

BEDFORDSHIRE

ARCHAEOLOGY



VOLUME 21

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Contributions and matters for review should be sent to the Acting Assistant Editor, *Bedfordshire Archaeology*, Beaumont, Church End, Edlesborough, Dunstable, Beds. LU6 2EP (telephone 0525 221219). **Intending contributors are asked to format articles as set out in the Contributors' Notes, available from the Acting Assistant Editor.**

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together with representatives from archaeological societies and museums of the county:

Ampthill and District Archaeological and Local History Society
Bedford Archaeological and Local History Society
Bedford Museum, Bedford Borough Council
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Higham Ferrers Hundred Archaeological Society
Luton and District Archaeological Society
Luton Museum Service, Luton Borough Council
Manshead Archaeological Society of Dunstable
Potton and District Local History Society
Sundon Historical Research Group

Members of Editorial Committee:

Evelyn Baker, David Hall, Robin Holgate, Barry Horne, John Hutchings

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Edited by Evelyn Baker, Carolyn Wingfield and Barry Horne
with the assistance of the Editorial Committee

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Cover: fragment of an Anglo-Saxon square-headed brooch from Roxton, now in Bedford Museum (see volume 19).

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Editorial

Take the sweet with the sour

Evelyn Baker

This, the twenty-first of what we hope is still regarded as a useful and successful county series, is a sign that archaeology in Bedfordshire is alive and kicking. But is it necessarily as healthy and flourishing as it seems? This volume is the fruit of rescue archaeology and research in the county, and this editorial tests the flavour of the Bedfordshire scene.

In some ways the answer must be a resounding yes to everything being sweetness and light. The richness and variety of the archaeology make it a veritable honeypot. Luton and Bedford Museums' Keepers of Archaeology have been willing and able to progress their various collections and go out to the public in enterprising ways. The Bedfordshire Archaeological Council still has a full and enthusiastic membership, though alas some societies have fallen by the wayside; its journal is recognised as being one of the best county journals to survive into the late twentieth century. While many societies are less than active in the field, the Manshead Society is still doing valuable work, principally field survey, and has just bought and is refurbishing its own headquarters. Named after a prominent archaeologist of the old school, Les Matthews, this new Centre will doubtless be the inspiration of a new generation of archaeologists in the Dunstable area.

A new historical society, the Bedfordshire Local History Association, has come into being; the Bedfordshire County Record Office has gained a well deserved Charter Mark. The County Council's Heritage Group is a model of its kind. The Historic Environment Record continues to thrive and grow, historic buildings and sites are being safeguarded, and the Contracts and Consultancy Division of the Archaeology Service is well ensconced in its Grade 1 listed church, St Mary. It has more work now than it has had to cope with before, and standards are rising all the time.

Archaeology and things past are actively fascinating and involving more people than ever before. The Heritage Industry is massive, and a huge income provider for the nation. Yet the source for this wealth is in danger by being subjected to forces alien to its survival.

The archaeological fruit, though fair, is becoming

increasingly sour and bruised in the manner of its gathering. Mammon, increasingly in the form of competitive tendering without regard to quality, together with local government reorganisation do not necessarily sit well with specialised local services dealing with a fragile, vulnerable and finite resource. Local expertise such as has been built up in Bedford, Luton and Dunstable, cannot easily be replaced by the cheapest bid which will not take into account local needs like local participation, education and display - let alone the opportunity, provided by decades of systematic work, to piece together the wider picture of life in this ancient county in order to understand it and ourselves.

The threats are various. Archaeologists need to eat: hungry units, starved by the long recession, can be tempted to lower their standards to outbid other units, and to take unacceptable shortcuts to remain within loss leader budgets. Career progression within archaeology is something which even now is available only to a fortunate minority. If the profession is to progress, standards must be raised, not lowered to technician or manual contractor status, with inevitable, albeit reluctant, desertion to better paid jobs with prospects. Graduate archaeologists are being placed on manual grades well below the poverty line as a direct result of competitive tendering; the alternative is corner cutting. Competition is forcing archaeologists, acknowledged experts in one region, to bid for work far and wide in others. Who will police them (and the locals) when the County Archaeologist has become an extinct species? Already there is mounting concern with regard to the great diversity of standards, expertise and resource levels among "planning archaeologists".

The financial cake for archaeology is finite. More cakes, thanks to PPG16 there may be, but there are very few cherries. Yet more and more slices, and more and more cherries are being picked by commercial consultants with the inevitable result that there is less developer provided money to record archaeology at risk. There is even less for expenditure on quality improvements and for taking intelligible archaeology to the people to whom it belongs, or letting them participate in their own heritage. The danger is inherent that there will be

little or no room for the amateur in all this; such involvement would deplete the profits. And why should we expect altruism in terms of paying for research (making sense of it all) from developers whose principal aim is profit?

Often outside consultants' local knowledge (and sometimes commitment) to an area is limited and they have the (dis)advantage of being hired by the developer, their clients. Developers naturally wish to remove archaeological obstacles as painlessly (ie cheaply and quickly) as possible. Some consultants run the risk of being over-zealous in assisting them in this laudable task. Some give their client the sense of security that they are getting value for money that they need with this still new and expensive requirement to record before destruction. The danger of abuse is even more apparent when the consultant not only undertakes the fieldwork but advises the client as to its importance and the way it should be treated (ie what should be spent on it). In this, the Department of Transport is wise in barring consultants from undertaking the contract work also. But the DoT has no role for the County Archaeologist, and little for English Heritage; they have vested great power in their archaeological consultants who must clearly have an interest in safeguarding their client's interests. Compound this with the increasing certainty that the lowest tender will be accepted always as a matter of principle and without the quality factor being considered, and that there will be no formal input by the indigenous specialist guardians of the local heritage, then the finite and precious resource becomes an endangered species. Hunters and sharpshooters abound, and the gamekeepers may have been given their cards!

Should central support cease or lessen, long

established archaeological/historical services would be disbanded or dissipated, with, as Richard Morris of the CBA describes it, "the wiping of collective memory". To resurrect it or to split it would be painful, expensive and less effective. Would smaller segments carry the same authority? It seems unlikely. To quote Morris again, how can we "provide stable cores of expertise which can ride out market forces"?

So, what is at risk is stability for not only local government units in which the writer has an obvious interest, but the SMRs, the County Record Offices and the County Archaeologists and their grip on planning issues and quality. Whichever form the new arrangements take, special arrangements must be made in order not to waste away decades of dedicated research, resulting in irreplaceable expertise and bodies of knowledge. The BCRO, the HER (or SMR which in Bedfordshire includes buildings), the expertise and databases built up by the St Mary's County unit team of archaeologists, all would be almost impossible to split up and divide between new unitary authorities. Loss of quality would go hand in hand with greater cost. Scattered data would be in danger of being downgraded, under-resourced, and become vulnerable to abuse. Expertise in the form of people could easily be wasted. Statutory status or truly binding agreements must be made to keep these centres of excellence intact or they will be the first to suffer when the first chill winds blow and the new authorities look to savings from non-statutory functions. The opportunity to improve upon existing arrangements during this time of flux should not be regarded as Forbidden Fruit.

Ring Ditch 'b' at Cople, Bedfordshire

JAMES DYER

SUMMARY

Rescue excavations revealed an oval ring ditch of unknown date, containing the base of a rectangular limestone structure, and evidence of large scale peat burning, possibly as a funeral pyre. Two extended male burials were also found, and probable early Mid-Saxon pottery occurred in the primary ditch filling.

INTRODUCTION

Aerial photographs by Dr J K St Joseph revealed four ring ditches in Culvers End Field, Home Farm, Cople. (TL 101498), (Fig 1 & Pl 1). By 1950 two of these (Fig 1, p and q) had been quarried away during gravel extraction, and the remainder were scheduled for destruction. In the event, this destruction had not taken place at the time of writing (1991). With the consent of the farmer, Mr T H Saunders, Bedford Archaeological Society organised a brief rescue excavation under the direction of the writer from 8-13 August, 1962. The most northerly of the ring ditches (Cople 'b' according to K Field's list, 1974⁽¹⁾, but not site 'c' as printed in Field's paper) was chosen for examination. Continuous rain for the duration of the excavation, no mechanical aid and only three diggers, seriously limited the quality of the work undertaken.

The ring ditches lay along a gravel spur which jutted northwards into peat covered lowland, south of a brook. Ploughing had removed any surface traces of former mounds or banks. Probing revealed the limits of the ditches, and ring ditch 'b' was chosen for examination. All measurements taken were imperial, and the photographic scales are in feet.

THE EXCAVATION

All digging was carried out by hand. The ditch was oval in plan and measured approximately 75 feet (23.0 m) by 62 feet (18.9 m) internally. Its width varied, but averaged 12 feet (3.6 m), and was 3 feet (0.9 m) deep. There were no signs of an entrance gap. Dug into gravel, the sides of the ditch had weathered and were gently rounded. The ditch-fill varied from one part of the site to another. A gravelly primary silt in ditch section 1 suggested some slipping of a bank or mound from the interior. Sherds of black pottery lay on the ditch bottom (see pottery report, group 2). In ditch section 2 were the

scattered remains of a hearth, apparently dumped from elsewhere, when the ditch was partially silted. In ditch section 1 a layer of thick humic sand halfway up the ditch, contained scraps of animal bone and four sherds of pottery (groups 1 and 3).

In the interior, and south of the centre, a linear spread of lumps of cornbrash (inferior oolitic limestone) appeared to form one side of a rectangular structure, though it may only have been a boundary wall. Some of the stones stood upright in a footing trench approximately 8 inches deep (20 cm), that had been cut from the surface of the gravel. Others lay on their sides and had clearly been overturned and displaced by the plough. At the western end the stones spread out in a diffuse scatter to form a side to the structure. The original layout was far from clear, due to the subsequent plough damage, but it appeared that an 'entrance' pavement of flat stones (EP, Figs 2 and 3) and a peat stacking area (PS, Figs 2 and 3) were discernible. None of the stones showed signs of burning. There was no trace of the structure on the north or east. In the western angle of the stone structure around the peat stack was a scatter of burnt material, mainly composed of peat and wood ash, with pieces of animal bone. A circular blue glass bead, 9 mm in diameter and 6 mm thick, dated to the 1st-2nd centuries AD, lay on the edge of the burning, but was not itself burnt. A vague scatter of small round pebbles within the limestone structure suggested an original cobbled floor, stretching intermittently from the southern line of stones, northwards for 16 feet (4.8 m) where it was much more pronounced. At the inner end of the eastern trench was a band of yellow sand 6 inches wide (15 cm) and 8 inches deep (20 cm). It was not on the same orientation as the wall of the rectangular structure, and was probably not connected. Its ends were not uncovered.

Around the centre of the site, at the same level as the stone structure, was a large area of burning, lying *in situ* on the old ground surface. It measured at least 9 feet (2.7 m) by 6 feet (1.8 m), and was partially destroyed by a small pit, devoid of finds, on its northern edge. This burnt area had two centres of intense burning (see Fig 2). Again there were indications that peat had been the main fuel. Pieces of animal bone (sheep and cattle) and human bone were identified amongst the ashes. A small iron knife-like object, possibly a leather creaser, lay on

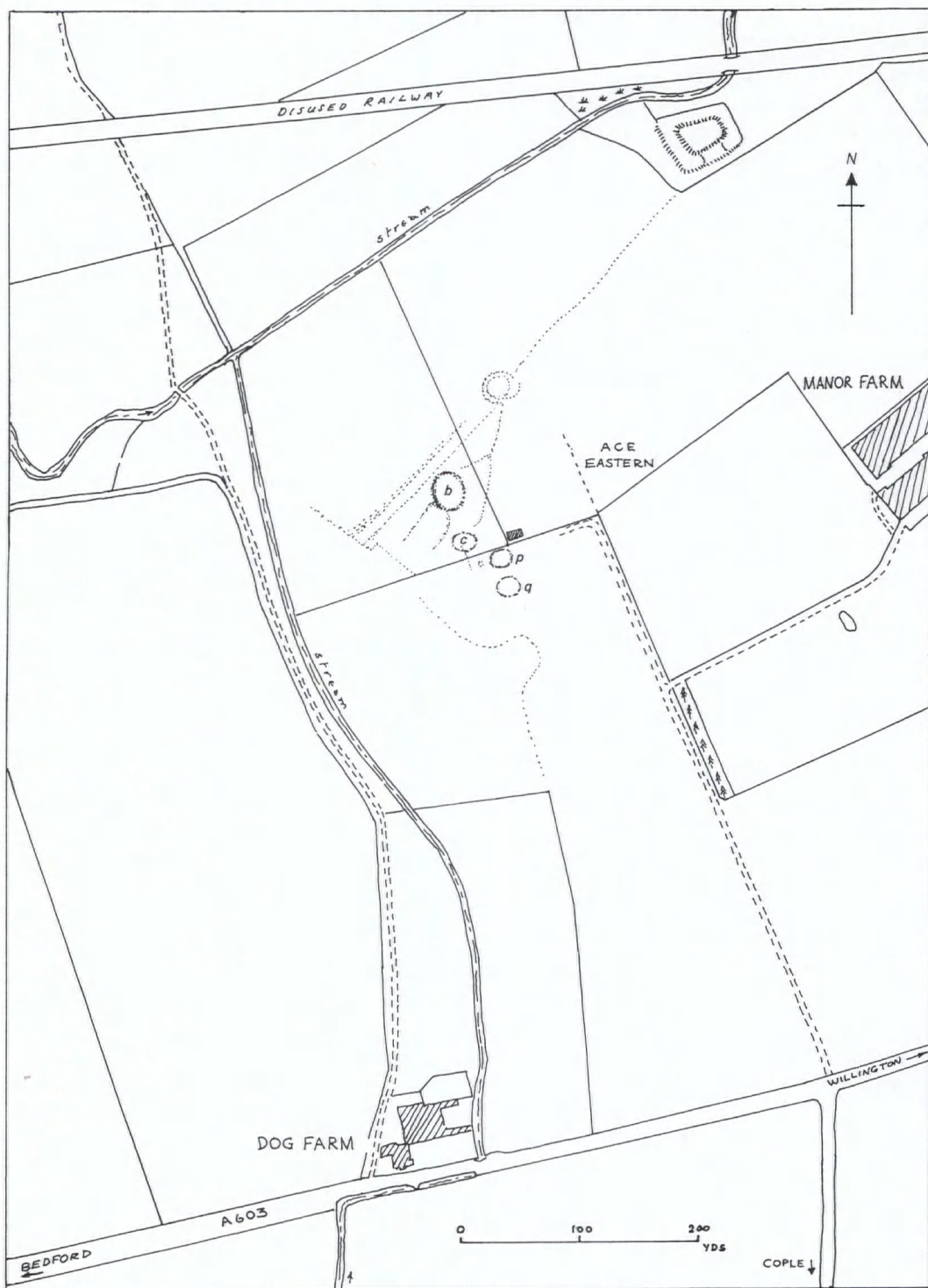


Fig 1. Cropmarks at Cople in 1960.

COPLE 'B'

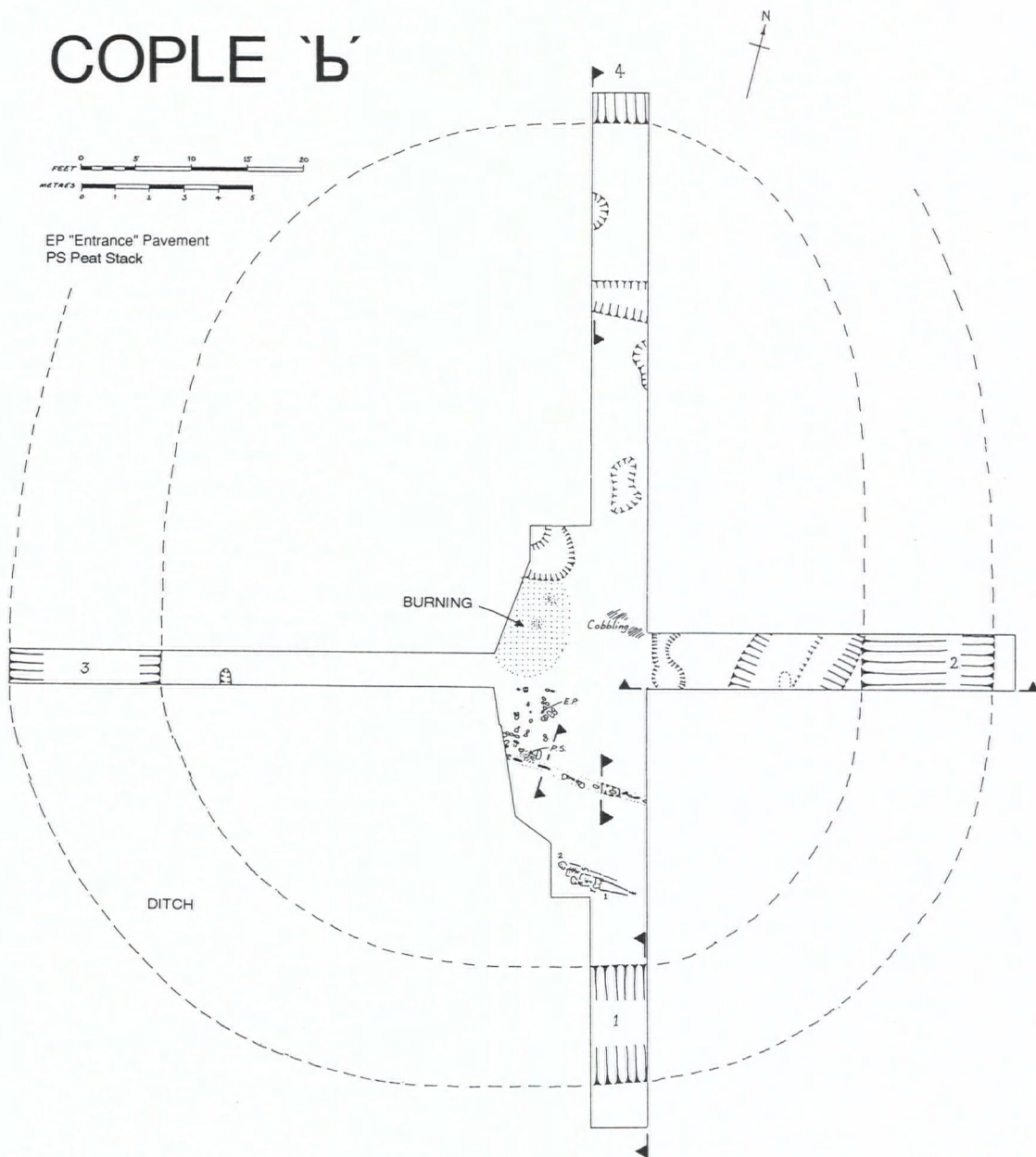


Fig 2. General site plan as in 1962.

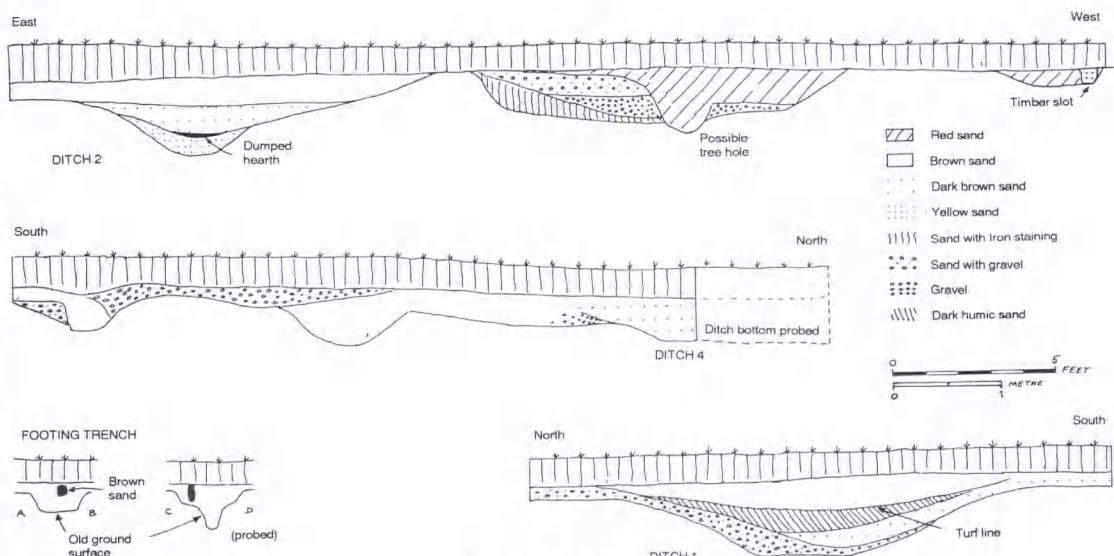


Fig 4. Sections.

the edge of the burnt area.

Between the southern ditch section 1 and the limestone footings were two inhumation burials. The first (No 1) lay in a shallow grave, some 5 inches (12 cm) deep, which had been partially cut away by recent ploughing. It was an extended male lying east to west, with its arms at its sides and head to right (looking south). There were no grave goods. Upon removing the burial traces of a second grave were found beneath it, separated by 5-6 inches (15 cm) of sandy gravel and a fine layer of pea-grit. It was on the same alignment, but lay 1 foot (30 cm) further west. The second burial (No 2) was of a well-built, elderly male (aged about 60), lying extended with the right arm bent across the waist, and the head tilted backwards. In life he had stood about 5 feet 6 inches tall (167 cm). Again there were no grave goods. All the human and animal bones from the site

were lost in transit before a detailed report could be prepared. The above comments are based on a preliminary report made in the laboratory by Dr Clive Martin.

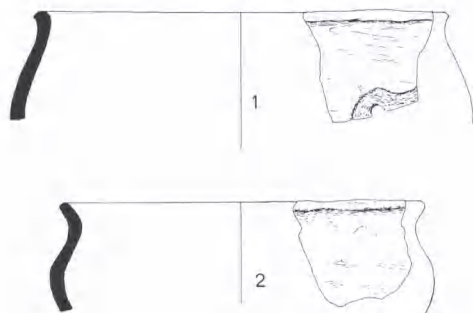
Deep ploughing had done irreparable damage to the site making it difficult to assess contemporaneity of features. The old ground surface was sufficiently intact overlying gravel in the centre of the site to suggest that the limestone footing trench, 'entrance' paving, cobbled surface and large area of burning were all probably associated. The ploughing had cut deeply into the area around the two burials, removing the old land surface, and it was not possible to tell if they were contemporary with the other features. Clearly there was some time lapse between the deposition of the two bodies.

A number of shallow scoops and pits are also marked on the plan and sections. Some of these were probably tree root holes. The very limited time for the excavation, and lack of diggers due to continuous inclement weather, made it impossible to do more than record their positions.

THE FINDS

THE BURNT BONE

Only a superficial examination was made of the material from the central burnt deposit which was composed mainly of ash of vegetable origin: mostly peat probably derived from the surrounding lowland. Mixed with the ash were numerous small fragments of burnt bone. These were examined in situ and the head of a human femur and three



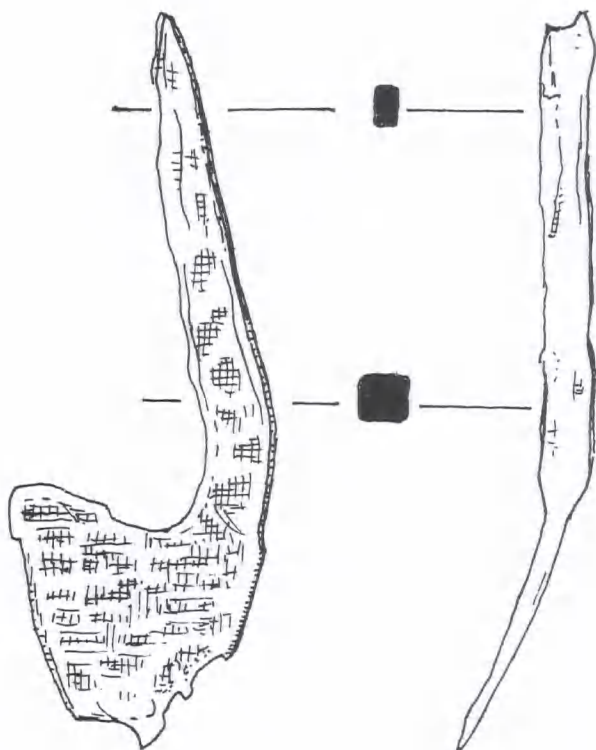


Fig 6. Leather creaser. Scale 1:1.

human thoracic vertebrae were observed. Burnt molars of cattle and sheep, and pieces of the long bones of the same animals were identified. Only the lower part of the burnt deposit was present, the upper part having been removed by the plough. It was clear that the burning had taken place in situ, the surrounding area being coloured by the intense heat.

THE POTTERY

by Carolyn Wingfield and Anna Slowikowski

Nine small hand-made sherds were recovered. None of the forms or fabrics are sufficiently distinctive to be very positively identified, but some at least could be Saxon and they are listed in decreasing order of probability below:

Group 1: Single black rim-sherd, rim slightly everted, fired moderately hard and with much sand tempering and some large quartz inclusions. This compares quite well with plain domestic vessels from Puddle Hill, Dunstable and Odell (Beds) where there was a period of Mid Saxon occupation c 6th-8th centuries. There are some generally similar early Mid Saxon fabrics from Bedford, though nothing strikingly similar: local production and local

variations in materials and firing conditions no doubt account for this. The Cople sherd would appear to be from a Mid Saxon domestic vessel. (Fig 5, 2).

Group 2: Five small black sherds, including one rim. The fabric is similar to group 1. Not so certainly Saxon as group 1, but could be from Mid Saxon domestic vessels. It is not impossible that the sherds could be Romano-British.

Group 3: Three sherds, hard sandy fabric with some oxidation of exterior surface (rim, Fig 5, 1. A hole in the side of this sherd is modern); also a small indeterminate grey body sherd. These are not distinctively Saxon in form or fabric, unless they are of a local Saxon type which has yet to be identified. They could equally well be late Iron Age or Medieval. It has not been possible to date them in form or fabric. The probable Saxon sherds (groups 1 and 2) could be domestic refuse from a Mid Saxon settlement in the vicinity. Their position in ditch section 1 suggests that they had been dumped there. At Barrow Hills, Radley, Oxon. (2), domestic rubbish deposits from an early Saxon settlement were found in the top fills of the silted prehistoric ditch.

IRON TOOL

by Professor W H Manning

Leather Creaser (?) length 9.2 cm (Fig 6) It has a slightly tapering tang, damaged at its end, which curves down into a flat, wide, triangular blade. The edge is slightly convex. In use the handle will have been at a slightly upward angle relative to the surface being worked. The blade is set at an angle of about 15 degrees to the line of the tang, although whether this is intentional or the result of the neck being bent accidentally is not clear.

I do not know of a precise parallel for this object, but the form of the blade with its wide, slightly convex edge is strongly suggestive of tools used for working leather. The normal Roman and medieval leather knife had a handle set above a crescentic blade, an arrangement which enabled the maximum pressure to be applied when cutting the leather. The design of the present piece would allow very little pressure to be applied and it is more likely, therefore, to be a creaser, a tool used to impress a line close to the edge of flat leatherwork in order to finish the work and reduce the chance of the edge fraying. In use the creaser was often heated to make the work easier and



Plate 1. Aerial photograph (J K St Joseph 1947). Showing circles 'b' (the larger) and 'c'; 'p' and 'q' have already been quarried away. © Crown copyright/MOD reproduced with the permission of the Controller of HMSO.



Plate 2. Limestone structure and burial 1.

reduce the pressure required.

I know of no certain Roman creasers although a number of tools exist which, although usually identified as leather knives, would have functioned equally well, if not better, as creasers, for example those from Kastell Zugmantell³ or Alteburg-Heftrich.⁴

In all cases the tang is set at an angle to the blade, although in no case is this as extreme as in the Cople piece, and in this they resemble medieval creasers where the tang slopes at an angle of about 45 degrees (information from Dr I H Goodall). The twist of the blade seen in the Cople example is not found in these creasers, but it would not have affected the function of the tool in any way.

In the absence of close parallels its date cannot be decided on typological grounds.

DISCUSSION

Ring ditch 'b' cannot be firmly dated. The pottery from the ditch bottom seems to be mid Saxon in date, but a Romano-British or even late Iron Age date cannot be ruled out. There is certainly a tendency for the Ouse valley ring ditches to be pre-Saxon in origin. The large area of burning at the

centre of the site, containing quantities of peat and charcoal and fragments of human and animal bone, may indicate that they originally surrounded a cremation, this being a funeral pyre.

The leather creaser found on the edge of the burning cannot be conclusively dated. The blue glass bead from close to the peat stack by the limestone footing can probably be dated to the 1st-2nd centuries AD.

The limestone footing is also of uncertain date, only the above mentioned glass bead offering a clue. It could have belonged to a rectangular enclosure of unknown size with a paved 'entrance' on the western side, most of which had been destroyed by subsequent ploughing. It could equally well have been a boundary wall. It was too insubstantial to have been a building. Burning around the peat stack inside the enclosure and on the south side of the 'entrance' tends to confirm that fire played a part in the function of the site, and that stratigraphically the enclosure seems to be contemporary with the central burnt area.

The two unaccompanied inhumation burials



Plate 3. Burial 2.

could not be dated by association. That one was directly above the other suggests a continuity of burial tradition, although there was clearly a time gap between them. It is impossible to say if they were contemporary with any of the central features.

Dating hangs on the identification of the pottery sherds (Group 2) found on the ditch bottom, which may be mid Saxon but could quite possibly be Romano-British or late Iron Age. The only certain mid Saxon sherd (Group 1) occurred halfway up the ring ditch fill. The writer is inclined to the view (without substantial evidence) that the ring ditch was of late Iron Age or Romano-British origin, surrounding a cremation pyre and limestone feature, and that it was reused in mid Saxon times, perhaps for the interment of the two burials.

ACKNOWLEDGEMENTS

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The finds and documentation have been placed in Bedford Museum.

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4. O.R.L. B Ili (Kastell 9), 1937, 9, Taf II. 21

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Recent Fieldwork at Maiden Bower

JOSHUA POLLARD AND MICHAEL HAMILTON

SUMMARY

A geophysical survey of Maiden Bower near Dunstable has revealed a previously unsuspected prehistoric enclosure within the interior of the Iron Age hillfort. Previous discoveries and the recent survey work illustrate a long sequence of often quite intensive activity at the site, complementing a picture which has been emerging through rescue and salvage excavations along this stretch of the Chiltern ridge since the turn of the century.

INTRODUCTION

The Iron Age hillfort of Maiden Bower is situated on a plateau overlooking the northern edge of the Chiltern scarp, at a height of 150 m OD, 2.5 km to the north-west of Dunstable (NGR SP 996225). The hillfort presently survives as a single circuit of bank, 220-250 m in diameter and up to c 3 m in height. All surface traces of the accompanying external ditch have been obscured by ploughwash. The erosion of a quarry edge has removed much of the Iron Age ditch and bank along its north-western side. A break in the circuit on the south-eastern side marks an original entrance; other gaps in the bank being of relatively modern origin (Smith, 1915).

PREVIOUS EXCAVATION AND FIELDWORK

The monument has been the focus of sporadic antiquarian and archaeological interest since the 17th century (Camden, 1695, 289; Stukeley, 1776, 115). Between the 1890s and 1915, Worthington George Smith recorded several prehistoric and Romano-British features in the process of destruction during the encroachment of a chalk quarry upon the north-western side of the site. Amongst these were a small early Roman cremation cemetery (Simco, 1984, 107) and at least three lengths of segmented ditch, which produced material subsequently recognized as of earlier Neolithic date (Piggott, 1931, 90-2; 1954, 21).

A limited excavation was undertaken around the south-east entrance of the hillfort in 1913 by Worthington Smith and the then owner of the site, Mr Dan Cook (Smith, 1915, 154-160). Several features were located, including possible post pits and a palisade slot, which probably formed the

western wall of a timber gateway (Smith, 1915, Fig 5). A substantial pit, 4.3 x 2.5 m, was found centrally within the entrance immediately to the north. Its relationship to the other features is unclear from the published account, but the presence of tile and iron nails within its fill could indicate a post-conquest rather than Iron Age date. The disarticulated remains of around 50 individuals were recovered from the lower fill of the pit, clearly forming a deliberate deposit. An interpretation of this feature as the mass grave of battle victims (Hawkes, in Matthews, 1976, ix) seems premature, especially given the disarticulated nature of the human remains which implies re-burial. Similar charnel deposits belonging to the final Iron Age or post-conquest period are known from hillforts in Wessex, and seem more likely to be related to funerary or boundary maintenance rituals than evidence of warfare (Sharples, 1991b, 82).

Continued weathering of the edges of the disused chalk quarry has exposed further longitudinal and oblique sections of the bank and ditch of the Iron Age hillfort, in addition to underlying Neolithic features (Matthews, 1976).

Rescue excavations by C L Matthews and others between 1937 and 1951, near the northern entrance to the site, uncovered several inhumations lying within the primary silts of the hillfort ditch, along with a crouched burial surrounded by chalk blocks at the base of an earlier feature of possible Neolithic or early Iron Age date (Davies 1956, Matthews, 1976, 160-162).

Aerial photographs in the possession of the Manshead Society appear to show a series of small curvilinear cropmarks in the northern and south-eastern area of the hillfort interior. A large trapezoidal feature (c 80 m in length), aligned north-east - south-west can also be identified on the same set of photographs, situated centrally within the hillfort (cf. Matthews, 1976, Pl. 1). The cropmarks appear to represent archaeological features. However, a degree of caution should be exercised in their interpretation as such since they apparently follow the pattern of cultivation, they appear only on photographs taken on a single occasion, and similar features were not observable during a recent geophysical survey.

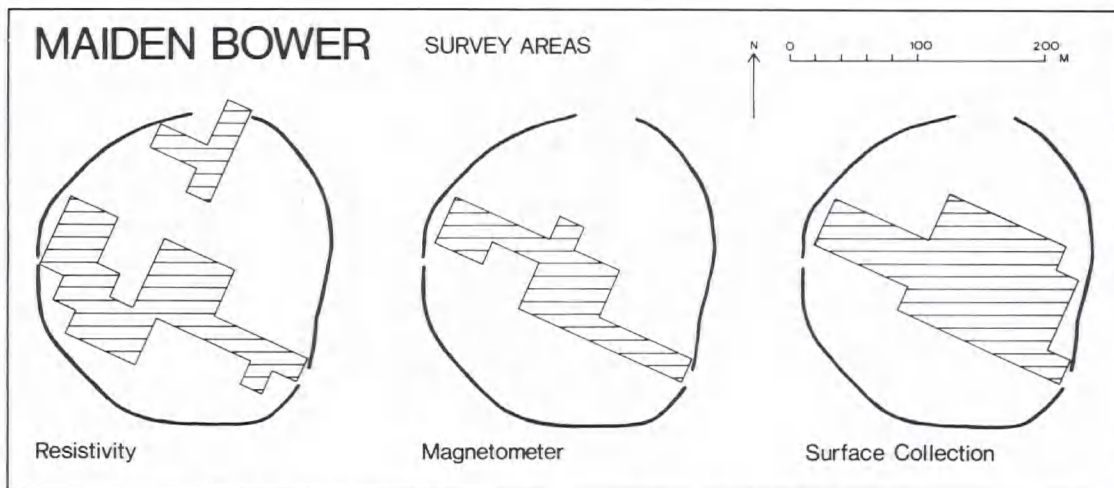


Fig 1. Location of the geophysical survey and fieldwalking areas.

THE NEOLITHIC ENCLOSURE

The possible existence of an earlier Neolithic enclosure underlying the Iron Age hillfort was first entertained by Curwen in 1930, largely on the evidence of finds from the site published in the *Victoria County History* (Curwen, 1930, 41). A year later, Piggott recognized and published surviving earlier Neolithic pottery from the segmented ditch sections excavated by Smith between 1897 and 1900 (Piggott, 1931, 90-2, Fig. 6).

In a study of regional variation in causewayed enclosure morphology Palmer (1976, 185) listed the site under his category of 'suspect or uncharacteristic interrupted ditch enclosures'. However, the character and length of the recorded segmented ditch segments, along with the range of material recovered from them, remains entirely compatible with their interpretation as part of an early Neolithic enclosure.

Amongst material from the Worthington Smith collection in Luton Museum are surviving earlier Neolithic sherds of Abingdon/Mildenhall type (Smith, in Matthews, 1976, 9), fresh flintwork (including scrapers, knives and microdenticulates), antler, animal bone (domestic and wild) and human cranial fragments from the ditches of the causewayed enclosure. An antler comb, comparable to early Neolithic examples from Windmill Hill (Smith, 1965, 125-7), is illustrated in the *Victoria County History* (VCH 1904, 169, Fig. 60). Drawings of other pieces of splinter-and-groove worked antler, including part of a second comb, survive in Smith's scrapbooks in Luton Museum,

though the objects themselves cannot be traced.

SURVEY WORK, OCTOBER 1991

Limited fieldwork was undertaken at Maiden Bower by the authors in October 1991, with the generous assistance of a grant from the Robert Kiln Trust. The primary aim of the survey was to locate and establish the extent of surviving features belonging to the earlier Neolithic enclosure. In addition it was hoped to gain an insight into the character of the later prehistoric and Romano-British activity at the site. Non-destructive survey techniques (geophysics and surface collection) were employed as an economical and relatively rapid means of examining the range and sequence of activity presented by the monument.

GEOPHYSICAL SURVEY

The geophysical survey was conducted with a Geoscan FM36 Fluxgate Gradiometer and RM4/DL10 Resistivity equipment. The survey was based on 20 x 20 m grids. Twenty-one grids (0.84 ha) were measured with the Gradiometer, and 34 grids (1.36 ha) with the resistivity. Most grids were measured with both sets of equipment, and about 1.48 ha of the hillfort was surveyed (approximately 32% of the total area) (Fig 1).

GRADIOMETER. Little was found using the Gradiometer. This is interesting because the equipment has generally produced good results on chalk sites. The magnetic survey showed few signs of the features recorded by the resistivity. The most

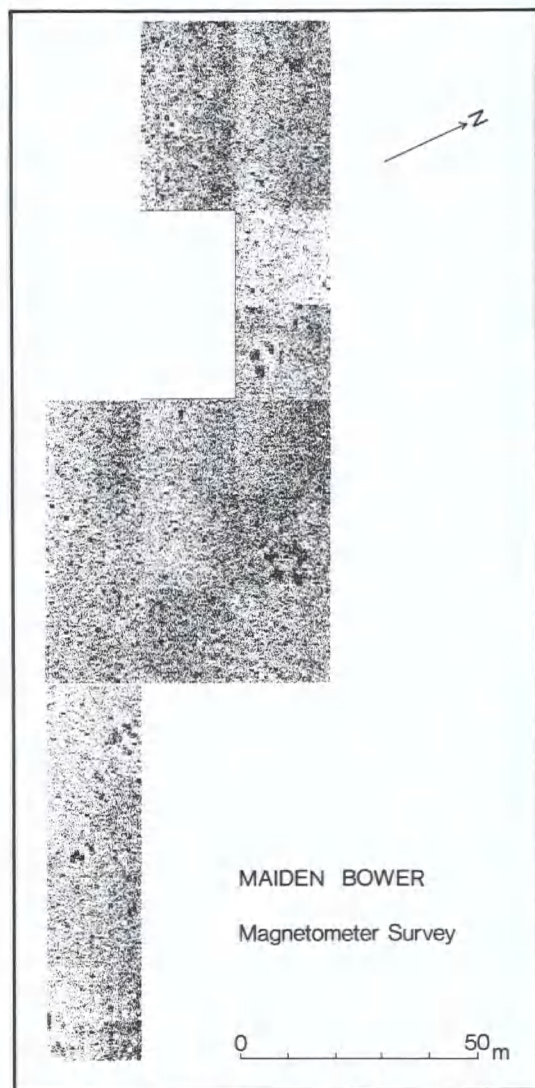


Fig 2. The magnetometer survey.

visible features were three small groups of anomalies. Each consisted of a central negative area and a surrounding ring of three to five positive blips. Each feature covered an area of between 5-8 m square (Fig 2). These anomalies look most unlike the normal signature of buried iron, and may represent clusters of pits, or areas of burning.

RESISTIVITY. There had been some rain in the week preceding the survey, and it rained once during the course of the survey. The soil was very dry, and one effect of this was a higher resistance

reading when taking a measurement on ridges left by ploughing. These higher readings explain some of the lines running diagonally across the transects.

Provisionally, a number of features have been identified (Figs 3, 5):

1. The most obvious feature located was a band of low resistance which consistently ran c 25 m behind the hillfort bank (Fig 3). It was located in three different areas, and probably 40% of its circumference was traced. This appears to be an inner ditch with a diameter of c 180 m. The feature had an interior edge marked by a sudden rise in resistance. Generally, the exterior edge was also distinct, but sometimes rather amorphous (principally opposite the south-east and northern entrances). There is no obvious entrance through the ditch in the areas surveyed, but there were some apparent breaks. It is not clear if these are genuine or merely the result of masking by later features.

The site is ploughed in a series of circuits immediately inside the hillfort bank, and then transversely on a roughly north-south axis. The circumferential ploughing may explain why the feature has not been recognized on aerial photographs, since it would run concentrically with the line of cultivation. Given the strength of the feature it seems highly unlikely to have been produced by such ploughing.

The feature could represent a quarry for the hillfort bank. However, the gap of c 25 m between the inner ditch and the bank seems excessive; the feature appears too regular to have simply been a quarry, and a substantial external ditch is known to accompany the hillfort bank. It is also worth noting that no gap is observable in the inner ditch corresponding to the original south-east entrance of the hillfort.

2. Most of the printouts show an almost cellular pattern, with frequent, roughly circular, low resistance areas of 4-9 m square (Fig 4). These are probably pits or scoops. Several especially distinct 'pits' seem to form a line running down the centre of the site on a north-east - south-west axis. However, it is possible that these features are distinct because of a drop in the background resistance, in which case the line may be fortuitous. Comparison might be made with the recently published geophysical survey of the interior of Maiden Castle, Dorset (Sharples, 1991a, Fig. 30), where the presence of numerous pits and hollows is indicated by a similar chequer-board pattern.

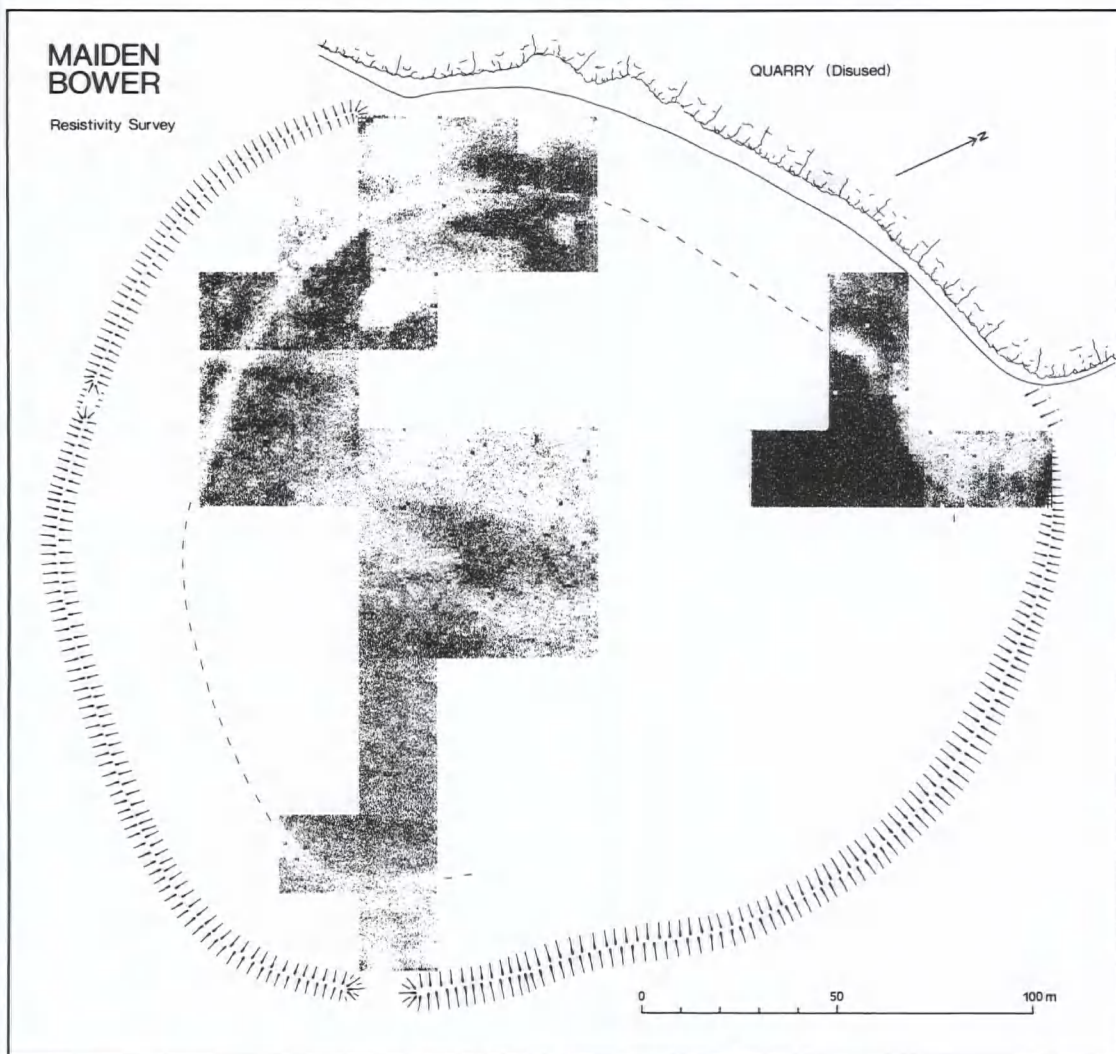


Fig 3. The resistivity survey.

3. The western-most grids show several high and low resistance linear features with very sharply defined edges. Unfortunately, the overall effect is difficult to make sense of, but may suggest the remains of wall trenches and rubble spreads belonging to a building.

4. There are a large number of features in the central grids which may be man-made, and which could represent further lengths of ditch.

Other, very broad, features are possibly of geological origin. One high resistance linear feature on an east-west axis could mark a metallised surface.

5. Against the edge of the Iron Age bank there were a number of low resistance areas, tentatively identified as quarry pits related to the hillfort.

6. In the northern-most grids there was a sharply defined linear feature which approximates to the position of a medieval or post medieval trackway, leading to the Sewell Greenway, observed by Smith (1915, Fig 2).

7. An area of low resistance inside the south-east entrance appears to agree with the site of Dan Cook and Worthington Smith's excavations of 1913 (Smith, 1915).

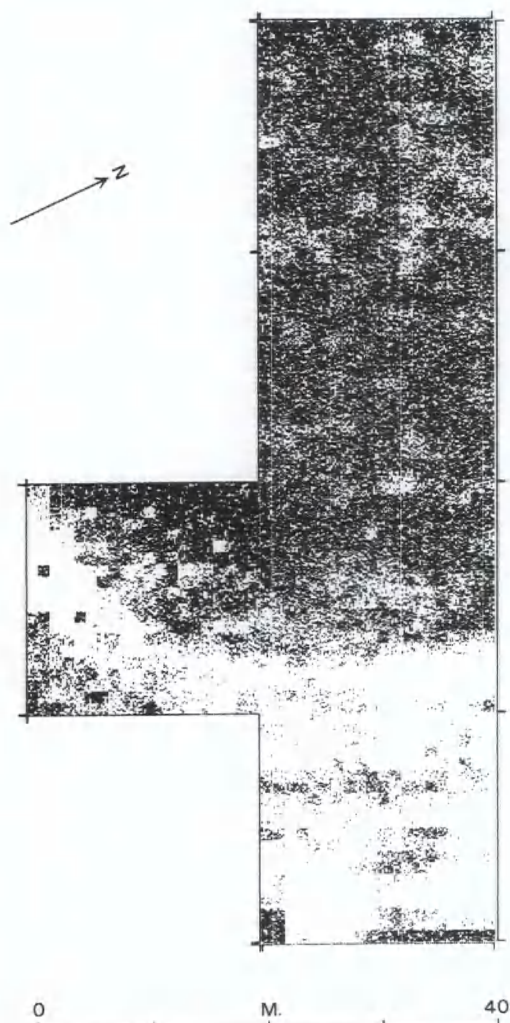


Fig 4. Detail of the south-east area of the resistivity survey showing possible pits.

FIELDWALKING

Fieldwalking followed the grids laid out for the geophysical survey. One metre wide transects, spaced at 10 m intervals and divided into 10 m lengths, served as the basic collection units. The area covered comprised a 10% sample of 15,200 square metres across the interior of the hillfort (Fig 1). Completion of the 100 m wide transect was prevented by sowing of the field during the survey.

All man-made material was collected, with the exception of post-medieval pottery, glass, tile, and so on. A total of 465 pieces of prehistoric worked and burnt flint, and 95 sherds of Iron Age and

Romano-British pottery were recovered. The greatest density of worked flint occurred towards the centre of the enclosure, roughly corresponding to a band running south-west to north-east. A secondary concentration was recognized at the western end of the transect, in close proximity to the area of the exposed Neolithic ditch sections in the quarry edge (Fig 6a). Diagnostically early Neolithic flintwork clustered around the eastern end of the transect. The distribution of later prehistoric and Romano-British pottery shows a light coverage throughout the area walked, though with a particular concentration in the western quarter of the site (an area where the geophysical survey suggests the possibility of a building) (Fig 6b).

The relative paucity of worked flint and pottery on the eastern edge of the transect, around the headland behind the Iron Age bank, may be a product of the increased depth of ploughsoil in this area.

The lithic assemblage shows both earlier Neolithic and later Neolithic or Early Bronze Age affinities (Table 1). The small earlier Neolithic component (perhaps contemporary with the causewayed enclosure) includes a number of carefully struck narrow flakes and blades, several core rejuvenation flakes, blade cores, three fragmentary leaf-arrowheads and a possible laurel leaf (Fig 7). Over 300 hard-hammer struck flakes and a transverse arrowhead (Fig 7) can be assigned to an intensive later Neolithic and possible Bronze Age phase of activity. Cortical core preparation flakes account for only 5% of the debitage, indicating, together with the relative frequency of rejuvenation and trimming flakes, an emphasis upon the final stages of core reduction. This would be more in accordance with a domestic origin for the assemblage, prepared cores having been brought in from an off-site quarry or surface source and then worked down and discarded on-site.

The pottery recovered from fieldwalking was extremely fragmentary, making identification difficult. Sherds in Iron Age, 'Belgic', Romano-British and Medieval fabrics were present. Romano-British sherds account for around 90% of the pottery recovered. Locally produced wares in sand and grog tempered fabrics predominate, though there are also sherds from shell tempered vessels and six small fragments of samian.

Identifiable rims are illustrated in Fig 7; 7.B13, 7.C20iii and 7.D20 belong to first century 'Belgic' forms, and 7.A19 and 7.F12 are from grooved-rim jars of first or second century date. A simple rim in

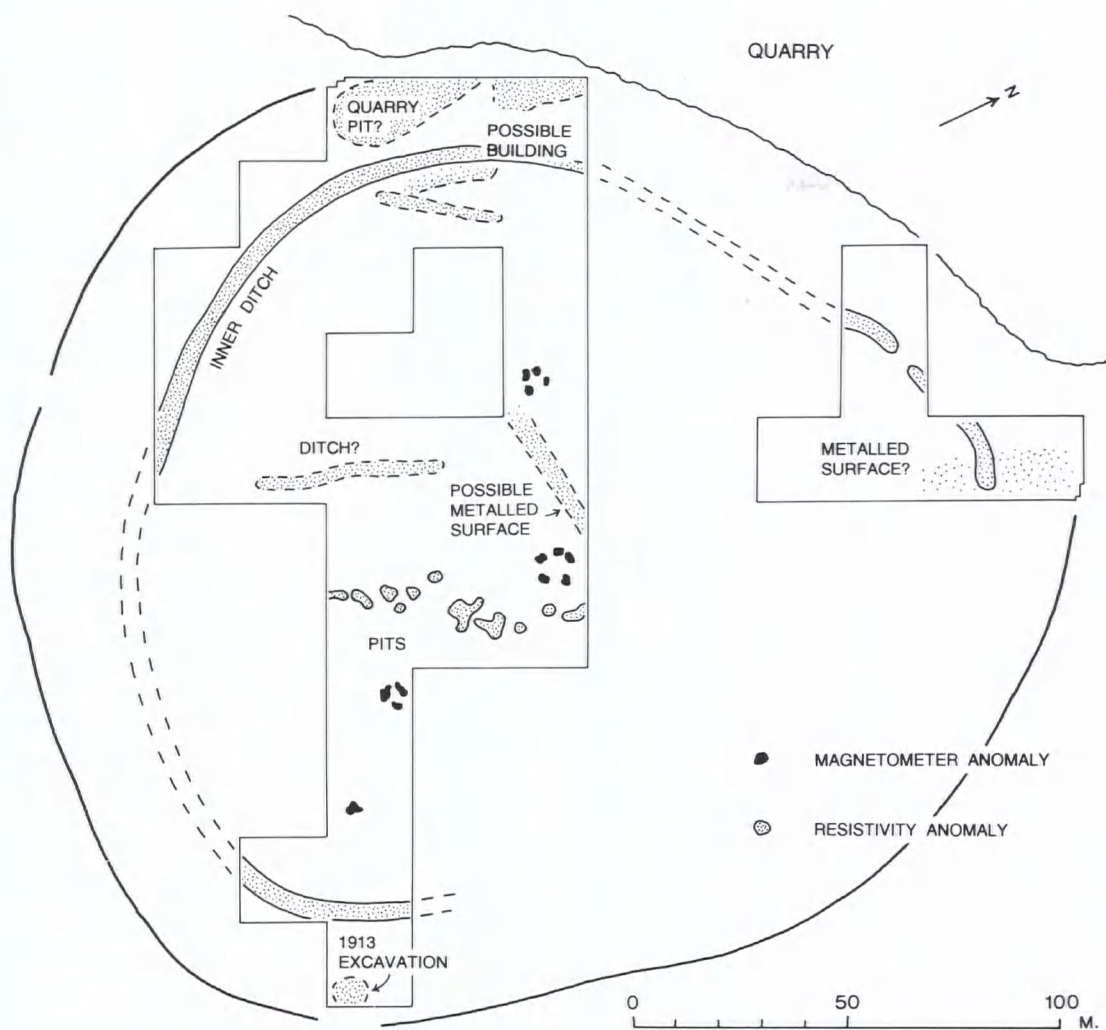


Fig 5. Interpretation of the geophysical survey.

a sandy fabric (7.C20i) compares with vessels of Matthews (1976) ceramic groups 3 and 4, and is probably of middle Iron Age date. The relative paucity of later prehistoric sherds is almost certainly due to their poor survival in the ploughsoil, rather than being a true reflection of past depositional practices.

DISCUSSION

Undoubtedly, the most important result of the survey is the discovery of a substantial earlier enclosure within, and running concentric to, the defences of the Iron Age hillfort. Without excavation it remains impossible to date this feature,

beyond the observation that it pre-dates the hillfort, and therefore can be accommodated somewhere within a span from the earlier Neolithic to the earlier part of the Iron Age.

Various possibilities for date and function can be proposed. The inner ditch could represent an earlier hillfort, of later Bronze Age - early Iron Age date, which was superseded by the present earthwork. Parallels for such a sequence can be cited from Ram's Hill, Berkshire, Maiden Castle, Dorset, Figsbury and Yarnbury, Wiltshire, for example (Cunliffe, 1984). However, in each of the examples cited there is a triple or quadruple increase in area in the second phase. With Maiden Bower the

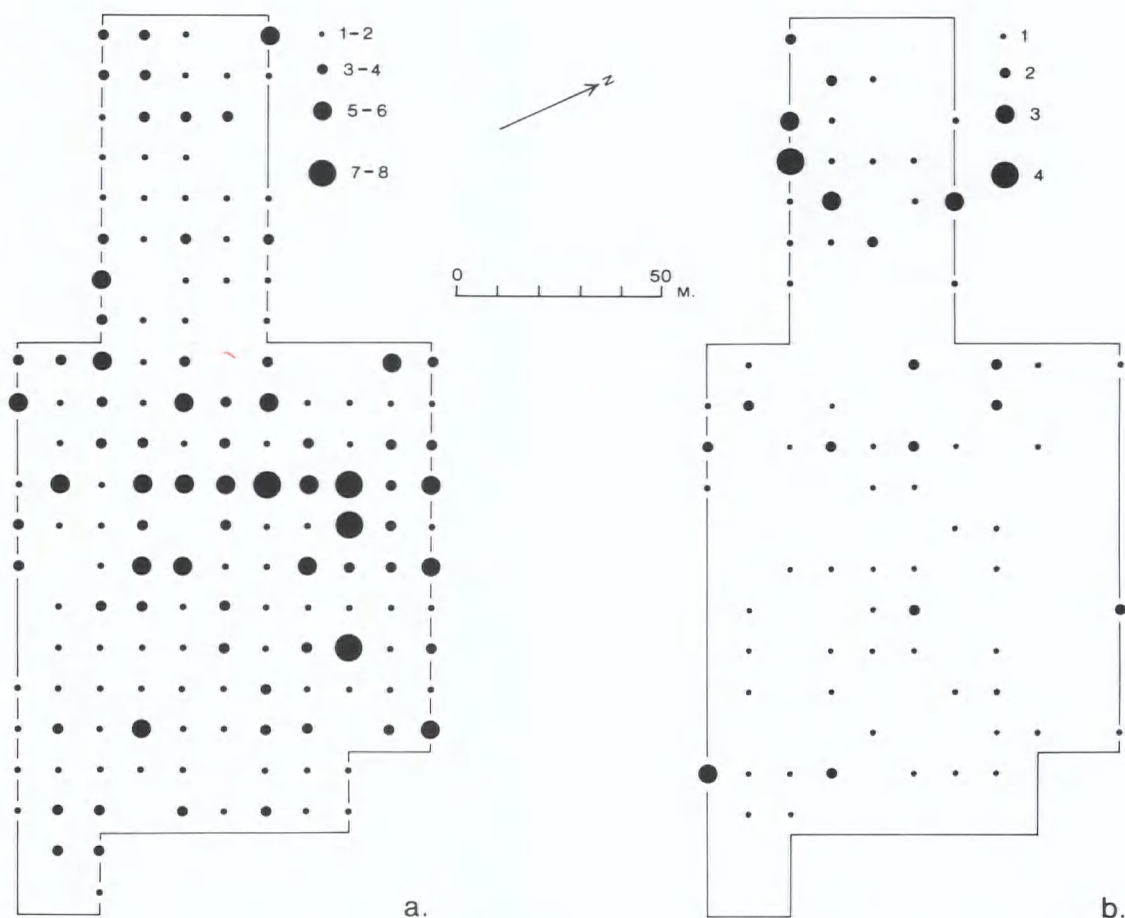


Fig 6. Distribution of (a) worked flint and (b) later prehistoric and Roman pottery from fieldwalking.

difference is not as marked; the surviving bank encloses roughly 4.9 ha, compared with 2.7 ha contained within the inner ditch.

Regional patterns may be more significant. Support for an early Iron Age date for the inner ditch could be adduced from the sequence at two other Chiltern hillforts - Boddington Camp near Wendover, and Wilbury Hill near Letchworth - both of which developed from earlier, less substantial, enclosures (Dyer, 1965, 14; Moss-Eccardt, 1964, 46).

Alternatively, the earlier ditch may be a surviving element of the causewayed enclosure complex partly destroyed by the chalk quarry on the north-western side of the site. The survey does not show any definite breaks or causeways in the inner ditch circuit, though narrow gaps would not necessarily be picked-up by the survey. It is worth

noting that the area enclosed by the ditch (c 2.7 ha) would be comparable with that defined by the earlier Neolithic enclosures of Etton and Great Wilbraham, Cambridgeshire (Evans, 1988, 143).

Sections of Neolithic ditch are still visible in the quarry edge, though it is extremely difficult to establish the angle at which they are aligned. Consequently, their relationship to the features recorded by the geophysical survey must remain uncertain. The possibility must be entertained that the causewayed enclosure was situated in the area outside the Iron Age hillfort, to the north-west, and that almost its entire circuit, with the exception of small surviving remnants visible in the quarry face, has been destroyed. No continuation of the ditches seen in the quarry edge was noted in the geophysical survey. If this is indeed the case, then the excavation of the surviving Neolithic ditch sections, which are

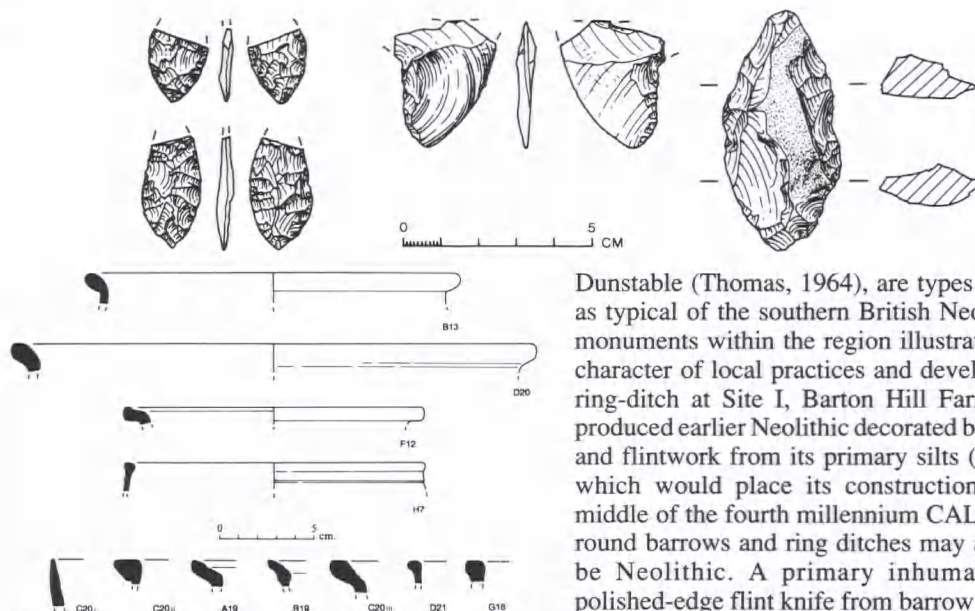


Fig 7. Worked flint and pottery from fieldwalking.

being continually eroded, must be a priority (if only to obtain material for dating and environmental samples).

Both the geophysical survey and surface collection have provided additional information on the later prehistoric and Romano-British use of the site. The interior of the hillfort appears to contain numerous pit clusters, perhaps indicating quite intensive or prolonged Iron Age settlement. Romano-British activity is seen to focus on the western part of the hillfort interior, where the geophysical survey indicates the possible existence of a substantial building. It is worth noting that the first-second century cremation cemetery recorded by Smith was situated outside the hillfort immediately adjacent to this area (Fig 5). The cemetery, sherd scatter and possible building could represent a small farmstead, though excavation would be necessary to clarify this issue.

THE SITE IN ITS LOCAL CONTEXT

The scale, extent and duration of Neolithic settlement across this part of the Chiltern ridge remains poorly understood. Like so many areas in southern England, our knowledge of the fourth/third millennium CAL BC landscape is dominated by monuments.

The causewayed enclosure at Maiden Bower and possible long barrows, such as that at Union Street,

Dunstable (Thomas, 1964), are types of sites seen as typical of the southern British Neolithic. Other monuments within the region illustrate the unique character of local practices and development. The ring-ditch at Site I, Barton Hill Farm, Streatley, produced earlier Neolithic decorated bowl ceramics and flintwork from its primary silts (Dyer, 1962), which would place its construction around the middle of the fourth millennium CAL BC. Further round barrows and ring ditches may also prove to be Neolithic. A primary inhumation with a polished-edge flint knife from barrow 5 of the Five Knolls (Dunning and Wheeler, 1931) is closely analogous to a later Neolithic burial at Stanton Harcourt, Oxon. (Grimes, 1960). Furthermore, whilst it is possible to view the massive Grooved Ware associated enclosure at Waulud's Bank, Leagrave (Dyer, 1964), as part of a later Neolithic tradition of ceremonial enclosure construction, its form and the apparent absence of internal settings are difficult to parallel amongst contemporary henge monuments.

Analogy with other more intensively studied regions could present a picture of small-scale and perhaps relatively mobile settlement within the earlier Neolithic. Maiden Bower, as appears to be the case with a number of causewayed enclosures (Sharples, 1991a, 255), could have been peripheral to major foci of settlement, functioning as a point of episodic gathering for widely dispersed groups.

The large later Neolithic component of the flint scatter at Maiden Bower suggests an intensification of activity along this part of the ridge in the second half of the third millennium CAL BC; a pattern which might be more general to judge by the number of Grooved Ware associated pit groups which have been discovered in the vicinity (Matthews, 1976, 3-18). Evidence for Bronze Age activity in the area is largely limited to a series of ring ditches and round barrows, including the Five Knolls barrow cemetery on the high-down to the west of Dunstable. A mid-late second millennium CAL BC settlement is known from Totternhoe (Matthews, 1976, 36-43), otherwise evidence for occupation during this

period is elusive.

Excavations along the Chiltern ridge suggest a pattern of dispersed settlement during the first millennium BC (Matthews, 1976), with a series of regions or territories being definable by the regular spacing of hillforts and multiple linear ditch systems (Dyer, 1961). Iron Age settlements are known within 2.5 km either side of Maiden Bower, at Totternhoe and Puddlehill (Matthews, 1976), though their relationship to the hillfort is difficult to establish without detail on the chronology and character of activity at Maiden Bower. Field systems of possible Iron Age or Roman date are known from cropmarks to the south and west of the site (Dyer, 1965, 17), and could be taken to indicate intensifying arable cultivation within an increasingly organized landscape.

Finally, it should be stressed that the position of the Iron Age hillfort at Maiden Bower adjacent to the causewayed enclosure, or over part of the complex if the newly identified inner ditch proves to be Neolithic, need only reflect the geographical desirability of the location. Continuity of settlement or sanctity between the fourth and first millennia BC is both inherently unlikely (Bradley, 1981) and unsupported by the available evidence.

TABLE 1. Worked flint recovered during fieldwalking.

TYPE	No
Flakes/broken flakes	318
Blades/broken blades	22
Rejuvenation flakes	27
Chips (<15mm)	17
Cores and flaked pieces	20
Scrapers	7
Leaf arrowheads	3
Misc. retouched	6
Burnt flint	45
TOTAL	465

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and members of the Manshead Society, Prof. W H Manning, and Mr and Mrs B. Pollard.

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A Romano-British Shell-Gritted Pottery and Tile Manufacturing Site at Harrold, Bedfordshire

ANTHONY BROWN

SUMMARY

A group of kilns making shell-gritted pottery was excavated in advance of chisel ploughing. The pottery from the kilns, and that from the numerous clay pits which were also found, indicate the manufacture of this type of ware at Harrold from the mid - 1st to the early 5th centuries AD. The evolving typology of the kilns and also that of the pottery is discussed. A probable tile kiln was also found; the tiles made at Harrold are described and their manufacture assigned to the late 2nd century and to the late 3rd - mid 4th century.

INTRODUCTION

The shell-gritted pottery and tile manufacturing centre at Harrold, Bedfordshire, lies 2 km SW of the village of that name, 400 m east of Harrold Lodge Farm and 700 m N of the parish (and county) boundary, at SP 933553 (Fig 1).

DISCOVERY OF SITE AND CIRCUMSTANCES OF THE EXCAVATION

The site was first noted as a dense scatter of pottery in ploughed land by Mr P Panter of Lavendon in 1968. During the winter of 1968-69 one complete kiln, Kiln 1 in this report, was excavated by Mr Panter and Mr K Field of the Wolverton and District Archaeological Society, and another, Kiln 3 here, located by them (Field 1969; Mynard 1969, 16). The existence of what was evidently an important Romano-British pottery-making site - the scatter of pottery was some 2-3 ha in area - and the threat of deep ploughing using a chisel-plough, led the then Inspectorate of Ancient Monuments of the Ministry of Public Building and Works, to organise a series of short excavations to obtain information about the true nature of the site, its chronological span and the range of products made there. Accordingly, from 1969 to 1971 three seasons of excavation, each of from three to four weeks duration, were mounted, under the writer's direction, with the co-operation of the owner of the land, initially Mr W T Godber and after the first season, Mr J Northern. The work was carried out by local volunteers, particularly from the Wolverton and District Archaeological Society, the Upper Nene Archaeological Society

and the Wellingborough Archaeological Society, as well as extra-mural students from the University of Leicester Department of Adult Education. It is pleasant to record that the material and notes (by Mr R M Friendship-Taylor) of the kiln excavations carried out in 1968-69 were placed at the disposal of the writer for inclusion in this report.

TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

The Harrold pottery site lies on the western side of the River Ouse, on a gentle slope running from west to east, between the 250 ft and 200 ft contours. To the E, the river Ouse is only 800 m away; to the W, the ground rises to a wooded ridge some 350 ft above OD, which carries the boundary between Northamptonshire and Bedfordshire. The exact line of the Roman road which ran south from the Roman town at Irchester in the Nene valley in Northamptonshire, 11 km away to the north, ceases to be known for certain as it approaches the Ouse, but presumably in a general way followed the line of the present road from Harrold to Hinwick and Podington, which carries a parish boundary for much of its length. This means that the Roman road would have passed within two or three kilometres of the site. Several scatters of Roman occupation material are known from both the high ridge to the west of the site, and from the Ouse valley itself close to Harrold; the Belgic and Romano-British farmstead at Odell, excavated in advance of gravel working during 1974-78, lay some 2.5 km away to the north-east (Simco 1984, 90; Dix 1981). Shelly pottery was made at Harrold itself in the 13th century, as well as at Olney Hyde, 7 km to the south-west, in the 14th and 15th centuries; also the deserted medieval village of Santon, where it is also considered that shelly pottery was produced, was situated 2 km away to the NW (Hall 1972; Mynard 1984).

The site is covered by a thin deposit of boulder clay. Beneath this there is probably limestone of the Cornbrash, covering shelly marls of the same series and mudstone of the Blisworth clay (geological report by Dr R Clements, pp 98-100). These marls and clays - which are of prime importance in

determining the location of the site - outcrop along the side of the valley and can be quite clearly seen in the ploughed field in which the site lies (Fig 2).

METHOD OF EXCAVATION

During the 1969 season attention was concentrated on the excavation of the second of the kilns uncovered by Messrs Field and Panter (Trench 1) as well as a small exploratory excavation of what turned out to be a large pit to the north of this (Trench 5) (Fig 2). During the 1970 season a series of trenches was opened up over certain concentrations of sherds, tile fragments, pieces of limestone and fire-reddened stones which suggested the presence of kilns (Trenches 7, 8 and 9). In the May of 1971 a geophysical examination of part of

the site was carried out by Mr A Clark and Mr D Haddon-Reece of the Department of the Environment, using a fluxgate gradiometer, and the trenches of the 1971 season were sited over anomalies revealed then (Trenches 3, 4 and 6).

DATING AND PHASING: ORGANISATION OF THE REPORT

The excavations in the main uncovered only two types of archaeological feature, kilns and pits. On a few occasions these cut into each other, affording a relative chronology (eg Kiln 3 and Pits 2 and 3, Trench 1), but the phasing of the features and the dating of the phases had over-whelmingly to depend upon the analysis of the pottery and other objects, including coins, which had been dumped in these features to level them off when they had gone out of

use. This analysis produced the following phasing scheme (the detailed evidence is set out in the pottery and coin reports, pp 47-79, 93-94). Fig 3 shows the features of each phase separated out within the overall trench plan.

Phase 1 A small group of pottery, to which a mid-1st century AD date can be assigned : Pit 11, Gullies 3 and 4.

Phase 2 The shelly Harrod ware types, mainly jars, belong to the second half of the 1st century AD, a dating supported by the presence of a little sandy grey, orange, buff and white wares: Kilns 2, 3, 4, Gullies 1 and 2.

Phase 3 The samian, Oxfordshire mortarium fragment and colour-coated ware suggest a late 2nd century date, which is in agreement with that assignable to the bowls and jars of shelly ware from dated local sites: Kilns 1 and 9, Pits 6, 20, 21, 22.

Phase 4 New types of pottery make their appearance, viz Oxfordshire and Lower Nene Valley colour-coated wares,

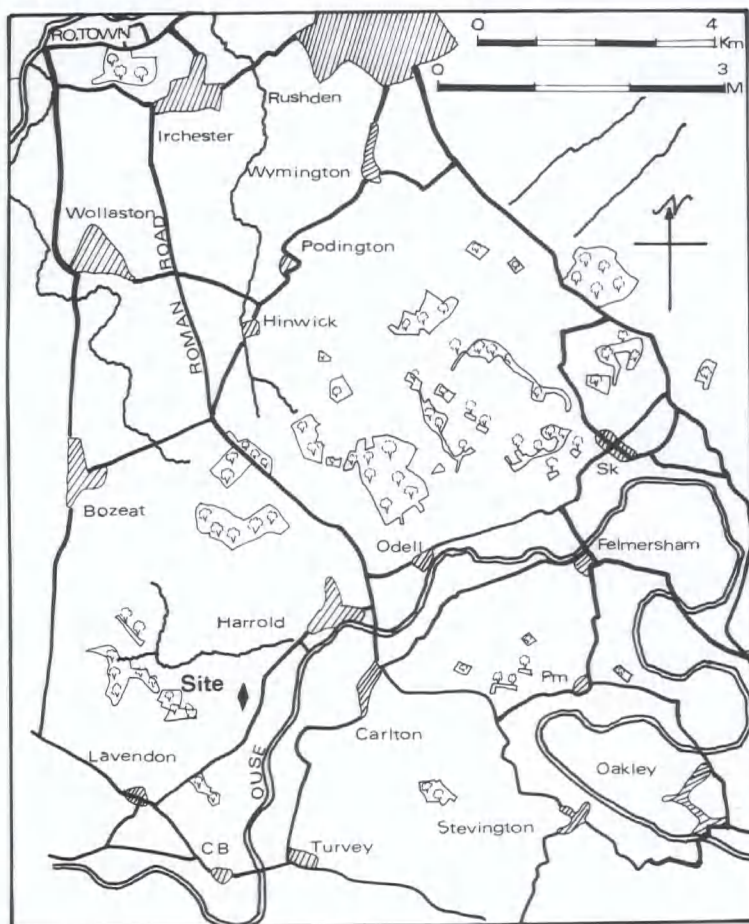


Fig 1. Harrod: site location.

CB: Cold Brayfield; Pm: Pavenham; Sk: Sharnbrook.

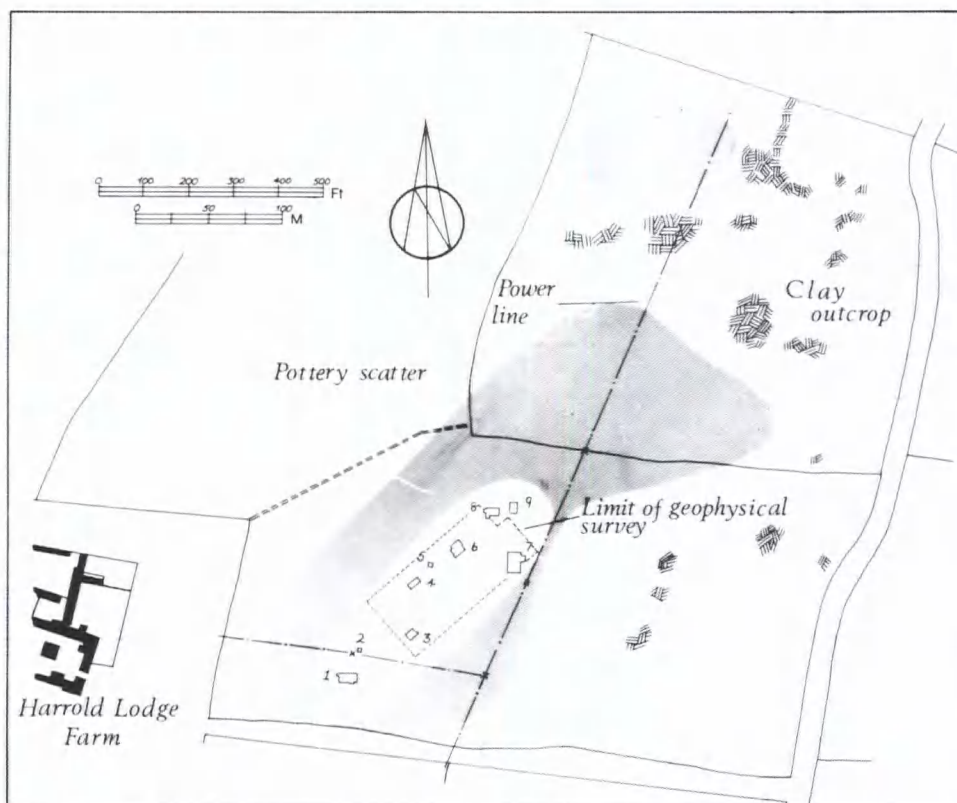


Fig 2. Location of pottery scatter, trenches and area of geophysical survey.

mortars from Mancetter-Hartshill and soft pink grogged ware; the shelly ware still has certain affinities with that of Phase 3. Later 3rd century AD: Kilns 5 and 6, Pits 9 and 17.

Phase 5 Lower Nene Valley colour coated ware in 4th century forms is common now; some typological changes are detectable in the Harrold shelly ware compared with that of Phase 4; early 4th century AD: Kiln 7, Pits 1, 2, 4, 7, 23.

Phase 6 Many 4th century coins going down to those of the House of Theodosius; late colour-coated forms; further typological changes in the Harrold ware to produce *inter alia* the familiar rilled shelly cooking pot: Pits 3, 8, 10, 12, 14, 15, 16, 18, 19.

THE EXCAVATED FEATURES: KILNS AND PITS

PHASE 1

Pit 11, Trench 9 (Figs 4, 17). Probably oval, 2.4 m

x 2 m. Excavated to a depth of 1.1 m but not bottomed. Layers: grey earth with patches of darker grey ash, flecks of charcoal; 2: brown clayey earth and stones.

Gullies 3 and 4, Trench 9 (Fig 4). Their real character uncertain, both were c 1 m across and consisted of trenches filled with tightly packed pieces of limestone separated by yellowish-brown clayey earth, with some patches of reddish burnt stone and dark grey greasy earth.

PHASE 2

Kiln 2, Trench 1 (Figs 5, 6; Pls 1 and 2). A well preserved sunken kiln, cut into the limestone and orientated E-W (with a stokehole at the W end). Its overall surviving length was 3.7 m (the W tip of the stokehole had been truncated by Pit 4); the diameter of the oven was about 2 m; the depth of the furnace chamber bottom below the subsoil surface was 1.1 m. The limestone into which it had been cut was burnt red along the length of the kiln to a depth of 50-60 mm. Excavation showed that the bottom of

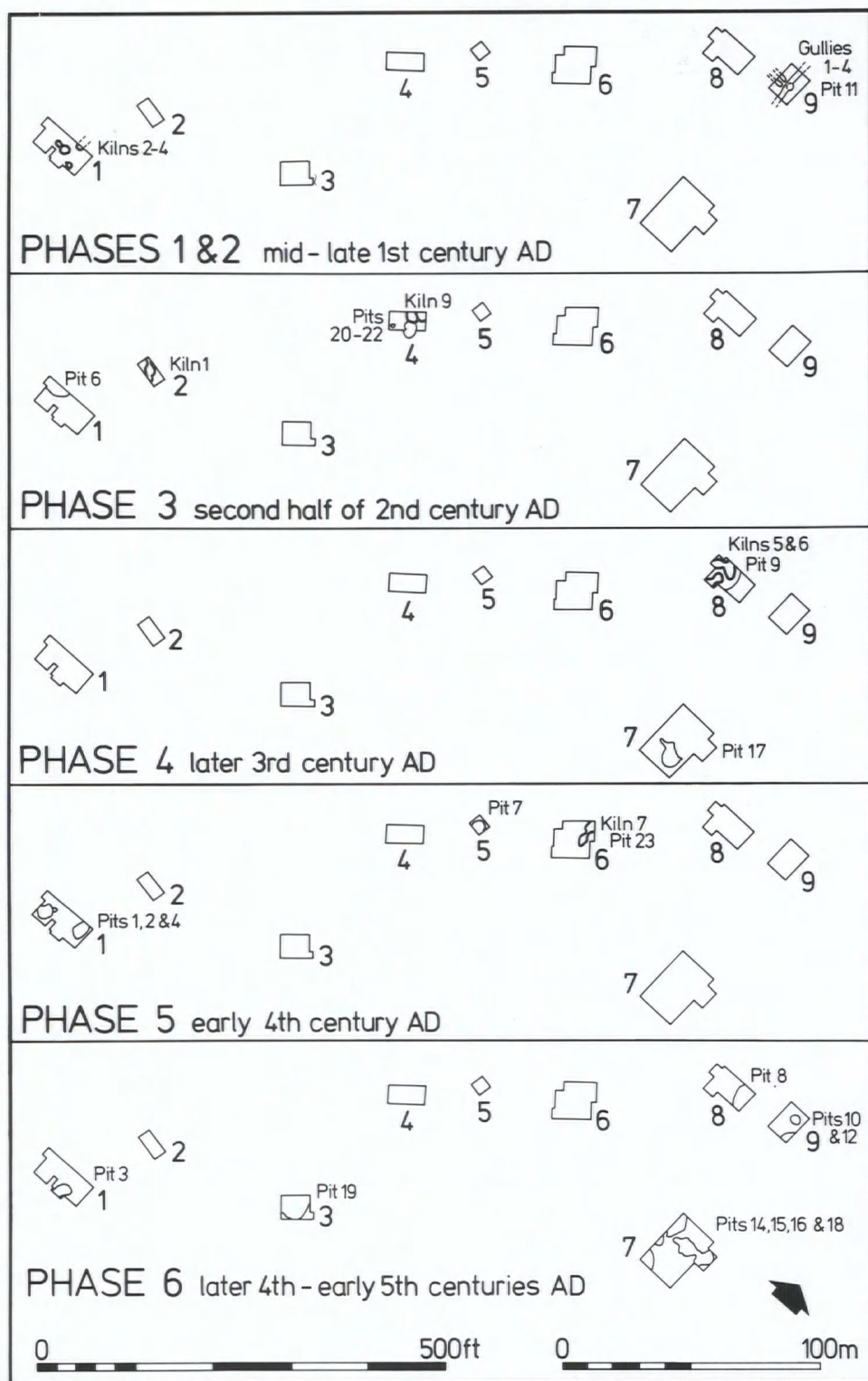


Fig 3. Phase plan.

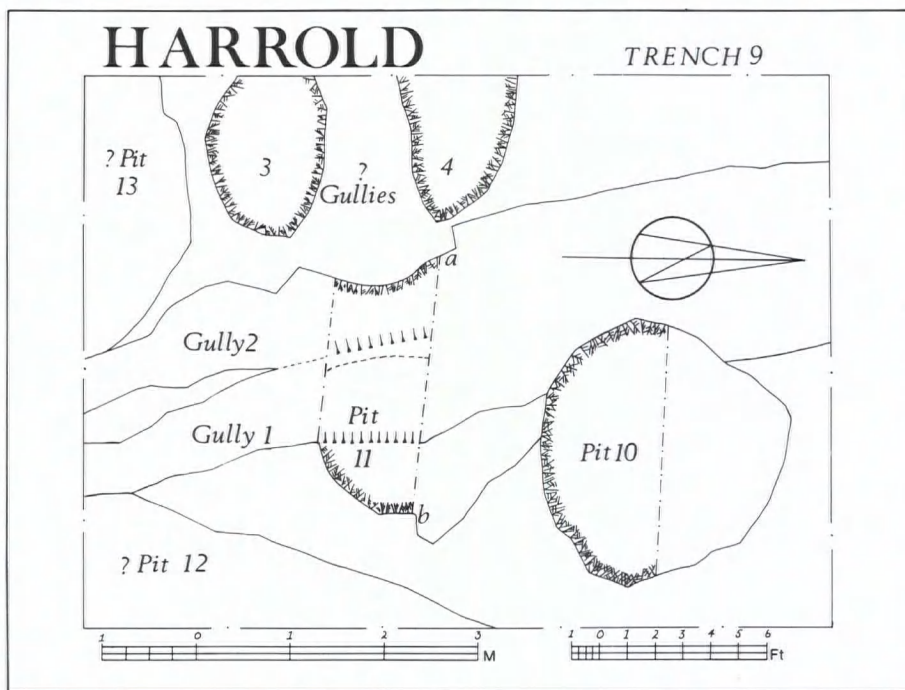


Fig 4. Trench 9.

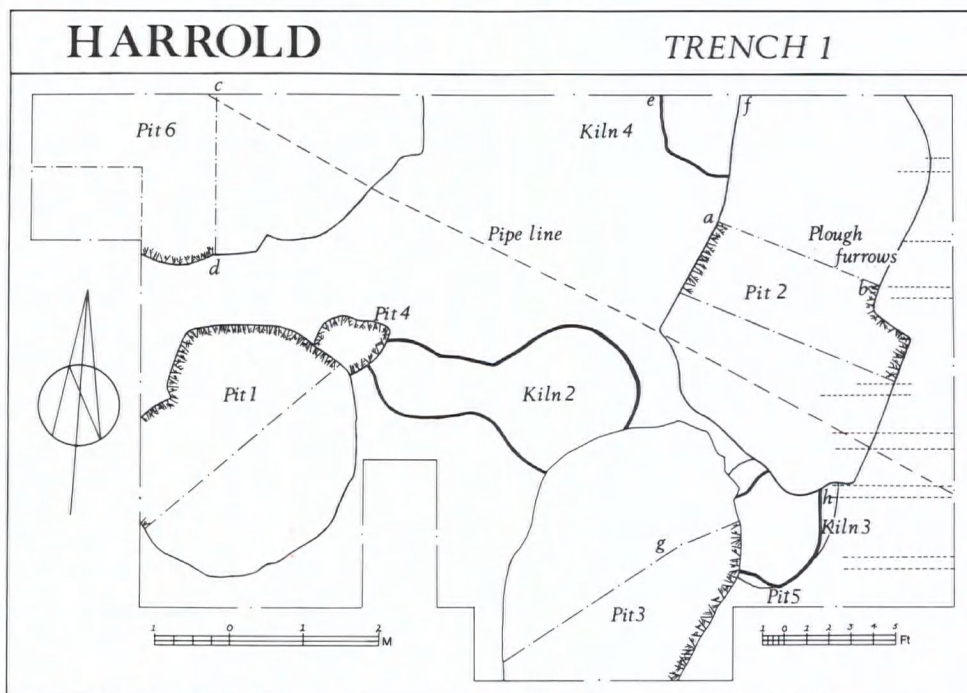


Fig 5. Trench 1.

HARROLD

KILN 2

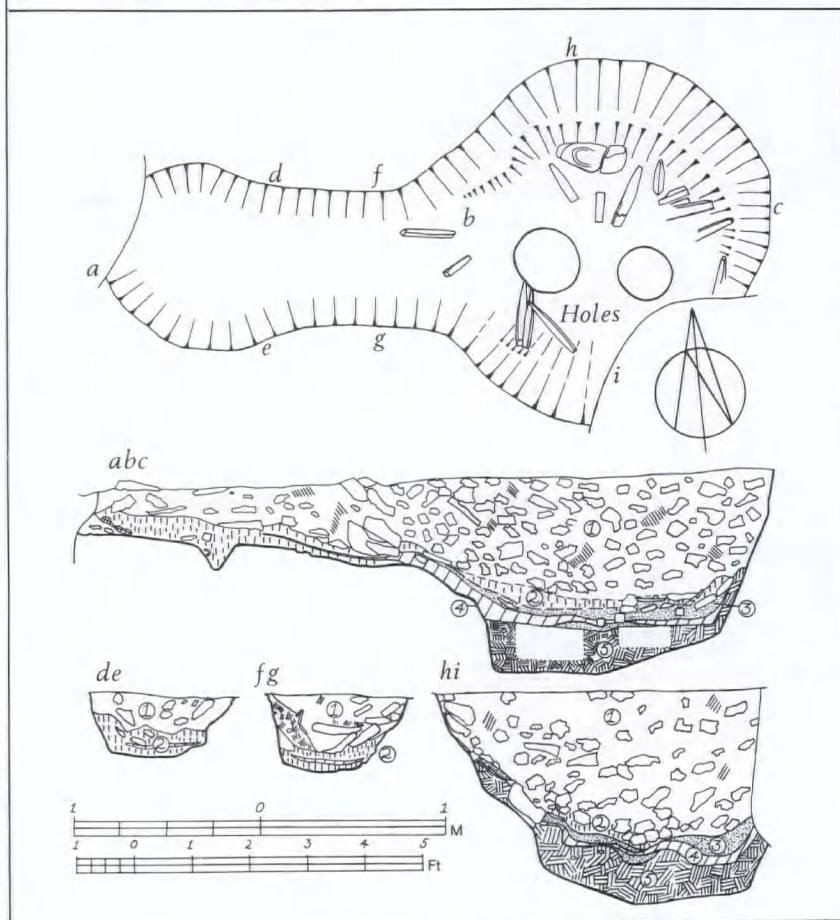


Fig 6. Kiln 2.

the furnace chamber had been covered with a layer 250 mm thick of hard dirty yellow clay (layer 5) with small stones, burnt red on its exposed upper surface, which had been continued upwards to line the furnace chamber wall in order to form a shelf on which the firebars could rest some 400 mm below the surface of the limestone, giving a maximum furnace chamber height of about 450 mm. Two regular cylindrical hollows 340 and 250 mm across had been formed in this clay floor to hold pedestals, but the pedestals had been removed and the holes left full of grey ash, with in one of them a fragment of a firebar and of a large jar.

The furnace chamber floor was covered with layers of grey (layer 3) and black (layer 4) ash, with

fragments of pottery and firebars, mostly broken but preserving something of their original radial arrangement, lying on and in them. These layers represent the remains of firings. Above was a layer of reddish burnt clay which extended westwards from the furnace for the full length of the flue and stokehole (layer 2). This weathering layer contained a few firebar pieces, pottery fragments and fire reddened stones. In the centre of the stokehole was a deposit of light grey ash. After abandonment the whole kiln had been filled up to the top with hard brownish-yellow sandy clay and large pieces of limestone, tightly packed (layer 1).

Kiln 3, Trench 1 (Figs 5, 16; Pl 3). This kiln had



Plate 1. Kiln 2 looking east. Scale in feet.

been located during Mr Field's earlier excavations. It had been considerably damaged by the digging of deep pits. Pit 2 had taken away a portion of the N side of what had probably been the furnace chamber and Pit 3 to the W had removed the flue and stokehole entirely. The furnace chamber, which was about 1.4 m across and 700 mm deep, had been cut into an earlier pit (Pit 5; layer 4, Fig 16) containing a fill of large pieces of loose limestone mixed with yellow clayey earth and dark sooty material with flecks of reddish burnt clay; there were no finds. The furnace chamber bottom was covered with a fine clay burnt brick red, and on this was a deposit of grey and black ash (layer 3). There were no traces of pedestals or of arrangements for supporting firebars. After going out of use the furnace chamber had been filled up with a very large quantity of broken firebar and pottery fragments, while on top of these were layers of fine grey ashy material containing fragments of pottery (layer 2), and brown earth containing pieces of limestone

(layer 1).

Kiln 4, Trench 1 (Figs 5, 16). A portion of what was probably the stokehole of another kiln, 600 mm deep, cut by Pit 2 and running outside the area excavated. It was filled with alternating layers of black soot (layer 2) and fine brownish earth (layer 1) containing fragments of pottery, with close to the top a layer (3) of greyish-brown earth with flecks of red burnt material. The stones around the sides had not been reddened by heat.

Other features (Figs 4, 17)

Gully 1, Trench 9. V-shaped, 350 mm deep, 1 m across. Chocolate earthy fill.

Gully 2, Trench 9. Cuts Gully 1, 850 mm wide, 300 mm deep. Brownish-yellow clayey earth, smallish pieces of limestone.



Plate 2. Kiln 2, details of firebars in furnace chamber. Note hole at bottom of photograph. Scale in feet.

PHASE 3

Kiln 9, Trench 4 (Figs 7, 8; Pl 4). This trench was opened up in response to an anomaly of 70y during the geophysical survey of 1971 and contained the oven, furnace chamber and part of the flue of what was probably a sunken updraught kiln orientated NW-SE. The oven and furnace chamber, 2.5 m across and 1 m deep, were of dry limestone construction, up to eight courses surviving in the best preserved portion. The flue had been unlined; its cheeks were reddened by fire. The furnace chamber floor had on it a localised layer of grey ash (layer 12), covered by a thin layer of yellow clay (11) with more thin grey ash on top of that, covering a wider area (10). These layers represent the detritus of kiln firings.

They were covered by a thin layer of reddish brown burnt clay (9), possibly caused by some slippage from the sides of the oven after the kiln had ceased to be used. On this rested a deposit of yellowish clayey earth (8), perhaps accumulation into the kiln from the surrounding subsoil. Onto this

had fallen a mass of limestone pieces, some of them burnt red on one side, representing the collapse of the upper part of the furnace chamber and oven lining. This had been covered in turn by layers of grey ash (7), stones and yellowish clayey earth (5 and 6) (perhaps more collapse); then yellow grey clay (1), hard dirty yellow clay with some pottery (2), brown clayey earth with much pottery and some tile fragments (3) and grey ash (4). Some of this material might have been derived from the fill of a pit (Pit 21) cut by the kiln on its north side, but the topmost layer seemed to have been dumped indiscriminately into kiln and pit at the same time, to level them up. There was no trace of a raised oven floor or of any support for one.

Kiln 1, Trench 2 (Fig 9). This kiln was excavated by Messrs P Panter, K Field and R M Friendship-Taylor in 1968-9. It turned out to be a single-chambered twin-flued sunken kiln oriented roughly E-W. The total length of the kiln was 4.7 m; the oven pit was in fact almost circular



Plate 3. Kiln 3 cut by Pit 3 in foreground. Note large quantity of firebars in furnace chamber. Scale in feet.

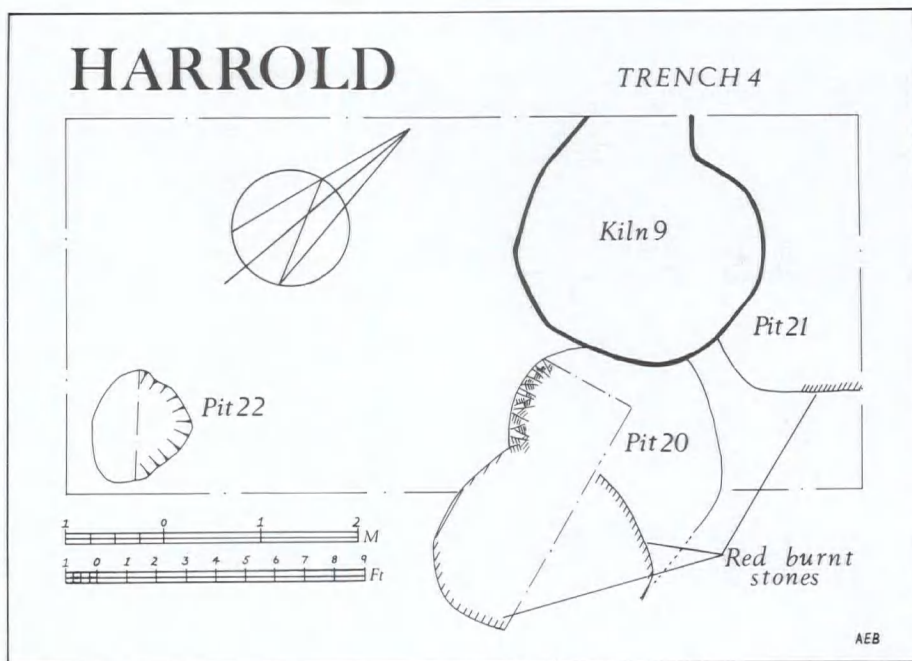


Fig 7. Trench 4.

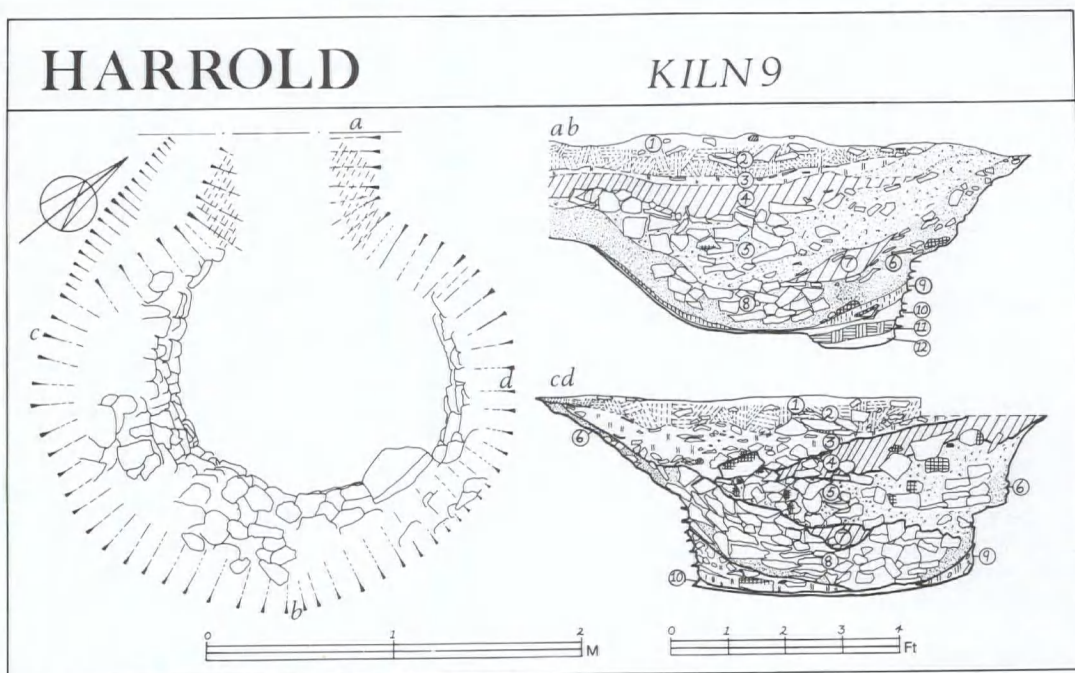


Fig 8. Kiln 9.



Plate 4. Kiln 9, looking west. Scale in metres.

in outline, with a diameter of 2.1 m; the western stokehole was bigger than the eastern one, 900 mm across as against 450 mm. The kiln floor was 1.1 m below the level of the topsoil.

The sides of the kiln had a lining of red burnt and yellow clay. On the western half of the kiln floor and the adjacent flue was a thick layer of black burnt matter (layer 10); in the eastern half was a thinner layer of corresponding material; this (layer 5) contained a lens of black-brown soil with yellow clayey streaks at its eastern end (layer 6). This pair of matching layers, which probably represented the remains of firings, covered layer 9, an area of solid yellow clay similar to that which lined the kiln and which here perhaps levelled off an irregularity in the bottom of the kiln; also layers 7 and 8, respectively thin layers of brown soil with specks of reddened clay, and yellow-brown clay.

On top of the ash on the bottom of the kiln was layer 4, brown-red burnt clay with patches of yellow unburnt clay, apparently collapse from the sides of the kiln. This was overlain by layers 1 and 2, brown-black soil and reddish soil with some small stones.

On either side of the western flue, at the beginning of the oven pit, was a single large stone. These stones could have formed the base of a flue arch; the group of reddened stones found at this point in the body of the oven could conceivably have come from this.

(**Note.** For the purpose of recording the finds from this kiln, the layers described above were combined and given new layer numbers as follows: Layer 1: the zone immediately above the drawn layers shown in Fig 8; Layer 2: equivalent to Layers 1, 2, 3, 4, 5, 6 and 10 on Fig 8; Layer 3: equivalent to layers 7 and 8 on Fig 8).

Pit 6, Trench 1 (Figs 5, 16 ; Pl 10). Shape not really determined but probably oval, over 5.3 m x over 2.2 m. Depth 2.2 m. Layers: 1: grey earth, lighter brown clayey earth, pieces of limestone and inclusions of blue clay with some pottery and tile fragments; 2: large pieces of limestone and brown earth; 3: yellow sandy clay with inclusions of blue clay.

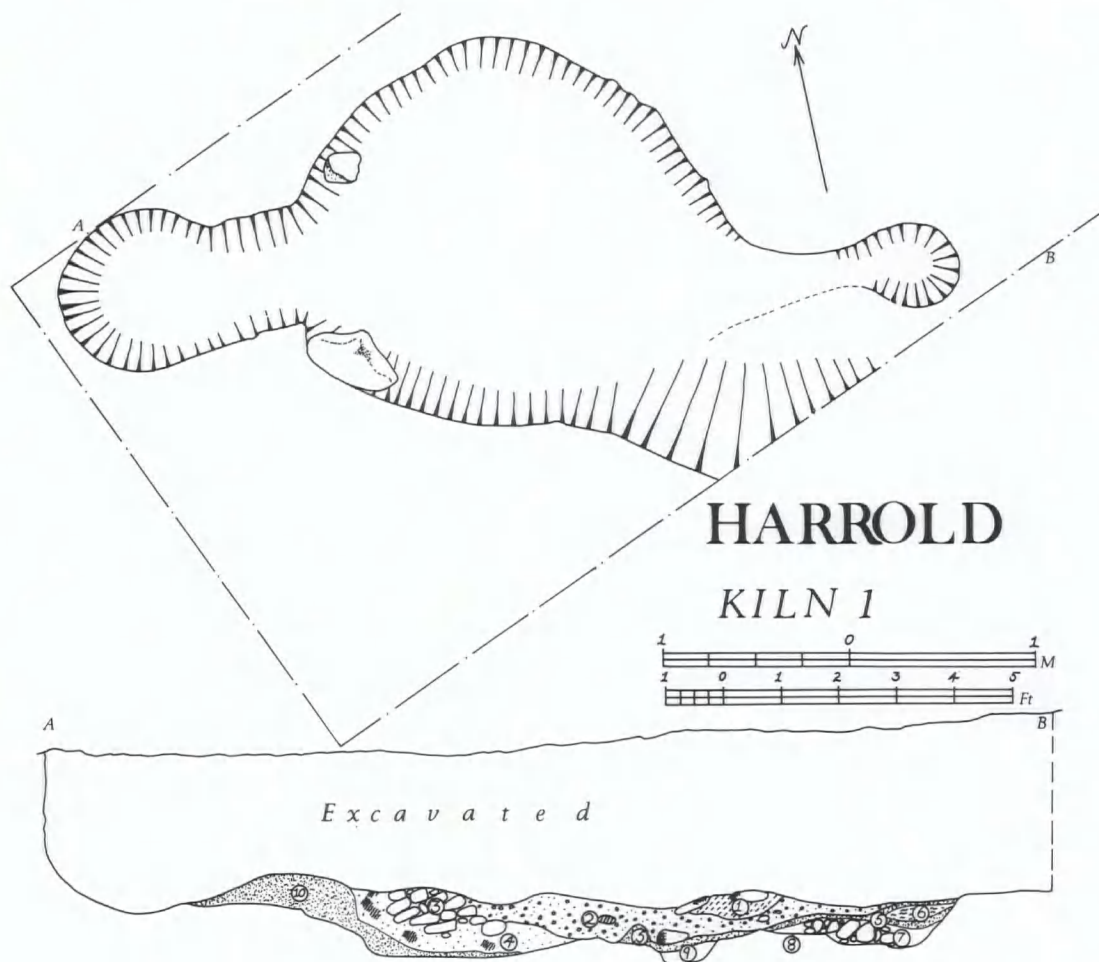


Fig 9. Kiln1.

Pit 20, Trench 4 (Figs 7, 17). Irregular oval, 2.4 m x 3.5 m. Depth: 2.6 m. Layers: 1: dark earth with some burnt stones and pottery fragments; 2: many pieces of limestone, some burnt, and chocolate clayey earth with a little pottery; 3: many red burnt stones with reddish brown earth; 4: yellow brown clay with pieces of limestone; 5: yellow clay, some pieces of limestone.

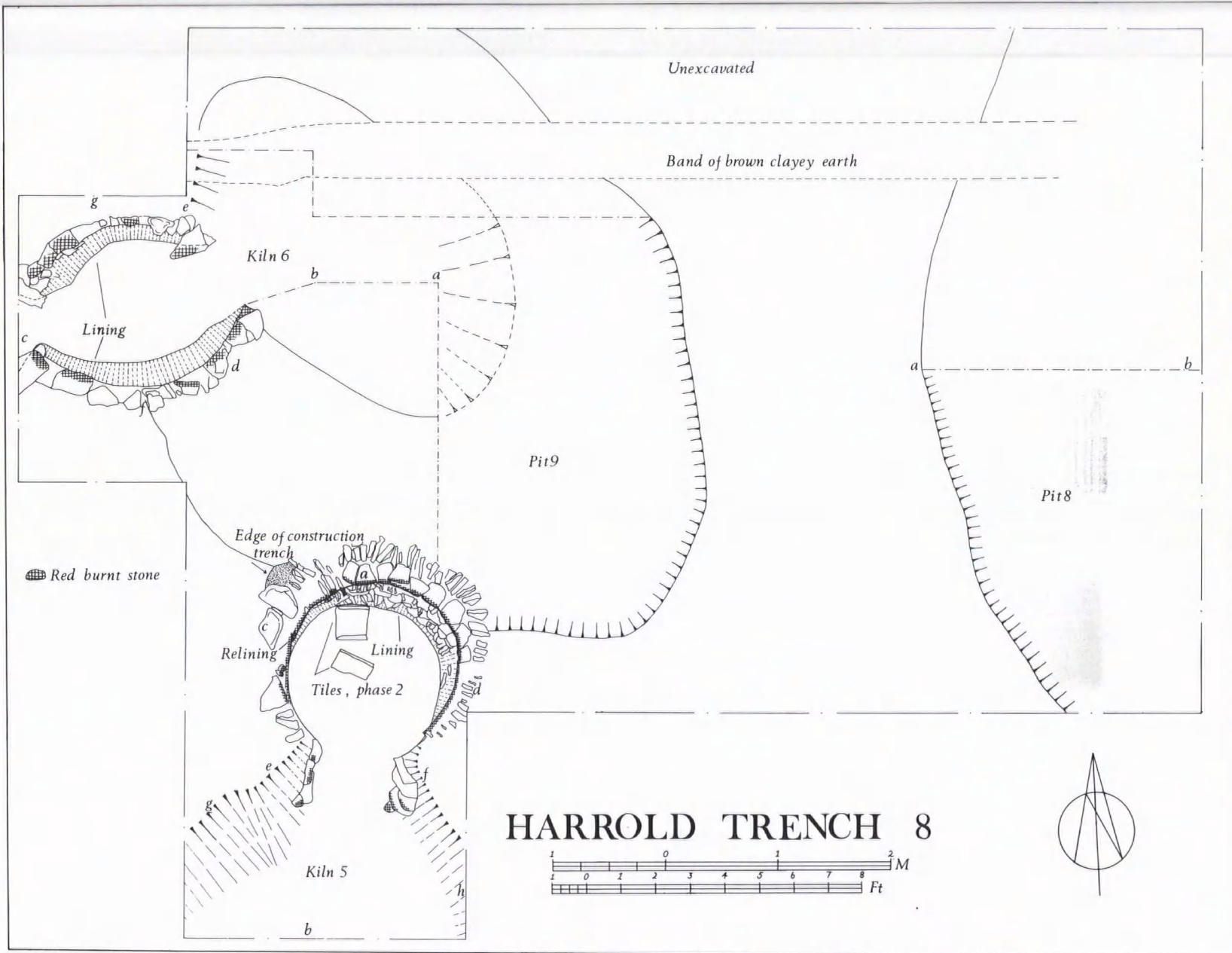
Pit 21, Trench 4. Upper layers only excavated; common to Kiln 9, layers 1 and 2 (Fig 8).

Pit 22, Trench 4 (Figs 7, 14; Pl 12). Circular, 1.1 m diameter; 300 mm deep. Layers: 1: hard bright yellow clay; 2: stiff greyish clay, pieces of limestone, some burnt; 3: greyish brown clayey earth, stones, flecks of charcoal.

PHASE 4

Kiln 5, Trench 8 (Figs 10, 11; Pls 5, 6, 7). This was a well preserved single chambered sunken kiln cut partly into a pocket of softish light brown sandy clay and partly into the fill of Pit 9, and orientated N-S. The full length of the kiln was not recovered, but was well in excess of 3 m; the diameter of the oven pit was 1.55 m and its depth below the top of the subsoil 750 mm.

The oven pit had been very solidly constructed with smallish pieces of limestone in eight alternately sloping and horizontal courses of double thickness, held together by hard yellow clay. The interior of the oven pit had been given a clay lining, fired to a hard grey on the outside but still a softish red on the inside. In one place it could be seen that the original lining, formed of a pre-fired slab of clay, had been



HARROLD TRENCH 8

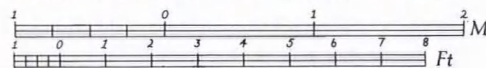


Fig 10. Trench 8, Kilns 5 and 6.



Plate 5. Kiln 5, looking north. Note pre-fired clay slab lining and re-flooring with roof tiles. Scale in metres.

covered again with a second coat of clay 20-50 mm thick. A thin layer of black ash and charcoal had accumulated on the oven pit floor and on top of this was a layer of red burnt clay in all probability representing the collapse inwards of some oven pit lining material. This in turn had been covered by a layer 60 mm thick of yellowish grey clay mixed with shell and stone, with in places complete or fragmentary tegulae fixed horizontally in its upper surface (6). This layer did not extend beyond the oven pit and seems to represent a re-flooring. More black ash (4) and red burnt clay (5) had accumulated on it.

The whole of the kiln had been deliberately filled up with a thick deposit of dark ashy material, containing flecks of charcoal and reddish burnt matter, some pieces of limestone, pockets of what appeared to be underfired prepared clay, pieces of pottery and quantities of tile fragments, including some twisted wasters (layers 1 and 2). Below this in the stokehole and flue, but extending a little way also over the re-flooring of the oven pit, was a layer (3) of softish yellow brown earth similar to the subsoil at this point, containing tile and pottery fragments, patches of yellow and red burnt clay and

many pieces of limestone, frequently burnt red. On the stokehole floor was a deposit of black ash (layer 7), covering a thin but hard deposit of chocolate clayey earth with pebbles, which could represent either trampling during the working of the kiln or a deliberate covering of the soft, sandy subsoil in order to provide a reasonable working surface.

Nowhere in the excavation of the oven pit was there any trace of pedestal, firebars or fired clay kiln material, although two hollow cylindrical pieces of kiln furniture c 170 mm long and 130 mm diameter were recovered from the filling, layer 2. A few fire reddened stones forming a springing for the flue arch were still in position in the flue.

Kiln 6, Trench 8 (Figs 10, 11; Pl 8). This rather unexpectedly turned out to be a large single-chambered twin-flued kiln. The full length was not recovered, but if the two stokeholes were of equal size it would have been in the region of 6 m. The oven pit was 1.5 m long and 1 m across at its widest point.

Like Kiln 5, it had been cut into the fill of Pit 9, which at this point was of softish brown earth. That portion of the stokehole nearest to the oven pit and



Plate 6. Kiln 5 under excavation, looking north at the area of the flue arch. Scale in metres.



Plate 7. Kiln 5, looking south at stokehole to show nature of fill. Scale in metres.

HARROLD

SECTIONS, KILNS 5 & 6

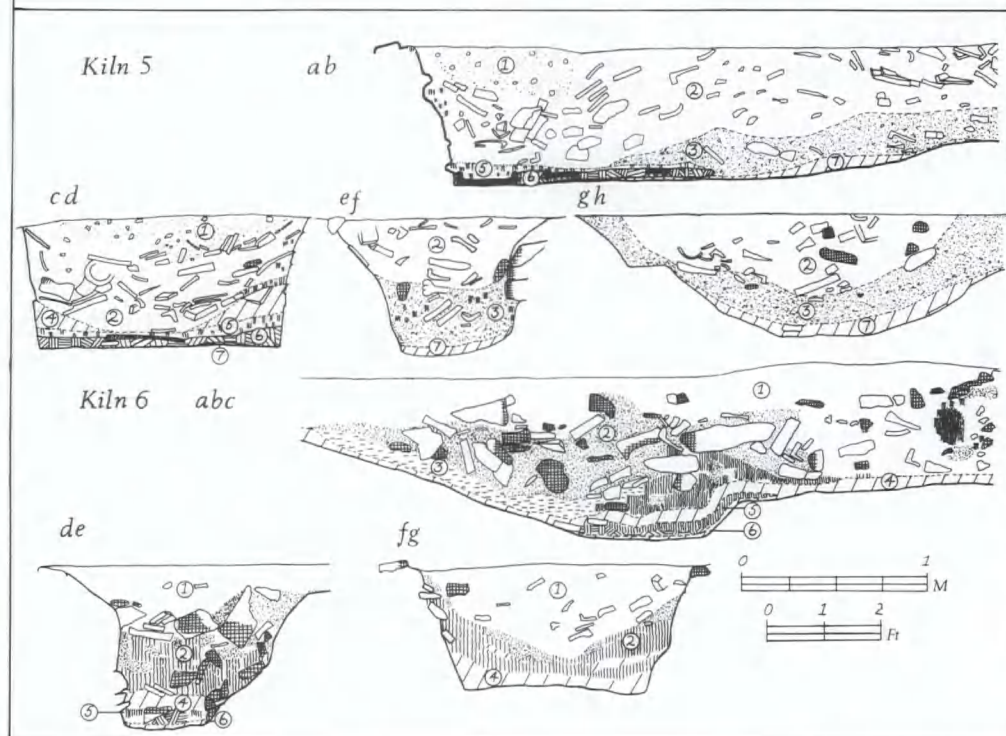


Fig 11. Kilns 5 and 6, sections.

the oven pit itself had been given a flooring of hard greyish clay and pebbles and on this black ash had accumulated (layer 6), to be covered in the stokehole only by a re-flooring of yellowish clay, burnt red on its upper surface (5). More black ash had collected on this (4). The oven pit floor sloped up to a level 150 mm above that of the stokehole. The kiln contained a large quantity of limestone blocks, many burnt red, mixed with tile fragments, red burnt clay - which predominated in the oven pit - and powdery yellow clay (2). It is probable that the sides of the kiln had originally been lined with these stones, which had been fixed in position and lined with clay; some in fact still remained in position with a hard grey clay lining in the oven pit. There is also the possibility of the collapse of a superstructure of limestone blocks and clay. In the stokehole the stones rested on some brown clayey earth (3), probably representing slippage into the stokehole from Pit 9. The space above the stone collapse in the kiln had been filled up with soft grey

rather ashy earth, with flecks of charcoal and some reddened stones as well as pottery and tile (layer 1).

Pit 9, Trench 8 (Fig 10). Oval, 4.75 m x at least 6.6 m. At least 2.2 m deep but not bottomed. Layers: 1 and 2 formed part of the E stokehole of Kiln 6; 3: powdery yellowish clay; 4 and 5: grey earth and yellow clay, pockets of black sooty material, flecks of charcoal, red burnt matter; 6: hard yellow clay, with intercalated layers of grey ash, reddened stones, red burnt clay and tile fragments; 8: dirty yellow clay with reddish brown burnt matter and tiles; 9: a very thick layer, 1.4 m, of yellow sandy clay, lumps of limestone and brown clayey earth.

Pit 17, Trench 7 (Figs 15, 16). An irregular oval, 6.2 m x 2.5 m. 1.8 m deep. Layers: 1: grey brown earth, ashy, small pieces of limestone, clayey inclusions and pottery, with some tile; 2: thick layer of solid blue clay; 3: limestone pieces and yellow clayey earth, patches of chocolate clayey earth; 4:



Plate 8. Kiln 6, looking west. Scale in metres.

dirty yellow green sandy clay; 5: yellow sandy clay.

PHASE 5

Kiln 7, Trench 6 (Figs 12, 13; Pl 9). This was a well-preserved single-chambered twin flued kiln, oriented N-S. Its full length could not be established but would have been a little over 7 m, with stokeholes approximately equal in area, but with the northernmost the deeper of the two. The oven pit, 2 m long, and 1 m across, at its widest point and 650 mm deep, was built of limestone blocks set in clay, with limestone cheeks flanking the entrances at both ends. The clay lining of the oven pit, 20 mm thick and burnt grey and black, was well preserved; in one place a tile 190 mm square had been incorporated in it. The NE corner of the oven pit was right-angled and there were indications that the NW angle had been similarly formed; the kiln might originally, therefore, have been roughly rectangular. The kiln floor was of red burnt clay, with no sharp upward slope from the stokeholes, as was the case with Kiln 6. On this and on the stokehole floors was a layer of black and grey ash, with tile fragments (layer 3), the result of the use of the kiln, rising to a thickness of 450 mm in the middle of the oven pit. This was covered by a thick

layer of crumbly yellow clay mixed with some red burnt clay (layer 2), together with a large number of pieces of limestone (and some tile) which occurred in great quantity in the oven pit, where this layer was thickest. Almost all the stones showed signs of burning, frequently along one edge only. It appears therefore that the kiln had been given a superstructure of limestone blocks, held together by clay, and that this had collapsed. Layer 1 consisted of soft dark grey sooty earth with a few pieces of reddened stone, with pottery and tile fragments.

The north stokehole of Kiln 7 had cut the lip of Pit 23. Both this and Kiln 7 had removed a large portion of Kiln 8, which was marked on the stokehole floor by an area of bright red burnt clay, bounded by a semi-circle 60 mm thick of red burnt stones, black ash, blue, red and yellow clay with in places a lining of hard red clay 10 mm thick. This kiln was not excavated and its date not determined.

Pit 1, Trench 1 (Figs 5, 14). Roughly circular, 3.4 m diameter, 2.2 m deep. Layers: 1: dark grey-brown clay with pieces of limestone and pottery; 2: as 1, but with yellow clayey material; 3: pieces of limestone, a little yellowish-grey clayey earth between them with pottery and tile; 4: yellow

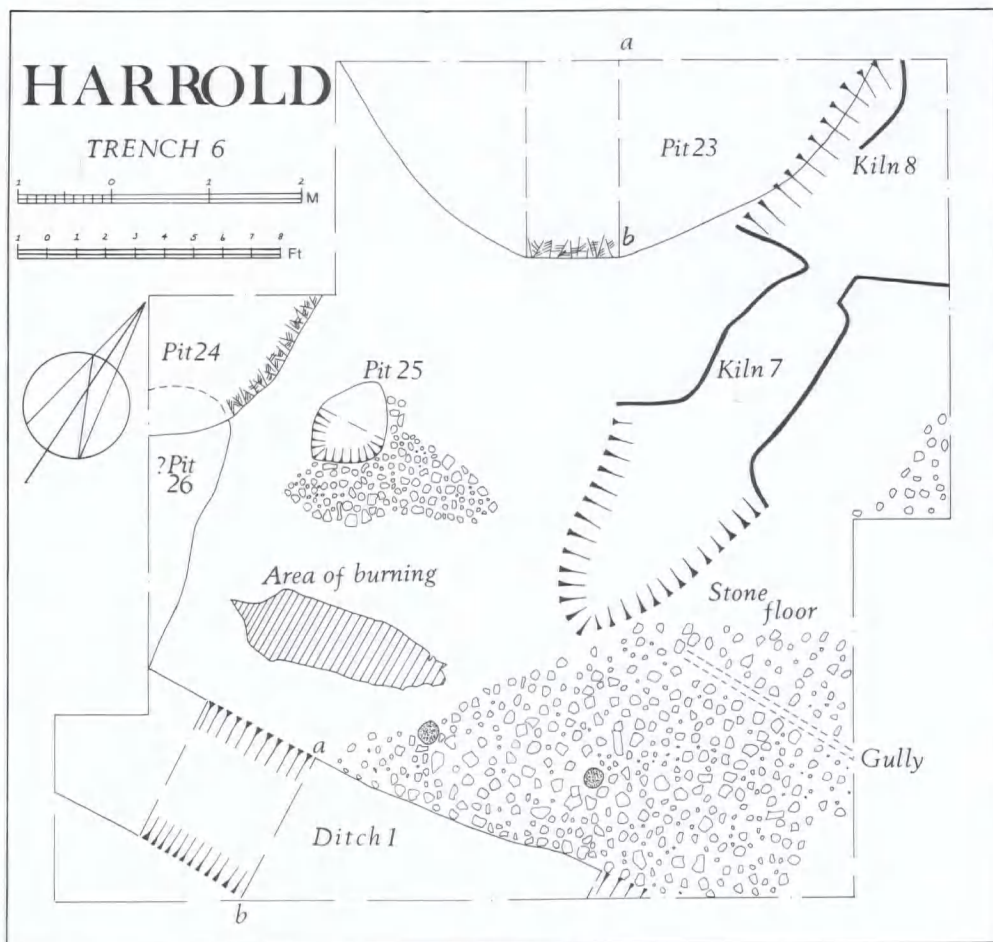


Fig 12. Trench 6.

sandy clay and dirty grey-brown clayey earth; 5: clean yellow clay merging into dirty yellow clay; 6: dirty grey clay; 7: reddish brown earth (5-7 all derived from Pit 4); 8: many pieces of limestone, brownish-yellow clay between them; 9: greyish-yellow sandy clay; 10: greyish yellow clay.

Pit 2, Trench 1 (Figs 5, 16). Irregular oval over 5.7 m in one direction, width varies 2.4 - 3.1 m. Depth: 2.10 m. Layers: 1: greyish-brown stoneless loam with pottery and tile; 2: limestone pieces, with dark yellowish-brown clayey earth, some burnt stones and zones of stoneless brown earth; 3: a great deal of limestone with some yellow clayey earth and brown earth; 4: large stones with some yellow clayey and brown earth; 5: light blue-grey sandy clay; 6: yellow sandy clay.

Pit 4, Trench 1 (Fig 5). Roughly circular 800 mm diameter, 700 mm deep. Hard brown clayey earth with stones, a little pottery.

Pit 7, Trench 5 (trench location, Fig 2). Shape not determined since pit occupied most of this 3 m square trench. Not bottomed, but excavated to depth of 1.7 m. Cut through rock. Layers: 1: grey-brown ashy earth, pieces of limestone, pottery and tile; 2: yellow clayey earth, much stone; 3: chocolate earth, small stones; 4: grey ashy; 5 and 6: chocolate earth with pieces of limestone.

Pit 23, Trench 6 (Figs 12, 17). Uncertain outline since against north side of trench, but at least 5.7 m across. Depth: 2.6 m. Layers: 1: dark brown grey ashy earth, red burnt matter, burnt and unburnt pieces of limestone and pottery; 2: yellow powdery

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KILNS 7 & 8

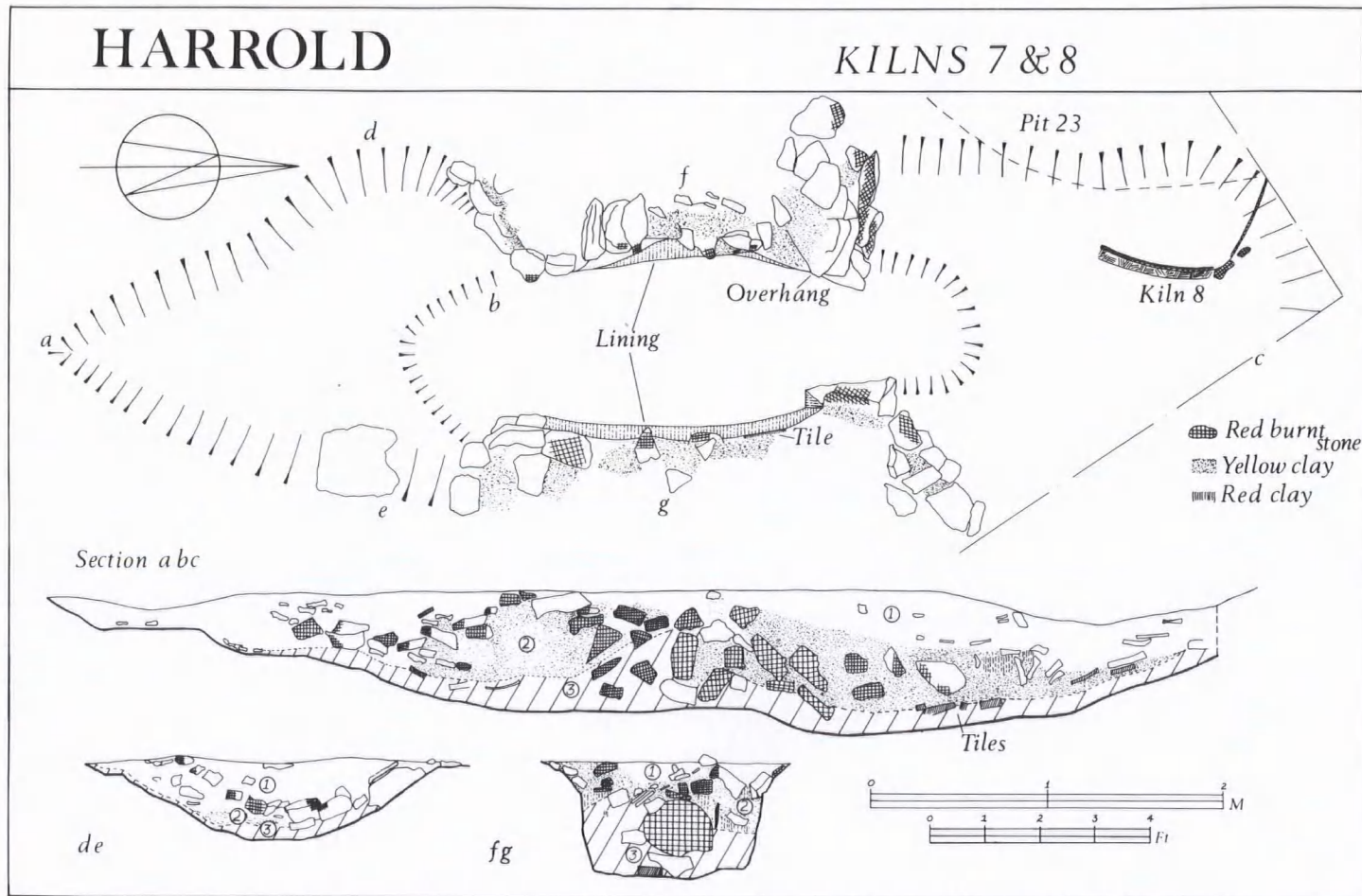


Fig 13. Kilns 7 and 8.



Plate 9. Kiln 7, looking south; stone floor beyond. Two-metre ranging rod.

clay, flecks of red, black ash, pottery and tile; 3: light grey ash, pottery and tile; 4: dark brown-grey ashy earth, red burnt matter, burnt and unburnt pieces of limestone, some pottery and tile; 5: yellow powdery clay, black ash, flecks of red; 6: dark grey ashy; 7: light grey ash; 8: dark grey ashy; 9: light grey ash; 10: light brown clayey earth; 11: dark grey ashy, flecks of red, patches of yellow powdery clay; 12: soot, red burnt flecks, small pieces charcoal, small area of brown earth; 13: yellow-brown sandy clay; 14: loose pieces of limestone separated by dirty clayey earth; 15: greenish-grey clayey, with lenses of blue clay in places.

PHASE 6

Pit 3, Trench 1 (Fig 5). Oval, over 4 m x 2.8 m. Not bottomed; excavated to a depth of 1.2 m. Layers: 1: dark grey clayey earth, yellow sandy clay and limestone; 2: limestone and yellow sandy clay; 3: limestone pieces mixed with brownish clayey earth; 4: limestone and yellow clayey earth; 5: as 3; 6: as 4.

Pit 8, Trench 8 (Figs 10, 17). Uncertain shape since

occupied whole of E edge of Trench 8, but at least 6 m across. Depth: 2.5 m. Layers: 1: light grey ashy with charcoal, pottery and tile; 2: pieces of limestone with black clayey earth, with charcoal and bluish clay; 3: grey clayey, lumps of limestone; 4: dirty grey-brown clayey with flecks of yellow clay and small stones, band of grey ash and charcoal; 5: yellow-grey clayey with band of grey ash; 6: light brown clayey; 7: hard yellow and reddish brown and grey clay, with stones and band of blue clay; 8: yellow-brown clay and yellow sandy, flecks of blue clay.

Pit 10, Trench 9 (Figs 4, 17; Pl 11). Circular, 2.5 m in diameter. Depth to water level, 2 m. Layers: 1: soft loose grey earth, some stones, pottery; 2: brown clayey earth, pottery, with pieces of limestone, not tightly packed; 3: pieces of limestone, gaps between, chocolate clayey earth, blue clay inclusions; 4: mixture of brown sandy clay, yellow sandy, a few stones.

Pit 12, Trench 9 (Fig 4). In corner of trench, real nature uncertain. Layers: 1: brown-yellow clayey, pieces of limestone; 2: grey earth and stones; 3: light

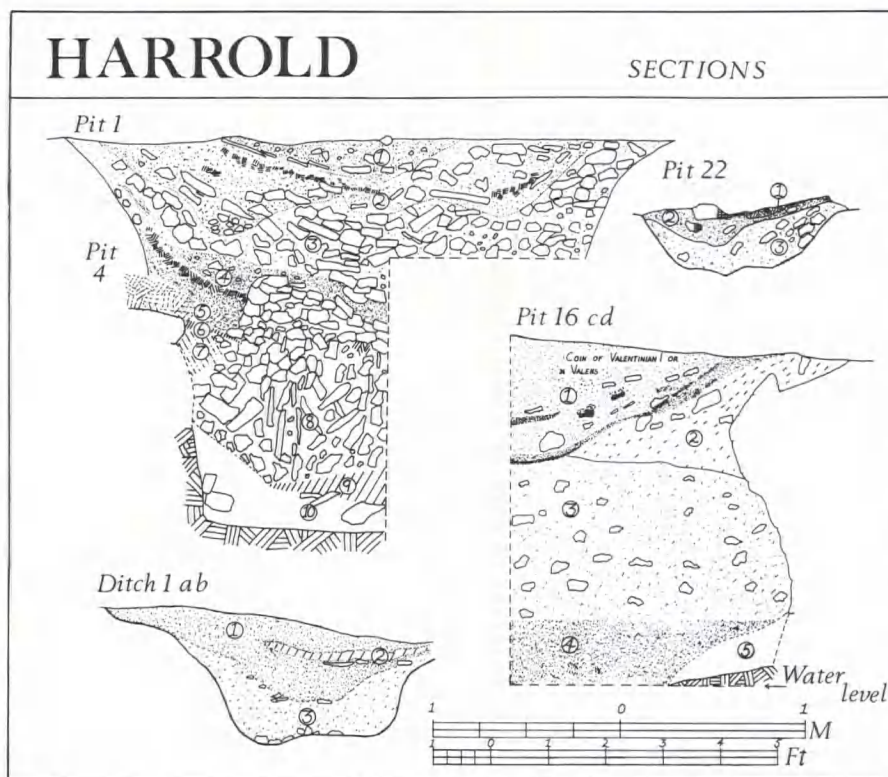


Fig 14. Sections, Pits 1, 16, 22 and Ditch 1.

brown sandy clayey.

Pit 14, Trench 7 (Figs 15, 16). Probably circular, 2.45 m diameter. Depth 1.7 m. Layers: 1: greyish brown clayey earth with red burnt stones in middle of pit; 2: brownish clayey earth with lumps of limestone in middle, yellowish limestone flecks elsewhere; 3: densely packed pieces of limestone; 4: greyish clayey; 5: reddish brown clayey; 6: smallish pieces of limestone with yellow sandy clay between them; 7: yellow sandy.

Pit 15, Trench 7 (Fig 15). In corner of trench, so shape uncertain, but at least 4 m x 3.20 m. Depth: 1.7 m. Layers: 1: fine grey ashy, stones, some burnt red, charcoal; 2: pieces of limestone, greyish-brown clayey earth with bands of yellow clay; 3: dirty yellow clay mixed with brown clayey earth and stones; band of blue clay; 4: yellow sandy.

Pit 16, Trench 7 (Figs 14, 15). Oval, 6.2 m x 2.5 m. Depth, 1.8 m. Layers: 1: fine dark grey ashy, band of dark ash at base; 2: brown clayey earth, few

stones; 3: yellow-brown earth, closely packed pieces of limestone; 4: dirty yellow-brown clayey, few stones; 5: yellow sandy clay.

Pit 18, Trench 7 (Fig 15). Irregular oval, 3 m x 2.4 m. Layer 1: grey brown clayey earth with smallish stones, alone examined.

Pit 19, Trench 3 (trench location, Fig 2). Trench 5 m square: pit occupied area of this and more. Not bottomed because on SE side, where section dug, the pit shelved in, but it was 2 m deep at this point already. Layers: 1: dark grey clayey earth, flecks charcoal, burnt and unburnt limestone; 2: dirty yellowish clay and chocolate clay, fragments of chalk; 3: dark grey clayey earth, fragments of charcoal; 4: light brown clay, small stones, patches of yellow clay; 5: grey clayey earth; 6: chocolate clayey and small stones; 7: yellow clay and stones; 8: soot, grey clayey earth, flecks red burnt matter; 9: grey-yellow clayey and stones; 10: brownish yellow clayey, some charcoal flecks, small stones.

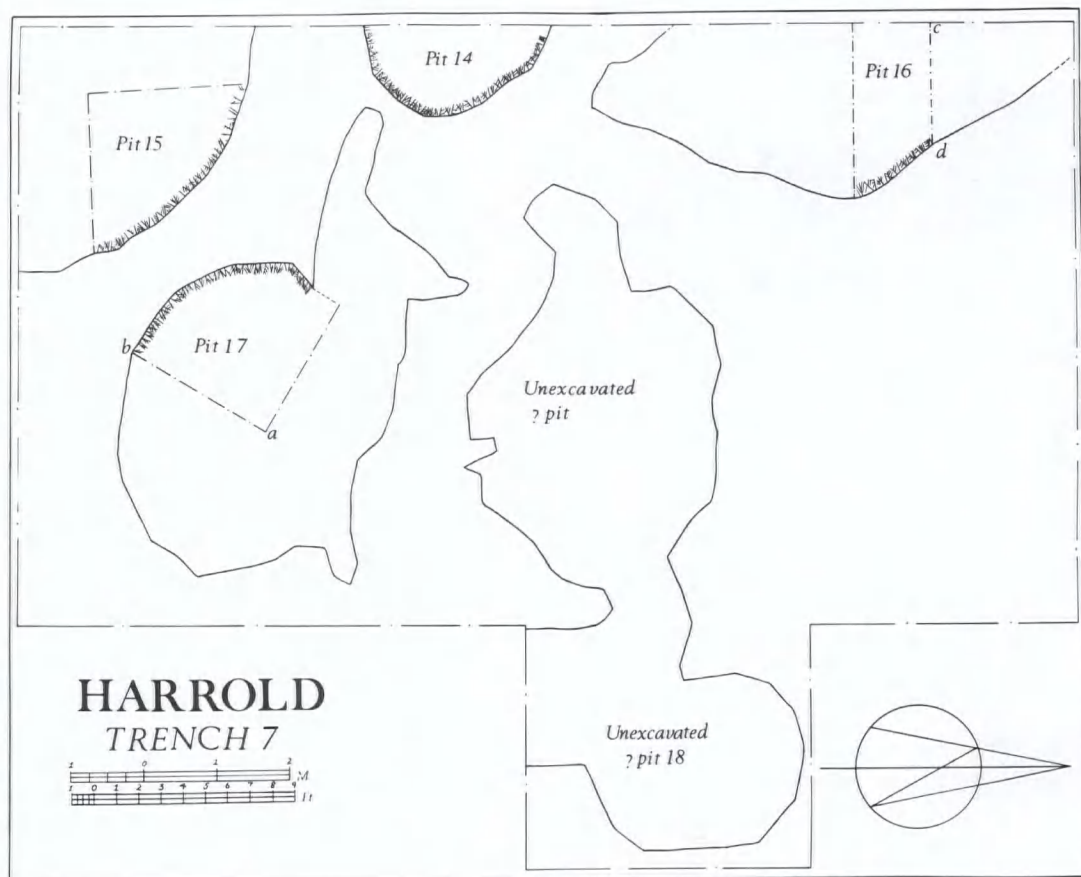


Fig 15. Trench 7.

OTHER 4TH CENTURY FEATURES, NOT ASSIGNABLE TO A PARTICULAR PHASE

Pit 13, Trench 9 (Fig 4). In corner of trench, so interpretation as a pit not wholly certain. Chocolate clay with flecks of yellow limestone.

Pit 24, Trench 6 (Fig 12). Same comments apply. Excavated to a depth of 500 mm. Layers: 1: grey clay and stones; 2: stones and brownish yellow clayey earth; 3: black sooty earth and stones. Cuts earlier feature, ? Pit 26, area of limestone pieces and grey earth, no finds.

Pit 25, Trench 6 (Figs 12, 17). Circular, 750 mm diameter, 350 mm deep. Layers: 1: yellow clay; 2: dark grey clayey earth; 3: limestone pieces.

Ditch 1, Trench 6 (Figs 12, 14). 1.8 m wide, flat

bottomed, 600 mm deep. Layers: 1: soft dark grey sooty, reddened stones; 2: light brown yellow clayey earth; 3: light yellowish brown clayey earth with stones. This ditch bounded a floor of pebbles, which was cut by a shallow gully 200 mm across and two depressions with the same diameter as this filled with dark grey clay, perhaps post holes.

'Area of burning', Trench 6 (Figs 12, 18). An oval area, 2.25 m x 0.75 m, where the natural chocolate clay subsoil has been burnt red. At both ends were low piles of stones 5-600 mm high, with yellow powdery clay mixed with them. A brick fragment 45 mm thick sat on its edge within the area and two other similar fragments lay flat inside it. The suggestion can be made that the feature represents a clamp for the firing of bricks. In itself the feature cannot be dated but its general situation suggests a 4th century date.



Plate 10. Pit 6. Scale in feet.



Plate 11. Pit 10. Note layer of rock through which pit was dug. Scale in metres.

THE KILNS, GENERAL

Kilns 2, 3, 4 & 9

These kilns can usefully be considered as a group. Although much cut about by the digging of pits, what was left of Kiln 3 - a depression only 700 mm deep bearing the marks of intense heat - suggests that what survived represented the furnace chamber of the kiln rather than the stokehole. The neatly made cigar shaped firebars are very typical of early kilns in the Nene and Ouse valleys and in the case of this kiln, given the shallow nature of the furnace chamber, their ends probably rested on the ground surface, being supported in the centre of the kiln by a portable pedestal similar to the one found in Pit 23 (Fig 50, 26). This means that the kiln can be thought of as falling into the semi-sunken category of pottery kilns of La Tène III derivation recently defined by Vivien Swan (1984, 55); other examples of comparable date come from the Nene valley at Martin's Lane, Hardingstone, and Camp Hill, Northampton, 7.5 km away (Woods 1969 and Shaw 1979).

But Kiln 2 differs from Kiln 3 in that the furnace chamber was deeper and a ledge existed half way up this in order to support the ends of the firebars.

This meant that a substantial part of the oven as well as the oven floor was below ground, a technological advance on the sort of kiln represented by Kiln 3. In this respect it resembled the kilns found at Elstow near Bedford (Swan 1984, 63) and Weston Favell, near Northampton (Bunch and Corder 1954). The superstructure of this kiln may well have been of turf; this is put forward as a suggestion on the analogy between our layer 2, reddish burnt clay, and the 'orange-red clayey deposit' considered to represent burnt turfwork at the early surface-built kilns at Rushden, 10 km to the north (Woods 1974, 265).

Kiln 9 would appear to have been similar. As with Kiln 2, the base of the furnace chamber was well below the level of the flue, where the fire was clearly set, as was evidenced by patches of burning on both sides of it. Unlike Kiln 2, Kiln 9 had a carefully constructed furnace chamber and oven of stone; the upper part of this construction had collapsed, but the general disposition of the surrounding remains was quite consistent with the notion that a ledge had existed on which the ends of a raised oven floor could have rested. No long firebars were found in the kiln although a single short bar-like object

HARROLD

PIT & KILN SECTIONS

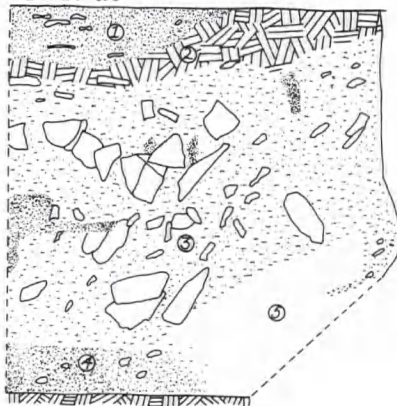
Pit 2 ab



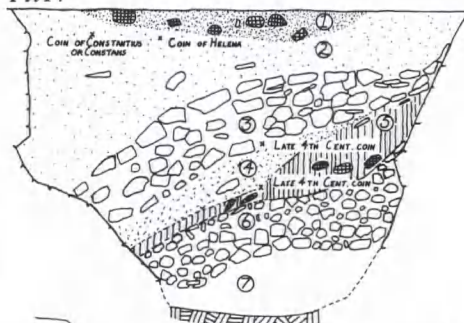
Pit 6 cd



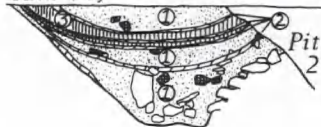
Pit 17 ab



Pit 14



Kiln 4 ef



Pit 2

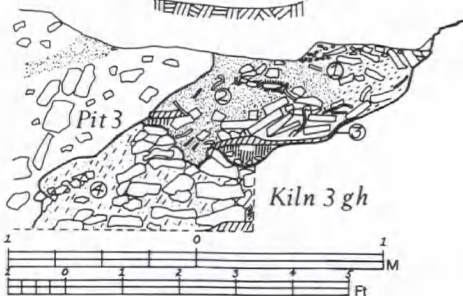


Fig 16. Sections, Pits 2, 3, 6, 14, 17 and Kilns 3 and 4.



Plate 12. Pit 22. Note light clay layer on top. Scale in metres.

similar to ones from Kiln 2 was recovered (Fig 50, 14); however, a fragment of a bigger bar, apparently more substantial than the bars from Kilns 2 and 3 came from Pit 6 (Fig 50, 12), which has been assigned to the same phase as Kiln 9. Also from Kiln 9 was a perforated clay plate very much like one from Gully 1 (Fig 50, 10, 16) suggesting similar stacking arrangements. But there were no traces of a pedestal or of any method of supporting one.

Kilns 1, 5, 6 and 7

These kilns shared the following characteristics: their stokeholes, flues and kiln floors lay on roughly the same level; and there was no evidence of any kind for raised oven floors in the form of firebars or of supports for them. These kilns belong therefore to the single-chambered variety defined by Vivien Swan (1984, 113-120). Kiln 5 clearly falls into the single-flued category; its fill gave no indication of the kind of superstructure it had, or indeed whether it had one. As for the twin-flued kilns (1, 6 and 7) enough evidence was present in the fills of 6 and 7, in the form of quantities of limestone pieces reddened at one end, mixed with yellowish powdery clay, to suggest that these had been given

permanent, presumably open-topped, superstructures, and that these had either collapsed or been pushed inwards. In the cases of Kilns 6 and 7, it is scarcely justifiable to speak of the existence of flues; maybe experience showed that the relatively low temperatures which the Harrold pottery required made them unnecessary. It may be significant that it was the earliest of the single chambered kilns, Kiln 1, which possessed long flues; this kiln contained a considerable number of pottery fragments which were clearly overfired.

Harrold is of particular interest as a site at which updraught kilns in the La Tène III tradition and single-chambered kilns, which had a different ancestry and a different distribution, occurred side by side. Since Kiln 9 (La Tène derivation) and Kiln 1 (single-chambered) both belonged to Phase 3, it looks as if the change-over in technology took place in the later 2nd century. Some elements of the earlier technology, concerned with the stacking of pottery within the kiln, were apparently carried over, however; Kiln 1 produced flanged clay plates very similar to the one from Kiln 9 (Fig 50, 17, 18). But, with the exception of the two cylinders from Kiln 5 (Fig 50, 24-5) the later pottery kilns

HARROLD

PIT SECTIONS

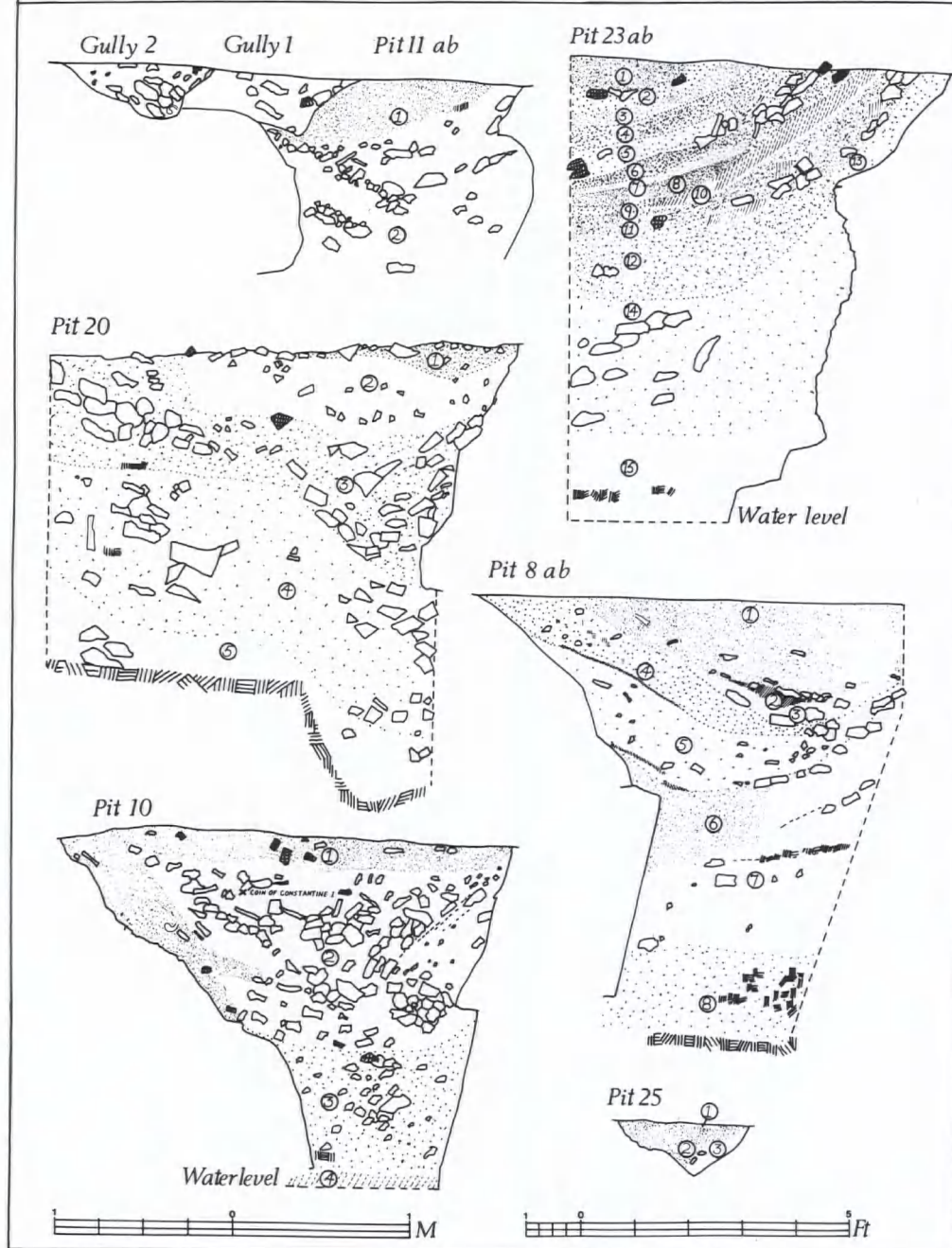


Fig 17. Sections, Pits 8, 10, 11, 20, 23, 25 & Gullies 1 & 2

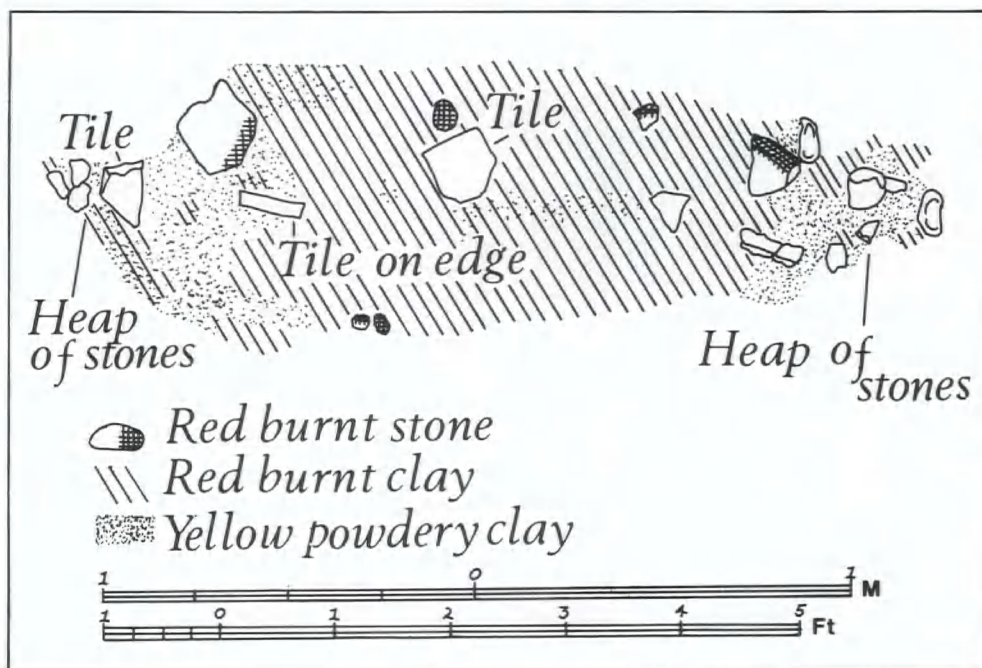


Fig 18. Burnt area, Trench 6.

yielded no evidence for stacking aids at all, suggesting a simplification in the firing process. What the pottery rested on is unknown, possibly broken sherds or pieces of tile.

Single chambered kilns possessed obvious advantages for the Harrold potters. They were very simple to construct and robust; there was no need for the kiln furniture necessary with the updraught kilns. They were simpler to operate. The aim of the Harrold potters was to produce a serviceable oxidised kitchen ware and the high degree of control over the firing process required by the producers of fine or reduced wares could be dispensed with, as the blotchy buff and grey surfaces of a number of Harrold sherds indicate. Also they were capacious, since valuable space did not have to be given up to form a furnace chamber. The switch to the single-chambered mode, and its application to the firing of tiles as well as pottery, is an indication of the adaptability of the Harrold potters.

Why double- and single-flue pottery kilns were in use on the same site at apparently much the same time is not altogether clear. A feature of a proportion of the Harrold output is the size of some of the pots (eg Figs 27, 35) and it may be that a double-flued kiln, although perhaps a little more trouble to operate than a single-flued one, avoided

cold spots at the back and so had advantages in the firing of these vessels.

Kiln 7 is unusual in its rectangularity; this contrasts quite markedly with the oval outlines of Kilns 1, 5 and 6. The possibility can therefore be raised that this kiln was used for the baking of tiles, although it would have been quite small for this purpose compared with most tile kilns elsewhere. Neither can good parallels be found for rectangular double-flued tile kilns like this, although there is apparently a class of single-flued single-chambered structures of rectangular form which have from time to time been suggested as possible tile kilns (McWhirr 1979, 101). The nearest single-chambered double-flued pottery kilns to Harrold so far known were at Much Hadham in Hertfordshire (Swan 1987, microfiche 2.358), but these were of 4th century date. Kilns very close in appearance to the Harrold double-flued ones and of the right 2nd century date have been found in Savernake Forest in Wiltshire (Annable 1962), but these are 112 km away to the west and so unlikely to have been the inspiration for our Kiln 1. Parallels of 2nd century date for the single-chambered single-flued Kiln 5 are easier to come by, as at Needham, Norfolk (Frere and Clark 1945) and Hedgerley, Buckinghamshire (Oakley *et al* 1937);

and other single-chambered single-flued kilns, with odd internal pilasters, but also of 2nd century date, are known from Horningsea in Cambridgeshire, 56 km to the east (Walker 1912). As Swan has pointed out (1984, 113), single-chambered kilns in general had a distribution in the south and east of Britain which largely excludes that of the La Tène III sunken kilns and might well represent the Romanization of a simple prehistoric firing technology; Harrold lies on the boundary of the two traditions and the potters there would have had many opportunities to appreciate the advantages for them of this particular method of firing pottery.

THE PITS, GENERAL

These fall into two groups, large and small.

(i) Large pits belonging to all periods were found. These were designed to extract the raw material from which the pots and tiles were made. This is indicated by their sections; the men who dug them were prepared to dig through the limestone of the Cornbash in order to get at the yellow shelly marl below. Once through the limestone, the pits were undercut as far as practicable (eg Pits 1, 2, 6, 20, 16 and 14: Figs 14, 16, 17). In some cases a certain amount of the stiff blue Blisworth clay which underlies the shelly marl was also taken out, eg Pits 1 and 20 (Figs 14, 17). Thin sectioning shows that both materials, as well as sometimes limestone, were used in the manufacture of pottery at Harrold (pp 100-104.). Once the decision had been taken to abandon a pit, then it was filled up with pieces of limestone and yellow brown clayey earth, possibly from the excavation of the pit in the first place, or rather more probably, since there were hardly ever any finds from these basal layers, from the digging of the next one. These stoney layers frequently overlay layers of the yellow shelly marl which had slipped into the bottom of the pits from the sides. Almost always these big pits were levelled off with kiln rakings and rubbish; the sequence of layers at the top of Pit 23 (Fig 17) might suggest the deposition of the rakings of several successive firings.

Pit 17 (Fig 16) was unusual in that close to the top of it was a thick layer of blue clay (layer 2) which dipped down towards the middle of the pit, perhaps a device to enable water to be kept.

The sensible practice of using filled in - and quite possibly recently filled in - pits to house the furnaces of kilns began early, from Phase 2.

(ii) There were three pits belonging to the group of small ones - Pit 22 (Phase 3), Pit 4 (Phase 5) and Pit 25 (unphased but dateable to the 4th century) (Figs 14, 17, 16). They were all shallow (up to 780 mm deep) and around 1m in diameter. A feature common to Pits 22 and 25 was the presence at the top of them of a layer of the yellow shelly marl from which the Harrold pottery was made; slippage into Pit 1 (layer 5) from Pit 4 (Fig 14) shows that this pit had also contained this material. The suggestion can be made that these small pits were used in the preparation of the clay for working, in perhaps the processes of levigation or puddling.

THE FINDS

THE POTTERY

The Samian Ware

Joanna Bird

Phase 2

1. Kiln 2, layer 2. South Gaulish

Phase 3

2. Kiln 1, layer 3. Dr 31, Central Gaul, Antonine
3. Kiln 9, layers 1 and 2. Dr 37 rim, South Gaul, Flavian - Trajanic
4. Kiln 9, layers 1 and 2. Dr 33, Central Gaul, Hadrian - early Antonine
5. Kiln 9, layer 2. Dr 18R, South Gaul, Flavian
6. Kiln 9, layer 2. Dr 18, South Gaul, Flavian
7. Kiln 9, layer 3. Dr 36, Central Gaul, Trajan - Hadrian
8. Kiln 9, layer 3. Dr 31, Central Gaul, Hadrian - early Antonine
9. Kiln 9, layer 4. Dr 31, Central Gaul, Hadrian - early Antonine
10. Kiln 9, layer 4. Dr 31, Central Gaul, Hadrian - Antonine
11. Pit 6, layer 1. Central Gaul, 2nd century
12. Pit 20, layer 1. Late Dr 27, Central Gaul, Hadrian - early Antonine
13. Pit 21, layer 2. Dr 18/31, Central Gaul, Hadrian - early Antonine

Phase 4

14. Pit 9, layer 7. Dr 31, Central or East Gaul: burnt. Antonine - mid 3rd century
15. Pit 17, layer 1. Walters 79, Central or East Gaul, Antonine

Phase 5

16. Pit 2, layer 3. Central or East Gaul, Antonine or 3rd century
17. Pit 7, layer 5. Burnt fragment, probably South Gaulish

Phase 6

18. Pit 3, layer 4. Dr 31, East Gaulish, late 2nd - mid 3rd century

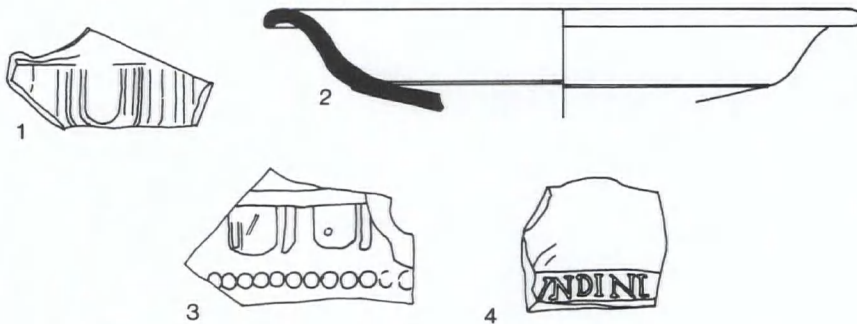


Fig 19. Samian ware. (1:4).

19. Pit 8, layer 4. Dr 18/31, Les Martres de Veyre, c AD 100-130
 20. Pit 8, layers 7 and 8. Dr 18, south Gaul, Nero - Flavian
 21. Pit 10, layer 2. Dr 31, Central Gaul, Antonine
 22. Pit 10, layer 2. Dr 18/31, Central Gaul, Hadrianic - early Antonine
 23. Pit 10, layer 2. Burnt sherd, Central Gaul, 2nd century
 24. Pit 15, layer 1. Dr 31, Central Gaul, Antonine
 25. Pit 15, layer 1. Dr 31, Central or East Gaul, later 2nd - mid 3rd century

26. Pit 16, layer 4. Dr 42 dish, Central Gaul, Trajan - Hadrian

4th century features, unphased

27. Ditch 1, layer 3. Dr 33, Central Gaul, Hadrian - early Antonine
 28. Stone floor, Trench 6. Dech 67 probably, South Gaul, Flavian - Trajanic

From the topsoil came the following:

29. Trench 5. Dr 37, Rheinzabern. The ovolo is double bordered, with a straight tongue, bent to the left, but is too broken to identify

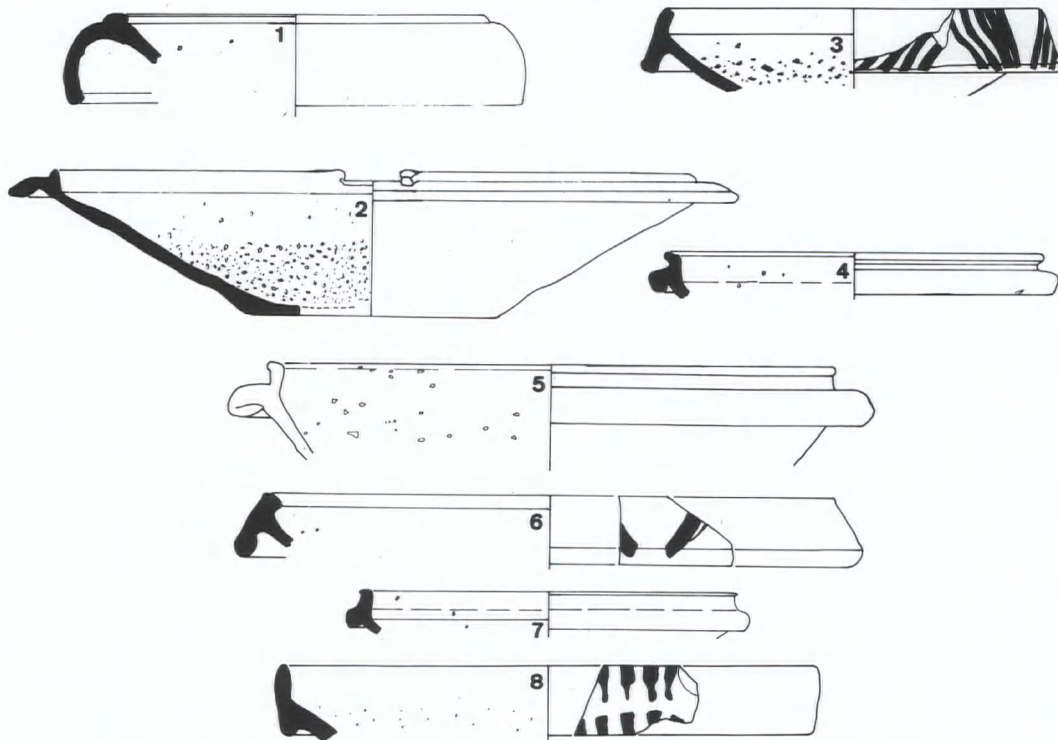


Fig 20. Mortaria. (1:4).

certainly. First half, 3rd century. (Fig 19, 1).

30. Trench 8. Curle 15/23 variant; the rim is curved over, and the internal junction of wall and base is marked by an offset. Rheinzabern, probably. Antonine. (Fig 19, 2)

31. Trench 4. Dr 37, South Gaul. The ovolo has been smudged in manufacture, but is small and square, probably single-bordered, with a straight tongue, and a row of large beads underneath. (Fig 19, 3)

32. Trench 4. Dr 33, stamped VNDINI - Secundinus of Lezoux, an Antonine potter. (Fig 19, 4)

From the topsoil over the site generally (numbers of sherds): South Gaulish Nero - Flavian, 1; Flavian, 1; later first century, 2; first century, 2; Trajanic, 1; probable South Gaulish, 1; Central Gaulish, Hadrianic - early Antonine, 4; Antonine, 4; second century, 8; probably Central Gaulish, 1; Central or East Gaulish, Antonine, 1.

Mortaria

Katherine F Hartley

Seventeen mortaria were found at the site and apart from one mortarium dated *c* AD 140-180, none are likely to be earlier than the mid-third century. Moreover, although there are ten mortaria from the Oxford workshops which are datable to the period AD 240-400 according to Young's assessment (Young, 1977), there are none which fall into the categories which he dates AD 240-300. The sample is too small to permit firm conclusions but it suggests that more mortaria were being used here in the fourth century than at any earlier period including the third century.

The absence of any mortaria attributable to workshops in the Upper Nene valley is noteworthy and consistent with general evidence indicating that mortarium production in the small local workshops of this area ceased or declined severely at some time within the period AD 220-250. This decline could be linked with increased production of mortaria in the Castor-Stibbington area of the lower Nene Valley which probably occurred about the same time. After *c* AD 250 the three potteries situated at Oxford, Mancetter-Hartshill, Warks, and in the Lower Nene Valley were the suppliers of mortaria to this part of Bedfordshire.

Phase 3

1. Kiln 1, layer 1. Oxford, *c* AD 140-80 (Young 1977, M3.5). (Fig 20, 1)

Phase 4

2. Pit 9, layer 4. Mancetter - Hartshill, *c* AD 260-350.

3. Pit 9, layers 6 & 8. Lower Nene valley, *c* AD 230-350. (Fig 20, 2)

Phase 5

4. Pit 7, layer 1. Oxford, AD 240-400 + (Young 1977, C97)

5. Pit 7, layer 1. Mancetter-Hartshill, probably 4th century. (Fig 20, 3)

Phase 6

6. Pit 8, layer 1. Oxford, *c* AD 240-400 + (Young 1977, M22). (Fig 20, 4)

7. Pit 8, layer 1. Oxford, *c* AD 240-400 + (Young 1977, M22). (Fig 20, 5)

8. Pit 8, layer 1. Oxford, *c* AD 240-400 + (Young 1977, M22).

9. Pit 8, layer 4. Oxford, *c* AD 240-400 + (Young 1977, M22).

10. Pit 8, layer 4. Mancetter - Hartshill, *c* AD 270-360. (Fig 20, 6)

11. Pit 10, layer 1. Oxford, *c* AD 240-400 + (Young 1977, M22).

12. Pit 10, layer 1. Oxford, *c* AD 240-400 + (Young 1977, M22.14)

13. Pit 14, layer 3. Oxford, *c* AD 240-400 + (Young 1977, M22). (Fig 20, 7)

14. Pit 16, layer 1. Oxford, AD 240-400 + (Young 1977, WC7).

15. Pit 16, layer 1. Oxford, AD 240-400 + (Young 1977, M22.9/22.18).

16. Pit 16, layer 2. Mancetter - Hartshill, probably 4th century. (Fig 20, 8)

17. Pit 16, layer 3. Mancetter - Hartshill, probably 4th century.

Summary of the mortaria from Harrold

Lower Nene Valley <i>c</i> AD 230-350 (Castor-Stibbington)	1
Mancetter-Hartshill, Warks <i>c</i> AD 260-370 (3 of them probably 4th century)	5
Oxford <i>c</i> AD 140-180	1
Oxford <i>c</i> AD 240-400	10

Other Pottery of Non-Harrold Origin

The following is a list of pottery fabrics of non-Harrold origin identified from the site. To avoid unnecessary descriptions reference has been made to published fabric series from other areas close by, from Milton Keynes (henceforward MK; Marney 1989), and Towcester (henceforward Tow; Brown and Alexander 1982 and Brown and Woodfield 1983). Similarly, pottery from the Oxfordshire factories has been described with reference to the corpus by Young (1977) and has not been illustrated. Table 1 shows the incidence of sherds of these fabrics by phase; the figures in brackets represent the estimated number of vessels where significantly different from the sherd count.

Colours have been described using the Revised Munsell Soil Color Chart, 1967.

Table 1. Sherds of non-Harold ware fabrics, by phase

Fabric	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Unphased 4th century
1	8	10		1	8	7	3
2		1					
3		5(3)					
4	1						
5		1	9		1	1	1
6			1			5	
6a			1				
6b			1				
6c		3			1		
6d		1	1				
7		14		1		1	
8			1				
9					1		
10				1			
11			3	2	1		
12			6		1	1	
12a			1				
12b-c		3(1)	11(5)				
13			3				
14			1				
15		16	15(9)	21(3)	4	23	1
15a		14(3)	3	2	12	7	
15b		8	12(4)	19	22	28	7
16		2	8(5)			1	
17			1	1		1	1
18			1				
19			1				
20						1	
21		16(5)		1		3	
22				2	6	3	
23			1				
24						4	
25		3	3			3	
25a		1		1			
26			11	24	78	148	3
27				3	25	109	
28						7	
29			3				
30				1	1		
31				63	45	57	
32					1	2	
33						4	

1st century wares

1. Belgic grogged ware, MK 46
2. Orange - brown sandy ware, MK 44
3. Hard, sandy, orange (2.5YR6/8), external burnishing. Butt beakers
4. Smooth, sandy, light grey (2.5YR8/2). Butt beaker, local manufacture

Late 1st-2nd century buff-orange sandy wares

5. Reddish orange sandy fine ware, Tow 1
6. Upper Nene Valley/Northamptonshire oxidised ware, MK17. The following sub-groups have been identified at Harrold: 6(a) - MK17(c): orange, white flecks; 6(b) - MK17(d) (into early 3rd century): brownish orange, hard; 6(c) - MK17(e): orange, pink (into early 3rd century); 6(d) - MK17(f): hard, pale pink/grey (into early 3rd century)

7. Buff sandy ware, probably Upper Nene Valley, MK43

8. Fine, brownish-grey sandy, Tow 34

9. Softish, orange - light buff, Tow 36

10. Orange, MK41(e)(to 4th century)

11. Hard sandy orange (5YR7/6 to 2.5YR6/6), sometimes with dark grey core, blotchy surfaces. Grooved flat rimmed bowls

Late 1st-2nd century cream wares

12. White/pink wares, MK18. The following sub-groups have been identified at Harrold: 12(a) - MK18(b): coarse, softish, yellow white, Upper Nene Valley; 12(b) - MK18(c): hard, white, cream, Northants, Oxon or ? Verulamium; 12(c) - MK18(g): white-pink- orange sandy, ? Verulamium

13. Yellow-cream, smooth, hard. Tow 41

14. Hard pinkish sandy, uneven surface. Tow 2

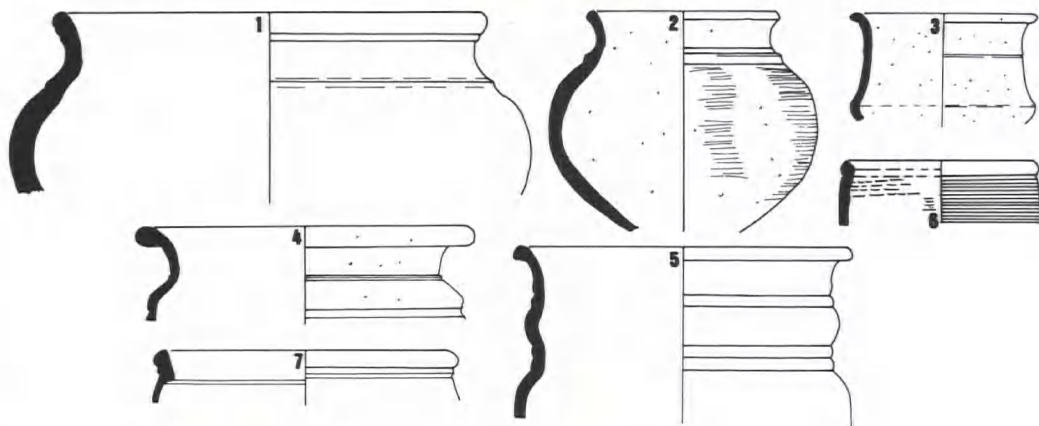


Fig 21. Pottery, phase 1 (1:4).

Late 1st-2nd century grey and black wares

15. Upper Nene Valley/Northamptonshire grey ware, MK14. The following sub-groups have been identified at Harrold: 15(a) - MK14(c): dark blue-grey, speckled; 15(b) - MK14/33, hard, granular.

- 16. Soft powdery grey ware MK25/30 (to 4th century)
- 17. Hard sandy shiny light grey, Tow 17
- 18. Very dark grey, buff core, Tow 26
- 19. Dark grey/black, lighter grey core, softish, Tow 24
- 20. Hard, rough, medium grey, coarse sandy, Tow 19
- 21. Black sand tempered, light grey core, red/reddish brown margins, MK9(a) (to 4th century)

Black burnished ware and imitations

- 22. Black burnished ware category 1
- 23. Local imitation with white grits, sandy. 2nd century
- 24. Local imitation. Muddy grey sandy (10Y7/1), interior a very lightly burnished, shiny black. A late fabric

Colour coated wares and related

- 25. Mica dusted ware, MK34. The following sub-group has been identified at Harrold: 25(a) - MK34(b), hard, dark buff surfaces, 2nd century
- 26. Lower Nene Valley colour coated ware
- 27. Oxfordshire colour coated ware
- 28. Oxfordshire Parchment ware
- 29. Cologne colour coated ware

Late coarse fabrics

- 30. Soft pink grogged, MK2
- 31. East Midlands burnished grey ware
- 32. Grey sandy, black slip, burnished, Tow 29(a)

- 33. Red sandy ware, Much Hadham

Detailed description of the pottery, mainly Harrold ware

Phase 1. Pit 11: Gullies 3 and 4 (mid-1st century AD)

The surface colours of the Harrold shelly ware sherds (ie those containing fossil shell as a filler, Group 1 in the Petrological Report, pp 100) are varied, ranging from 2.5YR7/6 - 6/6 orange and 2.5YR6/3 dull orange to 2.5YR4/1 - 6/1 reddish grey and 2.5YR2/1 reddish black. A small proportion of the fragments (7 altogether), which happen to include the best preserved pieces, are in a fabric which contains a mixture of both shell and grog, and sometimes limestone, as a filler (Groups 2, 3 and 4 in the Petrological Report; this fabric could have been made at Harrold as well). In the shell tempered pieces (a total of 125, 118 of which came from Pit 11) shell is visible only in small quantities on the surfaces: most of the sherds, while hard, have a gentle, soapy feel. The thicker body sherds have broad vertical lines, 2-3 mm wide, scored on their outer surfaces and presumably come from large jars of the kind so common in Phase 2 (23 fragments, 18.4% of the total). The thinner body sherds, when not plain, have cordons (from jars like those in Phase 2), areas of burnishing or in one case a covering of fine scored lines 1 mm across; one fragment has widely spaced horizontal scored lines and another regular horizontal rilling similar to that on the channelled rim jars of Phase 2. There are three fragments from carinated bowls like no 3, a form which does not appear in Phase 2. Thirteen body

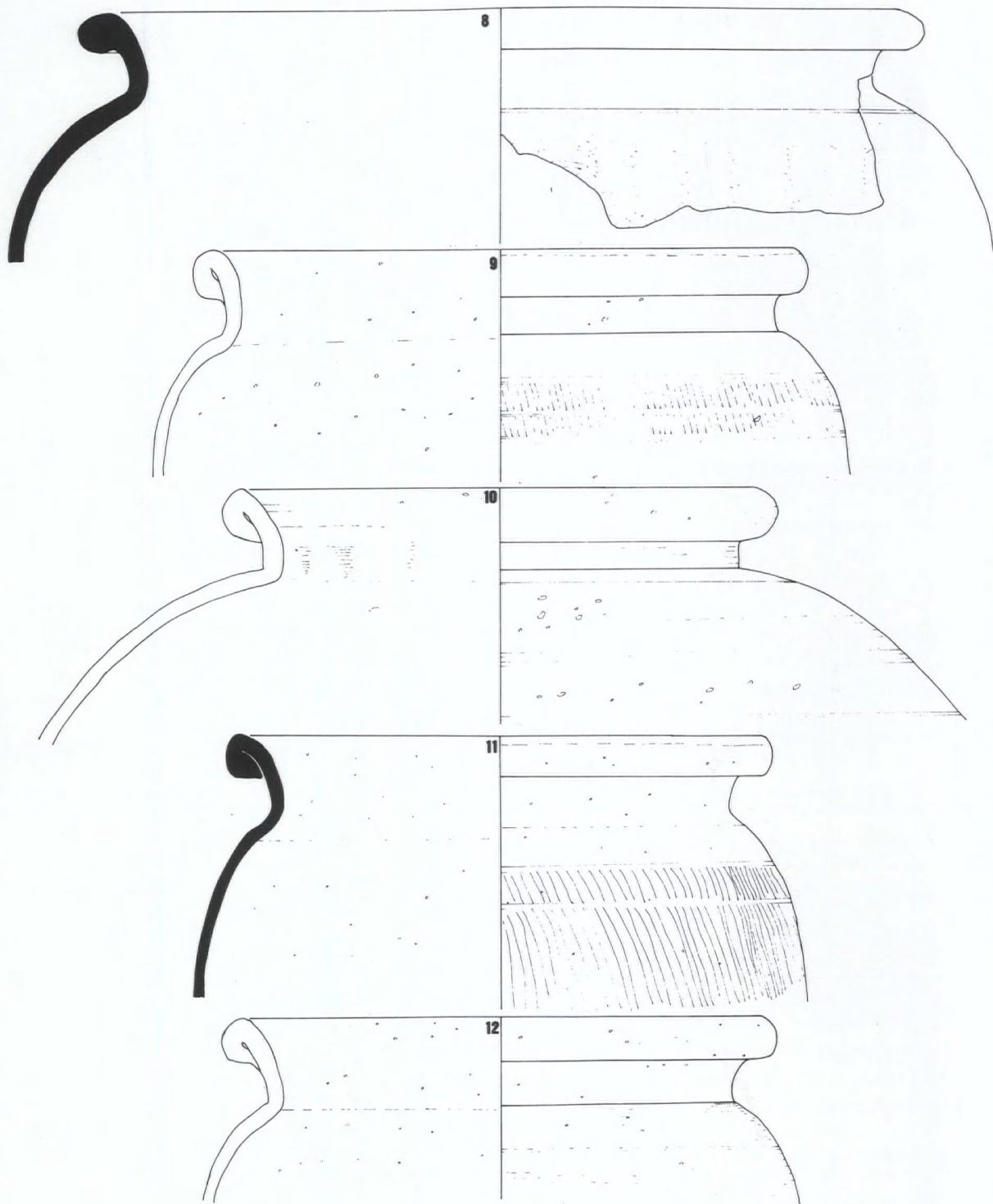


Fig 22. Shell-tempered pottery, Phase 2 (1:4).

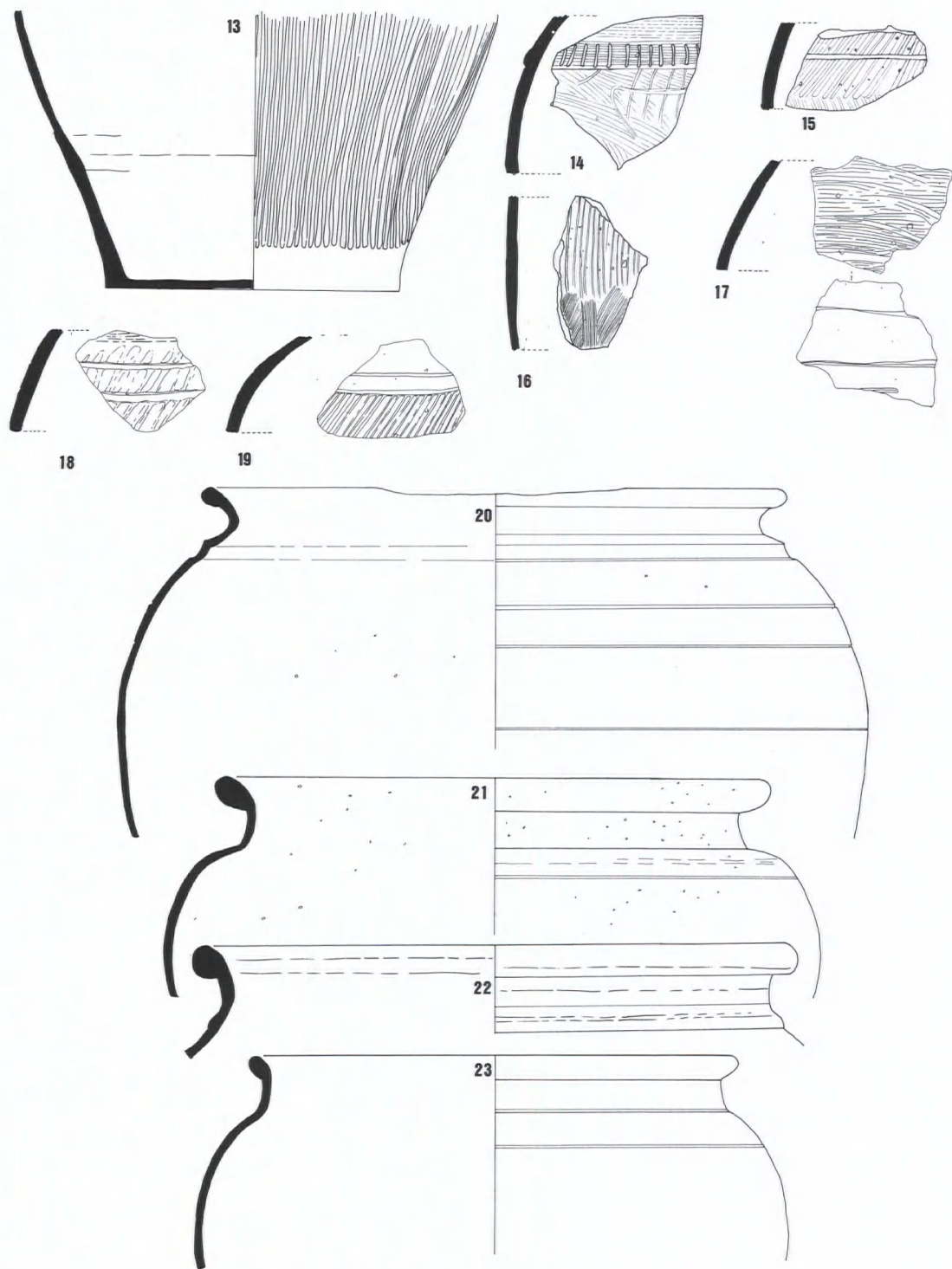


Fig 23. Shell-tempered pottery, Phase 2 (1:4).

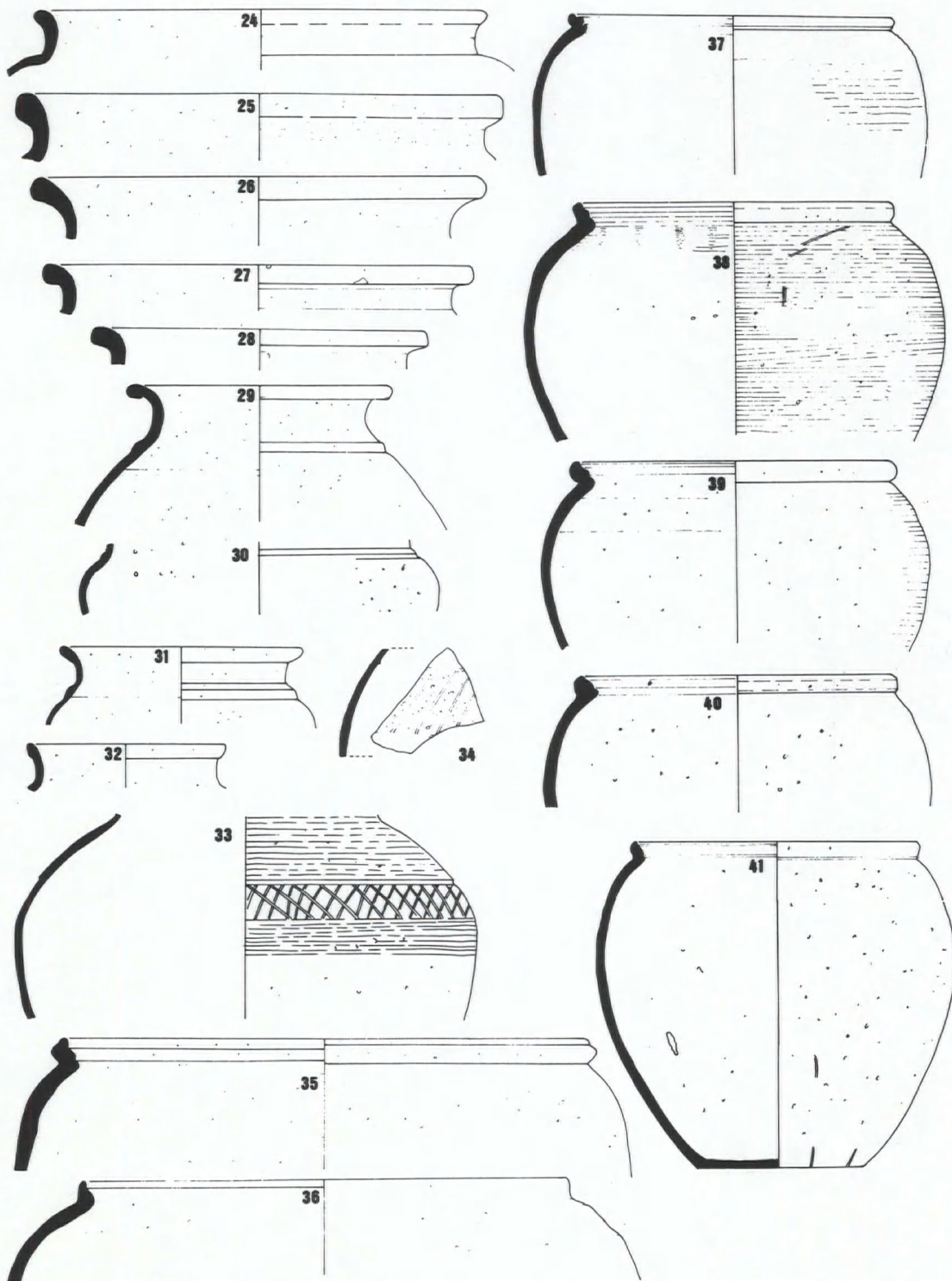


Fig 24. Shell-tempered pottery, Phase 2 (1:4).

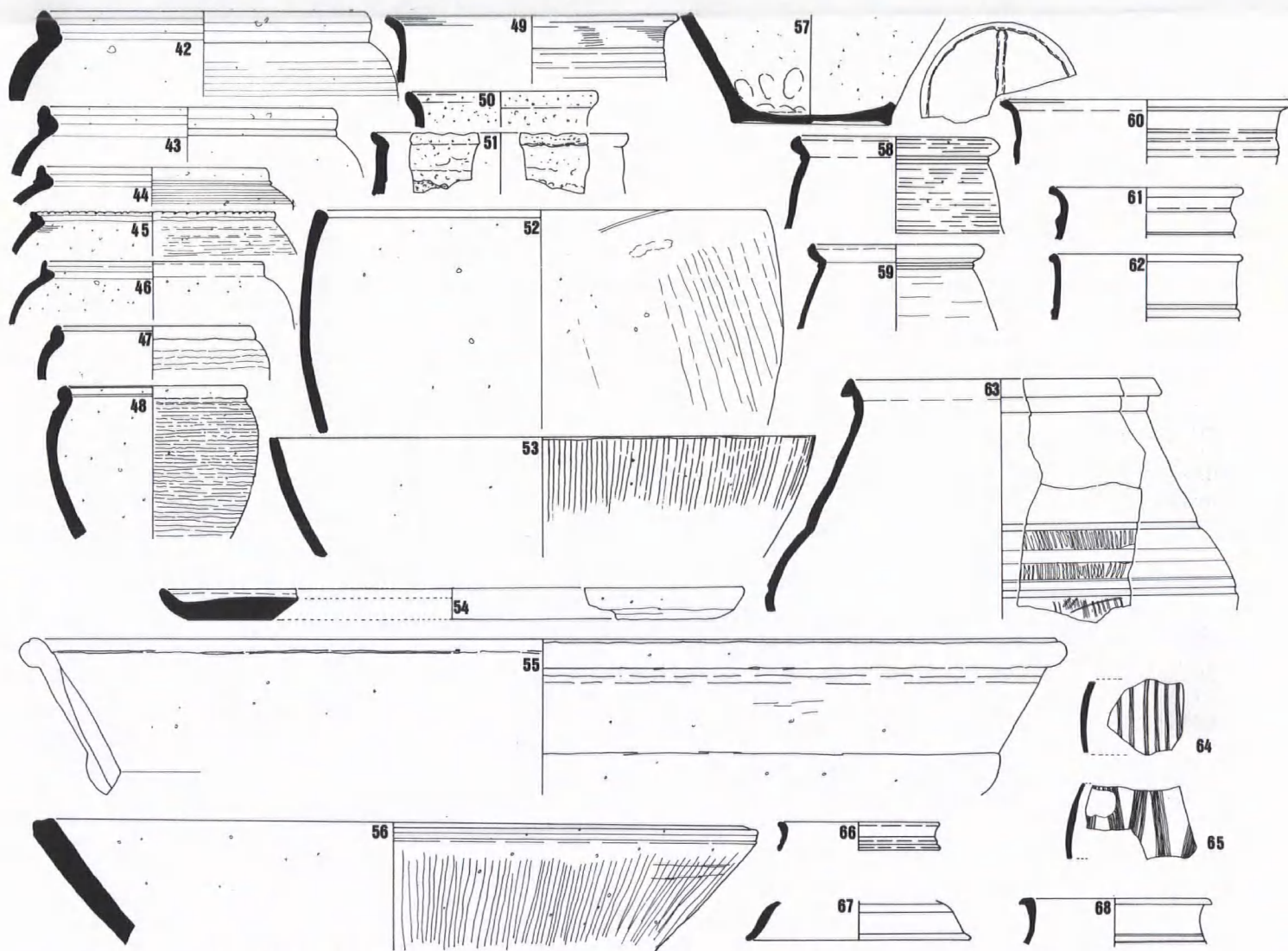


Fig 25. Nos 42-62, shell-tempered pottery; nos 63-68 are in non-Harrold fabrics, Phase 2 (1:4).

sherds have a thick grey core.

Illustrated Pieces

Fig 21, 1, 2 and 4 are in grogged and shelly ware, all from Pit 11; 3 and 6, shelly ware, Gully 3; 5, Belgic grogged ware, Fabric 1, Pit 11; 7, local copy of butt beaker, Camulodunum 113 (Hawkes and Hull 1947), Fabric 4, Pit 11.

Dating

The parallels for this small group come from contexts of the mid-1st century AD, as for example from the probable post-conquest kiln at Caldecotte, Bucks, where necked and cordoned jars in Belgic grogged ware similar to our nos 1, 2 and 4 occurred (Marney 1989, Fig 38, 21, 22). The cordoned carinated cup (no 5) is also a mid-1st century form: *ibid*, Fig 37, 79, 80; also at Magiovinium (Parminster, 1987, 51, mid-late 1st century) and Camp Hill, Northampton (Shaw, 1979, Fig 7, 7). In this area oxidized Belgic grogged wares are considered to be a phenomenon of the conquest period or after (Marney, 1989, 87).

Phase 2. Kilns 2, 3 and 4: Gullies 1 and 2

(late 1st century AD: for the distribution of the sherds, Table 2)

Except for reduced and obviously overfired pieces, the predominant surface colours of the Harrold shelly ware are orange (5YR7/6), pale orange (5YR8/4) or light yellow orange (7.5YR8/4). Unless overfired, when the fabric is harsh to the touch, the surfaces are still slightly soapy, but less so than in Phase 1. Shell, varying in size from pieces 4 mm across downwards, is only visible abundantly in breaks; it only appears in any quantity on the surfaces of the minority of vessels which have not been deliberately smoothed over. Patches of grey occur as spots with some frequency. The vessels were mostly fired orange throughout; grey or brownish buff/chocolate cores occurred on only 181 of the 2130 body sherds in this group. For thin sections of sherds from this Phase, see Petrological Report, p 100

The Harrold shelly ware can be divided into the

following types:

1. Large storage jars

Often decorated with vertical or near vertical combing, varying in execution from the delicate to the savage. The individual generally flat bottomed striations vary in width from 2 to 5 mm. It is sometimes possible to see how the direction of the grooving has swerved to change course and occasionally there are rows of prick marks where the comb has pushed in harder. The comb marks stop 20-30 mm short of the vessel bases (no 13). A few pieces have bands of horizontal rilling or one or more grooves above, or cutting, the combing (nos 18, 19); also the combing could be smoothed over after execution to give apparently reserved horizontal zones around the body of the vessel. 66% of the body sherds in the group had this combing.

Surface irregularities show that a proportion of these vessels was made by hand, but others to judge from turning marks were fashioned on a wheel. The rims were formed by simply rolling the clay over and pushing it down (no 12). Most of these vessels had diameters in the range 340-400 mm.

Figs. 22 and 23: 8, 11, 13, Kiln 3, layer 3; 9, 10, 12, Kiln 2, layer 3; 14, Gully 1; 15, Gullies 1/2; 16-19, Kiln 4.

2. Thinner, finer jars with simple outcurved rims

A group with wide variation in vessel sizes; diameters range from 350 down to 120 mm with no obvious concentration. Surfaces could be left plain, but were more often burnished, with occasional examples of bands of lattice or other forms of linear decoration. In a few cases a very fine, delicate, shallow version of the combing used on the coarse, big jars is encountered. There were six examples of vessels with raised cordons.

Figs. 23, 24: 20, 21, 23, 26, 30, 31, 34, Kiln 2, layer 3; 22, 29, 32, Kiln 3, layer 2; 24, Kiln 2, layer 2; 25, 33, Kiln 3, layer 3; 27, 28, Kiln 4.

3. Channel-rim jars

Again a wide size range, from 120 to 360 mm in diameter, with a concentration around 200-240 mm.

Table 2. Phase 2. Distribution of Harrold ware (estimated number of vessels in brackets)

	Kiln 2	Kiln 3	Kiln 4	Gullies 1 and 2	
Large storage jars	11(11)	63(20)	44(7)	41(3)	159(41)
Jars, outcurved rims	8(8)	4(4)	2(2)	5(4)	19(18)
Channel rimmed jars	12(12)	6(6)	12(6)	36(13)	66(37)
Other		11(7)			11(7)
Body and base fragments	488	1418	152	222	2280

Often with horizontal rilling on the body.

Figs. 24, 25: 35, 39, Kiln 3 layer 3; 36, 38, 40, 41, 46, Kiln 2, layer 3; 37, 45, 47, 48, Gully 1; 42, 43, 44, Kiln 4.

4. Other, miscellaneous forms, **Fig. 25**

49. Beaker, finely made, burnished on exterior. Gully 1.
50. Hand made. Kiln 3, layer 2.
51. Very roughly made by hand. Kiln 3, layer 2
52. Hand made, uneven surfaces. Top neatly bevelled off. Kiln 2, layer 3.
53. Probably hand made. Rather looks as if the vessel was made in sections, the sections put together and the scoring then done, but in this case the sections have come apart. Kiln 3, layer 3.
54. Platter; hand made. Kiln 3, layer 3.
55. Hand made. Gully 1.
56. Kiln 3, layer 2.
57. Base, hand made, raised band around underside edge and across middle. Gully 1.

Belgic grogged ware (Fabric 1), **Fig. 25**

58. Butt beaker, burnished exterior. 7.5YR4/3 brown - 7.5YR4/2 greyish brown. Kiln 3, layer 3.
59. Butt beaker, burnished exterior, 5YR5/2 greyish brown. Kiln 3, layer 1.
60. Beaker. Hard, smooth, finely made and grey core. Burnished. 2.5YR7/4 pale reddish orange. Gully 1.
61. Beaker. Hard, sparkling quartz inclusions. 2.5YR7/3, pale reddish orange - 7.5YR2/1 reddish black. Kiln 3, layer 2.
62. Beaker. Quartz visible. 7.5YR3/1 brownish black. Gullies 1/2.

Pottery from other non-Harrold sources, **Fig 25**

63. Butt beaker. Hard sandy fabric, burnished externally, thin grey core (Fabric 3). Kiln 2, layer 3.
64. Beaker fragment, pairs of closely set narrow grooves. Fabric as 63. Kiln 2, layer 3.
65. Body sherd, Fabric 2. Kiln 2, layer 3.
66. Jar with cordoned neck. Grey sandy fabric, Fabric 15. Kiln 4.
67. Lid; as 66. Gullies 1/2.

68. Jar. Dark grey sandy fabric. Fabric 15(a), Upper Nene Valley. Gully 2.

Dating

There are probably some residual pieces here of mid-1st century date, for example the lid-seated cooking pot with slashed rim no 45; maybe no 52; also the butt beakers in Belgic grogged ware, nos 58 and 59, which are mid-1st century at Milton Keynes (Marney, 1989, Fig 36, 77, 78). But heavy storage jars like nos 8-12 with scoring and other decoration are commonly found in deposits going down to the end of the 1st century, along with channel-rimmed jars of the type made at Harrold; for a similar group, from a ditch containing samian of c 50-70 at Irchester, see Hall and Nickerson 1967, Figs 13 and 14; also Magiovinium (Parminter, 1987, 145, 149, late 1st century); and Milton Keynes, where lid-seated jars like ours have been dated to the late 1st century (Marney, 1989, Fig 24, 2, 4, 7). That this group probably goes down to the later years of the century is suggested by nos 66 and 68, jars with grooves on the neck in a bluish-grey sandy fabric, a very common form in the Upper Nene valley, which occurs in the Irchester ditch group mentioned above but which becomes very much commoner towards the end of the century and beyond (eg Brixworth villa, Woods, 1970, 18). Lids similar to no 67 were late 1st-mid 2nd century at the Towcester Grammar School site (Brown and Alexander, 1982, Fig 9, 33). A late 1st century date for the closing of the group is supported by the body sherds of fabrics 4, 5(c) and (d), 6 and 11(b), all sandy fabrics which begin in the late 1st century, becoming much commoner in the 2nd.

Phase 3. Kilns 1 and 9: Pits 6, 20, 21, 22

(Second half of 2nd century AD. For the distribution of the pottery of this phase, Table 3) Most of the Harrold sherds of this phase consist of greyish, hard, brittle and overfired pieces which give no indication of the appearance the pottery was

Table 3. Phase 3. Distribution of Harrold ware (estimated number of vessels in brackets)

	Kiln 1	Kiln 9	Pit 6	Pit 20	Pit 21	Pit 22	
Large storage jars 1st century type	1(1)	1(1)	5(3)	1(1)			8(6)
Jars, outcurved rims	17(15)	50(25)	9(7)	4(4)	17(7)	3(3)	100(61)
Jars, triangular rims	9(9)	5(5)	2(2)	3(3)	8(5)		27(24)
Channel rimmed jars	33(20)	39(28)	6(5)	6(6)	11(7)		95(66)
Reeded rim bowls and derivatives	9(8)	8(6)		3(3)	7(7)		27(24)
Lids	3(3)	1(1)				3(3)	7(7)
Dishes		1(1)	2(2)				3(3)
Other	1(1)	1(1)	1(1)		1(1)		4(4)
Body and base fragments	308	103	261	15	88	33	1872

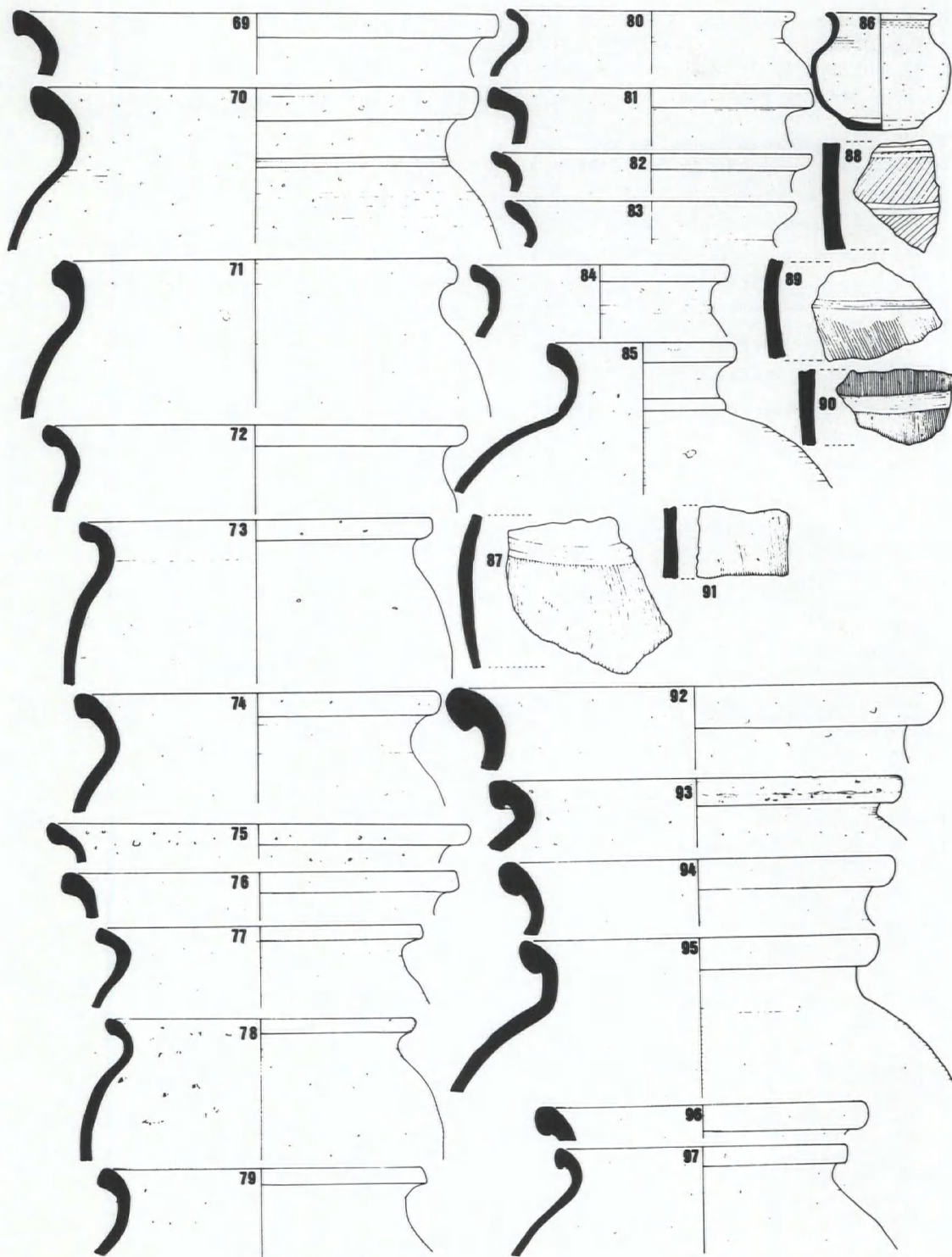


Fig 26. Shell-tempered pottery, Phase 3 (1:4).

originally intended to have. The better preserved pieces are hard yet smooth to the touch and are in the colour range 5YR8/4 pale orange - 7.5YR8/3 - 8/4 light yellow orange; 178 body sherds (10% of the total) have a grey core. Rilling occurs on 229 of the 1712 body sherds found (13%) and vertical or near vertical scoring of the more refined variety which occurs on certain of the Phase 2 jars is present on 54 body sherds of this phase (3%), perhaps residual. There are very few of the thick body sherds which could have belonged to the heavy storage jars so common on Phase 2 and only 8 rim fragments of vessels of this type.

There are the following Harrold shelly ware vessel types (for the significance of the Kiln 1 layer numbers see pp 26-29; for thin sections, p 100)

1. Jars with simple outcurved rims

Derived presumably from the simple-rimmed jars of Phase 2; a few still have the cordons evident on some of the 1st century pieces. Mostly in the diameter range 140-260 mm.

Fig 26, 69, 74, Pit 20, layer 1; 70, 87, 88, Kiln 1, layer 3; 71, Kiln 9, layer 8; 72, 84, Kiln, layer 1; 73, 76, 77, 78, 79, 81, 83, 90, Kiln 9, layer 3; 75, 82, 91, Kiln 9, layer 2; 80, 86, Kiln 1, layer 2; 89, Kiln 9, layer 10.

2. Jars with triangular, drooping rims

The beginnings of what eventually becomes the common 4th century type. The rilling so common then is present at this date.

Figs 26 and 27: 92, Pit 21, layer 1; 93, 94, 99, Kiln 9, layer 3; 95, Kiln 1, layer 2; 96, Kiln 1, layer 1; 97, Kiln 9, layer 6; 98, Kiln 1, layer 3.

3. Channel rim jars and their derivatives

Rims heavier than the first century ones; the grooves are often left out altogether. Most examples retain the rilling. The majority are in the diameter range 120 - 220 mm.

Fig 27, 100, 113, 114, 117, Kiln 1, layer 3; 101, 103, 112, Kiln 1, layer 2; 102, 105, Pit 21, layer 2; 104, 106, Pit 20 layer 1; 107, Kiln 1, layer 1; 108, 111, Kiln 9, layer 2; 109, Kiln 9, layer 11; 110, Kiln 9, layer 6; 115, Kiln 9, layers 8 and 9; 116, Kiln 9, layer 5; 118, Kiln 9, layer 10; 119, Kiln 9, layer 3; 120 (cross scratched on body of vessel before firing), area of Kiln 1.

4. Reeded rim bowls and their derivatives

A type not found in the earlier groups. There are a few examples of well made reeded rim bowls with

carinations, but in most cases the carinations have been smoothed out and the rims are rather heavy. The rims acquire a droop and the top may continue to carry grooves or, in one instance, wavy line decoration. Some rims have been pushed in to begin the flanged bowl series which forms such a distinctive part of the Harrold repertoire later on. A feature of some of these Harrold bowls is their size, with several pieces in excess of 260 mm in diameter.

Figs 27 and 28, 121, 122, 133, Pit 21, layer 2; 123, Kiln 1, layer 1; 124, 129, 134, Kiln 1, layer 2; 125, Pit 20, layer 2; 126, 127, 135, Pit 21, layer 1; 128, 131, Kiln 9, layer 3; 130, Kiln 9, layer 4; 132, Kiln 9, layer 1; 136, Kiln 1, layer 3.

5. Lids

Fig 28, 137, Pit 21, layer 2; 138, Pit 20, layer 1; 139, Kiln 1, layer 1; 140, Kiln 1, layer 2; 141, Kiln 9, layer 3.

6. Other vessel

Fig 28, 142, Pit 20, layer 2; 143, Kiln 9, layer 1; 144, crude hand-made dog dish, Kiln 1, layer 1; 145, Kiln 9, layer 9; 146, Kiln 9, layer 2; 147, area of Kiln 1; 148, Pit 21, layer 2.

Pottery from non-Harrold sources, **Fig 28**

Lower Nene Valley colour coated ware, Fabric 26
149. Dark chocolate colour coat, cream fabric. Kiln 9, layer 1.

150. Almost black colour coat, cream fabric. Kiln 9, layer 3.

151. Light - medium brown blotchy colour coat, greyish cream fabric. Kiln 1, layer 3.

152. Pinkish cream colour coat, white painted decoration, cream fabric. Kiln 1, layer 1.

Other

153. Upper Nene valley oxidised ware, Fabric 6(a). Creamy buff burnished exterior, reddish brown painted bands. Kiln 9, layer 2.

154. As 153. Fabric 6(b). Light yellowish brown, grey core. Kiln 9, layers 2 and 3.

155. Light greyish brown fabric, mica dusted. Fabric 25. Kiln 9, layer 2.

156. Local imitation, black burnished ware fabric. Fabric 23. Kiln 9, layer 3.

157. Brownish grey sandy. Fabric 8. Kiln 1, layer 2.

158. Upper Nene valley/Northamptonshire grey ware. Fabric 15(b). Kiln 9, layer 3.

159. Upper Nene valley/Northamptonshire grey ware. Fabric 15(b) Kiln 9, layer 3.

160. Upper Nene valley/Northamptonshire grey ware. Fabric 15. Kiln 9, layer 2.

161. Cream sandy ware. Fabric 12(b) or (c). Pit 21, layer 2.

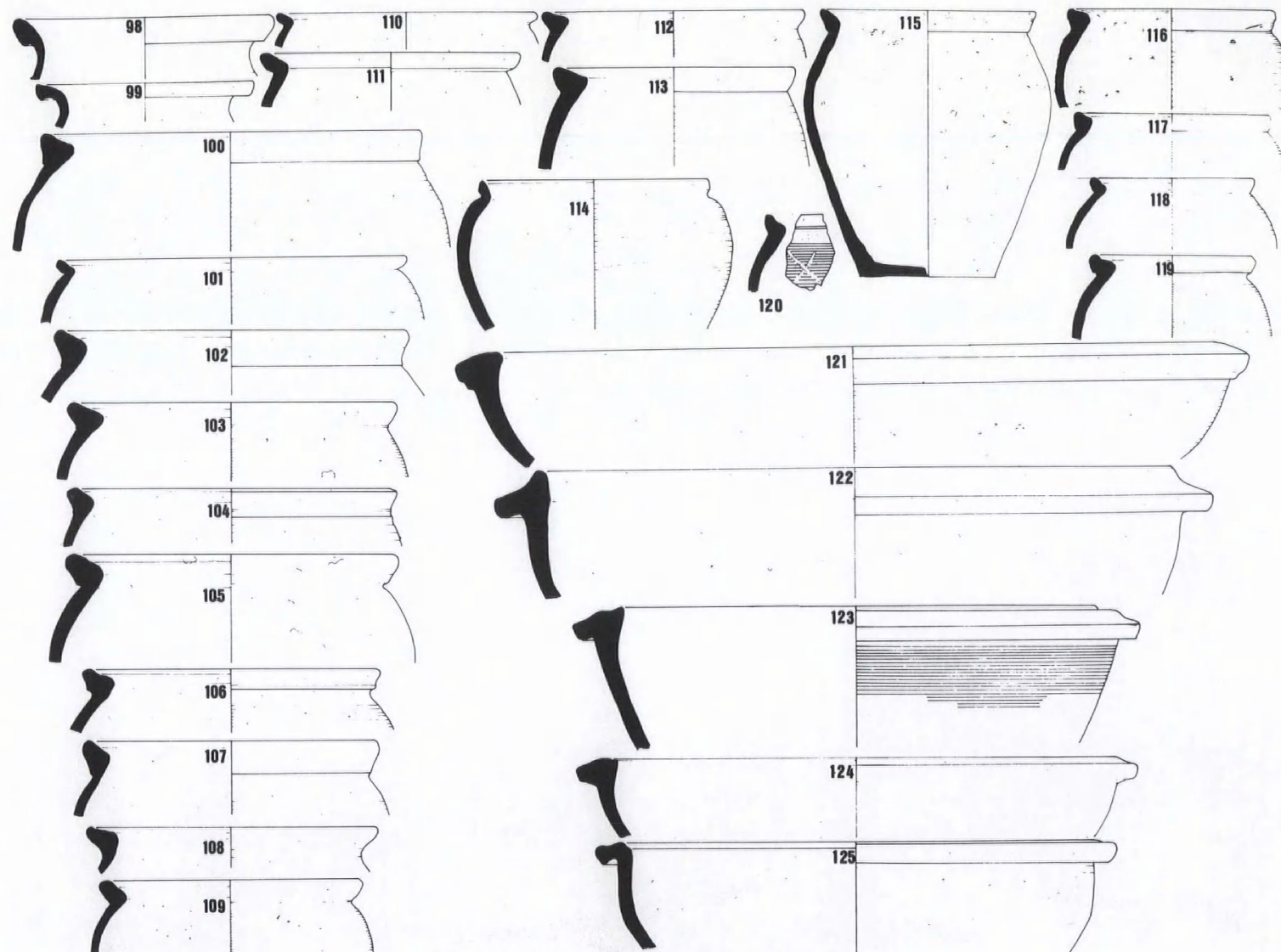


Fig 27. Shell-tempered pottery, Phase 3 (1:4).

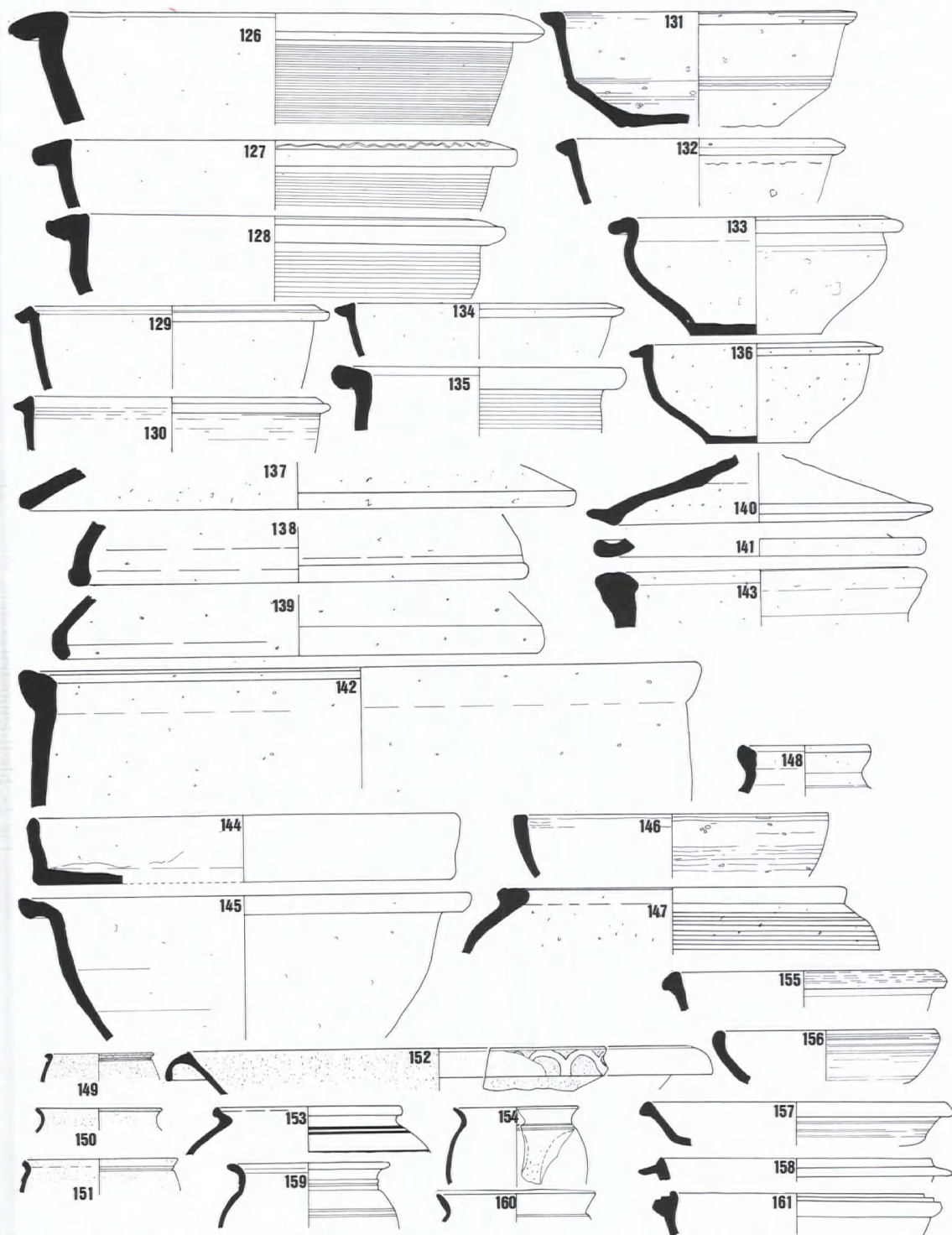


Fig 28. Nos 126-148, shell-tempered pottery; nos 149-161 are in non-Harrold fabric. Phase 3 (1:4).

Dating

The samian ware from Kilns 1 and 9 and from Pits 20 and 21 goes down to the Antonine period; the solitary mortarium rim, from Kiln 1, is an Oxfordshire example of 140-80 AD. The lower Nene valley colour coated ware cornice rim beaker no 149 is a later 2nd century type (Howe, *et al* 1981, 46, 47), as is no 151, from a bag-shaped beaker like Brixworth, no 293-4 (Woods, 1970). No 150, from a beaker of unknown body form, would also fit the period better than a later one, when simpler upright ones were the norm. The other non-Harold pottery found consists generally of oxidized, reduced and white sandy wares of 2nd century date; there were three fragments of colour-coated beakers from Cologne. The shelly bowls, jars and channelled-rim cooking pots are paralleled at Magiovinium in the 2nd century, with the accent towards the latter part of it (Parminster 1987, 18, 49, 283, 284, bowls: 322, jar with cordoned neck: 128, 156, 299, 302, channel rim jars); also Milton Keynes (Marney, 1989 Fig 24, 8, 9, 10, (channel rim jars); 12, (lid); Fig 25, 13, 17, 18, (jars)). A date in the second half of the 2nd century can be put forward.

Phase 4. Kilns 5 and 6, Pits 9 and 17

(later 3rd century: Table 4)

Setting aside the numerous overfired pieces, the surface appearance of the Harold shelly sherds of this phase resembles that of Phase 3, with colours in the range 2.5YR6/6 - 7/6 orange - 7.5YR8/4 light yellow orange. Almost half the body sherds have rilling, a reflection of the preponderance of jars and bowls with this form of decoration. The following vessel types have been identified in Harold shelly ware.

(Unless otherwise stated, the illustrated pieces

come from Kiln 5, layer 1. For thin sections, p 100)

1. Giant storage jars

Fig 29, 162, 163.

2. Jars, simple outcurved rims

The commonest vessel type. Mostly with diameters in the range 120-200 mm. **Fig 29**, 164-173.

3. Jars with triangular drooping rims

Foreshadowed during Phase 3. **Fig 29**, 174-178

4. Channel rim jars

Probably residual, these pieces mark the end of the line. **Fig. 29**, 179, 180, Pit 17, layer 4.

5. ?Flagon or narrow-mouthed jar

Fig. 29, 181, Pit 17, layer 1, roughly made.

6. Bowls

Mostly derived from the carinated and reeded rim bowls of Phase 3. Perhaps in three sizes with diameters of around 160 mm, 240 mm and 340-380 mm. **Figs 30, 31 and 32**; 182-211 (201 bowl from Pit 9, layer 1; 203 and 205 from Pit 9, layer 7). 210: wavy line decoration from a bowl similar to 208-9.

7. Jars with grooved tops

Fig. 33, 212-214. 213: just possibly a lid to go with 212; alternatively, a section of a vessel which has come apart.

8. Lids

Fig. 33, 215-217 (216 and 217 from Pit 17, layer 1).

9. Handle

Fig 33, 218.

10. Dog dish

Fig 33, 219

Table 4. Phase 4. Distribution of Harold ware (estimated number of vessels in brackets)

	Kiln 5	Kiln 6	Pit 9	Pit 17	
Large jars 1st century type, residual			2(2)		2(2)
Giant storage jars	13(6)			2(2)	15(8)
Jars, outcurved rims	118(48)	4(3)	21(17)	5(3)	148(71)
Jars, triangular rims	12(6)	7(4)	5(5)	1(1)	25(16)
Channel rimmed jars, residual			10(10)	3(3)	13(13)
Bowls	80(39)	3(3)	8(8)	1(1)	89(51)
Lids	1(1)	1(1)		2(2)	4(4)
Dishes	1(1)	1(1)			2(2)
Other	2(2)			1(1)	3(3)
Body sherds	523	281	112	332	1248
Residual 1st century body sherds	1		2		3

Other Fig 33

220. Pit 9, layer 4.

221. Pit 9, layer 6.

222. Section of body of jar which has come apart. As with 223, the assumed lower edge has been roughly smoothed off and bevelled: the upper surface has been bevelled on the inside and roughly indented on the outside. Pit 17, layer 2.

223. As 222.

224. Body sherd of large jar showing line of division between sections.

Pottery from non-Harold sources, Fig 33

Lower Nene Valley colour coated ware, Fabric 26

225. Brown metallic colour coat, buff fabric. Pit 17, layer 1.

226. Blotchy chocolate colour coat, buff fabric. Pit 17, layer 1.

227. Interior, chocolate colour coat; exterior, black. Creamy grey fabric. Pit 17, layer 1.

228. Brown colour coat, cream fabric. Pit 9, layer 7.

229. Light brown metallic colour coat, creamy pink fabric. Pit 9, layer 8.

230. Light brown metallic colour coat, cream fabric. Kiln 5, layer 1.

231. Burnt. Brown colour coat, pinkish cream fabric. Pit 17, layer 1.

232. Burnt. Brown colour coat. Kiln 5, layer 1.

Oxfordshire colour coated ware, Fabric 27 (unillustrated, described using the classification set out in Young 1977)

Kiln 5, layer 1, hemispherical bowl C55, 240-400+; another from layer 5.

Kiln 6, layer 1, flagon base C8, 240-400+

Other

233. Orange sandy, Fabric 10. Kiln 5, layer 1.

234. Black, sand tempered, Fabric 21. Kiln 5, layer 3.

235. Very hard, metallic grey, burnished, dark grey core. East

Midlands burnished ware, Fabric 31. Pit 9, layer 5.

236. As 235. Kiln 5, layer 2. Similar rim from Pit 9, layer 7.

237. Soft pink grogged. Fabric 30. Pit 9, layer 4.

Dating

The samian ware from Pits 9 and 17 goes down to the mid-3rd century. Oxfordshire colour-coated ware starts to appear, in forms which begin c 240 but which continue to the end of the Roman period. The few mortaria are from Mancetter-Hartshill and the lower Nene valley of a mid-3rd to mid-4th century date range. The Lower Nene Valley colour coat beaker 225 is a 3rd century type (Howe, *et al* 1980, 49); no 227 could be 3rd or 4th century (*ibid*, 50, 52). No 229 is an imitation samian form 36, late 3rd or 4th century (*ibid*, 81). East Midlands burnished ware and soft pink grogged wares appear now, the latter in very small quantities. The Harold ware has obvious differences compared with that of Phase 3, particularly in the disappearance of the channelled-rim jar and the apparent arrival of the giant storage jar; but in profile the bowls still have a tendency to hark back to the carinated prototypes of the 2nd century (eg nos 189, 195, 200, 209). A date in the later 3rd century is suggested.

Phase 5. Kiln 7, Pits 1, 2, 4, 7 and 23

(early 4th century: Table 5)

The surface appearance of the shelly pottery from this Phase is the same as that Phase 4. The following vessel types have been identified in Harold shelly ware: thin sections, p 100

1. Giant storage jar

Fig 34, 238. Pit 23, layer 2. A type which occurs, but less frequently, in Phase 6.

Table 5. Phase 5. Distribution of Harold ware (estimated number of vessels in brackets)

	Kiln 7	Pit 1	Pit 2	Pit 4	Pit 7	Pit 23	
Large jars 1st century type, residual			2(1)	2(2)			4(3)
Giant storage jars	2(2)	2(2)	1(1)		5(5)	4(4)	14(14)
Jars, outcurved rims	39(9)	72(34)	60(15)	2(2)	26(11)	156(35)	355(106)
Jars, triangular rims	16(4)	146(41)	24(12)	1(1)	21(8)	18(10)	226(76)
Jars, decorated rims						1(1)	1(1)
Channel rimmed jars, residual		2(2)	4(4)	5(3)	1(1)	2(2)	14(12)
Bowls with flat rims		6(6)			12(10)	4(4)	22(20)
Flanged bowls	1(1)	16(8)	7(6)	1(1)	14(9)	23(20)	62(45)
Lids		1(1)			4(4)		5(5)
Dishes	2(2)	8(4)			1(1)	2(1)	13(8)
Other			1(1)	1(1)	1(1)	1(1)	4(4)
Body and base sherds	1767	1348	538	56	344	944	4682
Residual 1st century body sherds		3	37		5	8	53

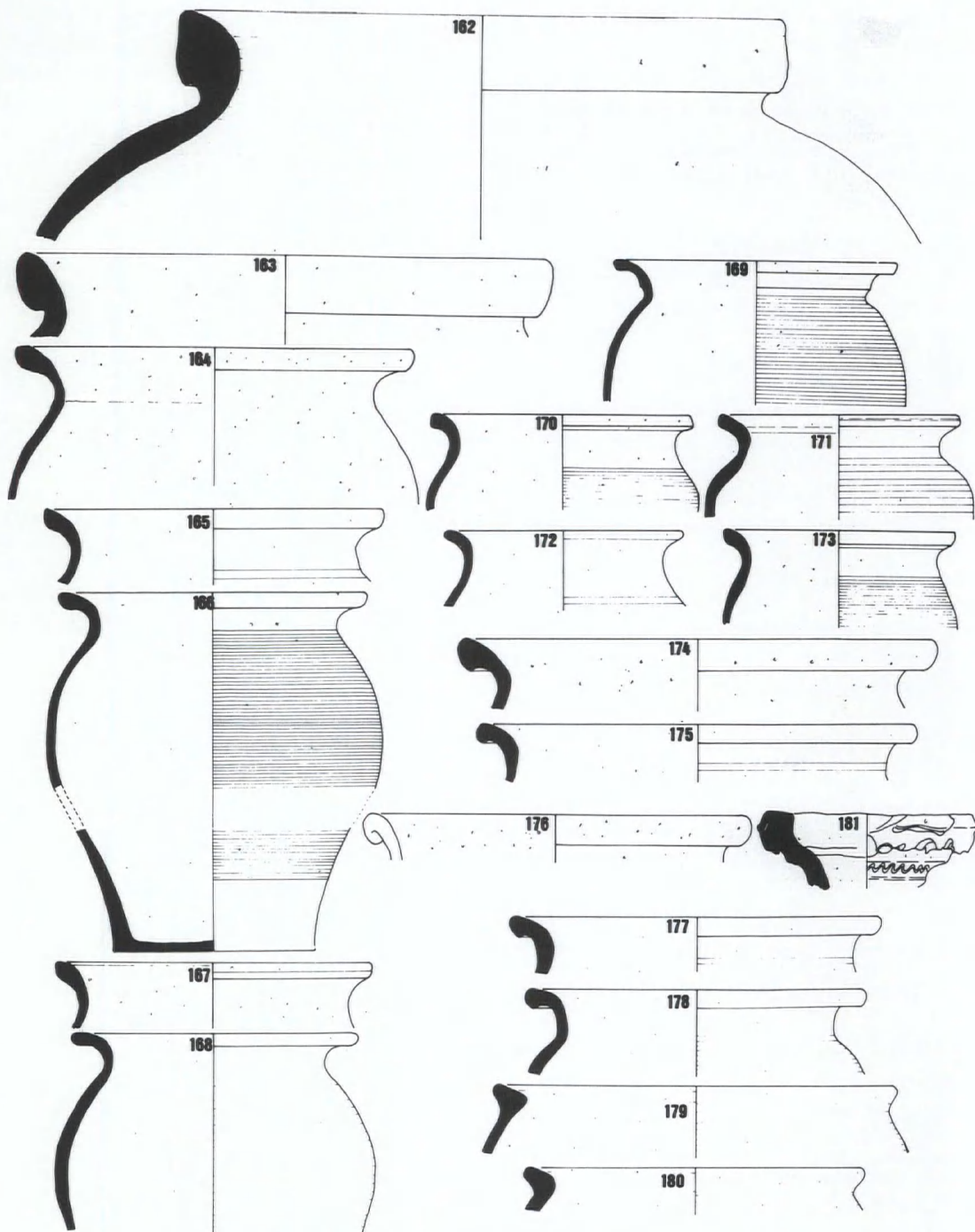


Fig 29. Shell-tempered pottery, Phase 4 (1:4).

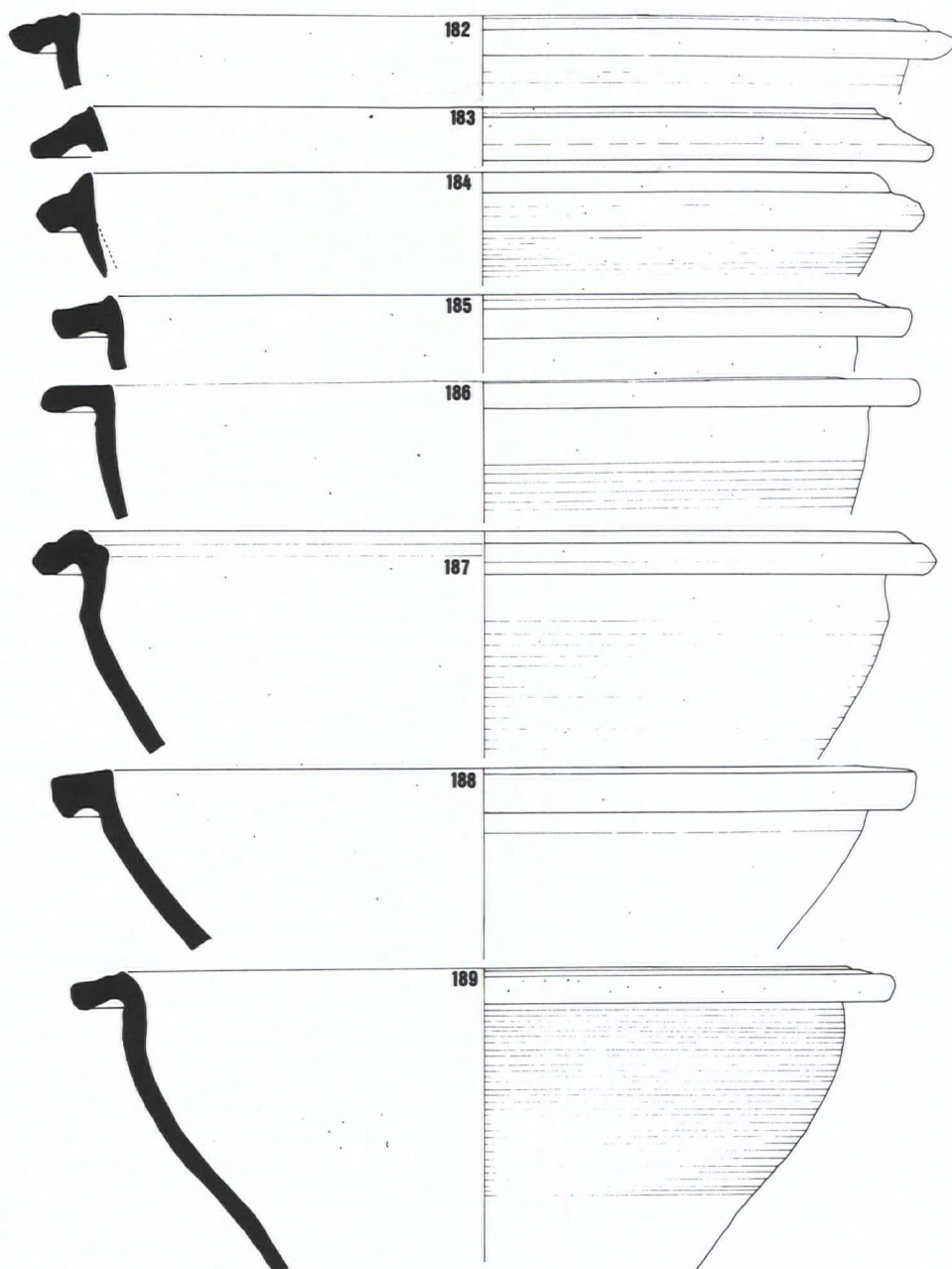


Fig 30. Shell-tempered pottery, Phase 4 (1:4).

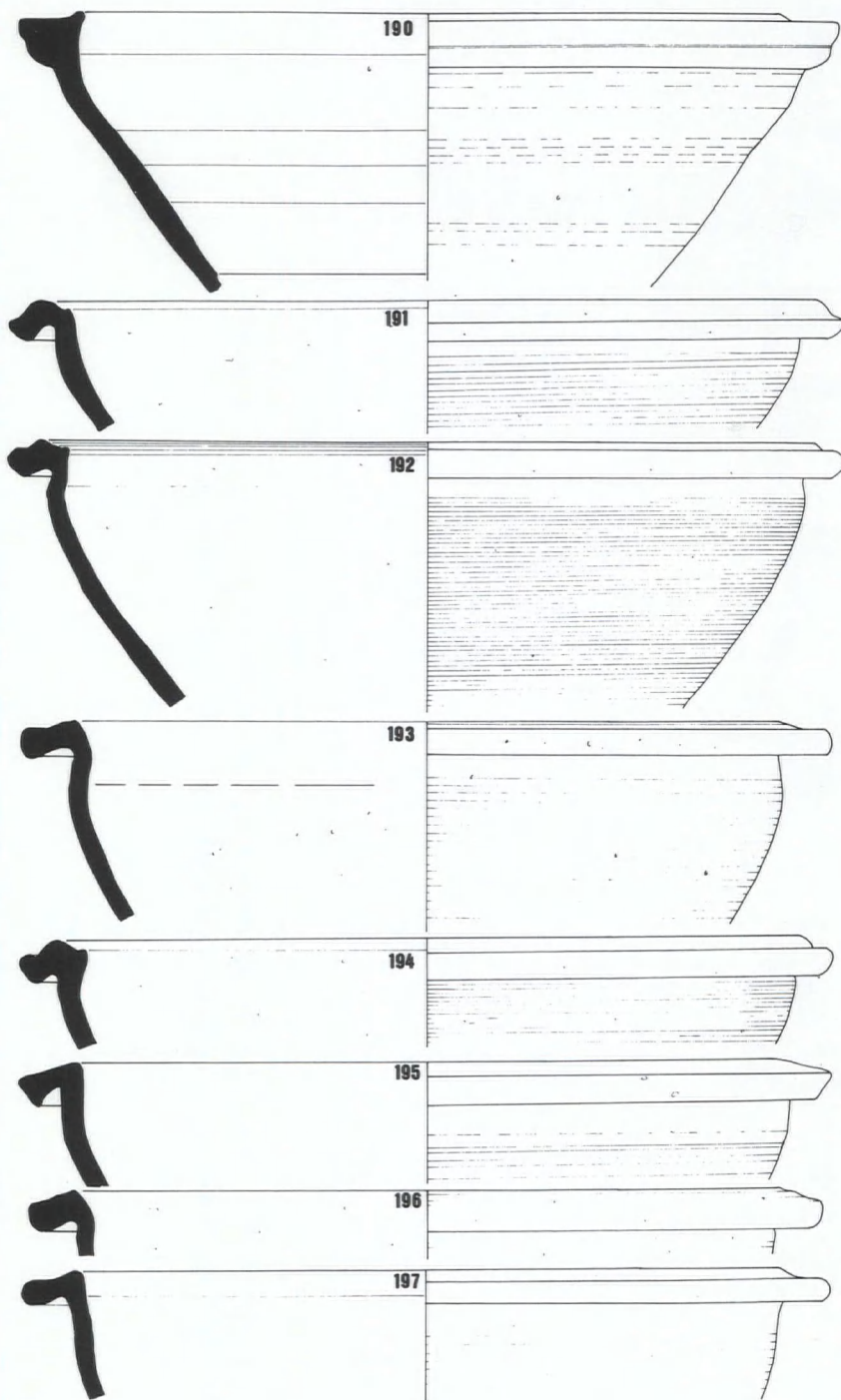


Fig 31. Shell-tempered pottery, Phase 4 (1:4).

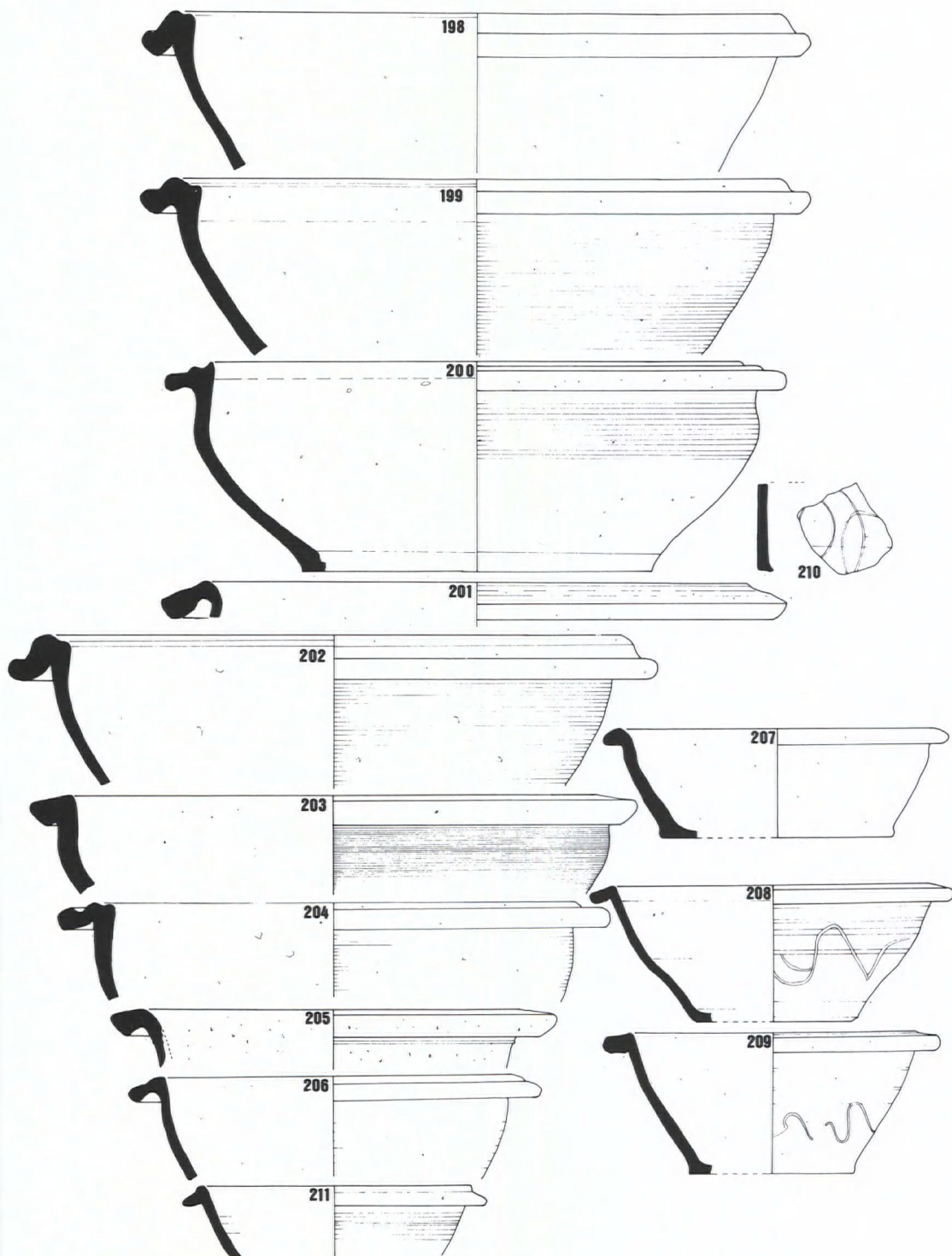


Fig 32. Shell-tempered pottery, Phase 4 (1:4).

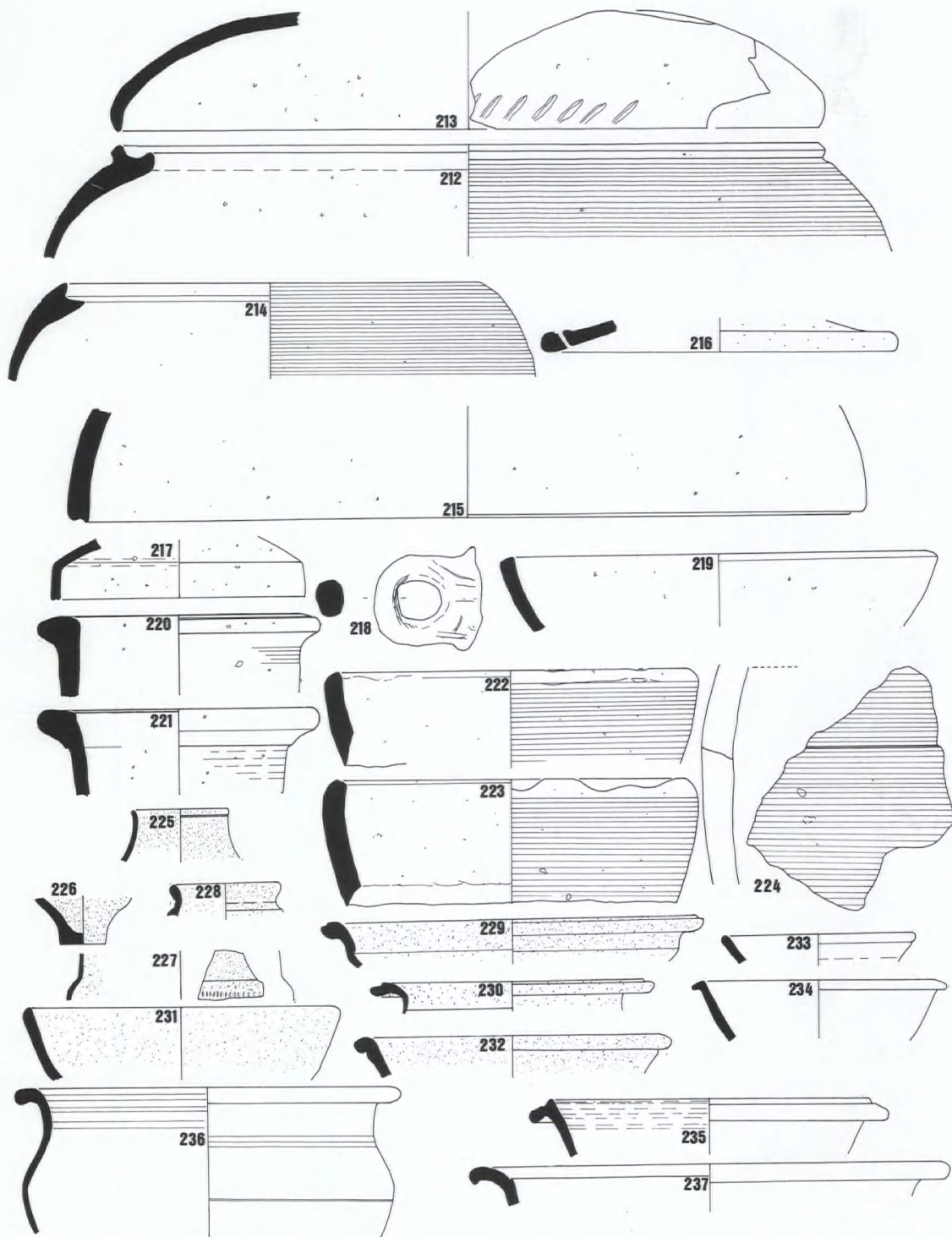


Fig 33. Nos 212-224, shell-tempered pottery; nos 225-237 are in non-Harrold fabrics. Phase 4 (1:4).

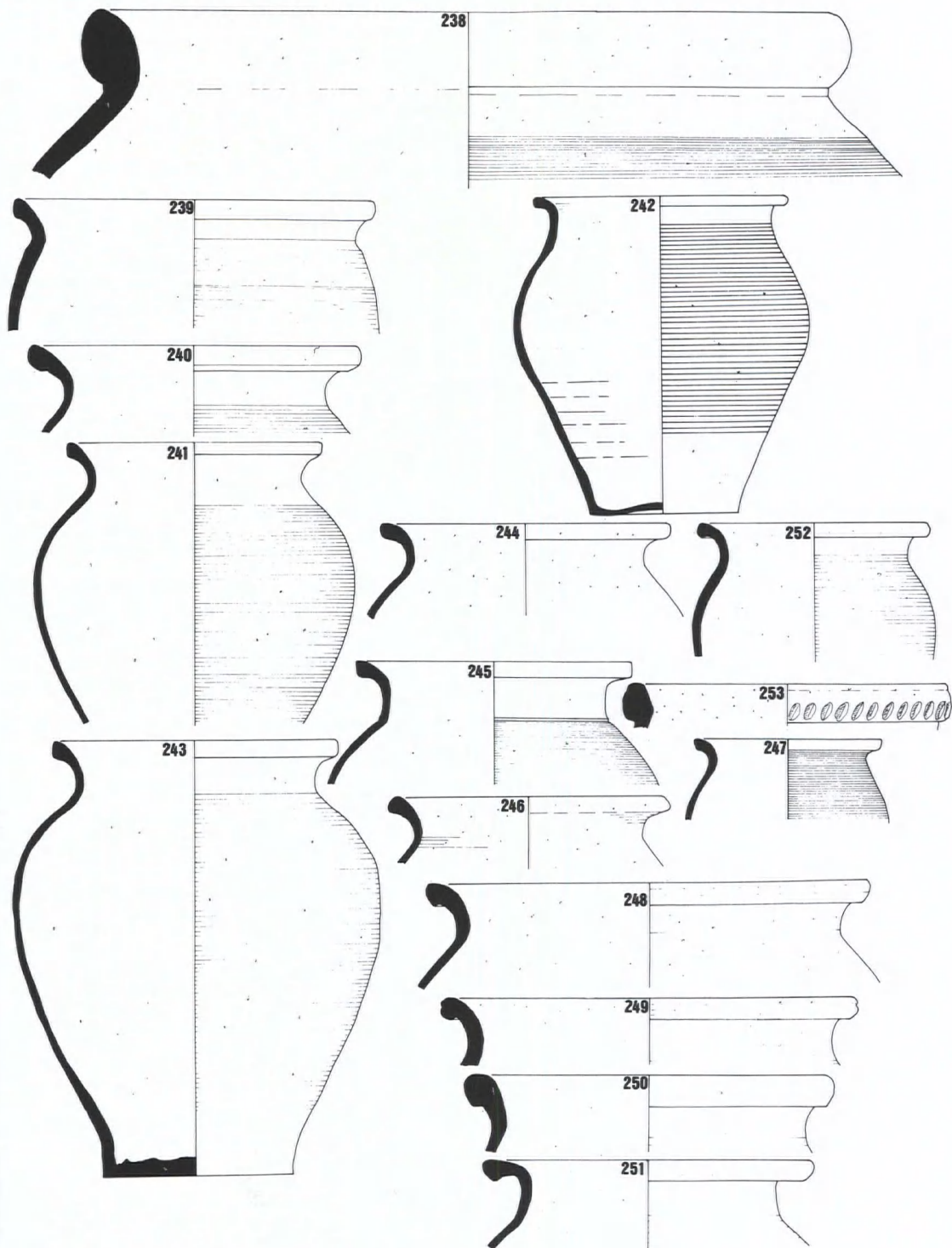


Fig 34. Shell-tempered pottery, Phase 5 (1:4).

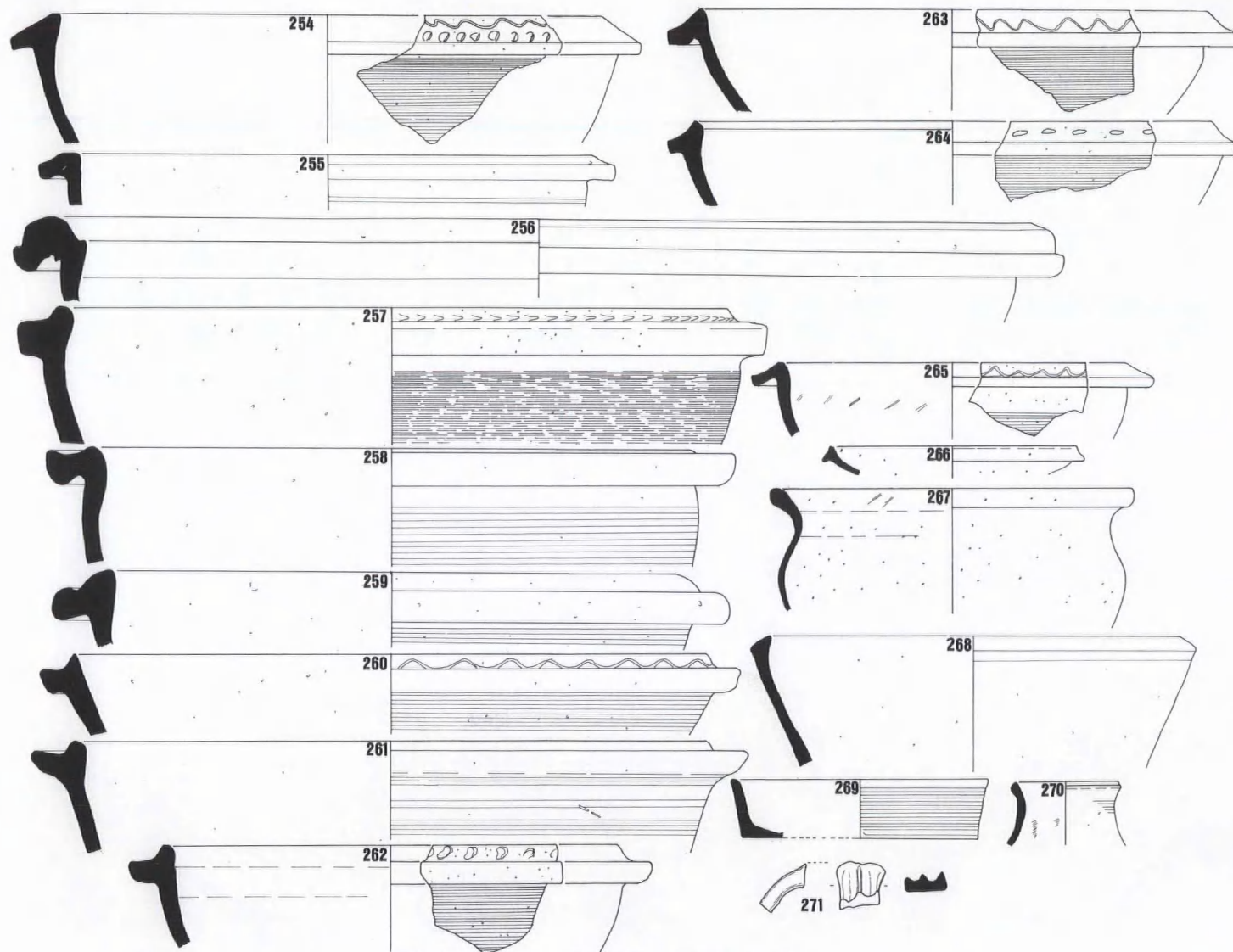


Fig 35. Shell-tempered pottery, Phase 5 (1:4).

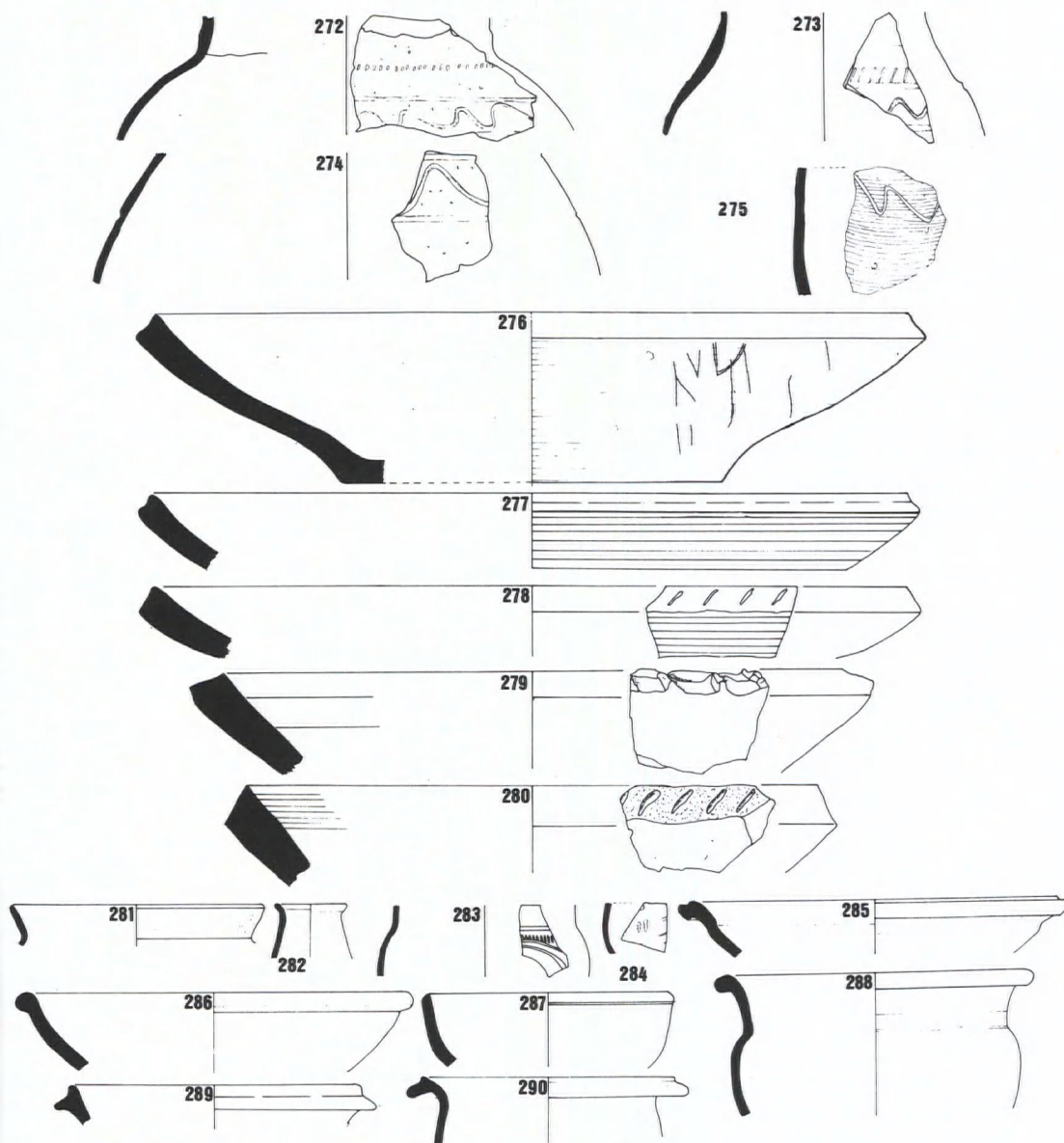


Fig 36. Nos 272-280, shell-tempered pottery; nos 281-290 are in non-Harrold fabrics. Phase 5 (1:4).

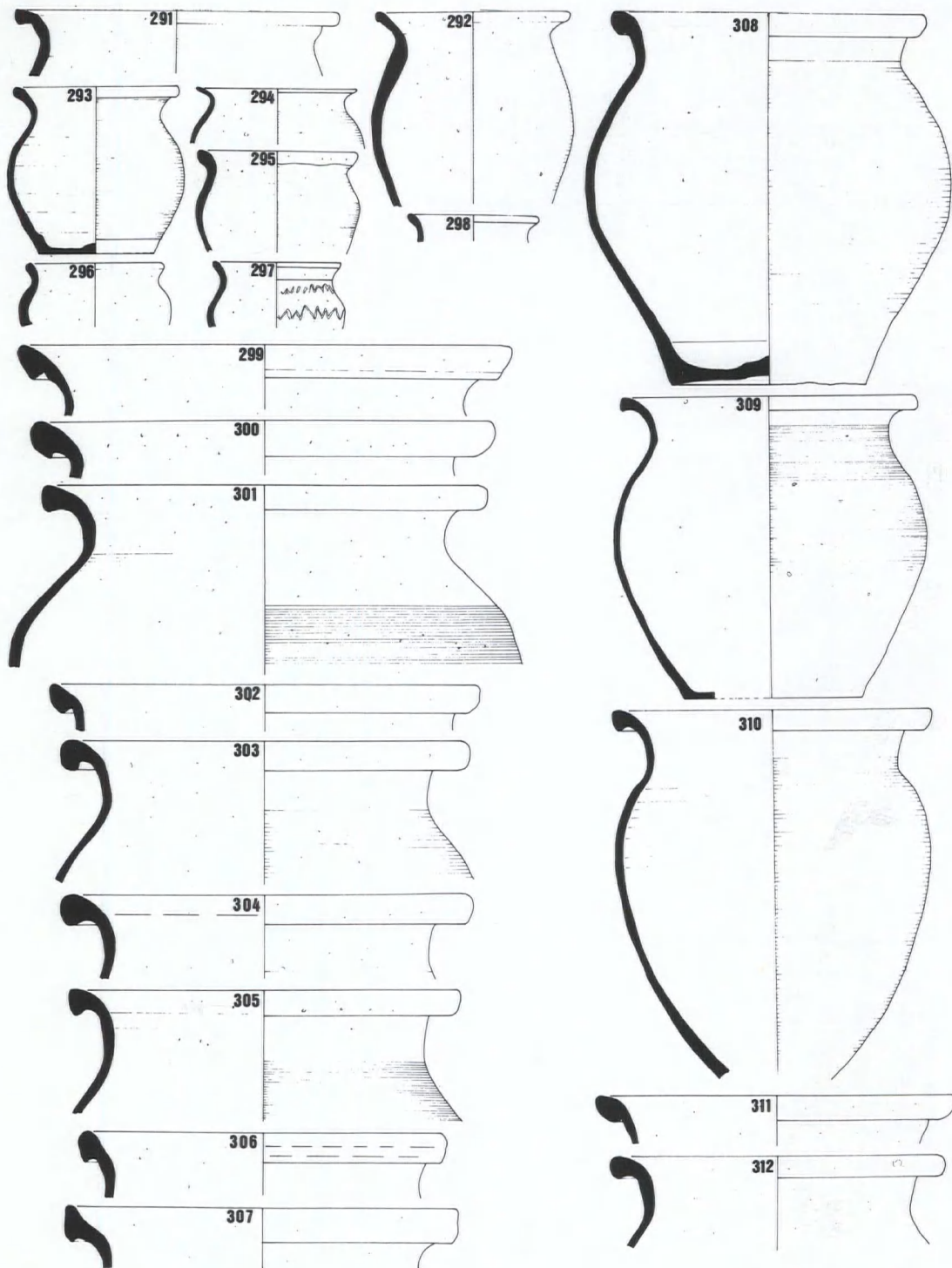


Fig 37. Shell-tempered pottery, Phase 6 (1:4).

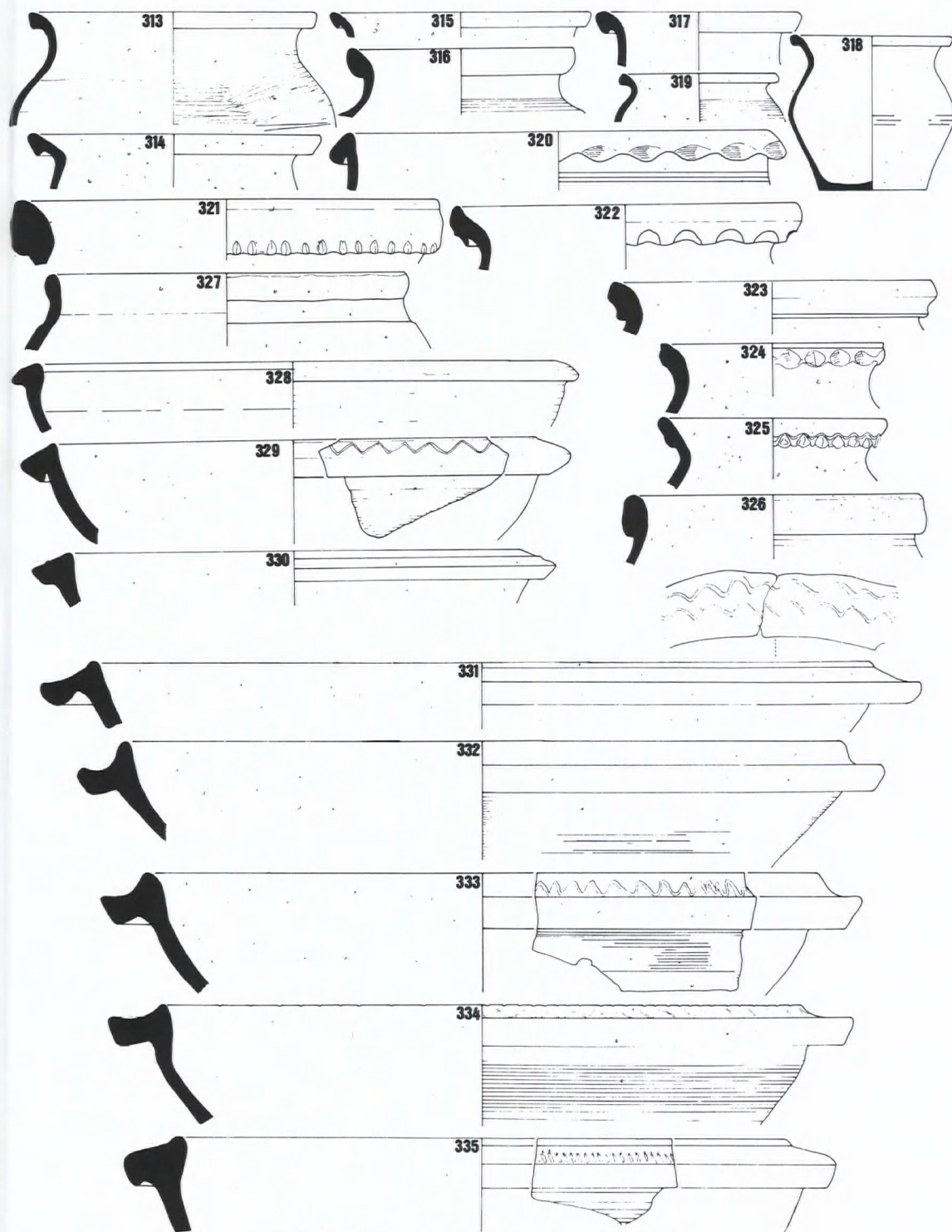


Fig 38. Shell-tempered pottery, Phase 6 (1:4).

2. Jars with simple everted rims

With diameters usually within the ranges 140-260 mm. Rilling is more often than not present on the body. The rims can be rounded or squared off at the end and when substantially thickened merge with the group of triangular rimmed vessels listed below. More common in this phase than the triangular rimmed pots.

Fig 34, 239, 240, Kiln 7, layer 2; 241, 243, Pit 2, layer 1; 242, Pit 7, layer 1; 244, 246, Pit 23, layer 3; 245, Pit 23, layer 4; 247, Pit 23, layer 2.

3. Jars with triangular drooping rims

Fig 34, 248, 249, Pit 23, layer 3; 250, Kiln 7, layer 2; 251, Pit 2, layer 1; 252, Pit 2, layer 8.

4. Jar with decorated rims

Fig 34, 253, Pit 23, layer 3.

5. Bowls with flat rims

Fig 35, No. 254, Pit 23, layer 3; No 255, Pit 7, layer 1.

6. Flanged bowls

The standard Romano-British flanged bowl, with a straight side and a straight flange set below a rim is rare at Harrold. Instead we find a large class of vessels which represent an amalgamation of this idea with the elaborate reeded rim bowls of Phase 4. Rims take on a variety of forms, but in the end a bowl with a curved side and a concave rim, frequently decorated with wavy lines and stabbing in a variety of combinations ousts all the others, to become practically the only bowl form made in Phase 6.

Fig 35 256, Pit 2, layer 2; 257, Pit 23, layer 3; 258, 260, 261, Pit 7, layer 1; 259, Pit 2, layer 1; 262, 263, 264, Pit 23, layer 2; 265, Pit 23, layer 4; 266, Pit 23, layer 1.

7. Necked bowl

Fig 35, 267, Pit 23, layer 2.

8. Dog dishes

Fig 35, 268, Pit 7, layer 1; 269, Kiln 7, layer 2.

9. Flask or Beaker

Fig 35, 270, Pit 23, layer 3.

10. Handle

Fig 35, 271, Pit 1, layer 2.

11. Body sherds with scored decoration, perhaps

copying East Midlands burnished grey ware

Fig 36, 272 and 274, Pit 23, layer 3; 273 and 275, Pit 23, layer 2.

12. Other, **Fig. 36**

These fragments could well be pieces of large vessels built up in sections, but which have either come apart in the firing or been fired as individual sections. An alternative view would be to see nos 276-8 as large lids, here shown upside down, to go with the flanged bowls.

276. Top carefully smoothed and finished. Pit 2, layer 1.

277. Like 276.

278. Top only roughly smoothed (unlike 276-7) and slashed at regular intervals. Pit 7, layer 1.

279. Top (or bottom?) given rough indentations, so creating ridges at regular intervals. Pit 2, layer 1.

280. Rough break showing thick grey core with depressions at regular intervals, which could have received ridges like those on 279. Kiln 7, layer 1.

Pottery from non-Harrold sources, **Fig 36**

Lower Nene Valley colour coated ware, Fabric 26

281. Blotchy brown colour coat, grey fabric, buff margins. Pit 7, layer 3.

282. Brown colour coat, cream fabric. Pit 23, layer 1.

283 and 284. Metallic black colour coat, white paint, grey fabric, brown margins. Pit 2, layer 1.

285. Metallic brown colour coat, grey fabric, buff margins. Pit 7, layer 3.

286. Brown colour coat, buff fabric. Pit 7, layer 1.

287. Metallic brown colour coat, grey fabric. Pit 23, layer 2.

Oxfordshire colour coated ware, Fabric 27 (Young 1977)

Pit 1, layer 1, shallow bowl C45, 270-400+; layer 3, necked bowl C75, 325-400+; layer 4, C45, 270-400+; layer 5, hemispherical bowl C55, 240-400+; layer 7, straight sided bowl C94, 300-400+.

East Midlands burnished ware, Fabric 31

288. Very hard metallic, grey, burnished on exterior and top of rim. Pit 23, layer 3.

289. Pit 7, layer 1.

290. Pit 2, layer 1.

Dating

The single coin, from Pit 7, layer 1, is a late 3rd century example of the reign of Claudius II (268-70 AD). The two mortaria fragments are an Oxfordshire piece of 240-400 AD and a probably 4th century Mancetter-Hartshill fragment. The Oxfordshire colour-coated pieces are of 3rd-4th

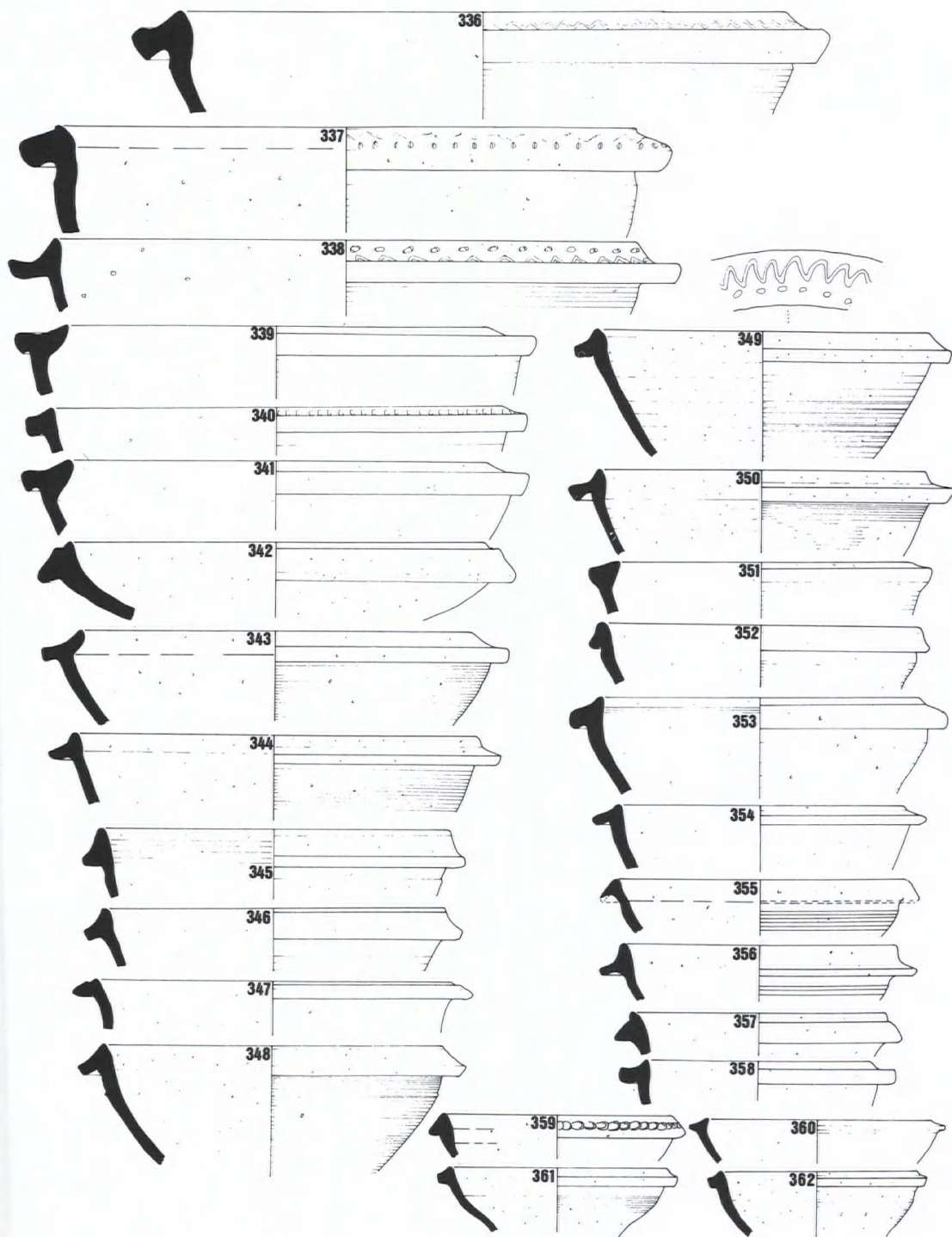


Fig 39. Shell-tempered pottery, Phase 6 (1:4).

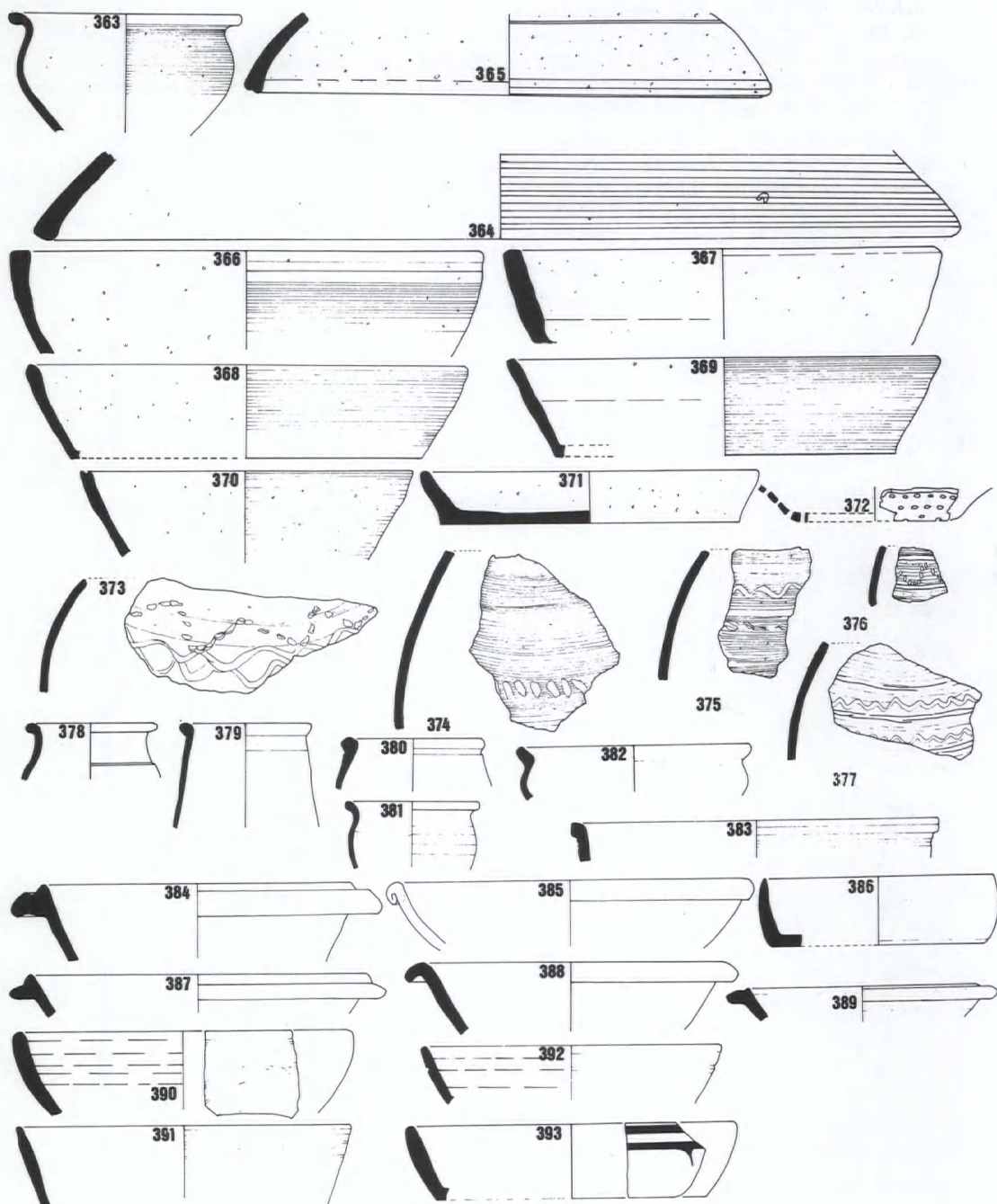


Fig 40. Nos 363-377, shell-tempered pottery; nos 378-393 are in non-Harrold fabrics. Phase 6 (1:4).

century date, with a number of fragments which belong exclusively to the 4th century, including a type which does not begin to be produced until the end of the first quarter of the century. The Lower Nene Valley colour-coated ware pieces are all types of the 4th century (eg nos 282, Howe *et al* 1980, 54-57; 289, *ibid*, 79); but with some which cease to be made around the middle of the century (eg no 285, *ibid* 81; 286, *ibid* 80; 287, *ibid* 82). As for the Harrold ware, there is little difference with the pottery of Phase 4; jars with simple outcurved rims still predominate, but the bowls have in profile further removed themselves from the carinated prototypes of the 2nd century. A date in the first half of the 4th century is put forward.

Phase 6. Pits 3,8,10,12,14,15,16,18,19

(later 4th - early 5th centuries: Table 6)

Surface appearance as Phases 4 and 5. Harrold shelly ware forms are as follows:

1. Jars with simple everted rims

Now with a tendency for the rims to oversail the girths; the result is to produce a vessel which greatly resembles the standard late black burnished cooking pot.

Fig 37, 291, Pit 8, layers 2/3; 292, Pit 8, layer 4; 293, 296, Pit 10, layer 1; 294, 295, 297, 298, Pit 8, layer 1.

2. Jars with triangular drooping rims

The commonest vessel type; outweighs the simple rimmed variety. Mostly diameters within the same range, 140-260 mm; rilling almost always present on the body; the degree of overhang of the rim very variable.

Figs 37 and 38: 299, Pit 19, layer 2; 300, 306, 307, 314, 319, Pit 19, layer 1; 301, 303, 304, 305, 312, 313, 316, Pit 8, layer 1; 302, 311, 315, 317, Pit 16, layer 1; 308, Pit 8, layer 4; 309, Pit 10, layer 1; 310, Pit 8, layers 2/3; 318, Pit 15, layer 1.

3. Jars with decorated rims

Fig 38, 320, 322, Pit 16, layer 1; 321, 325, Pit 10, layer 1; 323, 324, Pit 8, layer 1.

4. Jar with heavy rim and short neck

Fig 38, 326, Pit 16, layer 1.

5. Jar with upright neck

Fig 38, 327, Pit 10, layer 2.

Table 6. Phase 6 Distribution of Harrold Ware (estimated number of vessels in brackets)

	Pit 3	Pit 8	Pit 10	Pit 12	Pit 14	Pit 15	Pit 16	Pit 18	Pit 19	
Large storage jars, 1st cent type (residual)	1(1)	2(2)	6(6)							10(9)
Giant storage jars		1(1)	1(1)	1(1)		1(1)		1(1)		5(5)
Jars, outcurved rims	19(11)	63(30)	16(9)	1(1)	26(22)	27(13)	4(4)	4(4)	27(13)	187(107)
Jars, triangular rims	21(10)	77(33)	47(15)	2(1)	54(33)	55(20)	97(25)	67(13)	131(27)	551(177)
Jars, decorated rims							1(1)		3(3)	4(4)
Channel rimmed jars (residual)	1(1)		6(4)			1(1)	6(3)		2(2)	16(11)
Flanged bowls	5(5)	37(25)	10(9)		10(10)	8(7)	2(1)	1(1)	14(12)	87(70)
Bowls with flat rims	1(1)	15(14)	1(1)			3(3)	2(2)		1(1)	23(22)
Lids	1(1)		1(1)				2(2)			4(4)
Dishes	4(4)	6(6)	10(5)		1(1)	2(1)			3(3)	26(20)
Other			1(1)		1(1)	1(1)	2(2)		1(1)	6(6)
Body and base sherds	165	1201	552	53	1030	1869	1834	595	192	7491
Residual 1st cent body sherds	98		3						1	102

Table 7. Unphased 4th century features. Distribution of Harrold ware (estimated number of vessels in brackets)

	Pit 13	Pit 24	Pit 25	Ditch 1	Stone floor	
Giant storage jars				1(1)		1(1)
Jars, outcurved rims		14(6)	3(3)	14(10)	1(1)	32(20)
Jars, triangular rims	2(2)	14(4)	1(1)	3(1)	1(1)	21(9)
Jars, decorated rims				1(1)		1(1)
Channel rimmed jars				1(1)		1(1)
Flanged bowls	2(2)	2(2)	1(1)	4(4)		9(9)
Lids		2(1)			1(1)	3(2)
Body and base fragments	144	250	28	127	16	565
Residual 1st cent sherds			2	1		3

6. Bowls with simple thickened and flat topped rims
Fig 38, 328, Pit 16, layer 4; 329, Pit 8, layer 1; 330, Pit 19, layer 2.

7. Flanged bowls

A new development is the pushing inwards of the rim to give an internal overhang.

Figs 38 and 39, 331, 342, Pit 8, layer 4; 332, 333, 344, 348, 349, 350, 357, 360, 361, 362, Pit 8, layer 1; 334, Pit 10, layer 2; 335, 339, 343, 345, Pit 19, layer 1; 336, 340, 347, 351, 354, Pit 15, layer 2; 337, 346, Pit 19, layer 5; 338, Pit 10, layer 1; 341, Pit 19, layer 2; 352, Pit 14, layer 5; 353, 359, Pit 15, layer 1; 355, Pit 8, layers 2/3; 356, Pit 14, layer 3; 358, Pit 16, layer 2; 347 and 357 are standard Romano-British flanged bowl forms.

8. Necked jar

Fig 40, 363, Pit 8, layer 1.

Dog dishes (or lids for flanged bowls)

Fig 40, 364, 368, Pit 10, layer 1; 365, 366, Pit 8, layer 1; 367, Pit 18, layer 2; 370, Pit 8 (grooved top suggests intended use as a lid); 371, Pit 3, layer 4.

9. Colander

Fig 40, 372, Pit 19, layer 1.

10. Body sherds with scored decoration

Fig 40, 373, Pit 8, layer 5; 374, Pit 8, layer 3; 375, 376, Pit 8, layer 1; 377, Pit 16, layer 1.

Pottery from non-Harold sources, **Fig 40**

Lower Nene Valley colour coated ware, Fabric 26
378. Mid-brown colour coat, greyish cream fabric. Pit 8, layer 1.

379. Metallic brown colour coat, cream fabric. Pit 8, layer 1.

380. Dark brown colour coat, cream fabric. Pit 16, layer 1.

381. Burnt. Chocolate brown colour coat. Pit 8, layer 1.

382. Metallic black colour coat. Pit 8, layer 1. Another from layer 4.

383. Metallic brown colour coat, dirty grey fabric. Pit 16, layer 1.

384. Metallic brown colour coat, dirty grey fabric. Pit 15, layer 1.

385. Blotchy chocolate colour coat, buff fabric, grey core. Pit 8, layer 1.

386. Metallic bluish brown colour coat. Coarse cream fabric. Pit 8, layer 1.

East Midlands burnished ware, Fabric 31

387. Sandy grey, brownish tinge, Pit 19, layer 1.

388. Dark grey burnished, sandy, dark grey core, brownish grey margins. Pit 14, layer 3.

389. Hard medium grey sandy. Pit 8, layer 4.

390. Hard sandy grey. Pit 8, layer 1.

Black burnished ware imitations

391. Upper part of exterior and whole of interior a highly burnished and shiny black. Rest of exterior grey. Very hard. Probably from the Alice Holt area, Surrey (Millett 1979, type 7). Pit 8, layer 1.

392. As 391, but a shallower dish. Pit 10, layer 1.

Oxfordshire colour coated ware and parchment ware, Fabrics 27 and 28 (Young 1977)

Pit 3. Layer 1, straight sided bowl C94, 300-400+; layer 2, hemispherical bowl C60/61, 350-400+; layer 3, flanged bowl, 350-400+.

Pit 8. Layer 1, flanged bowls C51, 240-400+ (two); C52, 350-400+; shallow bowls C45, 270-400+ (two); C48, 270-400+ (two); flanged bowl C93, 350-400+; parchment ware, necked jar P8, 240-400+; bowl P24, 240-400+; layer 2, C51.

Pit 14. Layer 3, parchment ware bowl P24, 240-400+; layer 5, shallow bowl C45, 270-400+ (two).

Pit 15. Layer 1, necked bowls C75, 325-400+; C79, 340-400+; carinated bowl C84, 350-400+; layer 2, hemispherical bowl C55, 240-400+; straight sided dish C94, 300-400+.

Pit 16. Layer 1, hemispherical bowl C55, 240-400+; carinated bowl C84, 350-400+.

Other

393. Coarse sandy grainy surface, burnished on interior, bands of black paint on exterior. Pit 15, layer 2.

Dating

The abundant coins are Constantinian of the second quarter of the 4th century, but with a number of significant later issues of the house of Valentinian from Pits 16 and 19 and of the house of Theodosius from Pits 14, 19 and probably 12. The mortaria are Oxfordshire and Mancetter types of the 4th century; so are the fragments of Oxfordshire colour coated ware, with some types not current until after c 350, which go down to c 400 and beyond. The Lower Nene Valley colour coated pieces are similarly standard 4th century products. The arrival of a little Much Hadham ware is of interest.

The significant difference with the Harold ware of earlier phases is, as far as jars are concerned, the preponderance of the form with the triangular drooping rim. There are also some copies of the late black burnished cooking pot. This group belongs to the second half of the 4th century and goes on into the 5th.

TILES AND BRICKS IN SHELLY HARROLD FABRIC

Group 1

second half of 2nd century (for provenances, Table 8; **Fig 41**)

The surface colours of these brick and tile fragments lie within the following ranges: 10R 5/4 reddish brown - 10R 5/8 red, 7.5 YR 5/2 greyish-brown - 7.5 YR 7/3 dull orange, 5YR 7/8 orange- 5YR 5/2 greyish brown, 2.5 YR 7/2 light reddish grey - 2.5YR 7/4 pale reddish orange.

Tegulae

Tile thicknesses (17 - 20 mm) match those from 3rd and 4th century deposits but a proportion of the flanges are different, with a triangular profile (eg nos 1 and 2).

1. Very abraded. Unstratified but from Trench 2, near Kiln 1.
2. Pit 20, layer 1.
3. Kiln 1, layer 1.
4. Unusual groove along top of flange. Kiln 9, layer 1.
5. Very big flange from presumably a large tile. Kiln 9, layer 9.

Imbrices

Small fragments ranging in thickness from 12 to 21 mm. One piece (Kiln 9, layer 2) gives a near complete length of 320 mm.

Ridge tiles

Two definite examples only, but some of the imbrex tiles could have belonged to this class, particularly the thicker ones.

6. An unusual piece with an angled end, designed perhaps to begin or end the ridge of a sloping roof. Kiln 9, layer 3.
7. Very well finished and smoothed off on the interior, with sharp edges, but much rougher on the inside, with finger and former marks visible. Kiln 9, layer 3.

Relief-patterned flue tiles

Five abraded fragments, four joining, unstratified from south east of Kiln 1, Trench 2.

8. Much shell visible on surface; grey core. 2.5YR6/8 orange.

Mr Ernest Black of the Relief-patterned Tile Research Group writes that this is an example of Die 64 which has been noted in residual or destruction contexts at Braughing (Hertfordshire) and the Brixworth villa (Northamptonshire). Another die, 123, has a similar pattern and also occurs on tiles in a similar fabric; it has been found in a disturbed

context at the villa at Piddington (Northamptonshire).

Bricks

The fragments are 27, 30 and 43 mm thick, within the range of those made in the later period.

This small group of generally small tile fragments is enough to indicate that the range of tiles made in the 2nd century was much the same as that in the 3rd and 4th centuries, for which much more evidence is available.

Group 2

late 3rd to mid 4th century

The surface colours lie within the following ranges: 10 R 5/4 reddish brown - 10 R 5/8 red, 7.5 YR 8/3 light yellow orange - 7.5 YR 5/2 greyish brown. 5YR 7/8 orange - 5YR 8/4 pale orange, 2.5YR 7/2 - 2.5YR 6/6 orange.

The provenances and weights of the various types of tile are set out in Table 9. The contexts have been grouped and ordered according to their presumed dates as derived from the pottery evidence. This has the effect of showing not just which pits were more extensively excavated, but also how the later pits tend to produce rather less tile (and mostly abraded fragments at that); the suggestion can therefore be made that tile production at Harrold ceased somewhere in the second half of the 4th century; it did not last so long as pottery manufacture.

Tegulae

(**Figs 41-42**)

Low raised zones along the bottom edges of these tiles show how they were made by pushing slabs of clay into moulds; in some cases surplus clay has oozed out (14). Low raised lines of clay on the rough and irregular undersides may show where joins in the presumably wooden slats on which the tiles were laid out to dry occurred (9); there are also instances of similar raised lines along the external sides of the flanges. The presence of raised strips of surplus clay suggests that the cutaways were formed in the mould rather than with a knife. The tiles were carefully smoothed on the upper surface and relatively few show much shell; sometimes the lower edge of the underside was roughly smoothed off also. Very occasionally a groove was made during finishing along the inside of the flange, but pieces of surplus clay left behind and blocking these grooves show that they had nothing to do with facilitating water run-off (16). Finger impressions along the sides and on top of the flanges show how

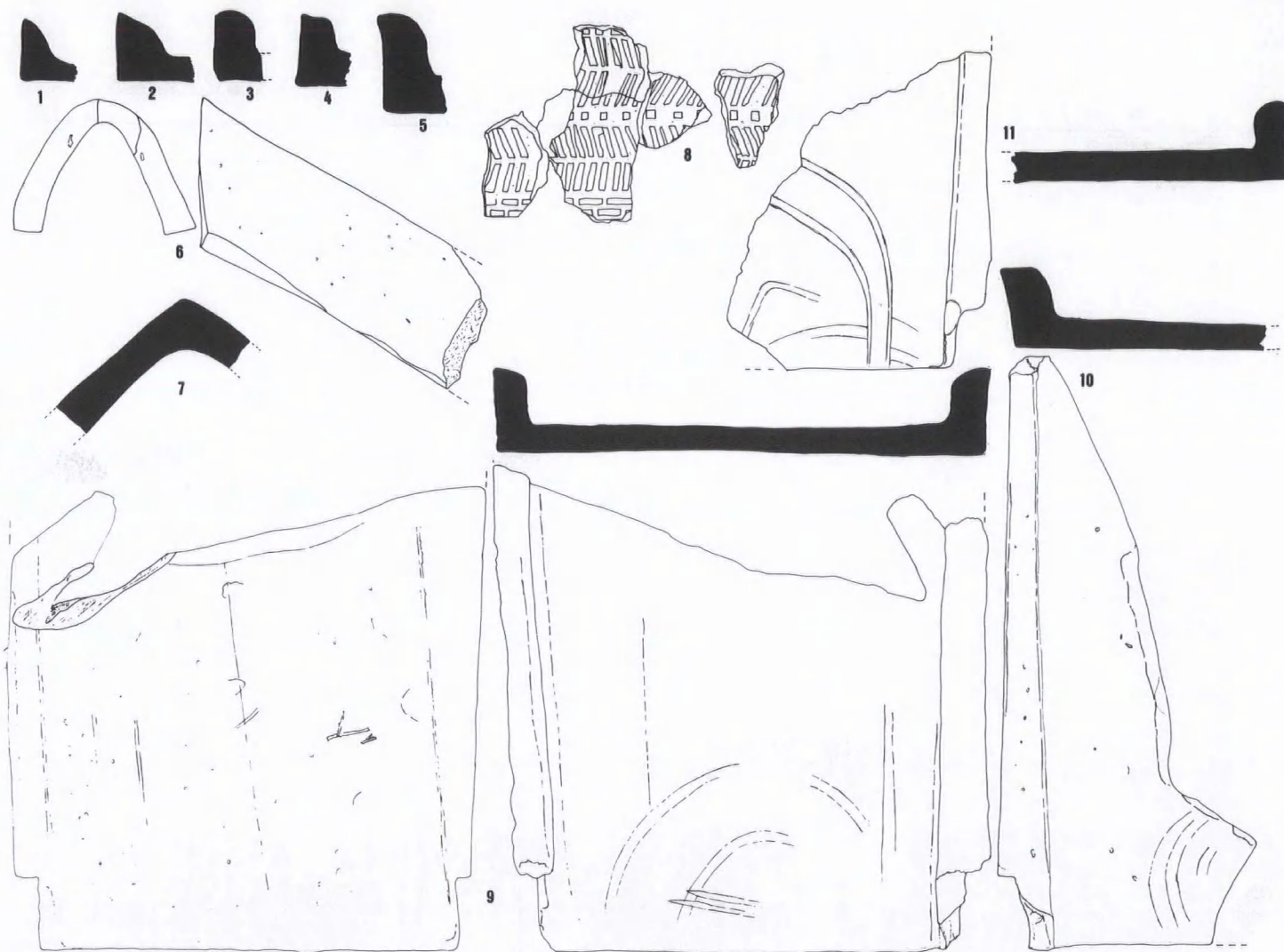


Fig 41. Tiles in shelly fabric. Nos 1-8, Phase 3; nos 9-11, Phases 4 and 5 (1:4).

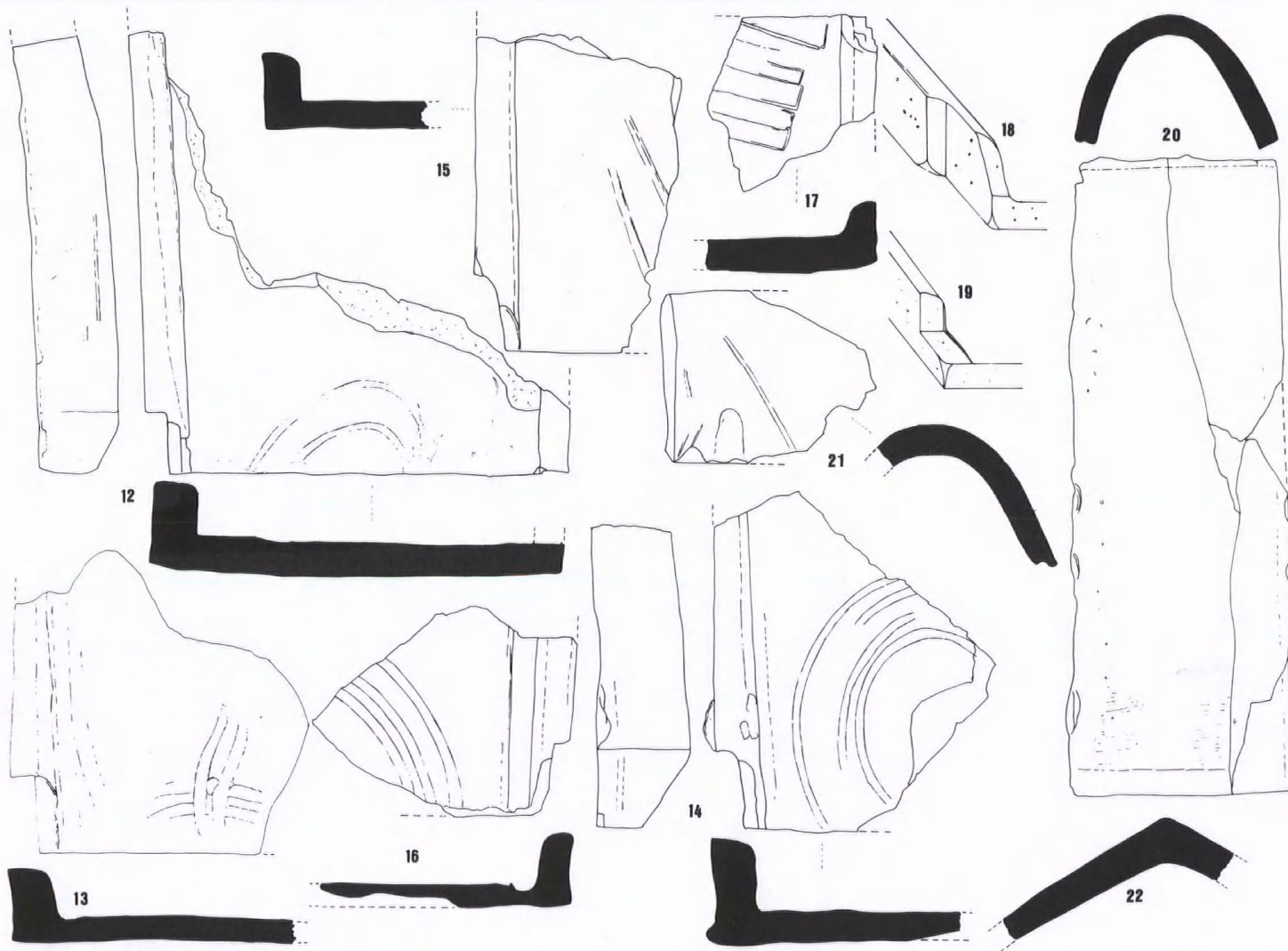


Fig 42. Tiles in shelly fabric, Phases 4 and 5 (1:4).

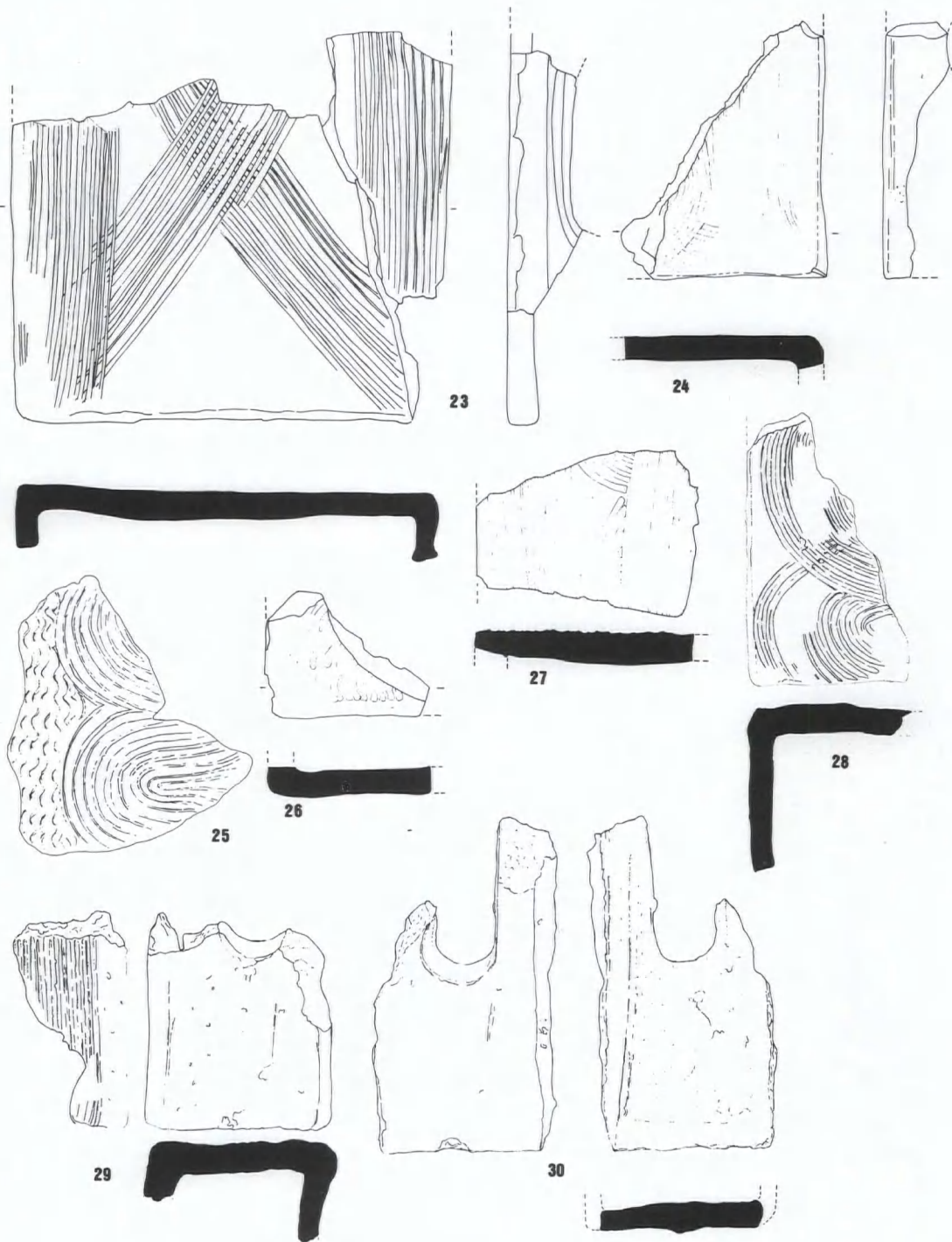


Fig 43. Tiles in shelly fabric, Phase 4 (1:4).

the tiles were removed from their moulds.

These tiles range in thickness from 15 to 20 mm; the external height of the flanges from 38 to 61 mm, but mostly around 50 mm. The one complete specimen from the furnace of Kiln 5 is 290/300 mm wide by 360 mm long by 20 mm thick and weighs 3.289 kg, a fairly small tile (Brodribb, 1987, 142). Tegulae with comparable dimensions one way come from Kiln 5, layer 1, 365 mm long; Kiln 6, layer 1, 350 mm long; Kiln 5, layer 1, 310 mm wide. But larger tegulae were made; one from Pit 9, layer 1, is 385 mm long and another from Kiln 5, layer 1, 370 mm wide, a very substantial tile. These measurements do not agree particularly well with those given by Zeepvat (1987, 120) for shelly tegulae from the Milton Keynes excavations.

Out of the grand total of 1815 tegula fragments of all kinds found, only 24 exhibit smeared finger signatures (9 - 16).

Figs 41 and 42, 9, Kiln 5, layer 1; 10, Kiln 5, layer 1; 11, Kiln 7, layer 7; 12, Pit 9, layer 6; 13, Kiln 5, layer 1; 14, Kiln 5, layer 1; 15, Kiln 6, layer 2; 16, strip of clay blocks groove along inside of flange: Kiln 7, layer 2; 17, tool marks on upper surface: Pit 7, layer 1; 18, example of lower cutaway; 19, example of upper cutaway.

Imbrices

(Fig 42)

After forming, the sides of these tiles were trimmed downwards, resulting in the creation of a roll of clay along each bottom edge. Finger impressions on the rough interior, particularly along the edge and at the end, show where the tiles were held while the smoothing of the exterior took place. Only one piece (21) had smear marks at the end comparable with those found on tegulae, but these may have been accidental.

The complete length as determined by examples from Kiln 5, layer 1, and Kiln 6, layer 3, was 390 mm and thicknesses ranged from 12 to 14 mm

giving a weight of 2.495 kg. The latter figure agrees with the imbrex thicknesses given by Zeepvat (1987) but the length figures are not in agreement.

20. Kiln 6, layer 3..

21. Kiln 5, layer 1.

Ridge tiles

(Fig 42)

Few examples of these thick (20 mm) and heavy tiles were identified and none could be reconstructed; undifferentiated side fragments would appear in the totals for bricks of thickness 24 - 40 mm.

22. A line on the underside shows where two slabs of clay have been lapped together. Kiln 5, layer 1.

Box tiles

(Figs 43 and 44)

No complete example could be reconstructed, but these tiles were at least 250 mm high and the one complete width was 270 mm. The sides were 115 mm across and without scoring.

23. Twelve shallow grooves. Kiln 5, layer 1.

24. Twelve grooves, finely executed, sharp. Kiln 5, layer 1.

25. Ten shallow grooves; surface only survives. Kiln 5, layer 1.

26. Broad shallow grooves; surface only survives. Kiln 5, layer 3.

27. Eleven grooves. Kiln 5, layer 3.

28. Fifteen grooves. Kiln 5, layer 1.

29. Shallow grooves. Kiln 5, layer 1.

30. Kiln 5, layer 1.

31. Twenty three sharply executed grooves. Pit 9, layer 1.

32. Nine grooves. Kiln 7, layer 1.

33. Ten broad grooves. Pit 2, layer 1.

34. Ten broad grooves. Pit 8, layer 7.

Table 8. Tiles and bricks, Phase 3 (no. of fragments)

	Tegulae	Imbrices	Ridge tiles	Box flue tiles	Bricks 24-40mm thick	Bricks over 40mm thick	Misc. flat frags up to 24mm thick	Totals	Weight Kg
Kiln 1	5	1		2			21	29	3.01
Kiln 9	5	9	2	1	1	1	4	23	4.83
Pit 6							1	1	0.028
Pit 20	1	1					1	3	1.05
Pit 21		1			1		4	6	0.94
Pit 22	1	2			2			5	0.71
	12	14	2	3	4	1	31	67	10.568

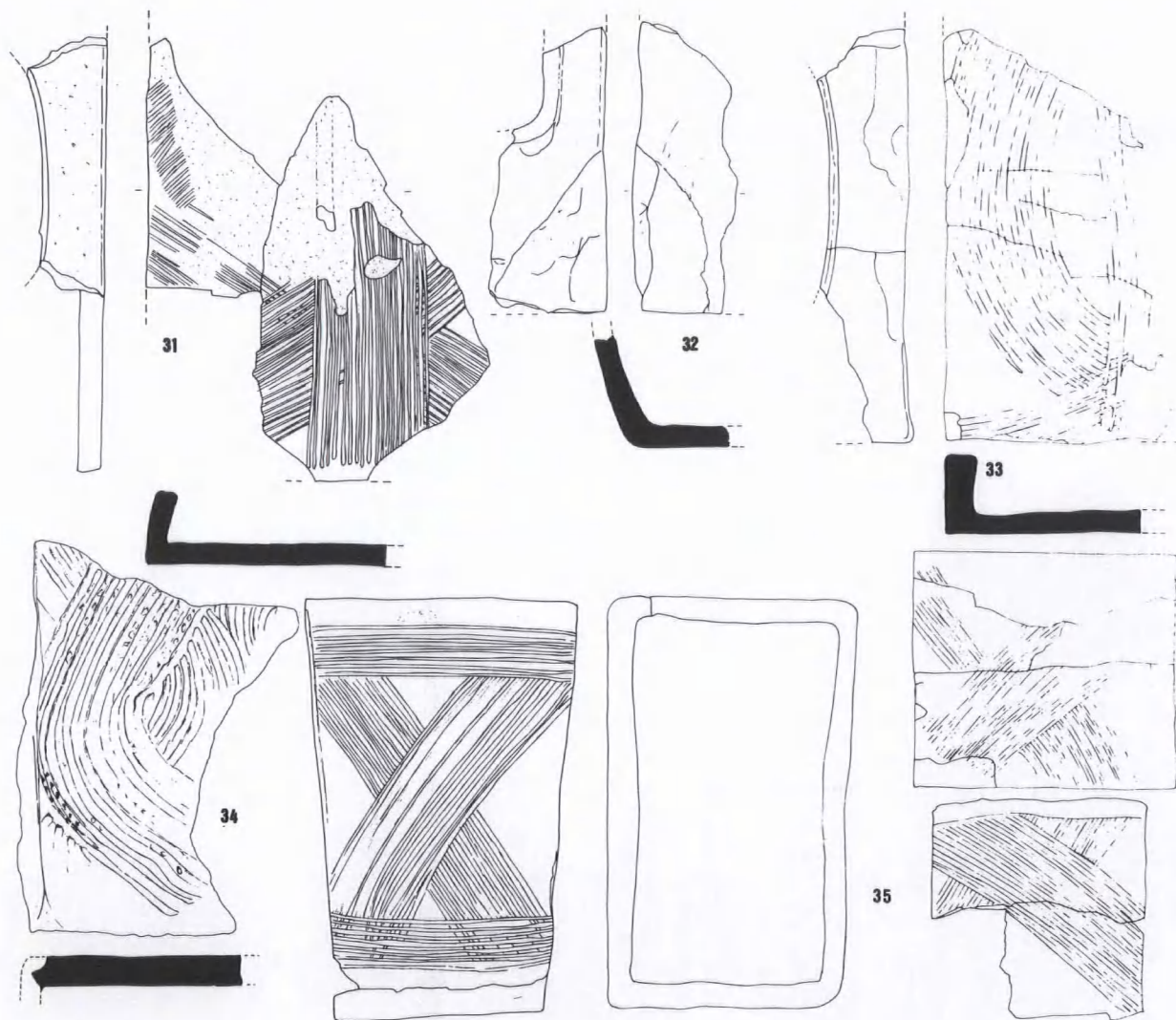


Fig 44. Tiles in shelly fabric, Phases 4 and 5 (1:4).



Fig 45. Tiles and bricks in shelly fabric, Phases 4 and 6 (1:4).

Hollow voussoirs

(Figs 44 and 45)

These occurred in two groups: from Kiln 5 and Pit 9 came a group of tiles about 220 - 240 mm high, 120 - 140 mm wide at the bottom, 160 - 180 mm across the top and 140 - 150 mm deep; the tiles ranged in thickness from 12 to 18 mm. The weight of the tile was 2.72 kg. They are well made with finely executed scoring. Enough pieces survived to show the joint which enabled the tiles to be completed around their former. The second, smaller, group came from Kiln 7, and consisted of smaller tiles; the height is not ascertainable but over 142 mm; the basal width is about 100 - 120 mm, the width of the top c 150 mm and the depth of the tile is c 120 mm. They were very crudely made.

35. Over nineteen grooves, very finely executed. Kiln 5, layer 1.

36. Fourteen grooves. Kiln 5, layer 1.

37. Side similar to 35. Nine grooves. Kiln 5, layer 1.

38. Six broad grooves. Kiln 5, furnace reflooring

39. Fourteen narrow grooves; scarf joint visible on underside and in section. Pit 9, layer 7.

40. Side fragment. Four grooves. Kiln 7, layer 3.

41. A side fragment? Seven broad grooves. Kiln 7, layer 3.

42. Top fragment? Eight grooves. Kiln 7, layer 1.

43. Bottom fragment? Five grooves. Kiln 7, layer 3.

44. Bottom fragment? Four grooves. Kiln 7, layer 2.

45. Possibly a voussoir fragment; very crudely made. Four grooves. Pit 23, layer 2.

Bricks

(Figs 45-47)

A range of bricks existed varying in thickness from 24 to 60 mm. Greater thicknesses of clay around the edge and some oozing around the bottoms showed how they had been made in wooden moulds. In all cases the undersides were very irregular and sometimes not even flat. Some (eg 46) exhibited the kind of slight ridges to be found on *tegulae*. Out of the 224 fragments of brick found, 8 (eg 47) had hobnail impressions on the underside, none forming a coherent pattern; 47 had holes in the underside penetrating to within a millimetre or so of the upper surface (47,51); 7 had smear marks on the upper surface comparable to those found on *tegulae* (eg 47, 49, 50, 52, 53).

A complete example from Pit 9, layer 6, of one of the thinner pieces (within the thickness range 24 to 40 mm) is 195 x 192 mm ie a *bessalis* (46) (terms from Brodribb 1987; these dimensions match those for *pilae* from Milton Keynes (Zeepvat, 1987)); another 200 x 180 mm comes from Kiln 5, layer 1.

Other examples of bricks within this thickness range with a complete measurement one way close to these come from Kiln 5, layer 1 (200 x 180+ mm) and Pit 2, layer 1 (230 x 230+ mm). From Pit 8, layer 8, and Kiln 5, layer 1, are examples 280 x 150+ mm and 287 x 220+ mm, and so possibly *pedales*. Another from Kiln 7, layer 7, measured 395 x 245+ mm and could have been a *lydion*.

Of the thicker tiles (40 - 60 mm), few had complete dimensions, but one (53) from the furnace reflooring of Kiln 5 measured 590 x 290+ mm and could have been a *bipedalis*. Zeepvat (1987) quotes examples of shelly sub-floor tiles 600 x 600 mm at the Bancroft villa, Milton Keynes. Another from Kiln 7, layer 2, was 310 x 290+ mm and could have been a *pedalis*, although, as with some of the other tiles mentioned above, other interpretations could have been possible.

46. Pit 9, layer 6.

47. Kiln 5, layer 1.

48. Heavily scored in the finishing off process. Kiln 7, layer 3.

49. Pit 8, layer 4.

50. Small holes on underside. Pit 8, layer 4.

51. Tool and finger marks on upper surface. Kiln 5, layer 2.

52. Kiln 7, layer 3.

53. Kiln 5, furnace re-flooring.

Other tiles

(Fig 48)

54. Part of an armchair tile, for the heating of a barrel vault. smoothed on one face, irregular on the other. Pit 8, layer 4.

55. Oblong brick. 213+mm long, 100 mm broad, 50 mm thick. Carefully finished top and sides, rough underside. Kiln 5, layer 1.

56. Another 120 mm broad, 50 mm thick, length uncertain. Carefully finished all over. Kiln 5, layer 1.

57. Chip of upper surface of a tile with paw mark of dog. Pit 9, layer 7.

KILN FURNITURE AND OTHER CLAY OBJECTS (Figs 49 - 51)

Phase 1

Several very small bits of burnt clay, buff, one or two with smoothed upper surfaces. Pit 11, layer 2.

Phase 2

Firebars

Pieces of firebars occurred in the following contexts; Gullies 1/2, layer 1 (1 fragment); Gully 2 (1 fragment); Kiln 2, layers 2 and 3 (26 fragments and 12 complete ones); Kiln 3, layers 2 and 3 (255

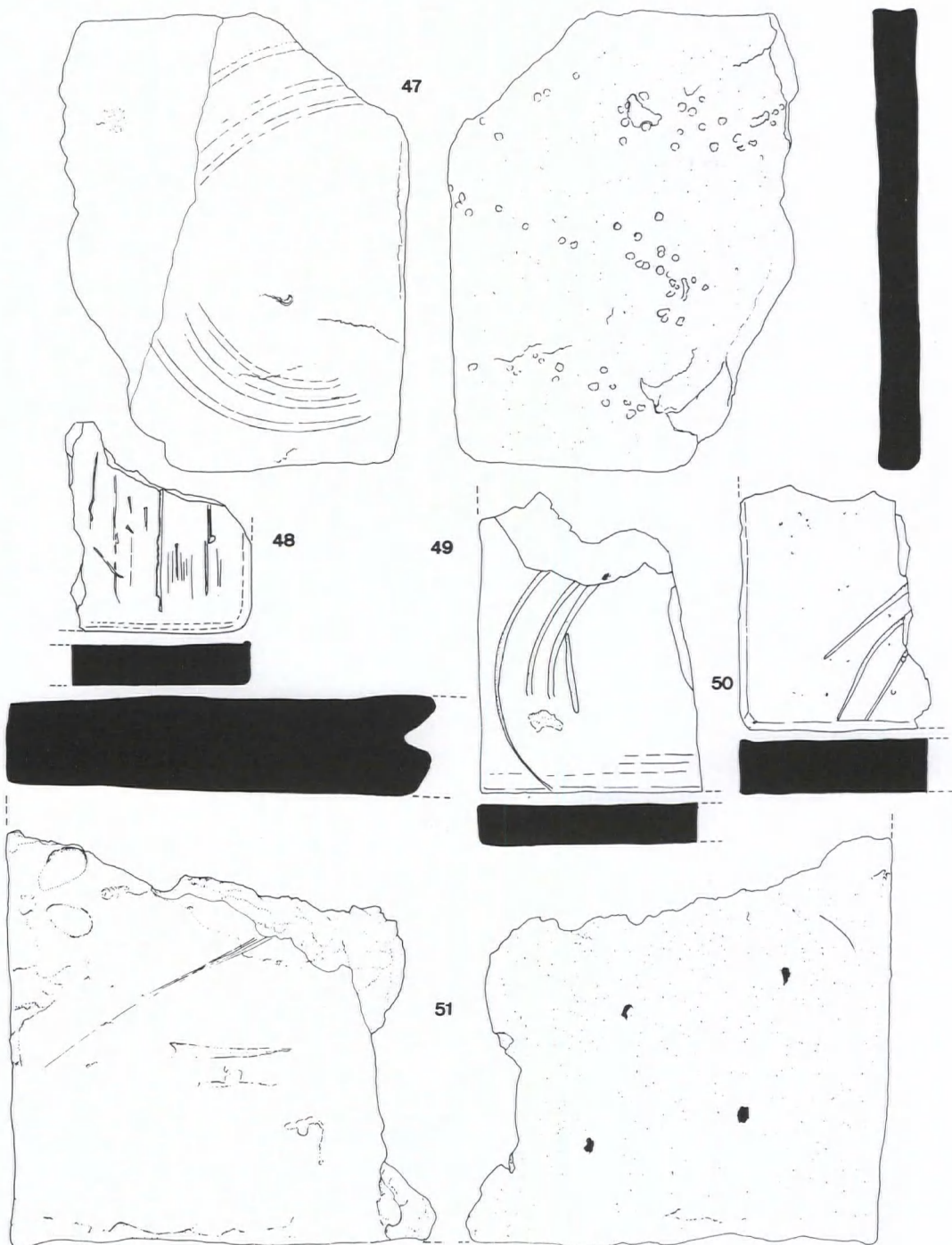


Fig 46. Bricks in shelly fabric, Phases 4, 5 and 6 (1:4).

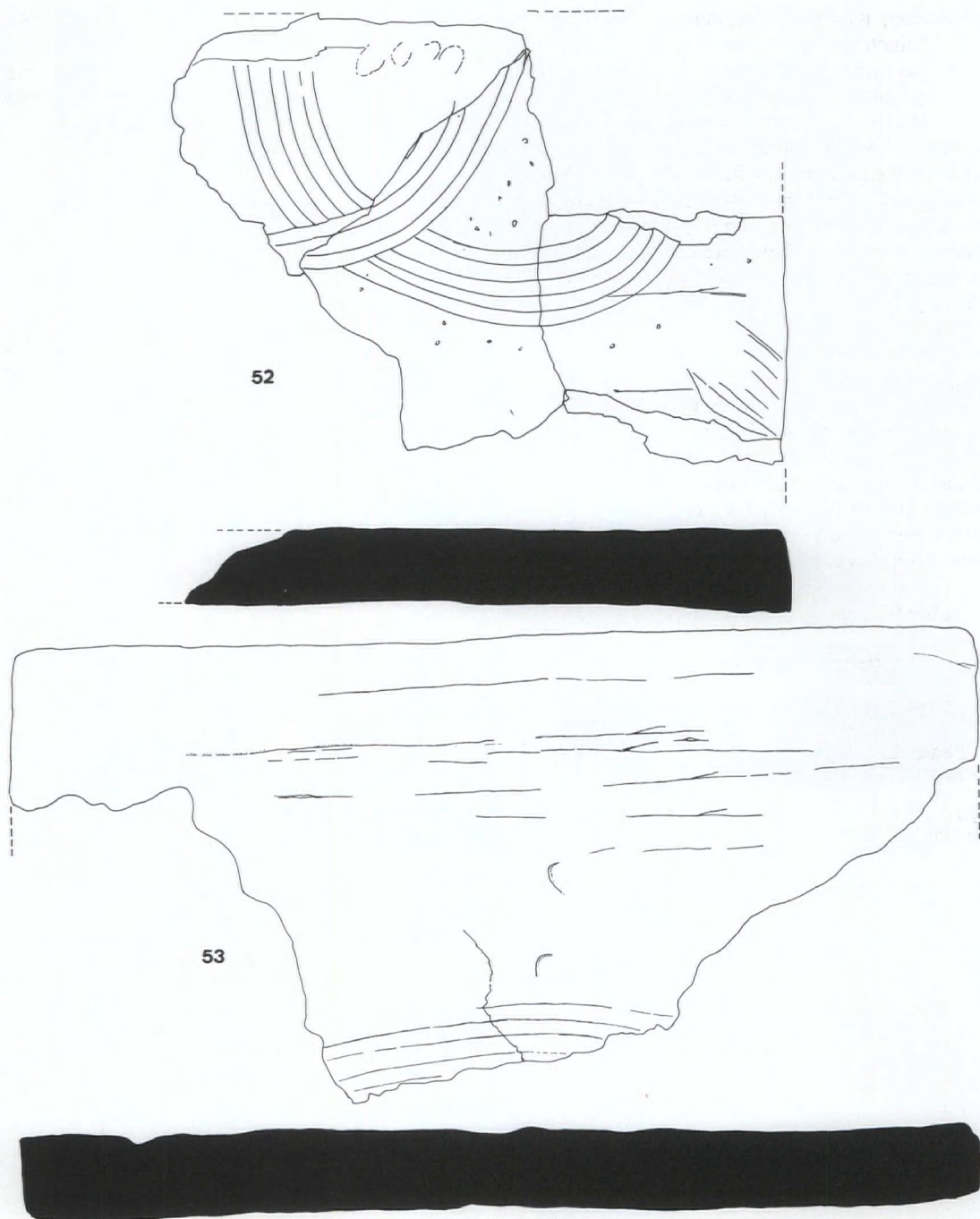


Fig 47. Bricks in shelly fabric, Phase 4 (1:4).

fragments); Kiln 4 (2 fragments). These firebars have distinctive characteristics and residual pieces were also found in Pit 3, layer 1 (2 pieces), Pit 8, layer 1 (2 pieces), all of Phase 6.

Generally speaking, these early bars were squarish in section, from c 350 mm to 470 mm across at the point of maximum size, cigar shaped, varying in length from c 640 mm to 480 mm, with the upper side flat or slightly concave and the remainder convex. They were carefully made in a light brownish buff shelly fabric similar to that of the contemporary pottery, with a consistently regular shape, sharply defined corner angles and with ends neatly squared off. Broken pieces frequently show a line of junction running diagonally through the bar (eg no 1) and breakages occur frequently along this line, suggesting perhaps manufacture in some kind of mould, with one slab of clay having been pushed in on top of another. The bars from Kiln 2 are not a homogenous group and bars were probably moved from kiln to kiln, and new ones were made, as circumstances

required. These neatly-made bars are typical of the La Tène III derived kilns of this period (Elstow, Swan, 1984, 60, 63; Weekley, Jackson and Dix, 1986-7, 58; Camp Hill, Northampton, Shaw 1979, 23 (with references to other sites)).

Illustrated

All from Kiln 2, layer 3.

1. Edges pushed up in a number of places before firing. 7.5YR 4/1 reddish grey. 1871 gm.

2. Different from the others in that there are shallow holes at both ends 200-130 mm deep. One half is 2.5YR 6/4 dull orange and the other 2.5YR 5/2 greyish red, the two halves having received different treatment since breakage. 1871 gm.

3. Unlike the others, not square in section. Little shell visible on surface. 5YR 7/4 dull orange, 2155 gm.

4. 2.5YR 6/4 dull orange, 1021 gm. There are three other firebars like this, all with a great deal of shell temper present, suggesting a group made at the same time.

Table 9. Tiles and Bricks, Phases 4 - 6 (no. of fragments)

	Tegulae	Imbrices	Ridge Tiles	Box flue tiles	Hollow voussoirs	Bricks 24-40mm thick	Over 40mm thick	Misc and flat fragments up to 24mm thick
Phase 4								
Kiln 5	1005	332	2	153	29	97	79	454
Kiln 6	97	68		35	2	21	34	243
Pit 9	97	126		60	4	49	23	369
Pit 17	5	4		10				11
Phase 5								
Kiln 7	131	98		137	5	39	30	190
Pit 1	28	2	1	9		20	5	36
Pit 2	21	19		93	1	35	9	168
Pit 7	8	7		15		11	4	99
Pit 23	16	56	1	21	6	7	5	82
Phase 6								
Pit 3								9
Pit 8	93	60		53	1	15	1	332
Pit 10	21	5		8	1	6		65
Pit 12						1		3
Pit 14	13	13		3	1	1		46
Pit 15	9	3		14				46
Pit 16	17	19		1				105
Pit 18	4							
Pit 19	22	61		7				82
Undifferentiated 4th century								
Pit 13				4		2		8
Pit 24	11	12		11	1		1	55
Pit 25	7	5		3		1		16
Ditch 1	25	20		22		6		58

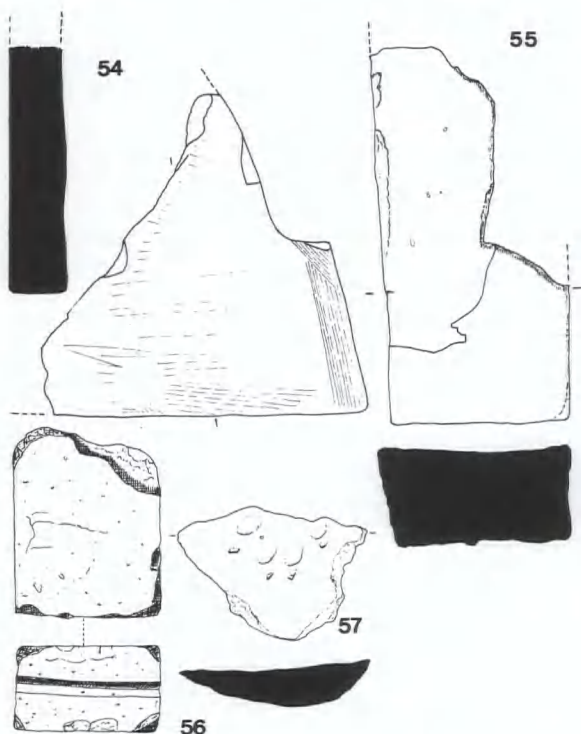


Fig 48. Tiles in shelly fabric (1:4).

Other bar-like kiln furniture

All from Kiln 2, layer 3.

5. Smoothed surfaces, well defined edges. Hole at widest end, 170 mm deep. 5YR 8/3 pale orange. 0.79 kg.

6. Roughly made, edges not sharp and sides not smooth. 5YR8/3 pale orange. 0.9 kg

7. Perhaps a broken version of 6, or the end of a much thicker firebar than 1-4. Roughly made like 6. 5YR 8/3 pale orange.

Clay Plates

8. Flat, irregular but still smoothed over upper surface, roughly rounded off edge. Underside very rough and irregular, many bits of chalk visible. ? rectangular or square, 255 mm one way. 5YR 8/3 pale orange. Four other similar fragments. For similar slabs, possibly used as liners, from Camp Hill, Northampton and elsewhere see Shaw 1979, 24. Kiln 2, layer 3.

9. Similar but thinner plate with curved edge. Carefully smoothed on one side, rough on other. 2.5YR 7/6 orange, 2.5YR light reddish grey blotch. Kiln 3, layer 3.

10. Perhaps a fragment of a thick plate pierced with holes. Smooth one side, rough the other. Examples also from Camp Hill, Northampton (Shaw 1979, 24). 2.5YR 6/4 dull orange. Gully 1.

From Kiln 2, layer 3, two pieces of clay, 600 x 500 mm and 300 x 230 mm, fired grey, smoothed and curved on one side, very irregular on

the other, as if pushed into crevices to fill them up and then smoothed over.

Phase 3

Clay lumps

11. Semi circular piece of clay, smooth underside, finger impressions on outside. Pit 20, layer 1.

Firebars or similar

12. Fragment of bar, rectangular in section, 650 x 360 mm, very abraded. 5YR 7/1 light brownish grey. Pit 6, layer 2.

13. Fragment of small bar, rectangular section, 200 x 140 mm, 5YR 7/6 orange, blotch 5YR 5/1 brownish grey. Pit 6, layer 1.

14. Short bar, 117 mm long, very crudely made. 5YR 7/4 dull orange. Kiln 9, layer 8.

15. Similar bar-like object, angled in middle. Crudely made. 2.5YR 6/1 reddish grey. Kiln 9, layer 8.

Clay plates

16. Fragment of plate pierced by holes, similar to 10. Ridges have formed where the clay has been pushed through. Abraded. 5YR6/1 brownish grey. Kiln 9, layer 3.

17. ? semi-circular clay plate, neatly made and smoothed off on upper surface, rough on underside. Flange along underside of curved edge. 2.5YR 7/6 orange. Kiln 9, layer 3.

18. Similar plate, 2.5YR 7/6 orange with blotch 2.5YR 6/2 greyish red. Area of Kiln 1.

19. Similar, but straight flanged edge. 2.5YR 7/2 light reddish grey. Kiln 1, layer 2. Nine similar flanged fragments from layer 2; two flat plate fragments from layer 1 and seven from layer 3. All are irregular but smoother one side than the other.

20. Plate with hole 2.5YR 7/2 light reddish grey. Kiln 1, layer 1.

21. Similar, Kiln 1, layer 3. Another from layer 2 plus two more from the area of Kiln 1.

Other

22. Flat, with lightly scored lines and straight, smoothed off edge. 5YR 7/4 dull orange, grey core; not abraded as other kiln furniture fragments are and therefore some other interpretation may be required. Kiln 9, layer 2.

23. Very thick, more so than any other pot found on the site. Carefully finished off on top and bottom, lightly scored on outside. Thick grey core, 5YR 6/4 dull orange. Not abraded. Pit 6, layer 3.

Phase 4

24. Complete, wheel thrown piece of kiln furniture in non-Harold fabric 180 mm high, 115 mm internal diameter at top. 7.5YR6/1 brownish grey, three holes pierced through body just above base; one hole has partial plug of Harold potting clay with shell, fired, 5YR 8/4 pale orange. Weight 1701 gm. Kiln 5, layer 2.

25. Similar, but only one hole near base. Height 190 mm, internal

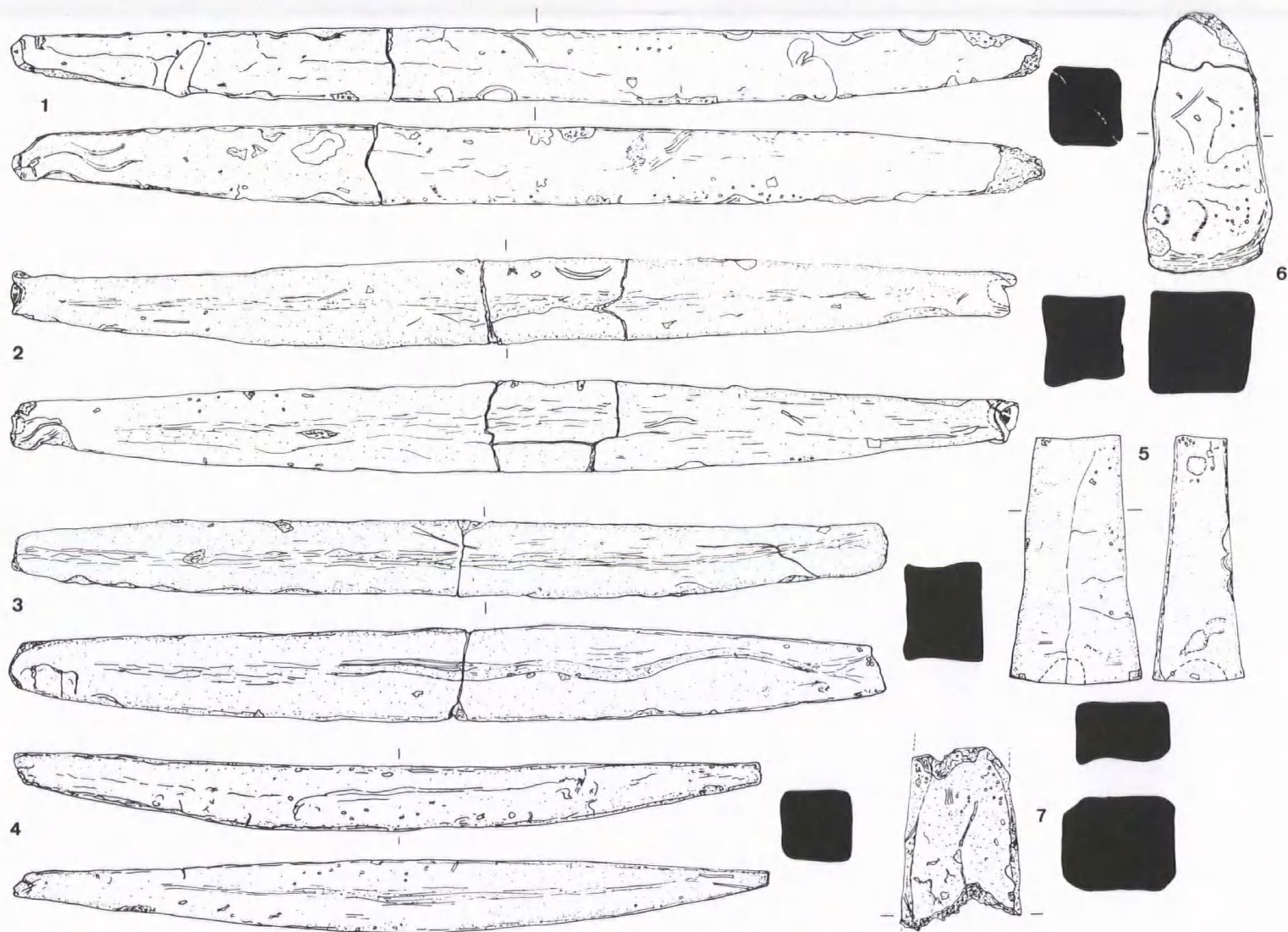


Fig 49. Kiln furniture, Phase 2 (1:4).

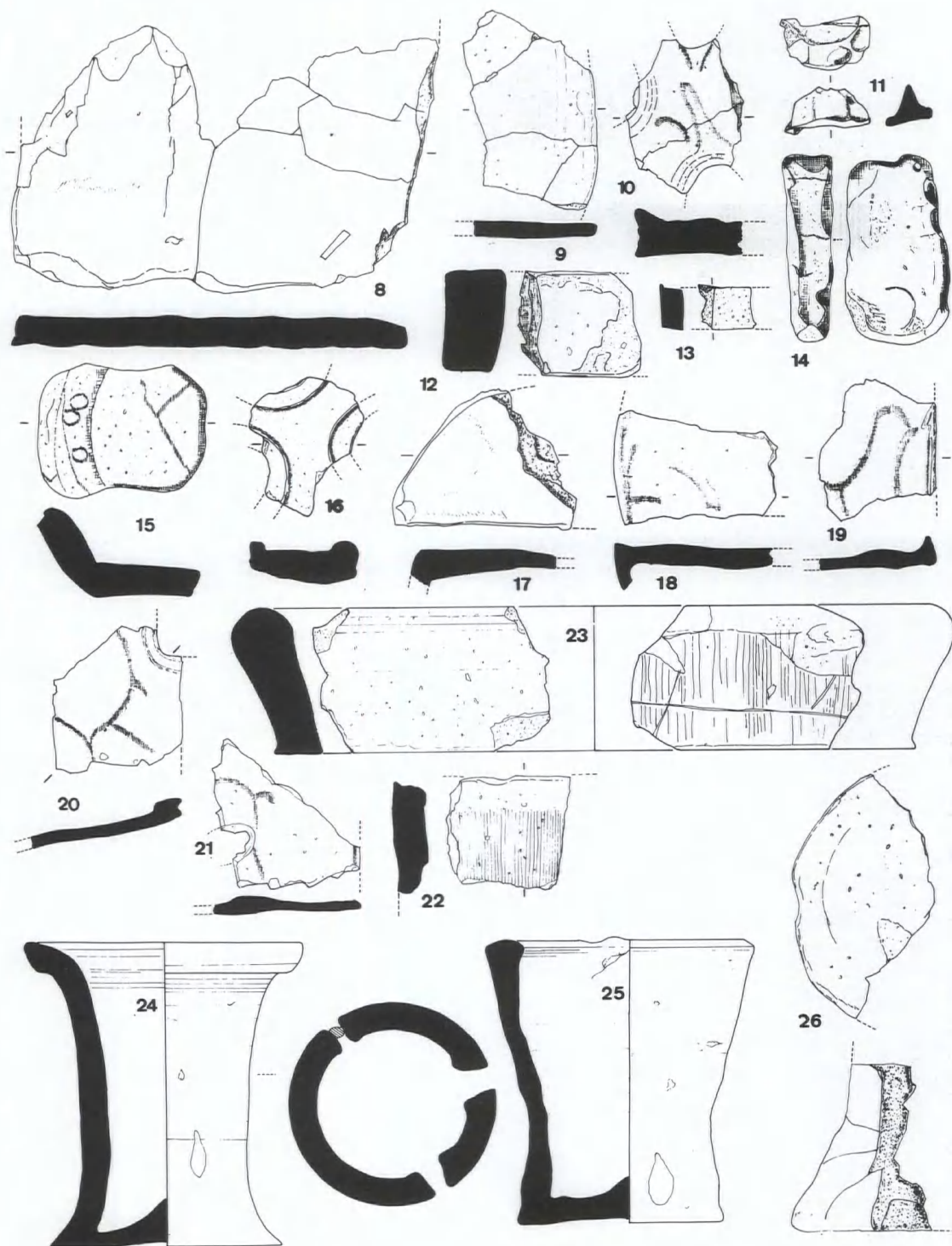


Fig 50. Kiln furniture and other clay objects (1:4).

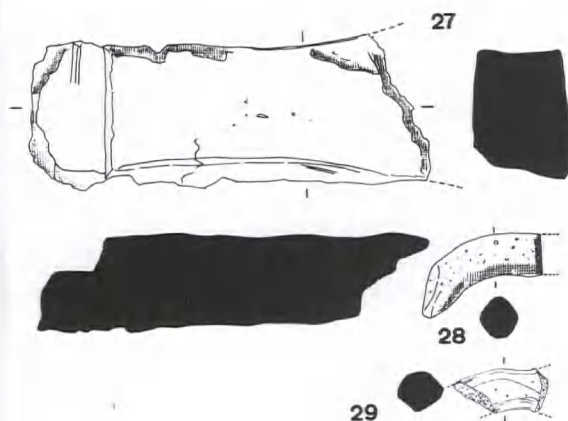


Fig 51. Clay objects (no 27, 1:2; nos 28, 29, 1:4)

diameter at top 112 mm. Weight 1814 gm. Kiln 5, layer 2.

Similar to kiln-props (which probably sat on the floor of the kiln and in this case supported saggars) found in 15th-16th century Cistercian ware kilns at Wrenthorpe, West Yorkshire (information from Ms Anna Slowikowski, Bedfordshire Archaeology Service). Despite the considerable difference in period these objects, which were presumably brought into the site from elsewhere, could well have fulfilled much the same function as supports at Harrold.

Phase 5

26. Fragment of portable pedestal, 900 mm base radius. 5YR 7/4 dull orange. Pit 23, layer 6, probably residual. Again like Camp Hill, Northampton, Shaw 1979, 23; also Kettering, Foster 1986, 173, and Wellingborough, Foster *et al* 1977, 64.

Also a few shapeless lumps of burnt clay from Pit 2, layers 1 and 3, Pit 23, layers 1,3 and 4, Kiln 7, layer 2.

Phase 6

27. Bar like object, stepped at the narrow end, sides curving away from this. Rough, assymetrical, abraded. 10R 6/6 reddish orange. Pit 10, layer 2.

Surface finds

28. Small roll of clay, crudely fashioned. 10R 4/1 dark reddish grey/2.5YR 7/6 orange. Surface find, 1971.

29. Perhaps another, or a fragment of a handle. Roughly made, 2.5YR 6/6 orange, grey core. Trench 1.

THE COINS

(identifications by Mr R A G Carson, Department

of Coins and Medals, British Museum).

Stratified

Phase 5

1. Claudius II probably, 268-70 AD. Radiate coin, holed. Pit 7, layer 1.

Phase 6

2. Constantine I, 315-6 AD. Rev: Soli Invicto Comiti. Arles 62, RIC VII. Pit 10, layer 2.

3. Uncertain emperor, but late 4th century. Pit 12, layer 1.

4. Constantius II or Constans, 341-46 AD. Rev: two Victories. Mint uncertain, *cf* LRBC Pl I, 140. Pit 14, layer 1.

5. Helena, 337-41 AD. Rev: Pax Publica. TRP, LRBC I, 119. Pit 14, layer 1

6. Uncertain emperor but *c* 390 AD. Rev: probably Victoria Auggg. Pit 14, layer 4.

7. Uncertain emperor but probably Theodosian, late 4th century. Pit 14, layer 5.

8. Constantius II, 330-35 AD. Rev: Gloria Exercitus, two standards. Mint uncertain, *cf* LRBC Pl I, 60. Pit 15, layer 2.

9. Allectus, 293-96 AD. Rev: Virtus Aug, galley. QL(London). RIC 55. Pit 16, layer 1.

10. Valentinian I or Valens, 364-75 AD. Rev: Securitas Reipublicae. Mint uncertain, *cf* LRBC Pl III, 527. Pit 16, layer 1.

11. Constantius II, 337-41 AD. Rev: Gloria Exercitus, one standard. TRP, LRBC I, 100. Pit 16, layer 4.

12. Constantius II, 337-41 AD. Rev: Gloria Exercitus, one standard. Mint uncertain, *cf* LRBC pl I, 1028. Pit 19, layer 1.

13. Valentinian I, 364-67 AD. Rev: Securitas Reipublicae. Constantinople, LRBC II, 481. Pit 19, layer 1.

14. Valens, 364-67 AD. Rev: Securitas Reipublicae. Constantinople, LRBC II, 480. Pit 19, layer 1.

15. Valens, 375-8 AD. Rev: Securitas Reipublicae. Constantinople, LRBC II, 535. Pit 19, layer 1.

16. Valentinian I or Valens, fragment, 364-75 AD. Rev: Gloria Romanorum. Mint uncertain, *cf* LRBC Pl III, 338. Pit 19, layer 1.

17. Gratian, 367-75 AD. Rev: Gloria Novi Saeculi. Arles mint. Pit 19, layer 1.

18. Gratian, 367-75 AD. Rev probably: Gloria Novi Saeculi. Pit 19, layer 1.

19. Gratian, 367-75 AD. Rev: Gloria Novi Saeculi. Constantinople, LRBC II, 503. Pit 19, layer 1.

20. Arcadius probably, *c* 390 AD. Rev: Victoria Auggg. Mint uncertain, *cf* LRBC pl IV, 389. Pit 19, layer 1.

21. Uncertain emperor, but probably Theodosian, later 4th century. Pit 19, layer 1.

From the topsoil (brief identifications only)

Trench 1 Constantius or Constans (two), 341-46 AD; Valentinian I or Valens, 364-75 AD; Theodosius I, *c* 390 AD; uncertain late 4th century.

Trench 6 Constantinian, uncertain emperor, 337-41 AD.

Trench 7 Tetricus 1, 270-73 AD; ? Constantine 1, 320-24 AD; Constantine II as Caesar, 330-35 AD; Constantius as Caesar, 335-37 AD; Valentinian 1, 364-75 AD; Valentinian 1 or Valens, 364-75 AD; Theodosius 1, c 390 AD; uncertain late 4th century (two); irregular Ae minim, uncertain prototype, late 4th century.

Trench 9 Irregular, Constantius II, c 355 AD; irregular Ae minim, imitation Fel Temp Reparatio type, 350-60 AD.

General coin list

During the excavations various people brought in coins from the surface of the field for identification. The following list represents a summary of all coins known to have been found at this site up to December 1971. The dates indicate the dates of the coin issues represented.

Elagabalus	220	1
Postumus	260-68	1
Claudius II	268-270	1
Divus Claudius II	268-270	1
Tetricus 1	270-273	1
Tetricus II	270-273	2
Late 3rd century radiate imitations	c 275	5
Allectus	293-296	1
Constantine 1 as Augustus	315-335	5
Urbs Roma	330-335	2
Constantinopolis	324-30	2
Constantinopolis copies	330-340	2
Crispus	322-323	2
Constantine II as Caesar	330-335	7
Constans as Augustus	341-346	1
Constantius II as Caesar	330-337	6
Constantius II as Augustus	337-360	5
Helena	337-341	1
Copies, Fel Temp Reparatio	350-360	5
Uncertain Constantinian (a)	320-1	2
(b)	330-41	7
Valentinian 1	364-375	4
Valens	364-375	5
Valentinian 1 or Valens	364-375	10
Gratian	367-375	7
Theodosius 1	390-395	3
Arcadius	c 390-395	3
Honorius	395-402	1
Theodosian	c 390	13
'Late 4th century'		5
'4th century'		11
'3rd - 4th century'		7

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SMALL FINDS (Figs 52 - 54)

Copper Alloy

1. Tiny brooch, crudely repaired by having had a small iron pin fixed through the top of the bow. Surface find.
2. Brooch pin. Topsoil. Trench 9.
3. Possibly a thin brooch bow. Topsoil. Trench 7.
4. Bracelet. Pit 8, layer 1, Phase 6.

5. Snake head bracelet. Pit 17, layer 1, Phase 4.

6. Bracelet. Pit 15, layer 1, Phase 6.

7. Toilet implement. Kiln 9, layer 6, Phase 3.

8. Suspension device for a bowl? Pit 19, layer 5, Phase 6.

9. Stud. Surface find.

10. Possibly part of a mirror. One straight edge, polished surface, metal 2mm thick. Kiln 9, layer 3, Phase 3.

Unillustrated

(a) Fragments of twisted wire, probably bits of bracelets; from Pit 9, layer 1, Phase 4; and Trench 7, topsoil.

(b) Small piece of sheet metal. Trench 7, topsoil.

(c) Small fragments of strip. Pit 16, layer 4, Phase 6.

(d) Small pieces of ring. Trench 6, topsoil.

(e) Rod, 8mm long. Trench 4, topsoil.

Iron

11. Spearhead. Pit 16, layer 1, Phase 6.

12. Potter's tool. Trench 9, topsoil.

13. As 12. Trench 7, topsoil.

14. Another potter's tool? Trench 4, topsoil.

15. Wedge. Pit 16, layer 1, Phase 6.

16. Bit. Pit 9, layer 4, Phase 4.

17. Stylus. Pit 8, layer 4, Phase 6.

18. Uncertain. Trench 7, topsoil.

19. Bar with loop at end. Pit 2, layer 1, Phase 5.

20. Another. Pit 16, layer 1, Phase 6.

21. Heavy nail, rectangular head and shank. Trench 8, topsoil. Similar from Pit 14, layer 3, Phase 6 and Trench 1, topsoil.

22. Heavy nail, rectangular head, square shank. Pit 8, layer 1, Phase 6 (two more from layer 1). A common type. Similar from Phase 3 (Kiln 9, layer 2; Pit 6, layer 2; Pit 21, layer 2; Pit 22, layer 3); from Phase 4, Pit 9, layer 1; from Phase 5, Kiln 7, layer 1, Pit 2, layer 1 (two), Pit 7, layers 1 and 2; from Phase 6, Pit 19, layer 5, Pit 14, layer 3. Also Ditch 1, layer 1 (4th century) and topsoil, Trenches 1 and 8.

23. Medium nail, round head, square shank. Pit 17, layer 1, Phase 4 (also another from this layer). Another common type: from Phase 4, Kiln 6, layer 1; from Phase 5, Pit 7, layers 1 and 2; from Phase 6, Pit 8, layer 1 (two), Pit 14, layer 5, Pit 16, layer 3; also topsoil, Trenches 1 and 4.

24. Medium nail, rectangular head and shank. Trench 8, topsoil. Another from Pit 15, layer 2, Phase 6.

25. Nail, large round head. Pit 9, layer 1, Phase 4.

26. Short nail, round head, square shank. Pit 8, layer 4, Phase 6.

27. Short nail, rectangular head, square shank. Trench 9, topsoil. Also from Pit 21, layer 2, Phase 3; and Kiln 6, layer 1, and Pit 17, layer 1, Phase 4; and Trench 8, topsoil.

28. Short nail, round head, square shank. Trench 1, topsoil.

29. Hob nail. Trench 6, topsoil.

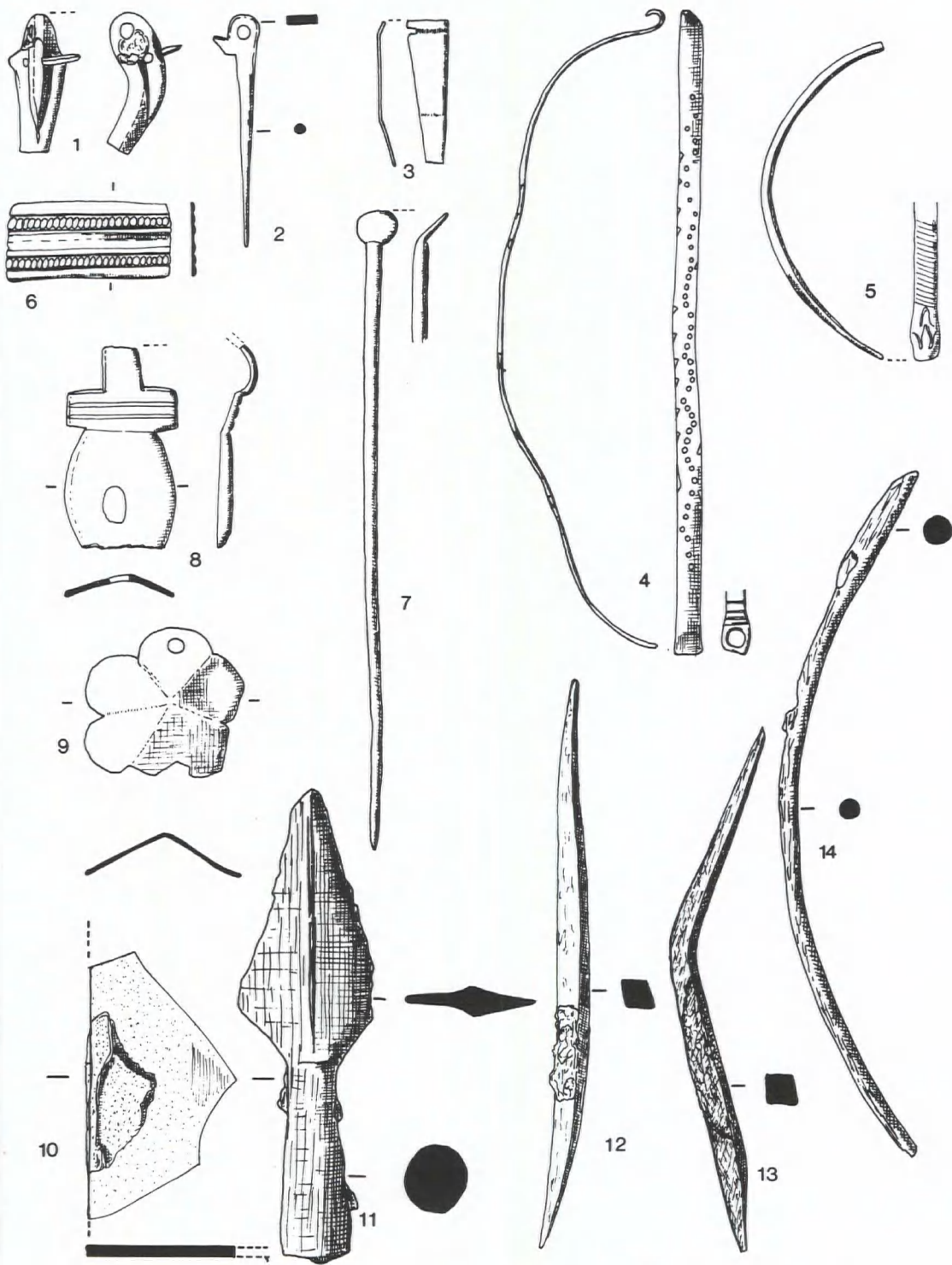


Fig 52. Small finds. Nos 1-10, copper alloy; nos 11-14, iron. All 1:1 except no 11, which is 1:2.



Fig 53. Small finds. Nos 15-29, iron; 30-33, glass; 34, bone; 35-36, tile; 37, chalk. Nos 17, 19, 21-24, 27, 30-32, 35-36, 1:2; remainder, 1:1.

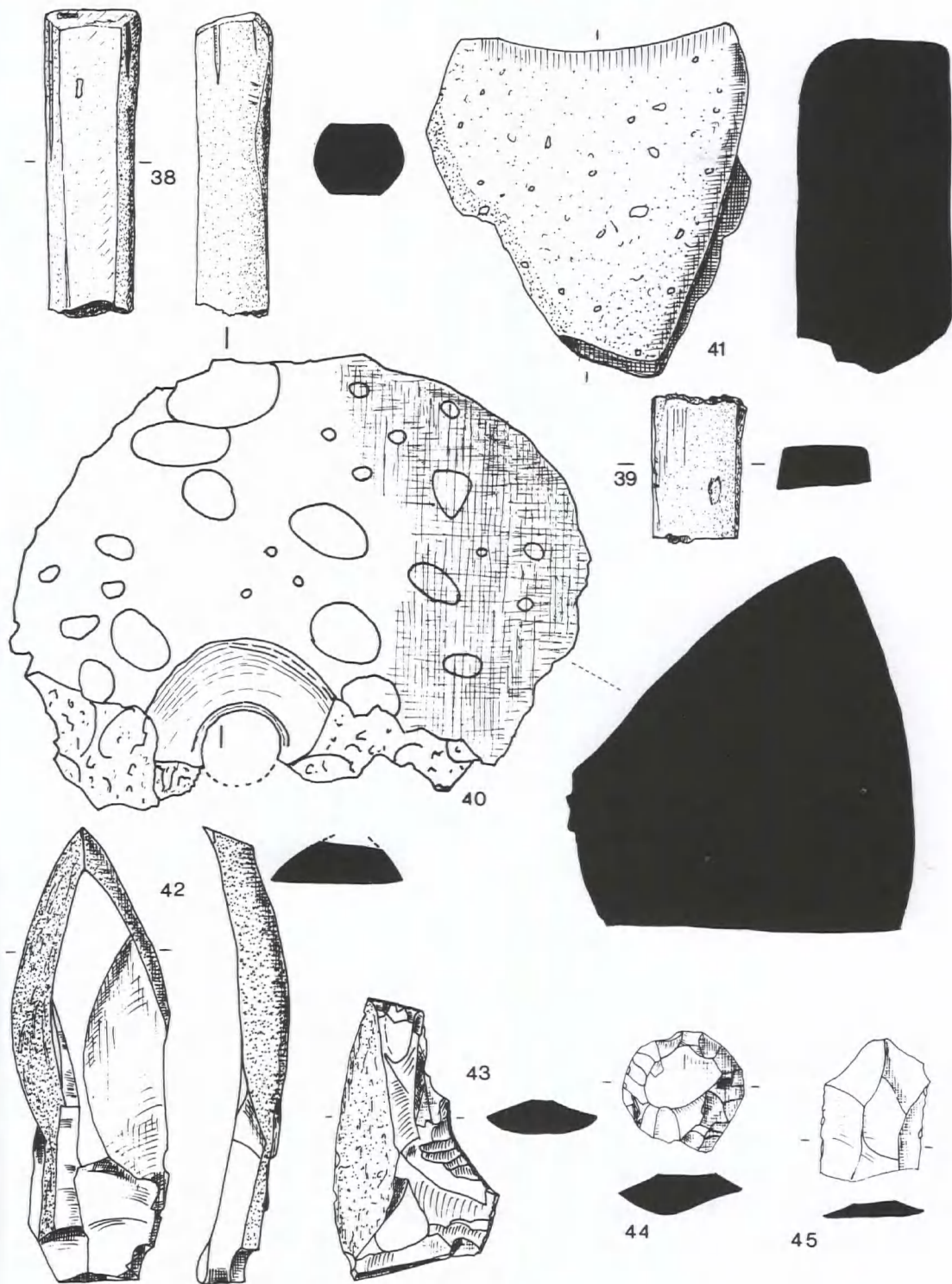


Fig 54. Small finds. Nos 38-41, stone (1:2); nos 42-45, flint (1:1).

Glass

30. Upper part of square bottle, blue green glass. Pit 17, layer 1, Phase 4.

31. Handle, from possibly the same bottle. Pit 17, layer 1, Phase 4.

32. Rim, pale green glass. Trench 4, topsoil.

33. Bead, green glass. Trench 7, topsoil.

Unillustrated

(a) Pale green glass fragment. Pit 22, layer 3, Phase 3.

(b) Greenish glass fragment. Pit 9, layer 9, Phase 4.

(c) Flaky greenish glass fragment. Pit 16, layer 1, Phase 6.

(d) Pale green glass fragment. Pit 19, layer 1, Phase 6.

Bone

34. Pin. Trench 8, topsoil.

Clay

35. Large quoit cut from tile. Kiln 5, layer 1.

36. Smaller quoit, also from a tile. Ditch 1, layer 3 (4th century). Another of similar size from this context has scoring on one side and has been cut from a flue tile.

Stone

37. Spindle whorl of chalk. Trench 9, topsoil.

38. Hone. Pit 7, layer 1, Phase 5. Mr S E Ellis of the British Museum (Natural History) writes: Fine-grained buff-grey sandy or silty limestone with visible shell fragments, showing lustre-mottling (due to large plates of calcite including smaller quartz-grains). It contains abundant organic remains, mainly echinoderm plates and also some ostracod tests. It is probably from the 'Kentish Rag' (sandy limestone of the Hythe Beds) of East Kent. This is known to have been worked and exported from Kent in Roman times.

39. Hone. Pit 2, layer 1, Phase 5. Mr Ellis writes: Laminated buff sandy limestone. This resembles the last excepting in being of slightly coarser grain and in not showing lustre mottling because the calcite is about as fine-grained as the quartz. It also is probably from the Kentish Rag.

40. Quern, puddingstone. Pit 7, layer 1, Phase 5.

41. Quern, fragment, millstone grit. Pit 2, layer 4, Phase 5.

Flint

42. Core rejuvenation flake. Pit 10, layer 2, Phase 6.

43. Scraper. Pit 15, layer 2, Phase 6.

44. Circular scraper. Surface find.

45. Flake. Kiln 5, layer 1, Phase 4.

Other flint flakes came from: Phase 1, Pit 11, 4; Phase 3, Pit 6, layer 4, 1; Pit 20, layer 1, 1; Phase 4, Pit 9, layer 9, 1; Phase 5, Pit 2, layer 6, 1; Phase 6, Pit 10, layer 1, 1; layer 2, 2; Pit 15, layer 2, 1. Also from the topsoil, Trench 1, 3; Trench 6, 1; Trench 9, 1; and surface finds from the area of the site

generally, 8.

ANIMAL BONES

Cristine Orr

Most of the features contained animal bones; 945 fragments were identified. They were mostly of cow and sheep/goat (more of cow) and all were very fragmentary. There were a few bones of pig, horse, deer, dog, hare and chicken. Some of the bones were chopped, chewed or burnt. A list of the identifications has been deposited with the finds.

GEOLOGY

R G Clements

Specimens of shell-gritted pottery from the site were submitted to Dr R G Clements of the Department of Geology, University of Leicester, together with some of the yellow sandy marl and grey mudstone which seemed to have been the objective of the large pits so commonly encountered on the site.

The aim was to establish whether the material from which the pottery was made was indeed the material from the pits; and the geological identification of the material. Dr Clements report is as follows.

1. The Sherds

Three specimens were provided:-

Specimen 1 (from Pit 25, layer 1) contained quite abundant indeterminate bivalve(?) shell fragments; scattered terebratulid shell fragments; quartz sand grains (common); fine-grained structureless limestone fragments; small nodular ferruginous (brown, limonitic) lumps - after pyrite(?).

Specimen 2 (from Pit 25, layer 1) contained regular echinoid spines (few), with open stereom; ophiuroid (?) ossicle (one), with open stereom; shell fragments, bivalve with foliate (?) structure - oysters (?) (abundant); shell fragments, ribbed bivalve (?) (few); terebratulid brachiopod shell fragments (few), punctae open; limestone fragments, fine-grained, with irregular cavities; scattered quartz sand grains.

Specimen 3 (from Pit 25, Layer 4) contained abundant indeterminate bivalve shell fragments; fine-grained limestone lumps/fragments (common); terebratulid brachiopod shell fragments (few); quartz sand grains (common); ophiuroid (?) ossicle

(one), with open stereom; ribbed shell fragment, indeterminate (one).

The three sherds are not identical (differing in colour, proportions of components, etc.) but the mostly calcareous, fragmentary, components in each are sufficiently similar to all have come from the same single or multiple geological source.

2. The Samples

(a) A single sample of yellow sandy marl was provided, from Pit 1, collected from immediately above the grey mudstone, and beneath a limestone unit. The material consisted of a creamy buff shelly marl with small limestone fragments. The sample was prepared using hydrogen peroxide and sodium carbonate and wet sieved to greater than or equal to 850 microns, and between 850 and 125 microns. The resulting residues were dried and examined under a binocular microscope. The following components were found:

Rock fragments: fine-grained (micritic) limestone clasts/fragments; fine-grained secondary (?) granular limestone lumps, with irregular cavities; brownish, essentially non-calcareous fragments, sideritic (?), of uncertain nature.

Fossils: ostracods (common); Foraminifera (common); Bivalvia, shell fragments including: oysters, most abundant, *Nanogyra* (?) sp.; various ornamented (ribbed) pteriomorphs, most abundant of which are *Meleagrinella* cf. *echinata* (Smith); Echinodermata - all show good stereom structure, with spaces unfilled: echinoids - regular, spines and plates (common); ophiuroids (cf. *Ophiomusium* sp.) - mostly lateral shields, some vertebrae (very common); stellaroid, one *Metopaster*-like marginal; holothurian - one sclerite; Brachiopoda: terebratulid shell fragments, with open punctae (common); Vertebrata: scattered fish scales and a vertebral centrum; serpulid worm tubes (few).

The nature of the limestone clasts, and of the main fragmentary fossils, is consistent with this being the source of the material in the sherds; note in particular the abundant oyster fragments, and the occurrence of echinoderm and terebratulid fragments (both the latter being distinctly well-preserved).

Geological age of this sample (and of the material used in the sherds)

The material is certainly not from the Upper Estuarine Series. The occurrence of terebratulids,

ophiuroids, and serpulids (and probably the Foraminifera) precludes this, as does the nature of the oysters (*Nanogyra* (?) sp. rather than *Praeexogyra* sp.)

With such fragmentary material (and the accompanying uncertainty of the identifications), it is difficult to be certain as to the geological age of the material. (Identification of the Foraminifera and of the Ostracoda might provide further information). However, if the identification of *Meleagrinella echinata* (Smith) is correct, then this would almost certainly make the material Cornbrash (Upper Bathonian/Lower Callovian, Middle Jurassic) (and thus the reportedly underlying grey mudstone, the Blisworth Clay). The rest of the fauna fits with this. If this material had been from the basal Great Oolite (= Blisworth) Limestone, resting on what would then have been topmost Upper Estuarine Series mudstone, I would have expected *Praeexogyra* not *Nanogyra* (?), and rhynchonellid brachiopods, not terebratulids. Douglas and Arkell (1932, *Quarterly Journal of the Geological Society of London*, vol. 88, p 112-170) record Cornbrash in two pits three-quarters of a mile north of Harrold.

In short, the material most likely (but *not* certainly) came from the Cornbrash.

(b) A sample of mudstone, medium dark greyish brown, resinous and mottled, from the same Pit. It has a blocky but very fractured appearance, and contains much fusain (charcoal) in blocks up to 20mm in maximum dimension scattered throughout. There are many pale, creamy, irregular veins and stringers (one or two millimetres wide) cutting the rock. It has a distinctly greasy feel, and is non-calcareous. No shelly or other fossils were seen.

The colour, greasy feel, and other characters of the rock are consistent with it being Blisworth Clay, and not with it being from the Upper Estuarine Series. This adds independent support to the conclusion reached on the basis of the study of the sample of sandy marl described above.

PETROLOGICAL REPORT ON CERAMICS FROM HARROLD

Ann Woods

Twelve sherds were submitted for examination in thin section. Also two clay samples from the site were made into briquettes, fired to 750° C examined in thin section.



Plate 13. Photomicrograph of Pottery Sample 4, a typical example of Group 1 fabric. The two rounded lumps on the left are clay pellets similar to Group 5. x20, XPL.

The sherds and clay samples were:

- Sample 1: sherd from Kiln 2, layer 3, Phase 2
- Sample 2: sherd from Kiln 2, layer 3, Phase 2
- Sample 3: sherd from Kiln 2, layer 3, Phase 2
- Sample 4: sherd from Pit 23, layer 3, Phase 5
- Sample 5: sherd from Kiln 5, layer 1, Phase 4
- Sample 6: tile fragment from Kiln 5, layer 1, Phase 4
- Sample 7: sherd from Kiln 5, layer 1, Phase 4
- Sample 8: sherd from Pit 20, layer 1, Phase 3
- Sample 9: sherd from Kiln 5, layer 1, Phase 4
- Sample 10: yellow marl, Pit 1; Clay Sample 1
- Sample 11: sherd from Pit 23, layer 3, Phase 5
- Sample 12: sherd from Gully 1, Phase 2
- Sample 13: sherd from Pit 11, layer 2, Phase 1
- Sample 14: blue mudstone, Pit 1; Clay Sample 2

Examination of the thin sections under a polarizing microscope enabled the fabrics to be divided into 5 main groups:

GROUP 1 : FOSSIL MATERIAL:

Samples 2-10

This fabric contains c 25-30% fossil material (shell, echinoderm and ostracod fragments etc., see geological report above) up to 5 mm in size in an optically active matrix. Scattered angular quartz grains and very occasional rounded micritized

limestone fragments, up to 3 mm in size, are also present. Rounded clay pellets, identical in composition to Group 5 (No 14, Clay Sample 2, blue mudstone) are also a feature of the fabric (see Pl 13).

Clay Sample 1 (No 10, yellow marl) is virtually identical to the other members of this group, but its inclusion content is at the top of the range (30%), making it slightly coarser than most members of the group.

GROUP 1a: FOSSIL MATERIAL AND CRYSTALLINE CALCITE:

Sample 11 (Pl 14)

This fabric differs only from Group 1 in that it contains c 1-2% crystalline calcite.

GROUP 2: FOSSIL MATERIAL AND GROG:

Sample 1 (Pl 15)

The matrix of this fabric is similar to that of the Group 1 samples but contains more small quartz grains. Fossil fragments and shelly grog (max. 2 mm in size) constitute c 15% of the fabric.

GROUP 3: GROG:

Sample 12 (Pl 16)

This fabric contains grog and quartz in an optically active, micaceous matrix which also exhibits abundant small (0.1 mm) quartz. The grog, which is similar in composition to the surrounding matrix,



Plate 14. Photomicrograph of Pottery Sample 11. x20, XPL. C denotes calcitic inclusions.

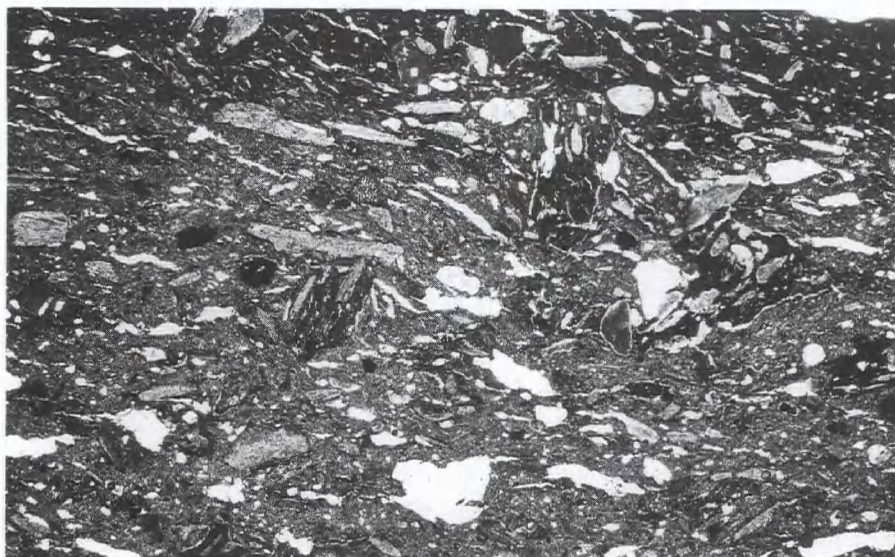


Plate 15. Photomicrograph of Pottery Sample 1. Group 2. x20, PPL. Three examples of shelly grog can be seen in the centre and to the right of the centre.

occurs up to 1.5 mm in length and constitutes *c* 10% of the fabric. The quartz grains are predominantly subrounded and rounded and range between 0.4 and 0.8 mm. A few limestone fragments and feldspars, in the same size range, are also present. These quartz etc. inclusions give the fabric a bimodal appearance and, although not plentiful (*c* 7%), are likely to have been added along with the grog. A few lumps of fine clay, similar to 14 (Clay Sample 2), are also present. A number of voids, some containing traces of carbonized organic matter, are also present, indicating the addition of vegetal material.

GROUP 4: CALCAREOUS INCLUSIONS AND GROG

Sample 13 (Pl 17)

This fabric contains limestone and fossil fragments and some grog in an optically active, slightly micaceous matrix which also exhibits some small (0.5mm) quartz and (?) glauconite fragments. The usual range of fossil fragments is found, constituting *c* 7% of the fabric; the grog, most of which contains shell fragments, makes up a further 5%. Several larger quartz grains, some of which are polycrystalline, are also present, as are some large ferruginous clay pellets. The largest inclusion is

1.25 mm in length but most are smaller (mean: 0.6 mm) as is consistent with a relatively thin-walled, wheel-thrown vessel.

GROUP 5: NO INCLUSIONS:

Sample 14 (Pl 18)

This clay sample was dark black in colour owing to a high organic content which took a lengthy period to burn out at 750° C; several large lumps of carbonized material were also present. The sample fired to a buff/pale yellow colour with occasional ferruginous streaks and concretions and looks 'fibrous' when viewed in thin section under crossed polars. There are almost no inclusions, though very occasional small (0.1 mm) quartz grains can be seen (*c* 1/cm²). The sample is identical with the rounded clay lumps found in some of the sherds (eg No. 4) and illustrated in Pl 13.

TECHNOLOGY OF THE ASSEMBLAGE

Tangential thin sections were made of Samples 2 and 3 (both large jars of Phase 2) in order to attempt to determine if the vessels were hand-made or wheel-thrown. Unfortunately, no positive evidence was forthcoming for either vessel as the high inclusion content probably prevented the potentially

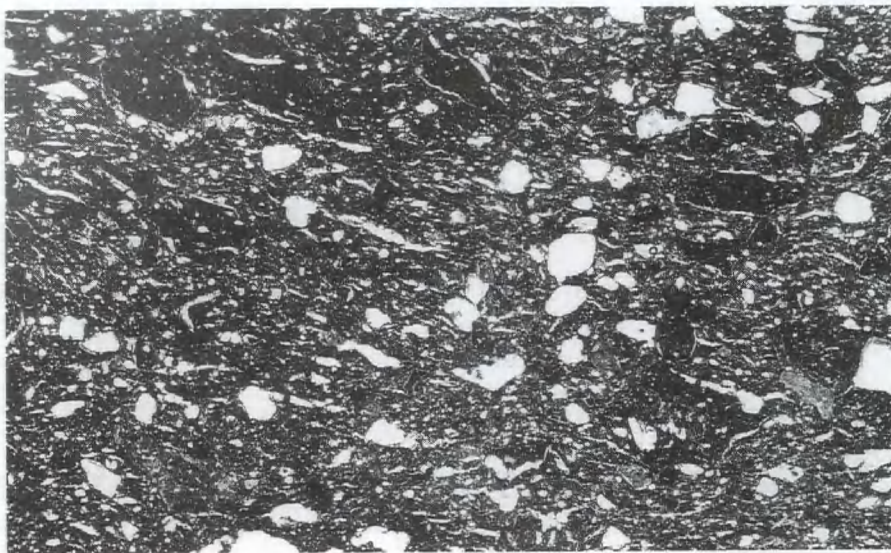


Plate 16. Photomicrograph of Pottery Sample 12. Group 3. x20, PPL. Many of the grog fragments present are darker than the matrix and are surrounded by shrinkage voids.

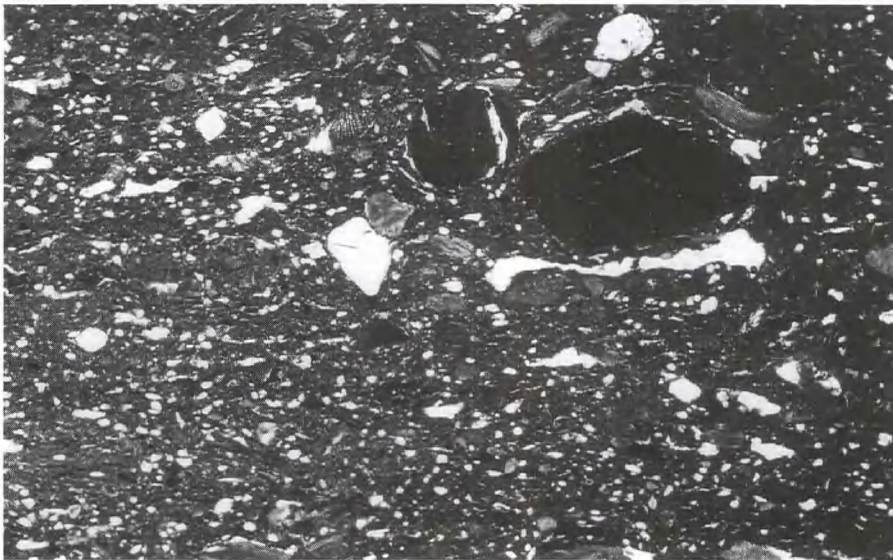


Plate 17. Photomicrograph of Pottery Sample 13. Group 4. x20, PPL. The finest fabric. Two ferruginous clay pellets are illustrated.

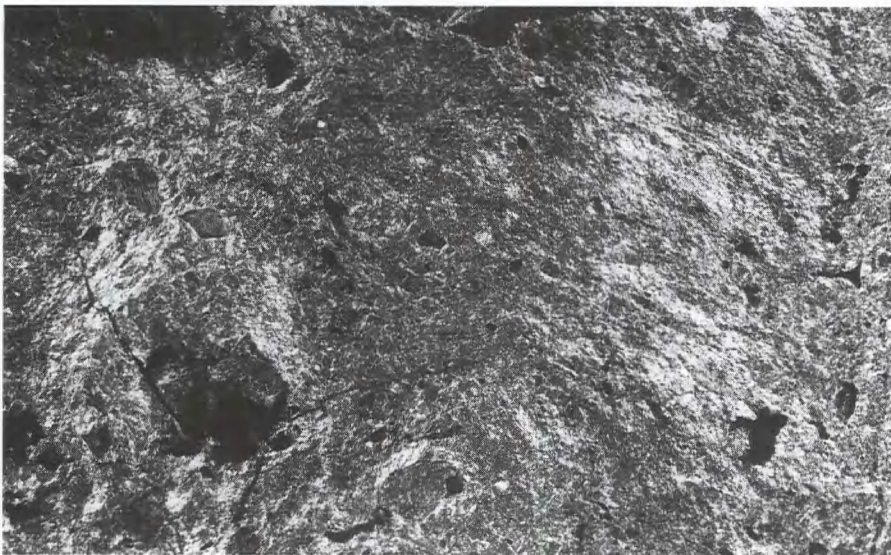


Plate 18. Photomicrograph of Pottery Clay Sample 2, blue mudstone. x20, PPL.

useful shell and other elongated inclusions from taking up a diagnostic alignment.

In the dry state, Clay Sample 1 (10) was a yellow colour with grey streaks and turned to an orangey red, similar to Samples 8 and 9, when fired to 750°. The high calcareous content resulted in post-firing disintegration of the briquettes as a result of lime blowing; as there is no trace of salt in any of the sherds examined, the use of a low firing temperature is indicated. When wet, the clay was extremely plastic and sticky: no attempt was made to throw a vessel on the wheel but the clay was virtually unworkable by hand, suggesting that some other method rather than the usual way of reducing plasticity (ie addition of non-clay opening materials or temper) must have been employed. The presence of lumps similar to Clay Sample 2 (14) may suggest that, if Clay Sample 1 were being used for the vessels, it may have been 'diluted' by mixing with the naturally extremely clean Clay Sample 2. The lighter fired colour of some of the vessels (eg Nos 4, 6, 11) may be a result of such mixing. Element analysis may be more useful than thin sections in solving this problem.

DISCUSSION

Pottery in the Belgic style was current in the Ouse valley during the first half of the first century AD and there is evidence for its manufacture there (Simco 1973; for early pottery manufacture at Bromham, Tilson 1973; possibly at Elstow, Dring 1971). Whether the earliest pottery at Harrold was pre- or post-Conquest in date is impossible to say.

The earliest pottery kilns at Harrold, however, come after the Roman conquest. These kilns take their place among the increasing number of kilns of La Tène III type making Belgic pottery now known in the Nene and Ouse valleys in the mid- to late 1st century. No doubt the advance of the Roman army and its requirements for good quality kitchen wares had something to do with the inception of these kiln sites and for the developing technology they represented (Swan, 1984, 57), but expanding opportunities for trade within an increasingly monetized economy, in an area known now to have carried a substantial population, is likely to have been an important factor also.

Most of the kiln sites which began now did not outlast the turn of the 1st and 2nd centuries, but Harrold survived to become a significant regional manufacturing centre for coarse kitchen wares during the 2nd century, establishing a definite place for itself in the valley of the Ouse and its

tributaries. The reason for the success of the Harrold industry would appear to reside in its location at a place where excellent raw material could be easily obtained, linked with its position in the Ouse valley close to the river, with its possibilities for water transport (and also relatively easy transport by land along the line of the river valley). The Roman road running northwards to Ircchester enabled its products to find a market there, although in general the penetration of Harrold wares in the Upper Nene valley was restricted by the presence there of a thriving coarse pottery industry based on sandy wares (Marney, 1989, 59). Also the proximity of the Harrold site to the ridge separating the valleys of the Ouse and Nene, which is covered with Oxford clay and carries substantial areas of woodland now (Fig 1), is known to have done so in the Middle Ages (Morris, 1977, 53.13, 32.4 for woodland at Harrold and Odell at Domesday), and can reasonably be presumed to have been wooded during the Roman period, would also have been a significant factor, in that fuel for the kilns would have been readily available.

The middle years of the 3rd century saw the collapse of the Upper Nene valley coarse ware industries. Yet once more Harrold survived. A continuing demand for its particular products, good serviceable kitchen ware, is not enough to account for this. Its advantages of location in relation to the communication pattern, raw material and fuel remained; but it is possible to suggest a further reason, namely, the technological adaptability of the potters. It may well be that in the last quarter of the 2nd century the Harrold potters discovered that it was possible to fire their pottery in very simple single-chambered kilns of the sort which had been widely used to the south and east of them for over a century. Once the process had been mastered, then it may well have been possible to fire large numbers of pots relatively quickly, with consequent savings in costs. A general context for this changeover in technology may be sought in the behaviour of the pottery market in this region towards the end of the second century. Studies of the relative frequency with which different pottery fabrics occur in selected groups of various dates in the Milton Keynes area show that in the later 2nd century shelly pottery is the predominant fabric (eg Marney, 1989, Pie charts 6 and 7). But around the turn of the century the proportions of soft pink grogged and sandy wares start to encroach on the lead hitherto held by the shell-tempered wares (*ibid*, Pie charts 8, 9, 10). Maybe therefore the pressures of the

market forced the Harrold potters to turn to new methods in order to survive.

If this was indeed the case then they were successful and production went on into the 5th century, on the evidence of stratified coins in clay pits, dateable pottery traded into the site, and parallels in form between Harrold wares and shelly wares from well-known pottery groups of late 4th-early 5th century date (Perrin 1981 for references to such). It is highly likely that it was in the second half of the 4th century that Harrold saw its most successful phase as a pottery production centre - note for example the large number of clay pits of period 6, which appeared in almost all the trenches opened. Many sites of this period, in a zone which runs from East Anglia to the Severn estuary, and which extends in the south not much beyond the latitude of London and in the north roughly along the latitude of the Wash (see the preliminary distribution maps in Sanders, 1973), show a significantly increased proportion of shelly pottery in a restricted range of forms, mainly rilled cooking pots and flanged bowls; an unknown but probably quite significant proportion of these vessels would have come from Harrold. There would seem to have been a link between the increased success enjoyed by the shelly pottery at this time and the decline in the export of black-burnished cooking pottery from the Dorset factories in the late 4th century, which led to the growth of potteries turning out copies of BB1 locally (Williams, 1977, 206), on perhaps too small a scale to entirely meet demand.

Harrold did not stand alone as a producer of shelly wares, but since so little is known about other varieties of shelly pottery and other kiln sites it is as yet impossible to say very much about the share of the market it had throughout the Roman period. There were certainly other production centres making the same range of forms as Harrold in the 2nd century; at Towcester in Northamptonshire a curious rather crude shelly fabric with a prickly surface supplied cooking pots in the 2nd century (Brown and Woodfield, 1983, 79); in the Lower Nene valley jars in a dark grey-buff fabric with large plate-like pieces of shell visible on the surface, quite unlike Harrold, appear in the early 2nd century (for a kiln site, Howe *et al* 1980, 10; and for other shell-gritted manufacturing sites in this general area, Perrin and Webster, 1990). A preliminary spectrographic analysis of fragments of this fabric by Dr F A Hart of Queen Mary College, University of London, using plasma emission techniques, shows that they had a totally different elemental

composition from those similarly analysed from the Harrold site. In the late Roman period also there were other centres at work. At Towcester once more there were plenty of fragments of rilled bowls and cooking pots in a grey-black fabric with abundant large pieces of shell visible (Brown and Woodfield 1983, 79), unlike Harrold ware and again shown by spectrographic analysis to have come from a different source. There may well be parallels to be drawn between this Roman shell-gritted pottery industry and the manufacture of the late Saxon and medieval St Neots ware, which also appears to have been made in a number of different places in a relatively restricted number of forms, in much the same general area and from the same raw materials as the Roman pottery.

As with the products of the black-burnished industries, several of the vessel forms produced at Harrold show how a process of continuous typological evolution can be traced from an early period to the end of the industry. The rilled triangular-rimmed cooking pot of the early 5th century can be seen to have evolved from the pot with a simple outcurved rim of the late 3rd and early 4th centuries; this had antecedents in the later 2nd century and the type ultimately derived from the smaller jars of the 1st century. Similarly the shell-gritted version of the flanged bowl of late Roman times owed much in its development to the carinated reeded-rim bowl of the 2nd century. Rilling was a feature of pottery making at Harrold for 350 years. But as with technology, the Harrold potters were quite quick to take up new ideas. The reeded rim bowl is an example - Fig 28, 131 is a perfect example of the type. Similarly the late Roman form of the black-burnished cooking pot with a cavetto rim had its influence on the form of the late shell-gritted cooking pot, and a few direct copies can be found (Fig 37, 292). Other examples of pot types taken into the Harrold repertoire from other traditions would be the wide-mouthed bowl (Fig 28, 145), the dog dish (eg Fig 33, 231), lids (Fig 28, 137-141), and the copying of the scroll-like decoration on East Midlands Burnished ware (Fig 36, 272-5).

Harrold is relatively unusual in that pottery and tiles were made side by side on the same site. The overall thread of tradition and consistency of design which runs right through the Harrold pottery suggests the continuity of pottery manufacture there. The same cannot really be said of the manufacture of tiles. The present excavations suggest two phases of tile manufacture, the 2nd

century and the late 3rd - early 4th centuries (this may, however, merely reflect the small proportion of the site actually dug). Shelly tiles are common in the Ouse and Nene valleys (Zeepvat, 1987) but the present state of knowledge does not as yet allow a refined chronology for the use of this fabric in relation to periods of capital investment in buildings, or whether other production centres were involved. The tiles themselves perhaps hint at a degree of disjointedness in the history of tile manufacture at Harrold - the variety of scoring patterns on the flue tiles for example, or the contrast between the crisply made voussoir tiles found in Kiln 5 compared with the smaller but also much cruder ones from Kiln 7 (Figs 44-45); a reflection maybe of the manufacture of particular types of tile for particular jobs at various times. Whether or not the tiles were made by itinerant tilers, or by possibly the same people who were responsible for the pottery, is uncertain, but if Kiln 7 was indeed a tile kiln, then the fact that it worked on the same principle as the pottery kilns would favour the latter view for the 4th century - evidence once more for the adaptability and enterprise of the Harrold potters.

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Analysis of Anglo-Saxon Solder Deposited on a Copper-Alloy Disc from the Cemetery at Marina Drive, Bedfordshire

TONY GIBSON and Dr PAUL HARRIS

SUMMARY

Among the objects displayed at Luton Museum, Warden Park is an artefact described in the Accession Register (52/120/58) as "Bronze Disc with punched decoration"; it was found, with other grave-goods in Burial E3, that of a young girl at the Anglo-Saxon Cemetery, Marina Drive, Bedfordshire. Its position in the grave indicates that it had been attached to her waist-belt or châtelaine, presumably to serve as a decorative ornament, possibly having some amuletic significance. The purpose of this article is to record the discovery and resulting scientific examination of solder found adhering to the underside of the disc and to offer an explanation as to its original function and purpose.

DESCRIPTION OF MARINA DRIVE DISC

This near circular flat polished copper-alloy disc (Fig 1.1, Plate 1) is approximately 50 mm Ø x 0.55 mm in thickness and is repoussé decorated with a border consisting of a single row of punch dots concentrically placed around its edge, inside this circle is an interrupted cross saltire meeting at a second smaller circle enclosing a central boss; a pierced suspension hole can also be observed. This pattern is a prominent Anglo-Saxon motif and can be seen decorating a number of seventh century silver-gilt scutiform pendants (Evison, 1987: Fig 37-3a) and (Hines, 1984: Fig 4-10).

On the underneath side (Fig 1.2, Plate 2), located in the void between the decorative border and the disc edge are a number of irregular shaped silver coloured metallic deposits. This substance has the appearance and touch of soft-solder, a material used in the process of joining metal together; usually consisting of lead or tin, or an alloy of the two, which has a lower melting range than that of the metal to be joined.

At the time of re-discovery the writer was engaged in a research programme relating to copper-alloy Anglo-Saxon relic boxes (Gibson, 1993) and attention was drawn to this disc because in material specification, size and decoration it has the appearance of a re-used lid top or base from such a box; furthermore, two other

relic-boxes are known to have been recovered from this cemetery (Matthews, 1962), both from double burials Grave B3 and B4 and the adjacent burial to Grave E3 - Grave E1 and E2.

RELIC BOXES

Forty-five provenanced relic-boxes are recorded Table 1. These small often naïvely decorated containers are occasionally found in seventh and early eighth century female burials in cemeteries and barrow graves widely dispersed throughout Anglo-Saxon England. For over two hundred years since their earliest discovery relic-boxes have been considered unusual and enigmatic objects, their origin and function has been the subject of calculated guesswork and academic research and an aura of mystery has evolved around these small containers. Recent reports and studies Ager (1989), Crowfoot (1987), Evison (1987), Hawkes (1973, 1982) and Meaney (1981) have failed to reach a consensus as to their function and purpose and they have been variously referred to as work, thread or sewing-boxes, amulet capsules or Christian reliquaries; the latter description based mainly on the cruciform ornamentation sometimes displayed together with their appearances in what are often termed "Final Phase or Proto-Christian" cemeteries. These views and interpretations have been challenged by the author who argues that the decorations on the boxes are indicators of Pagan not Christian symbolism and they evidence a pagan survival rather than representing a "new" Christian accessory and they should be considered as pagan relic-boxes.

Two distinctive types can be recognized; Type I, Fig 2, the largest group with forty recorded can be defined as follows. They are two piece cylindrical copper-alloy boxes, between 40 - 70 mm in diameter and 40 - 72 mm in shut length. The top or lid assembly, partly slide-fits over the bottom or base assembly and is retained in its closed position by metal friction between the inside diameter of the lid assembly, and the outside diameter of the base assembly. Without exception each box originally consisted of four principal elements, lid-top,

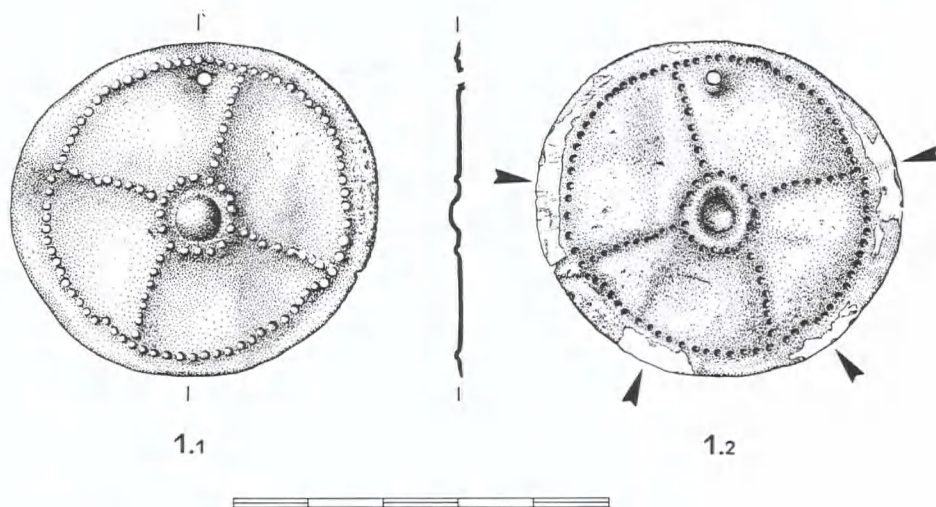


Figure 11 Copper-alloy disc Grave E3 Marina Drive.
1.1 Top view. 1.2 Under side showing solder.



Plate 1. Top view. Scale 1:1.

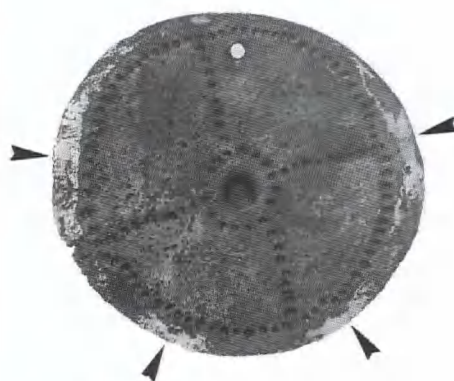


Plate 2. Under-side showing solder. Scale 1:1.

lid-ring, body and body-base, all manufactured from copper-alloy sheet between 0.45 and 0.65 mm thickness. Individual components were assembled together by bronze rivets, solder or were mechanically retained by metal crimping, or any combination of these processes. Lid-tops are one piece circular or near circular convex or flat discs, often decorated with internally applied punch dot impressions in various styles and motifs (Fig 3). Lid rings are made from a single piece of strip formed

into shallow open ended parallel tubes, jointed or seamed along their length, these are often bell-mouthed or flared at one end to make a platform to which the lid-top is fitted. The circumference of these rings is usually stamped from the inside with row(s) of raised punch dots applied to the flat sheet-metal prior to forming and final assembly. Attached and externally positioned on the joint is a single bronze split eyelet or bronze loop. This acts as an attachment point for a linked bronze or iron

DESIGN PRINCIPLES AND GENERAL ARRANGEMENT IN WORN POSITION

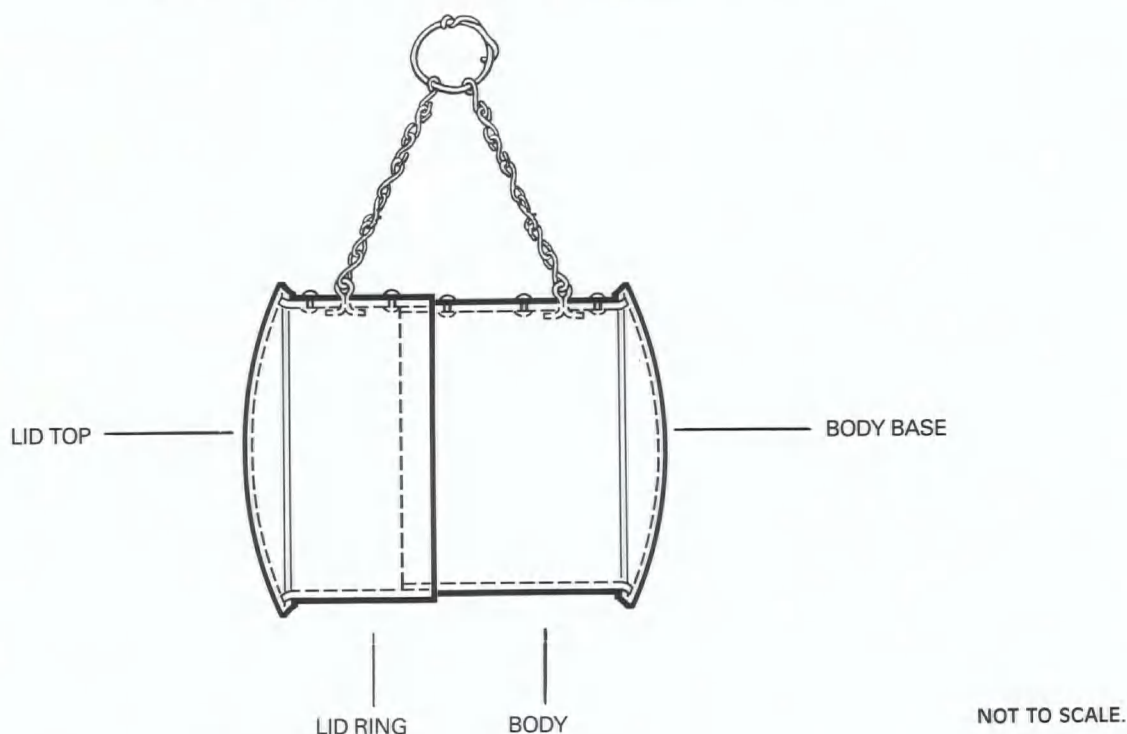


Figure [2] Design principals Type 1 relic-box.

chain complete with a central ring and serves the dual purpose of retaining the lid to the body, and also suspending the relic-box from the wearer's *châtelaine* or waist-belt. Relic-boxes' bodies are longer versions of the corresponding lid-ring formed and constructed in the same manner with an identical method of chain attachment; however the greater material area allows space for a more elaborate degree of artistic impression, an example of which can be seen on the Hawnby North Yorkshire box (Fig 4). Body-bases can be identified with lid-top in respect of material, shape and the method adopted in their attachment to the body. When decorated they often reflect the aesthetic quality of the tops, although not all carry the same motif and some are left plain.

Type II boxes, five in number, unlike the Type I classification are noticeably different in appearance from one another. They do however have enough common characteristics to enable them to be placed within a specific group. They share some features with Type I boxes in that their lid-tops, lid-rings,

body and body-bases are constructed in a similar fashion from the same material. Additionally, however, all have either a rigid or pivoting suspension flange, plate or arm projecting from one side of their body like the North Leigh Oxfordshire box (Fig 5); their lid assemblies were so designed that they were secured to the body assembly by either a wire ring, hinge or pivot pin; these allow the lid assembly to open or close onto the body without becoming totally detached.

As the lid tops and bases of both types are identical in design it is not possible to determine from which classification the Marina Drive disc originated, although the two other boxes found in the cemetery are both Type I. Nevertheless, the position of the solder like substance leaves little doubt that it had at sometime been attached to a circular component, most probably a lid-ring from a relic-box.

During the course of my research a number of relic-boxes were reconstructed using only tools and manufacturing techniques employed by craftsmen

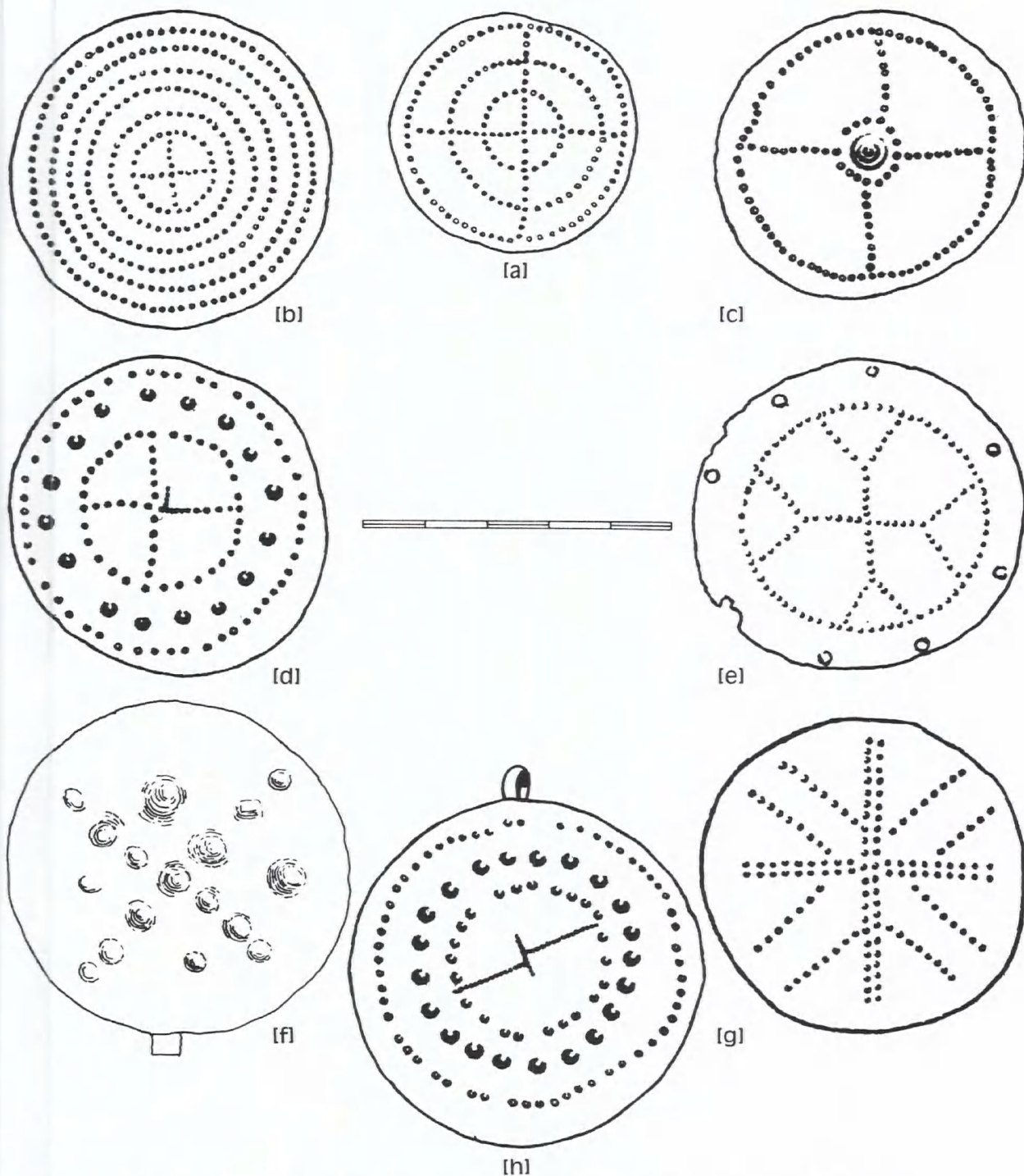


Figure [3] Examples of repoussé patterning on relic-boxes. [a] Polhill. [b] Kingston Grave 96. [c] Marina Drive Grave E3. [d] Uncleby Grave 1. [e] Sibertswold. [f] Ashmolean Museum. [g] Garton II. [h] Uncleby Grave 3.

and metal-smiths of the early and middle-Saxon period so the author was confident that the Marina Drive disc was a re-used component from such a box. What I was unable to determine was whether the original excavator, Les Matthews or the conservation staff at the museum at the time of discovery, (1957) had attempted to re-construct individual components from the other two boxes found at the cemetery with the Grave E3 disc using modern solder. Additionally, I needed to know if the disc had originally been silver-gilded, a decorative finish that features on a number of relic-boxes including the Marina Drive Grave B3 and B4 and another from Kempston Bedfordshire (Fitch 1864); could the metallic substance be all that remained of these plating processes?

SOLDER ANALYSIS: COPPER-ALLOY LID-TOP, MARINA-DRIVE GRAVE E3

Solders have been in use in the British Isles certainly since the late Bronze Age. A range of solder alloy compositions have been utilised, with the majority apparently based on the tin-lead system (Tylecote, 1986). This situation has not changed until the last decade or so. During 1957 when the artefact was discovered, there were three major uses for solders, plumbing, electronics, and the canning industry. Plumbers generally used alloys containing 50 (weight) % lead and 50 % tin (50 Sn 50 Pb). This alloy does not have a melting point as such, but on cooling from the melt first becomes pasty (during which time it can be conveniently worked) before solidifying. The requirements of the electronics industry are different and they typically, even today, use 60 Sn 40 Pb, or 63 Sn 37 Pb alloys, which have a sharp melting point. The canning industry on the other hand used a high lead content solder with a composition of 98 Pb 2Sn. The tin is essentially the active component in all of the alloys and is largely responsible for their good wetting and bonding properties. The addition of lead does confer a number of advantages, reducing the cost of the alloy while at the same time improving mechanical properties. In the case of plumbing and electronics solders it reduces the working temperature of the alloy, which is of particular importance in the latter case where excessive temperature excursions can damage both electrical components and the printed circuit boards on which they are mounted. Inclusion of lead also negates the possibility of both tin-whisker formation, and the occurrence of 'tin pest' (allotropic conversion of white tin into grey),

which are important practical considerations to industry. As a result of these advantages tin-lead solders have dominated the soldering market for most of the current century and the use of pure tin solder has been quite rare.

The specimen was examined using a Jeol 5400 scanning electron microscope (SEM), equipped with a conventional Everhard-Thornley secondary electronic detector and a four quadrant solid state back scattered electron detector. Within the SEM a finely focused beam of electrons is repeatedly scanned over a rectangular area of the specimen. The electron bombardment causes the material immediately under the beam to emit low energy secondary electrons, back scattered primary electrons and characteristic X-rays. Monitoring the intensity of the secondary and back scattered electron signals as a function of the position of the beam on the sample permits the formation of high resolution images of the specimen. Secondary electron images reflect the topography of the surface. The contrast in back scattered images, on the other hand, is primarily due to differences in the mean atomic number of the materials present and hence effectively provides a high resolution map of chemical composition.

A Link QX2000 energy dispersive X-ray analysis system was used to carry out microanalyses, and was used in both ultrathin window and windowless modes. The technique is capable of detecting all elements in the periodic table with atomic number greater than 4, with detection limits of the order of 0.1-1 atomic %. The depth of analysis and spatial resolution of the technique depend on a number of factors but are typically 0.5 - 2 micrometres.

The artefact had a generally bright, bronze appearance. EDX analysis indicated that the artefact was made of a copper-tin bronze. There was evidence of widespread pitting, undoubtedly associated with corrosion. There were, however, no major deposits of corrosion products present suggesting that they must have been removed at some stage. Solder was present on the outer periphery of the structure, consistent with its use to attach the artefact to another object. The outermost areas of the solder were roughened, presumably due to the mechanical disruption of the joint. Inner areas of the solder had a much flatter, mirror-like appearance where the molten metal had apparently flowed away from the joint during soldering.

A combination of scanning electron microscopy (SEM) and energy dispersive X-ray analysis (EDX) were used to study the morphology and composition

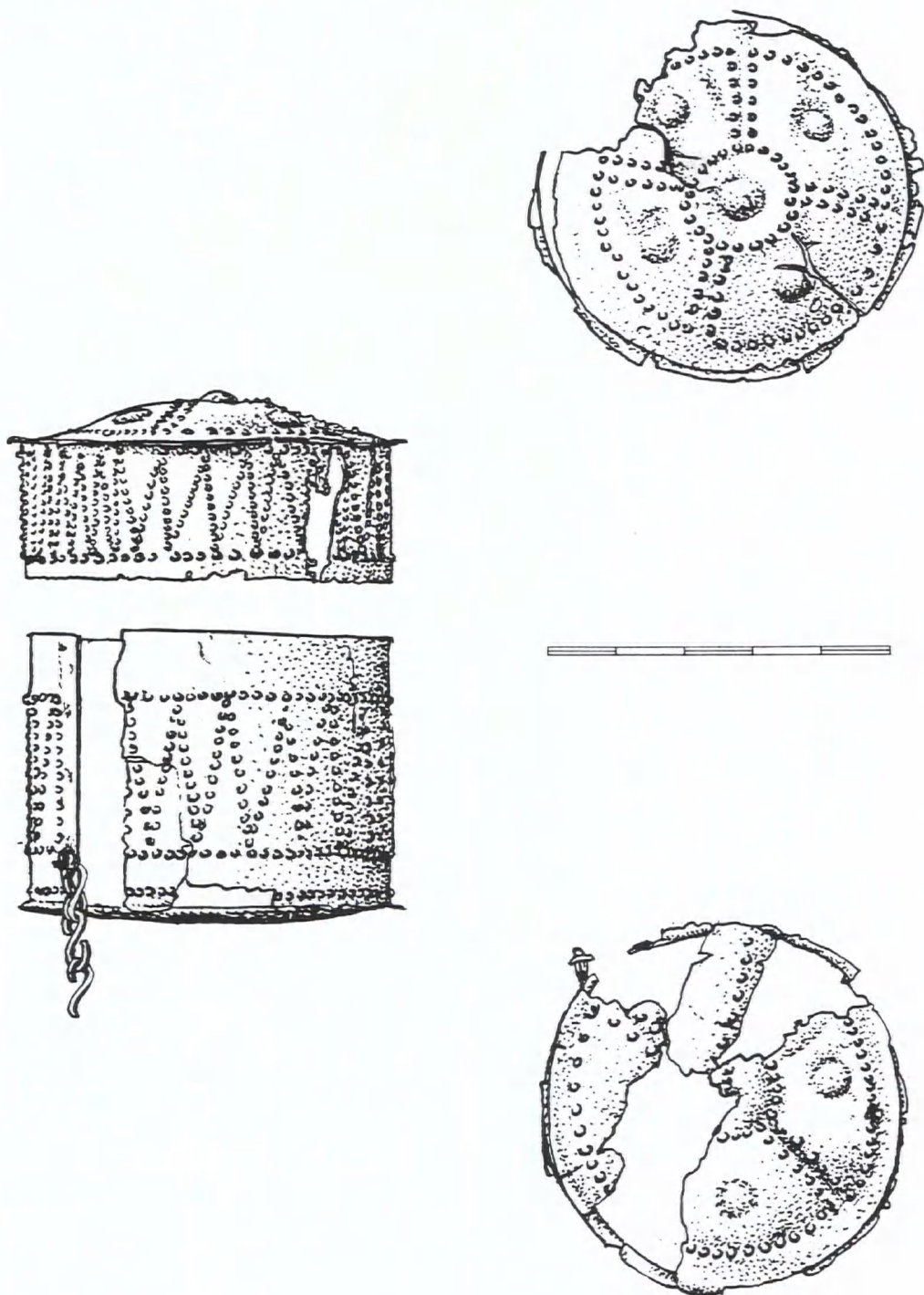


Figure [4] Hawnby North Yorkshire relic-box.



Figure [5] North Leigh Oxfordshire Type 11 relic-box.

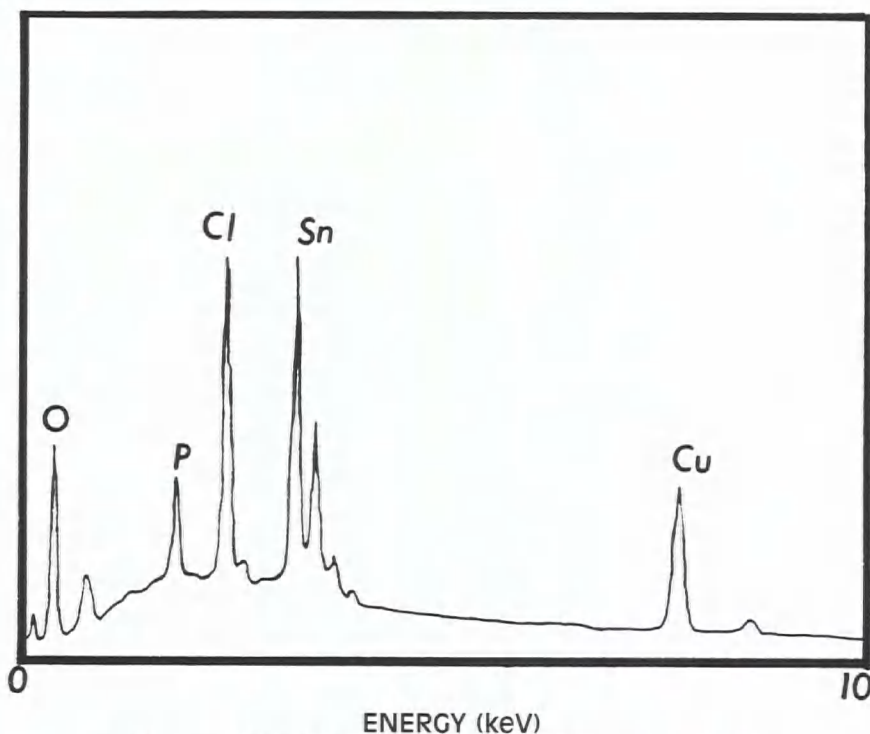


Figure 16| EDX spectrum of solder, as received.

of the solder. Fig 6 shows a typical EDX spectrum taken from the sample, indicating the presence of tin, copper, phosphorous, chlorine, oxygen and carbon. To distinguish between bulk constituents of the alloy and surface contaminants, the solder was gently scratched using a scalpel blade. Subsequent examination in an SEM revealed that a film of material was present on the surface. EDX analysis in the scratched areas detected only tin and copper, Fig 7. In the light of the general appearance of the specimen, and in particular the absence of corrosion products, the most plausible explanation of the EDX findings is that after its discovery the specimen had been cleaned by pickling in a hydrochloric acid solution (to remove oxide scale), followed by passivation in a phosphating solution. Pickling/passivation treatments of this type have been used for many years, for cleaning and preserving metallic surfaces. The fact that the chloride/phosphate layer was on top of the solder suggests that the solder was already present when the cleaning/passivation treatments were applied, and hence that it is indeed Anglo-Saxon.

The absence of lead in the solder is of great interest. At the time of discovery of the specimen virtually all solders contained high levels of lead,

for the reasons outlined above. More recently, in the last decade or so, lead-free formulations have been introduced because of toxicological concerns over the use of lead. But at the time in question, such matters were not appreciated and lead-containing solders were the norm.

The surface of the solder was generally flat and apparently single phase, with no signs of either the presence of any second phase or cavitation caused by the chemical removal of one. The observed copper signals were almost certainly derived not from the solder itself but from the copper-tin substrate immediately below it, i.e. the depth of analysis of the EDX technique was greater than the thickness of the free solder. If obtained from a homogeneous sample the copper signals detected from the solder would correspond a Sn-Cu alloy containing 30-35 weight % copper. Such an alloy would be contained several phases, including a copper-in-tin solid solution phase and copper-tin intermetallic compounds (primarily Cu_6Sn_5), (Hansen, 1958). The different phases should be readily visible in the SEM, none, however, were observed. Moreover it would have a liquidous temperature of 600-650° C and thus be useless as a solder. To test this theory analyses were carried at a

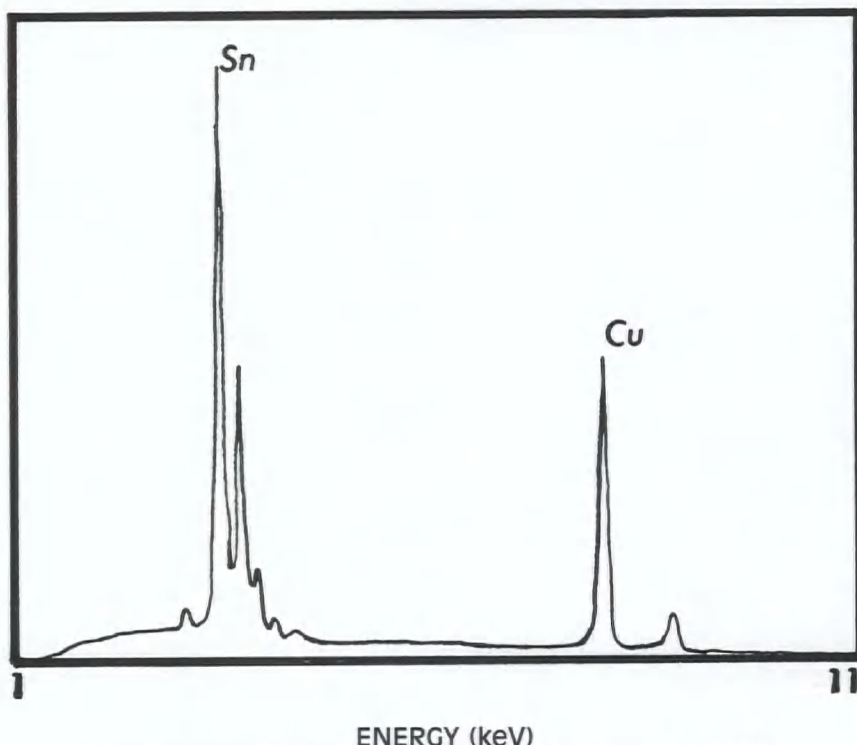


Figure 171 EDX spectrum of scratched area on solder.

range of accelerating voltages (15, 20 and 30 KeV) - effectively changing the sampling depth of the analysis technique, from approximately 0.5 to 1.7 micrometres. Increasing the depth of analysis was observed to result in an increase in the copper signals relative to those of tin, to a much greater extent than would be expected from a homogeneous material, supporting the theory that we are looking at a thin layer of tin on a copper-rich substrate.

As mentioned above tin reacts strongly with copper, forming intermetallic compounds at the copper-tin interface. Cu_6Sn_5 is usually the first compound to form, and this may be followed by a second layer of Cu_3Sn which forms at the Cu_6Sn_5 - substrate interface. On recently soldered joints, the thickness of free solder is normally always larger than the sampling depth of the EDX technique. It is most unusual to observe substrate signals since this implies that the free solder layer is less than 0.5 micrometres deep. A possible explanation of this unusual feature is that a thick intermetallic layer has formed at the interface, by progressively consuming the overlying free tin layer.

Intermetallic compounds form at copper-tin interfaces, even at ambient temperatures. Typically

of the order of 1 micrometre of intermetallic compounds form during the soldering process itself. Studies of intermetallic growth thereafter indicate that the growth rate can be estimated with reasonable accuracy using a parabolic relationship (Klein-Wassink, 1989);

$$\text{thickness} = k\sqrt{t}$$

where $k = k_0 \exp(-Q/RT)$

and t = time, Q = the activation energy for growth, R = the gas constant and T = absolute temperature.

On (pure) copper at 20° C the growth constant k has been measured to be $0.26 \text{ nm.s}^{-1/2}$, (Klein-Wassink, 1989). Thus over the lifetime of an Anglo-Saxon tin soldered joint one might expect a substantial quantity of intermetallic compounds to be formed, and this provides a useful method for checking the antiquity of soldered joints. Unfortunately, this could only be verified in the present case by destructive means, for example by cross sectioning a portion of the soldered area, and this was considered to be unacceptable.

DISCUSSION

In metal specification, size, thickness and shape the Marina Drive Disc can be paralleled to many of the circular lid-tops and bases incorporated into extant relic-boxes; additionally, the method of decorating by repoussé is a prominent feature on 35 (77.8%) of known boxes. Metallurgical evidence allied to the position of the solder indicates the disc had at sometime been an integral component of a circular box-like object, most probably a relic-box. Furthermore and most unusually, un-alloyed tin had been used as an agent in its original construction; had this process been carried out at, or after the time of discovery it is more likely that a modern alloyed solder would have been used. This observation combined with evidence of tin solder underlying 1957 conservation material indicates further that it is indeed of Anglo-Saxon origin and can with some confidence be assigned on scientific, excavation and typological evidence to the mid-seventh century AD.

Unlike others, the writer is unconvinced that the decorative pattern displayed on the disc has ever had Christian significance, instead it reflects only an unsophisticated, popular art-style of its day. Elsewhere (Gibson 1993) the view has been expressed that relic-boxes form the signifier of a conventional pagan rite, they were worn to indicate the completion of that passage; in the circumstance of conversion, some may have abandoned them, others by contrast, continued to wear them as attractive dress accessories. The hypothesis in respect of the Marina Drive disc is that it represents all that remained of an old dilapidated box, which, as an important pagan talisman was utilised as a pendant, and like the earlier relic-box, was worn, suspended from the young lady's waist.

That the pendant accompanied other grave-goods including a necklace comprising amethysts, glass, amber, fish-bones and ceramic beads, together with a cowrie shell, (most probably a fertility amulet) suggests that under the increasing influence of Christianity, now was the time to retreat from the outward trappings of pagan custom and practice and the disc was finally consigned to the grave at Marina Drive.

TABLE 1. Relic-boxes by County (pre-1974 re-organisation)

County	Site	Total from Site	Total for County
Bedfordshire	Kempston	2	
	Marina Drive	3	5
Cambridgeshire	Barrington 'A'	1	
	Barrington 'B'	1	
	Burwell	2	
	Haslingfield	3	7
Derbyshire	Hurdlow	1	
	Standlow	1	2
Gloucestershire	Lechlade	1	1
Hertfordshire	Verulamium		
	King Harry Lane	2	2
Kent	Dover-Buckland	1	
	Market Square	1	
	Finglesham	1	
	Kingston Down	2	
	Polhill	1	
	Sibertswold	1	
	Updown	1	8
	Barton-on-Humber	3	3
Norfolk	Caister St. Edmunds	1	1
Northamptonshire	Cransley	1	1
Oxfordshire	North Leigh	1	
	Standlake	1	2
Warwickshire	Bidford-on-Avon	1	1
Wiltshire	Yatesbury	1	1
Yorkshire	Aldbrough	1	
	Garton II	1	
	Hambleton Moor	1	
	Hawnby	1	
	Painsthorpe Wold	1	
	Uncleby	5	10
Unprovenved	Ashmolean	1	

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Biggleswade West

MICHAEL DAWSON

With contributions by Mark Robinson and Stephen Coleman

SUMMARY

Archaeological evaluation and excavation during the construction of a sewerage pipeline west of Biggleswade was intended to record and investigate evidence for the impact of early man on the landscape of the middle Ivel valley at Biggleswade. In fact the survey and excavation led not only to the recovery of significant environmental evidence, but to the identification of one of the major causative factors in the development of medieval Biggleswade.

INTRODUCTION

Archaeological evaluation in advance of *Phase 1 Biggleswade (West) Sewerage Pipeline* was undertaken by Bedfordshire County Council's Archaeology Service for Anglian Water Services. Desk-top survey of the Bedfordshire Historic Environment Record, topographic study and sample trench evaluation were undertaken in April 1992, and were followed in May 1992 by excavation of two areas along the route of the pipeline (Fig 1). A watching brief was carried out during the construction of the pipeline between Hill Lane and Mill Street, Biggleswade. The work was funded throughout by Anglian Water Services Ltd who have also paid for the publication of this paper.

TOPOGRAPHY

The topography of the Biggleswade area is dominated by the flood plain of the River Ivel. The landscape has evolved from the Late Last Glacial when the River Ivel and its tributaries, the Flit and Hiz, breached the greensand ridge to flow northwards into the River Great Ouse. This process has created an open landscape between the hills of the greensand ridge, in the north east at Stratford and the west at Old Warden. The valley floor comprises gravel beds laid down by the river but with some deposition of glacial drift mixed clay and gravel, most noteworthy in the 67 ft thick deposit of Ampthill clay at Biggleswade ⁽¹⁾.

THE HISTORIC LANDSCAPE

The historic landscape has seen considerable change. The increasingly dense occupation of the Ivel valley is evident from the early prehistoric

period onwards. In the Iron Age the valley provided a focus for rural agrarian settlement whilst during the Roman period a road was constructed east of the Ivel through the gap in the greensand ridge which connected the Roman small town of Baldock with Godmanchester. A Roman small town grew up at Sandy in the late 1st and early 2nd century ⁽²⁾ close to a ford over the River Ivel approximately 2 km north of Biggleswade. Subsequently the gap in the greensand ridge has been used as a major route way until the present day.

Throughout the medieval period Biggleswade parish was subdivided into three townships, each with their own main settlement and separate field system. Biggleswade, the smallest township, occupied the north and north eastern part of the parish, Holme (its main settlement now almost totally deserted) the area south of Biggleswade town and south west of the Roman road, and Stratton (its main settlement now totally deserted) the area east of the line of the Roman Road.

The earliest available large scale map of the entire parish is the Tithe Map of 1838. It indicates that the parish included an extensive part of the Ivel flood plain, most of which, according to recorded fieldnames and land use, was permanent meadowland ⁽³⁾. Until the present century the river formed the vast majority of Biggleswade's western parish boundary: nearly all of the historic parish of Biggleswade lay to the east of the Ivel. However, two small portions of the historic parish did lie to the west of the river, both, significantly, adjacent to the historic bridging points, and, coincidentally, becoming the location for most of the excavation trenches. These areas extending beyond the river were still meadowland in 1838 and have only recently been brought into arable cultivation.

By the mid 19th century some of the meadow in Biggleswade had been taken into closes, but a large proportion was still communally regulated as it had been for centuries. References in deeds and terriers in the Bedfordshire County Record Office indicate that a good deal of land in Biggleswade was meadow throughout the later medieval and post-medieval periods; unfortunately little documentation is available for the period before 1200 apart from Domesday Book. The vast majority

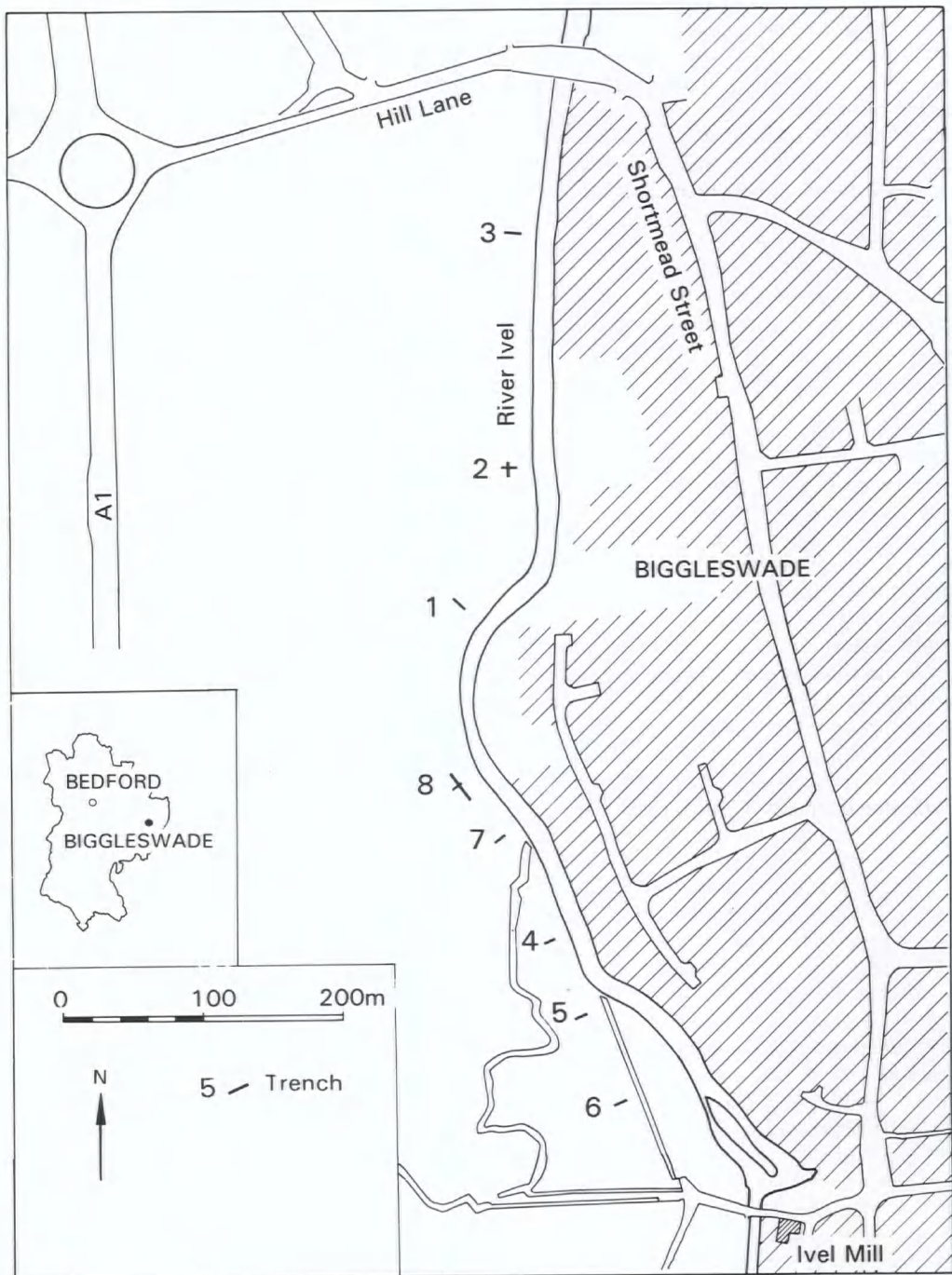


Fig 1. The location of evaluation and excavation trenches along the line of the Biggleswade West

of land below the 30 m contour was meadow, both on the Ivel flood plain to the west, and on and around the extensive Biggleswade Common to the north. That such quantities of meadow were available to the lord and tenants of Biggleswade was of great economic and agricultural significance: during the medieval period seasonally flooded meadow was the most highly valued of any land, both for the grazing it provided and, more importantly, for the annual hay crop - a major source of revenue. This is borne out in the returns of medieval taxations. That for 1297 indicates a relatively high proportion of hay and forage throughout the whole of Biggleswade Hundred, reflecting a great quantity of meadow along those parts of both the Ivel and the Ouse which lay within this administrative unit ⁽⁴⁾. Unfortunately only a fragment of the roll for Biggleswade township itself survives but that alone suggests the amounts of hay and forage, and therefore meadow, were larger than elsewhere.

Because of their economic significance any restrictions affecting common grazing rights on meadows or the cutting of hay from them were keenly contested, even where meadowland was plentiful and where those rights were in neighbouring parishes. At an assize of 1212 the tenants of Biggleswade Manor vigorously defended their age-old right of common in a marsh or "fen" lying to the north of Biggleswade against Robert de Braybrook, whom they claimed had banned them from it and had carried off the hay by force ⁽⁵⁾. This "fen" was probably in the vicinity of the Sandy/Sutton boundary with Biggleswade.

Meadowland is prominent in the entry for Biggleswade in Domesday Book of 1086. On a ten hide holding there was "meadow sufficient for ten plough-teams [of oxen] and producing five shillings from the hay" ⁽⁶⁾. This was one of the few holdings in Bedfordshire where the meadow available at least matched the number of plough-teams, even though extensive meadows also lay on the western bank of the Ivel in Northill, Old Warden and Southill parishes. Even more significant is the unusual reference to manorial profits from hay: such a surplus is only repeated in Bedfordshire at Stratton and Langford, both near Biggleswade. A considerable production of hay in the area and the conditions to make this possible is indicated ⁽⁷⁾. Much of the remaining land seems to have been under arable cultivation; no woodland is mentioned in any of the Domesday entries for Biggleswade, Holme or Stratton.

More recently the River Ivel saw a period of

intense activity when in 1756 the Ivel Navigation Act was passed ⁽⁸⁾. It is in this period that the course of the present Ivel at Biggleswade was established, when a navigation channel was cut to bypass Franklin's Mill, and similar diversions were made at Tempsford, South Mills and Sandy. In the 20th century dredging upstream of the Hill Lane bridge (since 1959) has led to the creation of a levee bank which stretches southwards for 380 m.

THE ARCHAEOLOGICAL EVIDENCE

THE STRUCTURAL EVIDENCE

The archaeological excavation at Biggleswade West comprised eight trenches numbered 1-8 from north to south (Fig 1) and a watching brief carried out during the excavation of the pipe trench. The location of archaeological work was in an area with considerable evidence of activity in the medieval period stretching from the girder bridge on Hill Lane south to Mill Street. Each of the eight trenches excavated was less than 250 m from a part of Biggleswade town's historic core. However, they were separated from it physically and in land use terms by the main course of the River Ivel. Although the Ivel formed the major boundary of the historic parish the majority of the trenches were located in the two areas of meadow land held by the parish west of the river. The first area, including trenches 1-3, consisted of just under 5 ha to the south west of what was formerly the site of Biggleswade Bridge (Hill Lane), now the girder bridge, whilst the other area, about 9 ha to the west and south west of the bridge at Ivel Mill, included trenches 4-6 in its northern part. Trenches 7 and 8 were excavated in what, historically, was part of Old Warden parish.

The trenches are described below: (dimensions given indicate the area excavated whilst the numbers in [-] brackets are the archaeological context numbers; trench location is detailed on Fig 1).

Trench 1 Trench 1 comprised a single linear trench (10 m x 2 m).

Stratigraphic evidence comprised an upper layer of arable topsoil to a depth of 300 mm which overlay an horizon of alluvial gravels. No archaeological deposits were observed.

Trench 2 Trench 2 comprised two elements, the first was a single linear trial trench (10 m x 2 m), the second was a trench (10 m x 2 m) excavated perpendicular to the first and parallel to the River Ivel.

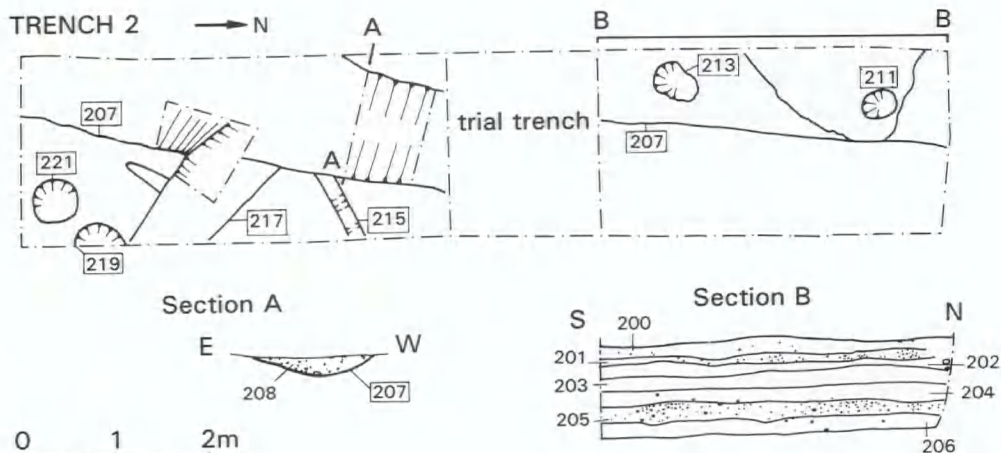


Fig 2. Trench 2 plan and section.

Stratigraphic evidence (Fig 2) from the two trenches comprised an upper layer of arable plough soil to a depth of 300 mm which overlay an horizon of grey alluvial clay silts [203]. The alluvial layer sealed a layer of dark brown humified organic clay [204] which overlay a brown sandy gravelly non-calcareous loam [205]. At the base of the sequence was a gravel horizon similar to that in trench 1. Cut into the gravel and sealed by the organic clay [204] were two ditches [217] and [207] and two post holes [221] and [211], two further shallow round features [219] and [213] may be the remains of post holes but had been badly truncated and could not be characterised. The ditches on the east side were considerably truncated by culverting and dredging in the 19th century⁽⁹⁾ but sufficient remained of the stratigraphy to confirm that both were sealed by the organic clay [204].

No artefacts were recovered from sections excavated through the ditches and post holes, however, the organic clay [204] was comparable in detail to a similar sealing layer at Warren Villas Quarry, Upper Caldecote, which overlay ditches of Iron Age and Roman date⁽¹⁰⁾.

Trench 3 Trench 3 comprised a single linear trench (10 m x 2 m).

The stratigraphic sequence in this trench differed from other trenches in that the upper horizon [6] comprised a layer of post-1950s river silts deposited during dredging, to a depth of 480 mm. During the dredging the topsoil was routinely cleared before

any silts were dumped. Beneath the modern debris was a sequence of alluvial horizons [7] [8] [9] [10] made up of mid grey and mid brown clays, below which was a distinct horizon of dark brown humified organic clay [11] identical to [204] in trench 2. The organic clay overlay the remains of a palaeochannel of the River Ivel which was excavated down to 2 m without encountering the natural gravels. Two horizons [12] [13] of dark grey silty clays were recorded in the old river channel. A single piece of worked wood was noted in the lowest part of the palaeochannel [13].

Trench 4 Trench 4 comprised a single trench (8 m x 2 m).

Stratigraphic evidence comprised an upper horizon of modern dredged silt deposits [14] overlying a light grey alluvial clay deposit [15] [16]. At the base of this sequence a narrow band, 40 mm, of mid brown alluvial clay [17] overlay a layer of dark brown humified organic clay [18], 80 mm thick. The organic clay [18] horizon sealed alluvial deposits [20] [21] [22] [23] [24] which constituted a palaeochannel that had filled with organic material.

Trench 5 Trench 5 comprised a single linear trench (10 m x 2 m).

The upper layer of trench 5 comprised modern arable plough soil to a depth of 360 mm which overlay a sub-plough soil horizon, possibly alluvial in origin, of light orange brown clay [26]. Below the alluvial deposit was an horizon of dark brown

humified organic clay [27] 200 mm thick, at the base of which was a grey-brown organic clay layer [28], a fine band of dark brown-black organic clay [29] and below a final band of blue grey alluvial clays [30] on top of natural gravels.

Trench 6 Trench 6 comprised a single linear trench (10 m x 2 m).

The upper layer of trench 6 comprised a modern arable plough soil horizon of approximately 300 mm which overlay a dark brown humified organic clay layer [32], 340 mm thick. The organic clay was found to seal a palaeochannel of the River Ivel. The old river course, which had filled with waterlogged material, had three identifiable horizons [32] [33] and [35] all of which comprised dark brown-black organic clays.

Trench 7 Trench 7 comprised a single linear trench (8 m x 2 m).

The upper layer of trench 7 comprised a modern arable plough-soil horizon of approximately 380 mm which overlay an orange-grey alluvial clay horizon [37] approximately 160 mm thick. Below, and sealed by this alluvial material, was a dark brown humified organic clay horizon [38] approximately 100 mm thick. Sealed below this was a palaeochannel of the River Ivel which had filled with organic clay silts [39] [40] [41] [42] [43] [44].

Trench 8 Trench 8 had two components. The first was a single linear trench perpendicular to the River Ivel (9 m x 2 m), the second was an extension of this trench to include an area parallel to the modern river. The second trench provided a section through a palaeochannel of the Ivel and an opportunity to examine the environmental evidence to provide a context for the change in the river's course.

The deposits identified in the two trenches (Fig 3) comprise a modern arable topsoil horizon approximately 340 mm thick, [250], which lay directly above the silted course of the palaeochannel. The section through the palaeochannel revealed the silting layers of a shallow river course which was open in the Roman period, but which by the 7th century AD had begun to silt. Although it may have become an overgrown mere, it may have remained water filled until the 18th century. The various silts which were recorded in the river course are illustrated in Fig 3. Environmental samples were taken from the sequence of silts starting with the earliest [260] and [256], followed by intermediate samples from [259]

[253] and from an upper level [252].

ARTEFACTUAL EVIDENCE

Waterlogged wood was recovered from several contexts in trench 8 ([51][53] [263]). Some of the contexts from which the waterlogged wood came were recorded in the first trial trench (not illustrated) hence the context numbers recorded above, [51] and [53], equate to [262]. The contexts from which the wooden objects came [263] [262] are those of the earliest period of silting.

Horizontal stake Trench 8 [Context 51]

Circular section, axed to chisel point, incomplete, length 900 mm, dia 30 mm.

Species: hazel, probably from coppiced woodland, approximately 8 growth rings.

Hurdle Trench 8 [Context 53]

Fragmentary remains of a wooden hurdle comprising 4 sails and 9 rods. The sails were approximately 39 mm diameter, 88-169 mm long; and the rods 7 mm dia, 51-181 mm long. The sails had been axed on one facet to chisel points. The hurdle may have been used in the revetment of the river bank. The raw material probably originated in coppiced woodland.

Stake Trench 8 [Context 263]

Fragmentary remains of single stake, approximately 700 mm long, 57-42 mm dia from coppiced woodland.

Species: *Ulmus* sp (elm); approximately 24 growth rings.

Stake Trench 8 [Context 263]

Fragmentary remains of single stake, approximately 39 mm long, 34 mm dia. Axed point, from coppiced or pollarded woodland to produce lengths of regular width.

Species: *Betula/Corylus/Alnus* group (birch/hazel/alder); hazel is the most commonly coppiced of the group, the sample has 9 growth rings and a ten year coppicing cycle is the most commonly used.

ENVIRONMENTAL EVIDENCE

Mark Robinson

Samples were taken through the general flood plain sedimentary sequence in Trench 2, and through the palaeochannel in Trench 8. These were analysed for macroscopic biological remains.

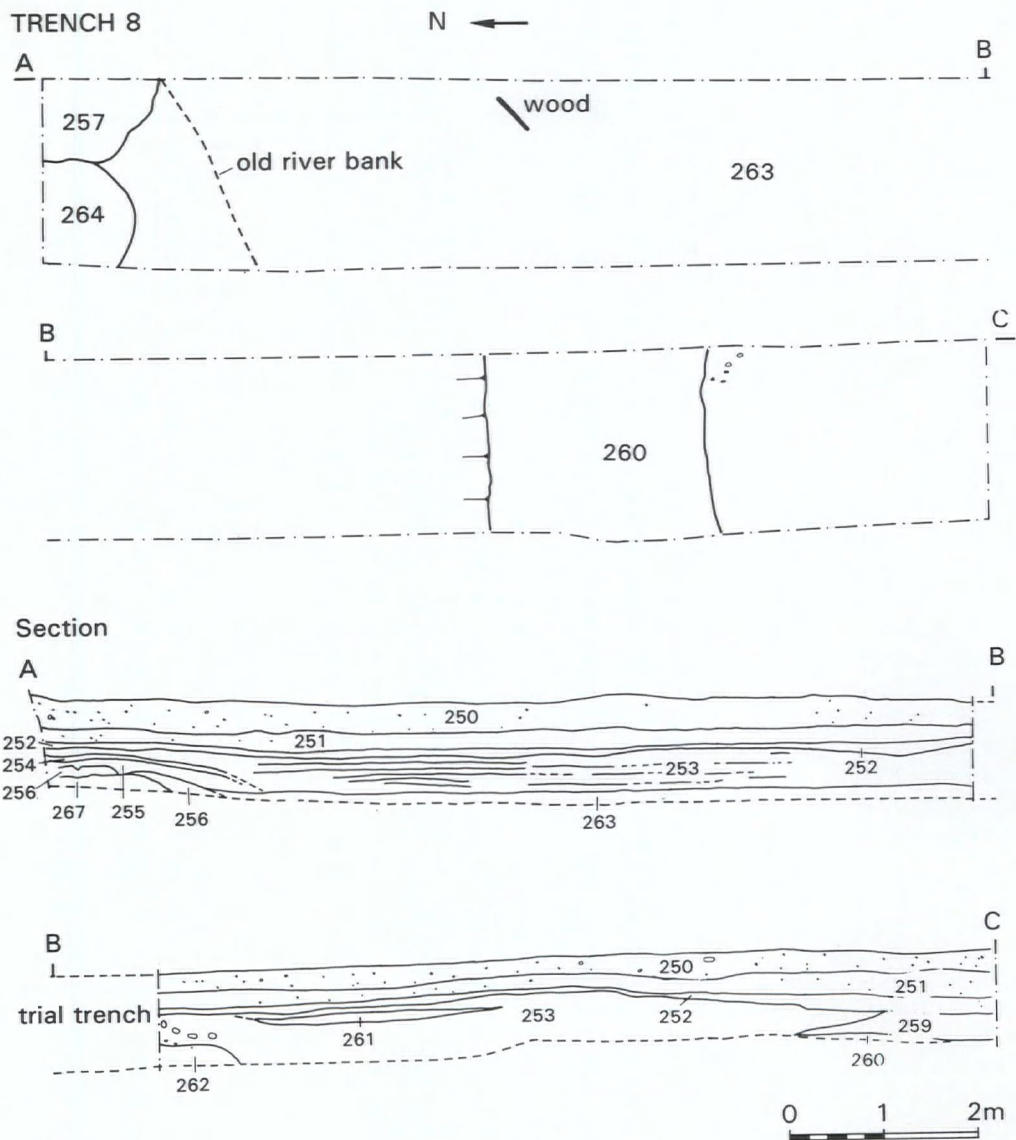


Fig 3. Trench 8 plan and section.

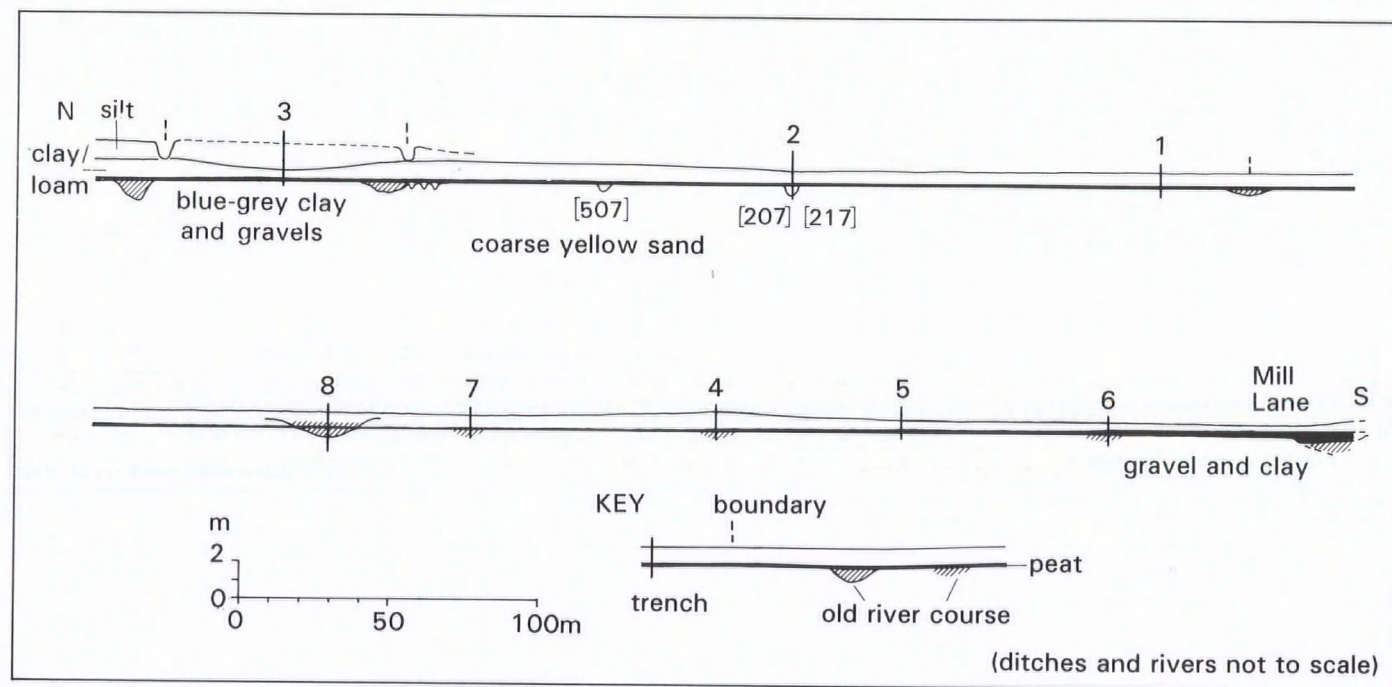


Fig 4. Running section along the Biggleswade West Pipeline.

For the location of samples see Fig 2

Trench 2

203 (top)	Grey alluvial clay with some iron panning, below recent plough soil.	1000g
203 (middle)	Grey alluvial clay with some iron panning.	1000g
203 (bottom)	Grey alluvial clay with some iron panning.	1000g
204	Dark brown very humified organic clay above 205.	500g
205	Brown sandy gravelly non-calcareous loam overlying gravel.	500g

For the location of samples see Fig 3

Trench 8

260	Dark grey shelly organic silt at the bottom of the south end of the trench.	250g
259	Grey organic calcareous silt	250g
252 (bottom)	Brown fibrous peat with monocotyledonous stems.	250g
256	Grey organic calcareous silt with some fine sand at the north end of the trench.	250g
253	Pale grey organic silt from the middle of the trench.	250g

Methods

Each sample was broken up in water and any organic fraction was washed over onto a stack of sieves down to 0.2 mm. The mineral fraction was washed through a stack of sieves down to 0.5 mm and dried. The organic flots were sorted under water using a binocular microscope for plant and invertebrate remains. Snail shells were dried and the other remains stored in alcohol. The dry residues were sorted for shells. The biological remains were identified with reference to the collections of the University Museum, Oxford.

Table 1: Trench 2

Waterlogged Seeds	204
<i>Rumex</i> sp. dock	1
<i>Mentha</i> sp. mint	5
<i>Juncus effusus</i> gp. tussock rush	10
<i>J. bufonius</i> gp. toad rush	10
<i>J. articulatus</i> gp. rush	410
<i>Juncus</i> spp. rush	100
<i>Iris pseudacorus</i> L. yellow flag	1
<i>Typha</i> sp. reedmace	10
<i>Carex</i> sp. sedge	1
Cyperaceae indet sedge	1
Total	549

Table 2: Trench 2

Mollusca	203 bottom	203 middle	203 top
<i>Carychium</i> sp.	8	39	248
<i>Lymnaea truncatula</i> (Müll.)	1	24	40
<i>Succinea</i> or <i>Oxyloma</i> sp.	5	36	99
<i>Anisus Leucastoma</i> (Milt.)	-	1	13
<i>Cochlicopa</i> sp.	1	7	27
<i>Vertigo antvertigo</i> (Drap.)	4	16	1
<i>V. pygmaea</i> (Drap.)	-	4	1
<i>Vallonia pulchella</i> (Müll.)	3	3	25
<i>Vallonia</i> sp.	4	19	54
<i>Arion</i> sp.	+	+	+
<i>Limax</i> or <i>Deroceras</i> sp.	15	14	26
<i>Vitrea</i> sp.	-	4	4
<i>Nesovitrea hammonis</i> (Ström)	-	1	2
<i>Trichia hispida</i> gp.	9	15	61
<i>Sphaerium corneum</i> (L.)	-	-	1
<i>Pisidium</i> sp.	1	5	1
Total	51	188	603

Results

The results are listed in Tables 1-8, giving the minimum number of individuals represented by the fragments identified from each sample or recording presence (+). Remains were entirely absent from 205 and not all the other samples contained all the categories of remains. The smallest seeds, which fell in the fraction between 0.2 and 0.5 mm, were recorded from a one tenth sub-sample and their numbers multiplied up for inclusion in the tables. The botanical nomenclature of the tables follows Clapham *et al* ⁽¹¹⁾ and the nomenclature of the Coleoptera follows Kloet and Hincks ⁽¹²⁾. Molluscan nomenclature is after Kerney ⁽¹³⁾ and Walden ⁽¹⁴⁾.

INTERPRETATION

Trench 2 (Fig 2)

The brown sandy gravelly loam of layer [205] probably resulted from the mixing of a little of the

underlying gravel with its original soil covering. It is possible that layer [205] was a plough soil, but given the proximity of the probable Iron Age features cut into the gravel [207] [217], it is also possible that the mixing was due to gully digging. There was no evidence for waterlogging or flooding from layer [205].

The high organic content of layer [204], the deposit which overlay layer [205], suggests that the water table of the site had risen, and surface conditions had become waterlogged. The clay component of the deposit shows that some alluviation was occurring. Mollusc shells were absent from the deposit probably as a result of post-depositional decay of the organic materials. The organic remains in this deposit were not well preserved, but the seeds identified from it (Table 1), particularly *Juncus* spp. (rushes), are appropriate to herbaceous fen vegetation.

Alluviation apparently intensified and the grey calcareous clay of layer [203] was deposited. It contained numerous mollusc shells (Table 2). Apart from a specimen of *Sphaerium corneum*, few of the shells were likely to have been derived from the floodwaters. The molluscan fauna shows strong similarities to the characteristic fauna of alluvial floodmeadows of the upper Thames valley (15). It can be divided into two components. Firstly, there are the slum aquatic or amphibious molluscs such as *Lymnaea truncatula* and *Anisus leucostoma*, which live in pools which persist after flooding and when these dry up, retreat into cracks. Secondly, there are the terrestrial molluscs which favour damp grassland including *Carychium* sp., *Succinia* or *Oxyloma* sp., *Vallonia pulchella* and *Trichia hispida* gp. The numbers of these terrestrial molluscs are very much reduced under the harsher conditions of grazed pasture rather than mown hay meadow.

Trench 8 (Fig 3)

The earliest deposit exposed at the south end of the trench, layer [260], contained a rich flowing-water molluscan fauna (Table 8). Shells of *Valvata piscinalis* and *Bithynia tentaculata* were particularly abundant. Both species require clean, well oxygenated water. Paired valves of *Sphaerium corneum* confirm that there were muddy conditions on the bed of the channel despite its flow. The majority of the seeds were from terrestrial plants (Table 8), but the floating-leaved and emergent aquatics represented included *Nuphar lutea* (yellow water-lily), *Sparganium* sp. (bur-reed) and

Table 3: Trench 8

Waterlogged Seeds	260	259	252	253	256
<i>Calattha palustris</i> L. kingcup	-	-	2	-	-
<i>Ranunculus cf. acris</i> L. meadow buttercup	1	-	-	-	-
<i>R. cf. repens</i> L. creeping buttercup	1	-	2	-	2
<i>R. sceleratus</i> L. celery leaved crowfoot	2	-	-	-	-
<i>R. S. Batrachium</i> sp. water crowfoot	-	-	-	-	4
<i>Nuphar lutea</i> (L.) Sm. yellow water-lily	1	-	-	-	-
<i>Fumaria</i> sp. fumitory	-	-	-	-	-
<i>Viola S. Melanium</i> sp. pansy	2	-	-	-	-
<i>Hypericum</i> sp. St. John's wort	10	-	-	-	-
<i>Lychnis flos-cuculi</i> L. ragged robin	3	-	-	-	1
<i>Argemone githage</i> L. corn cockle	1	-	-	-	-
<i>Stellaria media</i> gp. chickweed	1	-	-	-	-
<i>Chenopodium album</i> L. fat hen	3	-	-	-	-
<i>Atriplex</i> sp. orache	1	-	1	-	-
<i>Linum usitatissimum</i> L. flax	12	-	-	-	-
<i>Filipendula ulmaria</i> (L.) Max. meadowsweet	1	-	-	-	-
<i>Rubus fruticosus</i> agg. blackberry	-	1	-	-	-
<i>Lythrum salicaria</i> L. purple loosestrife	-	-	-	-	1
<i>Sium latifolium</i> L. water parsnip	-	-	1	-	-
<i>Berula erecta</i> (Huds.) Cor lesser water-parsnip	-	-	1	-	-
<i>Oenanthe aquatica</i> gp. water-dropwort	-	-	1	-	-
<i>Apium nodiflorum</i> (L.) Lag. fools watercress	-	-	-	-	1
<i>Angelica sylvestris</i> L. wild angelica	-	-	1	-	-
<i>Polygonum persicaria</i> L. red shank	4	-	-	-	-
<i>Fallopia convolvulus</i> (L.) Lov. black bindweed	2	-	-	-	-
<i>Rumex acetosella</i> agg. sheep's sorrel	2	-	-	-	-
<i>Rumex</i> sp. (not <i>acetosella</i> agg.) dock	2	-	-	-	-
<i>Urtica dioica</i> L. stinging nettle	1	-	-	-	-
<i>Alnus glutinosa</i> (L.) Gaert. alder	1	-	-	-	-
<i>Corylus avellana</i> L. hazel	1	-	-	-	-
<i>Mysotis</i> sp. forget-me-not	-	-	-	-	1
<i>Solanum cf. dulcamara</i> L. woody nightshade	-	-	-	4	-
<i>Scrophularia</i> sp. figwort	1	-	-	-	-
<i>Pedicularis palustris</i> L. red rattle	-	1	-	-	-
<i>Mentha</i> sp. mint	4	1	-	-	-
<i>Lycopus europaeus</i> L. gipsy wort	-	1	1	-	1
<i>Galium</i> sp. goosegrass	-	-	-	-	1
<i>Sambucus nigra</i> L. elder	6	-	2	-	-
<i>Bidens</i> sp. bur-marigold	1	-	-	-	-
<i>Eupatorium cannabinum</i> L. hemp agrimony	1	-	-	-	-
<i>Antheris cotula</i> L. stinking mayweed	7	-	-	-	-
<i>Sonchus arvensis</i> L. field milk-thistle	-	-	1	-	-
<i>Taraxacum</i> sp. dandelion	-	-	-	-	1
<i>Alisma</i> sp. water plantain	2	-	-	-	2
<i>Zannichellia palustris</i> L.	-	-	-	-	1
<i>Juncus effusus</i> gp. tussock rush	-	10	-	-	-
<i>J. bufonius</i> gp. toad rush	-	-	-	-	10
<i>J. articulatus</i> gp. rush	-	50	-	-	-
<i>Juncus</i> spp. rush	-	30	-	-	-
<i>Sparganium</i> sp. bur-reed	3	-	-	-	1
<i>Schoenoplectus lacustris</i> (L.) Pal. bulrush	6	-	-	-	2
<i>Eleocharis S. Palustres</i> sp. spike rush	1	-	-	-	1
<i>Carex</i> spp. sedge	13	2	19	1	12
cf. <i>Glyceria</i> sp. reedgrass	-	-	-	1	-
Gramineae indet grass	2	1	-	-	11
Total	99	97	32	6	53

Schoenoplectus lacustris (bulrush). Most of the insects were aquatic species such as Trichoptera (caddis) larvae or feed on emergent aquatic vegetation, for example *Donacia dentata* on *Sagittaria sagittifolia* (arrow-head) and *Alisma* sp. (water-plantain). The evidence recovered from layer 260 suggests that it accumulated on the bed of a slowly flowing well-vegetated channel.

The terrestrial faunal and floral remains from layer [260] included some appropriate to a marshy

Table 4: Trench 8

Other Waterlogged Plant Remains					
Bryophyta (moss) - stems	+	-	-	-	+
<i>Chara</i> sp. (stonewort) - oospores	-	-	10	-	-
deciduous leaves - fragments	+	-	-	+	-
<i>Linum usitatissimum</i> L. (flax) - capsule fragments	37	-	-	-	3

Table 5: Trench 8

Charred Plant Remains					
<i>Avena</i> sp. (oats) - peduncle	260				
Cereal indet. - grain	1				
<i>Chenopodium album</i> L. (fat hen) - seed	1				
<i>Hordeum</i> sp. (hulled barley) - grain	1				
cf. <i>Pomoideae</i> indet. (hawthorn etc.) - charcoal	+				
<i>Pteridium aquilinum</i> (L.) (bracken) - segment	1				
<i>Quercus</i> sp. (oak) - charcoal	+				
<i>Secale cereale</i> L. (rye) - grain	1				
<i>S. cereale</i> L. (rye) - rachis node	2				
<i>Triticum</i> sp. (free-threshing wheat) - grain	1				

Table 6: Trench 8

Coleoptera					
<i>Dyschirius globosus</i> (Hbst.)	260	259	252	253	256
<i>Pterostichus melanarius</i> (Ill.)	-	-	-	-	1
<i>Haliplus</i> sp.	-	-	-	-	1
<i>Gyrinus</i> sp.	-	-	-	-	1
<i>Helophorus brevipalpis</i> gp.	1	-	1	-	1
<i>H. aquaticus</i> (L.) or <i>grandis</i> Ill.	-	-	1	-	-
<i>Coelostoma orbiculare</i> (F.)	-	1	-	-	-
<i>Cercyon</i> sp.	-	-	-	-	1
<i>Megasternum obscurum</i> (Marsh)	-	-	1	-	-
<i>Laccobius</i> sp.	-	-	-	-	1
<i>Ochthebius</i> cf. <i>minimus</i> (F.)	-	1	1	-	-
<i>Limnebius</i> sp.	1	-	1	-	-
<i>Anofylus rugosus</i> (F.)	1	-	-	-	1
<i>Stenus</i> sp.	-	1	-	-	-
<i>Rugilus</i> sp.	1	-	-	-	-
<i>Mycetoporus</i> sp.	-	1	-	-	-
<i>Tachyporus</i> sp.	-	1	-	-	-
<i>Tachinus</i> sp.	-	-	1	-	-
Aleocharinae indet.	-	-	1	-	1
<i>Aphodius</i> cf. <i>sphacelatus</i> (Pc)	-	-	1	-	-
<i>Aphodius</i> sp.	-	1	1	-	1
<i>Onthophagus</i> sp. (not <i>ovatus</i>)	-	-	1	-	1
<i>Dryops</i> sp.	1	-	-	-	2
<i>Coccidula rufa</i> (Hbst.)	-	-	-	-	1
<i>Lathridius minutus</i> gp.	-	-	1	-	-
<i>Donacia clavipes</i> F.	-	-	-	-	1
<i>D. dentata</i> Hop.	1	-	-	-	-
<i>D. semicuprea</i> Pz.	-	1	2	-	-
<i>D. vulgaris</i> Zsch.	-	-	-	-	1
<i>Plateumaris sericea</i> (L.)	1	-	1	-	1
<i>Donacia</i> or <i>Plateumaris</i> sp.	-	-	1	2	-
<i>Chrysolina polita</i> (L.)	-	-	1	-	-
<i>Prasocuris phellandrii</i> (L.)	-	-	-	-	1
<i>Phyllotreta nigripes</i> (F.)	-	1	-	-	-
<i>Aphthona nonstriata</i> (Gz.)	-	1	-	-	-
<i>Longitarsus</i> sp.	-	-	1	-	-
<i>Apion</i> sp.	1	-	-	-	2
<i>Sitona</i> sp.	1	-	1	-	1
<i>Notaris bimaculatus</i> (F.) or <i>scirpi</i> (F.)	-	-	1	-	-
<i>Ceuthorhynchinae</i> indet.	1	-	1	-	-
Total	10	9	20	2	21

Table 7: Trench 8

Other Insect Remains					
<i>Ithytrichia</i> sp. - case	260	259	252	253	256
Trichoptera indet. - larva	-	-	-	1	-
Trichoptera indet. - case	2	2	1	-	1
Hymenoptera indet. - adult	6	-	-	-	1
<i>Melophagus ovinus</i> (L.) - puparium	-	-	1	-	1
Diptera indet. - adult	-	1	-	-	2

Table 8: Trench 8

Mollusca					
<i>Theodoxus fluviatilis</i> (L.)	260	259	253	256	
<i>Valvata cristata</i> Müll.	10	-	-	-	
<i>V. piscinalis</i> (Müll.)	2	-	-	1	
<i>Bithynia tentaculata</i> (L.)	53	-	-	-	
<i>B. Leachii</i> (Shep.)	54	-	-	-	
<i>Bithynia</i> sp.	8	-	-	-	
<i>Carychium</i> sp.	6	1	1	7	
<i>Physa fontinalis</i> (L.)	2	-	-	1	
<i>Lymnaea truncatula</i> (Müll.)	14	-	-	1	
<i>L. palustris</i> (Müll.)	2	-	-	-	
<i>L. stagnalis</i> (L.)	5	-	-	-	
<i>L. peregra</i> (Müll.)	14	-	-	2	
<i>Lymnaea</i> sp.	2	-	-	-	
<i>Planorbis planorbis</i> (L.)	1	-	-	-	
<i>P. carinatus</i> Müll.	3	-	-	-	
<i>Anisus leucostoma</i> (Müll.)	6	-	-	-	
<i>A. vortex</i> (L.)	10	-	-	1	
<i>Bathymphalus contortus</i> (L.)	3	-	-	-	
<i>Cyraulius albus</i> (Müll.)	7	-	-	-	
<i>Armiger crista</i> (L.)	2	-	-	-	
<i>Planorbis barbus</i> (L.)	1	-	-	-	
<i>Ancylus fluviatilis</i> Müll.	2	-	-	-	
<i>Acroloxus lacustris</i> (L.)	2	-	-	1	
<i>Succinea</i> or <i>Oxyloma</i> sp.	14	-	-	1	
<i>Cochlicopa</i> sp.	11	-	-	-	
<i>Vertigo antivertigo</i> (Drap.)	1	-	-	-	
<i>V. pygmaea</i> (Drap.)	1	-	-	-	
<i>Vallonia pulchella</i> (Müll.)	6	-	-	-	
<i>Vallonia</i> sp.	4	-	-	-	
<i>Euconulus fulvus</i> (Müll.)	1	-	-	-	
<i>Arion</i> sp.	+	-	-	-	
<i>Vitrea</i> sp.	1	-	-	-	
<i>Nesovitrea hammonis</i> (Ström.)	2	-	-	-	
<i>Zonitoides nitidus</i> (Müll.)	5	-	-	-	
<i>Limax</i> or <i>Deroceus</i> sp.	1	-	-	1	
<i>Trichia hispida</i> gp.	22	-	-	1	
<i>Sphaerium corneum</i> (L.)	9	1	-	-	
<i>Pisidium amnicum</i> (Müll.)	8	-	-	-	
<i>Pisidium</i> spp.	15	-	-	24	
Total	316	2	1	41	

river bank or wet grassland, for example the snails *Succinea* or *Oxyloma* sp. and *Vallonia pulchella*, and seeds of *Ranunculus* cf. *acris* (meadow buttercup) and *Carex* spp. (sedges). Apart from a few seeds of *Sambucus nigra* (elder) and a single seed of *Alnus glutinosa* (alder), there was little evidence of scrub or trees. The sample did, however, contain numerous waterlogged capsule fragments and seeds of *Linum usitatissimum* (flax) (Tables 3-4). This could have been the result of the channel being used for flax retting. It is also possible that the flax had been deposited in the channel with crop processing refuse. The sample produced various charred remains including grain and chaff of *Secale cereale* (rye) and a grain of a free-threshing variety of *Triticum* (wheat). Such an assemblage would be particularly characteristic of the Saxon or medieval periods and entirely appropriate to an urban context, although all these crops were cultivated in Britain from the late Bronze Age onwards. Waterlogged seeds of the annual weeds *Agrostemma githago* (corn cockle) and *Anthemis cotula* (stinking

mayweed) were probably derived from agricultural waste. Both species are apparently Roman introductions.

The deposit above layer [260], layer [259], contained few macroscopic biological remains apart from seeds of *Juncus* spp. (rushes). It possibly represented a phase of rapid sedimentation. Subsequently, the rate of sedimentation slowed and the fibrous peat of layer [252] formed. The peat seems to have developed under reed swamp conditions. The beetles included *Donacia semicuprea* which has larvae that tap the stems of *Glyceria maxima* (reedgrass) for air and *D. sericea*, which feeds on *Phragmites australis* (common reed). The seeds were mostly from aquatic Umbelliferae, such as *Sium latifolium* (water parsnip) and *Oenanthe aquatica* (water dropwort), and *Carex* spp. (sedges). The occurrence of some dung beetles from the genera *Aphodius* and *Onthophagus* suggests a background presence of pastureland.

The remaining two samples, [253] and [256], are consistent with the deposits in Trench 8 being within a channel. Sample [256] contained some flax capsule fragments and was therefore perhaps contemporaneous with sample 260. It also contained a puparium of *Melophagus ovinus*, a wingless fly which is an ectoparasite of sheep.

Correlation and Dating of the Deposits

Excavations on the flood plain of the River Ivel further downstream at Warren Villas showed that conditions on it were relatively dry until a rapid rise in the water table in the mid-Roman period resulted in peat formation over what had been a plough soil⁽¹⁶⁾. During the early medieval period, alluvial clay was deposited over the peat. The sequence in Trench 2 agrees well with the results from Warren Villas. Layer [205], which was non-waterlogged, was related to Iron Age features. Layer [204], the organic clay could easily have been Roman while an early medieval date for the alluvial clay of [203] is plausible. A Saxon or medieval date has been suggested for layer [260] in Trench 8 on the basis of the charred plant remains in it. It has been argued that layer [259] represented an episode of rapid sedimentation. It is possible that this was contemporaneous with the clay alluviation of layer [203] in Trench 2. Layer [202] post-dated any alluviation on the site and was probably late medieval or modern.

DISCUSSION

TOPOGRAPHY

The archaeological and environmental evidence from the Biggleswade West excavations indicates that whilst the general development of the river is broadly comparable with the results of investigations elsewhere along the middle Ouse, the Flit and the Ivel, some regional trends are becoming apparent. In the Biggleswade area, at Warren Villas Quarry, it is during the later Iron Age and Roman period that the regional impact of man's activity on the river becomes clearest. Here a plough soil on the river flood plain became waterlogged by the 2nd century AD⁽¹⁷⁾, caused by a rising water table. This is possibly the result of increased run off due to more intense farming activity and wider land clearance, a phenomenon which may be seen in alluvial layers [205] in trench 2 at Biggleswade.

THE ROMANO-BRITISH PERIOD

Specific artefactual evidence for Iron Age and Roman activity is slight from Biggleswade generally and absent from Biggleswade West. However excavation in trench 2 and, nearby, evidence from the watching brief has identified six ditches [217] [207] [507] and three in the watching brief (Fig 4), probably field boundaries, at the northern end of the pipeline, all sealed below an organic rich horizon [204] similar to the horizon that sealed late Iron Age and Roman activity at Warren Villas⁽¹⁸⁾. The location of the ditches is characteristic of the middle Ivel Valley, where Iron Age and Romano-British settlement is concentrated in small, possibly nucleated sites upon which field systems appear to focus. The field systems seem to take two forms. One is characterised by the settlement at Warren Villas (Fig 8) where rectangular fields run parallel to the river, the second where the settlement comprises a sequence of enclosures surrounded by fields such as that on Biggleswade Common (CUCAP RC8 MB27). There is some evidence from the Ouse Valley at Eastcotts (HER 1623) and Norse Road (HER 1830), both near Bedford, that this pattern is repeated along the valleys of Bedfordshire and not limited to the Ivel. The ditches at Biggleswade therefore may form part of the outfields of a settlement site similar to that of the Warren Villas. Close by a rectangular cropmark, the remains of a Romano-British enclosure (HER 468), suggests an alternative focus for the ditches, but as this is separated from the site by at least one subsidiary channel this is unlikely.

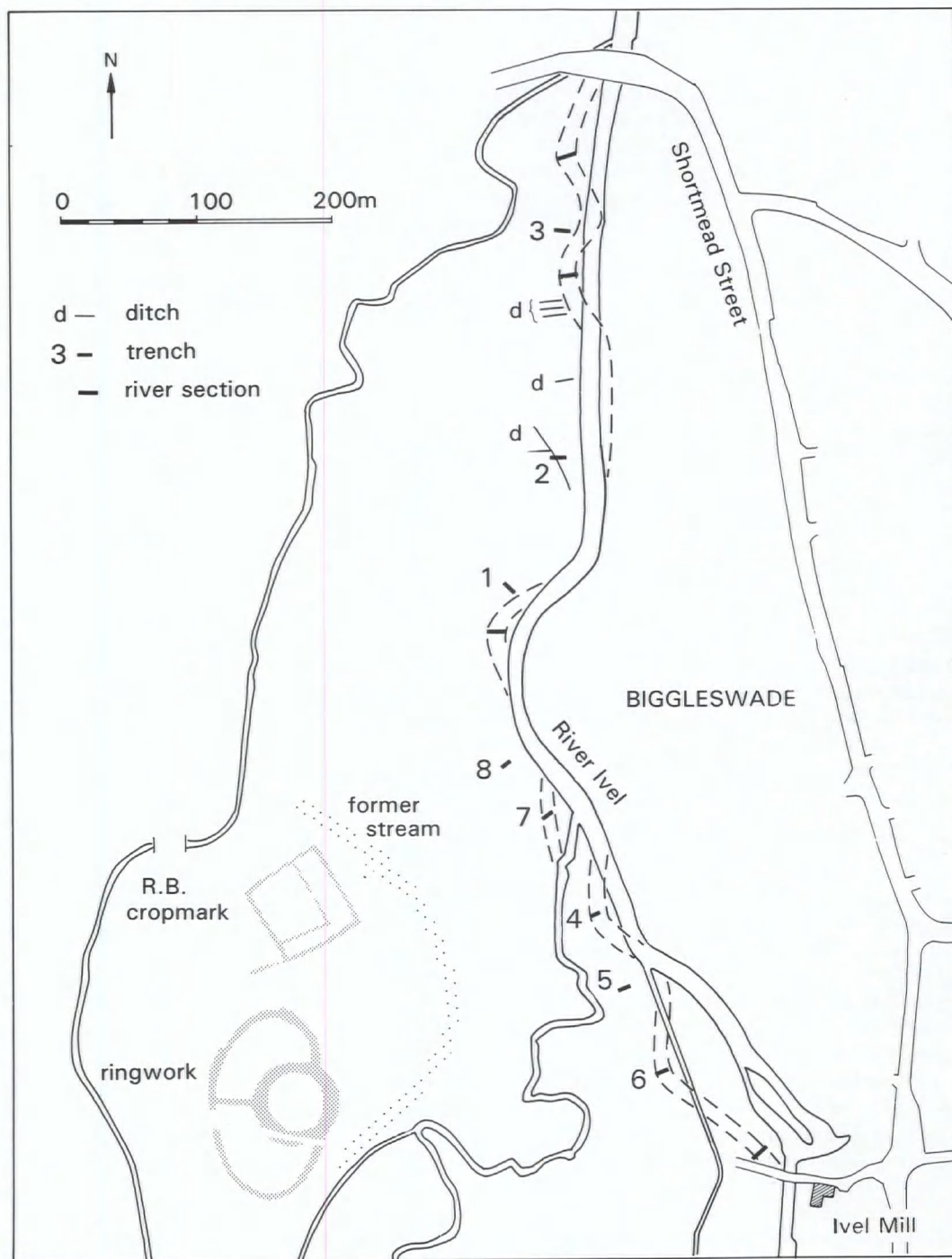


Fig 5. The historic landscape of west Biggleswade, showing the confluence of the Ivel and subsidiary streams at Hill Lane.

The rising water table evident from the organic horizon [204] suggests a reason for the abandonment of late Roman settlement or the discouragement of early Saxon colonisation on, or close to, the floodplain of the Ivel valley (Fig 5).

THE MEDIEVAL PERIOD

In the early medieval period the molluscan content of [203] suggests that the area close to Biggleswade was being managed as flood meadows, whilst the content of [260] the river bed horizon indicates urban waste from the early development of Biggleswade itself.

It is clear that much meadowland was available to the lord and tenants of late Saxon/early medieval Biggleswade but whether this included the two small areas of meadow west of the river is not known. It may be that seigneurially-led agreements or exchanges with the vill of Warden at this time or later resulted in the tenants, manor and township of Biggleswade gaining valuable additional meadow in locations most easily accessible from the east side of the river. Although in 1086 Ralf de Insula held the Manor of Biggleswade and the majority of his other lands lay in Stratton and Holme he did have a minor interest in Warden, according to an intriguing entry in Domesday Book: he held 1 virgates of arable which was assessed under Warden, but which "land belongs to Bicheleswade and it is valued there....."⁽¹⁹⁾

Possibly related is the location of the now nearly levelled early 12th century ringwork and bailey castle at TL 184 445 (Fig 5), some 400 m. south west of Biggleswade church and 250 m west of trenches 4-6. However, this was not constructed in Biggleswade parish but on the flood plain in Old Warden parish, separated from the town of Biggleswade by the main River Ivel and one of its minor channels. This, and the lack of any significant holding in Old Warden belonging to the lords of Biggleswade, suggests that the castle was constructed not for the defence of the town, but to control movement along the Ivel valley (the river was navigable) and traffic using the east-west route passing the castle from the bridging point at Ivel Mill⁽²⁰⁾. The only known documentary reference to the castle dates from 1423, long after it had been abandoned. A grant refers to "a messuage and 1 acre and half a rood of land in Hylle [in the parish of Warden] partly under the Ryggewey and partly abutting on Castellgate and 'le Brooke'⁽²¹⁾. Perhaps the 'Ryggewey' was the east-west route passing the castle.

The bridging point at Ivel Mill seems likely to predate Domesday. It is where the flood plain is narrowest in Biggleswade and the present water mill itself is the probable site of the two mills mentioned on the Biggleswade holding at Domesday. These were not separate mills but two mills under one roof as some multiple Domesday mills, proved to be. Ivel Mill was certainly the manorial mill described as two mills under one roof in leases of 1546/7 and 1557⁽²²⁾. No other mill is known within Biggleswade manor or township. It is likely that a bridge would have been associated with Ivel Mill from its earliest days.

It is not known when the other crossing point to the north at Hill Lane was first bridged though its relationship to other features in the landscape makes it look like a later insertion: it may only be of early medieval date. The earliest documented reference to a bridge there is not until 1302 when it was repaired (23). It is also not known where the wade or ford was from which the parish takes its name. The wade must have been significant before 1086 as it not only provided the name for the Domesday vill, but also for the larger administrative unit in which it lay, the Hundred. It could even have been the Hundred meeting place or moot.

How long before the late Saxon period these river crossings were in existence is not known. They were not utilised by the one major identifiable pre-medieval routeway through Biggleswade which ran not east-west but north-south, remaining on the east side of the river. This was the Roman road from Baldock to Sandy, the line of which is followed by the straight section of the A1 south east of Biggleswade and then by part of London Road and Drove Road. North of the town the road line has been lost where it must have crossed Biggleswade Common although it survives as a cropmark on aerial photographs as it crossed the common. It reappears again as Stratford Road in Sandy where it originally led into the Roman settlement at Chesterfield. The Stratford name derives from a ford where the Roman road or street crossed the east-west tributary of the Ivel passing through Biggleswade Common (Fig 7).

A possible reason for part of the road's abandonment and its disappearance may have been that the Biggleswade Common crossing became impassable for all or part of the year due to the rise in the water table and ensuing increased waterlogging or periodic flooding evident in all the trenches as the dark brown humified organic clay layer [204] [11] [18] [27] [32] [38]. The

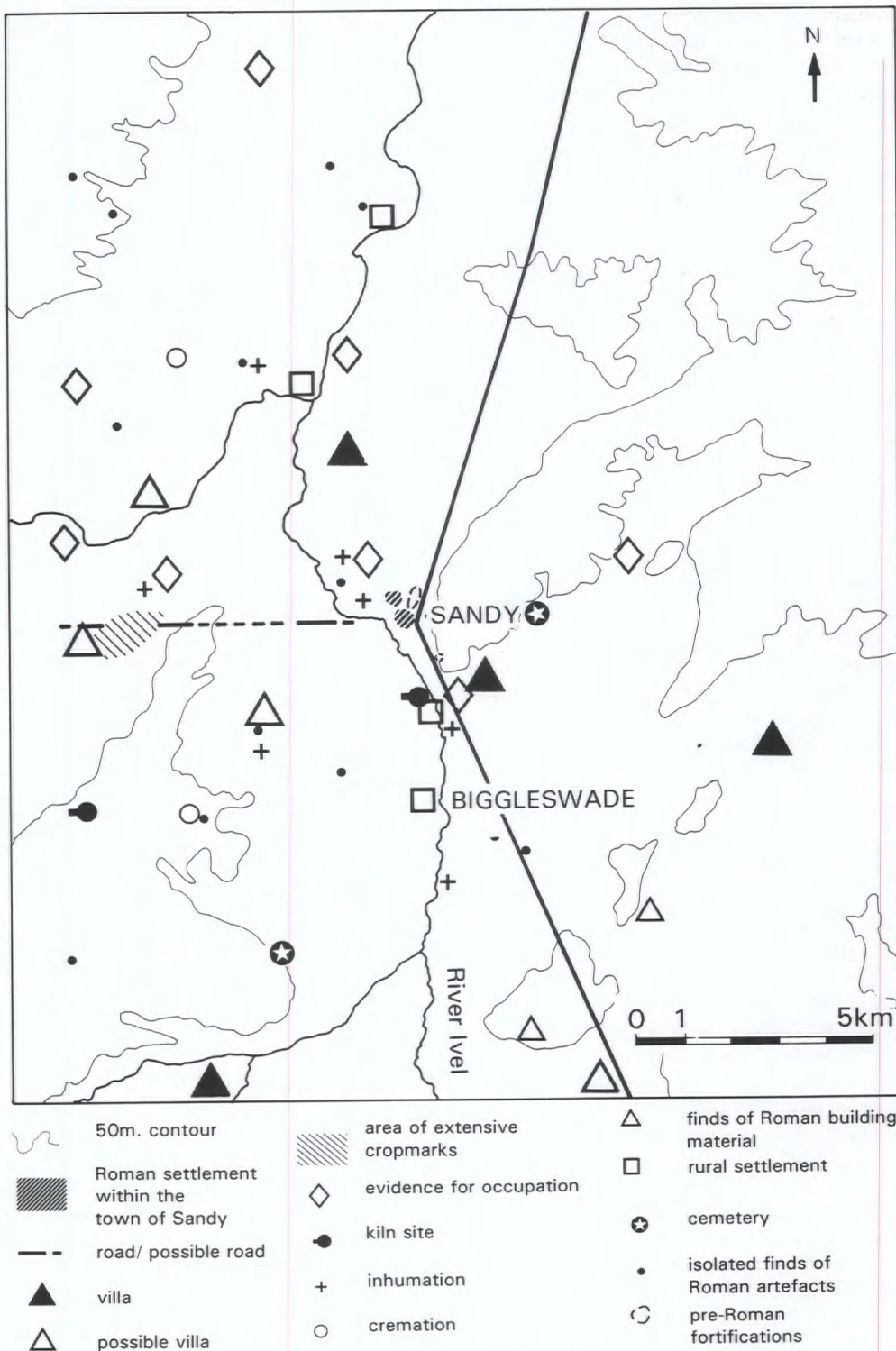


Fig 6. The Romano-British landscape of the Biggleswade and Sandy area.

environmental evidence from layer [204] trench 2 and from recent excavations at Warren Villas just to the west of the Common indicates such a rise occurring from the middle Roman period onwards to create conditions quite different from those pertaining when the Roman road was first built⁽²⁴⁾. The difficulties of crossing the Common probably increased during the Saxon and early medieval periods with more regular flooding leading to reedswamp conditions and peat formation. This would have been exacerbated by topographic restrictions imposed by the high ground of the greensand ridge at Sandy Warren. This left only a narrow gap for the road between the ridge and the river with no alternatives possible on this side of the river. This is likely to have been the impetus for developing the bridged crossing at the northern end of Biggleswade and the establishment of a section of a major route west of the river.

Further south the presence of the Roman road is also recorded in the place-name Stratton. This now deserted vill did not lie along the Roman road but parallel and 0.5 km to its east at TL 206 440. The historic core of Biggleswade and the now largely deserted settlement of Holme at TL 197 427 also did not lie on the Roman road but a little way from it although part of the road was utilised as the township boundary between Stratton and Holme. Such relationships are typical of most early medieval settlement and the arrangement of parishes or townships in the vicinity of Roman roads.

Recent excavations show Stratton to have been a substantial settlement in the 10th to 14th centuries, and documentary evidence suggests the presence of a chapel of ease⁽²⁵⁾. Indeed Domesday Book records 27 heads of household in Stratton vill with only 20 in Biggleswade where no urban attributes are indicated, unlike places such as Leighton Buzzard and Bedford. However, by 1309 Biggleswade had overtaken Stratton: a lay subsidy records 37 taxpayers in Biggleswade and 21 in Stratton (39 and 29 respectively in 1332)⁽²⁶⁾. Holme was always the smallest of the three settlements, all of which were surprisingly close, within a kilometre of each other.

It may be that Stratton in late Saxon times was the most significant settlement in the parish. However, the growing need for a major routeway west of the River Ivel to avoid the increasing difficulties for travel along the old Roman road, brought about by the high water table at the northern end of the parish, may have led to a re-orientation

of routes. The earliest route past Ivel Mill running westwards, guarded by the ringwork in the twelfth century, before turning north, crossed both the Ivel and at least two subsidiary channels (Fig 5) west of Biggleswade. An easier river crossing, possibly a new bridge, was to be found just beyond the confluence of the secondary channels and the river at Hill Lane. This re-orientation seems to have included the north-south road from Langford which, from the pattern of roads and tracks shown on the Tithe Map, may originally have carried on parallel to the river to Biggleswade Common, possibly even linking with the Roman road. Traffic using both northern routes was now forced to cross the Ivel at Biggleswade passing the area of difficult terrain to recross the river further north at Girtford in Sandy where the earliest known evidence for a bridge dates from the early to mid 13th century⁽²⁷⁾.

The draw of the river crossings coupled with strong seigneurial power seeking profits in Biggleswade township - it was not divided between several owners or manors like Stratton or Holme - provided the impetus for urban development there during the early medieval period. By 1132 the Manor of Biggleswade was in the King's hands, Henry I, who in that year granted it to Alexander, Bishop of Lincoln, for the cathedral⁽²⁸⁾. It was probably the Bishop who was responsible for laying out the new Market Place, now substantially encroached upon, as a planned addition to an already existing settlement. This, and the establishment of burgage tenure, probably occurred during the mid-late 12th century, a time when similar developments for profit were taking place elsewhere, such as in Leighton Buzzard and Dunstable⁽²⁹⁾. The earliest certain reference to burgage tenure dates from 1247 but a 13th century survey of the Manor of Biggleswade which may date from c 1220-40 records 54 burgage tenements held by 45 burgesses⁽³⁰⁾. The town was already well developed by this time: the Bishop of Lincoln had been granted the right to hold a market by King John, though it was probably already being held regularly. This right was confirmed by Henry III in 1227⁽³¹⁾.

The east-west orientation of the Market Place was at variance with the general north-south trends of the historic landscape and clearly an imposition. Its laying out with burgage tenements on either side would have necessitated some reorganisation of landholdings and realignment of some routeways, particularly the creation of a western spur off the Roman Road north of Stratton, now part of London

Road (Fig 7). As a result both of the main routes from the south were made, quite deliberately, to pass through the Market Place before reaching, what had now become, the main bridging point at the north end of Shortmead Street. The Market Place was also laid out so that St Andrew's Church, presumably on an ancient site, fronted directly on to its western end. That part of the Bishop's demesne land on the south side of the church also fronted on the Market Place and may have been the site of his palace or dwelling house during the medieval period. Some bishops visited at least annually but others more regularly, in particular Bishop Oliver Sutton who visited many times between 1280 and 1299 and especially in 1293-5 when he occasionally stayed for up to a week (32).

The form and location of the settlement to which the Market Place was added is not known though, presumably, it included the church. Shortmead Street could have been the earlier focus for Biggleswade with the church at its southern end but topographically is out of alignment in relation to the historic landscape of Biggleswade and burgrave plots on the north side of the market place which suggest the earliest settlement at Biggleswade was along the east-west route towards Ivel Mill. Also much of the northern two thirds of Shortmead Street is rather low lying - below the 30 m. contour - land which in the rest of the parish was usually meadow. The street name is obviously indicative of meadow and medieval documents demonstrate there was an area of meadow called Schortmade (33). One 15th century deed even refers to a "William Phelip of Shortmade" granting a "messuage [dwelling house] and land in Shortmade" (34). Perhaps Shortmead Street too is a planned feature, though earlier than the Market Place, laid out in part across former meadow.

Also of interest are 18th century references to cottages in Shortmead Street with hemplands adjoining (35). Hemp, the best material for rope making and also used for canvas and other coarse cloth, was usually cultivated in small closes, yards or gardens rather than in the common fields. Such hemplands are often mentioned in the eastern part of Bedfordshire, including examples from nearby Ickwell, Upper Caldecote, Northill, Old Warden, Beeston, Langford and Southill (36). Compared with the rest of Bedfordshire there seems to be a concentration of hemp related names in this area, presumably because the lighter soils provided suitable growing conditions and it became an important local crop at some period. Most of the

fieldname evidence dates from the early 16th and early 17th centuries but probably reflects hemp growing not at this time but earlier. Similarly the 18th century names in Shortmead Street are probably indicators of earlier practises but whether of medieval date is not known.

Flax, whose fibres were used to produce linen, was also grown in the same circumstances as hemp, sometimes both together (37). Though they were different plants no fieldnames derived from flax growing are known: the term hemp seems to have been used generically. Furthermore, cultivation of flax, though not hemp, is attested by environmental evidence in samples [260] [256] dated to the Saxon or medieval period from a palaeochannel in trench 8 just west of Shortmead Street. These samples included flax remains, possibly a result of the channel's use for flax-retting. Flax was later grown again on Stratton Farm during the latter part of the 19th century (38).

CONCLUSION

To conclude, the integration of topographical, environmental, archaeological and documentary evidence has highlighted the impact which a rise in the level of the River Ivel may have had on the early development of Biggleswade. From the decline in primacy of the Roman road which established the need for a new route to avoid the low-lying areas on the parish boundary with Sandy, the conditions for the growth of Biggleswade were established possibly in the late Roman or early Saxon period. As traffic on the north-south routes from Langford, Ashwell and Baldock concentrated on the Ivel Mill river crossing so the need for an easier river crossing was established and with it pressure grew to construct Shortmead Street through an area of meadow lands and flax fields to beyond the confluence of streams to what is now Hill Lane. Ultimately the re-orientation of the river crossing became the focus of the new market square in the 12th century and so to this day the early effects of changes in the landscape can be seen in the layout and orientation of modern Biggleswade.

ACKNOWLEDGEMENTS

This report is the result of archaeological work carried out by Bedfordshire County Council's Archaeology Service on behalf of Anglian Water Services Ltd during the initiation and implementation of Phase 1 Biggleswade (West) Sewerage Pipeline. This paper is the result of the integration of several individuals' work. The

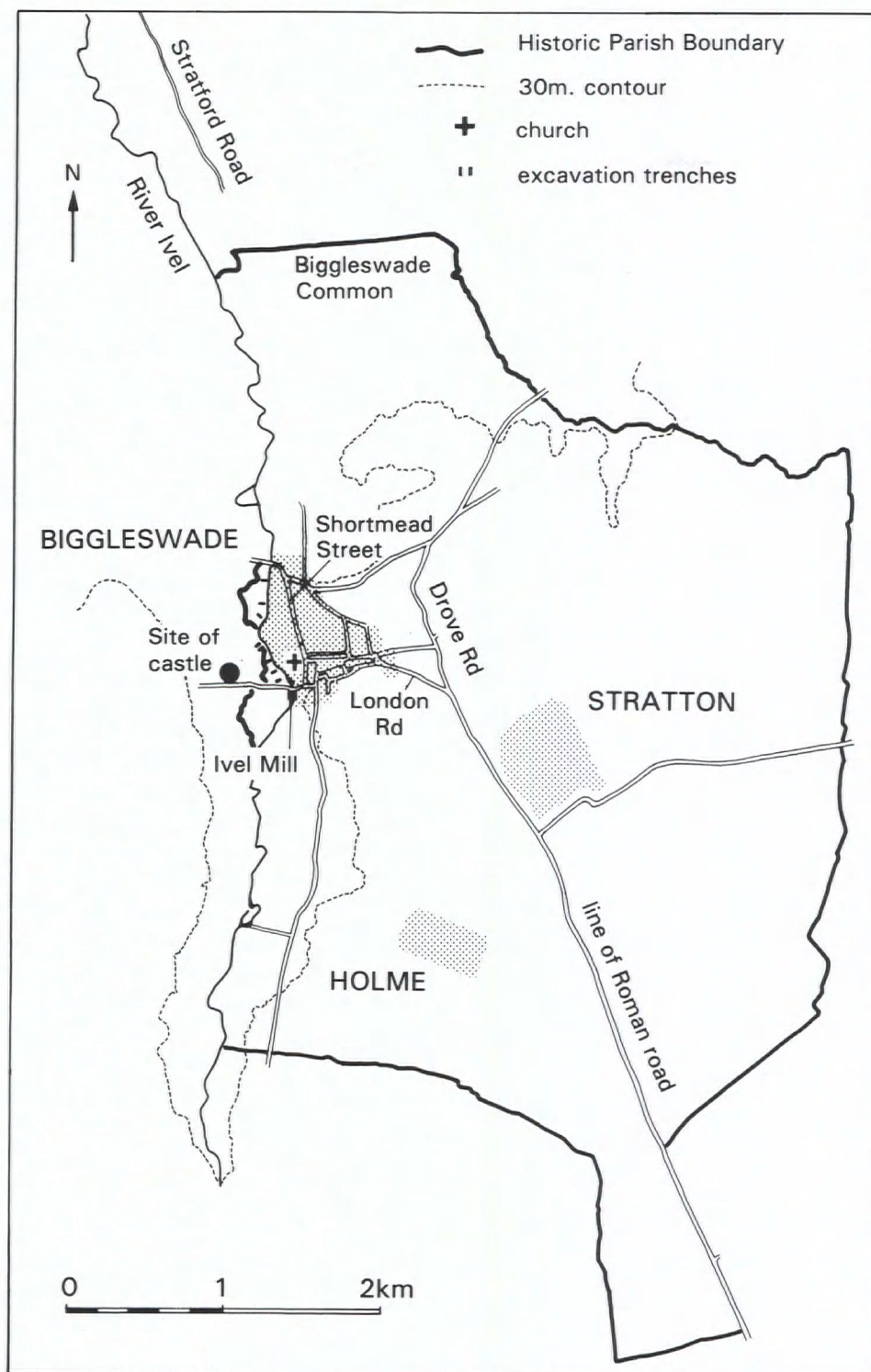


Fig 7. The historic landscape of early and medieval Biggleswade.

environmental study of the waterlogged plant macrofossils was undertaken by Dr M Robinson of the University Museum, Oxford; the documentary research undertaken by S Coleman Historic Environment Information Officer Heritage Group Bedfordshire County Council; P Gentil reported on the waterlogged wood samples 1-4 and E Hutchins on the wood species. The illustrations Figs 1-5, 7 were drawn by C Marshall and Fig 6 by R M A Trevarthen. The Archaeology Service is grateful to AWS consultants Gifford and Partners Ltd for their support during the post excavation phase of this project.

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Collection of Clay Pipes from Ampthill TL 0390 3970

KEVAN FADDEN

SUMMARY

Members of the Ampthill allotments Association informed the Ampthill Archaeological and Local History Society that they had found a concentration of white clay pipe fragments while tending their gardens.

BACKGROUND

The pipe fragments were all fabricated from a fine clay fired to a pure white, hard consistency. They were found in the top soil of land which had been in use as allotments for approximately thirty years. Tradition among the allotment holders suggested they were targets from a shooting range, as the field was rough pasture used as common ground prior to 1960. The land was almost certainly part of the Ampthill brickworks which closed down in 1866. The area of collection was approximately a quarter of an hectare.

SUGGESTED DATES AND OBSERVATIONS

The basic bowl shapes suggest dates from the early 17th. through to the mid 18th. century. Plain and spurred bowls are represented. Decoration is limited

to rouletting round the bowl rim in four cases and R B in relief moulded on the spur of seven others. One stem, which appears to come from a heavily moulded pipe, has letters incuse on the side which appears to read DAVENTRY although the D and the A are not quite complete.

The seven pipes with R B moulded on the spur are the same design and make a group with a general typology date of 1730-60. It may be a coincidence but a pipe maker by the name of R Brown served his apprenticeship in Daventry in 1723 and marked his pipes R B. This could suggest a connection between the seven pipes and the stem, but we must recognise that there is a distance of some 30 miles between the two towns of Daventry in Northamptonshire and Ampthill in Bedfordshire. The stem also came from a completely different style of pipe than the bowls marked R B, they would not have been heavily moulded.

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Fig 1. Detail of R as found on seven pipe spurs.
1:2

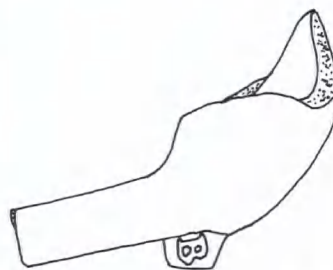


Fig 2. Detail of B on other side of pipe spurs in
Fig 1. 1:2



Fig 3. Moulded stem with Daventry incuse on the side.

Acquisitions, Enquiries, Research on Collections and Fieldwork at Bedford and Luton Museums, 1990-93

CAROLYN WINGFIELD AND ROBIN HOLGATE

INTRODUCTION

The following articles provide information on the most significant archaeological acquisitions and objects brought for identification to Bedford and Luton Museums during the past four years, and summaries of research undertaken on the museums' collections and of associated fieldwork. It does not include archaeological material acquired through excavation or other fieldwork which is published in full reports elsewhere.

Objects are grouped chronologically under general period headings. Provenances are given as the parish, followed by locality detail and the grid reference; grid references in brackets [] have been inferred from the description of the findspot.

Both Bedford and Luton Museums offer an identification service free of charge and are always pleased to consider offers of appropriate archaeological material from North Bedfordshire and South Bedfordshire respectively. For further information please contact:

Keeper of Archaeology, Bedford Museum, Castle Lane, Bedford MK40 3XD, tel. (0234) 353323;

Curator, Luton Museum Service, Wardown Park, Luton LU2 7HA, tel. (0582) 36941/2.

BEDFORD MUSEUM CAROLYN WINGFIELD

Note: the following abbreviations are used
A&DALHS - Ampthill and District Archaeological and Local History Society

Beds CC - Bedfordshire County Council

LCCM - Longsands Community College Museum, St Neots

MBeds DC - Mid Beds District Council

Details of all acquisitions and enquiries are held at Bedford Museum and the HER (Historical Environment Record), County Planning Department, where they are available to bona fide researchers.

PALAEOLITHIC

CORE TOOL

Roxton

TL 15 54

Patinated flint core tool, damaged by later knocks which appear to be random and may have resulted from being struck by machinery.

Enquiry 802, collected and reported by Mr T Morgan. The river-valley gravel deposits near Roxton would be a likely source for this core tool.

MESOLITHIC, NEOLITHIC AND BRONZE AGE

TRANCHET AXE

Biddenham

TL 01 48

Flint axe of Mesolithic tranchet type, 108 mm long x 44 mm (maximum width), found in topsoil.

Accession number Bedfm 1991/210, found and reported by Mr Eric Compton and donated at the finder's request by the landowners, RMR Wingfield/the Biddenham Estate.

FLINT CORE TABLET

Everton

TL 21 52

Core tablet in grey flint, probably Mesolithic, found by footpath NE of Everton.

Accession number Bedfm 1992/2, donated by R and V Holgate.

AXE AND WORKED FLINTS

Potton (Everton Road)

TL 20 50

A site on the greensand ridge has produced a variety of flint tools and debitage which have been collected over the years by the landowners. The worked flint covers a date-range from Mesolithic to early Bronze Age. Flint artefacts include:

1. Neolithic polished flint axe, with a lop-sided cutting edge which suggests that it was damaged and re-shaped in antiquity.
2. Thick-butted Neolithic axe re-used as a core.
3. Single-platform Mesolithic core.
4. Neolithic end-scraper, retouched at rounded end.
5. Large Neolithic flake of black flint, rounded end flaked to form a scraper.
6. Discoid knife of high-quality black flint, one side is smoother and has a ground edge. Similar to Neolithic knives from the Thetford-Brandon area and possibly an import from this region.
7. Small scraper, late Neolithic - early Bronze Age.
8. Leaf-shaped arrowhead, early Neolithic.

9. Finely-worked blade, broken at one end, Beaker period.
10. Late Mesolithic - early Neolithic blade, cortex along each side.
11. Abruptly-retouched blade or side-scraper, Neolithic.
12. End-scraper of Brandon type. Upper Palaeolithic or Mesolithic.
13. Small blade, Mesolithic - early Neolithic.
14. Part of a late Neolithic thin-butted axe or chisel which has been flaked and ground.
15. As 14, but with butt-end complete.
16. Triangular or oblique arrowhead of late Neolithic type.

Enquiries 565 (no 1) and 574 (nos 2-16), collected and reported by the Montila family. The site was visited in February 1991 by C R Wingfield and R Holgate. Other flint artefacts collected by the landowners and examined at the site included 3 Mesolithic blades and 6 blade fragments and a variety of Neolithic worked flint, notably 2 Beaker-period pressure-flaked knives. Records in Museum and HER. With acknowledgement to Dr R Holgate (Luton Museum Service) for assistance with the identifications.

ARROWHEAD

Goldington (Brookfield Road) [TL 06 50]

Barbed and tanged flint arrowhead, maximum length (tip to base of tang) 33.5 mm, maximum width across barbs 17 mm (one barb broken at tip). Late Neolithic - early Bronze Age.

Enquiry 495 found and reported by G Hooper.

WORKED FLINTS

Kempston (Hillgrounds) (Margetts Road)

TL 03 48

TL 03 47

19 worked flints from site of public swimming pool in Hillgrounds Road, comprising parts of 2 late Mesolithic/early Neolithic rods or long flakes, 2 small flake cores, part of a knife or notched blade, a small scraper of late Neolithic or early Bronze Age type, 6 waste flakes and 7 probable waste flakes, again likely to be late Neolithic/early Bronze Age. Also one complete rod retained by finder. Flint blade and blade fragment, both probably Mesolithic, in patinated flint from Margetts Road.

Accession numbers Hillgrounds: Bedfm 1992/21 flints found and donated by Simon Ware (originally enquiry 725). Margetts Road: Bedfm 1992/3 flints from rear garden of 12 Margetts Road, found and donated by R and V Holgate.

WORKED FLINTS

Maulden/Flitwick (Ruxox Farm) [TL 05 35/36]

Worked flints from area of Ruxox Farm:

1. Blade, unifacially retouched, Mesolithic - Neolithic (Fadden 1970, Fig 3 no 14)¹
2. Scraper, Neolithic
3. Bifacially worked flint, Neolithic

4. Knife, Neolithic
- 5-7. 3 scrapers, Neolithic
8. Knife, Mesolithic - Neolithic
- 9-12. 4 blades, Mesolithic

Accession numbers Bedfm 1991/155.1 - 12. Collected c 1970 by Mr Course and donated by LCCM.

WORKED FLINTS

Pertenhall (Grange Farm) TL 07 66 and 05 66

Chisel-shaped arrowhead, late Neolithic type, from Grange Farm; late Neolithic scraper or discoidal core.

Accession numbers Bedfm 1993/34 and 35, collected and donated by R Kawka by kind permission of the landowner, Mr D Shelton, and with acknowledgement to Dr R Holgate, Luton Museum Service, for assistance with identifications.

WORKED FLINTS

Ravensden (various sites)

Group of worked flints collected during fieldwalking at Highfield Farm, comprising a knife or cutting piece (undiagnostic of date); 1 blade, 2 flakes, 1 core and 1 retouched flake, all Neolithic; and an end scraper of Neolithic or Early Bronze Age date. Neolithic/Early Bronze Age core from Cleathill Farm. 3 flints from other locations in Ravensden parish: a Neolithic flake, and an end scraper and flake core, both Neolithic/Early Bronze Age. A fourth group from locations to the S and SW of Highfield Farm comprised a flint nodule and scraper found together, 2 scrapers and a flint point probably of late Neolithic date.

Accession numbers Bedfm 1993/29 (Highfield Farm), 1993/31 (Cleathill Farm) and 1993/30 (other locations), and fourth group enquiry 822. Collected and donated by R Kawka, with acknowledgement to Dr R Holgate, Luton Museum Service, for identifications.

WORKED FLINT

Renhold (Howbury Hall)

TL 09 51

Beaker-period thumbnail scraper and a Neolithic/Early Bronze Age flake.

Accession number 1993/32, collected and donated by R Kawka, with acknowledgement to Dr R Holgate, Luton Museum Service, for assistance with identifications.

POTTERY AND FLINT

Roxton (Barrow 'A')

TL 17 53

Flint debitage, fragments of Bronze Age and later prehistoric pottery and archive from excavations of 1972 by GT Rudd on ring-ditch A of the Bronze Age barrow cemetery.

Accession number Bedfm 1991/17, donated by LCCM. GT Rudd's excavation formed part of a larger investigation of the whole barrow cemetery by Alison Taylor and Peter Woodward²

AXE HAMMER (Fig 1.1)

Staploe

Axe hammer with concave profile typical of Class II axe hammers, but with shaft-hole further from the butt end than normal. Overall length 144 mm, maximum width 70 mm and maximum depth 53 mm at blade end. The shaft-hole has a maximum internal diameter of 34 mm.

Enquiry 500, found and reported by C Cutts.

SOCKETED SPEAR

Kempston

TL 02 48

The tip of a socketed spear (length 86 mm surviving) was found in silt from the edge of the River Ouse, and dates from the late Bronze Age.

Collected by metal detector and reported by Mr M Cook.

SOCKETED AXE (Fig 1.2)

Cople

TL 10 48

Plain socketed axe of late Bronze Age (approximately 1000 - 600 BC), of relatively long and slender form. 104 mm in length, socket measuring 34 x 35 mm maximum externally. The axe has a thick collar round the socket and a basal loop.

Bedfm enquiry 712, found in recently-machined ploughsoil during onion-harvesting and reported by the landowner, Mr D Mountain.

BELGIC AND ROMAN IRON AGE

BROOCH AND COIN

Bolnhurst

TL 07 58

Copper alloy Nauheim derivative bow brooch, bow approximately square in section, being flat on underside and rounded on upper surface. The pin and 2 coils of the spring are missing; the spring would have consisted of 4 coils originally. Length 46 mm. From the same area, a worn Republican denarius featuring a male head wearing a laurel wreath, and a quadriga galloping right on the reverse; there is no legend.

Enquiries 526 and 527, collected by metal detector and reported by R Elmore.

BOW BROOCH

Elstow

Copper alloy bow brooch of Colchester type, with pierced catchplate.

Enquiry 793, collected by metal detector and reported by Mrs S Coutts.

PLATE BROOCH (Fig 2.1)

Marston Moretaine

SP 97 42

Oval copper alloy plate brooch, maximum dimensions 29 x 23 mm, with inlaid enamel border of 10 segments, alternating red and blue. The central oval setting would have held a glass paste intaglio. Of the 20 to 30 similar brooches known, those with the intaglio surviving have either a head or abstract pattern of Celtic type; they combine native decoration with a Roman form. Findspots range from Hadrian's Wall to the Scilly Isles, but the type does not occur on the Continent and so may be assumed to originate in Britain. Dating is generally considered to be 2nd - 3rd centuries AD, although few brooches have been excavated from closely datable contexts. A brooch very similar to this was found on the site of a late Iron Age and Romano-British settlement on Ermine Street in Hertfordshire³.

Enquiry 898, collected by metal detector and reported by Mr R Elmore. For key to enamel colours, see *Beds. Arch.* 19 (1991), 112.

LOOPED FASTENER (Fig 2.2)

Harrold (Lodge Farm)

SP 93 55

A cast copper alloy annular mount with two trumpet terminals and a circular stud between them hiding a bar. The stud is 14 mm in diameter and has a cast triskele which would have been offset against an inlaid enamel background (enamel missing). The flattened, plain reverse of the fastener shows that it was intended to lie flat. Its date lies between the end of the 1st century BC and early 2nd century AD. The Harrold find belongs with other classes of fastener and harness-fitting, Celtic in style and pre- or early Roman in date. The decorative enamelled stud is reminiscent of button-and-loop fasteners, but could hardly have been used as a button since it is attached to the trumpet terminals on both sides. Its miniature form is paralleled in other miniature harness fittings, for example the terret from Trevelgue, Newquay (Cornwall), however the size of the bar on the Harrold fastener is insufficient for a load-bearing leather strap. This suggests it came from thinner or decorative straps either on the bridle or attached to human dress.

Enquiry 836 collected by metal detector and reported by R Martin, drawn by Polly Thompson.

BELT SLIDE FROM GLADIUS (Fig 2.3)

Kempston

TL 04 47

Part of cast copper alloy belt slide from a Roman short sword or gladius, dating to the late 1st or early 2nd centuries AD. Part of the suspension loop is

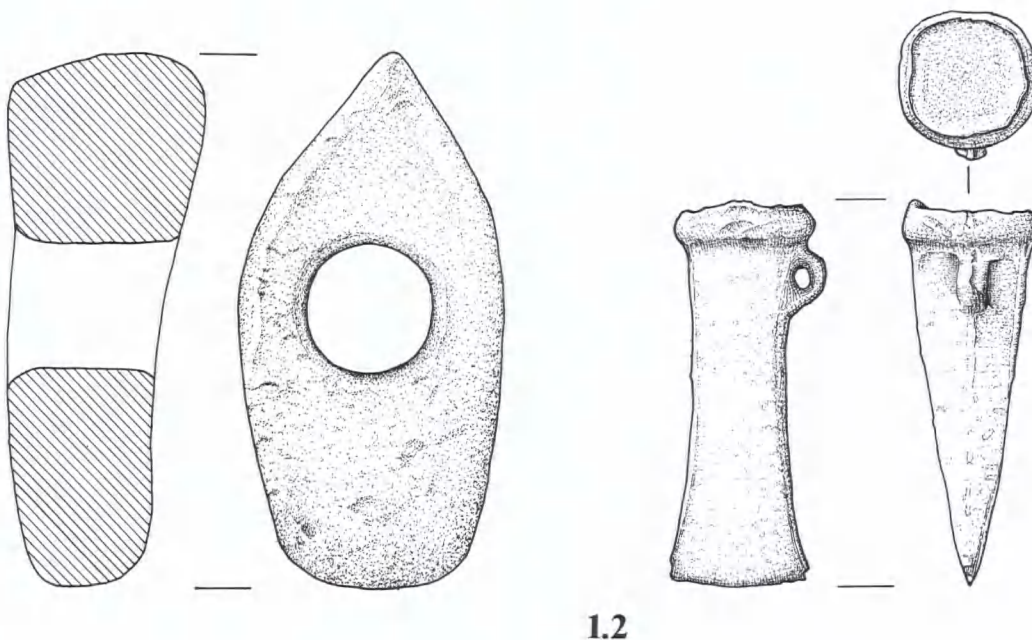


Fig 1.1. Stone axe-hammer, Staploe (1:2); 1.2. Bronze socketed axe, Cople (1:2)

missing. Finds of Roman military equipment are rare in Bedfordshire, and there is no known military site in the vicinity of Kempston although it was a focus for civilian settlement and burial in the late pre-Roman Iron Age and Romano-British period. Enquiry 905, collected by metal detector and reported by Mr A Parker. Drawn by Polly Thompson.

PENNANULAR BROOCH

Melchbourne

TL 03 65

Copper alloy brooch, diameter 28 mm with reeled terminals, which may or may not be intended to represent confronted animal-heads. Possibly Romano-British though the longevity of this type of brooch makes a Saxon or medieval date also possible.

Accession number Bedfm 1992/105, found and donated by DA Howard of Rushden.

IRON CLEAVER

Sandy (exact findspot unknown)

Iron cleaver with split socket, a variation of Manning's type 6. Total length 240 mm, of which the socket measures 48 mm but has been shortened through corrosion.

Accession number Bedfm 1991/156, donated by LCCM.

COINS

Farndish

TL 92 33

Total of 54 late Roman bronze coins collected from a probable habitation site, including 8 radiates, 16 Constantinian, 13 Valentinianic and 6 mid-4th century forgeries (minimissimi); the remainder were too worn to be positively identified.

Enquiry 450 (a), collected by metal detector and reported by R Martin. Full record of coins in Museum and HER.

COINS

Kempston (Church Field and Ladies Walk Field)

TL 01 47

330 Roman bronze coins, almost all of mid 3rd to late 4th century date.

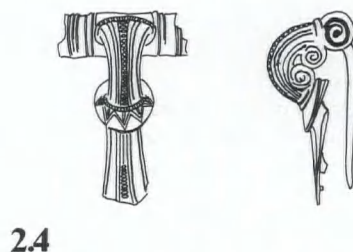
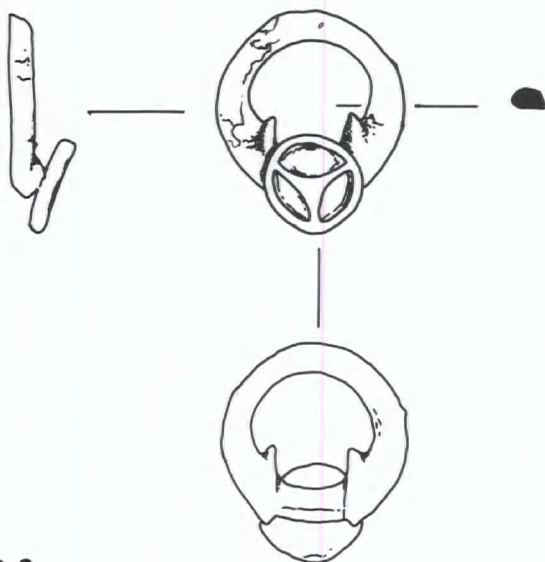
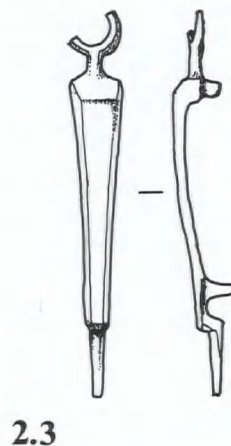
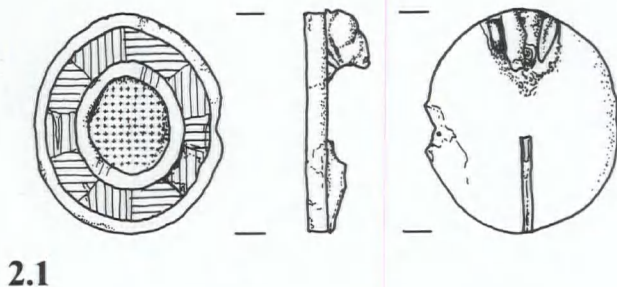
Enquiry 465, collected by metal detector, recorded and reported by R Martin. Full coin list held at Museum.

COINS

Marston Moretaine

8 bronze coins all of Constantinian date, including 4 GLORIA EXERCITUS, 1 VRBS ROMA, 1 CONSTANTINOPOLIS and a VICTORIAE DD NN AVG ET CAE(S) of Magnentius or Decentius. 1 denarius of Hadrian, reverse HISPANIA, 134 - 138 AD.

Enquiries 556, 559 and 564, collected by metal detector and reported by R Elmore. Full details of coins in Museum and HER.



2.2

Fig 2.1. Enamelled copper alloy plate-brooch, Marston Mortaine (1:1); 2.2. Copper alloy looped fastener, Harrold (1:1); 2.3. Copper alloy belt slide from gladius, Kempston (1:1); 2.4. Silver-gilt miniature brooch, Podington (1:1).

COINS AND BROOCHES (Fig 2.4)

Podington

SP 93 63

17 Roman bronze coins from probable habitation site, including 1 sestertius of Gordian III/SECURIT.PERPET.; 1 centenionalis of Magnentius/Salus DD NN AUG ET CAES; 8 Constantinian; 1 Valentinianic and 5 illegible late Roman coins.

The same site later produced a further 52 late Roman bronze coins, plus a penny of Edward III, a fragment of a medieval hammered silver coin possibly from E Europe and 3 Charles II farthings. Of the identifiable Roman coins, there were 4 radiates, 26 Constantinian, 1 of Magnentius or Decentius, and 3 Valentinianic including a siliqua of Valentinian with VRBS ROMA reverse.

Investigation of an adjacent field produced 18 Roman bronze coins and 2 brooches. The coins included a sestertius, an as of Antoninus Pius, 6 radiates, 2 coins of the house of Constantine and 2 of Valentinian. One of the brooches was a fine miniature brooch of thistle or rosette type in silver-gilt (Fig 2.4), which probably dates from around the middle of the 1st century AD. The brooch was apparently cast all in one piece, and has a sprung pin and tubular wings. The double scroll of silver wire behind the bow seems to be purely decorative although on larger rosette brooches a similar arrangement of iron or bronze wire has formed part of mechanism to hold one or more bolts. The other brooch was the head and upper bow of a T-shaped brooch in bronze with hinge-mechanism. 4 pieces from medieval bronze buckles and belt-fittings were also recovered.

Enquiries 450(e), 745 and 746, collected by metal detector and reported by R Martin. Full record of coins in Museum and HER. Brooch drawn by Patricia Hansom.

METALWORK, COINS AND POTTERY

Podington (Whites Barn) SP 93 63

Silver pin with reeled terminal; pins of similar type have been found at Baldock (Brewery Field) and in bronze at Verulamium (context dated 105-115 AD) and Puddlehill near Dunstable. Late Roman bronze coins collected from the same area were: 2 barbarous radiates and a small illegible flan which may have been a mid-4th century copy; 3 Constantinian and 1 Valentinianic, probably of GLORIA ROMANORVM type.

Another visit to the site produced sherds of Samian ware and 10 bronze coins. The Samian included 2 adjoining sherds from a Drag. 37 bowl, of (estimated) height 90 mm approx. and diameter 170 mm. The decoration featured part of a hunting scene below a row of beading and swags; the fabric was orange-pink in colour and probably originated in central Gaul, mid 2nd century. 4 other Samian sherds were collected. A sesterius of Hadrian, 6 radiates and 3 Constantinian bronze coins were found.

Enquiries 468 and 767, collected by metal detector and reported by R Martin. Full record of coins in Museum and HER.

METALWORK, COINS

Harrold (Lodge Farm) SP 93 55

The head and spring of a LPRIA Nauheim bow brooch, 2 small strap-mounts of probable Roman date, and 30 bronze coins. The coins include a sestertius of Faustina Junior, 6 radiates, 6 Constantinian and 2 Valentinianic; the remainder

are too worn to be identified beyond late 3rd-4th century.

Enquiry 450(b), collected by metal detector and reported by R Martin. Full record of coins in Museum and HER.

METALWORK, COINS AND POTTERY

Kempston (Church End) TL 01 47

8 Roman coins recovered: 1 sestertius and 1 dupondius of late 1st century; 5 more ases or dupondii in extremely worn condition; as of Antoninus Pius; denarii of Faustina Senior/AETERNITAS (commemorative). Severus Alexander/MARS VLTOR and part of a denarius of Antoninus Pius or Marcus Aurelius; and a base silver radiate of Gallienus/AEQVITAS. 8 bronze bow brooches: 2 broken and worn feet with catchplates; head of a small mid-1st century Colchester derivative; tinned Hod Hill with diagnostic side-knobs to bow and part of the head of a second in which the side-knobs were simply extensions to a flat, reeded head; heads of 2 Langton Down brooches (mid 1st century); trumpet brooch with head-loop for chain, late 1st-mid 2nd century. Other copper alloy objects included a blue-enamelled seal-box lid, probably of 2nd-century date, part of a nail-cleaner, and a fragment of a bracelet.

Enquiry 450(d), collected by metal detector and reported by R Martin. Full record of coins and finds, including post-medieval metal objects, held in Museum and HER.

METALWORK, PIPECLAY FIGURINES AND OTHER FINDS

Flitwick/Maulden (Ruxox Farm) TL 05 35

A collection of finds made by a former tenant-farmer, Mr Course, during the early 1970s. The most important finds will be published and discussed more fully with reports on excavations at Ruxox by the A&DALHS. In summary, the collection made by Mr Course includes a notable collection of fragments from Gallo-Roman pipeclay figurines (mostly the so-called "Venus" type, as also found in excavations at Roxton, Bedfordshire); 4 intaglios, one in a silver finger-ring; and a number of Roman coins and other metal and non-metal small finds.

Accession number Bedfm 1991/19, donated by Beds CC (landowners) and LCCM. The archives from the A&DALHS excavations directed by Kevan Fadden at Ruxox have also been donated to Bedford Museum, accession numbers Bedfm 1991/160 (site 2) and 1991/161 (site 3).

METALWORK AND POTTERY

Maulden/Flitwick (Ruxox) TL 05 35

Pottery and other finds, nearly all of Roman date, excavated by T Gardner in the 1950s, but

subsequently dispersed although a significant proportion were preserved in Luton Museum. Finds which have been relocated and transferred to Bedford Museum include coins, 1 copper alloy bow brooch and parts of 2 others, fragments of an iron knife and other objects, a lead strip, piece of a glass vessel and a small amount of flint debitage. The pottery includes Samian and colour-coated wares, mortaria sherds, an amphora stopper and greywares. Accession numbers Bedfm 1992/108, pottery previously kept in old display cases at MBeds DC offices in Ampthill and donated by MBeds DC.; Bedfm 1992/109 coins, metalwork and pottery donated by Luton Museum Service, Luton Borough Council. Bedford Museum is the now the agreed repository for all archaeological finds from Ruxox Farm, which spans the boundary between the museum services' collecting areas.

COINS AND POTTERY

Sharnbrook (Unilever)

SP 97 59

35 bronze Roman coins including a very worn sestertius, 13 radiates, 5 Constantinian, 4 Valentinianic and 12 late Roman illegible coins. Pottery collected at the same time included 5 sherds of plain Samian, 2 of colour-coated wares (one a beaker base), one perforated greyware sherd from a strainer, and a reeded rim of a small mortarium.

A later visit produced a sestertius and a dupondius (both illegible), 11 radiates, 7 bronze Constantinian coins and 5 Valentinianic. A further 9 bronze coins in poor condition could not be identified beyond "late Roman".

Enquiries 450(c) and 745, collected and reported by R Martin. Full record of coins, also a few late and post-medieval objects, held in Museum and HER.

METALWORK AND POTTERY (Fig 3)

Tempsford

TL 16 52

Surviving finds from GT Rudd's excavations of 1961-2 near the presumed site of a Roman villa. These excavations were the subject of a note in *Beds. Arch. J* 2 (1964) which records that some of the finds were stolen from the site hut. Those now preserved in Bedford Museum include the following iron objects:

1. ladle
2. spoon-bit
3. stylus
4. a medieval dagger
5. a ring and 6. twisted rods of uncertain function
7. prong from a rake
- 8 and 11. object of uncertain function
9. part of a barrel padlock
10. a tanged knife blade
- 12 and 13. 2 socketed spears (although one may be a socketed knife)

There is also a copper alloy pin. Pottery includes Samian, colour-coated and coarse wares (among these, 3 near-complete greyware pots) and a stamped mortarium (complete) of Verulamium ware (Fig 3). There is also a small amount of flue tile and building material.

Accession number Bedfm 1991/18, donated by LCCM. Mortarium drawn by Polly Thompson.

CREMATION/POT (Fig 4)

Elstow

Small late LPRIA wide-mouthed pot part of rim missing, in brown fabric. Provenance recorded on an old label with pot and presumed to be from former London Brick Company workings in Elstow.

Accession number 1993/28 donated by London Brick Company, Stewartby. Drawn by Polly Thompson.

CREMATION/POT

Tempsford (Stonebridge)

[TL 16 53]

Near-complete late pre-Roman Iron Age pot in local shell-tempered ware, 160 mm high and diameter about 175 mm at widest point of shoulder, just below the rim. The fabric is pink/brown internally and around the rim but grey over much of the exterior. Recovered by GT Rudd and recorded as a cremation vessel from "Stone Bridge, Tempsford" according to the display label from Longsands College.

Accession number Bedfm 1991/21, donated by LCCM.

POTTERY AND COINS

Harrold (Lodge Farm)

SP 93 55

Bases from 2 colour-coated beakers and a base and a rimsherd (with part of lip) from 2 mortaria were recovered together with a stabbed handle from a medieval jug and a number of late Roman bronze coins.

Accession number 1990/51 collected and donated by R Martin with permission of the landowner, Mr J W Northern.

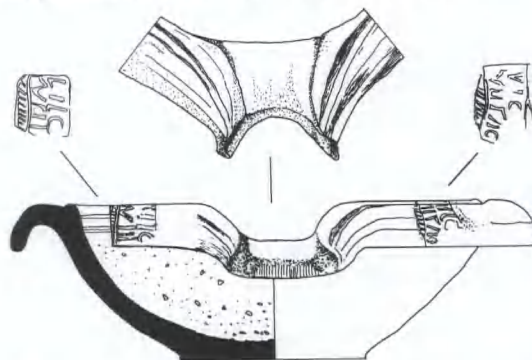


Fig 3. Stamped Verulamium ware mortarium, Tempsford (1:4).

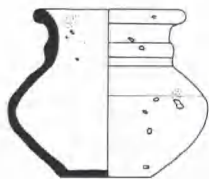


Fig 4. LPRIA pot, Elstow (1:4).

POTTERY AND TILE

Biddenham (opposite Kempston Mill) TL 02 48
Sherds of Romano-British pottery and tile collected from field near R Ouse.

Accession number Bedfm 1993/9, collected and donated by R and T Kawka of Bedford.

POTTERY

Bromham or Kempston

An important collection of 1st - early 2nd century AD vessels, all complete or nearly so and therefore presumably from burials. The collection was amassed by the Jarvis family, a Bedford firm of mineral extractors who owned gravel pits in Bromham, Biddenham and Kempston during the late 19th and early 20th centuries. There is no record of which pit(s) the pots came from although family tradition indicates a Kempston or Bromham provenance. The collection acquired by Bedford Museum comprises:

1. mammoth tooth
2. small shallow bowl, grooved cordon round shoulder, simple everted rim and narrow foot, brown fabric with some burnishing, LPRIA
3. knobbed lid in dark grey fabric decorated with 3 concentric incised circles crossed by groups of short radial lines
4. flask in dark grey/brown fabric, single horizontal line with row of saltire crosses below, just above widest point of girth, 1st cent.
5. small jar with triple groove round widest point of girth, double groove round base of tall neck with everted rim. Hard dark grey fabric, 1st cent.
6. jar with sharply everted rim and 2 zones of incised chevrons between narrow round cordons on the shoulder. Fabric has dark grey core, light grey/brown exterior, 1st cent.
7. lower half of plain carinated jar, thin and hard light grey/brown fabric, 1st cent.
8. small plain pot with narrow foot and everted rim, hard dark grey fabric, 1st cent.
9. small plain pot with everted rim, irregular incised

line below widest point, red/brown fabric, 1st cent.
10. tall jar with pedestal foot, single groove round neck and upright rim, everted at top. Hard, dark grey fabric, 1st cent.

11. wide-mouthed jar, with cordons round shoulder, everted rim. Hard, sandy grey fabric, LPRIA.

12. jar with cordon round carination and groups of parallel incised vertical lines below, pedestal foot and everted rim. Hard, homogenous dark grey fabric and exterior, some burnishing, LPRIA.

13. flagon with globular body in thin pale orange fabric with black colour-coat, neck and handle missing, late 1st - 2nd cent. (see also under Anglo-Saxon for 2 further vessels from this collection)

Accession numbers Bedfm 1993/8, 1-13 purchased from Mr J H Moore of Redhill, by kind permission of the Moore family. The family collection had previously been recorded by Beds CC Planning Department in 1985 when in the possession of Mr J H Moore's late father, who had inherited it from his mother, a member of the Jarvis family. Some items recorded in 1984 are now missing or retained by the Moore family, and those purchased by the Museum include several not previously recorded: full records and a concordance are held at Bedford Museum. A group of Palaeolithic core and flake tools recorded in the late Mr Moore's collection in 1984 were published in *Beds. Arch.* 18 (1988), 109-111 by Andrew Pinder.

POTTERY AND COIN

Ravensden (Cleathill Farm)

TL 05 53

Quantity of sherds collected from one field and probably signifying a Romano-British settlement. The sherds were concentrated in 4 areas A - D, each coinciding with a dark spread of soil. Area C also produced a bronze follis commemorating Constantius I, altar and eagle on reverse, London mint 307 AD (RIC 264).

Accession number 1993/10 (pottery) and 1993/16 (coin), collected and donated by R and T Kawka of Bedford.

ANGLO-SAXON

SCEATTA

Kempston

TL 04 47

Primary series silver sceatta, of maximum diameter 12 mm, dating to c 690 - 725 AD. Obverse: diademed head facing right, surrounded by snake-circle and a nonsensical legend (clipped) around the outer edge. Reverse: cross with bird facing right above, an annulet at the end of each short arm of the cross, one pellet below bird's tail and 3 pellets to the right of the bird's breast; enclosed by snake-circle and nonsensical legend. (British Museum Catalogue type 27).

Enquiry 904, collected by metal detector and reported by Mr P Bell.

SQUARE-HEADED BROOCH (Fig 5.1)

Elstow

TL 04 47

Copper alloy square-headed brooch (with pin missing) 63 mm long and 25 mm across the width of the head-plate. The head-plate has a central rectangular panel surrounded by Style 1 animal ornament, and three horizontal bands, the middle one pelleted, in the centre of the panel. Both lateral wings and the foot terminate in masks, with a single band of billets along the edge between the bow and mask on the wing.

Enquiry 796, collected by metal detector and reported by Mrs S Coutts. Drawn by Patricia Hansom.

SMALL-LONG BROOCHES

Kempston

TL 02 48

2 copper alloy small-long brooches, found near R Ouse. Both are worn and slightly damaged: one has a plain rectangular headplate and measures 64 mm in length, the other has a trefoil-shaped headplate and is 66 mm long.

Collected by metal detector and reported by Mr M Cook.

TAG END (Fig 5.2)

Roxton

TL 15 54

Gilt-bronze tag or garment clasp, with part of plate and end of hook missing. The surviving part of the plate shows 2 animal-heads with interlacing tongues; the style suggests a date around the 8th century.

Enquiry 585, collected by metal detector and reported by Mr T Morgan.

SOCKETED SPEARHEAD

Great Barford (lock in R Ouse)

Iron socketed spearhead 293 mm long, with slender blade 220 mm long gradually tapering to fine point, 36 mm across at its widest point.

Accession number Bedfm 1991/13, donated by LCCM.

SOCKETED SPEARHEAD

Odell

SP 96 57

Iron socketed spearhead with remains of mineralised wood in the socket. Maximum length 275 mm with short leaf-shaped blade which accounts for only 90 mm of total length and has a maximum width of 30 mm. The shape and dimensions are generally those of Swanton group D2, which would place it in the 6th - 7th centuries, however X-radiography did not show any sign of a split socket. Although solid sockets are not unknown in the Saxon period, they are rare and without further information on the context of the spearhead, a medieval date may also be possible.

Enquiry 698, found several years ago while digging wall footings and reported by Mr Nowicki of Odell. X-radiography undertaken at the Conservation Laboratory, Verulamium Museum.

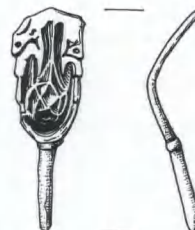
URNS

Bromham or Kempston

The lower half of a decorated cremation urn and a



5.1



5.2

Fig 5.1 Copper alloy square-headed brooch, Elstow (1:1); 5.2 Gilt-bronze tag end, Roxton (1:1).

plain globular urn, both handmade, nos 14 and 15 from the Moore Jarvis collection (see above under Late and Roman Iron Age). 14 lower half of *Buckelurne* of Myres II-4 (possibly group 2). The decoration scheme comprises pairs of parallel, more-or-less vertical elongated bosses, with horizontal slashes across them; the bosses could form the lower part of *stehende Bogen*. There are 2 plain round bosses between each pair of *Bogen*. The fabric is dark grey with some large irregular red inclusions (possibly oxydised grog), not recorded in other early Saxon pottery from the Ouse Valley. Late 5th-early 6th cent.

Accession numbers Bedfm 1993/8.14 and 15. Purchased from Mr J H Moore of Redhill.

MEDIEVAL

SEAL DIE

Bedford (Queens Park)

TL 02 49

Lead vesica-shaped die of 12th-13th century date. The motif appears to be a buckle, the legend reads

+ S' ROBERT TRICHET
(seal of Robert Trichet)

There is a Tricket family recorded at Colworth in Sharnbrook in the 13th century, so it is possible that the seal die records a variant of that family name.

Enquiry 468(a), found by metal detector and reported by R Martin.

SEAL DIE

Bletsoe

TL 02 58

Copper alloy handled die, 14th-15th century, depicting a finely-engraved stag at bay. The legend is difficult to make sense of, but appears to read

* ALASBOWLESI

Enquiry 468(b), found by metal detector and reported by R Martin.

SEAL DIE

St Neots/vicinity of Priory

Copper alloy seal die with pierced handle, a common type dating from late 13th to early 15th centuries. The face features a squirrel eating a nut and the legend

* I CRAKE NOTIS
(I crack nuts)

Enquiry 642, found and reported by Mrs Carpenter.

SEAL DIE

Willington

Round lead alloy seal die, dating to around the 13th century, with a simple 8-petalled flower-pattern engraved on the face. The legend is partially unintelligible

: S' NICHOLAS [:C]OCI
("seal of Nicholas ?")

Enquiry 691, found and reported by Mr Ward.

LEAD ALLOY MOUNT

Great Barford (exact findspot unknown)

Decorative lead alloy openwork mount, originally circular and about 70 mm in diameter.

Originally identified as a pilgrim's badge and dating from around the 14th century.

Accession number Bedfm 1991/12, donated by LCCM.

SEAL DIE, BROOCH AND BUCKLES

Elstow

Lead-copper alloy vesica-shaped seal die, 28 x 18 mm, with vestige of suspension loop on reverse. Engraved with legend

*AVE MARIA GRACI
(Hail Mary [full of] grace)

and Virgin holding a child in her arms. Probably mid 13th - early 14th century. A copper alloy annular brooch, external diameter 26 mm, with 8 equally-spaced cast animal heads round the rim and a buckle with forked spacer and plates of mid 14th - early 15th date were also found in the same area. Enquiry 800 found by metal detector and reported by Mr Summers.

HARNESS PENDANT

Bolnhurst (Wood End Farm)

Copper alloy harness pendant of square shape depicting a griffin-like animal with bushy tail against a red enamelled field. 13th - 14th century.

Enquiry 592, collected by metal detector and reported by Mr R Elmore.

HARNESS PENDANTS

Brogborough and Ridgmont

2 copper alloy horse harness pendants, and both originally enamelled although the colour-schemes cannot now be discerned. The smaller pendant is of a common 14th-century type, shield-shaped with a suspension loop and measures 48 mm height (including loop) by 38 mm maximum width. The heraldic design is fretty, on a chief a lion passant,

within a border, although the border may have been a purely functional element to contain the enamel inlay rather than part of the heraldry. Out of several families bearing similar arms, one - the St Amand or Amond family - is recorded as holding a manor in Houghton Conquest in the late 14th and early 15th centuries. The second pendant, also shield-shaped, is larger than most horse-harness pendants and has no suspension loop. It measures 67 mm (height) by 53 mm width across the top. Heraldically it is billety, the 10 billets arranged 4, 3, 2 and 1. These arms are common and it is not possible to suggest any connections with any particular local family.

Enquiry 544, found and reported by SE Williams. Photograph retained at Museum.

KEYS, POTTERY, TILE AND BONE

Maulden (Ruxox Farm) TL 04 35

Finds from the site of a former monastic cell of Dunstable Priory, which was founded in the late 12th century and lasted until the Dissolution. They include 2 large iron keys, potsherds, fragments of floor and roof tile (some glazed), part of a human jawbone and a small number of animal bones.

Accession numbers Bedfm 1991/20 (keys) collected by a former tenant-farmer Mr Course c 1970 and donated by Beds CC (landowners) and LCCM; Bedfm 1992/108 excavated by T Gardner of Amphill in the 1950s and donated by M Beds DC.

KEY AND FLOORTILES

Warden Abbey TL 12 43

19 glazed floortiles and an iron key from excavations by GT Rudd and B West on the site of Warden Abbey, 1960-61.

Accession number Bedfm 1991/15 (key) and 16 (tiles), donated by LCCM. There are stamped and pseudo-mosaic tiles, including new types since incorporated in the Warden Abbey type series by Evelyn Baker.

POTTERY

Haynes (Hill Top Farm) TL 10 41

1 late medieval jar rim in grey sandy fabric and 13 sherds in thin, buff-coloured fabric of Brill-Boarstall type. Recovered in 1982 from the site of old farm buildings, and found under a later cobbled surface. The assemblage also contained one abraded sherd of combed slipware (not retained).

Accession number Bedfm 1992/104 collected and donated by Ann Hagen of Haynes.

HARNESS PENDANT AND POTTERY

Pertenhall TL 08 65

Handles of 3 medieval pitchers, one in leached shell-tempered ware, not later than the late 12th or early 13th century, and the other two of sand-tempered ware, 13th-14th centuries. A shield-

shaped horse harness pendant in copper alloy was also found. Surviving enamel indicated a chequered field of blue and another colour.

Enquiry 879 collected by metal detector and reported by Mr E Compton.

POTTERY

Houghton Conquest TL 02 40

52 sherds of late medieval domestic pottery, c 14th century, mostly in grey sandy fabric. The assemblage also contained a few Romano-British sherds.

Accession number 1993/6 (originally enquiry 822) collected and donated by R and T Kawka of Bedford.

POTTERY

Pertenhall TL 08 57

3 groups of potsherds, medieval and some early post-medieval.

Accession numbers Bedfm 1993/36, 37 and 38, collected and donated by R Kawka by kind permission of the landowner Mr B Banks.

POTTERY

Thurleigh (Scald End) TL 04 57

and Odell (Hobbs Green) SP 96 58

Pottery collected during fieldwork by AE Brown and C Taylor.

Accession numbers Bedfm 1990/2092 (Thurleigh) and 1990/2093 (Odell), donated by A E Brown. The results of this fieldwork are published in *Landscape History* 11 (1989), 61-81.

POST-MEDIEVAL

FUNERARY HELMET

formerly in Odell parish church

16th century funerary close helmet with skull-piece, visor, lower visor and beaver. The crest of the skull-piece and edges of other parts are outlined with a single band of moulded ridge and cable ornament. Traces of dark grey paint survive on the exterior. The helmet was unearthed in the grounds of Odell Castle in the 1920s and subsequently hung on a memorial to a member of the Alston family in the church. Complete funerary helms of this date are relatively scarce (greater numbers survive from the 17th century). The helm may have been made in Flanders in or around the 1540s.

Accession number 1992/1, donated by Mrs Temperance Alston Payne and Mr Crewe Alston Payne, with acknowledgement to Odell Parish Church Council and Mrs J Stubbs of Harrold, and to Karen Watts of the Royal Armouries for identification and advice. Conservation undertaken by Conservation Laboratory, Verulamium Museum.

NOTES

1 Fadden, K., 1970; "Ruxox Farm, Maulden: 1 The Prehistoric

Finds" in *Beds. Arch. J* 5, 1-4.

2 Taylor, Alison F. and Woodward, Peter J., 1985; "A Bronze Age Barrow cemetery, and associated settlement at Roxton, Bedfordshire" in *Archaeol. J.* 142, 73-149.

3 Disc brooch no. 71 in Potter, T W and Trow, S D, 1980 "Puckeridge - Braughing, Hertfordshire; The Ermine Street Excavations 1971-72" in *Herts. Arch.* 10, 49-50.

LUTON MUSEUM

ROBIN HOLGATE

Donations and Enquiries

PALAEOLITHIC/MESOLITHIC/NEOLITHIC /BRONZE AGE

FLINTWORK

Studham

TL 020 157

Lower palaeolithic ovate hand axe.

LTNMG enquiry brought in by Mr Peter Williams. Found whilst digging a trench in the rear garden of 57 Woodland Rise, Studham.

FLINTWORK

Pegsdon

TL 11 29

A total of 20 flints (one mesolithic bladelet core and 18 flakes and a scraper of neolithic/Bronze Age date) and a Romano-British potsherd.

LTNMG 1993/224 donated by Beds. and Cambs. Wildlife Trust and collected by Robin Holgate from the surface a field at Telegraph Hill recently seeded with grass.

FLINTWORK

Luton/Bramingham

TL 07 26

A total of 48 neolithic-Bronze Age flints (45 flakes, a flake core, a notched flake and a leaf-shaped arrowhead) and a medieval potsherd.

LTNMG 1991/4 donated by Mr C Makin and found by him on the Bramingham estate prior to housing development. This material complements that found in 1987-88¹⁾.

FLINT ARROWHEAD

Sundon

TL 05 26

Barbed and tanged arrowhead.

LTNMG 1994/44 donated by Mr H McColl and found by him on the surface of cultivated land north of Sundon water tower.

IRON AGE

POTTERY

Luton/Limbury

TL 06 24

Four fragments of late pre-Roman Iron Age sand-tempered pottery.

LTNMG enquiry 3199 reported by Mr W Halden. Found in the rear garden of 6, Monton Close.

ROMANO-BRITISH

POTTERY

Luton/Icknield Way

TL 07 24

Base fragment of black-burnished ware dish of 2nd or 3rd century date.

LTNMG enquiry 3548 reported by Mr D Northcott. Found in the garden of 147 Icknield Way.

POTTERY

Luton/Winch Hill Farm

TL 12 21

A total of 42 Romano-British potsherds, 20 tegulae fragments, two imbrex tile fragments, five box flue tile fragments, two Iron Age sherds and thirteen flint flakes.

LTNMG 1991/35 collected by Mr R Hudspith from the surface of cultivated land north-east of London Luton Airport in December 1990.

POTTERY, FLINTWORK AND BOW

BROOCHES

Barton-le-Clay

TL 082 322-TL 106 316

A total of 31 Romano-British potsherds (including one samian and one colour-coated 'sherds), three medieval sherds and two flint flakes.

LTNMG 1991/4/8-11 collected by Mr C Makin after topsoil stripping along the line of a pipetrench being laid by British Gas in April-June 1990.

Barton-le-Clay

TL 08 32

A total of 27 Romano-British potsherds.

LTNMG 1992/119 collected by Mr R Hudspith after topsoil stripping along the line of a pipetrench being laid by British Gas in 1990.

Barton-le-Clay

TL0134-TL0533

A total of 48 flints (a mesolithic bladelet core and 46 flakes and a scraper) and a Romano-British potsherd.

LTNMG 1992/115-118 found by the British Gas Archaeology Division along the line of the British Gas pipetrench.

Barton-le-Clay

TL 08 32

Colchester two-piece (type B) brooch of AD 50-75 date and Hod Hill type brooch of AD 43-70 date.

LTNMG enquiries 3206 and 3227 reported by Mr B Squires. Found by metal detector in advance of laying a British Gas pipeline.

Pottery And Coins

Sundon

TL 05 26

A total of eleven Romano-British potsherds, one late Iron Age sherd, one medieval sherd, four Romano-British coins in poor condition (a denarius, an antoninianus and two folli), a mid-2nd century copper alloy key handle and a copper alloy awl

tracer.

LTNMG 1994/39-43 donated by Mr H McColl and found by him on the surface of cultivated land adjacent to Sundon water tower.

COIN

Luton/Runfold Avenue

TL 07 24

Follis of 4th century date in poor condition.

LTNMG 1991/52 donated by Mr G Charlton. Found in the garden of 34 Runfold Avenue.

COIN

Luton/Fallowfield

TL 07 24

Follis of 4th century date in poor condition.

Obverse: bust facing right. Reverse: virtually illegible with mint mark PLG (Lyons) visible.

LTNMG enquiry 3452 reported by Mr L Osdaldiston. Found between Fallowfield Road and the River Lea.

COIN

Luton/Riddy Lane

TL 07 24

Cut-down sestertius of ?Marcus Aurelius (161-180) in poor condition. Obverse: bust facing right. Reverse: figure standing left, holding ?staff in right hand.

LTNMG enquiry 3869 reported by Mr M Slack. Found in the allotments at Riddy Lane.

COIN

Luton/Icknield Way

TL 07 24

AE 4 of Constans, AD 346-50) in good condition. Obverse: D.N.CONSTANS P.F.AVG, diademed, draped and cuirassed bust facing right. Reverse: FEL.TEMP.REPARATIO, phoenix, radiate, standing right on rocky mound with mint mark TRP (Trier).

LTNMG enquiry 3544 reported by Mr & Mrs E James. Found in the garden of 147 Icknield Way.

COINS

Luton/Bramingham

TL 07 25

Two folli of 4th century date in poor condition.

LTNMG 1994/38/1-2 donated by Mr H McColl and found by him on the Bramingham estate.

MEDIEVAL

COIN

Sundon Hills

TL 06 29

Long cross silver penny of early 13th-early 16th centuries date in poor condition.

LTNMG enquiry 3363 reported by Mr E McArdle. Found on footpath in Sundon Hills Country Park.

POTSHERDS

Sewell

SP 99 22

A total of 22 fragments of late medieval pottery and three ?late Iron Age/Romano-British sherds.

LTNMG 1993/108 donated by Mr R Kawka and found by him on the surface of cultivated land to the north-west of Maiden Bower.

POTSHERDS

Battlesden/Hockliffe

SP 96 27

Five fragments of late medieval pottery.

LTNMG enquiry 3352 reported by Mr C P Spence. Found near the Fleur de Lys public house on the Battlesden/Hockliffe boundary.

LEAD AMPULLA

Dunstable

TL 03 20

Lead ampulla with scallop shell decoration on one face.

LTNMG 1993/255 found by Mrs C Stevens at the junction of Caddington Lane and the A5 (Watling Street).

IRON ARROWHEAD

Near Barton-le-Clay

TL 08 31

Iron arrowhead of 13th-16th centuries date.

LTNMG enquiry 3187 reported by Mr J M Boon. Found in a field at Barton-le-Clay.

FIELDWORK

Luton/Goosebury Hill

TL 077 249

Inspection of foundation trenches prior to the construction of housing to the rear of 34, Goosebury Hill by Robin Holgate in February, 1990 led to the recovery of six Romano-British bodysherds and six neolithic-Bronze Age humanly-struck flint flakes (LTNMG 1990/97). Traces of Romano-British occupation have been recovered previously from Goosebury Hill² but if similar remains once existed at 34, Goosebury Hill, most traces have since been truncated.

Luton/Whitehill Farm, Stopsley

TL 10 25

Surface collection after topsoil stripping along the line of pipetrench being laid by the Lea Valley Water Company by Robin Holgate in March and April 1990 immediately to the north of Whitehill Farm yielded mesolithic-Bronze Age flintwork in two localities. At TL104254, 31 neolithic-Bronze Age flints were recovered, including 22 flakes, two blade fragments, a flake core, three scrapers, a notched flake, a cutting flake and a miscellaneous retouched flake (LTNMG 1990/98/1). At TL105255, five mesolithic flints (two bladelets, a bladelet core, a truncated blade and a burin) and 20 neolithic-Bronze Age flints (18 flakes, a scraper and

a cutting flake) were retrieved, along with two medieval bodysherds (LTNMG 1990/98/2). Both groups of flintwork could result from domestic activity at the two localities.

NOTES

1 Wingfield, C. and Holgate, R. 1991; "Acquisitions, Enquiries, Research on Collections and Fieldwork at Bedford and Luton Museums, 1988-89", *Bedfordshire Archaeol.* 19, 82-3 .

2. Warren, D. 1990; "A Roman Site at Gooseberry Hill, Limbury (Luton)", *The Manshead Magazine* 30, 20

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