopening of a supply route which had lapsed due to piracy by assembling a fleet of 600 ships in AD 359 to transport corn from Britain to the Lower Rhine (*Ammianus Marcellinus*, xviii.2,3; *Libanius, Orationes* xviii, 82–3; *Zosimus* iii, 5, 2) suggests a possible destination, but the northern frontier is also a candidate. Caister would have been well-placed for produce from East Anglia and the Fenland, and officials (with the usual insignia of rank) would have been needed to supervise. While *Zosimus* is a poor secondary source for events in Britain, the distance he gives from the Rhine mouth to Britain of 900 *stadia* (c. 103 miles) may not be as erroneous as it appears.

### Conclusion

It is possible that Caister and other forts in the northern section of the east coast were of less defensive significance in the later 4th century, the emphasis having perhaps moved to a defence-in-depth, relying upon small coastal establishments, and strong-points inland. Whether this reflects less piracy and raiding or the state of the army is unknown. The non-retrieval of the coin hoards suggests disturbances in the mid-4th century, possibly two on the basis of the size of copies, but the evidence of coins, finds and pottery are

consistent with occupation in the 360s. A medial date of c. AD 380 is suggested for the end of occupation, but there is no artifactual evidence to refine it within a decade either side. Whether the site functioned as a depot or not, the usurpation of Magnus Maximus would have had a drastic effect, and probably saw major changes in the defensive system. An alternative, but less compelling, interpretation, is that occupation by a small garrison, mostly paid in kind, continued to the end of the 4th century.

## VI. The Name

The sole source for the name *Gariannonum* is the *Notitia Dignitatum*, compiled c. AD 395. Since Caister was the primary military establishment, founded before Burgh Castle, was it called *Gariannonum*?

It is curious that not only are cavalry units on the Saxon Shore restricted to the two Norfolk forts, Brancaster (*Equites Dalmatarum Branodunensium*) and Burgh Castle (*Equites Stablesianorum Gariannonensium*), but the older style of military unit occurs only at those sites and the other known early fort at Reculver (*cohortis primae Baetasiorum*) (Johnson 1976a, 69). The other Saxon Shore fort garrisons recorded in the *Notitia* are *numeri* with *milites* at Dover and the *Legio Secunda Augusta* at Richborough (although the presence of the legion has been questioned: Bartholomew 1984, 180). A similar curiosity occurs in the forts of the Saxon Shore on the continent where the *Notitia* records the garrison of *Grannona* as the *cohortis primae novae Armoricanae*, and that of *Marcae* as *equites Dalmatae*. The location of neither site is known, and there is therefore no archaeological evidence, but Johnson has suggested that these sites may have an earlier origin than the later continental coastal forts (Johnson 1976b, 84, 86). More interesting is the fact that apart from Brancaster, Burgh Castle and Reculver having the old style military units, the titles in the *Notitia* of both Brancaster and Burgh Castle include the placenames, suggesting that the units were linked to the forts by long-term occupation. Both these units were possibly created by Gallienus and probably arrived after AD 274 (Hassall 1977, 9), the *Dalmatae* replacing the original unit at Brancaster and taking the placename of their new location, and the *Stablesiani* doing likewise at Burgh Castle. This suggests that the name *Gariannonum* was that of the initial fort at Caister. Forts close together are known from other parts of the Empire, as at Aquincum and Regensburg on the Danube with the bridgehead forts of *Contra Aquincum* and *Contra Reginam* (in litt., M.W.C. Hassall). The possibility that Caister rather than Burgh Castle could be the site of *Cnobheresburg* is also raised below.

## VII. The Cemetery

by Kirsty Rodwell

### Dating

Three factors can be taken into consideration to arrive at a date for the cemetery; the finds associated with the burials, the mode of burial, and an estimate of the length of time the cemetery remained in use, based upon the phasing. There are no radiocarbon determinations.

Both the stratigraphy of Area 4 and the amount of residual Roman material in the burials make it clear that

the cemetery is post-Roman. This area also produced a smaller quantity of post-Roman pottery and metalwork, but very little can be directly associated with individual graves. There was an iron finger-ring (Fig.53, No.247) in Grave 77, whose parallels are late 6th or early 7th century, and there are spearheads and part of a horseshoe (Figs 107, 77, Nos 753, 754, 433), all of Saxon type but not closely datable from Graves 41, 63 and 86. All these burials belong to phase 3. There is also a hairpin of Late Saxon type (Fig.46, No.128) from phase 4 Grave 90.

The pottery from Area 4, which must have been derived from the upper fills of grave cuts, includes six sherds of hand-made Middle Saxon ware, eighty of Ipswich type, and twenty-seven of Thetford type, but only one of the hand-made sherds can be associated with an individual burial, Grave 132, which is assigned to phase 1. In addition there was Stamford Ware, dated to c. 1020 or later from phase 4 Graves 32 and 40.

There were also three coins from Area 4; two early 8th-century sceattas (Pl.XXX, 3, 4) which cannot be assigned to specific graves, and a silver penny of Ecgbert of Wessex (Pl.XXX, 8), found beneath the skull of Grave 14. This was a deliberate inclusion and is unlikely to have had a long period of circulation before burial. It can be dated to c. 828–839 and provides the best evidence for an absolute chronology of the cemetery, for it is associated with a phase 3 burial.

When the distribution of burials within Area 4 is considered phase by phase it can be seen (Fig.28) that the cemetery was laid out in rows, up to six of which fall within the main excavated area. It can also be seen that this area was most intensively buried during phases 1 and 2. Its use during phases 3 and 4 was more intermittent and was concentrated towards the eastern edge of the area. If the phase 3 burial Grave 14 can be dated to the mid-9th century, an 8th-century origin for the cemetery is indicated. Whether this was early or late depends upon the frequency with which the area was reburied, and in a large cemetery such as this a burial generation of fifty years would not be unreasonable. On this basis a notional date for the start of phase 3 might be c. 820, phase 2 c. 770–820 and phase 1 c. 720–770. A generation of twenty-five years would give a late 8th-century origin for the cemetery. Both are in accord with the other 8th-century finds from the area.

The Stamford Ware from Grave 40, one of the latest graves in the cemetery, and that from the rather more dubious Grave 32, indicates that burials were still being made in the mid-11th century, some two centuries later than Grave 14. This implies a much more sporadic use of the cemetery in phase 4 than in earlier phases, a pattern which is reflected in the decline in burial density. The date at which the present churchyard came into use is unknown; the oldest part of the existing church is early 13th century (Pevsner 1962, 108). These burials may indicate that the transition did not take place until the later 11th century, but it is also possible that they could have been made as isolated interments in a disused cemetery.

Certain distinctive aspects of the method of burial, such as the inclusion of packing stones, or the use of clench nails, are characteristic of Middle and Late Saxon cemeteries. However within this date range, they do not, on present evidence, appear to be confined to any one period or type of grave (see Burial types, above).



## Orientation

(Fig.29)

All the burials lay with their feet to the east. Green determined the magnetic bearings of ninety-seven (ninety-five from Area 4), which ranged from N58° (Grave 49) to N127° (Grave 48) with a mean of N90°. However, both these extreme bearings were on burials only partially exposed in builders' trenches, and the majority lay within an arc of 15° either side of 90°. Using the information obtained from both the Caister and Burgh Castle cemeteries, Green investigated the possibility that the variations in the bearings reflected the changing positions of sunrise throughout the year, and therefore indicated at what season burials were made (Wells and Green 1972).

However, on this basis ninety-one of the burials would have fallen within the period 18 February to 20 April or 22 August to 24 October (Wells and Green 1972, 438). Statistically this is an improbable result, which is not reflected by documented incidences of burial frequency throughout the year (Brown 1983, 323). These indicate that *c.* 40% of deaths can be expected for the months November to February, whereas at Caister only 3.8% (four) of burials would have taken place within this period (Wells and Green 1972, 439). Factors other than the position of the sun therefore influenced the alignment of burials at Caister.

Although the mean orientation is 90°, if the burials are broken down by phase a perceptible shift southwards in the prevailing orientation can be observed; the mean for phase 1 burials is 85.5°, but for phase 4 92.6° (Table 3). This is also visible spatially, for the burials deflected to the north (81° or less) are concentrated in the south-west corner of the main excavated area, whereas those deflected to the south (94° or more) occupy the north-east corner.

The prevailing alignment was probably influenced by features in the immediate vicinity. This phenomenon can be observed in post-medieval churchyards such as Deerhurst (Gloucestershire), or Llangar (Rodwell 1981, figs 63, 81), where burials close to paths or boundaries frequently take their alignment from that feature, even if noticeably divergent from a 'correct' east-to-west bearing. It can also be observed in the cathedral cemetery at North Elmham, Norfolk (Wade-Martins 1980, fig.158). Buildings can affect grave orientation; at Rivenhall (Essex) burials at the east end of the church were deflected by the curve of a 12th-century apse, which served to distinguish them from earlier and later burials associated with square-ended chancels (Rodwell and Rodwell 1985, 99, fig.65). At Wells (Somerset) burials aligned on the Saxon cathedral differed by 12° from the more liturgically correct medieval bearing (Rodwell 1981, 135).

The cemetery at Caister must have been surrounded by residual features of the Roman landscape, and it is possible that some of the earliest burials were influenced by the line of the defences. The southerly deflection of many of the later, more easterly graves hints at a focus within the cemetery itself, such as a mausoleum or a church.

## Burial practice

(Figs 27, 28)

There were no discernible patterns in the spatial distribution of different types of burial, but differences in the incidence of coffins and clench-nails did emerge when considered chronologically. With one exception burials with clench nails were confined to the first two phases, and in phase 1 39.3% of burials were in coffins (Table 4;

possible examples are excluded) whereas 28.6% were not. In phase 2 the incidence of coffins rose to 50%, compared with 22.7% without, but in phase 3 the position was reversed with only 25% of burials in coffins and 43.8% without, a trend which continued in phase 4 (16.7% in coffins; 27.8% without). The overall incidence of coffin burial in the first two phases was 44% compared with only 20.5% for the last two phases, which indicates that the trend is a general one, uninfluenced by any minor alterations which could be made to the phasing.

Flexed burials were confined to phase 1 (Graves 47, 139, 143), but burials with 'packing stones', 15.2% of the total, did not have a marked chronological bias, occurring in phases 1, 2 and 4, as well as in seven unphased burials (mainly 1979 excavations). There were nine instances of packing round the head, four round the feet, and three round both head and foot. In four cases packing was associated with clench nails, in six with coffins, in two there were no coffins, and the remainder were uncertain. 'Packing stones' have been found in a number of Middle and Late Saxon cemeteries (Rodwell and Rodwell 1985, 82-3 for a discussion of the type) ranging in date from the 7th to the 11th century. At Rivenhall, Essex (Rodwell and Rodwell 1985, fig.57) they occurred in about one-third of the 9th- and 10th-century burials in cemetery 1, mainly in graves without a coffin. At St Peter's Church, Barton-upon-Humber (Rodwell and Rodwell 1982, 301, pl.XLVa) they were found within some of the waterlogged Late Saxon coffins, and formed a much smaller percentage of the whole.

The cemetery was a mixed one and neither sex was dominant in the analyzed sample. There was a slightly greater percentage of males in the total number of burials for which a sex determination was possible, and a slightly greater percentage of females in the phased burials (Table 5). The ratio of children in the first two phases was lower (15.5%) than in the two later phases or in the overall total (21%). Infant burials were rare.

Age or sex exerted no influence on burial type (Fig.30). Of the graves with clench nails six were male, four were female, one was an adolescent, and another a child of three to four years. There were no discernible trends in the inclusion of packing stones, nor in the incidence of coffins, which were evenly divided between the sexes.

## Burials with clench nails

(Figs 27, 31, 32)

Twelve of the burials excavated by Green contained clench nails. He interpreted these almost immediately as 'boat or pseudo-ship burials' (letter to Bruce-Mitford dated 15 July 1954; Green n.d., 14), in which lengths of planking two to four strakes wide were cut from the side of a boat and laid as a cover over the body.

This hypothesis must now be examined. There was independent evidence in a number of these burials for the presence of coffins constructed without metal fastenings. This took the form of wood traces or skeletal posture (see above). With one exception the clench nails only occurred over the body, indicating that they formed part of a lid. Yet a simple lid need consist of no more than a board laid over, or possibly pegged to the coffin (Rodwell and Rodwell 1982, 311). The clench nails imply a more elaborate structure, but the wide variation in their numbers (Table 2) indicates that this was not built to a standard pattern. This is reinforced by the number of rows of nails used, which varies from one to three. The vertical position of the nails

and the traces of mineralized wood make it clear that they could only have fastened a lapped joint in oak boards. Other reconstructions such as the gabled lids or the use of pliable materials, which were suggested for similar burials at Barton-upon-Humber (Rodwell and Rodwell 1982, 291–2) must be discounted. The Barton burials must be reconsidered in the light of the Caister evidence.

Therefore purely structural deductions indicate that re-used, lapped planks, containing variable numbers of clenched nails, were being employed as coffin lids. Positive evidence that these were boat timbers is provided by the use of hazelwood plugs (see Clench nails, above). This technique was employed in the Graveney boat (Fenwick 1978, 98, fig.8.17), where plugs were inserted into pre-drilled holes c. 8mm in diameter before the clenched nails were driven through from the outside. The strakes were of oak but the wood used for the pegs could not be identified (Fenwick 1978, 145). The distance between clenched nails was on average 160mm (308 out of 439 nails were between 140 and 180mm apart), which compares closely with the spacing of the clenched nails from Caister, and the average thickness of the strakes was 26mm (1in: Fenwick 1978, 95), compared with 15mm (5/8in) at Caister (Table 2).

Each strake of the Graveney boat was formed from several planks which were joined end to end with a scarf joint. This was secured by a vertical row of short clenched nails the thickness of a single plank (Fenwick 1978, 97). This feature can be observed in Grave 67 at Caister (Fig.32), where the line of clenched nails at the head of the grave can be interpreted as a strake joint. Although the individual nails can no longer be identified, the nail shank lengths in this burial were variable and included some only 15mm long, the thickness of a single plank.

The Graveney boat is dated by dendrochronology to AD 927, and by radiocarbon determinations to 944±30 (Fenwick 1978, 109). At the time of publication no post-Roman parallels could be found for the technique of plugging the joints before securing them with clenched nails (Fenwick 1978, 224). No traces of such plugs were observed on the clenched nails at Sutton Hoo, but as these were in generally poorly preserved their existence is not precluded. Otherwise the same constructional techniques were employed as at Graveney, with clenched nails securing the strakes at the same intervals, scarfs joining planks end to end, and an average plank thickness of 26mm (Bruce-Mitford 1975, 361–5).

The evidence from Caister is therefore entirely consistent with the hypothesis that conjoined strakes from a boat were laid over some burials. However, in the majority of cases they appear to have been used as lids to otherwise conventional coffins, rather than forming the sole cover, as Green suggested (n.d., 14). Only in one burial Grave 136, where the clenched nails were beneath the body, do the boat timbers appear to have been used as a bier. Green also considered that the inclusion of boat timbers were deliberate and reflected the earlier East Anglian tradition of true boat burial, of which Sutton Hoo is the best known example. This must remain unproven, but some degree of significance may have been attached to the inclusion of boat timbers in some burials rather than in others. A minimal view would suggest that they are no more than re-used timbers, and it is clear both from Caister itself (Grave 116) and Barton-upon-Humber (Rodwell and Rodwell 1982, 291) that other kinds of second-hand timber were used in coffin construction. At Trondheim, Norway, sections of

boat planking were regularly used to repair street surfaces (Long 1975, 22). Clench nails could also be used in structures other than boats, such as buildings A1 and A3 at Yeavinger (Hope-Taylor 1977, 193, fig.91), or the church door at Hadstock, Essex (Rodwell and Rodwell 1982, 313 note 23).

This type of burial remains rare despite the great increase in the number of Middle and Late Saxon cemeteries excavated since 1954. Clench nails occurred in some of the burials in the monastic cemetery at Jarrow (on display in the Bede Museum, Jarrow Hall), and in several Kentish cemeteries (inf. Ian Riddler), most notably Sarre (Brent 1863; 1866; 1868) where nine burials contained between one and eighty clenched nails. The plan of this cemetery has been lost, but in several graves the nails were arranged in lines down the sides of the burial. They ranged in length from 23 to 43mm, with three examples of over 50mm, but they can no longer be associated with individual graves. A burial at Ozingell, Kent, contained twenty (Meany 1964, 131), and they occurred in graves under the south-west corner of Gundulph's tower at Rochester Cathedral (*Medieval Archaeol.* 5 (1961), 309). There are difficulties in dating all the Kentish examples but they are probably 7th century.

Green noted an isolated example beneath the former church of St Catherine, Thorpe-by-Norwich (*Norfolk Res. Comm. Bull.* 1952, 4), which contained at least two rows of vertical clenched nails. The burial ante-dated a mid-12th-century church and apparently post-dated a 10th-century occupation layer, which included a silver pin of Viking type. One of the pre-conquest burials from York Minster contained a double row of clenched nails (inf. Birthe Biddle), but the largest number of recently-excavated examples is found in the cemetery associated with St Peter's Church, Barton-upon-Humber (Rodwell and Rodwell 1982, 290–2), which included some sixteen burials containing clenched nails. These were arranged in up to three rows with an average distance between nails of 0.2m. The majority were positioned vertically over the burial and there was clear evidence in some cases for a separate coffin. The nail shanks were up to 30mm long, implying a plank thickness of 15mm (detailed analysis has not yet been carried out, nor are radiocarbon dates yet available for the inhumations with clenched nails).

Some parts of this cemetery were waterlogged, so that a number of perfectly-preserved pegged oak coffins were discovered, but unfortunately none of the burials with clenched nails lay in this part of the site. The Saxon cemetery at Barton was a large one with several burial horizons and can be divided into two main phases, one of which is 10th–11th century, associated with the three-celled Saxon church, and one of which predates the church and is 9th century or earlier. Some of the burials with clenched nails belong to this earlier phase, but they form a much smaller percentage of the excavated sample than the burials at Caister.

The Caister graves have found their way into the corpus of north-European boat burials (Muller-Wille 1968/9, 181, no.417; Bruce-Mitford 1975, 426), but apparently have no direct parallels on the other side of the North Sea. Although coffins with and without nails were common, only one of the inhumations at Birka, Sweden, contained clenched nails. They were larger than those at Caister and were interpreted as evidence for a cart burial (Gräslund 1980, 25, fig.17). On the other hand 285 cremation burials contained clenched

nails (Gräslund 1980, 55; up to 150 nails), which were probably derived from boat fragments used as fuel.

### Size and significance

The burials excavated and observed by Green represent only a small part of a much larger cemetery. The Roman defences appear to have formed its northern limit, for burial in Area 4 stops short of the outer ditch, which suggests that this was still a visible feature. The western boundary, and perhaps the others appear to have been fenced, for a feature which contained close-set posts was excavated in OVII (see Boundaries, above). It closely resembles the boundary to the Saxo-Norman cemetery at North Elmham (Wade-Martins 1980, fig.158). If projected northwards it would have enclosed the western limits of burial in grid square LVIII, but insufficient excavation took place there to demonstrate its presence. The southern limits can be inferred from chance finds in builders' trenches, from which it would appear that the burials in trench PVII/VIII were close to the boundary.

The eastern limits are more speculative, for the cemetery ought to include the burials observed by Rumbelow in 1932, where another early 8th-century sceatta was found (Pl.XXX, No.5). These are some 140m to the east, but are evidently not outliers of the present churchyard, to which they are much closer. Excavations in the intervening rectory garden produced only Roman material, and no burials were recorded there.

The cemetery would appear therefore to have occupied a narrow rectangle c. 40m wide and c. 220m long with a total area of c. 8800 square metres. If the sample excavated in Area 4 is representative of the overall burial density, it suggests a total of c. 3000–4000 graves. This cemetery is distinct from the burials recorded east of Brooke Avenue (see Burials inside the walled area, above) for they are separated by the Roman defences.

From the record of chance finds and excavations it is possible to distinguish at least four separate cemeteries in and around the Roman walled area. The earliest of these is a mixed Roman inhumation and cremation cemetery north-east of the church (see Appendix 1). The coffins were constructed with nails and appear to be of 3rd or 4th-century date (Rodwell, K. 1988, 50). The cemetery discovered north-west of the church in 1837 (see Appendix 2) also appears to be late Roman in origin. The description of the brick-lined pit suggests that it was a mausoleum (Rodwell, K. 1988, 51) probably of 4th-century date, and that it was an early feature of a cemetery in use for some time. The

later burials had no grave goods but were not all orientated east-to-west. The precise location of this cemetery is uncertain but it was probably outside the walled area.

The environs of Caister appear to be devoid of any unequivocally Pagan Saxon burials; there is only the unsubstantiated reference to possible shield bosses from 'Uplands'. The intra-mural Brooke Avenue cemetery is otherwise very similar to the Area 4 cemetery; both contained numerous burials of mixed sexes and ages, which were regularly laid out, aligned east-to-west and without grave goods. On the surviving evidence it is impossible to say whether one superseded the other or whether they were contemporary but served different communities. Both exhibit Christian characteristics in their mode of burial, and there is a distinct probability that they were associated with a church. The large number of burials involved and their early date suggests that this was a minster rather than a proprietary chapel.

This raises the further question of the nature of the site as a whole in the Saxon period. It is now very difficult to interpret the evidence for post-Roman occupation within the walled area, but if one considers the total assemblage of Middle Saxon finds, particularly the number of sceattas, the picture of a high status settlement emerges. Comparable assemblages of material, derived from much more comprehensive excavations have been recovered from the Middle Saxon settlements at Butley (*Current Archaeol.* 97, 53–4) and Brandon, Suffolk (*Medieval Archaeol.* 26 (1982), 207–8; 30, 162). Both have associated cemeteries and have claims to be considered monastic.

In this light there is a case to be made for considering that Caister rather than Burgh Castle is the site of Fursa's monastery of *Cnobheresburg*; Bede's description of the site is 'pleasantly situated near to the sea and to forests and constructed in a *castrum*' is just as applicable to Caister as to Burgh Castle, but because the walls had disappeared by the 18th century, Caister was discounted as a Roman settlement of any consequence by later antiquaries, such as Haverfield (1901, 293). Green himself excavated at Burgh Castle (Johnson, S. 1983) and discovered a small cemetery of Middle Saxon date, a quantity of Ipswich Ware, and some rather enigmatic traces of buildings. However, the interpretation of this evidence poses considerable problems (Johnson, S. 1983, 117–21) which led Johnson to conclude that the identification of Burgh Castle with Fursa's site had not been proven beyond question. Caister with its evidence for a large Middle Saxon population might therefore be considered to have a stronger claim.

## Appendix 7

### The Human Skeletal Remains from Burgh Castle

by Sue Anderson and the late David Birkett

Part of Ancient Monuments Laboratory Report 27/89 (with additional data (Demographic data 4. onwards) supplied by the authors)

#### Summary

Bones of Anglo-Saxon date from 163 grave contexts and several groups of disarticulated remains, together representing a minimum of 167 adults (seventy-nine males, sixty-four females and twenty-four of unknown sex) and approximately thirty children are reported on.

#### Introduction

(Table 59)

One hundred and sixty-three numbered inhumations were recovered from the cemetery. A large number of disarticulated bones were also collected, and this, together with the fact that several of the inhumations were actually 'bone dumps', made the estimation of a minimum number of individuals very difficult. An estimate was made on the basis of number of major adult long bones as shown in Table 59.

From this it can be suggested that there were at least 167 adult individuals, and that the minimum numbers of males and females were seventy-nine and sixty-four respectively.

Bone	Male	Female	Unsexed	Total
R. Femur	79	64	24	167
L. Femur	73	57	22	152
R. Tibia	69	48	30	147
L. Tibia	62	51	21	134
R. Humerus	71	48	34	153
L. Humerus	54	47	33	134

Table 59 Burgh Castle human bone: adult long bones.

The children were rather more difficult to assess. Only five were numbered inhumations, although seven others were included in some of the 'bone dumps'. Other children were present in the disarticulated remains, and although some of these bones may belong to the more complete skeletons, many do not. It seems probable that there were approximately thirty children, although if none of the disarticulated bones belong together there may have been as many as sixty.

#### Method

See full report

#### Condition of material

The majority of skeletons were in fair condition, although the occasional interment in good or poor conditions was also found.

#### Demographic analysis

##### 1. Age at death

(Tables 60–1)

Since the ageing of adult skeletons is in general extremely inaccurate, no attempt has been made to calculate the mean age of death of this population. Table 60 gives a possible distribution of age for all those skeletons aged more precisely than simply 'adult'.

Age group	Suggested age range	Male		Female	
		n	%	n	%
Young adult	18–25	8	11.3	8	15.7
Young–Middle-aged	25–35	9	12.7	13	25.5
Middle-aged	35–45	29	40.8	17	33.3
Middle-aged–Old	45–55	15	21.1	5	9.8
Old	55+	10	14.1	8	15.7

Table 60 Burgh Castle human bone: age at death.

Although more females fall into the 'Old' category, there are more males in the 'MA–Old' and 'Old' combined. The majority of females fall into the 'Y–MA' and 'MA' groups, whereas most males are found in the 'MA' and 'MA–Old' categories. So although ageing is not accurate and tends towards underageing in most cases, the pattern still seems to be that there are more older males than females. This could be due to some ageing bias, for example loss of older, osteoporotic female skeletons, or the fact that male skeletons tend to have more prominent muscle-markings and are therefore more affected by the ageing process.

As stated above, there were thought to be approximately thirty children. Although children can generally be aged more accurately than adults from their skeletal remains, the dispersed nature of the juvenile skeletons from this site means that the distribution shown in Table 61 can only be approximate. No attempt was made to estimate an average age at death for these children.

Only one infant was found in this population, and this individual itself was only represented by one bone. It is possible that this lack of infant burials was caused by differential preservation, but it seems more likely that young children were generally not buried in this cemetery, or that there was a separate area set aside for them which has not yet been excavated.

##### 2. Sex distribution

As mentioned above, the minimum number of males was thought to be

Age group	n	%
n.b.–2 years	1	3.3
2–6 years	9	30.0
6–12 years	9	30.0
12–18 years	11	36.7

Table 61 Burgh Castle human bone: age at death of children.

seventy-nine, and the minimum number of females sixty-four. This is a fairly normal ratio of men to women, and it is what would be expected of a secular site. However, based on a plot of the sexes of the numbered burials, it is possible that more of the earlier burials are male, and also that more of the disturbed remains are male. This may be evidence in favour of Green's argument for a monastic cemetery, but owing to the disturbed nature of many of the burials it would be wise to regard this as merely conjecture.

##### 3. Stature

(Table 62)

Table 62 shows the mean and ranges of stature for the numbered inhumations.

Sex	n	mean	range
Female	38	1.631	1.515–1.762 (5ft 1in–5ft 10in)
Male	54	1.759	1.657–1.861 (5ft 6in–6ft 3in)

Table 62 Burgh Castle human bone: stature.

These means are higher than normal for an Anglo-Saxon population, although the difference is only one of 2–3in and may not be significant. The shortest woman and the tallest man are also taller than those from the majority of sites. This may be an indication that the people from Burgh

Castle were better nourished than their contemporaries or it may simply be a genetic phenomenon.

#### 4. Cranial indices (details in archive)

These seem to suggest that there is a basic difference in the head forms of males and females. Most men fall into the long, medium high head group, whereas most females have crania of medium length and low height. Such a sex difference is often seen in Anglo-Saxon populations. The majority of populations after the Bronze Age and before the medieval period tend to fall into the long-headed or dolichocranial category, and in this the men here are no exception. Females at similar sites often seem to be slightly more round-headed than males.

#### 5. Meric and Cnemic indices (details in archive)

Relatively narrow bones are common in earlier populations, and in the case of the femur this is true here. However, the majority of individuals of both sexes fall into the broadest category of the cnemic index. Without a reasonable explanation of the cause of this condition, it is impossible to suggest why this should be.

#### 6. Non-metric traits (details in archive)

The following traits were observed in the main adult skeletons: Metopism (4.6%), Parietal foramina (50.5%), Coronal Wormian bones (2.3%), Sagittal Wormian bones (6.3%), Lambdoid Wormians (47.4%), Epitric bones (24.0%), Parietal notch bones (7.4%), Inca bone (8.8%), Asterionic bones (2.9%), Torus palatinus (24.1%), Tori maxillares (10.5%), Torus mandibulares (10.3%), Tori auditives (1.2%), Double hypoglossal canal (13.0%), Post-condylar canal (16.2%), Pre-condylar tubercle (4.3%), Triple mental foramina (1.5%), Double condylar facet (4.3%), Squame-parietal ossicle (7.5%), Septal aperture of humerus (9.5%), femoral third trochanter (7.3%), Atlas double facet (9.7%), Acetabular crease (29.3%).

Two children (Nos 53 and 130) also had extra sutural ossicles. No.53 (aged twelve to fifteen) had lambdoid Wormian bones, an ossicle at the lambda, and asterionic bones. No.130 (c. four years) had large lambdoid Wormian bones and an Inca bone. The presence of sutural bones in one suture is often linked with the occurrence of one or more in other parts of the cranium, and it is possible that these traits are linked to environmental factors affecting growth, although there may still be a genetic predisposition for them. The fact that the rare squame-parietal ossicle occurred in three individuals might suggest some genetic component for this trait at least. Percentage scores of most traits are similar to those found in other Saxon groups. The figures produced for the monastic cemetery of Monkwearmouth, Tyne and Wear, are extremely close, for example, whereas medieval groups such as Guisborough Priory and Blackfriars, Newcastle, seem more distant in this respect.

The squame-parietal suture occurred in Nos 69a, 81 and 83, all buried in the middle of the southern half of the cemetery. This does suggest a possible relationship between the three individuals. Metopic sutures were noted in Nos 61 and 159, which were almost adjacent to each other, and in Nos 45 and 69b, which were also fairly close together. This trait has been found to occur in distinct groupings at other sites, suggesting that it is not a chance occurrence. Other traits show less clear-cut relationships, and it would be unwise to infer anything from them. There does, however, seem to be a high probability that the individuals mentioned above have some genetic affinity with each other. It must always be remembered when assessing this kind of information that married women were most likely to be buried with their husbands' family than with their own blood relations, and that there is usually a long period of burial activity in large cemeteries, often with hundreds of years separating the first and last interments. This obviously means that establishing familial relationships between skeletal individuals is more difficult than may at first appear.

#### 7. Dental study (details in archive)

This was of the more completely articulated skeletons.

Ante-mortem loss of one or more teeth had occurred in eighteen males and fourteen females, 37.5% and 45.2% respectively, 40.5% overall. Of these, eleven males and five females had caries and/or abscesses.

Ante-mortem tooth loss was greater in the mandible than in the maxilla, and in males than in females. This may be because men were

living longer than women, and therefore had longer to lose their teeth. The overall rate of loss for the whole site is average for the period.

The greatest ante-mortem tooth loss occurred in the molar area of each quadrant of the jaw, and this was the most common area to be affected by tooth decay. Most lesions were located in the approximal region, as is normally found in early populations. Fourteen males and five females had carious lesions.

The overall male caries rate was greater than that of females, and the maxilla was affected to a greater extent than the mandible. It may be that the greater ante-mortem tooth loss seen in the mandibulae was a result of the presence of carious lesions, which would account for the smaller numbers of affected teeth in the lower jaw.

Periodontal abscesses were most common in the premolar teeth and molar regions of the jaws, although they were also present around the anterior teeth.

The male maxillae and female mandibles were most affected by abscesses. The reason for the difference is unknown. The overall greater prevalence in the maxilla could be due to the greater ante-mortem loss in the mandible causing abscesses to heal over in the lower jaw. These abscesses were present in the jaws of thirteen men and nine women. The overall prevalence of abscesses is average for the period.

Most unerupted teeth were third molars, although one male (No.9) had an unerupted left mandibular canine. A greater prevalence of third molar agenesis is usually expected to occur in females, and Burgh Castle is no exception. The figures for unerupted third molars are consistent with those found at other contemporary sites.

Dentitions were also assessed for the presence or absence of calculus (tartar), enamel hypoplasia and alveolar resorption. High percentages of all three were found. Calculus was only slight in the majority of cases, but a large number of medium examples were also recorded. The condition is usually associated with lack of dental hygiene, particularly when soft foods are common in the diet. Vigorous chewing of meat, for example, would remove the greater part of such deposits. It is probable that the people of Burgh Castle were not eating excessively soft foods, but that their dental hygiene was poor. Percentages of enamel hypoplasia were average when compared with contemporary populations. This condition has been correlated with malnutrition, physical stress and disease, but the link is not well established in modern groups. None of the individuals have the extremely gross hypoplastic lesions which can be encountered in very poor populations. Alveolar resorption is linked to old age, and here it was generally most advanced in older individuals, although if periodontal disease was present alveolar resorption could be expected to occur at a faster rate.

A few dental abnormalities were noted. The lower left canine of No.9 was lying horizontally in the alveolar bone and was unerupted. The upper left M3 of No.23 was rotated in the alveolus, and was partially erupting through the buccal wall of the maxilla. A lack of occlusion of the upper left teeth with the lower of No.62 was caused by uneven wear of the upper teeth, possibly due to some occupational use. An odontome had formed in the incisive foramen of No.70, which is a fairly common position in which to find this type of benign neoplasm.

The dental health of the individuals was not good when compared with the present (although they were less afflicted with tooth decay than we are today), but it was normal for the period. Caries, abscesses, tooth loss, calculus and alveolar resorption all increased through life, and this age factor should be taken into consideration when comparing prevalences of these lesions between males and females. If women did not survive into old age they are less likely to have been affected by gross lesions, and this seems to be the case in the Burgh Castle group.

#### Catalogue (Table 63)

The full catalogue of the skeletal remains (AML Report 27/89) is not published here. It can be found in the archive, and copies of the report can be obtained from the Ancient Monuments Laboratory, English Heritage, Fortress House, 23 Savile Row, London W1X 2HE.

The data on sex and age of numbered interments has been extracted, and is shown in Table 63. This supplements the data published previously (Grave/Trench/Orientation/Comments) by Johnson (1983, table 1).

Grave	Sex	Age	Grave	Sex	Age
1	Male	middle-aged/old		Male	?25-35
2	?	adult	53	?	child c. 12
3	?Male	?young	54	Male	young/middle-aged
4	?	?middle-aged	55	Male	?young adult
5	?Female	adult	56	?	sub-adult ?16-18
6	?Male	adult	57	Male	middle-aged
	Female	adult	58	Male*	25-35
	Female	adult		?	?
7	?	adult	59	Male	?young/middle-aged
8	Male	45+	60	Male	middle-aged
9	?Male*	?middle-aged	61	Female*	?young
	?Male	?		Male	?
10	Male	?middle-aged	62	Male*	middle-aged
12	Male	?old		Male	adult
13BD	?	?	63	Female	middle-aged/old
15	?Female*	adult	64	Female	?middle-aged
	?	?	65	Female	young/?middle-aged
19	Male*	30+	66	?Male	?middle-aged
	?	adult	67	Female	young/middle-aged
19a	?	child c. 9	68	Male	old
20	Male	?young	69BD	Male	adult
21	Male	35-40+		Male	adult
22	?Male	?25-35	70	Male	middle-aged
23	Female	35+	71	Male	middle-aged/?old
24	?Female *	old	72	Female	middle-aged
	?	?	73	Male	middle-aged
25	Male	middle-aged/old	74BD	Male*	middle-aged
26	Male	old		Male	?
27	Male	35-45+		Male	?
28/29?	Male	middle-aged/old		Female	?
29	Male	middle-aged	75	Male	35+
30BD	?	?	76	Female	?35-45
	?	?	77	Male	30+
	?	?	78	Female	?20-30
33	?	adult	79	Female*	middle-aged
34	Male*	35+		?	?
	?	?	80	Male	35-45
35BD	?Male*	?	81	?Female	?middle-aged
	?Female	?	82	Male	old
36	Male	?old	83	?Female	?middle-aged
37/44	Male	35+	84	Female	young adult
38	Male	middle-aged/old	85	Male	old
39	?	adult	86	Male	middle-aged
40	?Female	middle-aged	87	?Male	middle-aged
41	Female	middle-aged/old	89BD	?Female*	?middle-aged
42	Female	35-45+		Male	adult
44	see 37			?	child 6-7
45	Male*	old	90	Female	18-20
	?	?	91	Male	?middle-aged
	?	?	92	?Female	25-35
46	Male	young/middle-aged	93	Female	middle-aged/old
47	Female	30+	94BD	Male	?
48	?Female	adult		Male	?
50/158	Male	45+		Male	?
51/52	?Male	middle-aged/old		Female	?

Grave	Sex	Age	Grave	Sex	Age
95	Male	middle-aged		Female	?
	?Female	old	127	Female*	old
96	Male	middle-aged		?	?
97	Female	old	128	Male	middle-aged/old
99	Male*	young/middle-aged	129	Female	young/?middle-aged
	?	child c. 5	130BD	Male	?
100BD	Male	?		Female	adult
	Male	?		?	child c. 4
	Male	?	131	Female*	?30–35
	Female	?		Female	?
	Female	?	132	Male*	middle-aged/old
	Female	?		?Female	?
	?	child	133	Female	?30–40
101	Female	?middle-aged	134	Female	17–20
102BD	?Male	?	135	Female	old
	?Male	?	136BD	Female*	25–35
	?Female	?		?	juvenile/sub-adult
	?Female	?		?Female	?
	?	child	137	Male	young
103BD	?Male*	middle-aged/old	138	Male	20–21
	?	?	139	Male	?old
	?	?	140	?Female	adult
	?	?	141	Male	young/middle-aged
	?	?	142	Female	25–35
105	?Female	15–20	144BD	Male	?
106	Female	?middle-aged		Male	?
107	Male	middle-aged/?old		Male	?
108	Female	?30–40	145BD	Male	?
109	?Female	old		Male	?
110	?Male	young/?middle-aged		?	?
111	Male	?35+		Female	?
112	Male	young	146	Male*	middle-aged/old
113	Male	?35–45		?Female	?
114	Male*	middle-aged	147	Male	adult
	?	?	148	Female	old
	?	child 5–6	149	?Female*	c. 15
115BD	Male	adult		?	adult
	?	juvenile	150	Male*	young/?middle-aged
	?	sub-adult		?	juvenile
116BD	Male	middle-aged/old		?Female	adult
	Female	adult	151	Female	old
	?	sub-adult	152	Male	young
	?	child c. 10	153	Male	c. 16–18
117	Female*	middle-aged	154	Male	old
	Male	?	155	Female	25–35
	Male	?	156BD	Male	?
118	Female*	young/?middle-aged		Male	?
	Male	?		Female	?
121	Female	adult		?	sub-adult
122	Male	middle-aged	157	Female	middle-aged/old
123	Male	young	158	see 50	
124	?	adult	159BD	Female	?35–45
125	Male	35+		Male	adult
126BD	Male	?		?Female	adult
	Male	?	160	Female	young

Grave	Sex	Age
161	Male	middle-aged/old
162	Female	25-35
163	Female*	?middle-aged
	Female	adult
	?	juvenile
164	Female	young/?middle-aged

Notes: BD = 'Bone dump'

\* = ?main interment

Table 63 Burgh Castle human bone: sex and age of numbered interments supplementing Johnson 1983, table 1.



## Appendix 8

### The Human Skeletal Remains from Caister-on-Sea

by Sue Anderson (with data produced by the late Calvin Wells and the late David Birkett)

Part of Ancient Monuments Laboratory Report 7/91

#### Summary

The skeletal remains from a large but incompletely excavated Saxon cemetery are examined. Remains of 139 articulated individuals were recovered, together with a small amount of disarticulated bone from all over the site. The articulated remains represented forty-nine males, fifty females, eight unsexed adults and thirty-two children. Demographic, metrical, morphological, dental and pathological aspects of the group are considered, and compared with the contemporary local cemetery populations from Burgh Castle, North Elmham and Brandon.

#### Introduction

Excavations in the 1940s and 1950s uncovered the remains of 155 numbered skeletons, to which were added another seven in 1979. This total of 162 individuals probably only represents a quarter (or possibly less) of the original cemetery population since large areas of the site remain unexcavated. Some of the numbered skeletons were not analysed for various reasons (*e.g.* because they were not lifted, or the 'graves' turned out to be just features, or the skeletons have been lost over the years), and a total of 135 numbered inhumations was seen, as well as a number of bags of disarticulated bones. Taking into account only the articulated remains, a minimum number of individuals was estimated at 139 (eighty-eight of which came from the main excavation in Area 4).

Most of the disarticulated remains were recovered from Area 4, but at least seventeen bags contained remains from Area 1, particularly from grid squares close to Sks. 1 and 2, in Building 1.

The original brief for this work involved the writing of a report using the information collected by Calvin Wells and David Birkett. Unfortunately, when the notes were looked at in detail it was found that they were incomplete, only twenty-one skeletons being represented. Luckily most of the tables of measurements were available, although the mandibular measurements for the females had been lost. It is likely that all the information necessary to write this report would have been collected by Dr Wells or Dr Birkett, but that it has been 'filed safely' over the years and some has gone missing. Dr Birkett had supplied Kirsty Rodwell with ages and sexes of most skeletons for inclusion in the cemetery report, although the list was not complete. It was therefore necessary for the current author to collect palaeopathological, non-metrical and dental data for this skeletal group, and also to age, sex and measure those individuals who had been missed. In order to attain some degree of uniformity, the whole group was re-assessed for age and sex whilst the other data was being collected, and in general there was found to be little change from the original assessments.

A number of bones have also disappeared over the years, although in some cases it seems doubtful that they were seen by any of the analysts. A number may have been pathological and have gone to make up one or more collections somewhere. A few have been published by Wells and these are noted in the catalogue and the relevant sections of the report, but many are unfortunately unaccounted for. If they were present on site, this has been noted in the catalogue, and the skeletal forms reproduced at the end of the catalogue show only those bones seen by the present author to give an idea of the amount of material available.

#### Method

Measurements were taken using the methods described by Brothwell (1981), together with a few from Bass (1971). Cranial and mandibular measurements taken by Wells follow Morant (1923). Sexing and ageing techniques follow Brothwell, and the Workshop of European Anthropologists (1980). Stature was estimated according to the regression formulae of Trotter and Gleser (Trotter 1970). All systematically scored non-metric traits can be found in Brothwell, and grades of dental calculus, cribra orbitalia and osteoarthritis are also listed there.

It should be noted that male mandibular measurements (recorded by Wells) were probably taken on a mandible board, which was not available to the present writer for measurement of the female jaws. It is hoped that most other measurements taken by myself will be compatible with those of Dr Wells, although obviously some degree of inter-observer error will occur. Since the majority of skeletons were measured by Wells it is probable that the few taken by myself will alter the means and ranges very little. The tables of measurement in the archive and full report show which skeletons were measured by each analyst.

#### Comparative material

The major sites used for comparison in this report are Brandon, Suffolk (Middle Saxon, Anderson 1990), Burgh Castle, Norfolk (Middle to Late Saxon, this volume), and North Elmham, Norfolk (Late Saxon, Wells 1980).

#### Condition of material

Most of the skeletons from Caister were in fair or good condition. Out of the 137 skeletons assessed, only nine were classed as poor or very poor. This is reflected in the fairly high proportion of bones for which it was possible to record measurements. There was little difference between the sexes, although children and unsexed adults appear to be in slightly worse condition than sexed adults.

#### Demographic analysis

##### 1. Age at death

##### (Table 64)

Out of the 139 individuals analyzed from this site, 107 were adult (*i.e.* over eighteen years of age at death) and thirty two were children, giving a ratio of 77:23. Although this proportion is quite low for a post-Roman cemetery, it is actually higher than that found at Burgh Castle (15.5% children), Brandon main cemetery (20.3%) and North Elmham (18.9%). The small number of child burials at Caister may be explained by incomplete excavation of the cemetery, since there is a large concentration of juvenile burials at the eastern edge of the main area, suggesting some form of clustering, perhaps around a particular feature in the cemetery, such as a tree, cross or church. Burial of children close to the church building is known at other sites (for example, The Hirsell, the site report for which is in preparation by Professor R.J. Cramp). If it were the case at Caister, then there may be a much larger proportion of juvenile burials than the current analysis suggests.

No attempt has been made to calculate an average age at death for this population due to the inaccuracy of current ageing techniques for the adult skeleton. Table 64 records possible age distributions for all adult articulated skeletons aged more precisely than simply 'adult'.

Four males, one female and six unsexed individuals could only be categorized as adults. It should be noted that many of the individuals in the categories 'Young-Middle-aged' and 'Middle-aged-Old' were put there simply due to the fact that it was impossible to decide which single category they fitted into. The suggested age range should therefore be seen as only a rough guide.

Firstly, it can be noted that more women died young than men, but after this initial mortality peak, the female population seems to show a similar distribution to the male. A larger proportion of the population seems to have died in late middle-age or older, than those dying around late youth to middle-age. Apart from the female peak in early adult life, this pattern is very similar to modern groups, and also to the Saxon and medieval cemetery groups of Jarrow and Monkwearmouth on the North-East coast (Anderson, unpublished). It is not like the patterns of age distribution found by the present author at Burgh Castle or Brandon, or by Wells at North Elmham. The general trends in these three groups were towards higher mortality in young and middle-age. The reason why Caister should be so different from the neighbouring and near-contemporary site of Burgh Castle is unclear, and it is particularly difficult to speculate due to the incomplete and non-random nature of the Caister sample.

The numbers of children found in various age groups for the main excavation area and the whole site are as follows: newborn to two years 7 (21.9%), two to six years 6 (18.8%), six to twelve years 12 (37.5%), twelve to sixteen years 4 (12.5%), sixteen to eighteen years 3 (9.4%). It can be seen from this that the largest proportion of children died between six and twelve years. It might be expected that the greatest chance of dying in childhood would be in the first few years of life, but at Caister the children would appear to have as much likelihood of facing death after the age of six years as they did before this age. A similar pattern was found at Brandon, but at Burgh Castle the greatest mortality was in the twelve to eighteen years category, and at North Elmham children under the age of six had the greatest probability of death, with this slowly decreasing as they approached adulthood.

##### 2. Sex distribution

Forty-nine men, fifty women, eight unsexed adults and thirty-two children were found at Caister. Two sub-adults in the age category sixteen to eighteen years were also sexable, one being ?male and the other ?female.

Over the whole site the ratio of men to women is approximately 1:1, which is expected in a normal population. In Area 4, however, there is a greater proportion of women (thirty-seven) than men (twenty-seven). This may reflect an intentional grouping of women in a particular area of the

Age Group	Suggested age range	Male		Female		Total, with unsexed	
		n	%	n	%	n	%
Young-adult	over 18	3	6.7	13	26.5	16	16.7
Young-MA	over 25	7	15.6	7	14.3	15	15.6
Middle-aged	over 35	13	28.9	9	18.4	22	22.9
MA-old	over 45	12	26.7	9	18.4	22	22.9
Old	over 50	10	22.2	11	22.4	21	21.9

Table 64 Caister human bone: possible age distribution for adults.

Site	Sex	Cranial Index		H/L Index		H/B Index	
		N	m	N	m	N	m
Caister	M	34	75.0	31	69.3	32	92.9
	F	33	75.1	24	69.1	26	92.5
Burgh Castle	M	22	73.1	18	71.1	14	96.9
	F	18	75.5	17	70.1	15	92.9
Brandon	M	6	73.1	-	-	-	-
	F	4	73.5	-	-	-	-

Table 65 Caister human bone: cranial indices.

cemetery, but it could just as easily have occurred by chance. When the sexes are plotted on the site plan (Fig.30) of the main excavation area there do appear to be small groupings of men and women, but there is always at least one burial of the opposite sex either close to or within these small clusters. It has already been stated above that the children seem to form a group in this area, in that they are nearly all buried in a north-to-south line near the eastern edge of the excavated area. This may suggest some form of graveyard management, tradition or religious belief, or simply family wishes. Unless the entire cemetery is excavated it is difficult to be certain why this distribution has occurred.

### Metrical and morphological analysis

#### 1. Stature

The average male stature at Caister was 170.8cm (5ft 7in) with a range of 157.0–185.8cm (5ft 2in–6ft 1in), calculated from thirty-three individuals. The mean female stature for thirty-nine individuals was 161.1cm (5ft 3in), with the shortest woman measuring 148.6cm (4ft 11in) and the tallest 172.3cm (5ft 8in).

These means and ranges are very similar to those found at Brandon and in other contemporary populations, although the men at North Elmham were slightly taller and the women slightly shorter on average. They are short compared with the unusually tall Burgh Castle group. In connection with this, it should be noted that the tallest man in the Caister group (Sk. 2) was not buried in the main cemetery, but some distance away in Building 1. It might be tentatively suggested that he was not a member of the Caister population, but came from elsewhere, Burgh Castle being a possibility. However, the other man interred next to him (Sk. 1) was only 167.1cm tall, so obviously this kind of conjecture would have to be based on more evidence than height alone.

#### 2. Cranial indices

##### (Table 65)

The means of the three main cranial indices (100L/B, 100H/L and 100 H/B) are recorded in Table 65, with those from other sites for comparison.

It is interesting that the means of the Burgh Castle females are closer to those of both sexes at Caister than they are to the men of Burgh Castle. It may be indicative of men settling in East Anglia and taking native wives, but this scenario assumes that the Caister group is a native one, which is impossible to ascertain from their cranial measurements alone.

When the three main cranial indices and the nasal and orbital indices are divided into their descriptive categories (see archive report), there appears to be very little difference between the sexes. At Burgh Castle differences between the sexes were much more noticeable. The majority of males there were dolichocephalic, orthocephalic and metriocephalic, whereas the majority of females were mesocephalic, chamaecephalic and tapeinocephalic. At Caister, both sexes seem to be fairly evenly spread between the first two categories of each index, suggesting that they were

a more homogeneous group. Their cranial indices are very similar to those of the people of North Elmham, who were 'a long- to medium-headed group, with a lowish head height, long narrow noses, and with eye sockets of medium proportions' (Wells 1980).

#### 3. Meric and cnemid indices

At Caister, the majority of female femora were very flattened (hyperplatymetric), whereas the male femora were mostly very flattened but with a large proportion of platymetric (flattened) bones as well.

The majority of male tibiae fall into the platycnemid and mesocnemid categories, whereas those of the females are more evenly spread. The greatest numbers of both sexes fall into the mesocnemid range, however.

Relatively narrow bones are thought to be common in earlier populations, and at Caister this is true of the femora, and the tibiae to a lesser extent. Similar patterns were found at Brandon, Burgh Castle and North Elmham. It seems that although the causes of these conditions remain uncertain, they do tend to present a similar picture at a number of contemporary sites.

#### 4. Non-metric traits

Non-metric traits are small non-pathological variations in the 'normal' anatomy of the skeleton. They can be scored for any bone in the body, but have been studied in most detail on the skull. Most are at least partly genetically determined (although the genetic components of single traits are unknown at present).

Sixteen cranial traits were scored systematically in this population. Other traits were noted when they were seen and are recorded under the skeleton concerned in the catalogue. Some sexual differentiation was seen for a few of the traits, for example sagittal wormian bones and Inca bones occurred in three male but no female skulls, asterionic bones occurred in males but not females, and palatine and mandibular tori were noticeably more common in females than in males. Most of the traits scored here have similar frequencies to those seen at Burgh Castle and Brandon, although basi-occipital traits (double hypoglossal canal, post-condylar canal and pre-condylar tubercle) were far less common at Burgh Castle than at Caister or Brandon.

Eleven post-cranial traits were systematically scored in this group. Of those which were also scored at Burgh the frequencies found at Caister were slightly higher, which may reflect the different techniques of the two observers involved. The main sexual differences at Caister were the larger frequencies of femoral head traits (Poirier's facet and plaque formation) in the males than in the females.

Non-metric traits can be used to suggest tentative relationships between individuals buried in a cemetery. Some of the more uncommon traits found at Caister were plotted on the site plan to see if any occurred in neighbouring skeletons. A few possible groupings occurred. For example, torus palatinus was present in three out of four skeletons in a group at the south-west corner of the main excavation area (Sks. 60, 61

and 63), and these skeletons also had other traits in common. Mandibular tori occurred in two skeletons buried adjacent to each other in Trench MII (116 and 118), and this trait was also common in the large group at the north-east corner of the main excavation area. This last group seemed to have a number of traits in common, although not all skeletons had the same combinations. Unlike many other sites, retention of the metopic suture did not show any obvious relationships, although Sks. 33 and 91 both showed this trait and were buried close to each other. Unfortunately a number of the rarer traits occurred in skeletons which could not be located, so the picture is far from complete. From the evidence available, it seems that there may be at least two family groups in the main excavation area, as mentioned above, although the wide dispersal of a number of traits may suggest a close breeding community. When assessing this type of information, however, the long period of use of the cemetery should be taken into account.

### Dental analysis

Forty-two males and forty-seven females had one or more fragments of dentition available for study. These were made up of forty-one male maxillae, thirty-nine male mandibles, forty female maxillae and forty female mandibles. The total numbers of expected tooth positions available for study were thus 1280 each for men and women, of which sixty-four male and fifty-five female positions were missing, leaving 1216 male and 1225 female observable positions. One hundred and ninety-seven male teeth and 267 female teeth had been lost after death, ante-mortem loss accounted for seventy-six male and eighty-three female teeth, twenty male and thirty-nine female teeth were unerupted or congenitally absent, leaving 923 male and 836 female teeth for study. In addition, there were eighteen children with dental remains (sixteen maxillae, fifteen mandibles).

#### 1. Ante-mortem tooth loss

##### (Table 66)

Ante-mortem loss of one or more teeth was observed in twenty males and sixteen females, giving percentages of 47.6% and 34.0% respectively, 40.4% overall. Of these, nineteen males and fourteen females had caries and/or abscesses.

Ante-mortem tooth loss is highest in the molars, second premolars and mesial incisors of both males and females, and is generally greater in males than in females. Similar patterns were observed at North Elmham, Brandon and Burgh Castle.

Table 66 records the total ante-mortem tooth loss by sex as a percentage of the total identifiable positions for Caister, with some other sites for comparison.

Site	Male	Female
Caister	6.3	6.8
Burgh Castle	6.9	4.9
Brandon Cemetery 1	7.7	4.3
North Elmham	9.8	12.1
Ipswich School Street	15.3	6.7

Table 66 Caister human bone: ante-mortem tooth loss.

The male figure is close to the almost contemporary sites of Burgh Castle and Brandon, but is lower than the later sites of Ipswich (Mays 1989) and North Elmham. As at North Elmham, the female figure is higher than that of the males, possibly due to different eating habits. However, the two figures are quite close, and it may be that the similar mortality rate of men and women at Caister had a greater effect here.

#### 2. Caries

Ten males and ten females had carious lesions in one or more teeth. All except two lesions were located in the molar area, the exceptions being a lesion in the upper left first premolar of Sk. 5 and the upper left canine of Sk. 132, both males. No children were affected.

Carious lesions occurred more frequently in the mandible than the maxilla in both sexes. The overall caries rate was slightly higher for women than for men (1.8% and 1.7% respectively), but the difference is very small compared with other similar groups. Again, this is perhaps due to the similar mortality rates of men and women in this population. The caries rate for the whole group (1.8%) is quite low, and is comparable with those of Burgh Castle (1.9%) and Brandon (1.0%), but lower than North Elmham (6.4%). A low frequency of carious lesions may suggest a diet containing few carbohydrates, or perhaps a high standard of oral hygiene.

#### 3. Periodontal disease

Out of 2441 observable adult tooth positions, 131 were affected with periodontal abscesses, giving an overall abscess frequency of 5.4%. This is much higher than the rates seen at Burgh Castle (2.0%), North Elmham (2.0%) and Brandon (2.5%). The higher rate at Caister may be connected with higher life expectancy, since this would allow more time for abscesses to develop for whatever reason. However, it was noted that many abscesses had formed around the roots of teeth whose pulp cavity had apparently opened due to attrition. In these cases it was often seen that surrounding teeth did not reach anything like the degree of wear of the affected tooth. It may be that the appearance of these teeth was due to advanced carious attack coupled with heavy attrition, but it seems unlikely that the entire crown would disappear for this reason in so many cases.

Periodontal abscesses were spread between twenty-five men and fourteen women. The premolars and molars of both sexes were affected the most, although the range of affected teeth seemed to be wider in the maxilla than the mandible. The men seemed to be more affected by this disease than the women.

Abscesses may occur as a result of caries, and at Caister nine men and eight women were affected with both conditions. Abscesses were found under nine female carious teeth and six male, but there may have been more since teeth have been lost post-mortem and ante-mortem from alveoli with abscesses.

#### 4. Unerupted/congenitally absent teeth

Since it was not possible to radiograph the dentitions in this skeletal group, scoring of congenital absence or uneruption of the teeth has had to be based on the external appearance of the alveolar bone (except in a few cases where the jaw was broken at the appropriate point), and therefore no distinction can be made between the two possibilities. As is the case in most populations, the majority of 'unerupted' teeth were third molars.

It is usually expected that females will show a greater rate of third molar agenesis, and Caister is no exception. The male frequency was 11.0% and the female frequency was 24.3% (maxillae and mandibles combined). Other groups in the area show similar degrees of occurrence. At Burgh Castle the totals were 13.5% for males and 21.1% for females, and at North Elmham there was a prevalence of 9.4% in the males and 22.6% in the females. The Brandon figures were slightly less: 9.1% for males and 14.4% for females.

Of the eight other 'unerupted' teeth in this population, four were canines, two were incisors and two were premolars. Sk. 4 (?Male, Y-MA) had no lower left canine, probably due to non-eruption. Sk. 9 (Female, old) had retained her deciduous upper right canine, and the permanent canine was lying obliquely in the jaw. The upper right canine of Sk. 20 (Male, MA-Old) was not fully erupted. Both upper lateral incisors of Sk. 89 (Male, MA+) appeared to be congenitally absent. Sk. 116 (Female, young) had retained the upper left deciduous canine (lost post-mortem) with partial eruption of the adult tooth, and also the deciduous lower second molars.

#### 5. Calculus, and hypoplasia

Dentitions were also assessed for the presence or absence of calculus (tartar), and enamel hypoplasia. Calculus was scored according to the scheme of Brothwell (1981), and hypoplasia has been scored on a similar four point scale.

Although the women had slightly more calculus overall, the men seemed to have a greater amount. This may indicate differing eating habits between the sexes, or it may suggest that women took more care of their mouths. The quantity of calculus seems to correlate well with advancing age, and the fact that the large majority of adults were affected suggests that oral hygiene was not good.

Enamel hypoplasia was found to occur more in men than in women, but of those affected there seems to be little difference in quantity between the sexes. This might suggest similar treatment of both sexes in childhood.

The children were also assessed for the presence of enamel hypoplasia, and three out of eight assessable were found to have slight lesions. The remaining five were unaffected.

In this group, the adults were more affected with hypoplasia than the children. Since hypoplasia is a malformation of the enamel of the teeth as they grow in childhood, the adults probably did not have a longer time to develop the lesions. The data from this group suggests that those individuals who survived into adult life show more and grosser lesions than those dying in childhood. It may be that those children dying of disease were killed by acute infections which left no mark on the teeth. Periods when enamel deposition was difficult may be suggestive of chronic illness which individuals were generally able to survive.

**Pathology**

*1. Congenital anomalies*

At Caister, the spine was the most common region of the skeleton to be affected by lesions which appeared to be congenital in origin. Three individuals had a detached neural arch of the fifth lumbar vertebra (Sks. 76, 83 and 134). One of these (Sk. 134) also had spina bifida occulta of the first two sacral segments, and Sk. 63 was affected with spina bifida of the S3-4 and coccyx. Five skeletons appeared to have six lumbar vertebrae each (Sks. 37, 41, 94, 112 and 120; 37 and 94 are buried close together, as are 112 and 120). The right lower zygapophyseal facet of the fifth lumbar vertebra of Sk. 1 apparently never formed (the corresponding area of the sacrum was lost post-mortem). The left ala of the sacrum of Sk. 130 is smaller and narrower than the right anteriorly.

The skull of Sk. 87 shows marked sagittal keeling, particularly when viewed from the rear, although craniostenosis has not occurred. This anomaly may be congenital in origin, although it cannot be called scaphocephaly owing to the lack of premature fusion of the sagittal suture.

The superior edge of the left first cuneiform has an extra rounded piece of bone projecting over the position of the second metatarsal, for which there is a facet just below.

It is unlikely that any of these skeletal malformations would have given their owners any problems in life.

One other possible congenital anomaly was noted by Wells (1962a) in an unspecified female skeleton from Caister. The right auditory canal was imperforate, presumably causing deafness in that ear.

*2. Arthropathies and degenerative disease (Tables 67-9)*

Evidence for some degree of osteoarthritic change was found in twenty-four men, eighteen women and one unsexed adult. The vertebral column was affected the most, and Table 67 shows the number of individuals involved as a proportion of the number of individuals with at least part of the area of spine in question. Details of individual lesions, including part of vertebra affected, can be found in the catalogue.

From Table 67 it can be seen that arthritic lesions were most common in the cervical region of both sexes, where the females were more affected than the males. Arthritis of the lumbar vertebrae was more common in men, perhaps reflecting different tasks performed by men and women.

Table 68 presents the general areas of articulation in the skeleton and the presence of arthritis in those areas. The shoulders and elbows are the most commonly affected joints in both men and women. At Brandon, the most common areas to be involved after the spine were the shoulders and hips, and at North Elmham the feet, shoulders and elbows have the greatest prevalence of the disease. The most striking difference between the sexes is that only women were found to have arthritis of the knee, which was also the case at Brandon. In most other areas of the body the results for the two sexes are very similar, although the men are affected in the left elbow more frequently than the women, and left shoulders and hips of women are more often involved than those of men. This seems to suggest different usage of the joints by men and women, and is possibly related to occupational factors.

The rib heads and tubercles, together with their articulations on the thoracic vertebrae, were also frequently involved, as was the case at North Elmham. One other site not included in Table 68 is commonly affected by arthritic change, this being the temporo-mandibular joint. At Caister only one example was found, on the left temporal fossa and mandibular condyle of Sk. 76 (male, MA-Old), which were roughened and pitted with eburnation and osteophytosis.

One disarticulated adult ?female left humerus, included with Sk. 6 (Child), was seen by Wells. The head was destroyed, there was slight eburnation over the surface and a large ring of osteophytes around the joint. This has been published as a case of pyogenic or septic arthritis (Wells 1962b and 1972) and is currently on display in Norwich Castle Museum.

Osteophytosis, a degenerative process which involves the growth of bony prominences around the joint, can be seen in association with osteoarthritis but is more frequently seen on its own. It is most common in the spine, but may occur around any articular surface in the skeleton, and becomes more frequent with advancing age. The frequencies of osteophytosis seen in adult spines from Caister are shown in Table 69.

Area of spine	Male			Female		
	N	OA	%	N	OA	%
Cervical	33	10	30.3	28	10	35.7
Thoracic	27	7	25.9	31	8	25.8
Lumbar	29	7	24.1	31	4	12.9

Table 67 Caister human bone: numbers of arthritic lesions.

Area affected	Side	Male			Female		
		N	+	%	N	+	%
Knee	R	31	0	-	39	4	10.3
	L	32	0	-	39	3	7.7
Sacro-iliac joint	R	25	0	-	28	0	-
	L	26	1	3.8	28	0	-
Elbow	R	26	5	19.2	30	6	20.0
	L	27	5	18.5	31	4	12.9
Shoulder	R	25	8	32.0	32	9	28.1
	L	27	4	14.8	33	8	24.2
Hand/wrist	R	31	2	6.5	28	4	14.3
	L	31	2	6.5	29	1	3.4
Foot/ankle	R	28	2	7.1	39	3	7.7
	L	27	2	7.4	38	3	7.9
Hips	R	32	4	12.5	35	5	14.3
	L	32	3	9.4	38	6	15.8

Table 68 Caister human bone: areas of arthritis.

Area of spine	Male			Female		
	N	OP	%	N	OP	%
Cervical	33	12	36.4	28	4	14.3
Thoracic	27	19	70.4	31	15	48.4
Lumbar	29	21	72.4	31	17	54.8

Table 69 Caister human bone: osteophytosis.

Table 69 shows that in both sexes osteophytes were most common in the lumbar region, followed closely by the thoracic area. This was also found to be the case at North Elmham. The condition is more frequently seen in males than in females in all areas of the spine, perhaps due to the greater workload placed on the male vertebral column.

After the spine, the shoulders and hips were the joints most commonly affected with osteophytosis in both sexes. This is probably associated with the same factors as those which caused arthritis in these areas.

Six skeletons, all males, showed evidence of the degenerative condition known as DISH (diffuse idiopathic skeletal hyperostosis) in which there is osteophyte growth around most joints, together with calcification of the ligamentous attachments and cartilage (particularly thyroid and costal), and sometimes partial or complete fusion of the vertebral bodies (ankylosing hyperostosis). It is generally seen in middle-aged or older men. Sk. 14 (?male, old) showed osteophytosis of a number of joints, calcification of costal cartilage on the manubrial joint with the left first rib, and DISH-type lipping of one lower thoracic vertebra. The ninth and tenth thoracic vertebrae of Sk. 77 (male, old) were ankylosed, the T11 and L4-5 were also affected with DISH, and the xiphisternal process was calcified. DISH-type lipping was also seen on some vertebrae of Sk. 76 (T9-11, L4-5 and S1 right side), Sk. 120 (L3-6, and fusion of left sacro-iliac joint), Sk. 133 (T9-11 right side) and Sk. 'B' (L3-5 right side, plus calcified thyroid cartilage around sternum). Five other individuals had calcified xiphisternal processes (Sks. 33, 83, 116, 124 and 153), three had calcified thyroid cartilage (118, 134 and 153) and one had calcified costal cartilage (122), but none of these showed any other evidence which could be linked to DISH.

Osteoporosis involves thinning of the cortices and inner structure of the bones, generally associated with increasing age but also caused by some deficiency diseases. In this group, five individuals showed changes which may be osteoporotic in origin. The thoracic and lumbar vertebrae of Sk. 2 (male, MA+) seemed very lightweight and the T11-12 were particularly flattened with wedging of the T11 to the right. The second lumbar vertebra of Sk. 14 (male, old) was extremely cod-shaped (*i.e.* the centre of the body had collapsed inwards due to loss of bone structure). The mandible of Sk. 33 (male, old) appeared thin and osteoporotic. All bones of Sk. 38 (female, MA-Old) and Sk. 84 (female, old) seemed light and osteoporotic.

### 3. Spinal pathology

Schmorl's nodes, a condition in which small depressions are formed in the upper and lower surfaces of the vertebral bodies due to breakthrough of the nucleus pulposus of the vertebral disc, is fairly common in most skeletal populations. It is associated with physical stress in young people.

The condition was found in similar quantities in the thoracic and lumbar regions of the spine, but men were affected more than women, perhaps suggesting that they undertook heavier tasks.

Wedging of one or more vertebral bodies was seen in eight skeletons. This condition can occur as a result of loss of bone structure in osteoporosis, or may be due to trauma, congenital malformation, or infection. In most cases seen at Caister it is not possible to state the cause of the lesion with any great certainty, but the most likely explanations in most instances are degeneration and osteoporosis. The affected skeletons were Sk. 2 (possible kyphosis and scoliosis, especially of T11-12), Sk. 40 (collapse of left side of L5), Sk. 52 (right side of first sacral segment lower than left, possibly congenital?), Sk. 58 (wedging of T3 to left, scoliosis), Sk. 63 (L5 wedged to right, probably connected with sacralisation of left side, possible scoliosis), Sk. 91 (wedging of T3 to right, slight scoliosis), Sk. 108 (slight anterior-posterior wedging of L1, slight kyphosis), and Sk. 153 (anterior-posterior wedging of T11-12, kyphosis).

Other notes on spinal pathology can be found in the sections on congenital anomalies, and arthropathies and degenerative disease.

### 4. Cribra orbitalia and porotic hyperostosis

Cribra orbitalia is a lesion of the roof of the orbit (the part of the skull which encloses the eye) which has been associated with iron deficiency

anaemia. In its mildest form it consists of a number of small pits over most of the roof area, but it can progress and growth of fibrous bone may occur over the surface of the orbital roof. It has been classified into three main groups — cribrotic, porotic and trabecular (Brothwell, 1981). The lesion was seen in seven children, nine males, and nine females, and was spread fairly evenly through the types (although no example of trabecular cribra was seen in the children).

Prevalences of the condition are similar in males and females, but there is slightly greater occurrence in the children. This is similar to the pattern found at Brandon. In all cases where both orbits were available for assessment the lesion was bilateral and of the same category. Only one example was seen of the more advanced stage of cribra in which fibrous bone grows over the affected area, in Sk. 65 (child, 18-24m).

Seven adults (Sks. 4, 5, 38, 87, 108, 110 and 'A') showed possible evidence of healed porotic hyperostosis, a lesion of the cranial vault also associated with anaemia. In all cases there was bilateral pitting of the parietals along either side of the sagittal suture, two adults had evidence of striations running perpendicular to the suture, and two skulls appeared thickened. The most convincing case was Sk. 38, whose skull showed evidence of all three of the above symptoms, and who also had the trabecular form of cribra orbitalia. Pitting may occur if the individual was affected by a scalp infection, but bilateral occurrence is more likely to have occurred as a result of porotic hyperostosis. No children were seen to have the disease.

### 5. Circulatory disturbances

The most common disease in this category which is seen in archaeological populations is osteochondritis dissecans. This is characterized by a small pit in an articular surface, from which a small area of bone has broken away. It often occurs in young individuals (particularly males), is probably associated with physical stress or trauma, and may heal spontaneously. At Caister it occurred in one male, four females (three of whom had more than one lesion) and one juvenile.

Lesions are frequently noted in the foot bones and the femoral condyles in many populations, and Caister is no different from most. Six of the affected bones were of the foot, four lesions were located on femoral condyles (Sk. 87 was affected on both knees), and one possible lesion was seen on a scapula glenoid fossa.

### 6. Infectious disease

Although infectious disease must have been common in the past, it is very difficult to identify in the skeleton. When evidence of an infectious process is seen, it generally has to be categorized as non-specific (*i.e.* the causative organism cannot be identified). Specific infections, such as tuberculosis, leprosy and syphilis, are rarely seen in most skeletal groups, and unless the skeleton is complete their diagnosis has to be tentative.

The most common infectious condition seen in bone is periostitis, an infection of the outer layer of bone for which the aetiology is unknown. It is most often seen in the lower leg in archaeological populations, and this was found to be the case at Caister. Periostitis of the fibula and/or tibia was seen in eight men and two women, ranging in severity from slight graining and new bone growth through to deep graining and thickening of the bone. Sk. 75 (?female) was particularly affected, with graining and enlargement of both tibiae, the distal thirds of both fibulae, and slight graining of both femora. The grossest lesions of this type seen in this population involved the right tibia and fibula of Sk. 91 (male), with graining medially, fibre bone growth at the distal end, and profuse bone growth along the interosseous line increasing at the distal end. The left tibia was unaffected, but the fibula had deposits of new bone medially and there was slight new bone growth on the lateral surface of the right first metatarsal. The metatarsals were also affected in two female individuals (Sks 84 and 85).

A few lesions were seen which may have been caused by infectious processes, but whose diagnosis is uncertain. The sacrum of Sk. 62 (female) had irregular deposits of new bone on the anterior surface,

perhaps caused by a periosteal reaction following possible trauma to this bone (the first sacral segment is slightly misaligned, the left side being further back than the right when held in anatomical position). Similar deposits of bone were seen on an extra sacrum with Sk. 142, however, and this one showed no evidence of trauma. One child (Sk. 67, aged fourteen to fifteen) had thick deposits of fibrous bone on the insides of some right and left mid ribs, presumably caused by an infection of the chest. Both femora of Sk. 108 (male) had fairly smooth deposits of new bone above the condyles on the posterior surface, possibly due to an infection but perhaps more likely caused by some form of physical stress in these areas. The lateral side of the proximal end of the fifth metatarsal of Sk. 133 (male) was destroyed, leaving the trabecular bone exposed with apparently healed edges of cortical bone, perhaps due to an infection. The proximal half of the right femur of Sk. 134 (male) was bowed antero-posteriorly with slight graining antero-distally, and the tibia was also slightly bowed towards the lateral side at the proximal end, but the cause of this is unknown. Finally, the right second metatarsal shaft of Sk. 153 (male) was thickened midshaft superiorly, with a misaligned appearance, possibly due to a fracture or an infection.

Only two cases of maxillary sinusitis were noted (perhaps not surprisingly considering the complete nature of many skulls), affecting both sinuses of Sk. 135 (female), due to breakthrough of abscesses around both upper first molars, and the sinuses of a maxilla included with Sk. 47 (female).

An infection of the palate was recorded by Wells (1964c, pl.71) in Sk. 'B' (not seen by the present writer), where it is stated to be 'typical of the gingivitis, pyorrhoea and underlying osteitis that is found in severe cases of scurvy'.

One skeleton requires special attention in this section, Sk. 137 (male, young to middle-aged). Both fibulae and the left tibia (right not available) were enlarged with new bone growth over the surfaces of the shafts at the muscle attachments, but the cortices were very thin. There was some periosteal graining, and some inflammation of the left fibula. Fragments of talus and calcaneus appear to show infection and some deformation, but are in poor condition. Unfortunately no other foot bones were preserved. Two finger phalanges show signs of disease: one ?thumb phalanx shows flaring and distortion at both ends ('hourglass' deformity) with necrotic and depositional processes occurring, and one proximal finger phalanx is completely resorbed down to the proximal articular facet with only a conical area of bone where the shaft used to be. One other phalanx shows signs of possible tapering. The right third metacarpal and capitate have an anomalous articulation on the volar side which appears arthritic. There was no enlargement of the nutrient foramina of the metacarpals. Most of these lesions are suggestive of leprosy, but for a definitive diagnosis more hand and foot bones would be necessary, and the facial skeleton should also be studied.

Two other burials contained bones which may have been leprosy. One of these, Sk. 47, contained a large quantity of disarticulated material which there is good reason to suppose has been wrongly numbered. If these bones belong to Sk. 45 (disarticulated skeletons), as seems likely, the leprosy bone from Sk. 47 probably belonged to Sk. 137 (Sk. 45 remains are buried around this grave). The bone concerned is a ?left first metacarpal, the head of which is flattened, with osteophytic growth, and the shaft is very narrow. A proximal pollical phalanx from Sk. 125 had a narrow shaft tapering to a pointed deformed end with small spurs of bone projecting from it, but there was no other evidence to suggest that this may have been caused by leprosy.

### 7. Neoplasms

Eight individuals were affected with benign neoplasms at Caister. Three males (Sks. 13, 76 and 77) and one female (Sk. 53) had one or more ivory osteomata on the cranial vault, three occurring on the frontal bone (all small), and two on the occipital (both large). Sk. 134 (male) had a possible osteoma on the left side of the nose, c. 8mm in diameter. A small ?osteoma (8 by 10mm) was also seen just above the distal medial fossa of the left humerus of Sk. 78 (female). A large midshaft swelling of the left femur of Sk. 'B' was recorded by Wells, initially as a sub-periosteal haematoma due to scurvy (Wells 1964, pl.77), but later re-diagnosed as an osteoid osteoma (Wells 1965). A similar but smaller lesion (30 by 9mm) was seen on the right femur of Sk. 16 (?male) approximately one third down the shaft and with an unbroken periosteum, but without a radiograph it is not possible to decide whether it was caused by an ossifying haematoma, an osteoid osteoma, or some other condition.

Wells records the presence of a tumour on the medial surface midshaft of the left femur of Sk. 89a (now missing), but unfortunately gives no further details.

### 8. Trauma

Thirteen males and ten females were affected by some form of traumatic lesion, ranging from small exostoses, through fractures, to a possible unhealed wound.

The simplest form of traumatic lesion which can be observed in the skeleton is an exostosis or ossifying haematoma. Such lesions occur when a violent movement tears or strains the ligaments at their point of insertion with a bone. If bleeding occurs, this will clot and may eventually become bone, leaving evidence in the form of a small raised spur or prominence. In most cases the individual concerned would not have noticed the lesion once the initial shock and/or pain had passed. Five men and four women showed evidence of this least debilitating form of injury. Lesions were most common in the lower legs and feet. The anterior distal edge of the left fibula was affected in Sk. 11 (female), Sk. 145 (?male) had a small exostosis superior-medially on the R. fibula running down the interosseous line for 23mm (3mm high at inferior end), and Sk. 34 (female) had a small rounded lump (12 by 4mm) at the middle of the interosseous line of the right tibia which may have been an ossified haematoma or possibly an osteoma. Sk. 63 (female) was affected on the left first cuneiform at the superior edge of the joint with the second metatarsal, Sk. 41 (?male) had a small lump (5mm long) running along the superior surface of the left first metatarsal, and Sk. 144 (female) had possible exostoses on the posterior border of the posterior facet of the left talus and corresponding ones on the calcaneus. Other exostoses were seen on the chin area of Sk. 30 (male), and the inferior border of a right middle rib and the anterior midshaft area of the right humerus of Sk. 1 (male). The fusion of the left sacro-iliac joint of Sk. 120 (male) by a profusion of new bone over the superior edge may have been caused by tearing of a muscle in this area, and the lipping of the left ischial tuberosity (not present on the right) may have been caused as a consequence of reduced mobility of the pelvis.

Healed fractures were seen in ten individuals and three disarticulated bones. One man and one woman had fractures of a clavicle. The left clavicle of Sk. 2 (male) was well-healed with some distortion, and the right clavicle of Sk. 62 (female) was broken at the lateral end with shortening and distortion. Sk. 57 (male) had a fractured mid rib, with a possible lesion on another. These three injuries could have been caused by simple falls, but they are also often associated with direct violence.

Fractures of the fibula were seen in one man and one woman. Sk. 52 (female) had an oblique fracture of the distal part of the right fibula, which was well-healed with slight distortion and some callus. New bone on the proximal end of the right fibula of Sk. 57 (male) could be callus, but was on the lateral side only and there was no visible line of fracture. A greenstick fracture could be considered as the cause of this lesion.

Fractures of foot bones were seen in Sk. 124 (?male, right fifth metatarsal), and disarticulated bones with Sk. 84 (right second and third metatarsals). Disarticulated hand bones from Sks. 80 (one finger phalanx) and 83 (left second metacarpal) were also fractured.

One man, Sk. 153, had a classic Colles' fracture of the right radius and ulna, which was well-healed and apparently occurred a long time before death. There was very little callus, and very little deformation of the radius, presumably due to natural splinting by the ulna. The styloid process of the ulna was almost completely lost. Eburnation and sclerosis of the distal end of the ulna at the joints with radius and wrist probably occurred as a result of the injury.

A crush fracture of the left ankle bones of Sk. 113 (male) had resulted in the synostosis of tibia, talus and calcaneus with complete loss of movement in this joint. Roughened new bone had formed around the joint and on the distal end of the fibula, and there was periosteal graining on the tibia shaft. Wells reported this case, originally as the result of a non-tuberculous infection (1964, pl.25), and later as a crush fracture (1976). In the latter paper, it is suggested that injuries of this type are most likely to be the result of a fall from a high place.

Depressed fractures of the frontal bone of the skull were seen in two female skeletons. That of Sk. 38 was at the centre of the right side of the bone, was 17 by 10 mm in size and was healed, with rounded edges and a pitted floor. A similar lesion just to the right of the midline of the frontal bone was observed in Sk. 53, approximately 27mm above the orbit, 18 by 18mm in size, and with a pitted floor. One man, Sk. 89, appeared to have suffered a broken nose, as the inferior ends of the nasal bones were pushed to the right and there was new bone formation at the end which was not centrally aligned.

One individual, Sk. 108, had an unhealed cut on his skull. The cut ran across the occipital and part of the left parietal and had sliced off an oval flake of bone between the lambda and the occipital crest. The point of entry appears to have been the left side, the superior and right sides being forced off along the line of the lambdoid suture. The lesion seems unlikely to have occurred post-mortem since the grave was not disturbed in antiquity. If inflicted ante-mortem it is very likely to have been the cause of death.

Four other lesions were seen which may have been traumatic in origin. Theinion on the occipital crest of Sk. 13 (male) appeared enlarged and flattened, perhaps as the result of a torn muscle. The right femoral lesser trochanter of Sk. 108 appeared flattened. Some form of injury seemed to be the cause of the flattened distal end of the proximal right third finger phalanx of Sk. 110 (?female). The distal end of the left ulna of Sk. 130 (female) was malformed with a large irregular lump on the anterior surface, no styloid process and some eburnation on the distal end. The lack of radius in this case is unfortunate, as it might have provided some clue to the origins of this lesion.

### 9. Miscellaneous lesions

A number of pathological lesions could not be categorized under any of the previous headings, and some could not be diagnosed. These are recorded below.

The left humerus of Sk. 91 (male) was recorded by Wells (1963) as a case of polyostotic fibrous dysplasia. This is a benign disease of unknown cause in which the bone marrow is replaced by fibrous tissue. It probably had very little effect on the individual concerned, other than slight pain in the upper arm.

A possible trephination hole was present on the skull of Sk. 142 (female, MA+), located on the most superior part of the left parietal. The lesion was circular, c. 15mm in diameter (estimated from a photograph), and had smooth healed edges. Wells provides examples of trephination in five early Saxon skulls from Norfolk and Suffolk (1974), all of which seem to show evidence of scraping. The Caister example is completely different, particularly as there was no obvious evidence of the method of incision. This may be the result of different techniques being used by different 'surgeons', or it may be that the Caister lesion had some other cause. The presence of rounded bone around the edge of the hole allows post-mortem changes to be disregarded, but some congenital conditions cause openings in the cranial vault. However, these are generally seen in areas where fontanelles were present in the infant skull, or are enlargements of congenital anomalies such as parietal foramina (Ortner and Putschar 1981). Neither of these possibilities seem to explain the Caister lesion. Two other suggestions made as alternatives to trephination are perforations of the skull due to neoplasms (in which case the edges of the lesion are likely to be less regular) or to infections such as syphilis, both of which seem unlikely here. The most probable explanation for this lesion is either injury caused by a sharp instrument, or trephination.

One young woman, Sk. 116, appears to have died in childbirth. The infant present in her grave beneath her pelvis may have been ejected from the womb after burial, or it may have lain between her thighs. Unfortunately the bones of the infant were not present on analysis, so it was not possible to estimate the age of the child. Hawkes and Wells (1975) describe a similar case from Kingsworthy, Hampshire. As a caveat, it should be noted that documentary evidence for the 19th century suggests that infants and young children were quite commonly buried with women to whom they were not necessarily related simply as 'company', and that this may be an old tradition (unattrib. 1988).

Four skeletons had possible developmental defects in various bones. These were Sk. 16 (both lunates, superior left facet of axis and C3-7, distal articular facet of left tibia at junction with medial malleolus, and occipital sphenoid synostosis), Sk. 33 (small fossa at centre of both scapular glenoids, large pit on right superior facet of axis and smaller behind this, similar on superior right facets of C3-7, and on anterior of head of left femur), Sk. 67 (upper right facet of axis, possibly osteochondritic), and Sk. 106 (lower part of superior facet right calcaneus, two ?vascular holes). In most cases these lesions consisted of small pits in the cortical bone, with a similar appearance to osteochondritic defects.

Three skeletons showed evidence of an inflammatory condition of the ischial tuberosities, known as ischial bursitis. This is typically indicated by new bone growth over the tuberosities, giving them a roughened, craggy appearance. It can be caused by continual movement whilst sitting on a hard seat, and is commonly known as 'Weaver's Bottom', although it can occur in other occupations. Sks. 76 (male) and 85 (female) were affected bilaterally, but Sk. 153 (male) was apparently only affected on the right side.

Sk. 108 (male, young/middle-aged) showed possible evidence of a condition known as hyperostosis frontalis interna, which is extremely rare in a man. However, the skull of this individual is extremely robust and the sciatic notches of the pelvis are narrow, so the ascribed sex is not really in doubt. The disease occurs as a result of changes in pituitary hormones, occurring after menopause in a woman, and consists of a marked thickening of the frontal bone with rounded new bone growth on the interior surface. Such changes were seen in the central area of the frontal bone of Sk. 108, although they were not as profuse as some cases seen in female skulls. A small deposit (c. 2mm diameter) of new bone on the interior of

the skull of Sk. 58 (female, old), to the left of the midline of the frontal bone, might represent the beginnings of this condition or may be a neoplastic growth.

A number of anomalies were seen on the foot and hand bones of various individuals. Possible hallux valgus (the lateral deviation of the big toe) was seen on the right foot of Sk. 2 (male). The right fourth and fifth metatarsals of Sk. 13 (male) were abnormally bowed, and the medial facet of the fourth was enlarged suggesting possible arthritis. This type of bowing was attributed by Wells (1964, 131-2) to habitual wearing of a tight sandal thong. Sk. 149 (unsexable adult) showed apparent deformation of the proximal ends of the right third and fourth metatarsals — the lateral facets of the third appeared to be pushed round towards the proximal facet, which was in turn pushed round to the medial with slight lipping on the lateral edge. The shafts of both bones were abnormally bent. This may also be caused by tight footwear. The right proximal pollicial phalanx (thumb) of Sk. 37 (male) had an extra lump of bone, a kind of tubercle, on the medio-distal end next to the facet, the cause of which is unknown.

Two individuals had ankylosed digits. The distal and medial phalanges of the ?left ?third toe of Sk. 37 (male) were fused together, and the proximal phalanx had a flattened head, presumably resulting in a claw-shaped appearance. Sk. 126 had a fused ?left little finger (distal and medial phalanges). These two conditions could be caused by infection, trauma or arthritis.

A few individuals had abnormally bowed leg bones. Both tibiae were bowed towards the lateral side at the proximal end in Sks. 34 and 37, and the right tibia of Sk. 134 was also affected. Both tibiae of Sk. 57 were bowed anteriorly, but the interosseous lines were straight. Both femora of Sk. 132 were bowed to the lateral side. Such changes have been ascribed to healed rickets, but no evidence of this disease was seen in juveniles, and it is not normally common in non-industrialised populations. As most of the changes are slight, they may be within the bounds of normal anatomical variation.

Some growth anomalies were noted in a few skeletons. Sk. 12 (child, c. eleven years) had rather short lower arms, the lengths of these suggesting an age of c. eight or nine years, whilst the other bones suggested an individual of c. eleven. The left humerus of Sk. 81 (female) was at least 10mm shorter than the right, but unfortunately neither was well-preserved and measurements could only be estimated. As the skeleton was disturbed, it may be that the two bones did not belong together. The left side of the mandible of Sk. 57 (male) was slightly shorter from alveolus to inferior edge than the right, the mentum was definitely smaller, and the lower edges were curved convexly, but the reasons for these anomalies are unknown. The left squamous suture of Sk. 20 (male) was completely fused whilst the right was unfused, but no distortion had occurred. The left clavicle and first rib of Sk. 124 (?male) had an anomalous articulation near the medial end of the clavicle, with corresponding facets on both bones.

Undiagnosed lesions involving new bone growth were seen in three individuals. Sk. 47 had a rounded lump (c. 35mm long, 13mm wide and c. 4mm high) a third of the way down the shaft of the right femur on the medial border, which appeared as part of the cortex in cross-section, possibly a neoplasm or an ossified haematoma. New bone growth around the distal end of the shaft of the left ulna of Sk. 108 (male) may have been due to a fracture or other trauma, but the bone was not misaligned, and the cause could not be ascertained without a radiograph. A deposit of roughened bone on the left mentum of Sk. 133 may be an exostosis, perhaps caused by a blow to the chin.

The incisive foramen of the palate of a skull labelled 'Supp. 1' was enlarged with a smooth floor, perhaps the remains of some kind of cyst, or caused by a localized infection, or perhaps not pathological in origin.

A slight depression had formed on the distal end of the right ?fifth proximal phalanx of Sk. 149 (unsexable adult) just below the head on the palmar surface. Similar depressions are seen in rheumatoid arthritis, but in view of the absence of conclusive evidence for this disease in archaeological populations, and the lack of any other signs of the disease in this skeleton, an alternative explanation for this lesion would probably be more acceptable.

### Summary and discussion

Like most cemetery populations, the skeletons from Caister show major similarities and minor differences to contemporary groups. The male:female ratio of almost 50:50 is similar to many Saxon groups, although a number are closer to 60:40, especially if they are monastic. The small percentage of children is also comparable with local groups. However, all conclusions based on the skeletons from Caister must take into account the fact that only a small section of the cemetery has been excavated. This is particularly important in view of the apparent grouping of child burials along the eastern edge of the main excavation area, suggesting non-random distribution.

Age distribution at this site is slightly different to that seen in other East Anglian groups, with similar death rates of both sexes in the older age groups, although there is the expected peak of female deaths in young adult life. This may have been due to death in childbirth, the cause most often attributed to higher female mortality in youth, and one possible example of this was shown by the presence of the foetus in the grave below the mother's pelvis. Death in childhood was particularly common before the age of six years, as at other sites, but remained on a similar level between six and twelve years, with gradually decreasing mortality after this.

Adult height was very similar to other groups, although only one individual was over six feet tall, perhaps surprisingly when compared with the nearby Burgh Castle population, who were unusually tall for the period. Cranial morphology was similar to that seen at North Elmham, and in the female population at Burgh Castle. Remains from Brandon were too few for adequate comparisons to be made. The men from Burgh Castle seem to be slightly different from their women, and both men and women at Caister and North Elmham. Percentages of non-metric traits were in the normal range, and a few tentative family groupings were suggested by studying the distribution of some rare traits in the cemetery.

Dental analysis produced similar results to other early populations, in that the caries frequency was low and deposits of calculus were common. The relative lack of oral hygiene suggested by the latter implies that the small amounts of tooth decay were more likely to be due to a diet low in carbohydrates than to care of the mouth. Abscesses, however, are more common at Caister than in any other local contemporary group, and this might be explained by greater life expectancy increasing the length of time available for abscess formation.

The most common pathological lesions seen in the Caister group were of the type caused by arthritis and degenerative disease, as is normally expected in skeletal populations. Differences in the joints involved between the sexes may reflect differences in occupation, particularly as the men seemed to be slightly more susceptible to diseases of the load-bearing

joints such as the lower back (arthritis, osteophytosis, DISH and Schmorl's nodes), whilst only women were affected with arthritis of the knee. However, osteochondritic lesions, which are also linked to physical stress, were more common in the women of Caister than the men, the reverse of findings at most other sites.

Diseases linked with malnutrition were rare at Caister. A few individuals had minor lesions of the orbit or scalp which may be associated with iron deficiency anaemia, but enamel hypoplasia was not particularly common, and diseases such as rickets almost never occur in populations such as this. One possible case of scurvy was noted by Wells, but this disease is not normally easily recognizable in the skeleton.

The most common bone infection seen at Caister was periostitis of the lower leg, a common finding in other groups. No examples of more advanced non-specific bone infections were seen. There is good evidence for leprosy changes to the hands, feet and lower legs of one skeleton, but the skull is missing and diagnosis cannot therefore be conclusive.

Fractures and other forms of trauma were fairly common in this population, as at other contemporary sites. This is perhaps not surprising in a period before mechanization removed the necessity for man-power in the more strenuous daily activities. Evidence of physical stress is seen in arthritic and degenerative change, osteochondritis dissecans, and traumatic incidents. Although a few of the fractures seen at Caister may have been caused by direct violence, the majority of traumatic lesions were probably due to accidental damage of muscles or bones. One skull showed possible evidence of an unhealed wound, but this seems to have been exceptional in this group.

The people buried at Caister were generally very similar to other contemporary groups, although their apparent physical differences to their close neighbours at Burgh Castle were unexpected. Like other Saxon groups, their lives would have been hard by today's standards, and disease must have been a frequent extra burden, but those who survived childhood seem to have had quite a high life expectancy, perhaps suggesting a high level of attunement to their environment.



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