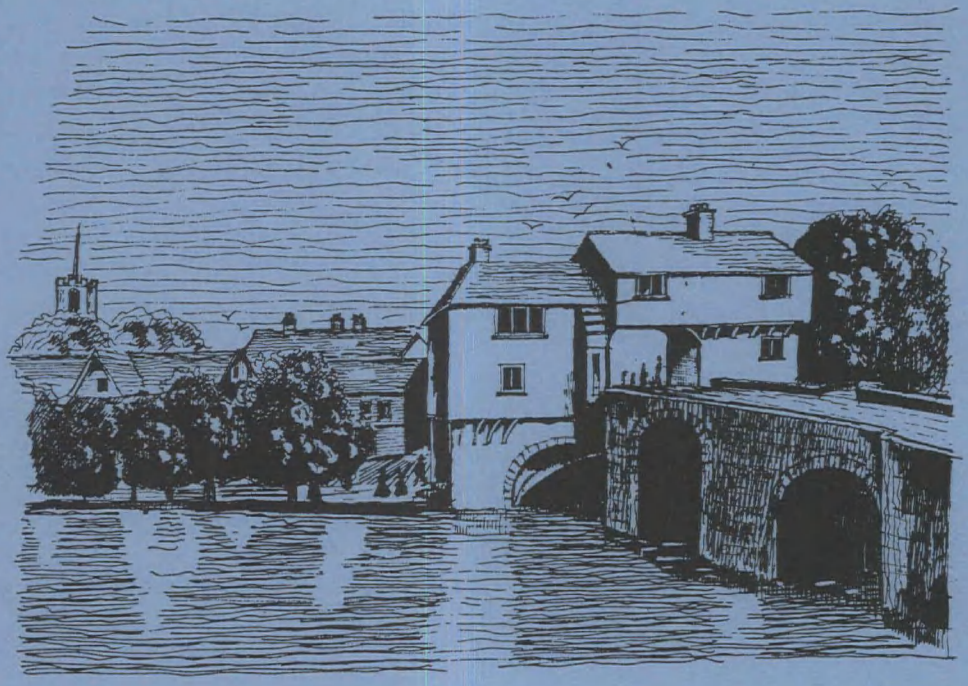
Bedfordshire Archaeology



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Bedfordshire Archaeology 16

The Bedfordshire Archaeological Council

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Editorial Note

The contents of this volume were submitted to the editor of the *Bedfordshire Archaeological Journal* at various dates between May 1977 and July 1981 with the intention that they would form the contents of a volume to be prepared for publication in the late autumn of 1981. However, as a matter of policy Bedfordshire Archaeological Council decided to use *Bedford Archaeological Journal* **15** (1981) for a single item, *sc.* C.L. Matthews *et multi alii,* 'A Roman Inhumation Cemetery at Dunstable', which had been submitted at the same time. Publication of the contents of this volume thus has been delayed.

Another paper was submitted early in 1983 and this has been included in *Bedfordshire Archaeology* 16.

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Editorial

From Bedfordshire Archaeological Journal to Bedfordshire Archaeology

The Bedfordshire Archaeological Council was formed in 1959. The only editorial to have appeared in any issue of the *Bedfordshire Archaeological Journal,* namely in the first volume noted:

> The County of Bedfordshire has been without a journal dealing with archaeology since the end of the last century. The great interest in archaeology since the last war has been reflected in the formation of a number of societies each dealing with a part of Bedfordshire. The result of this has been a considerable increase in fieldwork and excavation without an organisation capable of co-ordinating the work or the resources to produce a permanent journal.

The permanent record was begun by the issue of the first volume of the *Bedfordshire Archaeological Journal* in 1962. Since then fourteen more volumes have been published, and since 1969 the attempt has been maintained to issue one volume each year.

With the Bedfordshire Archaeological Council approaching twenty-five years successful stewardship of the publication of archaeological research in the county, a new appraisal of its publication was deemed not inappropriate. This was seen to be especially so in the external appearance of the volume.

Henceforth, the publication of the Bedfordshire Archaeological Council will be known as *Bedfordshire Archaeology.*

Issues of *Bedfordshire Archaeology* are to be numbered consecutively following those of Bedfordshire Archaeological Journal. Thus, *Bedfordshire Archaeology* **16** follows *Bedfordshire Archaeological Journal* **15**.

D.H.K.

Second Century A.D. Pottery from Sandy, Bedfordshire

BRIAN DIX and PAT AIRD

A long history of chance discoveries of Roman pottery and other objects at Sandy has combined with recent, limited rescue excavation and salvage recording to indicate the existence there of a dispersed rural settlement.[1] The precise nature of Roman habitation, which arose at the junctions between several roads, and was strung along their routes as they approached a gap or pass in the Greensand Ridge that had been previously guarded by a series of hillforts, is even now poorly understood, and its former relationships and possible interdependence with other sites nearby are largely unknown.[2]

A report to the Conservation Section of the county Planning Department by Mr A.E. Rollings in June 1981, that he had learned of the discovery of Roman pottery and excavated human remains at an unspecified building site in the modern town, was therefore received with interest, and visits were immediately made to those sites where development was taking place. The finds had been made on a housing estate lying to the east of St Neots Road, where the final phase of a major housing project being undertaken in Sandy by the Greater London Council was located. The site lies between one and one and a half kilometres, or approximately two-thirds of a mile, to the north of the focus of Roman settlement as revealed by previous discoveries, in an area of unknown archaeological importance where finds have not been recorded before.

The mechanical excavation of foundation-trenches for dwellings on the east side of Winchester Road by the corner of Engayne Road led to the discovery of Roman pottery, human bones and a small quantity of other finds within a small area, probably no greater than 500 sq m overall. Some finds, perhaps most of them as indicated by the number of pieces of pottery from single vessels which joined, occurred in the infillings of features which showed in the sides of the machine-dug trenches, and they were removed in the short interval between excavation and back-filling with concrete. At the time of the visit to check the discovery, the surrounding area had been disturbed and compressed by contractors' machinery and no other features were visible. Mr J. Porter, Clerk of Works at the site, had retained the earlier finds, and he kindly made them available for study.[3]

The pottery forms a useful group, providing an indication of second century wares used in Sandy, and at the same time adds to the series of pottery, chiefly earlier and later forms, that has been published from the area.[4] The decorated samian *(Fig 1, 1)* and a representative collection of sherds of the commonest coarse pottery fabrics have been returned to the finder. The remainder has been deposited in Bedford Museum, together with an accompanying catalogue and description of all the material that was found.[5]

THE POTTERY

Samian[6]

(a) Decorated[7]

1 *Mr Hedley Pengelly writes:* Form 30, two adjoining pieces, Central Gaulish. Ascribable to the work of the Donnaucus group and especially the anonymous potter X-13 : *cf. S & S.*, pl. 44, 513 (with the same ovolo); pl. 46, 541. The crouching beast appears to be the panther *D.* 799 (= *O.* 1518), though some of the detail was marred during removal from the mould. The identity of the seated figure is uncertain. Such bowls as this one were made at both Les Martres-de-Veyre and Lezoux under Trajan and Hadrian. The probable range is *c.* A.D. 105-30, judging by the fabric and finish.
(Fig 1, 1)

(b) Plain

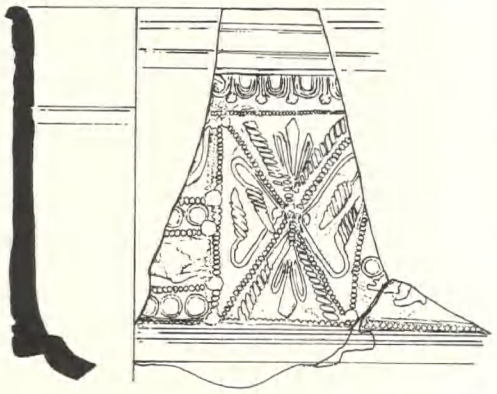
2 Form 18/31. Central Gaulish. Hadrianic-Antonine. *(Not illustrated).*

3 Form 31. Central Gaulish, with slightly crackled glaze. Mid-to-late-Antonine *(Not illustrated).*

4 Form 79. Central Gaulish. The stamp on the flat base is an illiterate one, not recorded previously, but almost certainly that of a Lezoux potter. Mid-to-late-Antonine. *(Fig 1, 2)*

Other pottery

Approximately three-quarters of the remainder of the pottery from the housing site comprised reduced, or grey wares, which can be separated into several groups on the basis of their fabrics.



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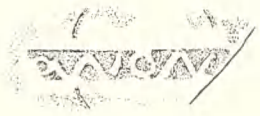

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Figure 1 Samian pottery. Potter's stamp shown at actual size; decorated bowl reproduced at half full-size.

None of the individual wares, which had all been wheel-thrown, can be attributed to a known kiln site.

Grey Ware Fabric A
Over half of the proportion of grey ware at the site occurred in a soft, porous fabric which has the feel of fine sandpaper. Fine black inclusions, probably of iron-ore, are scattered throughout the clay matrix which also contains occasional grains of black and white quartz. Sometimes flecks of shell and lumps of limestone are present.

The colour varies from light blue-grey to light brown-grey at the surfaces, and is a light to dark blue-grey across the break.

Forms include necked and carinated bowls *(Fig 2, 9-12)* and a poppy-head beaker *(Fig 2, 3)*.

Grey Ware Fabric B
Vessels made in a second fabric are characterised by their granular surfaces and sugary texture. The fabric is fairly hard and open-bodied with medium to coarse quartz inclusions.

The colour ranges from light grey to black at the outside, and from brown-grey through black to orange-brown on the inside.

At least six vessels occur, including bowls (eg., *Fig 2, 13, 16)*, two jars *(Fig 2, 4, 5)*, and a dish or lid *(Fig 2, 20)*.

Grey Ware Fabric C
More varied than the pottery made in either of the previous fabrics, vessels in this group are consistent only in having a dense distribution of fine quartz with varying amounts of coarser inclusions within the clay matrix. An indication of the range of variation in fabric is included in the individual descriptions below.

A number of other grey ware fabrics were also present, chiefly represented by single pots or parts of vessels, and their fabrics are described in the appropriate catalogue entries which follow.

Included among the other wares at the site are a roughcast beaker with dark grey-brown colour-coat from the Nene Valley region *(Fig 2, 1)*, and sherds from the walls of vessels made in white wares, in one instance in a pipe-clay fabric, and soft orange pastes *(not illustrated)*. A small number of jars occur in shelly fabrics (eg., *Fig 2, 6-7)*, although the amounts and sizes of the shell inclusions vary between individual pots.

Catalogue of pottery illustrated in Figure 2

1 Rough-cast beaker with cornice rim. Soft, abraded white ware with dark grey-brown colour-coat. From the Nene Valley region.
2 Jar. Soft, fairly open-bodied, reduced fabric with granular surfaces, containing a dense distribution of unevenly arranged quartz inclusions of various sizes and a sparse to moderate amount of fine red iron-ore. Brown-grey with orange-red core, perhaps originally slip-coated. Lattice decoration on exterior.
3 Poppy-head beaker. Grey Ware Fabric A. Light grey with slightly darker core.
4 Ovoid jar. Grey Ware Fabric B. Ext. : grey; break : blue-grey; int. : brown-grey to orange-brown.
5 Jar. Grey Ware Fabric B. Light brown-grey with darker core.
6 Jar. Moderately hard, rather close-bodied, shelly fabric with dense distribution of fine and medium sized pieces of shell within the clay matrix. Hand-built. Ext. : dark grey-brown; break : dark brown; int. : light to dark brown.
7 Jar or cooking-pot. Hard, close-bodied, shelly fabric densely packed with fine pieces of shell, and containing sparse inclusions of coarse shell and fine pieces of iron-ore. Hand-built. Ext. : dark brown to black; break: grey; int. : light orange to brown. Slightly sooted exterior.

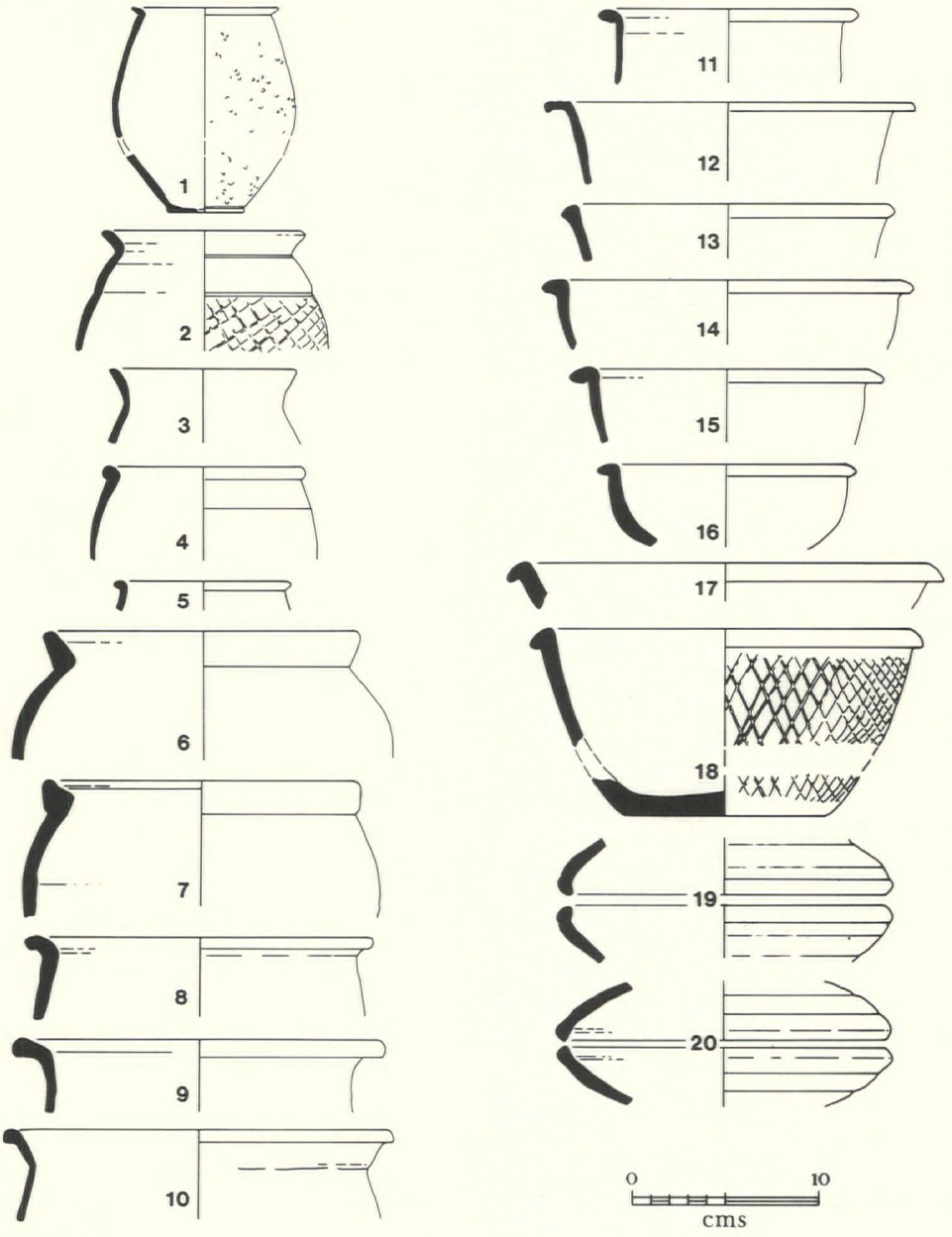

Figure 2 Other pottery. (Scale ¼)

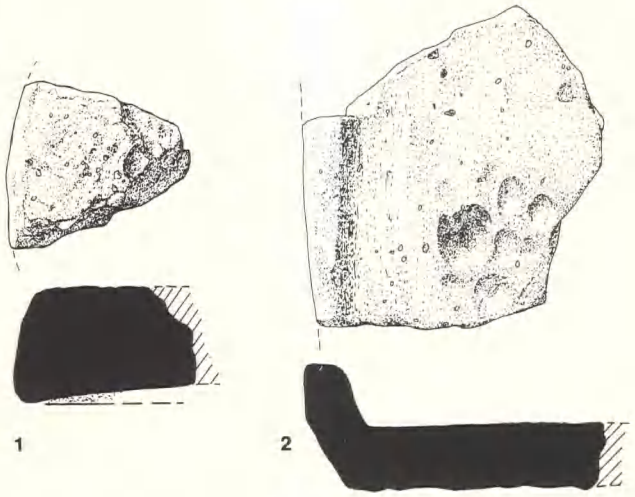

Figure 3 Other finds. (Scale 1/3)

8 Jar. Hard, reduced fabric with granular surfaces, containing a dense distribution of medium-sized quartz grains, with occasional coarser pieces, and a sparse to moderate amount of coarse red quartz within the clay matrix. Fine red iron-ore is also present, as well as occasional flecks of shell and small lumps of limestone. Light grey-brown to charcoal-grey throughout.

9 Necked bowl. Grey Ware Fabric A. Light blue-grey with dark grey core.

10 Necked bowl. Grey Ware Fabric A. Grey with blue-grey core.

11 Carinated bowl. Grey Ware Fabric A. Light brown-grey with blue-grey core.

12 Carinated bowl. Grey Ware Fabric A. Light brown-grey, darker blotched on the inside, with a grey core.

13 Carinated bowl. Grey Ware Fabric B, containing pellets of red iron-ore. Brown-grey, darker at the outside, with blue-grey inner core sandwiched between dark brown-grey.

14 Wide-mouthed bowl. Grey Ware Fabric C, containing a dense concentration of fine quartz grains with some medium-sized pieces and fine flecks of red iron-ore. Ext. : dark grey to black; break : light grey-brown; int. : grey.

15 Wide-mouthed bowl. Grey Ware Fabric C, similar to the preceding item. Grey with blue-grey core.

16 Wide-mouthed bowl. Grey Ware Fabric B. Grey with light grey core.

17 Bowl. Hard, reduced fabric with a rough surface and slightly open body containing a sparse occurrence of medium and large sized pellets of red iron-ore. Light grey-brown to charcoal-grey throughout.

18 Deep-sided bowl. Soft, close-bodied, reduced ware with sandy, micaceous surfaces, containing occasional medium sized quartz grains and pieces of red iron-ore within the clay matrix. Black with red core. Lattice decoration on the outside.

19 Dish or lid, the form being equally suitable for either use. Grey Ware Fabric A. Grey with a grey inner core sandwiched between dark grey.

20 As last. Grey Ware Fabric B. Black with dark grey inner core sandwiched between orange. Burnished line on inside rim or lip.

OTHER FINDS

Fig 3, 1 Fragment of upper quern or millstone with flat top, dressed with regularly pecked pits, and a conical grinding surface. The original diameter cannot be ascertained due to the smallness of the fragment, although the outer edge is preserved and is approximately 50 mm tall. Of Old Red Sandstone from the Welsh Borders region.

Not illustrated : A piece of burnt Millstone Grit, obtained from the Pennine region, presumably formed part of another quern.

Fig 3, 2 Fragment of *tegula,* or roof-tile, with a squared flange. The slightly soft, orange, rather gritty fabric contains pieces of shell, ironstone and limestone. The imprint of a dog's or fox's paw is preserved in the upper surface with a second, perhaps related print partly superimposed upon it.

Not illustrated : A small quantity of oyster shells and animal bones were also found. Human remains included skull fragments, teeth and other parts of the skeleton.

CONCLUSION

The fabrics and forms of the coarse pottery here reported on are consistent with a second century A.D. date, and several of the types, for example, *Fig 2, 6-7, 14-15, 17,* and *19-20,* are paralleled by

finds from excavation at the Roman villa at Newnham, near Bedford, ten kilometres, or a little more than six miles, to the west, where they date from the period around the middle of the century.[8] Similar forms also occurred in contemporary deposits at Verulamium,[9] and examples of the distinctive soft grey ware fabric which is 'peppered' with black inclusions (Grey Ware Fabric A) have been noted amongst pottery found at Odell in the upper Great Ouse valley.[10] Vessels in that fabric occurred there with samian pottery dating from Trajanic/Hadrianic to Antonine times, with some pieces not earlier than A.D. 160.[11] The same general dating, probably extending to no later than *c* A.D. 175, is implied for the Sandy finds by the associated fine wares, among which the rough-cast beaker from the Nene Valley, *fig 2, 1,* has the delicately moulded cornice rim of early examples of the type.[12]

The discovery of human skeletal remains with the pottery could indicate the existence of a cemetery, but the association between the two classes of material is uncertain, and oyster shells, animal bones, tile and broken quernstones, perhaps representing domestic rubbish, were also found. It is unfortunate that the features in which the material was found could not be adequately explored prior to further construction, and the extent of the area which they covered remains unknown. The remainder of the housing site was checked for the presence of other archaeological features with negative result, and previous building in the area had not apparently disturbed any other remains. It is possible that further discoveries will be made on land to the north if it is developed in the future, perhaps then providing an indication of the relationship between the site of the recent finds and the main area of Roman settlement to the south.[13]

NOTES

1 David E. Johnston, 'The Roman Settlement at Sandy, Bedfordshire', *Bedfordshire Archaeol J* 9 (1974), 35-54.

2 Cf. Brian Dix, 'The Romano-British farmstead at Odell and its setting : some reflections on the Roman landscape of the south-east Midlands', *Landscape History* 3, 17-26, especially 21.

3 We are grateful to both Mr Porter and Mr K. Ward, Site Agent, Pumfrey Construction Ltd., for allowing us access to the site and for making over the finds.

4 Johnston, *op. cit.* (note 1), 48-51, fig 14.

5 Museum Accession No. 1981/1. Isabelle Plan drew the coarse pottery, and Andrew Pinder illustrated the samian and other finds.

6 We are grateful to Hedley Pengelly for specialist advice regarding identifications and for providing the description of the fragment of decorated bowl. Miss Brenda Dickinson, University of Leeds, kindly commented on the potter's stamp.

7 The following abbreviations are used :
D. Figure-type in J. Dechelette, *Les Vases ceramiques ornes de la Gaule romaine; II* (Paris 1904)
O. Figure-type in F. Oswald, *Index of Figure-Types on Terra Sigillata* (Liverpool, 1936-7).
S & S. J.A. Stanfield & Grace Simpson, *Central Gaulish Potters* (London, 1958).

8 Unpublished results from analysis by Pat Aird.

9 *Cf.* S. Frere, *Verulamium Excavations;* I (Rep Res Comm Soc Antiq London No. XXVIII, Oxford, 1972), figs 122-25, 127-29.

10 Brian Dix, 'Excavations at Harrold Pit, Odell, 1974-1978 : a preliminary report', *Bedfordshire Archaeol J* 14 (1980), 15-18.

11 See further, Brian Dix, *Excavation at Harrold Pit, Odell, Bedfordshire, 1974-1978,* forthcoming.

12 *Cf.* M.D. Howe, J.R. Perrin & D.F. Mackreth, *Roman Pottery from the Nene Valley : A guide* (Peterborough City Mus Occasional Paper No.2, 1981), 8.

13 Paper written July 1981.

The Bedfordshire Archaeological Council is indebted to the Planning Department, the Bedfordshire County Council, for a grant towards the costs of this paper.

Excavations at Roxton, Bedfordshire, 1972-1974
The Post-Bronze Age Settlement

ALISON TAYLOR and PETER J. WOODWARD

SUMMARY

The excavation of a cropmark complex (TL 157535) south of Roxton village concentrated on the examination of five ring ditches, and parts of a system of associated rectilinear enclosures and other features.

The ring ditches were shown to be ploughed-out burial mounds of Bronze Age date. These and their associated settlement will be described in a later paper.

The Bronze Age earthworks began to be ploughed during the Iron Age. They were bounded on the east in the first century B.C. by a palisaded defensive ditch laid across the floodplain of the river. To the east of this boundary, field enclosures were laid out. A second series of small field enclosures for arable and stock were organised across the cemetery site, probably in the first century A.D. Ploughing of these ditched fields during this period continued to remove the external banks and fill the ditches of the burial mounds. This farming was probably seasonal and discontinuous, and the enclosures could be regarded as the, 'out-fields' of a 'farm' possibly at some distance. By the middle of the first century A.D. the palisaded ditch had been totally filled, and during the second century A.D. the field system was substantially modified to accommodate an habitation area at the centre of the field unit. However, the structural and material evidence suggested that this accommodation was temporary, and the occupation short and seasonal. Use of the fields for arable continued after this short occupation. There was also slight evidence to suggest the presence of a 'Celtic shrine' nearby.

Two hearths, carbon-dated to the fourth-sixth century A.D., cut into the upper plough-wash silts of two of the ring ditches, indicating re-use in the post-Roman period.

All traces of these earthworks were finally removed during the medieval period.

INTRODUCTION

The excavations set out to examine in detail a group of five ring ditches together with an associated system of linear boundaries. These had been identified in aerial photographs by Prof. J.K. St. Joseph, K. Field and others. This cropmark complex (Plate 1), and others, have been systematically plotted by the Conservation Section of Bedfordshire County Council, for the County Sites and Monuments Record, at the scale 1:10,000 (Fig 1B).

The cropmarks (Beds. C.C. S.M.R. 619) at TL 157535 were to be destroyed by gravel extraction during 1972-74. Co-operation with the quarry (Redlands Gravel Co.), and the farmer (Philip Bath) enabled archaeological excavations to take place in advance of each phase of gravel extraction. These excavations were financed by the Department of the Environment and Bedfordshire County Council.

Each ring ditch was almost totally excavated by the quadrant method, and sample trenches were cut through the linear boundaries. These excavation areas are shown in Fig 1C. Excavation was carried out by hand after the modern plough-soil had been removed by machine.

It was possible to carry out further observation, and sometimes excavation, of most major elements (such as ditches and pits) during quarry operations. However, it was not always possible to record the

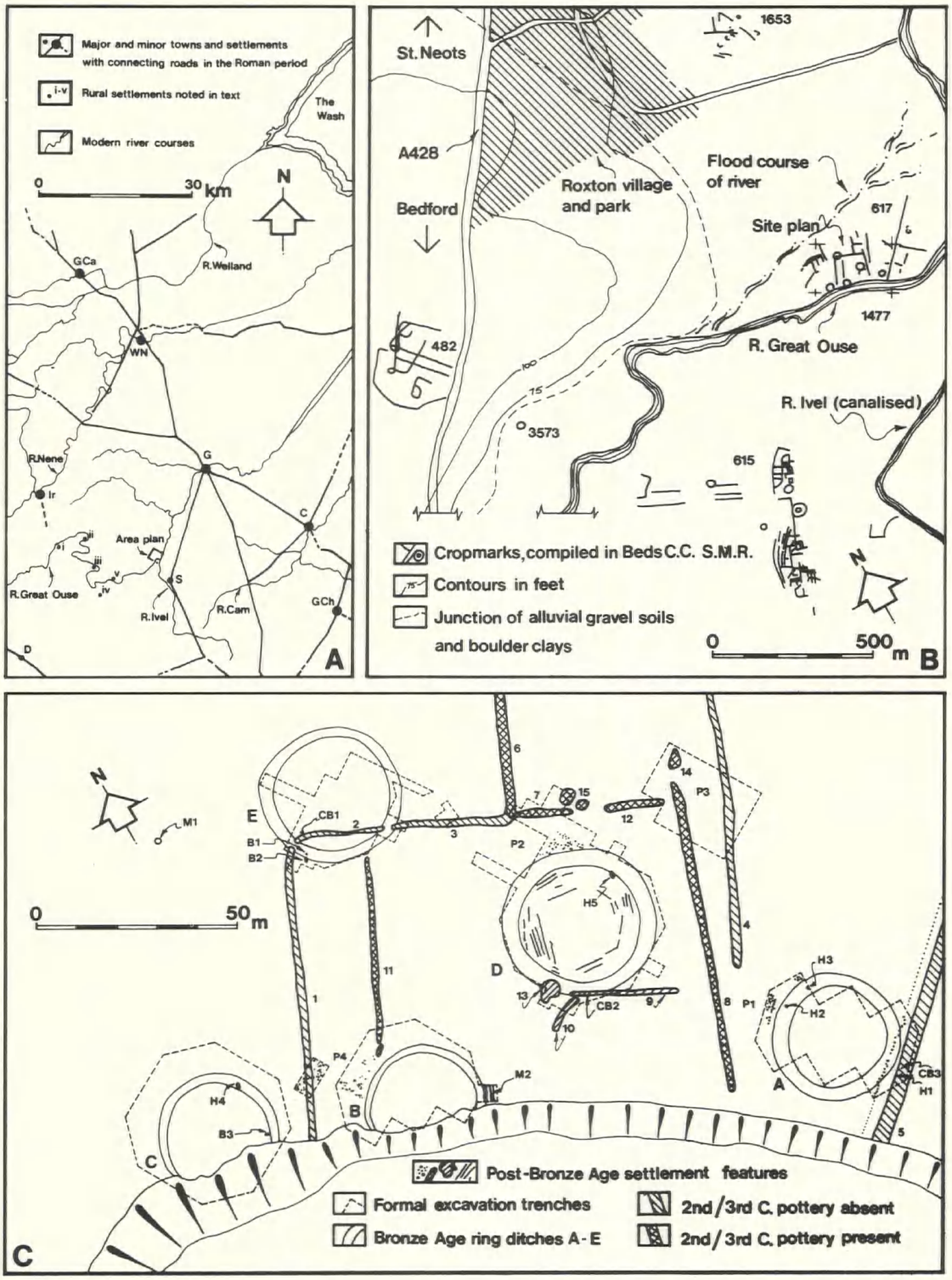
Major and minor towns and settlements with connecting roads in the Roman period
Rural settlements noted in text
Modern river courses
0 30 km
N
The Wash
GCa
R.Welland
WN
R.Nene
G
Ir
C
Area plan
i
ii
iii
iv
v
S
R.Great Ouse
R.Ivel
R.Cam
GCh
D
A
St.Neots
A428
Bedford
1653
Roxton village and park
Flood course of river
Site plan
617
1477
R. Great Ouse
482
100
75
3573
615
R. Ivel (canalised)
Cropmarks, compiled in Beds C.C. S.M.R.
Contours in feet
Junction of alluvial gravel soils and boulder clays
0 500 m
B
N
M1
E
CB1
B1
B2
2
3
6
7
15
14
P3
12
P2
H5
4
D
11
1
13
CB2
9
10
8
P1
H3
H2
CB3
H1
A
5
P4
M2
B
H4
B3
C
0 50m
Post-Bronze Age settlement features
Formal excavation trenches
Bronze Age ring ditches A-E
2nd/3rd C. pottery absent
2nd/3rd C. pottery present
C

Fig 1 Roxton excavations: Location: Area and Site Plans:

A. Location plan
Based on Ordnance Survey map of Roman Britain (Second Edition 1979):

GCa : Great Casterton
WN : Water Newton *(Durobrivae)*
G : Godmanchester *(Durovigutum)*
Ir : Irchester
C : Cambridge *(Durolipons)*
S : Sandy
GCh : Great Chesterford
D : Dropshort *(Magiovinium)*
Local sites noted in the text:
(i) : Odell (SP 956568)
(ii) : Radwell (TL 010574)
(iii) : Bromham (TL 017573)
(iv) : Elstow (TL 050473)
(v) : Newnham (TL 073493)

B. Area Plan
Cropmarks plotted at 1:10,000 from Bedfordshire County Council's sites and Monuments Record have been compiled from a number of sources:
Cambridge University Committee for Aerial Photography
National Monuments Record
Mr. K. Field
Bedfordshire County Council

C. Site Plan
Plan of formal excavation trenches and major features with general date interpretation. The detail relating to the Bronze Age ring ditches (Central Burials, Secondary burials, pits and post-structures . . .) has been omitted to clarify the nature of the Later Iron Age, Roman and post-Roman settlement features.

B1 - B2 : Inhumations and Cremations (Roman)
B3 : Flexed Inhumation (Saxon)
CB1 - CB3: Articulated cow bones (Iron Age/Roman
H1 - H3 : Field Hearths (Iron Age/Roman)
H4 - H5 : Stone laid hearths (late-Roman,post-Roman)
1 - 4 : First to third century A.D. field gullies
5 : First century A.D.palisaded boundary ditch
6 - 12 : First to third century A.D. field gullies
13 - 15 : Second to third century A.D. pits
P1 - P4 : Post structures
M1, M2 : Medieval features

smaller ditches and post-holes, nor the upper levels of larger ditches and gullies, because of the nature of the topsoil stripping carried out.

The site record and index has been deposited in Bedford Museum, together with the finds, apart from the human skeletal remains which were deposited in the Department of Physical Anthropology, University of Cambridge. All features and finds mentioned in the text can be related to the published site plan (Fig 1), which can in turn be related to the museum records. Publication of the site has also been split into two. The Bronze Age cemetery and earlier settlement will be published at a later date.

THE EXCAVATED FEATURES AND THEIR INTERPRETATION

It is only possible to examine the site as a chronological sequence by the grouping of field boundaries firstly, in terms of their relationships within the total site plan; secondly, in terms of their function, size and profile shown by excavation; and thirdly, in terms of the history of the site as dated by the diagnostic pottery recovered within the plough silts.

The total layout of the post-Bronze Age settlement boundaries can be seen in the cropmarks (Fig 1B, Plate 1). These can be grouped into three units.

I The long linear boundary ditch lying at 'right-angles' to the present course of the River Great Ouse, and running south-west to north-east, together with boundaries laid-off to the east.
II Ditches lying centrally across the Bronze Age cemetery.
III Cropmarks in the Northern corner of the site; a series of ill-defined criss-cross patterned ditches.

Only those at II were fully examined, and observed in detail during topsoil stripping for gravel extraction. In I the long linear boundary was examined where it ran adjacent to ring ditch A. In III pottery was collected during quarry operations from the topsoil strip immediately around and above them, and in a single feature cut in the gravel.

No occupation levels survived intact on the site, and all datable material had been removed or deposited in pre-existing features as a result of ploughing, apart from the material deposited in two hearths (H4 and H5), gully (7), pits (13) – (15) and burials (B1) – (B3). The site stratigraphy was such that only a few relationships could be defined in the area of detailed excavations.

EARLIER IRON AGE OCCUPATION

Settlement during this period was only apparent from the quantities of highly abraded pottery sherds recovered from the plough-wash silts of the Bronze Age ring ditches and in later features. It would seem likely that structures of this date were hidden amongst the vast array of undated postholes identified on the site (Fig 1C, P1-4). Ploughing probably took place during this period, and began to infill the ditches of the Bronze Age cemetery structures.

LATER IRON AGE OCCUPATION

Boundary ditch (5) and associated field unit I

Later Iron Age ('Belgic') occupation was only identified in the abraded pottery in the plough-wash silts of boundary ditch (5). This ditch was 3.5 metres wide and 1.5 metres deep with a 'V' profile. A row of postholes ran parallel to this ditch on the western side. These were 20-30 cm deep, and spaced 60 – 150 cm apart. They cut through the lower plough-wash silts of ring ditch A, indicating that the area had already been ploughed by the time this boundary was constructed. Second/Third century finds were absent from the plough-wash silts of this ditch, although pottery of this date was present in the nearby upper plough-wash silts of ring ditch A, and in some boundaries of field system II. It is likely therefore that this ditch was filled and the boundary redundant by the end of the first century A.D.

The massive proportions of the ditch and palisade make a strong boundary defence, which may have defined separate land holdings, or territorial divisions. All the barrows lie immediately to the west of it, which may suggest territorial continuity with the Bronze Age.

The field boundaries to the east were not examined, but can be assumed from their layout to be contemporary. It is probable that the 'Belgic' pottery in (5) is derived from settlement in this area. The large quantity of cattle bones (CB3) recovered from (5) contained a high percentage of vertebral bones which suggests stock slaughter on site. The presence of red ochre on some of these bones might indicate some ritual significance for this deposit (cf below). A concentration of burnt charcoal and soil (H1) in (5), was probably connected with scrub clearance.

LATER IRON AGE TO THIRD CENTURY OCCUPATION

Field unit II

All the field gullies at II on plan were of similar scale and profile, and all had roughly the same orientation. They were therefore considered as a single unit. However, the stratigraphic relationship of the gullies to the Bronze Age ring ditches and their silts differed and the occurrence of habitation debris in the gully silts varied. It is clear from this that the field boundaries which the gullies defined were sometimes modified or replaced, and that the fields which they enclosed had different functions. These fields were probably also surrounded by hedges, banks and fences but only the gullies survived.

The small field boundary gullies (1) – (4) and (6) – (12) were steep sided and flat bottomed and varied in width from 0.3 – 1.0 metres, and in depth from 0.2 – 0.5 metres. In all of them an initial weathering and collapse of the gravel sides was noted. The subsequent silting, apart from (7), was characterised by medium sand loams with up to 15% gravels and grits. These soils were ill-sorted and no stabilised turf lines could be identified within them. No direct evidence existed for gravel banks alongside the ditches, since the upper levels of all ditches and associated occupation horizons had been eroded by subsequent ploughing, nor could evidence for banks (or hedges) be inferred from the ditch silts. Field gullies (1) – (3) butted ring ditch E, and subsequently were filled by the same plough-wash deposits. Gully (2) cut across the camber of a then extant mound. The changes in level at the base of the gully and a shallowing and narrowing at its centre, suggests that the height of the mound would have been about 1 metre.

Gully (9) cut across the upper plough-wash silts of ring ditch D. This may therefore be a late addition to the field unit since it was cut *after* the ring ditch had been substantially filled with plough derived soils. Field gully (11) stopped well short of ring ditch B, and bent away from it, suggesting that at this time an external bank surrounded this burial mound. Unfortunately at this junction all the upper levels of this ring ditch down to the Bronze Age turf line had been totally removed by modern and earlier ploughing,

and so it was not possible to define this relationship further. However, slight evidence for an external bank on a small portion of the eastern side below two late plough-marks (M2), was recorded, but this was very much eroded and little more than a slightly denser spread of gravels.

It was clear that when some of the field boundaries were set out that ploughing had already taken place and that there was now no regard for the barrows as 'ritually' significant areas, although they were to be re-used for burial in three cases. Neither were they seen as an obstacle to ploughing in small arable fields. Ploughing of the ring ditches began prior to the first century BC (see above).

Evidence for second/third century habitation within this field system was found in the distribution and deposition of pottery and other debris in the plough-wash silts of gullies around ring ditch D, (7)–(11), and in the upper silts and berm of ring ditch D. This debris was *not* characteristic of manuring. Large sherds survived (e.g. castor ware lid, Fig 2, 15), together with a high concentration of metalwork (nails, plate and spring lock may be the remains of a bound 'box' Fig 4, 8-12), a single tile, a Rhenish lava quern fragment, one coin of Trajan, and other material indicative of occupation. Ditch (7) was packed with pottery in a deposit of fine sandy loam and crushed charcoal which was substantially different from the plough-wash sediments in all other gullies and ditches. A concentration of post-holes (P2) lay adjacent to the south. However, there were no indications of substantial buildings, nor enough material to suggest a long occupation. The post-holes were cut one into another indicating replacement, but no individual structures could be differentiated. The buildings to be inferred would hardly have been suitable for other than temporary shelter, animal penning, or barns.

Roman pottery over ring ditch A, and post-structure (P1), suggest a second focus of activity at this corner of the central enclosure. It is probable that there was some reorganisation or replacement of field boundaries in the second century, gully (8) probably replaces the gully (4), and gullies (1)–(4) were probably fully silted at this time.

Concentrations of burnt charcoal and soil (Hearths 1, 2, and 3), within the upper silts of ring ditch A, indicated the periodic necessity for scrub clearance. The occurence of charcoal, throughout all levels of plough-wash, suggested that this was carried out occasionally, and was indicative of periodic land use and the rotation of arable and pasture areas.

A series of soil pits (13) (14) and (15) were dug around the boundary of the second/third century 'enclosure'. Two burials (B1) and (B2) were also placed in the corner of a field at the limits of the habitation site. B1 was a cremation in a second/third century 'seconds' pot, and adjacent was an extended inhumation (B2) lying roughly north-south with the head to the north (Plate 2). Both were cut into the upper ring ditch silts of E.

A single coin of Trajan was recovered from the upper ditch silts of ring ditch D.

Articulated cattle bones (CB1 and 2) were found in the silts of (2) and (9), indicating stock slaughter on site (see below p 45), and a single grain of hulled barley was recovered from the lower plough-wash silts of ring ditch E.

Interpretation of this evidence suggests that the boundaries served as field divisions between animal grazing, arable fields, and at one point an 'habitation' area. The lack of habitation debris prior to the later 2nd century indicates that when the fields were laid out they were the 'marginal out-fields' of settlement, within the flood-plain of the river. However the fields must have been at times accessible in late autumn and early spring for the harvesting and planting of grain-crops, which shows that these fields were used to their fullest extent. In the second/third centuries, there was a short period of occupation without significant buildings which may indicate additional pressure on land. The area reverted to out-field management after this habitation ceased.

The occurrence and absence of second and third century pottery in the boundary gullies of this field unit are shown in Fig 1C. (second/third century pottery also occurred in the upper plough-wash silts of Ring ditch D on the north western side, but shading for this has been omitted for clarity). This pottery was derived from a habitation area centred on ring ditch D and defined by gullies (7)–(12), and much of it occurs in the gully and ring ditch silts as a result of ploughing after habitation ceased.

The absence of second/third century pottery from the lower plough-wash silts of A-E and gully (6), and throughout the silts of gullies (1)–(4), suggests that they were filled by the second century. The only pottery recovered from these deposits was Early Iron Age, highly abraded, and presumably residual. Much of the lower plough-wash

Plate 1 The site prior to quarrying

silts of the ring ditches accumulated before the first century BC. That other of the field unit gullies were *not* filled by the second century, since they contain pottery of the second to third centuries, can only be explained in two ways:–

(i) *The Gullies were all cut at the same time.* In this case there was initially no habitation on the site, and that the gullies were filling as a result of differential ploughing, due to earthwork obstacles, hedging and penning arrangements. Only residual material from the Earlier Iron Age filled some of these ditches. The ring ditches must have filled with plough derived soils to different levels since all the gullies had varying relationships to them. Occupation in the second-third centuries subsequently led to pottery being deposited in those ditches not filled by previous ploughing.

(ii) *The gullies containing pottery of the second - third centuries were cut later.* In this case the gullies must have been cut to follow the alignment of gullies that had previously been filled. It follows therefore that the boundaries marked by the filled gullies were also marked by other means which would have been visible when the second set were cut, *i.e.* by hedges, banks or fencing. No direct evidence is provided for these in this field unit, but it is likely that they were present since the function of the boundaries was to pen stock from arable, and within habitation areas. This explains some functional replacement of boundaries, such as (4) by (8).

It is not possible on the stratigraphic evidence described to be certain of the correct sequence of events. However both alternatives allow that the gullies were filled at different rates; the Bronze Age mounds and ditches were still present as obstacles; field hedges and banks were in all probability present; the fields were initially farmed as out-fields, and they were laid-out prior to the later second century A.D.

The distribution of the second/third century pottery shows that gullies (1) - (4) filled first of all. These are the outermost boundaries of this group of fields. It is likely that they were hedged to pen the 'stock' between them, which would suggest the the gullies were filled as a result of arable ploughing of the areas to the north and west of (1) - (3) and (6), and to the east of (4). The penning between these outer gullies would have served to separate stock, and in the 2nd to 3rd centuries habitation. Ploughing after habitation ceased also included the central 'stock/habitation' area, which might suggest that the site was subsequently used only for arable, or at very least there was a change in the land-management policy.

It should also be noted that none of the boundaries of this field unit are aligned with or make use of the palisaded boundary (5). In addition no Belgic pottery was present in the area of the ring ditches or in the gullies of this field system. It would therefore seem likely that this boundary (5) was redundant when this field unit was laid out. This evidence suggests that field unit II was constructed at the end of the first century A.D.

THE POST THIRD CENTURY LAND USE

The second/third century habitation was ploughed after its desertion. Ploughmarks that must have been covered during the next seasons ploughing by material derived from the mound and the occupation debris that previously lay on it, were noted on the berm of ring ditch D. These varied from 4-10cm in width, and were only up to 2cm deep. The profile was variable and not well preserved in the gravel subsoil. They ran discontinously in parallel groups spaced as little as 20cm apart (Fig 1C). They succeeded in reducing the mound to an irregular angular plan. Two hearths, (H4) and (H5) cut into the upper ring ditch silts were of a specific type, and charcoal from them gave radio-carbon determinations of

H4 : 310 a.d. ± 80 years (HAR - 1004)
H5 : 530 a.d. ± 70 years (HAR - 711)

The difference in date is somewhat surprising because of the identical nature of the two hearths. Both were cut about 15cm into upper plough-wash silts, at the bottom of each was laid a flat bed of rounded firecracked sandstones (up to 15 cm size). The cut was about 1.4m long and 0.8m wide with rounded ends. The hearths were orientated in exactly the same direction, roughly north-south, and both were cut in the same position relative to their respective ring ditches. The ring ditches and their mounds must therefore have still survived as earthworks. The bases of these two hearths were covered with charcoal of hawthorn *(Crataegus sp.)* and firecracked flint. No suggestion as to the function could be made, but that they had a specific use rather than being the sites of field clearance fires is certain. The origin of the stone was not ascertained.

A shallow burial (B3) lay just below the modern ploughsoil on the inner lip of ring ditch C. The

burial was incomplete but may have been flexed. It was laid east-west with the head to the west, and was accompanied by the remains of an iron knife, which was laid behind the pelvis and pointed to the head (Plate 3). Burials accompanied by this type of grave goods are usually Saxon of sixth or seventh century date (Meaney and Hawkes, 1970).

THE MEDIEVAL OCCUPATION

Field Unit III and final plough erosion of the ring ditch cemetery.

Medieval pottery was present above and around the cropmarks in the northern corner of the site (unit III). Information was recovered during quarry stripping of the area, but it was not possible to examine the exposed features by proper excavation. It is likely, however, that they date to this period. Part of a shallow dish in a fine sandy fabric of the 14th century was recovered from the small pit (M1) on the southern boundary of this cropmark (Fig 1C). Two parallel features (M2) occurred at a very high level, and cut across the outer lip of ring ditch B. These also cut across the top of earlier plough-soils, and what may be the remains of an outer bank to this ring ditch. They did not touch the gravel subsoil. Both were linear and parallel, but with a very irregular and discontinuous profile of up to 70cm wide and 10cm deep. Their lines were approximately 130cm apart. These survived just below the modern ploughsoil and may represent the silted remains of medieval ploughing.

A silver coin of 1561 was recovered from the base of the modern plough-soil to the east of ring ditch E.

DISCUSSION

The post-Bronze Age settlement can be divided into five periods; Earlier Iron Age, Later Iron Age, First to Third century A.D., post-Roman and medieval. In all of these periods only partial survival of material and structures occurred, due to progressive degradation by ploughing, and erosion of the site along its southern edge by the shifting course of the river Great Ouse. No sharp divisions between these periods could be identified to provide certain dates of abandonment, desertion and reoccupation. However, it was possible from the excavated evidence and intensive survey of the surrounding area to discern a remarkable similarity between the settlement and landuse patterns of the Bronze Age, Roman and Medieval periods.

The Bronze Age settlement pattern for the area is discussed in Woodward (1978). The Early Bronze Age ring ditch burial cemetery (circa 1700 b.c.), and the ring ditch site 3573 (Fig 1B), were located on marginal land within the floodplain of the river. The associated habitation was located nearby above this floodplain, at the junction of the Upland clays and the gravel terrace. A large concentration of knapped flint debris was found in the turf line of ring ditches B and C, which could be dated to circa. 1100 b.c. from associated secondary burials. This suggests that, whilst the site continued to be used for burial, habitation episodes also occurred sporadically. This pattern is repeated on the ring ditch sites at Milton Keynes (Green 1974) and at Radwell (Hall and Woodward, 1977). The carbon dates and a summary discussion of the settlement and habitation characteristics of these ring ditches in the Great Ouse Valley can also be found in Hall and Woodward (1977).

Use of the site continued into the first millenium BC. Residual Earlier Iron Age pottery was found in the plough-wash soils which infilled the features of later periods, but there was no structural evidence associated with this period. At most the surviving evidence suggests that the site was used for temporary habitation, and could therefore still be regarded as marginal land used seasonally, and probably sporadically.

A major boundary defence was built across the site, probably in the late first century BC. This separated the fields to the east from the barrow cemetery, and probably served as a land-holding or territorial division. Some form of continuity with the Bronze Age might be suggested, if the cemetery is regarded as having been located on marginal land at the edge of a territory.

At some stage in the first century AD the agricultural use of the ring ditch cemetery area was regularised by the enclosure of fields with small hedged gullies. These were presumably constructed to separate livestock from arable areas. In the second century AD the field unit was adapted and reorganised with a central 'enclosure' around ring ditch D being used for habitation, but without significant buildings being constructed. There was evidence for stock slaughter on site from the first century BC to the third century AD. The stratigraphic evidence also suggests that ploughing occurred throughout this period, in spite of seasonal flooding and Bronze Age obstructions. The use of such land for habitation suggest not only land pressure but also perhaps short spells of drier climate.

However, neither farming nor habitation were ever intensive or permanent. At times the fields were presumably just used for seasonal grazing, and scrub would grow. Burning of such scrub is attested by the charcoal deposits within the silt layers. One unsolved problem is the location of the farm from which these fields were worked,

which was presumably above the floodplain.

A more intensive settlement (482), of the first – second century AD and situated about a mile away at TL 144539, could be associated with the development and farming of these fields, (Fig 1B). This site has been described by Granville Rudd (see below). It provides evidence for pottery manufacture, which could be connected with the occurrence of the 'seconds' pot used for the cremation (B1) in the ring ditch silts of E.

The number of well dated field systems and settlements of this type and period are few along the Great Ouse valley. The five sites of this period on the gravel terrace which have been excavated in some detail are at Odell (SP 956568), Radwell (TL 010574), Bromham (TL 017573), Elstow (TL 050473), and Newnham (TL 073493). These are shown in Fig 1A, (i) – (v). Of these sites only two give any detailed evidence on the settlement fields; those at Radwell and Odell.

At Radwell (Hall, 1973), the fields of the settlement are smaller, more numerous and organised on a more regular grid. They varied in size from 12m to 20m wide, and 15m to 56m in length, and could be dated to the second and third centuries AD. There was also evidence for more substantial associated buildings, although these were not certainly domestic. This complex was situated on a part of a well drained gravel terrace, which was not particularly subject to flooding. It was suggested that there was some evidence for a 'villa' type building to the south. Contemporary burials were located inside one of the fields nearest to the buildings, and these were taken to indicate that at least part of the buildings were domestic, as it was unlikely that burials would be sited near purely farm buildings (Hall, 1973, 70). However, the reverse argument was used for Iron Age burials on the site (Hall, 1973, 71). The location of Burials (B1) and (B2) at Roxton on the edge of one of the fields adjacent to a temporary habitation area, perhaps points to a medial view. That is, burials related to rural farming settlements were located in nearby fields, but the status of that field was in no way different from its neighbours, and that its distance from the habitation site was not important. The same is true for the burials at Odell (Dix, 1980).

The fields at Odell were rectilinear and regularly grouped along a droveway running down to the river floodplain. They were in use from the first to fourth century AD. Again, as at Radwell and Roxton, the farm was partly located on the site of a Bronze Age cemetery. Some of the fields too, were of comparable size and they were closely associated with a farm and habitation areas. As on the previous sites the ditches of these fields were cut to provide divisions between animal penning/pasture and arable areas. The evidence from the fields themselves indicated that shallow holes were cut to retain water for animals, and that hedges were planted alongside the field boundary gullies.

Other excavated sites along the Great Ouse cannot be closely compared with the site at Roxton, because of incomplete excavations, the partial survival evidence, and the different status of the sites. All are habitation complexes; Elstow (Woodward, 1977) and Bromham (Tilson, 1973), were 'farms' of Later Iron Age to third century date, and Newnham was a 1st century farm which appears to have developed into a villa/farm in the 2nd to 3rd centuries (cf. *Britannia* (5), 1974, 435). Also, none of these sites can be interpreted as being located on 'marginal' land and none are (significantly) associated with Bronze Age cemetery areas, as at Radwell, Odell and Roxton. The continuing use of the site at Roxton into the post-Roman period can be paralleled at Odell, but the nature of the 'settlement' was not defined. The charcoal type present in the two hearths of the 4th to 6th centuries AD was chiefly blackthorn and hawthorn *(Cretaegus sp.)* which might suggest that cleared land was reverting back to thorn scrub. The post-Roman settlement evidence at Odell was also limited, but the presence of three timber constructed wells showed that farming may have continued into the 6th century (Dix, 1980).

The closely spaced parallel and right angular cropmarks in the northern corner of the site produced 14th century pottery. Possibly these identify the position of medieval barns or outbuildings on the edge of meadow land. Ploughmarks (M2) on the edge of ring ditch B and the total erosion of all earlier earth works, show that the area continued to be used for arable, and that the area was part of the open fields of Roxton village, which is itself in a classic settlement position above the floodplain of the river at the junction of glacial clays and the gravel terrace (Woodward 1978). Similar closely intersecting cropmarks appear on the other side of the river at Blunham (615). These may also be medieval since they continue along the alignment of the medieval village street to the south.

River erosion and the use of land for pasture to the south makes it impossible to give the limits of

the site in this area. Site 1477 (cf below) does not exist, being a misinterpretation of aerial photographs. The cover of alluvium on the area between the confluence of the Great Ouse and Ivel makes it likely that this area was unsuitable for arable fields at any time in the past. Today it is permanently pastured meadowland.

The status of the site at Roxton can be seen as being similar for all periods of use. In the Bronze Age it was used for a planned cemetery and sporadic or seasonal habitation on the edge of settlement. Later this marginal land continued to be used for organised out-fields of settlement and as an occasional burial place. Sporadic habitation episodes on the site were temporary and presumably related to changes in land management, population pressures, and climatic variation.

THE FINDS

THE EARLIER IRON AGE POTTERY

(Fig 2, 1-4)

All the earlier Iron Age pottery recovered from the site was much abraded and occurred residually in the later 'plough-wash' silts of ring ditches A-E or later field gullies. The only diagnostic rims and bases came from the upper plough-wash of ring ditch C and the lower plough-wash of ring ditch D.

These sherds were characterised by being hand-made, fired at low temperatures, and oxidised on the external margins, but with a brown-grey to black reduced core. The material was frequently gritted with white angular flint (up to 1 mm) and with occasional grog. Some sherds were soft and soapy in texture, but others were harder with angular breaks. The surfaces were frequently pitted, with some vegetable tempering often apparent and with grit inclusions often protruding. Finger pressed surfaces were frequent. The surface of some sherds were harder and smoothed in treatment, more reminiscent of Bronze Age urn material. One body sherd from the lower plough-wash of ring ditch C had a ring join, and another from the same context had a slight thickening and external curve which could possibly represent the base of a collar, but was too fragmentary to illustrate. All the diagnostic rim and base sherds from this broad range of material are illustrated. (Fig 2, 1-4).

Although these fabrics have close affinities with the Bronze Age urn material, they can be clearly differentiated on the basis of inclusions, hardness and surface treatment. Although none of this material can be closely dated, its origin in the early centuries of the first millenium BC is likely. It is markedly different from the fabrics and forms of the Later Iron Age and Roman periods.

1 Simple everted rim, grey-brown reduced core with light brown external and internal margins. Mica gritted sandy fabric with small angular flint and grog inclusions. Slightly soapy to the touch but with protruding grits. *(Ring ditch C, u.p.w.)*

2 Shoulder with oblique 130° angled spatula impressions. Grey brown reduced core with red-brown external margin. Sandy fabric with angular flint grits. Slightly soapy to the touch with protruding grits internally and a smoothed external surface. *(Ring ditch C, u.p.w.)*

3 Base with vertical finger grooves. Black reduced core with red brown external and internal margins. Occasional mica sand grits and grog tempers. Slightly soapy to the touch, with a pitted external surface due to vegetable tempering. *(Ring ditch D, l.p.w.).*

4 Base sherd, grey-brown reduced core with angular flint grits. Slightly soapy to the touch with protruding grits. External surface highly abraded. *(Ring ditch D, l.p.w.).*

THE FIRST CENTURY 'BELGIC' POTTERY

by Brian Dix

(Fig 2, 5)

A number of much abraded pieces of a first century AD 'butt' beaker vessel were recovered from the plough-wash silts of boundary (5). The cordoned wall of a sole diagnostic piece is illustrated (Fig 2, 5). The vessel was hand-made and probably finished on a 'tournette'. The exterior is burnished. The soft, reduced fabric is of a 'Romanising' type: fine dark grog has been added to the slightly sandy clay matrix, which also contains mica and occasional white angular flint grits. The vessel has been fired black at the exterior surface with a grey core and brown inner surface.

Similar fabrics occur at other sites along the Great Ouse Valley but no other butt beaker as thick walled as this example has yet come to the writer's attention.

THE ROMANO-BRITISH POTTERY

by Brian Dix and Peter Woodward, with a contribution on the Samian pottery by Hedley Pengelly

(Fig 2, 6-22, Fig 3, 23-45)

The stratified Romano-British pottery was recovered from the boundary ditches of a series of small rectilinear field gullies of field unit II, from the upper plough-wash deposits in the Bronze Age ring ditches A, D, and E, and from some rubbish pits and series of post-holes and slots representing timber buildings. However, the small quantity of material so recovered and the consequent impractability of arranging it into closely stratified groups invalidates any examination in terms of spatial location. Nevertheless, although deriving from a number of different features and levels, the pottery represents a fairly homogeneous collection of material dating at the earliest from the mid- to the late second century AD. The almost total absence of flanged dishes and colour-coated bowls from the Oxford region, which become important elements in pottery assemblages of the area from the late – third century onwards (cf. Woods, 1973), would further suggest that the Roxton material was deposited in the century after c. A.D. 170. Yet, although many of the sherds probably relate to an activity within this period, the present paucity both in the discovery and publication of well-stratified and securely dated groups of pottery from comparable sites in the immediate area precludes the possibility of any finer dating. In

the following catalogue of the pottery, those sherds which might be considered most diagnostic, by being described in detail, are therefore intended to suggest a chronological context for the other material. Their find-spots are given in terms of the features illustrated at fig 1C, with the abbreviation *u.p.w.* used to denote the upper plough-wash of the ring ditches.

The Samian Pottery
by Hedley Pengelly

(a) Plain forms (not illustrated)

With the exception of a single first century A.D. piece, no. 2 below, all the plain samian forms date from the Antonine period:

1 Form 33. Central Gaulish. Antonine. *(Ring ditch D, u.p.w.)*

2 Part of a large cup of form 35. The rather hard, pale micaceous fabric, slightly pitted, and the very patchy pale orange-to reddish-brown micaceous slip, externally lustrous, internally matt, and partly worn away, suggest first century origin at Lezoux. First century Lezoux ware is generally inferior to contemporary South Gaulish samian. Often the wide range of fabrics and slips are of very poor quality due to technical shortcomings and the use of unsuitable clay. Common enough at Lezoux, these efforts, not surprisingly, achieved little success further afield, and in Britain distribution is confined to sites in the south. Export from Lezoux to Britain fell under Nero and Vespasian and was probably confined to the period c. A.D. 55-75. *(Ring ditch D,u.p.w.)*

3 Part of the rim of a large deep-sided dish of form 31. Central Gaulish. Mid-to late-Antonine. *(Ring ditch D, u.p.w.)*

4 Form 31R. Central Gaulish. Antonine, not earlier than A.D. 150. *(Gully. 10).*

5 Three joining fragments, slightly burnt, of a very large dish of form 36. Central Gaulish, with plain rim similar to examples from Pudding Pan Rock (cf. Oswald & Pryce 1920, pl. LIII, 19). Probably late-Antonine. *(Gully 8).*

(b) Decorated Samian (Fig 2, 6).

A fragment from the base of a large bowl of form 37, Central Gaulish, in the characteristically untidy style of Secundus I of Lezoux (cf. Simpson & Rogers, 1969, fig 2.4, and Stanfield & Simpson 1958, pl. 154. 14-16, there assigned to Pugnus). These bowls give most of the detail on the Roxton sherd which has a double-medallion or festoon; hare (Dechelette 1904, 950A, variant); gadroon (cf. Rogers 1974, U153); cornucopia (U245) and triple leaf (H109). Secundus was a contemporary of Cinnamus. His work is relatively common at military sites in northern Britain and in the Danubian provinces which formed a major market for Central Gaulish ware in the second half of the second century (e.g. Karnitsch 1959, Taf. 56, 4, 5). c. AD 150-80. *(Ring ditch D u.p.w.)*

The Coarse Pottery

(a) Mortaria

7 Wall-sided mortarium with grooved wall Oxford ware finished with orange wash. Late-second to mid-third century A.D. cf. Young, 1977 type M15. *(Ring ditch D, u.p.w.).*

8 Mortarium with upstanding rim and a downward hanging flange with closed hook. Oxford ware, slightly overfired. Second half of the third century A.D. cf. Young, 1977, type M18.3. *(Gully 7).*

(b) Colour-coated wares

(i) Beakers with plain or cornice rims (Gillam 1970, types 77, 84-5 and 89; cf. also Hartley 1960, fig 4.1) are characteristic of the earliest period of colour coated production in the lower Nene valley, c. A.D. 170-240. Of the several examples of this type of vessel recovered during the excavations, the following are illustrated.

9 Beaker with plain rim in fine white paste with a slip coat which has fired light brown on the outer surface and darker on the inside of the vessel. Below a double groove a row of applied pellets forms the upper edge to some animal scene *en barbotine (Gully 7).*

10 Beaker with cornice rim. Formerly decorated with zoomorphic motifs as 4 above. The slighly sandy orange paste bears a dark olive slip. *(Gully 7)*

(ii) Bowls

11 Small bowl with fairly upright sides decorated with a band of rouletting. The fine white fabric is coated with a brown slip and is similar to examples from East Northamptonshire for which no precise source has yet been identified *(cf. Britannia vii. 1976. p.63). (Gully 7).*

12 Wall-sided bowl with grooved rim. White colour-coated ware from central and southern parts of the Oxford potting zone (Young, 1973 p. 110; 1977, p. 120). Probably current by the mid-third century A.D.Cf. Young, 1977, type WC3. *(Ring ditch D, u.p.w.).*

13 Rim of medium-mouthed bowl in a hard fine grey-white paste with olive grey slip. *(Gully 7).*

(iii) Dishes

14 Segmental dish, the form of which possibly derives from the Samian dish Dr. 36. Hard smooth grey-white paste with olive grey slip. A running scroll decoration *en barbotine* decorates the inside of the rim below a pronounced groove and recalls similarly designed vessels manufactured in the lower Nene valley c. A.D. 210-40 (cf. Hartley 1960, fig 4 and Dannel 1973, fig 1, 1a-b). *(Gully 7).*

15 Lid of 'Castor box' decorated with wedge-shaped rouletting. Its somewhat sandy orange paste is coated with a dark olive grey slip. The type appears to have been made at most of the lower Nene valley kilns from the late-second century until the end of production (cf. Hartley 1960, Fig 4. 17). *(Ring ditch D, u.p.w.).*

(c) Other pottery

Among the non-imported wares at Roxton the following broad classes of fabric have been distinguished.

(a) A fine relatively smooth-textured fabric, easily scratched. The basic colour of the oxidised version is orange often with a grey core. The reduced colour ranges from light to dark grey. The sandy matrix has small quartzite and mica grits with occasional medium sized

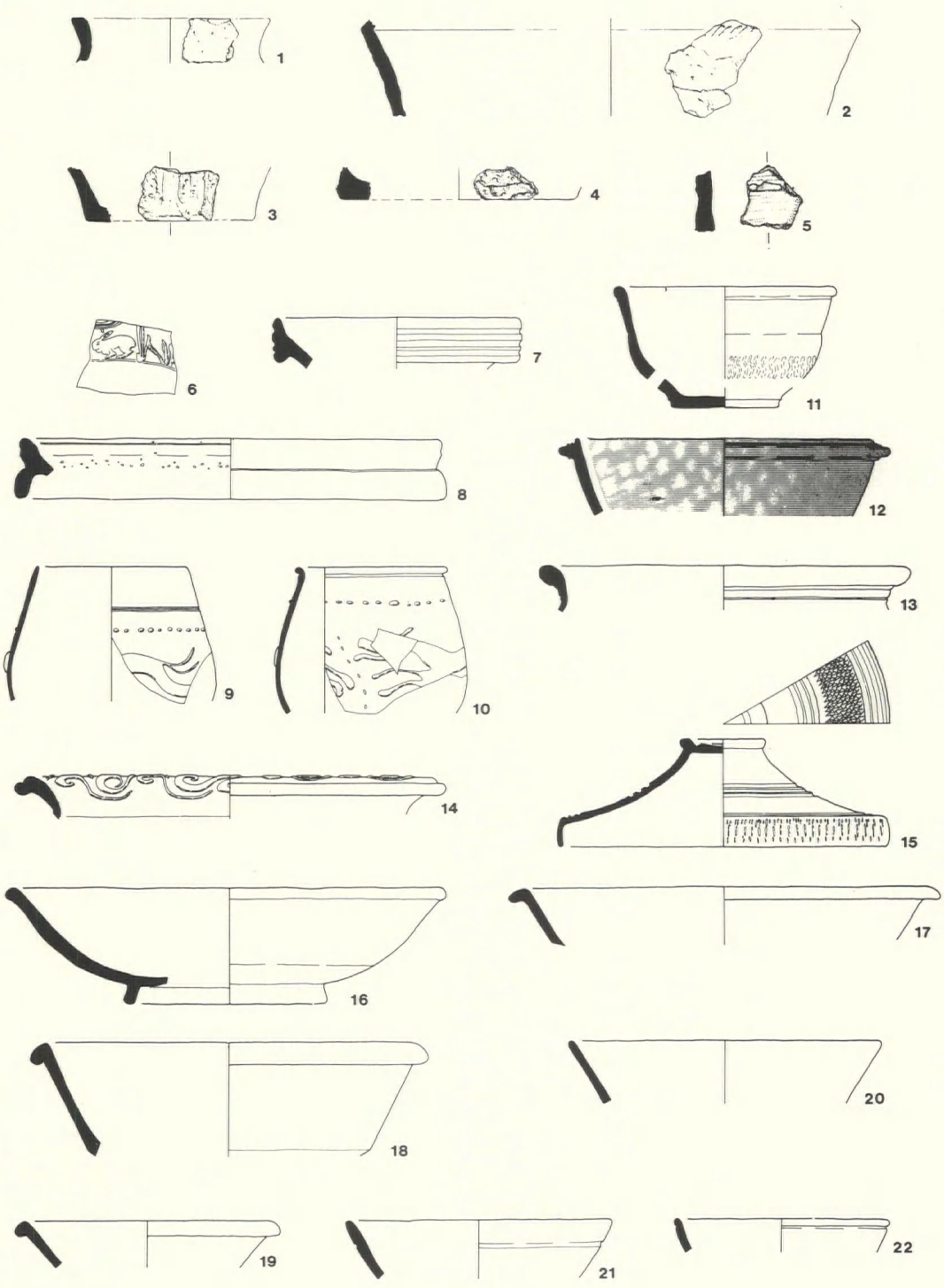

Figure 2 Iron Age and Tomano-British pottery, 1-22
(scale ¼)

flint grits. Voids derive from occasional shell impurity or the loss of grits resulting from the rather crumbly nature of the fabric. Within the tradition of local oxidised wares which included those of Oxfordshire and other areas (e.g., Young, 1977, p.185).

(b) A smooth fabric with a slightly 'soapy' texture. Predominantly a fine reddish brown to light buff colour which is often differentially fired. Well integrated into the fabric are quantities of ground shell, varying in size from extremely fine to thin plates up to 5mm across.

(c) A very soft 'soapy' fabric which is orange in colour and sometimes differentially fired. A high shell content, mainly of a flat disc type, causes the pot to spall and shear easily. Its looseness in the clay matrix and subsequent high rate of erosion have resulted in a 'corky' or 'vesicular' appearance. There is also a medium-sized grog content which is rather badly integrated into the matrix material.

(d) A fine laminated white fabric with a rough surface resulting from the even distribution of small quartzite grits throughout the matrix. It is a hard tough fabric with occasional voids.

(e) A fine sandy orange-red fabric with a grey core which has been reduced to a dark grey colour at its surface and contains an even distribution of small-to medium-sized mica and quartzite grits.

(f) A fine grey to buff sandy fabric which has evenly distributed within it small quartzite and mica grits. Its surface texture is fine and smooth as a result of burnishing.

Most of these fabrics were presumably manufactured locally in a range of vessel types with many examples produced in reduced finishes.

(i) Bowls and dishes

16 Bowl. Fabric A. The vessel is in close imitation of samian form Dr. 31 even to the extent of reproducing the internal ridge at the junction of the wall and base. The prototype was common in the late Antonine period (Oswald & Pryce, 1920, P.183). This derivative ought probably to be dated to the succeeding half century or so, although later copies of the same vessel form occurred in Oxfordshire colour-coated wares from the late-3rd century onwards (cf Young 1977, types C44-46), and so a later date cannot be entirely discounted. *(Pit 14).*

17 Bowl or dish with a small, thin, slightly out-curving rim. Perhaps similar to the last. Fabric A, reduced. *(Gully 10).*

18 Dish with a heavy, triangular, undercut rim. Fabric A reduced. *(Ring ditch D, u.p.w.).*

19 Dish with a short thick rim of a slightly triangular section. Fabric A reduced *(Pit 14).*

20 Straight-sided bowl or dish. Fabric A reduced. *(Pit 14).*

21 Straight-sided dish. Fabric F. Slight groove decorates the outside wall below the rim. *(Pit 13).*

22 Bead-rim dish. As Fabric A but with surface differentially fired to an oxidised buff colour *(Gully 8).*

(ii) Vessels with constricted mouths

With one exception, Fig 3, 45, the remaining coarse pottery sherds belong to vessels characterised by their constricted mouths. The profile below the rim ranges from a straight length or 'neck' which ends in a pronounced turn to shoulder *(fig 3, 23-25),* to a less distinct neck with a gradual turn towards the shoulder *(fig 3, 42, 43).* However, whilst the material could be categorised in terms of necked jars and bowls, such an analysis, based inevitably upon a definition of proportion (cf Webster, 1976, pp. 17-20) cannot be applied in those instances where little of the profile survives below the rim. Accordingly, the examples given below are grouped to illustrate the variety of forms present at Roxton. The vessels belong to that tradition of pottery manufacture which stemmed from such 'belgic' designs as the cordoned jar with its medium or narrow neck (cf. Kenyon, 1948, pp. 97-8), and which lasted in some areas well into the fourth century A.D. (e.g. ibid., fig 54, 12; Woods, 1973, fig 8. F100). However, consistencies in vessel design and the widespread manufacture of the type have resulted in the impossibility of arranging a detailed chronological sequence for the product (cf. Johnston, 1969, p. 86), and at best the Roxton examples can only be dated from their association with better classified sherds. The richness of vessel forms further suggests a variety of original function. However, the surviving nature of material precludes any arrangement in this way and would itself perpetuate an illdefined and already overworked method of classification.

23 Fabric A reduced. Rim turned out and slightly thickened. This vessel was formerly used as a cremation urn: the choice of a kiln-waster or more properly 'second', is interesting, apart from any religious considerations, for its implications regarding former marketing practices and for its suggestion of the location of a kiln site nearby. *(Deposited in u.p.w. of ring ditch E, B1).*

24 Fabric E reduced. Neck fairly straight to an out-curved rim. Grooves at the beginning of the shoulder. *(Pit 14).*

25 Fabric A reduced. Neck curved out slightly to a less pronounced rim than 24. Faint groove-tooling decorates neck. *(Gully 7).*

26 Fabric E reduced. High neck flaring into rim. *(Pit 13).*

27 Fabric A reduced. Rim rolled over and rounded; grooved neck. *(Gully 8).*

28 Fabric D. Neck fairly straight to an out-curved and somewhat rolled over rim. *(Pit 13).*

29 Fabric F reduced. Neck curved out slightly to an undercut rim. *(Pit 13).*

30 Fabric A reduced. Rim curved out and somewhat squarish in section *(Gully 7).*

31 Fabric C. Short neck curving into a heavy, flattish, rolled over rim. *(Gully 10).*

32 Fabric B reduced at outer surface. Fairly short neck curving into a more square rim than 31. *(Gully 28).*

33 Fabric C. Rim well curved out, flat on top. *(Gully 7).*

34 Fabric F reduced. Rim only slightly out-curved *(Gully 7).*

35 Fabric D. Rim everted, but not sharply so; grooved internally. *(Pit 13).*

36 Fabric A reduced. Short curved neck. Grooves at the beginning and just above the middle of the shoulder bulge. *(Gully 7).*

37 Fabric A reduced. Short curved neck *(Ring ditch D u.p.w.)*
38 Fabric A reduced. Short neck; rim curved right out to a thick squarish section. Groove at the beginning of the shoulder. *(Pit 14).*
39 Fabric C reduced at exterior. Rim rolled over to form a squarish section. *(Gully 7).*
40 Fabric B. As 34, but rim flatter *(Pit 14).*
41 Fabric C. Very straight quite short neck curving to a fairly flat angular rim as in 40. Slight groove above shoulder *(Gully 7).*
42 Fabric A reduced. Slightly curved neck; rim thickened and rounded. *(Ring ditch D, u.p.w.)*
43 Fabric E reduced. Short neck curving to a rounded rim. *(Ring ditch D, u.p.w.)*
44 Fabric A reduced. Slightly everted rim. *(Pit 14).*
45 Fragment of lid. Fabric A. *(Pit 14).*

THE MEDIEVAL POTTERY

(Fig 3, 46)

A number of medieval sherds of a sandy fabric were recovered from the vicinity of group III field gullies, during quarry stripping of the area. Only one piece was diagnostic and this was part of a bowl, pushed into a shallow pit to the west of ring ditch E (Fig 1C, M1). This sherd is illustrated.

46 Shallow bowl or dish with upright folded rim. The sandy fabric is within the C6 range recognised at Bedford. (cf Baker and Hassall in Baker et al 1979 p. 172). It has a light brown core oxidized to a red brown on internal and external margins. The surfaces are rough and occasionally pitted where inclusions have been loosened. The external surface is smoke blackened, and the vessel is wheel thrown. (Pit M1).

THE VENUS FIGURINES

by Frank Jenkins MA, PLD, FSA

(Fig 4 Nos 1-3)

All the pieces described are made of well levigated white pipe-clay and derive from possibly two statuettes. When complete they portrayed a female personage standing completely nude, grasping with her right hand a wayward tress of hair which falls over the front of the shoulder. In her left hand she supports a *tunica* which hung down to the ground by her left leg.

1 Two pieces which join, were of the front of the personage from the waist down to just below the knees. The left hand supports a *tunica* the lower part of which has gone through breakage. *(Ring ditch D, u.p.w.).*
2 A portion of the front of possibly the same statuette as No. 1 *supra.* from just below the knees to the feet with a piece of the *tunica* attached to the left leg. *(Ring Ditch D, u.p.w.)*
3 A small hollow domed plinth retaining a piece of the hem of the *tunica.* The fracture scar shows that this piece does not belong to No. 2 *supra. (Ring Ditch D, u.p.w.)*

The art type stems from that of the classical Roman goddess Venus Anadyomene, of which these statuettes are inferior Gallo-Roman copies. They were cast in two piece clay moulds, one for the front and one for the back, and were mounted on separately made small hollow domed plinths. They were mass-produced in quantity in the various *officinae* situated in central Gaul, principally along the Allier and tributaries centred on Moulins-sur-Allier, which specialised in the production of a wide range of moulded clay statuettes of several types. It is clear that the Venus type was very popular and was widely exported to the western provinces. (Tudot, 1860; Rouvier–Jeanlin, 1972; Vertet and Vuillemot, 1974).

A significant quota penetrated the British market where, with slight variations in minor details this type is, on the present evidence, the most numerous of all the various types of Gallo-Roman clay statuettes found in the province. These statuettes of Venus are most numerous, and presumably were more popular as cult objects in the civilian areas of the province (Jenkins, 1958), particularly in those *civitates* in closer proximity to the Gallic mainland whence they were exported, and in the immediated homeland of cults with which they were associated (De Vesly 1909; Miln 1877; De Laet 1950).

The use of clay statuettes of the kind under discussion, as *ex votis* to the gods at temples, for domestic worship and as grave offerings is well attested (Jenkins 1958), but at present it is impossible to place the Roxton examples in any one of these categories. Without stressing the point here, the position of the site at Roxton is worthy of comment. It is sited near the junction of the River Great Ouse and the River Ivel, and it was at confluences that the Gauls tended to build shrines. In Britain altars to Condatis, the deity whose name means "the Joiner Together", have been found at two places situated at watersmeet in Co. Durham, viz:– Piercebridge and Chester-le-Street. There is also the Roman settlement known as *Condate* situated at the confluence of the River Weaver with its several feeders at Northwich in Cheshire. As the close association of the clay statuettes of Venus with the water-cults in Gaul is well attested, those examples found at Roxton would not be out of place close to the confluence of two rivers. It would not be beyond the bounds of possibility that there is a slight chance of the existence of an as yet undiscovered shrine at Roxton.

At present the chronology of the industry and the development of the export trade in Gallo-Roman clay statuettes has not been satisfactorily determined. On the basis of the evidence derived from excavations carried out at Gauting (Bavaria) and at Hofstade-bij-Aalst (Belgium) it appears that clay statuettes of this type of Venus had arrived at both places either in the reign of Hadrian, or in that of his successor Antoninus Pius, but certainly before A.D. 150. (Kellner, 1971; De Laet, 1950).

Not many of the examples which arrived in Britain as imports, have been found in stratified deposits associated with other archaeological material, but the available evidence suggests a date not earlier than A.D. 125 and not later than 150 A.D. The length of time that elapsed between the arrival in this country of these comparatively fragile objects and when they were discarded is not known. As objects of veneration a life of some twenty years might be the maximum, hence

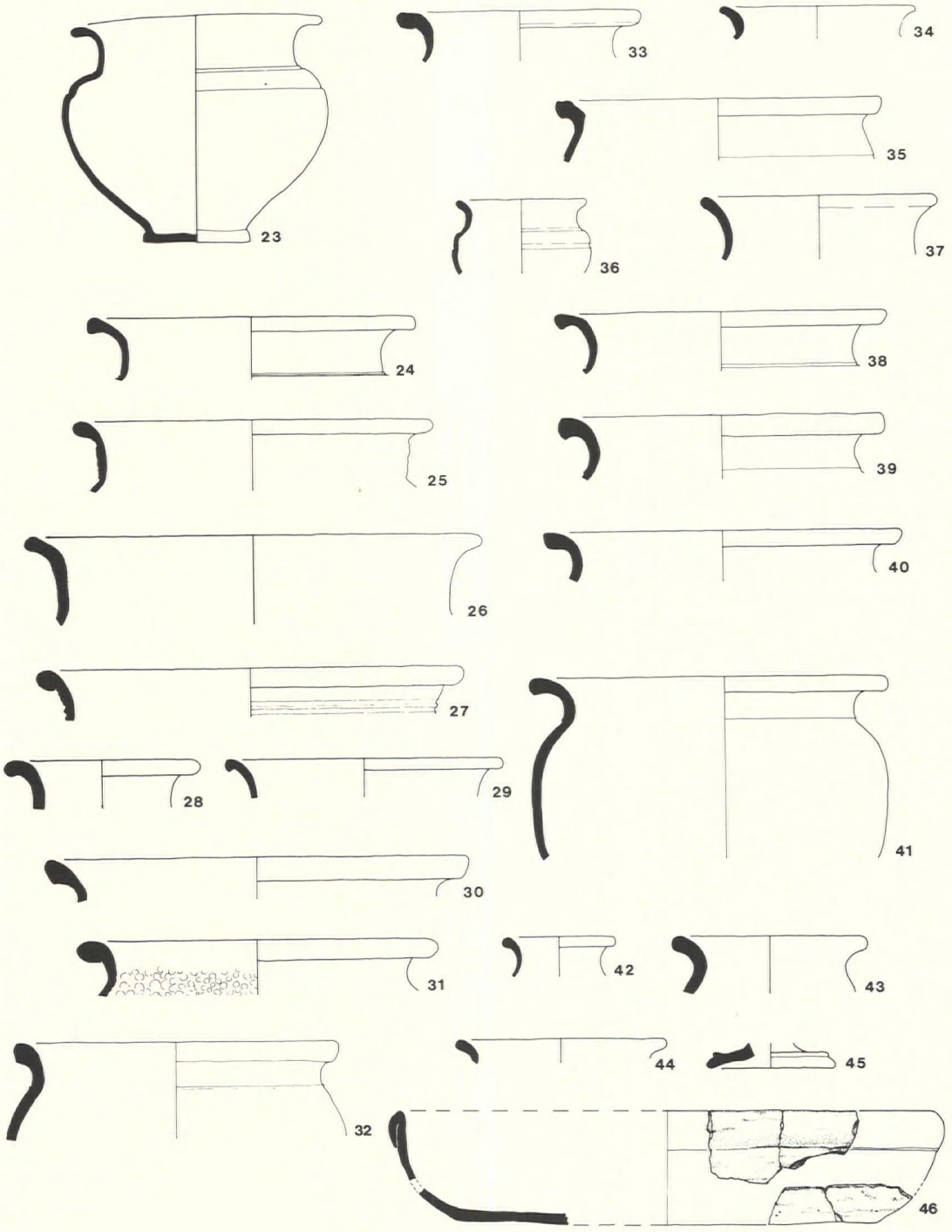

Figure 3 Romano-British pottery, 23-45; Medieval pottery, 46
(scale ¼)

as the examples found at Roxton seem to have been imported between A.D. 125-150, and were recovered in a context dated by the associated material A.D. 170-270, they are best regarded as survivals in later debris.

OBJECTS OF IRON

(Fig 4, 4-14. Fig 5, 15-16)

The majority of ironwork occurred in the 2nd/3rd century habitation context, much of it from the upper plough-wash silts on the northern side of ring ditch D. One concentration consisted of a punched iron plate, an iron bar and pieces of a barb-spring padlock (Fig 4, 9-11), possibly representing the remains of an iron bound box. Two hooks and a part of a handle (Fig 4, 13, 14) were recovered from pit 13. A quantity of nails were recovered from the site, of which a sample are illustrated. A reaping hook (Fig 5, 15), is a further indication of the arable nature of the site.

4 Iron nail with squared head, shaft broken. *(Ring ditch D u.p.w.)*
5 Iron nail with flattened head. Shaft broken. *(Ring ditch D u.p.w.).*
6 Iron nail with rounded head, possibly complete but point damaged, the most common type on site. *(Ring ditch D u.p.w.)*
7 Iron pin or nail with indented, concave, circular head. Squarish section to shaft. Possibly part of ornament. *(Ring ditch D, u.p.w.).*
8 Broken-off head to heavy pin. Circular head. *(Ring ditch D, u.p.w.).*
9 Iron plate with one or more punched holes, recovered in association with objects 10-12. *(Ring ditch D, u.p.w.)*
10 Iron bar of square cross-section found in association with objects 9, 11 and 12. *(Ring ditch D, u.p.w.).*
11 Part of a barb-spring padlock. This can be paralleled in both civilian and military contexts (Cunliffe (1975), 241, Fig 128, 218) for object type and fuller note). *(Ring ditch D, u.p.w.).*
12 Iron plate and hook, possibly part of catch or lock *(Ring ditch D, u.p.w.).*
13 Iron-wire hook (broken) pit 13. *(Ring ditch D, pit 13)*
14 Iron hook or handle (Broken). *(Ring ditch D, pit 13)*
15 Reaping hook (twisted and bent). A type that is found in the Iron Age contexts and which continued in use into the Roman period. (cf Manning (1976), 30 and fig 8) *(Ring ditch D, u.p.w.).*
16 Iron knife accompanying crouched inhumation (B3). This object is incomplete and its precise type remains indeterminate. However its occurrence in a grave may indicate that it accompanied a burial of pagan Saxon date (cf. Meaney and Hawkes, 1970).

OBJECTS OF BONE

(Fig 5, 17-18)

A simple ornamental bone pin was recovered from *pit 14.* This was complete with faceted sides to the shaft and an irregular hexagonal head and separated from the shaft by a single groove (Fig 5, 17). This approximates to Crummy type 2 (Crummy, 1979), but the conical head is absent. Possibly late second-third century AD.

A small bone wedge with green cuprous staining was recovered from the upper plough-wash of ring ditch C. No Roman parallel could be found. It may be residual from an earlier period (Fig 5, 18).

OBJECTS OF STONE

(Fig 5, 19-20)

Two pieces of 'Kimmeridge' shale armlets were recovered from the site, in the upper plough-wash deposits of ring ditches E and D. These were circular in section, lathe turned and both had a diameter of about 8 cm. This form is common from the second century onwards, (Calkin (1953)).

19 Shale armlet piece, radius about 8 cm *(Ring ditch E, u.p.w.).*
20 A single hone stone of a micaceous sandstone was recovered from the upper plough-wash of ring ditch D.

A fragment of Rhenish lava quern was recovered from *gully 7.* This was very fragmentary and damaged. Its original diameter was probably about 30cm. It was probably the lower stone of a pair (not illustrated).

THE COINS

by John Turner, Bedford Museum

A single very badly worn and corroded coin was found in the upper plough-wash of ring ditch D. All that it was possible to say with certainty was that it was of *orichalcum* and a *dupondius.* The portrait resembles most closely Trajan, but the small fragment of obverse inscription still readable was not sufficient to confirm this.

A coin of Elizabeth I was recovered at the base of the modern plough-soil to the east of ring ditch E. This was a badly struck (hammered) silver ¾d. Legend to the left on obverse and right on reverse was virtually absent.

Privy mark	–	lis
Obverse	–	Bust to the left with rose behind. Lead, E.D.G. ROSA. SINE, SPINA
Reverse	–	Royal arms, dated 1561, CIVITAS, LONDON

THE ANIMAL BONES

by Annie Grant

The majority of the bones found at Roxton were found in Iron Age or Roman contexts. Over 80% of these were cattle bones, with sheep and horse bones next in importance. The most unusual feature of this group of bones was the presence of two partly articulated cattle spines (Fig 1C, CB1-2), one found in gully (2) running across ring ditch E and the other in gully 9 near ring ditch D. The bones found in boundary ditch (5) (Fig 1C, CB3) includes a high percentage of vertebral bones. The presence of these vertebrae may be due to a particular butchery technique practised by the people who used the site, where the limb bones and the meat were removed from either side of the vertebral column, which was then discarded as waste. The vertebrae found in the ditch (5) were sometimes coated with red ochre. This may indicate that some ritual significance was attached to the placing of the vertebrae in the ditches.

Sheep bones formed 9% of the Roman and Iron Age bones, and pig bones less than 1%. Horse bones were as

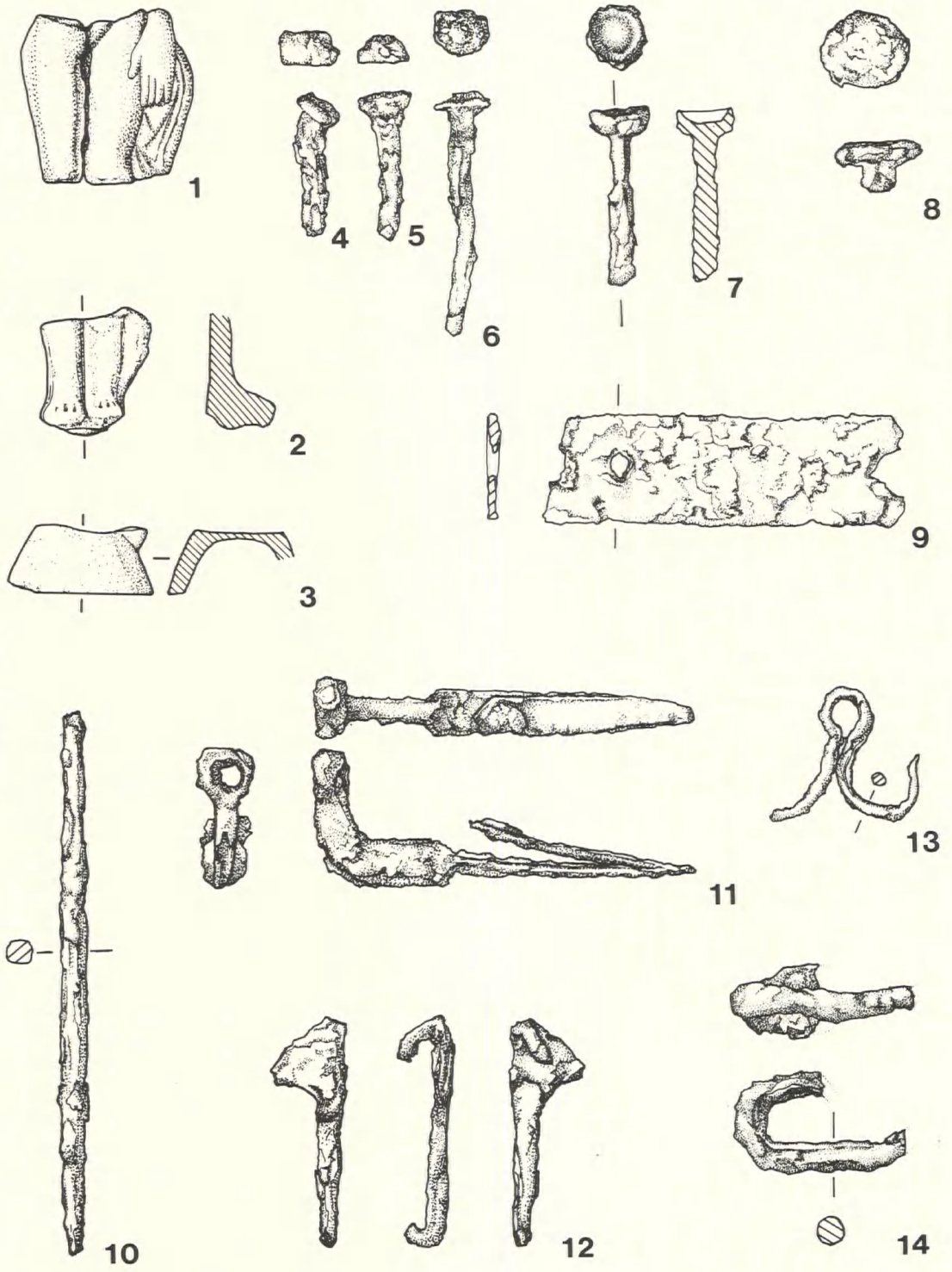

Figure 4 Romano-British pipe-clay Venus figurine, 1-3; and ironwork, 4-14
(scale ½)

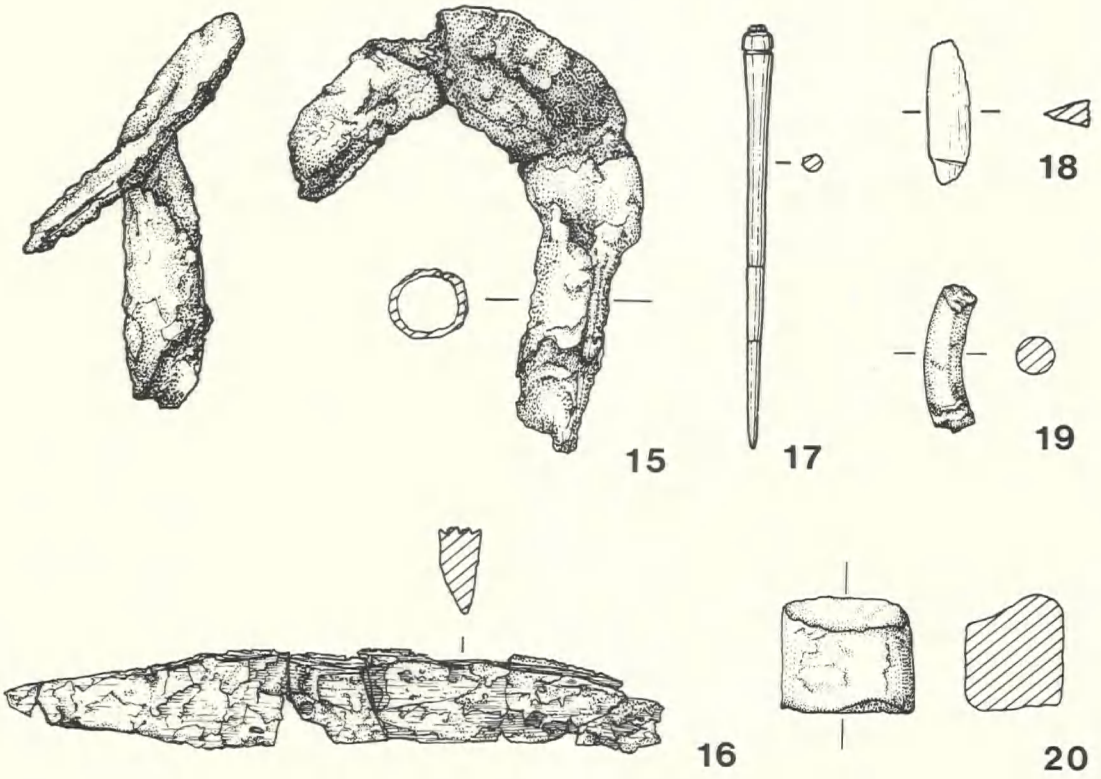

Figure 5 Romano-British ironwork, 15-16; bone objects, 17-18; and stone objects, 19-20
(scales: 15-17, 19-20 at ½; 18 at full size)

common as sheep bones in Roman contexts. The other animals, dogs, cats, red deer, birds and badgers were only represented by a very few bones.

The majority of the bones would appear to be the remains of the meals of animals that had probably been kept in the area of the site, and in this light the scarcity of pig bones and the relatively high numbers of horse bones is interesting. However, too few bones were recovered to allow any more than the most tentative of conclusions.

THE HUMAN SKELETAL REMAINS

by C.B. Denston, Department of Physical Anthropology, University of Cambridge

Of the post-Bronze Age human skeletal remains submitted to the department, two were from inhumations (B2) and (B3). One of these was extended (B2) and the other crouched and accompanied by an iron knife (B3) (plates 2 and 3). A third group of bones (B1) had been cremated and placed in a jar of 2nd/3rd century date. All burials were in a fragmentary or eroded state of preservation. All the remains have been retained in the Department of Physical Anthropology, Cambridge.

Burial B1

It is possible that these remains were not of a single individual but of two. However there were no duplicate portions of bones to substantiate this hypothesis. The fragments were of differing colours. This was probably because they received varying degrees of heat in the process of cremation.

Fragments of the skull and of certain postcranial bones were recognisable, and it would seem that some fragments of long bones of one colour were too large in proportion to belong with other fragments of a lighter colour and smaller proportion. These fragments were not of similar bones, but the relative size in their positions in the skeleton (e.g. radius and femur) would seem to suggest they were not from the same skeleton.

Colour: White – light brown.
Length of fragments: 0–46mm
Sex: Possibly male. ? Female.
Age at death: Adults.
Weight: 282.5gm.

Burial B2 (Plate 2)

The human remains submitted to the department for examination were in the main of the postcranial skeleton, through a few fragments of skull were present. The frag-

Plate 2 Extended Romano-British inhumation

mentary nature unfortunately made it impossible to record any of the usual biometric measurements on the skull, and only four of the long bones produced measurements from which a tentative reconstructed stature could be assessed.

From an examination of the innominate bones, it was clear that the individual was a female. This was substantiated by sexual features of other bones, and the overwhelming non-robust appearance of all of the remains. Owing to the inability to determine the development age by change at the pubic symphysis, it remained for the dental attrition to produce an age at death. Fortunately the right half of the mandible, and the right dental arcade of the maxilla were both preserved; the mandible having three molars, two premolars, a canine and a lateral incisor *in-situ,* and the maxilla producing one molar, one pre-molar, a canine and two incisors. The first premolar, and the first and second molars had been lost from the maxilla *anti-mortem.* The dental attrition of the teeth suggested a person possibly from forty to forty-five years. An approximate stature of 5' 1¾" was computed from the combined maximum length measurements of the femora, left radius and left ulna. Most body portions of the vertebrae were not preserved, and those that were preserved displayed erosion, the superior and inferior articular facets throughout these bones were well preserved, and those of the fourth and fifth lumbar vertebrae and the sacrum displayed the involvement of osteoarthritis. No caries or abscesses were noted in the mandible and maxilla, but resorption of the alveolas borders suggested some periodental infection. The mandible fragment also displayed a non-metrical feature in the form of a torus in the area of the premolars and the first molar, and situated on the lingual surface of the corpus.

Sex: Female
Age at death: 40-45 years
Stature: 1.57 metres.

Burial B3, (Plate 3)

The remains were of a very fragmentary nature with many bones, or portions of bones missing, this preventing any attempt at reconstruction of individual bones. The skull was very fragmentary and displayed post-mortem erosion and obvious indications that it had suffered post-mortem distortion, possibly due to earth pressure. Though fragmentary, the portions of bones present suggested the individual was quite robust and certainly of male sex. An age at death was assessed from the state of attrition of the molar teeth *in-situ* in a portion of the maxilla and those from a portion of the mandible. 25-30 years was an approximate age. These teeth were first and second molars from the right side of the maxilla, and first, second and third molars with also a premolar from the left half of the mandible. None of the teeth displayed evidence of ante-mortem decay.

The pre-Iron Age burials

The human skeletal remains dated to the Neolithic and Bronze Age will be described with the details of the Bronze Age ring ditch cemetery.

OTHER ROMAN MATERIAL

A single piece of pale green bottle glass with surface lamination was recovered from the upper levels of pit (13).

Both tegulae and imbrices occurred in the upper levels of the ring ditch silts of D. Four pieces were noted but not collected. It is not likely, since they were so few in number, that they were used for roofing on this site.

Oysters were noted in the upper plough-wash of ring ditch D, and in pit (13).

RESIDUAL MATERIAL

Residual material from earlier periods was noted in the Roman levels. The earlier Iron Age pottery has been described in a previous section.

Plate 3 Crouched inhumation with iron knife

Two bronze pins from the upper plough-wash of D and in gully (7), were of a Bronze Age type. They were presumably disturbed from the ring ditch structure D, during the 2nd/3rd century occupation, or during the phase of ploughing which followed this. They were found in silts nearby the Roman Imperial coin (see previous). These will both be described in the report on the Bronze Age cemetery.

Worked flint was recovered from the site in all levels. This was identified as being residual from the Neolithic and Bronze Age occupation of the site, apart from a single gun flint found at the top of the ditch of ring ditch A. This material will be discussed in detail with the Bronze Age cemetery.

SPECIALIST REPORTS AND OTHER NOTES

THE SOILS AND SEDIMENTS

All the features on this site were cut into fluviatile sands and gravels and their associated soils of the flood plain terrace of the river Great Ouse. A general idea of the soils in the area can be found in King D.W. (1969). The soils here were gleyic brown earths of the Biggleswade series and the associated brown earths developed on the same parent material.

A full report on the soils and ring ditch sediments at Roxton has been prepared by Dr. H. Keeley and Mr. R. Allen (Keeley 1974; Keeley 1976). However, much of this is of a technical nature and more specifically relates to the Bronze Age ring ditch sites. A full description can be found in the site record and archive deposited in Bedford Museum, but that information which is of importance to the description of the Bronze Age mound structures and their subsequent erosion will be found in the second Roxton report.

WOOD IDENTIFICATION

by Carole Keepax, Ancient Monuments Laboratory, Department of the Environment

Of the charcoal submitted to the laboratory for examination, only two samples were from the post-Bronze Age settlement levels. These were from the two hearths H4 and H5.

Hearth 4:
This sample consisted of three large bags full of charcoal. About 25% of one bag was identified. Most of the sample was blackthorn *(Prunus cf spinosa* L.), with some hawthorn-type *(Crataegus/Pyrus/Malus/Sorbus* sp.), and a small amount of buckthorn *(Rhamnus Catharticus* L.).

Hearth 5:
This sample consisted of hawthorn *(Crataegus sp.)*. Both branch and twiggy fragments were present.

The sample submitted from the Bronze Age levels of the site will be found described with the details of the Bronze Age ring ditch cemetery.

CARBON DATES

by R.L. Otlet and A.V. Walker, Nuclear Physics Division, Atomic Energy Research Establishment, Harwell

Two samples of charcoal from post 2nd/3rd century contexts were submitted for radio-carbon dating. These were from two hearths H4 and H5. Details of the method of measurement have been described in Otlet, R.L. and Walker; A.V. (1978).

Hearth 4
HAR – 1004: Charcoal of hawthorn sp. (ref wood identification), 310 a.d. ± 80 years.

Hearth 5
HAR – 711: Charcoal of hawthorn sp. (ref wood identification), 530 a.d. ± 70 years.

The difference in date from two stratigraphically identical features is discussed in the site description.

The samples submitted from the Bronze Age levels of the site will be found described with the details of the ring ditch cemetery. They have, however been previously published in Otlet R.L. and Walker A.J. (1978) and discussed more fully in Hall D.N. and Woodward P.J. (1977).

GEOMAGNETIC MEASUREMENT

by Mike Barbetti, Oxford University Research Laboratory for Archaeology

A sample of the sandstones in the base of hearth (H4) were taken for the measurement of the preserved magnetic orientation. It was hoped that these measurements might contribute to a reference curve of earth's magnetic field changes *vis-a-vis* carbon-date; that is provide a 'geomagnetic date' for the hearth.

Preliminary basic measurements showed that the magnetic directions of the samples were scattered, suggesting that the stones were heated on more than one occasion and were rearranged between heating events. Consequently, it was not possible to provide a 'geomagnetic date' for the hearth.

THE GRAIN AND SEED REMAINS

by J.R.B. Arthur, FLS

A single grain of six row hulled barley *(Hordeum vulgare L.)* was recovered from the lower plough-wash of ring ditch E.

The other seeds and grain recovered from the site were from the central Bronze Age burial pits or ring ditches B and C. This material will be described with the report on the Bronze Age cemetery.

THE ADJACENT CROPMARK SITE (482)

by G. Rudd, Longsands School St. Neots

(Fig 1B)

This site (at TL 144539) was examined in 1969 when road improvements were made to the A428 road along the section between TL 148544 and TL 142536. A watch was kept for archaeological features when a new roadside drainage ditch was dug. The sections of numerous pits and ditches were revealed along its length with a concentration centred at about TL 145540. Pottery in these features was exclusively Roman and mainly of the late 1st and 2nd centuries A.D. A quantity of burnt clay, crushed charcoal and debris was suggestive of the near proximity of a pottery kiln. In a ditch partly overlying the brick pier of the gateway to 'High Barns' a skeleton of a man aged about 35 years was carelessly buried among burnt daub and building materials. No detailed excavation of these features was possible. The finds have been placed in Longsands School Museum.

THE ADJACENT SITE (1477)

(Fig 1B)

The site (at TL 155533) is described in the Bedfordshire Sites and Monuments Record as the pit alignment discussed and described in *'A Matter of Time'* (1960), 28-31. The gazetteered site at Roxton has a N.G.R. at TL 157535 which is clearly erroneous since it is coincident with the ring ditch site described here. Reinterpretation of the aerial photographs cited (St. Joseph, WV 15-18, located in N.M.R. as 147/156536), shows that these may have been misinterpreted, and apart from the excavated site no others (in particular a pit-alignment) are present.

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The Origin and Plan of Bedford

JEREMY HASLAM

In 1970, in a short article in this *Journal,* David Hill discussed the origins of Bedford, and also put forward an interpretation of the layout of the various elements in its topography. There are, however, several considerations concerning both of these aspects which suggest alternative hypotheses, and which in the writer's view place the origins and physical development of the town in a new light.

THE TOWN PLAN

The course of the defences around the northern burh of Bedford has never been established by archaeological means. That there were defences, however, can be inferred both from the entry in the Anglo-Saxon Chronicle (*sub anno* 915, Whitelock 1955, 195) referring to Bedford as a burh and to its inhabitants as *burgware,* and from the presence of the fortified southern burh built by Edward the Elder (Baker 1970, 67; Hassall and Baker 1974, 79-80) which is clearly a secondary element (see below). Since the line of the defences of the northern burh has been lost, it is therefore the topography of the town which must provide the evidence for their exact course.[1]

The only suggestion as to their course has been made by Hill (1970, 98). He has pointed out that the northern burh is essentially rectilinear in plan (Biddle and Hill 1971, 84 and fig 1); and has also suggested that the Saxon church of St Peter is part of the northern gateway, placed so that its tower and stone walls acted as 'bastion or a flanking guard to the gate' (Hill 1970, 98). The east side of the defences is to be located east of the castle area, and the west side as far west as the Saffron ditch (Baker 1970, 68, fig 1). This solution is broadly accepted in the more recent survey of the town (Hassall and Baker 1974, 79).

There are a number of arguments which make it necessary to reject this proposed course and to put forward an alternative, which will make the rectilinear plan of the original burh even more evident than is suggested by Hill. This line and the alternative course proposed here are both given in figure 1.

Hill's view that St Peter's church was placed on, or formed part of, the north gate rests on an analogy with the numerous examples of the association of churches with the gates of Saxon burhs in Wessex.[2] However, the known associations of early churches with burh gates occur almost exclusively in Wessex, rather than to the north of the Thames (excepting Oxford). Bedford is not a Wessex burh, and, it will be suggested below, has a very different origin and early development; any analogies drawn between Bedford and, say Cricklade or Wallingford, are therefore likely to be misleading. The argued coincidence between church and gateway is moreover contradicted by other considerations discussed below.

The clue to the position of the north gate is provided by the alignments of four main roads which approach the northern end of the High Street from the west (Bromham Road – Dame Alice Street),[3] from the north-west (Tavistock Street), from the north (Little Bury Lane), and from the east (St Peter's Street).[4] The meeting place of all these streets is immediately to the north of point A on figure 1, that is, some distance south of St Peter's church, and they join the axial north/south road, which crosses the bridge and runs along the High Street, at this same point. If Bedford had defences at any period, it must be assumed that the courses of these roads reflected the position of gates in these defences. The northern gate must therefor have occupied a position indicated by point A, placing the junction of all these roads (or to look at them from the inside of the burh, their division) on its outside. The major east/west route of Bromham Road and St Peter's Street would therefore have run outside the gate, rather than through the corners of the defences, were the north gate located at St Peter's church.

Besides establishing the position of the north gate, this conclusion has an important corollary: St Peter's church now becomes an extra-mural church, placed in a triangular-shaped open area, possibly a market place, to the north of the gate.

Instances of the association of a market area and a church, situated *outside* one or more of the gates of the earliest nuclei of pre-Conquest burhs, are not only common to towns north of the Thames, but are also, with only a few exceptions, absent from burhs to the south of this line.[5] Bedford clearly provides an example of this type.

The positioning of the north gate at point A establishes an important fixed point which suggests the way in which the lines of the defences relate to surviving topographic elements of the burh. The northern defences thus ran along a line immediately to the north of Lime Street and Lurke Lane, with the inference that these represent the course of the original intra-mural lane or wall street.[6] This line of streets is, significantly, also followed by the parish boundary for most of its length. Similar cases of the conjunction of a parish boundary with an intra-mural street at Northampton (Silver Street), and at Hereford (Behind the walls Lane), lend further plausibility to this identification.

The line of the eastern defences, as marked on figure 1, can also be deduced by the same arguments which locate the northern line. To the east of Mill Street, the eastern arm of the four main cross-streets of the town, is St Cuthbert's church, placed in a rectangular area which, certainly from the time of Speed's map of 1610,[7] is clearly a significant element in the topography of the town. The possibility that this church was associated with an extra-mural market place, rather than with the east gate itself, suggests that this gate should be placed at point B, and that the eastern defences should therefore lie to the west of the church. On this alignment, the inner edge of the northern half of the eastern defences is again followed by a parish boundary. There is no north/south street on this line, and none is marked on Speed's map; it must be assumed therefore that this boundary was drawn along the line of a feature which was lost at an early date. To the south of Mill Street this boundary takes a wandering path to the east of the castle, which suggests that it was diverted from a straight north/south line by the imposition of the Norman castle on the town. Just as this castle has altered the street plan and tenement boundaries of the south-east quadrant of the town (Hassall and Baker 1974, 81), so it may reasonably be assumed to have affected the course of the parish boundary. If this is so, then the original parish boundary could well have followed the entire length of the intra-mural street of the eastern defences in the Saxon period. On this assumption, three sides (including the river) of the original burh are precisely defined by the parish boundary of St Paul's, its main church. A third important feature is that the line of the eastern defences thus postulated takes them underneath both the centre of the motte of the Norman castle and the north-east bastion of the castle bailey (Hassall and Baker 1974, 81 and fig 5; Baker 1972, 18-19 and fig 2). The Saxon defences must certainly have been visible when the castle was constructed and are unlikely to have been ignored; and the siting of a Norman castle on, rather than inside, Saxon urban defences has many parallels. In the writer's view the location of the defences on this line makes more sense of the various observable topographical features than does Hill's suggestion that the defences lay to the east of the castle.[8]

The position of the western defences is more problematical. The west gate (point C in fig 1) is placed approximately the same distance westwards from the central crossroads as the east gate is to the east. This position is supported by the fact that the defences which incorporated this gate lie immediately to the east of the course of a stream flowing southwards into the Ouse,[9] thereby taking advantage both of the defensive potential of this stream and of the raised land to its east. The defences shown in figure 1 thus lie along a break in the slope which is still clearly visible. They also cross the line of the main street where it makes a change of direction to the south, which is more likely to have occurred outside rather than inside the line of the defences. Though there are no parish boundaries or other obvious features of the built topography which might act as a guide, this general course is probably the only one which the physical topography will allow. The archaeological evidence which bears on this problem is however somewhat equivocal. Recently recovered material suggests that middle Saxon occupation extended further to the west than this line.[10] The western defences could be placed further to the west, provided that their line respects the physical constraints already mentioned. It must be pointed out that the area could well have been occupied before the construction of the postulated 8th century burh defences, whose layout would have respected the physical rather than the built topography; the earliest defences of Hereford, of possibly similar date, similarly cut across earlier occupation (Shoesmith 1972). To the north of the gate the defences

are made to take a line which curves eastwards to meet the western end of the northern defences, running parallel to All Hallows' Lane to the west. This street is marked on Speed's map and is clearly an element in Bedford's early topography;[11] just as St Cuthbert's Street must have followed the line of the eastern defences, so All Hallow's Lane would, it is suggested, have followed the line of the western defences.

The line of the defences as argued above encloses a sub-rectangular area of approximately 37 acres or 15 hectares (about half the area of Cricklade or a sixth of that of Winchester). This area is divided into quadrants by the four main streets which have been assumed in the discussion above to have passed through gates in these defences at or near their centre points. Recently discovered evidence of the position of an earlier timber bridge slightly to the west of the present stone bridge (Hassall and Baker 1974, 78) suggests that the original line of the High Street approximated more nearly to a straight line, its southern end probably diverted only on construction of the stone bridge in the 12th century *(ibid).* This is marked in broken lines in figure 1. The main streets thus display a more marked regularity even than the lines of the defences.

The analysis so far has suggested that apart from the church of St Paul's and the Norman castle there are five main elements in the growth and development of the northern burh. These are:

1 Defences, of sub-rectangular form.
2 Four main streets set at right angles, the west, north and east streets passing through presumed gates in the centres of the defences, with the south street leading to the bridge.[12]
3 The bridge, placed approximately centrally in relation to the defences and the street system.
4 Two 'Market areas' immediately outside the north and east gates, each associated with a church (St Peter's and St Cuthbert's).
5 Main roads leading from the north gate and from the west gate, and minor extra-mural north/south streets to the west and east of the defences.

The primary elements in this layout are clearly the first three: defences, streets and bridge. The physical topography of the northern burh shows that it is the river crossing which is the *raison d'etre* of Bedford. The town is placed on the end of a long spur of land, further defined by a stream running down its western side, which reaches to the edge of the river – a site ideal for the bridging point of a river,[13] for a permanent settlement, and for a defended enclosure to guard this bridge. The function of this burh as a device for safeguarding the bridge, as well as a means of regulating river traffic, is reflected in the unity of bridge and burh which is suggested in historical sources from the 8th century onwards. In his discussion of the three common and obligatory burdens of army service, the building of fortresses and the construction of bridges, Brooke shows (1971) that they are always associated in the reservation clauses in charters from at least the middle of the 8th century. In commenting on and explaining the importance of this association, he states that ' . . . in England bridges were linked with fortresses . . . Bridge and fortress were a single military unit; together they secured the river crossing for the armies of the kingdom and together they prevented the movement of enemy troops either by land or by river' *(ibid,* 72).

The physical connection of burh and bridge is also suggested by the fact that both are considerable investments in labour: a defended enclosure at a river crossing justifies the effort of building a bridge, and is the best guarantee for its continued existence and upkeep. The fundamental connection of the street system with the burh and bridge unit is also suggested by the fact that it provides the essential link between the position of the bridge, the lines of the defences and the gates through these defences at their central points. The plan of the burh, as well as its relationship to the bridge and to the roads leading to its northern gate, would be meaningless without them.

The three elements of burh, bridge and streets in Bedford must be seen therefore as a single unit, in that the existence of one of these elements implies the existence of the other two. Since they are linked together in space, it may be concluded that they are also linked together in time; in other words they form a single system which has been planned and laid out over a short period, as a result of a deliberate policy which may be described as broadly defensive. This conclusion will be seen as of some importance when the origins of this system are discussed below.

ORIGINS

The documentary evidence for the origin of Bedford comes solely from the Anglo-Saxon Chronicle. This has already been quoted and discussed by Hill (1970, 96-7), and it is, as he points out, clearly crucial to a consideration of Bedford's origins.

However, Hill makes several conflicting observations on the Chronicle references. He argues that since Edward also stayed for four weeks at Buckingham, where he built two burhs, he must also have been responsible for the construction of both north and south burhs at Bedford. To this period, therefore, belong 'the regular pattern of Bedford, together with its walls and bridge' (*ibid,* 98). This conslusion has been broadly adopted in the survey of Bedford by Hassall and Baker (1974, 79). The comparison with Buckingham, however, not only runs against the statement of the Chronicle, but is also itself beset with difficulties. The exact course of the defences of the two Buckingham burhs is not known, and there is no indication therefore that the lengths of the defences of the burhs in both places are comparable. Furthermore the physical topography of Bedford and Buckingham is quite dissimilar; there is no indication of the comparative size of the workforce which built each burh; and there is also no way of knowing whether or not the defences were built with the same techniques. The lack of any features common to these two places suggests that no direct comparisons can be made.

The entries in the Anglo-Saxon Chronicle make it quite clear, however, that the southern burh built in 915 is an addition to a burh already in existence on the north side of the river. When Edward the Elder and his army came to Bedford in 915, he 'obtained the *burh* and almost all the citizens *(burgware)* who dwelt there before, submitted to him' (Whitelock 1955, 195). Whatever the precise significance of the term *burgware,* it is clear that in 915 there was already in existence a fortified burh with a resident population, which was by implication the fortress occupied until that time by the Danish army. Secondly, Edward is recorded as having ordered the construction or fortification only of the burh on the south side of the river, thereby implicitly contrasting it with one on the north side.

The conclusion that the northern burh of Bedford predates the southern burh constructed by Edward appears to be independently confirmed by the topography of the town. It has already been indicated by Hassall and Baker (1974, 78) that the two streets aligned onto the southern end of the bridge – Cardington Road from the south-east and Cauldwell Street from the south-west – have both been deflected inside the perimeter of the southern burh to meet at a point somewhat south of the bridge, at what in effect is its central cross roads (see fig 1). There is an obvious conclusion from this observation: if these roads, heading towards the bridge, were deflected by the construction of the southern burh in 915, then their original alignment, and therefore the existence of the bridge, predates this event. Since it has already been argued that northern burh, bridge and streets are a single planned unit, the existence of the bridge at this date demonstrates the existence of the whole system.

The combination of topographical and historical evidence suggests therefore that both the northern burh (including the main streets) and the bridge were already in existence by the time Edward arrived at Bedford in 915. There are therefore two possible alternatives for its origins: either it was constructed by the Danes, or it is earlier. A Danish burh on the north side of the river, at a nodal point on the boundary line of the Danelaw which was settled by treaty in 878, would have had some strategic importance both in guarding a crossing place and in regulating river traffic. Such considerations might well have figured amongst the reasons why the Danes did occupy Bedford, but they do not provide evidence that it was newly constructed by them for that purpose. There is, however, one major difficulty in accepting the northern burh at Bedford as a fortress of Danish origin. It has already been shown that this burh is of a fairly regular rectilinear construction; the relationship of both bridge and burh to the physical topography of the site shows that the bridge forms an integral part of this arrangement, and is clearly its focus. There is no evidence that the Danes constructed rectilinear burhs of this pattern, nor were they heirs to any such tradition; there is, indeed, much to show that their fortified sites, towns as well as fortresses in both Denmark and in England, were of a quite different type. Neither Birka (in Sweden) nor Haitabu, each founded *c* 800 and each given defences at a later stage, is of the same rectilinear form. Although excavations at Haitabu have shown that the town was laid out in regular parcels of land bounded by streets (Lobbedy 1978, 136-142), this pattern is in no way linked either to the defences or to a bridge. The complex of topographical features differs both in degree and in kind from those shown at Bedford.

In England, there is some evidence to show that the burhs whose construction is attributable to the Danes were organised, or rather developed, in a way which shows no similarity to the layout

of rectilinear fortresses of whatever period. It will be argued at a later date[14] that a Danish burh at Cambridge, which comprises the parishes of St Clement and St Sepulchre (Lobel 1974, map 6), is of a U-shaped plan with its straight side formed by the river frontage and its main axis formed by a pre-existing roadway leading from the bridge.

Precisely the same plan is shown by Huntingdon, which sits astride Ermine Street. The similarly shaped fortified enclosure to the south of Lincoln, called Wigford, is also possibly Danish in origin (Colyer 1975, 34). Furthermore, the extensive Anglo-Danish settlement at York shows little evidence for the existence of any regular layout (Radley 1971, 39; Biddle 1976a, 123; Hall 1978). Dyer (1972) has also suggested that the most characteristic form of the Danish fortresses along the Danelaw frontier is a D-shaped enclosure, built on either flat land butting onto water or on an island surrounded by marsh or fenland – neither type of site showing any similarities to the topography of Bedford. Finally, of the so-called Danish 'boroughs', only Bedford and Northampton have anything like a rectilinear plan, suggesting that this was certainly not the normal way in which the Danes built fortresses for their army.[15] The origins of the type must therefore be sought elsewhere.

If the burh at Bedford is not of Danish origin, then it must be earlier, a conclusion which at once raises the problem of the origins of rectilinear burhs. Hitherto this type of fortification has been regarded at least in England as the creation of King Alfred in Wessex (Biddle and Hill 1971), although more recently antecedents for it have been sought in a planned burh at Hereford (Biddle 1976a, 120-1; 1976b, 23-7) whose earliest defences belong to the 9th or even to the 8th century (Shoesmith 1972; Rahtz 1977, 111). There is an increasing amount of archaeological and topographical evidence to show, however, that burhs, and even rectilinear planned burhs, were not the creation of Alfred, but have a rather earlier origin. This evidence now suggests the following hypothesis: that Bedford is one of a series of at least twelve burhs, all with a rectilinear or sub-rectilinear plan, placed along the frontiers of Mercia by King Offa (died 796). It will also be suggested that this system of burhs represents, as does that of the Alfredian burhs of Wessex, 'a deliberate policy of urban foundation' (Biddle and Hill 1971, 83), and that they are in a very real sense fortified towns, concerned as much with regional administration and the protection and encouragement of trade as with military objectives.[16]

Of the features common to these early burhs, it is the combination of the evidence of the physical topography and of the archaeology which perhaps most clearly illuminates the formative stages of Bedford's growth. The physical topography has already been described, and not only provides the common denominator of all the comparable sites so far mentioned, but is also the essential factor without which human activity in general, and the built topography in particular, on the site of Bedford cannot be understood. The series of recent archaeological excavations in Bedford has produced extensive evidence of occupation in the area of the northern burh in the middle Saxon period.[17] Pottery and some timber structures of this period have been found in two main areas of the town – the north-west and south-east quadrants. It has not, however, been possible either to date any of the streets, to locate the defences, or to establish the existence – or indeed the non-existence – of any of the main elements of the northern burh described above; early occupation can therefore be proved but not related to the burh system. What this evidence does demonstrate, however, is that there was extensive occupation on the site of the burh before the arrival of the Danes, and that they came to an already-existing settlement important enough to use as a point in the boundary of the Danelaw in 878, to serve as the headquarters of part of their army, and to control sufficient agricultural land to support this army in addition to the local population. These conclusions are entirely in concordance with the hypothesis that a defended burh and bridge already existed on the site before the establishment of the Danelaw.

The hypothesis of the origin of this burh in the eighth century also fits in with the wider settlement patterns which have been deduced for the area. Morris (1962, 62) has suggested that the focus of the region during the sixth, and probably the seventh century, was at Dunstable, which developed at the expense of Kempston (2 miles south-west of Bedford) as the centre of a 'densely populated area'. This is supported by a particular concentration of the sceatta coin finds of Aethelbald, Offa's predecessor, around Dunstable (Metcalf 1977, 91), which as Metcalf points out lies on the frontier of Greater Mercia at the junction of Watling Street and the Icknield Way. Although Metcalf

has said *(ibid)* that the shift of settlement focus from Dunstable to Bedford occurred in the late ninth or tenth centuries (presumably reflecting the idea of the Danish or Edwardian origins of Bedford as a fortified place), Morris (1962, 62) suggests that 'it was probably under Mercian rule that the strong place of Bedford on the Ouse replaced the ill-defended Dunstable area as the main centre of the region'. Furthermore, the shift of gravity from a settlement site whose importance was determined by the existence of earlier roadways to one which reflects a greater consideration for the needs of defence, is a process which not only appears to be a characteristic of the period,[18] but also points to the controlling hand of a powerful king such as Offa.

The suggested identification on the ground of the series of burhs mentioned above reflects the situation which can be deduced from the documentary evidence discussed by Brooks (1971). He concludes that the earliest mention of the three common obligations of army service, bridge work and fortress work occur in Mercian, rather than Kentish or West Saxon, charters, the first of which was drawn up in 749. By this time, therefore – and certainly by the reign of Offa – there is evidence for the existence of, or at least of the political means and willingness to construct, a class of public work where 'bridge and fortress were a single military unit' (Brooks 1971, 72), which independent evidence suggests might be typified by a unit such as the burh and bridge at Bedford, and which is reflected in the topography of all the other places in this group.

It is not difficult to find an immediate historical context for the construction of the burh and bridge at Bedford in the late eighth century. Piratical raids by bands of Scandinavians were beginning to be directed against England at this time (Loyn 1977, 54-6), and a fortified bridge at Bedford would have effectively blocked penetration of Mercia by river-borne Vikings. It will be suggested elsewhere (Haslam, forthcoming) that the creation of a burh and bridge at Cambridge at the same time would have served a precisely similar purpose. Even though documentary evidence for this process is lacking from Mercia, it is certainly available for Kent. Brooks has shown that by 792 Offa was for the first time reserving the three common military obligations on all the Kentish churches 'contra paganos marinos' (1971, 79); and he goes on to suggest that 'Offa reacted vigorously to the new Viking danger and brought Kent into line with Mercia. by insisting that all estates, even church lands, should contribute men for service in the army and for the building of bridges and fortifications' (*ibid,* 80). The burh at Bedford, can therefore be seen as one element in a system for the defence of the eastern part of Greater Mercia, set up by King Offa in probably the last few years of his reign in direct response to the real or forseen threat of Scandinavian invasion.

NOTES

1 Detailed documentary evidence has not been used in this analysis, though not in ignorance of its potential importance. It should be noted that the defences of the southern burh were rebuilt in the late 11th or early 12th century (Hassall and Baker 1974, 80), which suggests that the defences of the northern burh could possibly have been reconstructed at the same time.

2 See comments in Biddle 1976a, 129 and examples quoted in note 253.

3 The street names are those in current usage, and are taken from the plan of the town in fig 6 in Hassall and Baker 1974.

4 Two main streets, one from the north-east (Kimbolton Road) and the other from the east (Goldington Road), merge a little to the east to form this street. All these lines are marked on fig 1, and also given in Hassall and Baker 1974, fig 7. They show up clearly in the aerial photograph of the town, plate 5, *ibid.*

5 Towns with prominent market areas outside gates include Hereford, Gloucester, Oxford, Nottingham, Stamford, Northampton and London. The exception to the south of the Thames is Winchester, where a market place was in existence outside the west gate certainly by the early 10th century (Biddle 1976c, 285).

6 This street is increasingly being recognised as a distinctive feature of Saxon burhs (Biddle 1976a, 130 and note 256, 149) and has been demonstrated archaeologically at for instance Winchester (Biddle 1975, 103), Cricklade (excavation by the writer, 1975), London (Biddle and Hudson 1973, 23), Canterbury (Tatton-Brown 1978), Hereford (Shoesmith 1972), and Tamworth (Sheridan 1972-3). It can also be seen as an important element in the existing street plans of many other towns – e.g. Northampton (Lee 1953), Hereford (Lobel 1969) and Nottingham (Barley and Straw 1969).

7 Reproduced as a plate opposite p. 84, Hassall and Baker 1974.

8 It has been suggested (Hassall and Baker 1974, 81) that the ditch around the eastern edge of the motte (followed by Thames Street) formed a common ditch with the main defence. However, the line of the parish boundary, and of this street itself, suggest that the building of the motte spread well outside the comparatively slight width of the Saxon defences.

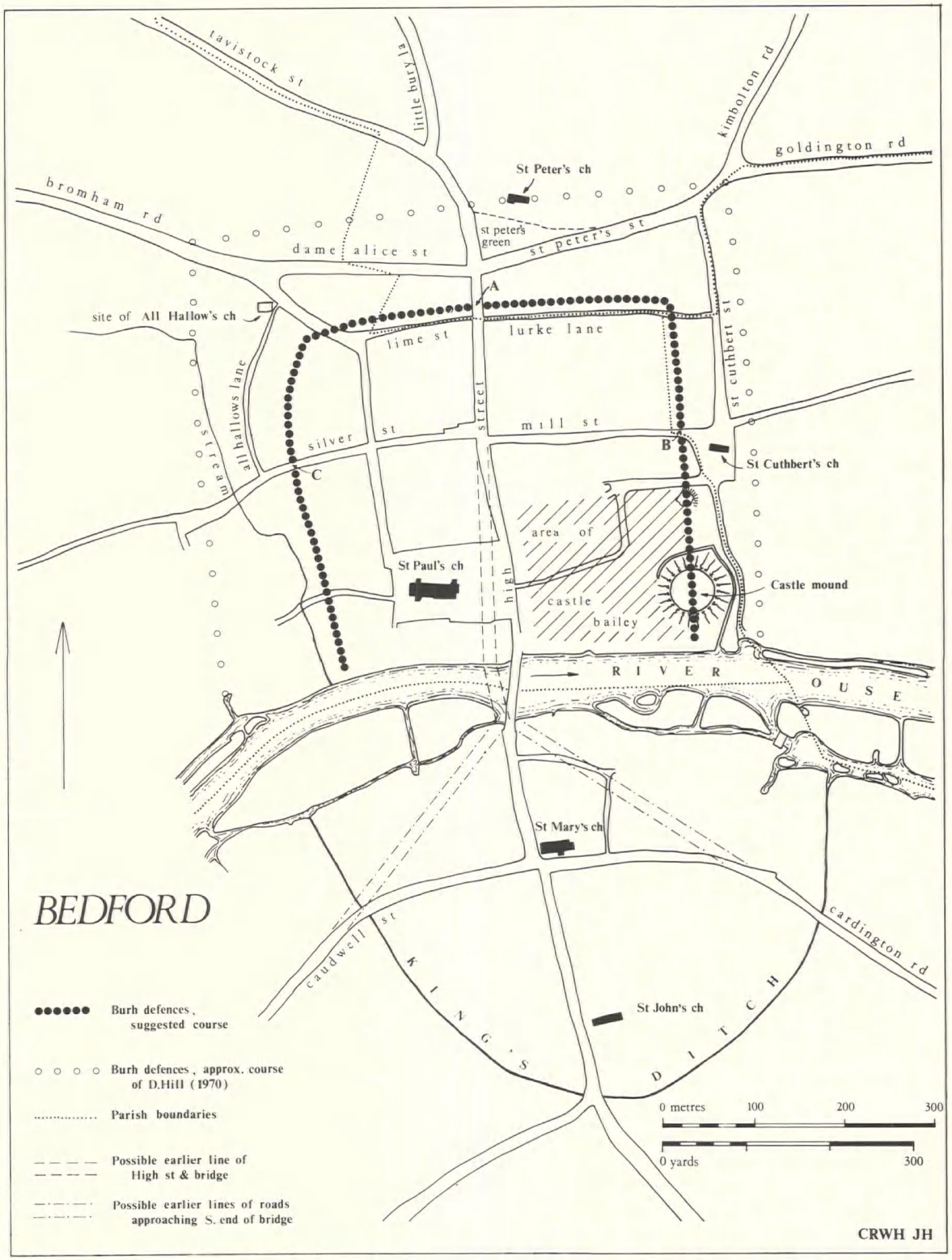

Fig 1 Early Medieval Bedford

9 This stream is shown on Speed's map of 1610, and more precisely on Brayley's plan of 1817, but by the time of Reynolds' plan of 1841 had disappeared under new housing.

10 Finds from the Empire Cinema site. I am grateful to Jane Hassall for drawing my attention to this.

11 That it is of some antiquity is suggested by the consideration that the position of this street is closely reflected by the position of St Cuthbert's Street on the east of the town, which joins the postulated extra-mural market place outside the east gate with the main roadway (St Peter's Street) to its north. In the same way All Hallow's Street joins the street immediately outside the west gate with one of the main westerly roadways to its north. Both these streets can therefore be seen as one of the organically derived elements consequent upon the planned layout of the main streets, gates and defences (see above, p 00), and, if the early and certainly pre-Conquest dates of the extra-mural market places are a guide, of possibly pre-Conquest origin themselves.

12 The side streets also exhibit a rectilinear form, running in most cases parallel with the main streets. Though there are topographical grounds for suggesting an early date for these streets – in the south-east corner they appear to be affected by the insertion of the Norman castle – there is no evidence which indicates whether they did or did not form part of the original system. The intra-mural or wall streets are probably also an integral part of this system, allowing ease of movement on interior lines (Biddle 1976a, 130), but this suggestion is, as indeed is their very existence, inferential only.

13 That the site of Bedford was a crossing place in the Roman period is suggested by the alignment of a Roman road from Campton, near Shefford (13km south-east of Bedford) which enters Bedford at St John's Street (Kennett 1969, 84), and by the scatter of finds of Roman date on both sides of Bedford bridge (Hassall and Baker 1974, 77).

14 In Haslam, forthcoming.

15 Indeed, it will be suggested that the rectilinear burh of Northampton is, like that of Bedford, pre-Danish.

16 There is evidence to suggest that the origin of most of the Midland shire towns (of which Bedford is one), as fortified centres (though not as settlements) must be sought in a programme of administrative reorganisation of the Mercian kingdom by Offa in the late 8th century. The detailed evidence for this hypothesis will be considered at a later date.

17 I am most grateful to both David Baker and Jane Hassall for the opportunity to discuss this evidence in advance of publication. See Baker *et al* 1979.

18 A similar shift can be observed in the Oxford region, where the new burh (it is suggested here) of Offa at Oxford replaced Dorchester-on-Thames as the main regional centre (Ashdown and Hassall 1975, 133; Biddle 1976a, 145 note 153). These relationships will be discussed further at a later date.

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Excavations in Bedford 1977 and 1978

JANE HASSALL

SUMMARY

Excavations were undertaken on the former Peacocks Yard and Salvation Army sites, in advance of redevelopment for the Howard shopping centre. Evidence of Saxo-Norman/Early Medieval occupation was encountered right across the site, and included numerous rubbish pits, a well and two well-houses. In addition the long rectangular pond shown adjacent to the Saffron ditch on John Speed's map of Bedford in 1610, was located and sectioned. An absence of Medieval finds and archaeological features was noted westward towards River Street.

Four trenches were excavated on the site of the Empire Cinema, Midland Road, and occupation evidence from the ninth to fourteenth centuries was recorded. The largest trench, I, fronting Midland Road, contained a ditch with running water, and several pits and gulleys of tenth to twelfth century date. Material and organic remains indicated that iron working, horn working and some copper working were undertaken on site or close by, as also were farming, with animal husbandry, and domestic occupation. Structural features including limestone wall-footings represented a twelfth or thirteenth century dwelling on the corner site, trench II. Some inconclusive pre-Conquest settlement evidence was also present. The east side of a large ditch (twelfth to fourteenth century) was found in trench III, running north-south and lying partly under the line of Allhallows. The remains of wooden joists which once supported a building were uncovered in trench IV dating to the twelfth century or earlier.

INTRODUCTION

Peacocks Yard and Salvation Army Sites

Bedfordshire Archaeological Journal 13, 1979 was devoted to publishing the results of more than 30 excavations in Bedford during 1967–1977. Time did not allow for the reports on the Peacocks Yard and Salvation Army sites to be included but an outline of preliminary results was given on page 79. The finds, however, were processed and form part of the published catalogue. References are made here to this publication, and to save space and avoid repetition, the volume is referred to as BAJ, vol 13, except where the work of a specific author is mentioned, when the usual Harvard system applies.

Peacocks Yard and the Salvation Army sites occupies the area between Midland Road, River Street and Horne Lane. Re-development involved considerable destruction of archaeological levels, and excavation was desirable for several reasons. The suspected line of the late Saxon town boundary was likely to cross the site, and so too was the later Saffron ditch or the long pond next to it. (BAJ, vol 13, 296 Urban Origins). Middle Saxon pottery has been found to the north (trenches BMR 74 I and II) and to the south (Horne Lane, site unspecified) of the sites, so some form of ninth to tenth century occupation here was to be expected (BAJ, vol 13, 155-159). In addition there was an opportunity to test the stratigraphy away from the street frontages where work had been previously concentrated.

Resources allowed for rescue excavation to take place in the form of four trial trenches, I, II, III and IV, dug to traverse the site within the limits of modern footings etc, and to sample the archaeological remains. Trenches V to X were then hand-dug to provide detailed contextual information, their positions being determined by the discoveries in the four trials.

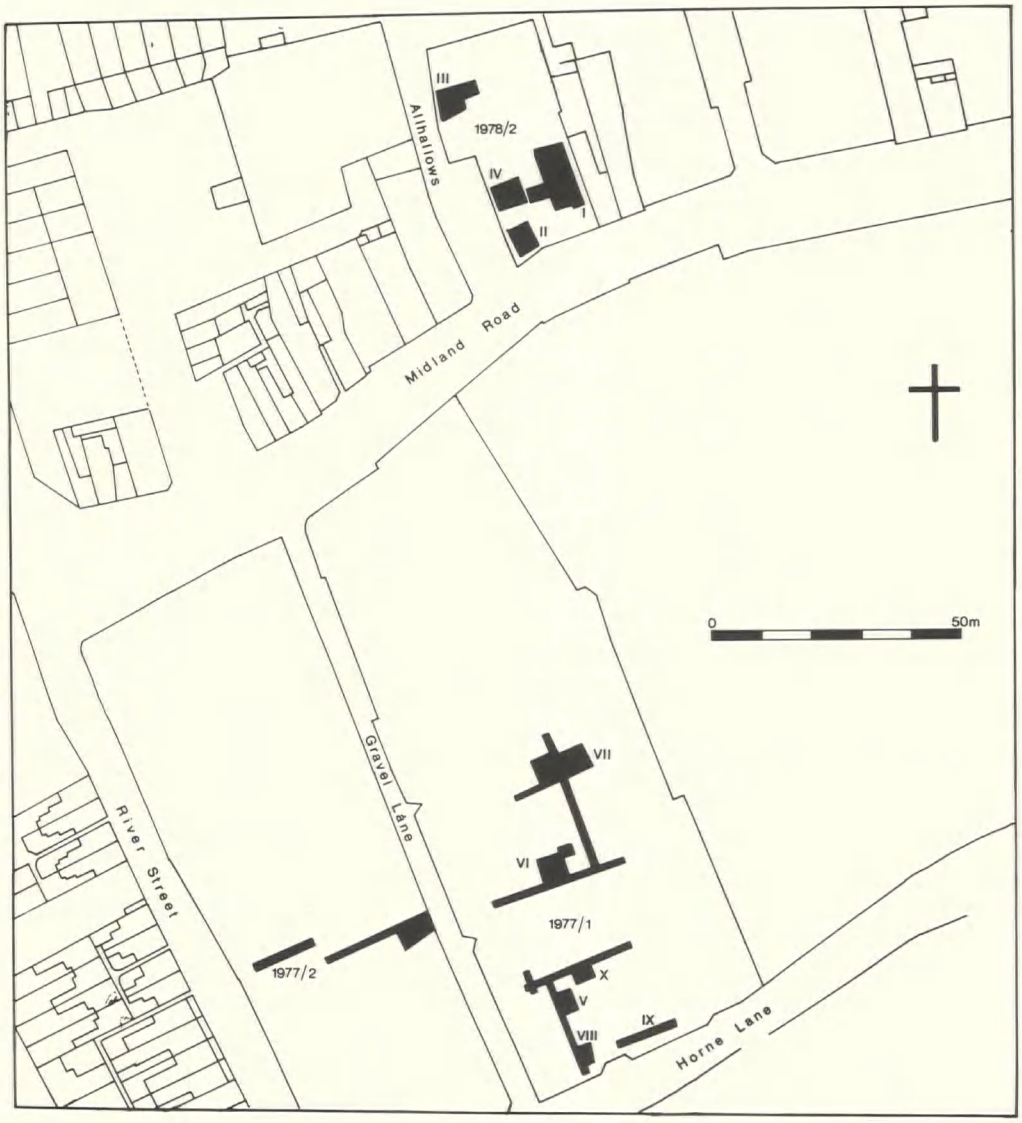

Fig. 1 Location plan of excavated sites

The excavations were jointly financed by the North Bedfordshire Borough Council, who also gave permission to excavate, and Bedfordshire County Council.

The excavators are grateful to all who assisted on site, and in particular to Richard Thomas. The Bedford Archaeological Society helped with the arduous task of pot-washing.

The sites codes 1977/1 and 1977/2 were number allotted from the accessioning system at Bedford Museum. These codes were followed by context numbers, used on separate sheets for site recording. This system enabled all finds, site records, and subsequent archival material to be simply numbered and integrated into the Museum's collection. The following report is an abstract from this 'Level III' material (DoE 1975).

The excavation archive can be consulted at Bedford Museum, Castle Lane, Bedford. Enquiries should be directed to the Curator. It is anticipated that microfilm storage of the records will be made in due course.

The Finds

A collecting policy was established whereby all finds of pottery, bone, slag, iron, copper alloy, flint and daub were kept. The presence of tile, brick, shell, glass and clay pipe-stem fragments were noted and sampled. The material remains were analysed in order to form part of the extensive catalogue published in BAJ, vol 13, 147–293. Where reference is made to this published material, the catalogue numbers are given in bold type.

The bulk of the pottery finds relate to the Saxo-Norman to Medieval period and were analysed according to their form, fabric and decoration. A basic division emerged between calcareous tempered fabrics (B wares) and those with mineral tempering (C wares) and individual fabric types were then identified by a code e.g. B1, C1, etc. Middle Saxon wares were prefixed by the letter A. Detailed descriptions and illustrations are given in BAJ, vol 13, to which the reader is referred.

THE EXCAVATION Figs 1 and 2

Features relating to the following periods predominated:

Period 1 Saxo-Norman, ninth to twelfth centuries, and Middle Saxon period, ninth to tenth centuries, were both represented by potsherds, and few if any features could be clearly identified.

Period 2 Medieval, twelfth to fourteenth centuries.

Period 3 Post-Medieval, sixteenth to nineteenth centuries.

Trenches I–IV were machine-excavated, and trenches V–X were dug by hand following initial machine clearance. Between 1.30 and 1.50 m of modern overburden (disturbed and recent soils) were mechanically removed from most trenches, before archaeological features were encountered.

The trenches are grouped and described as they occur from north to south across the site.

TRENCHES II AND VII Fig 3

Period 3, Post-Medieval

Trial trench II cut through recent deposits and disturbances but a second trench machine-excavated at right angles towards its N end showed signs that a water course had once existed here. As this was on the likely alignment for the Saffron ditch or the adjacent rectangular pond, excavation continued by hand and trench VII was opened, extending the machine-cut section northwards.

The top 1.50 m of soil, mostly removed by machine, consisted of modern overburden with sewer and drainage channels of nineteenth-centry date. Beneath this several sticky clay layers were encountered (48, 49, 84, 109, 140, 141) which formed the fill of a flat bottomed ditch or pond approximately 10 m wide and 1.50 m deep, dug into the natural gravel subsoil. A complete profile across this feature was obtained though only a small section was fully excavated. Modern footings and disturbances prevented a larger area from being examined. The water table occurred at about 1 m above the base of the ditch/pond, and a pump was used to enable excavation to be completed. Pottery and other finds indicate a Post Medieval date for its infilling. The north-west area of trench VII was excavated down to layer 48, and the west edge of the ditch/pond could be seen to continue northwards. No Medieval features had survived although occupation during Middle Saxon and Medieval times is suggested from the sherds recovered, particularly from the mixed layer 48.

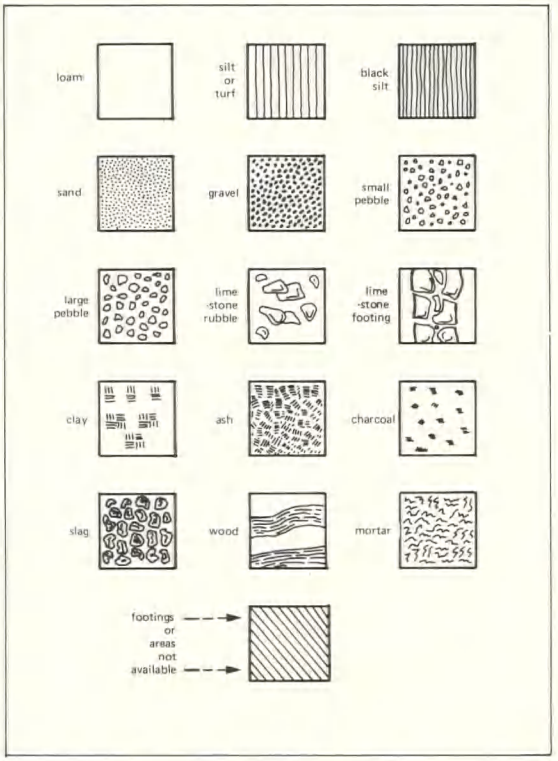

Fig. 2 Symbols used in the illustrations

To the west of the ditch or pond, the machine-cut trial trench continued for a further 6 m (not illustrated). There was less brick rubble and more turfy layers, as well as the remains of two pits dug into natural gravel. However, there were no pottery finds or other forms of dating evidence.

The Finds

Less than 1 kg of pottery from all periods was recovered. Two residual sherds of Middle Saxon fabric A 10 have been published (BAJ, vol 13, 67 and 69) and Medieval sherds recorded include B1, B4, B7, C3, C5, C9, C11B and C15 from layer 48. Post-Medieval material from the same and other layers include sherds of Staffordshire slipware, Mocha, Delft, Chinese Porcelain, Notts/Staff and saltglaze stoneware, and unglazed earthenware. Part of a coffee cup or beaker dated to 1715–1740 in Chinese Porcelain was found in the bottom layer of pond fill, 109 (BAJ, vol 13, 989). Small finds included a table knife, two forks and a few amorphous iron objects, all dating to the last two centuries, and not illustrated. Brick, tile and animal bones were noted, but not kept.

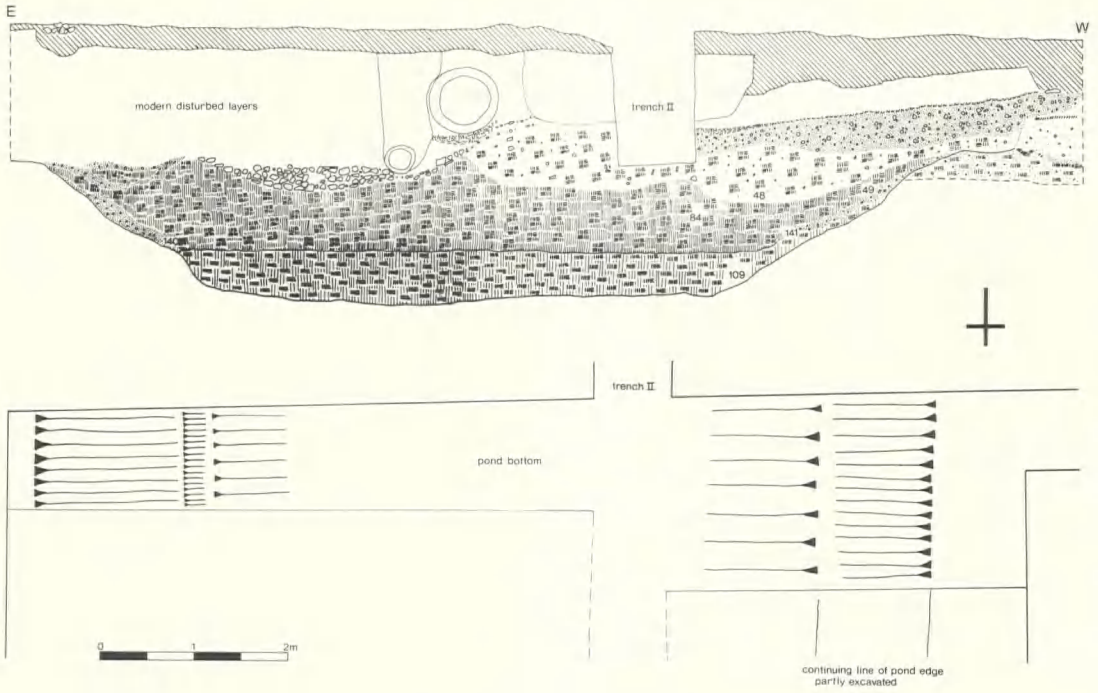

Fig. 3 Plan and section of Peacocks Yard trench VII

TRENCHES I AND VI Fig 4

Period 2 Medieval

Trial trench I revealed much recent building rubble and footings. However, one area beneath nineteenth-century floor levels showed signs of Medieval occupation and trench IV (27.5 sq m) was opened alongside and excavated by hand. Beneath a metre or so of modern overburden several large intercutting pits dug into the natural gravel subsoil were uncovered (64, 71, 78, 96, 80, 76) for which pottery evidence suggests a twelfth–fourteenth century date. Along the north and south edges were two linear features 92 and 87, running parallel with each other: 92 terminated at the well 151 (NE corner) and may have been associated with it; 87 pre-dates the pits 80 and 71. The remains of a small pit 34 with two stake holes were found near the south-east corner.

The discovery of limestone footings in the north-east corner led to the extension of the trench, and within the limited area available for excavation, part of the stone-built well 151 was revealed. It had several courses of stonework intact, with an internal diameter of 1.32 m, and the remains of three steps leading down to the well pit. Thirteenth–fourteenth century potsherds were found in the fill. Although less complete, it was similar to the stone wells found in trench V (below) and at St Johns Street 1976 (Hassall 1979 A, p 121, figs 71, 72).

A contemporary feature, gulley 155 to the east appears to cut straight across the well and the large adjacent pit 162. The small square feature 165 against the north section contained a sherd of the ninth–tenth century fabric A 12.

The Finds

The proportion of pottery fabric B wares to C wares was 2:2.35 kg. Fabrics included B1, B4, B5, B8, B9, C1, C2, C3, C5, C6, C9, C10, C11A and B, C15, C17, C20, C22, C23, C25, C26, C29, C34, C35 and C42. Sherds published in BAJ, vol 13, are A12 **104**, C5 **531** and **542**, C29 **696** and C35 **721** A few Post-Medieval wares were recovered, including unglazed earthenware, Cistercian, Mocha and Delft, and a few fifteenth–sixteenth century coarseware sherds were found. The only small finds were two iron objects, a nail and six objects of copper alloy. These were mostly fragmentary and are not illustrated.

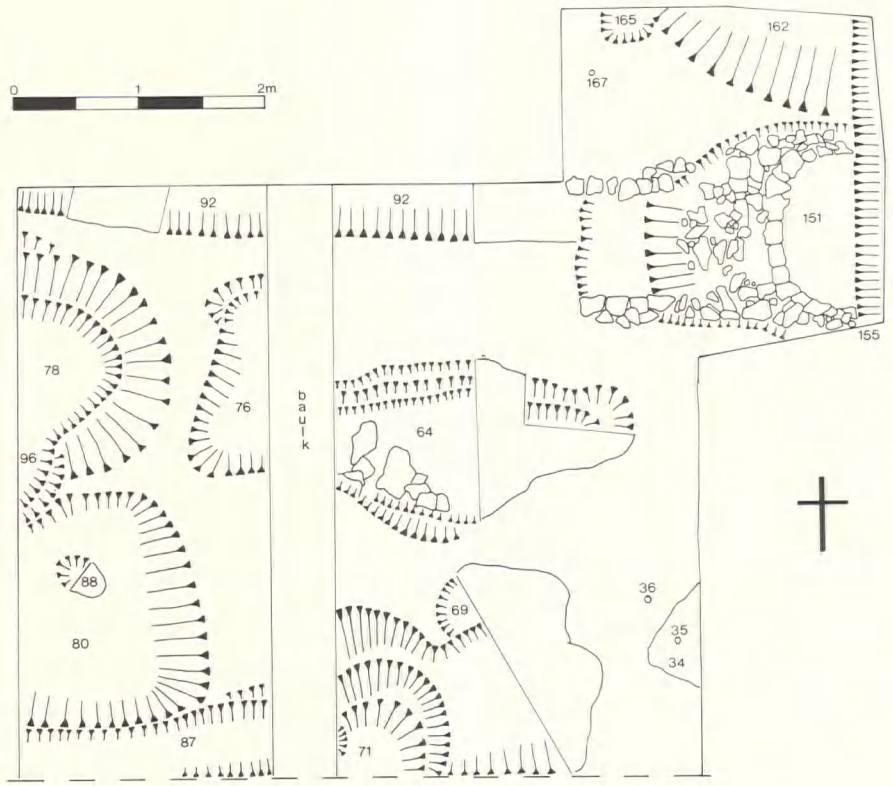

Fig. 4 Plan of trench VI, Medieval features

TRENCHES III AND X Fig 5

Period 2, Medieval

Trial trench III was machine excavated for 25 m east-west across the site parallel with trench I and about 16 m to the south. Natural gravel was encountered below approximately 1.50 m of modern rubble and disturbed layers. Trench X, approximately 16 sq m was opened by hand to investigate Medieval features discovered cut into the gravel subsoil.

A number of intercutting pits and post holes was revealed, dominated by the large central pit 120, and the circular stone well 117, 1.4 m diameter. Most of the pits contained domestic refuse including pottery chiefly of thirteenth–fourteenth century date. Pit 149 in the south-west corner and pit 161 to the east in trench III, may belong to an earlier phase (eleventh–thirteenth centuries).

The Finds

2.400 kg of Saxo-Norman to Early Medieval sherds were recovered, with approximately half of them B wares and half C wares. Fabrics included B1, B4, B5, B7, B8, B9, B11, C9, C10, C26, C17, C18, C29, C36, C38 and C45. Sherds published in BAJ, vol 13 include C36 **719**, C38 **724**, E7 **802**, and Middle Saxon sherds A9 **54** and A10 **65**. There was no Post Medieval pottery.

Small amounts of animal bone were found, and those from the pit 120 have been included in Annie Grant's analysis below.

TRENCHES IV, V AND VIII Figs 6 and 7

Period 2, Medieval

Trial trench IV was excavated at right angles to III and ran for 20 m southwards to the Horne Lane street frontage. About halfway along two intercutting pits were found, dug into the gravel subsoil, and were excavated together as feature 26. Potsherds of eleventh–twelfth century date were re-

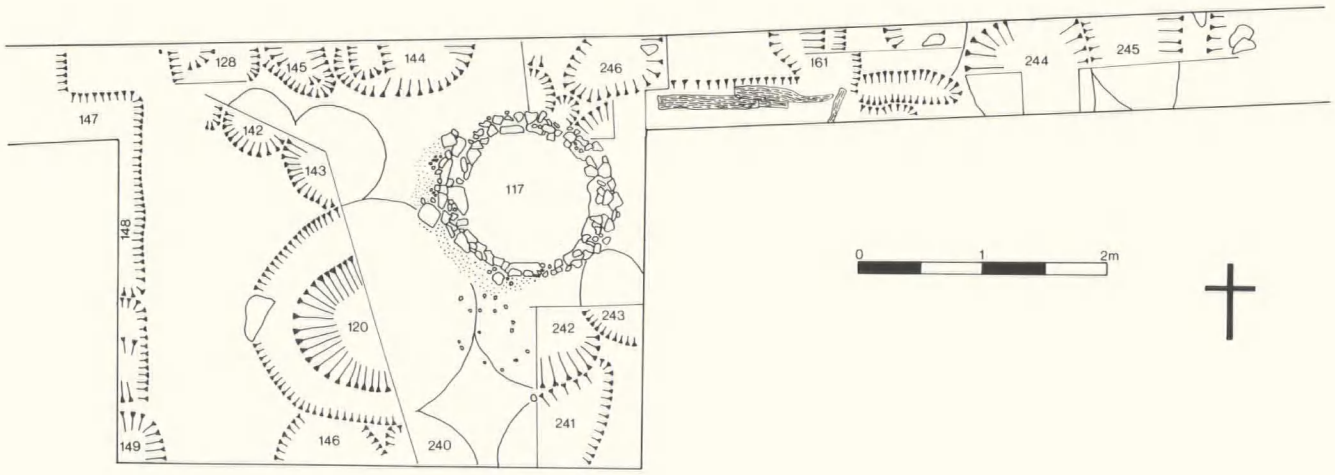

Fig. 5 Plan of trenches III and X, Medieval features

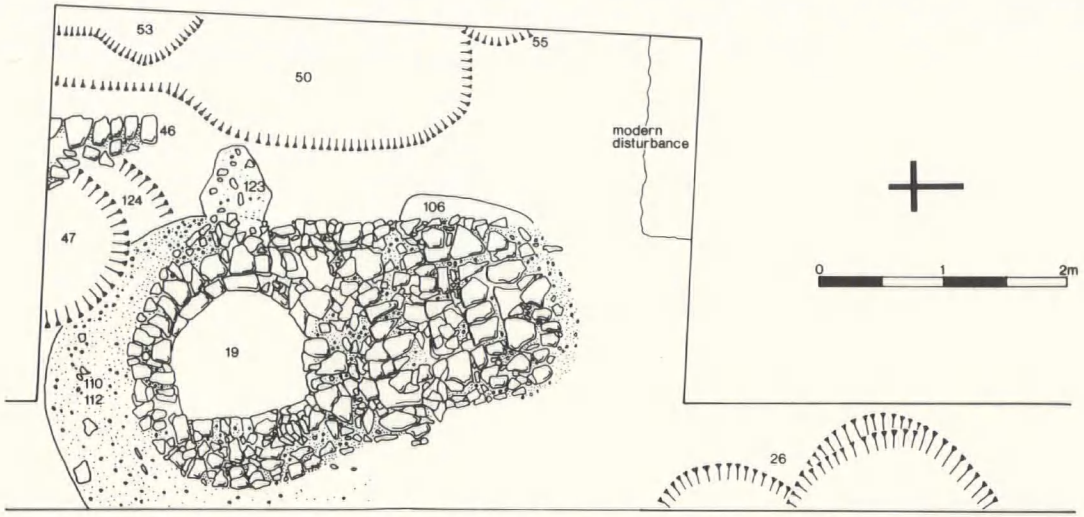

Fig. 6 Plan of trenches IV and V, Medieval features

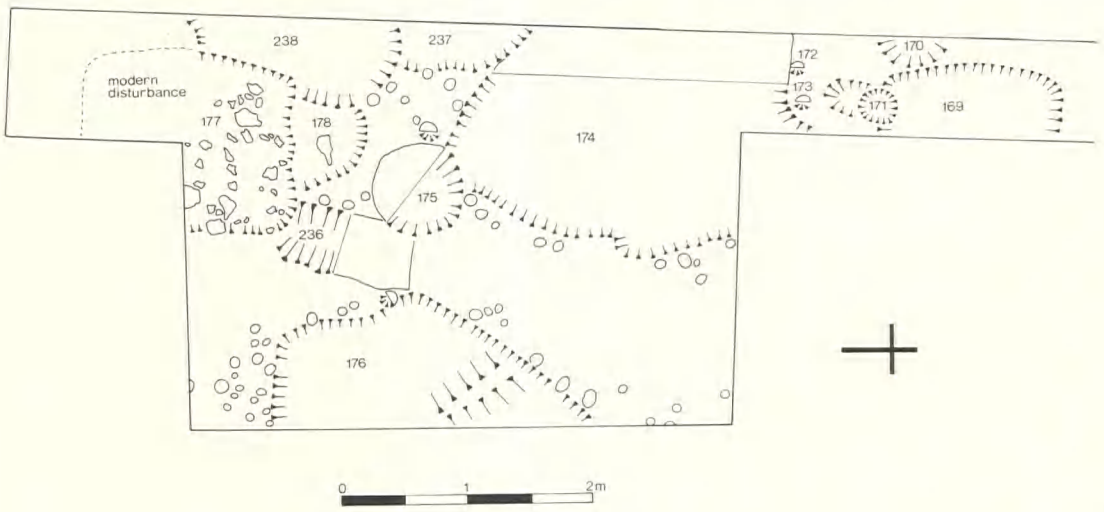

Fig. 7 Plan of trenches IV and VIII, Medieval features

covered. Trench V was opened about 3 m north of these pits where an area of tumbled limestone was revealed (Fig 6).

The top 0.90 m of disturbed soil was excavated by machine and work then proceeded by hand. The limestone rubble was found to be part of one side of a stone well-house whose total length was 3.5 m and width 2 m. The well shaft was built from coursed limestone blocks with small stone rubble used as infilling, and there were no traces of any bonding material. There were some indications in the layers of stonework that the well-shaft may have been constructed in two phases, the first being circular as suggested by the inner line of coursing. During the second phase the well was enlarged to its present D-shape, the west edge being straight, and a flight of steps added to the south. Four or five steps leading down to the well were uncovered each 0.30–0.40 m wide a tread of approximately 0.20 m. The remains of the pit (110, 112) into which the well was set were apparent to the north. The well was dug through Medieval layers (20, 27, 107) dated to the thirteenth–fourteenth centuries. Four distinct layers of fill were removed from the well's interior (42, 59. 60, 61) before natural gravel was encountered 1.40 m below the existing top level of walling. The water table occurred about half way down, and a pump was used in order to complete the excavation. Potsherds gave an overall thirteenth–fourteenth century date for the infilling.

Once recorded, the south end of the well stonework was removed to reveal the remains of two underlying Medieval pits 106 and 239 (the latter not illustrated, and neither pit fully excavated). At its north end the well feature had cut through two other pits 123 and 124 and was in turn cut by pit 47. A small area of limestone walling 46, was found against the north section. All these features relate to the thirteenth–fourteenth centuries.

Parts of another three pits, 50, 53 and 55 were excavated against the east section of the trench. These were also of thirteenth–fourteenth century date, with 53 possibly a little earlier. All three were dug into a layer of alluvial clay 0.40 m or so thick, which was found to overlie natural gravel along the side of the trench.

The Finds

Just over 3 kg of Saxo-Norman to Early Medieval sherds were found, about half of which were B and half C wares. Fabrics included B1, B2, B4, B5, B8, B9, B11, C4, C5, C7-C11B, C15-C17, C20, C22, C28, C36 and C49. Sherds published in BAJ, vol 13, are C16, **645**, C20 **660** and C49 **737**. Post-Medieval wares from the post-machine cleaning layers include Cistercian, Delft, unglazed earthenware and stoneware. Part of a decorated bone plate, **1516**, probably from a comb was found in layer 20 (thirteenth–fourteenth century).

TRENCH VIII Fig 7

As Medival features were apparent at the south end of trench IV is was decided to open another small area nearer the street frontage, to determine their extent if possible. Trench VIII was machine excavated and between 0.70 – 0.80 m of overburden was removed. A spread of yellow clay loam was found 0.30 m thick and overlying natural gravel. There were several small pits (175, 178, 236, 237, 238) and many stake holes cut into this layer, whilst two large pits 174 and 176 were cut through it into gravel subsoil.

Lack of time prevented all features from being fully excavated, but a ground plan was obtained. Many of the stake holes appeared to follow the edges of pits 174 and 176, with clusters at the south end. No obvious explanation for their distribution is apparent. A long trench IV to the north pit 169 was discovered containing a few thirteenth century sherds.

Although no other finds or dating evidence was retrieved from this area the occupation represented by these features is likely to be thirteenth century or later.

TRENCH IX (not illustrated)

Period 3, Post Medieval

This machine excavated trial section was dug to locate the south end of the long rectangular pond feature discussed in trench VII. Beneath the top 1.30 m of overburden a sloping profile was seen in section which represented the west edge of the pond, and the brick sewer exposed in trench VII which followed the pond alignment was also found. There were no material finds or other features, and no Medieval occupation.

DISCUSSION

The ditch/pond feature sectioned in trenches II and VII was thought at the time of excavation to be part of the Saffron ditch, a natural stream whose course has been plotted on maps and documents from at least 1610 (Hassall and Baker 1974, 79; Hassall 1979 B, 79). Subsequent reflection suggests that this feature, because of its great width and location, is part of the long rectangular pond which causes an apparent deviation of the Saffron ditch around its north, east and south sides (see early maps of Bedford in Liddle 1973). The west edge of this pond was also noted in section in trenches I, III and IX, indicating a length of over 50 m. Excavation evidence shows no primary silting at the base of the pond, and very little of the edges, suggesting that it was cleaned out from time to time. Post-Medieval sherds from the bottom layer of fill suggest a terminus post quem in the first part of the eighteenth century for its infilling. Finds in general were few from the section examined. Little was recovered to indicate the pond's original function or why it went out of use. It may have served as a source of waterfowl or fish but its primary use remains a matter of speculation. (Baker forthcoming).

The results from the rest of the trenches (except IX) clearly demonstrate domestic occupation on site during the twelfth–fourteenth centuries. It was interesting to note that rubbish pits and a well-house were to be found as far back from street frontages as trench VI, 25 m from Gravel Lane and 45 m from Horne Lane.

The finding of stone wells from Saxo-Norman to Post-Medieval times has been a regular occurrence on most Bedford sites to date. Only two well-houses have been noted however, from the St Johns Street 1976/2 site, already mentioned, and possibly also from St Mary's Street, trench 38 (Hassall 1979 C, 139) although insufficient remains of the latter to be certain. The Peacock's Yard examples both date to the twelfth–fourteenth centuries. The well-house in trench V resembles that from St John's Street in size and construction, but it is less well-preserved and has a different shape of well-shaft. It has generally been assumed, because of their more substantial structure, that well-houses were intended for communal use.

Despite the occurrence of some post-holes and linear features (e.g. 246 and 156 in trench X) there was no obvious traces of dwellings or other structures even in trenches VIII and IX nearest the street where they might be expected. Undoubtedly the small size of the trenches and the amount of Post-Medieval and recent disturbance had reduced the chances of survival of such features. Little remained, also of the spread Medieval layers normally encountered above the pits and post-holes.

These limitations prevented a full analysis of the several phases of occupation apparent in trenches V, VI and X. Residual Middle Saxon sherds and ninth–twelfth century fabrics testify to earlier activity on site, but few specific features can be assigned to those times.

With regard to urban origins, no trace of a late Saxon town boundary or defence was found. Hill's conjecture that the NW burh defences were likely to be situated somewhere near, or indeed be part of, the Saffron ditch, is yet to be proved. (Hill, 1970, 96–99; Hassall and Baker 1974, 79).

THE ANIMAL BONES
by Annie Grant

Bones from the well 151 in trench VI and from the large circular pit 120 in trench X, both of thirteenth–fourteenth century date, were submitted to the writer. 260 bone fragments were recovered in these contexts, of which 156 were identified.

This is a very small number of bones and detailed analysis was not possible. The species represented were cattle, sheep, pigs, horses, cats and birds. Details are given in the table, Fig 8. There was a slight predominance of cattle bones over sheep bones. Pig bones were rather less numerous. Birds, horses and cats were each represented by a few bones. Despite the complete absence of dog bones at the site, a few of the bones had obviously been gnawed by dogs.

There was a little evidence of butchery. A cattle vertebra had been split longitudinally, there were chop marks of a sheep's skull and a cattle pelvis fragment had been sawn through. Saw marks of animal bones are comparatively rare. One fragment of a sheep skull was from a hornless animal.

	Epiphyses*		Frags.*	
	No.	%	No.	%
Cattle	17	37	43	45
Sheep	11	24	28	29
Pig	5	11	7	7
Horse	6	13	10	10
Cat	2	4	2	2
Bird	5	11	6	6
Total	46		96	
Ribs			43	
Skull Frags.			17	
TOTAL			156	

Fig 8 Analysis of Animal Bones, 1977/1

(*Grant 1975)

SALVATION ARMY SITE, 1977/2 Figs 1 and 9

Period 2, Medieval

Trench I was approximately 22 m long and 1.20 m wide, and was machine excavated down to natural gravel, 0.60 m–1 m below modern ground surface. No Medieval spread layers were seen, most of the overburden relating to recent building activities and disturbance. Medieval sherds of twelfth–thirteenth century date were discovered in features cutting into the gravel subsoil towards the east end of the trench, which included pits 2, 6, 11, 12 and slot 13. The south-east corner was then extended and dug by hand. A band of natural yellow clay 0.30 m thick, overlying the gravel occurred along the west side of the extension, and pits 20, 21, 31, 33 and 7 were dug through it. The major feature was the ditch 36, about 1.80 m wide, 0.80 m deep and running approximately north-south. It was filled with several clay loam layers in which twelfth–thirteenth century sherds and animal bones were found. The east edge of the ditch was partly abraided by the remains of two or three intercutting pits (25, 26 and 23).

There were no traces of Medieval occupation further west than pit 2. Trench I was curtailed by nineteenth century building debris, and trench II was opened a little to the north, running west, in order to provide a complete section across the site. Nothing but recent building foundations and debris were encountered, and there was no sign of any Medieval activity.

The Finds

Both B and C fabrics were present in the pits and ditch, and proportions being 3.400 : 1.500 kgs, B : C wares. It was noticeable that the most frequent B wares were B5, B7, B8, B11 dating from the eleventh-thirteenth centuries. Other sherds included B1, B2, B4, B6, B9, C1, C3, C4, C5, C9, C22, C27 and C30. The overall date range for pottery assemblages from all excavated features was the twelfth–thirteenth centuries.

Sherds published in BAJ, vol 13, include B4 **293** and **294**, from ditch 36, and B6 348 from pit 6. A small bone object from pit 2, **1550**, may have been a tuning peg from a stringed instrument.

Only a few animal bones were found, and those from the ditch fill have been analysed.

THE ANIMAL BONES
by Annie Grant

A very small number of bones was found in the ditch 36, dated to the twelfth–thirteenth centuries. 235 bones were submitted for analysis, of which 198 were identified. The species represented by these bones were cattle, sheep, pigs, dogs, cats and birds. Details are given in the table, Fig 10.

The majority of the bones were sheep and dog bones. A small number of cattle, pig and bird bones were found together with one cat bone. There were no horse bones. A few isolated dog bones were found, but the majority came from the remains of a single individual which was articulated when found.

A few bones had been gnawed, but there was little evidence of butchery.

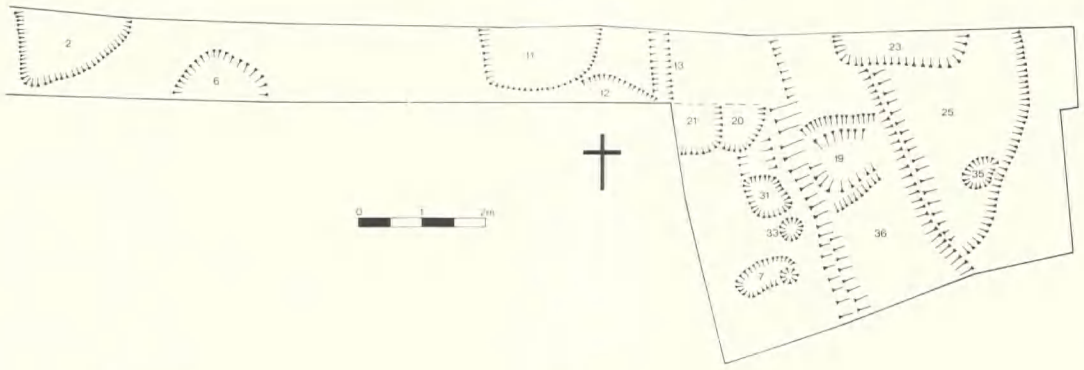

Fig. 9 Salvation Army Site, Plan of Medieval features

	Epiphyses*		Frags.*	
	No.	%	No.	%
Cattle	8	9	18	14
Sheep	31	36	36	29
Pig	5	6	8	6
Dog	28	33	48	38
Cat	1	1	1	1
Bird	12	14	14	11
Total	85		125	
Ribs			70	
Skull frags.			3	
TOTAL			198	

Fig 10 Analysis of Animal Bones, 1977/2
(*Grant 1975)

Discussion

Early Medieval domestic occupation can be clearly demonstrated from the features excavated towards the east end of the trench. The small ditch 36 was probably dug for drainage or as a property boundary. Its meagre proportions make it unlikely to have had any connections with a town boundary or defence. There were no traces of timber buildings or other structures. Activities at this period appear to cease westwards with an absence of archaeological material and features. Trench II yielded the same negative results as those obtained from trenches 33 and 34 excavated by David Baker in 1972, some 50 m or so to the north (fig 1; Hassall 1979, 79). These findings may suggest an approximate limit to urban expansion in the twelfth–thirteenth centuries and before, but no trace of a town defence or boundary was encountered.

EMPIRE CINEMA SITE 1978/2 Fig 1

Introduction

Rescue excavations were undertaken during April and May 1978 on the east corner site between Allhallows and Midland Road, on the site of the former cinema and Kelly's cafe, in advance of redevelopment by Eastern Electricity. The chief aims of the excavation were to determine the extent of Saxo-Norman to Early Medieval occupation, in relation to street frontages and to look for evidence of a town defence or boundary bank and ditch, which might be expected to occur on this site. (Hassall and Baker 1974, 75-94).

Four trenches were opened, their siting determined by modern footings, disturbances, standing walls and perimeter fences. Initial trial machining located the cinema basement footings, and trench I was opened accordingly. The building of the cinema in 1911 had effectively removed all Post-Medieval and modern soil levels and the cinema floor was built straight on top of Medieval soils. The other three trenches were all opened by machine, and approximately 1 m of modern overburden was removed, archaeological investigations continuing by hand to the natural gravel subsoil. Work was hampered in all trenches by wet weather and a high water table.

A collecting policy for finds determined that only material from stratified context be kept, except for significant potsherds from spoil heaps etc. Pottery, animal bone, slag and small finds were kept (except where noted in text) while brick, tile, clay pipe-stem and glass were sampled. Some soil samples were taken to analyse organic remains and for Carbon 14 dating.

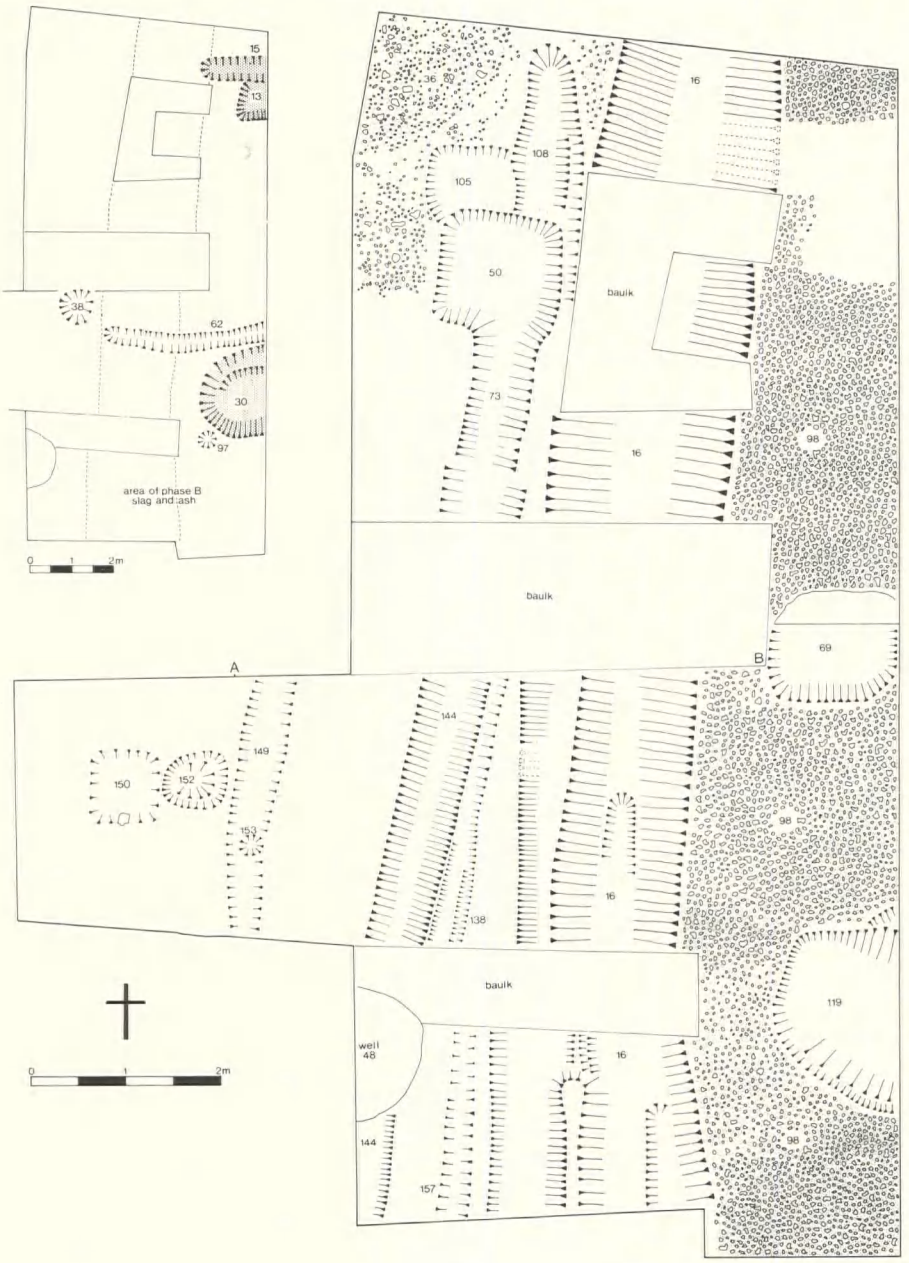

Fig. 11 Empire Cinema site, trench I. Plan of Period 1 features, with Period 2 inset

The excavation was jointly funded by the DoE, North Bedfordshire Borough Council and Bedfordshire County Council. Permission to excavate was kindly given by Eastern Electricity. Thanks are due to all who helped on site and especially to the site supervisor R J White, and site assistant R Mustoe. S Tabrett and the Bedford Archaeological Society assisted with processing the finds.

As with the Peacock's Yard site, this excavation was recorded on context sheets, with a site code, 1978/2, which formed part of a combined archival and Museum accessioning system. All finds and documentary records are deposited at Bedford Museum.

THE EXCAVATION

The following three periods were identified:

Period 1, ninth to twelfth century

Period 2, twelfth to fourteenth century

Period 3, Post-Medieval

TRENCH 1 Figs 11 and 12

Period 1, Ninth to Twelfth centuries

Two phases, A and B, could be identified, relating to the earliest occupation in this trench, composed of features cutting the natural gravel subsoil.

Phase A

The ditch 16 was the major feature, running the length of the trench, north-south, approximately 2 m wide and 0.70–0.80 m deep. It was water-filled for the bottom 0.20–0.30 m and a pump was used in order to complete the excavation. The water was flowing south and was fed by springs to the north of the trench. The ditch was fairly uniform in shape and size except at the south end where it appeared to bifurcate, or to have been realigned slightly. This may have occurred in association with the ironworking noted in phase B, and considerable amounts of slag were found in the upper ditch fill. The layers of infill varied in composition along with the ditch's course, but the primary silts, layers 123, 124, contained many organic remains, samples of which were analysed (see report below).

Pit 50, was found adjacent to the ditch at the north-west end. Attached to the pit's south side was a gulley or small ditch 73, which broadened and continued across the trench as 144. Successive layers of dark brown and green 'organic' silty fill suggested a probable original function as a well, fed by a spring, with the gulley to take the overflow. Pit 50 appears to have superceded the pit 105 and gulley 108.

Pits 69 and 119 were excavated to the east of the ditch, 119 lying partially beneath the east edge of the trench. Pit 69 was of similar proportions to 50 and was thought to be another well or cess pit. Pit 119 was larger and rounded, but contained similar layers of rich organic fill.

All along the east side of the ditch, and in places to the west, the remains of a cobbled surface (36, 98) were encountered just above the natural gravel. This was composed of small squarish pieces of limestone and small gravelly pebbles and may have been constructed in order to maintain access to the ditch and wells especially in wet weather. Upcast from the ditch (12) forming a small vestigial bank, was most noticeable along its east edge, and was found on top of the cobbled surface.

Some narrow, shallow ruts, 138, 157, were excavated at the south end of the trench between ditch 16 and gulley 144. A shallow slot, 0.06 m deep, was uncovered in the west extension of the trench, containing the post-hole 153. This may represent a fence line or boundary. To the west lay a small pit 152 and the remains of a hearth 150.

Phase B

An extensive area of iron slag and ashy soils was found covering the entire south-east corner of the trench, spreading north to the first baulk and west across the ditch 16. Considerable quantities of slag were recovered, and much ash, charcoal and discoloured soils observed. There was no trace of an associated furnace or structure in the trench, and any such feature must have been situated immediately to the east of the excavated area. The slag deposit probably represents clearance or rake-out from an iron-working site, and was chiefly smelting slag.

A gulley, 62, 0.35 m wide and 0.20 m deep, ran west from the east section and cut through the upper layers of the ditch 16, terminating at the west side of the ditch. It was probably dug for drainage as there were no post-holes or other indications that it may have served as a trench for building or fence footings.

Two small shallow pits also belong to this phase, 38 dug into the upper layers of ditch fill, and 97 west of pit 119.

The Finds – phases A and B

The pottery section below summarises an analysis of the

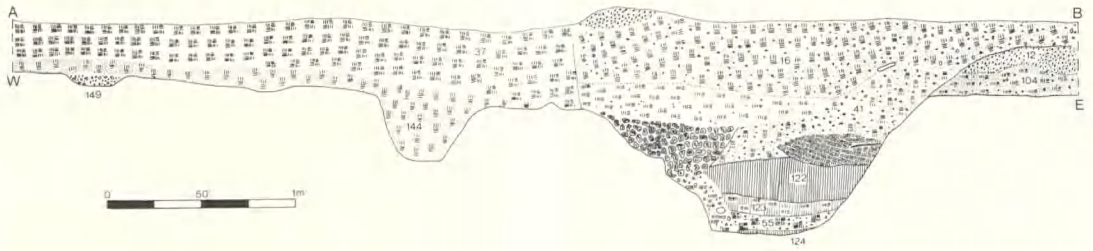

Fig. 12 Empire Cinema site, trench I. East-west section across the ditch 16

sherds. Full details of fabrics, form and decoration are given in BAJ vol 13, 147–211. Animal bones, and fossil insect and plant remains from the following features were also analysed and reports are given in the main finds section below.

Phase A

Ditch 16: Pottery 7.365 kg, 78% B wares: 22% C wares. Fabrics – A11, A12, B1, B4, B5, B7, B8, C1, C8, C12 Stamford ware including 143 lamp or crucible sherds, C22, C29. Iron slag – 90 kg; 4 bone objects; quern and whetstone fragments. Carbon 14 dates from layer 123-HAR 3437, 900 ± 70 years BP – ad 1050 ± 70 years. From layer 124 – HAR 3438, 1570 ± 70 years BP – ad 380 ± 70 years.
Pit 50: Pottery 1.945 kg. Fabrics B4, B5, B7, B8, C1. Iron slag – 4.200 kg. Carbon 14 date from layer 116 – HAR 3436, 850 ± 80 years BP – ad 1100 ± 80 years.
Pit 69: Pottery 0.375 kg. Fabric B. B4. Iron slag – 1 kg.
Pit 119: Pottery 0.075 kg, Fabric B1. 1 bone object.

Phase B

Ironworking: 0.205 kg, Pottery fabric B4. Slag samples
Gulley 62: 0.170 kg Pottery fabric B4. Slag 0.500 kg. Some animal bone and oyster shell not analysed.
Pits 38 and 97: 1 sherd and 0.035 kg Pottery fabric B4.

Period 2, Twelfth to Fourteenth centuries
Figure 11

Various compacted Medieval layers were found across the site, below the overburden removed by JCB. They indicate occupation during the twelfth–fourteenth centuries, but few specific features were encountered. In the north-east corner and partly sectioned by the east edge of the trench was the square-sided pit 13, and a shallow gulley or slot 15, sliced its edge to the north. These features were revealed within early Medieval deposits and cut through into the natural gravel, Pit 30, again partly under the east trench edge, was approximately 0.40 m deep and its base was formed by the underlying cobbles 98.

The Finds

Medieval Layers: One sherd A12. B and C fabrics 2.880 kg B4, B5, B7, B8, C3, C4, C5, C8, C9, C10, C22, C27, C28, C31. Proportions by weight 65% B: 35% C wares. Iron slag – 10 kg.
Pit 13: Pottery 0.300 kg. Fabrics B1, B4, C5. Some animal bone. Iron slag 0.500 kg.
Pit 30: Pottery 0.190 kg. Fabrics B4, B8. Some animal bone. Iron slag 0.050 kg.
Gulley 15: Pottery 0.660 kg. Fabrics B4, B5, B7, C37. Some animal bone. Iron slag 0.250 kg.

Period 3, Post-Medieval

The building of the Empire cinema effectively removed the Post-Medieval features from this trench, With the exception of the well 48 (partly excavated) in the south-west corner there were no positive Post-Medieval features.

DISCUSSION

The picture that emerges of Trench I during the tenth–twelfth centuries is one which demonstrates a variety of activities whilst virtually excluding any domestic dwelling or building. However, pottery, shell and animal bones all testify to nearby habitation. Faunal remains from refuse pits (50, 69, 119) show that farming including animal husbandry was being carried out in the vicinity.

Plant remains from the ditch 16 suggest open ground alongside cultivated or disturbed land, and taken with the faunas, show it to have been used first as a refuse dump (layer 124) and subsequently as open water for drainage (layer 123).

Pottery finds from the ditch indicate that it was in use, and filled in, during the tenth–twelfth centuries. Forms include cooking pots, bowls and jugs, a typical accumulation of domestic refuse. In addition crucible sherds in Stamford ware show that the melting of copper or copper alloy was being undertaken on site or nearby. There was no evidence of waste or finished articles from this process and this, plus the fragmentary nature of the sherds suggests that they were simply refuse dumped in the ditch. The same may be said for the iron slag, although the large quantities and ashy soil make it likely that working occurred very close by.

A horn-working industry at or near the site is demonstrated by the large number of sheep and goat horn cores from the ditch and pits 50, 69 and 119. It is possible that this was part of the same process which resulted in similar waste found on the Midland Road sites, opposite the Empire Cinema, excavated in 1974. (Trenches BMR 74 I and II; Grant 1979, 94). The rest of the animal bones were food refuse consistant with that found on most other Bedford sites.

Carbon 14 dates from the ditch samples are wide-ranging. Sample HAR3437 from layer 123 gave a date of ad 1050 ± 70 years, which confirms the date suggested by the pottery finds. The absence of any finds earlier in date than the ninth–tenth centuries from the ditch makes it unlikely that the ditch was functioning before this period. It may be that the sample of organic matter from which the Harwell date was obtained was residual in its context.

In contrast with ditch 16, samples from base layers of pit 50 suggested that wet conditions prevailed when it was first used (layer 116) and that it subsequently dried out (layer 96) and was used as a rubbish dump. Pit 50 could have served as a well originally, with gulley 73 taking the overflow (the direction of flow being north-south toward the Ouse ¼ mile or so away) although the presence of water may have resulted from fortuitous flooding. The material assemblage including the faunal sample clearly shows the pit to have been infilled with domestic rubbish, whatever its original function. The Carbon 14 date HAR3436 of ad 1100 ± 80 years is commensurate with the date suggested by the pottery finds.

Pit 69 yielded a comparatively small number of finds. The presence of many dung beetles within the organic base layer testify to its having been used for the disposal of dung and/or decaying vegetation. Although there is some faunal evidence for there having been water in this pit there are no strong indications that it may have served as a well.

The paucity of archaeological features and material remains from Period 2 twelfth–fourteenth centuries, does not allow for any significant interpretation. Domestic refuse still occurs and testifies to continuous occupation on site. The change in proportion of pottery fabrics (65% B wares: 35% C wares) and the presence of later fabrics confirms the Medieval date.

The few Middle Saxon sherds, fabrics A11 and A12, found with the Saxo-Norman material, are likely to be residual. Ninth–tenth century settlement has been demonstrated on the nearby sites BMR74 I and II (BAJ, vol 13, 83-95) so the occurrence of early sherds here is unexceptional.

THE FINDS

The Pottery

Six sherds of hand-made Middle Saxon pottery were found, including one from trench II (layer 346). Fabrics A11 and A12 were represented, A11 being a proto-St Neots fabric and A12 being a fore-runner of the local shelly ware B4. The sherds include applied thumbed strips from storage vessels, two thickened rims probably from bar-lug vessels and small bowl rims. (BAJ vol 13, 155 and figs 93-94).

17.325 kg of Saxo-Norman to Early Medieval pottery were recovered from trench I, of which approximately 78% were B wares, and 21% were C wares. 360 sherds were analysed and fabrics types present were comparable with material from the previously excavated Bedford sites. For these and for full details of fabric, form and decoration see the pottery section in BAJ, vol 13, 147–211.

In outline, the fabrics from the Empire Cinema include B1, St Neots type, B4, a Bedford product and by far the most prolific here, B5, a local import, B7, possibly a late St Neots type, B8, possibly from Harrold or Olney Hyde, and B9, Lyveden ware. C wares probably manufactured in or near Bedford are C1, C3, C4, C5, C22 and C37. The regional imports include C8 Thetford type, C9 Oxford/Bucks type, C10 Potterspury type, C12 Stamford type and C29, possibly from Northampton. C28 was also present, locality of manufacture unknown. The only continental import was a sherd of C31, Saintonge ware.

The jugs, bowls and cooking pots etc, represented by the sherds conform to the rim types already defined and published. Fig 14 illustrates the main types relevant to the Empire Cinema. Types 17, and 15 were most common (largely cooking pot forms in B fabrics) followed by the bowl types 6, 24, 2 and 5. One rod and a few strap handle sherds from jugs were found. Two sherds from the base of a lamp or candlestick occurred in fabric B4 (as BAJ, vol 13, 193) and there were sherds from lamps or crucibles in C12, Stamford ware, the majority of which were found in ditch 16. This C12 form had not been previously encountered in Bedford, and sherds were

B4	51% (185)	C4	1% (5)
B7	9% (32)	C8	1% (5)
C12*	7% (24)	C9	1% (5)
B8	5% (17)	C10	1% (4)
C1	5% (17)	C37	1% (4)
B5	4% (16)	C27	<1% (2)
B1	3% (13)	C9	<1% (1)
C5	3% (11)	C28	<1% (1)
C3	3% (10)	C29	<1% (1)
C22	1% (6)	C31	<1% (1)

Fig 13 Fabric types, % of total, and number of sherds of each type.

(* C12 figures exclude crucible/lamp sherds)

analysed by Justine Bayley. As the form is well known from other sites such as Stamford and Lincoln, and has already been well-defined (Kilmurry 1977) the Bedford sherds are not illustrated.

The majority of the pottery was plain, decoration occurring on only 6% of sherds. BAJ, vol 13, fig 96 shows the range of decorative elements so far encountered, and on the Empire Cinema sherds rouletting (type 3) combing (types 57, 58, 62, 63), direct thumbing (71, 72, 74) and applied thumbed strips (78) were the only type present.

THE STAMFORD WARE CRUCIBLES AND LAMPS
by Justine Bayley

From considerations of form and fabric alone, most of the sherds examined could well be from crucibles. However many of them show no signs of use as such; on these there is no vitrification of inner or outer surfaces (except a slight 'gloss' in some cases) and no traces of metal.

Some sherds have an extra outer skin of clay, often vitrified on its outer surface. This is found commonly on crucibles where it is thought to help conserve the heat in the pot during casting and make the crucible less susceptible to breakage from thermal shock. This suggests that the examples from Bedford with this extra layer of clay may well be crucibles although the degree of vitrification noted is far less than normal.

Only three sherds showed any signs of the metal they contained. One sherd (from context 120) contained tiny blobs of silver and two more (one each from contexts 103 and 341) had red patches in the 'glaze'on their outer surfaces. This is caused by the presence of copper and suggests that these sherds were parts of crucibles used to melt copper or one of its alloys. (The presence of copper was detected by x-ray fluorescence in the Ancient Monuments Lab. and the silver was confirmed by Steve Wyles at the Laboratory of the Government Chemist).

The non-crucible sherds may well be from lamps.

Kilmurry designates crucibles as vessel form 16 and ovoid lamps as vessel form 19 though there is little difference between the forms (1980, 289 and 293).

THE ANIMAL BONES
by Annie Grant

Just over 600 animal bones recovered from the section of the ditch 16 and about 150 bones from the pits/wells, 50, 69 and 119 in trench I, were sent to the writer for analysis. The bones were thought to be of 11th to 12th century date. A total of 710 bones were positively identified and were the remains of animals of the following species – cattle, sheep, goats, pigs, horses, dogs, cats, birds, rabbits/hares and a small carnivore. Full details of the numbers

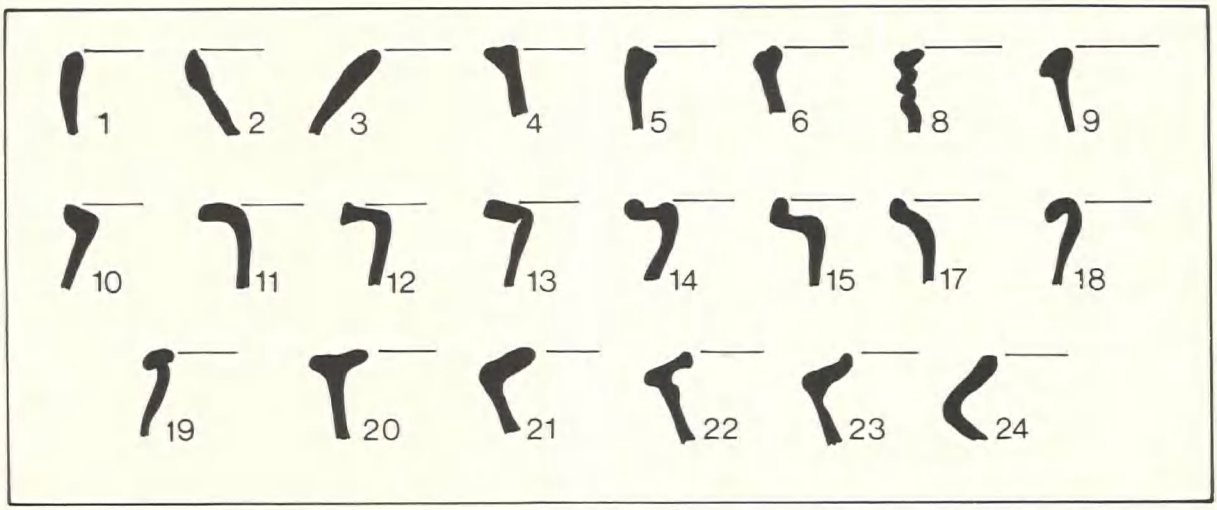

Fig. 14 Empire Cinema site: Main rim forms used in Pottery Analysis

and percentages of bones for each of these species are given in Fig 15. The methods used for percentage calculation are those described in detail in Grant (1975).

The majority of the bones were from sheep or goats, with cattle bones also fairly well represented. This was the situation at the majority of the other Bedford sites examined by the writer (Grant, 1979). Pig bones were rather less common. Horses, dogs, cats and rabbits/hares were each only represented by a very few bones, but bird bones were slightly more common.

One human 1st phalange was found with the animal bone.

Neither of the methods used for calculating the percentages given in the Fig 15, count skull or horn core fragments, for reasons explained in Grant (1975). However, at this site as can be seen from the bone fragment totals a particularly high percentage of the bone material was skull and horncore fragments. The vast majority of the skull fragments were in fact sheep and goat horn cores, 22 sheep and 66 goat horn cores were found in a fairly complete state, together with 39 horncore fragments. All but four of the horncores were found in the ditch section. In contrast, only three cattle horn cores and 5 cattle horncore fragments were found.

The majority of the sheep and goat horncores had cut marks on them, either on the base of the horncore, or on the skull beside the horncore. Some sheep skulls had also been chopped along the line of the frontal suture.

It is clear that the bone material found at this site can be divided into two groups. The first group comprises the large number of sheep and goat horncores, and it is evident that these are the waste from a hornworking industry which must have been situated at or near the site.

The second group comprises the rest of the bone material, and seems to be merely food waste. Metapodials were the best represented cattle bones, and mandibles and metapodials the most common sheep bones, but almost all other parts of the skeleton of these animals were also found. Since only a small number of pig bones were found, not all skeletal elements were represented, but there were bones from each area of the body. Cut marks were found on the bones of cattle and sheep, consistant with a butchery technique using a heavy chopping tool.

Despite the fact that only one dog bone was found, a reasonable number of the bones had been gnawed, almost certainly by dogs. This discrepancy has been seen at other Bedford sites, and is discussed in Grant (1979, 287).

The majority of the bones of cattle came from mature animals, although there was evidence that a number of cattle had been killed before they reached full maturity. No remains of cattle of under one year of age were found. There were sheep bones from juvenile and mature animals, with one bone from an animal of under one year of age. The mandible wear (see Grant, 1975) suggests the presence of animals between two and six years of age. The pig bones were probably all from young juvenile animals. The age structure of these animals is very similar to that seen at other Bedford sites.

In conclusion, the second group of bones, the food refuse, suggests eating habits and an economy very similar to that seen at the majority of other medieval sites in Bedford examined by the writer. The group of sheep, and especially goat horn cores must have been especially collected together. The horns would have been used as the raw material in a hornworking industry, presumably situated in the neighbourhood. Collections of horncores have been found in other areas of the town. High percentages of cattle horncores were found in the lime kiln in Bedford Castle (Grant 1979, 59), and a collection of goat horn cores with chop marks around their base was also found in the Castle Area. A high percentage of cattle horn cores were found at St John's street site (Grant 1970) and at the Midland Road site (Grant 1979, 94) there were particularly high percentages of cattle, sheep and goat horn cores. It would appear that there were several local hornworking centres within Bedford and that whereas at some, horns from cattle, sheep and goat horns were used, at others there was a preference for the horns of either cattle or sheep and goats.

	Epiphyses*		Fragments	
	No.	%	No.	%
Cattle	54	38	102	29
Sheep*	68	48	158	45
Pig	17	12	37	11
Horse	2	1	9	3
Dog	1	1	1	
Cat	1	1	1	
Bird	omitted		32	9
Rabbit/Hare	omitted		7	2
Carnivore	omitted		2	1
Total	143		349	

	No.	%
Identified fragments	349	49
Rib fragments	188	26
Skull fragments	173	24
Total	710	

Fig 15 Analysis of Animal Bones

(Epiphyses* – Grant 1975: Sheep* – sheep and/or goat)

FOSSIL INSECT ASSEMBLAGES FROM THE EMPIRE CINEMA SITE, BEDFORD

by Maureen A. Girling

Samples of Saxo-Norman and Early Medieval age from the Empire Cinema site, Bedford were submitted to the Ancient Monuments Laboratory for environmental analyses. Waterlogged pit infills from context 96 and 116 (pit 50), 100 (pit 69), 154 (pit 119) and layers 123 and 124 from ditch 16 yielded insects and plant remains which are detailed by Miss P Paradine below.

The organic silts were intially treated by the paraffin flotation technique (Coope and Osborne 1968, Kenward 1980): the samples were disaggregated in warm, running water, washed on to a 300 micron sieve, drained, mixed with paraffin then cold water was added causing the lightest organic remains, including insect cuticle, to float. This flotant was decanted and sorted for arthropod sclerites. Subsequent sorting for seeds by Miss Paradine was carried out on this flotant and the entire residue, an essential process as paraffin flotation is not a satisfactory technique for concentrating seeds. Insect remains were present

in all samples, although their preservation varied and sample 123 produced a degraded, fragmentary fauna. Seeds, which generally appear to be more resistant, showed less variation in their state of preservation between samples. The insect remains, dominated by beetles and occasional high totals of fly puparia, are composed of unaltered cuticle but another arthropod class, millipedes, have also been preserved at the site by the partial replacement of their more permeable exoskeletons by $CaCO_3$. This mechanism has been shown to be common in many sites with lime rich bedrock and/or hardwater drainage (Girling 1979).

Environmental implications of the insect fauna

The interpretation of the environmental conditions under which the organic silts were deposited is based upon assesment of the ecological requirements of the total fauna, and their division into habitat groups. Problems of interpreting archaeological insect faunas, especially those from urban contexts, have recently been discussed by Kenward (1976, 1978). A major difficulty lies in defining ecological groups among those species which display a wide range of habitat requirements and differing degrees of specificity for particular living conditions. In the latter instance, stenotopic beetles, i.e. those with narrow habitat ranges, are more valuable as indicator fossils than eurytopes which tolerate a variety of conditions. The Bedford samples have been evalued on species content and then a method of faunal grouping has been applied to enable direct comparisons to be made between layers. The four groups are:

I Vegetation rubbish/dung/house-pest complex
II Aquatics
III Phytophages
IV Eurytopics

The rubbish complex includes taxa such as *Cercyon* spp which occur in a variety of damp vegetation habitats including pond edges, but whose habitat requirements are suited to accommulations of rotting plant material and/or dung where they are commonly found. Numbers of Staphylinidae also fall into this damp vegetation/dung group. The rubbish complex has been extended to include woodworm beetle, *Anobium punctatum* as it is a notorious pest of worked timber (Hickin 1968) and in a settlement site building timbers, fencing and dried logs for firewood provide major sources of infestation. Individuals in the rubbish complex might have arisen from flooring within timber constructed buildings, the disposal of wormeaten wood or an infestation at source in wood in the pits. In contrast to this rubbish complex, the aquatic group is more strictly defined to include only those species which breed in ponds or streams and which require standing water as opposed to just damp mud or vegetation. The small weevil *Tanysphyrus lemnae* is also assigned to this category as it lives exclusively on the duckweed *Lemna*, swimming between the plants which form a dense mat at the surface of the water, and whose presence indicates at least seasonal standing water in the ditch. Phytophages are plant feeders (excluding *T. lemnae*) whose presence may be due to their inclusion in vegetation gathered for flooring or bedding, and the final eurytopic group is composed of beetles which occur in a wide range of habitats and those taxa where identification of incomplete fossil material could not be achieved to the level where habitat preferences could be established.

The fauna from the pits and ditches are generally dominated by the rubbish complex, but it is noticeable that there is more variation within the layers of the features than between the pits and ditches, reflecting changes in water level while they were in use.

Pit 50

Layers 116 and 96

Layer 116 represents the initial silting of a square-sided pit and it is overlain by layer 96 whose darker appearance, suggesting a higher organic content is borne out by the richer beetle fauna extracted from it. Several aquatic species are present in 116, amongst them *Porhydrus lineatus* which lives in silt-bottom or detritus pools in calcareous substrates, and the duck-weed feeder *Tanysphyrus lemnae*. The presence of water is further indicated by the ephippium, or egg case, of the water dwelling crustacean *Daphnia*. The wet conditions provide a suitable breeding place for *Hydrobius fuscipes* represented by four individuals and *Ochthebius minimus*. Records of *Anobium punctatum* reflect nearby availability of timber, and the ground beetle, *Pterostichus melanarius* is predominantly found on cleared ground, around buildings and in other synanthropic habitats. The faunal change in layer 96, strongly suggests that at this stage, the pit no longer contained standing water, and that vegetation refuse was accumulating probably as the result of dumping. Although part of the fauna must have originated with the transported refuse, for instance the pea or bean beetle *Bruchus rufimanus* which lives on cultivated legume plants, conditions within the pit would have permitted breeding populations of numbers of the rubbish-complex beetles. The 60 fly puparia also suggest an in situ maggot population. Numbers of the beetles are associated with dung which is likely to have formed a constituent of the dumped rubbish; in addition to the dung beetles, *Aphodius* spp, there are records of *Oxyomus sylvestris, Coprophilus striatus* and *Platystethus arenarius*, species often found in dung. The dung and/or rotting vegetation also provides suitable habitats for *Cryptoplerum minutum, Sphaeridium* spp., many Staphylinidae and *Anthicus floralis. Helophorus rufipes*, unlike most other species in its genus which occur mostly in aquatic or pond side habitats, is one of the turnip mud beetles, the others being *H. nubilus* and *porculus*. These species are recorded as breeding in turnips in the ground (Balfour-Browne 1958) and decaying plant materials. The distribution of the faunal groups from 116 and 96, shown in Fig 16, illustrates the change from standing water to a damp accumulation of dung and/or vegetation refuse, although 116 is based upon a smaller fauna. When the aquatic fauna is plotted against totals of the rubbish complex fauna (Fig 17), a similar pattern emerges of drying out at the 96 level. The function of the pit can only be tentatively suggested by the insect data. Originally the water contained in the pit, perhaps fed by the gully, could have served as a well although it might equally represent accidental flooding of the hollow. The subsequent infill appears, however, to be a dump of house and stable sweepings, flooring and dung, and this implies use as a refuse pit.

Pit 69

Layer 100

This silty, organic basal layer of a square, straight sided pit yielded 91 beetles which fall dominantly into the rubbish complex faunal group. The commonest taxa are the dung and dung associated beetles: *Aphodius* and *Cercyon* spp. Dung and/or decaying vegetation are further suggested by *O. sylvestris, Anotylus rugosus* and *H. Nubilus.* Species which lie outside the rubbish complex are *H aquaticus* and *Dryops* sp which live at pond edges. Although the former is a strong flier, these and the single caddis case might provide evidence for some water in the pit. In addition, the legume feeder *Bruchus rufimanus* is also present. This pit contained the $CaCO_3$ replaced millipede segments.

Pit 119

Layer 154

This layer represents the basal infill of a rounded pit cut into gravel. The poor preservation and paucity of insect remains from the silts might have resulted from the free drainge of the deposit. A small number of aquatic species recorded in the other pits are present, including *H. aquaticus* and *O. minimus* and there are larval caddis fly fragments. The rubbish complex is represented by *Aphodius, Ceryon* and *Anotylus* spp. and the small histerid *Acritus nigricornis* which occurs in general refuse. There is little in the fauna to suggest the possible function of the feature.

The pits generally appear to have acted as dumps for a settlement where farming included some animal husbandry. There is no direct evidence of a cess-pit function for the features, although the seeds reported by Miss Paradine do include fruits which may have formed part of the diet at the site.

Ditch 16

Base Layers 123 and 124

The sequence suggested by the faunas from the two bottom layers of the ditcl feature are of refuse accumulating in a water free freature which was subsequently flooded. True aquatic beetles are absent from the base of the pit, although water plant seeds are reported and may indicate flood refuse vegetation. The strongest indications are of the dung/rubbish group which includes the dor beetle *Geotrupes, Falagria caesa* and *Onthophilus striatulus* in addition to species present in the pit deposits. Over 50 puparia were also recorded. Interpretation of the overlying layer is hindered by its very poor preservation, but occurrences of *Colymbetes fuscus* and *Rhantus* sp. suggest open water which is further indicated by caddis fly larvae and several small fish scales. The micro-environmental changes between these layers are illustrated in the faunal grouping of Fig 16 and when the rubbish complex and aquatic totals are plotted, layer 124 is grouped with pit layers 96 and 100, suggestions that although the ditch may have had a drainage purpose at the site, it served for a time as a dump.

REPORT ON PLANT REMAINS FROM THE EMPIRE CINEMA, BEDFORD

by Pamela J. Paradine

Samples from ditch layers 123 and 124

Plant remains in the form of seeds and fruits recovered from this site represent an average cross section of a flora associated with an open habitat on basic soil. This is usually seen in close proximity to cultivated or disturbed land and includes plants commonly classified as weeds.

The comparatively small percentage of numbers of the Compositae family such as groundsel, thistle and sow-thistle can be accounted for by natural wind dispersal. These plants are typical members of the family which disperse away from the parent plant by means of the hairy pappus or parachute. Another member of the family not using this method is *Anthemis cotula*, which simply drops around the parent plant, and as might be expected there is a higher proportion of achenes present, indicating the presence of the plant. *A. cotula* (mayweed) in particular is commonly found growing in fields, headlands and such places as paths.

Poppies, buttercups, scarlet pimpernel, chickweeds, docks and polygonums are consistently found in such environments, strongly suggesting an 'open' type of ground. The elderberry and cracked fragments of hazel shells could represent the result of bird and rodent activity or gathering by man. Had these trees been growing in the immediate area either as a scrub or hedgerow stand, many more seeds and shell fragments would be expected.

The interesting and unusual plants found in this list are *Ranunculus* ssp. *Batrachium* – water buttercup and *Potamogeton crispus.* These two plants are true aquatics normally requiring fresh running water of some depth, and they had obviously flowered and fruited to produce fertile achenes and fruits. *Apium nodiflorum* needs a more marginal shallower running water and is commonly found on the edge of brooks where the flow is less strong. *Conium maculatum* prefers a wet or damp habitat. The finding of these plants would therefore imply the ditch had at some time contained fairly deep running water with a shallower marginal area, and this is confirmed by the fragmentary beetle fauna.

The ditch infill 124 interpretation was based upon a smaller number of seeds but these indicate a similar environment to 123. Although some aquatic plants, including *Zannichellia* were present, both species and seed counts were significantly lower than those of 123 and it appears that this basal infill was laid down in drier conditions and the ditch was subsequently flooded at the level of the 123 infill.

Pit infill samples 96, 116, 100, 154

The pit infills again represent plants basically found on open ground associated with the cultivation or in disturbed areas such as rubbish dumps. The only significant differences occur in samples 96 and 116.

Sample 96 contained *Prunus* species in relatively large proportions and combined with the evidence of blackberries, black horehound and lesser stitch-wort could indicate a hedgerow or scrub area or source of gathered

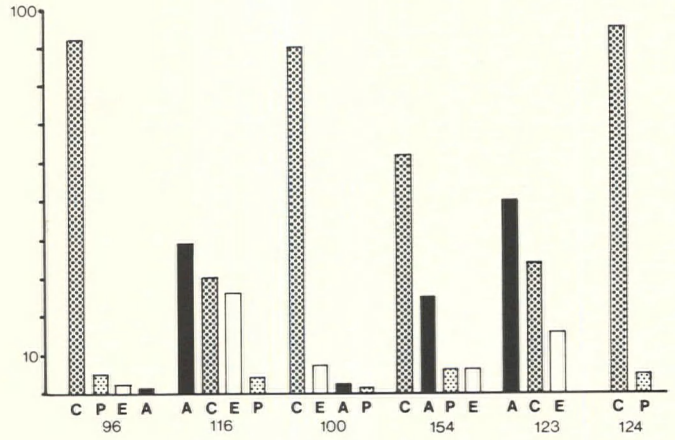

Fig. 16 Empire Cinema site. Faunal groups in pit and ditch assemblages

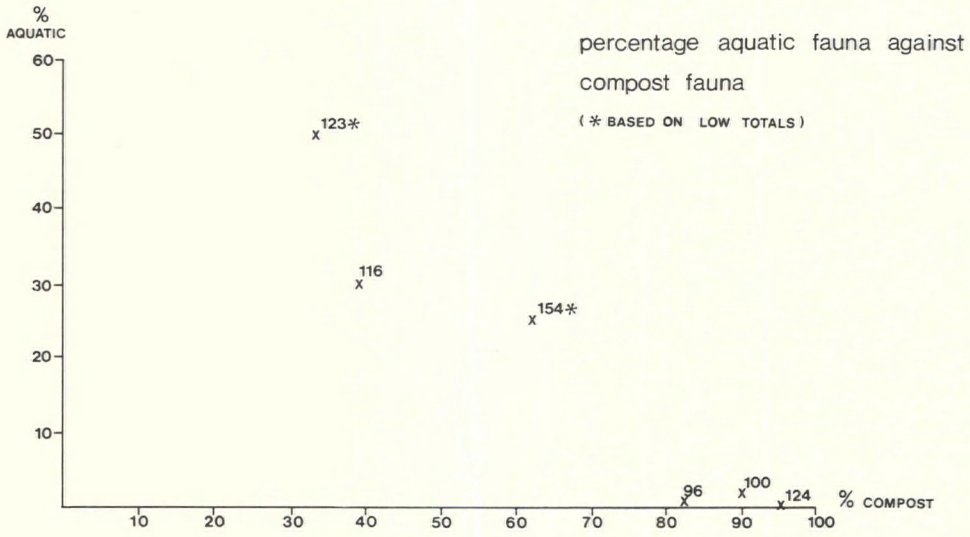

Fig. 17 Empire Cinema site. % Aquatic: Compost Fauna

BEDFORD, EMPIRE CINEMA

SPECIES LIST, ARTHROPODA	96	100	116	123	124	154	Total
ARTHROPODA							
DIPLOPODA							
Polydesmidae *indet.*	–	2	–	–	–	–	2
Fam., Gen. et sp. indet.	–	1	–	–	–	–	1
INSECTA							
DERMAPTERA							
Forficula auricularia (L)	2	–	1	–	1	–	4
TRICHOPTERA							
Fam., Gen. et sp. indet	–	1	–	2	–	1	4
HEMIPTERA							
Heteroptera *indet.*	–	–	3	–	1	–	4
COLEOPTERA							
Carabidae							
Nebria Brevicollis (F)	1	–	–	–	–	–	1
Clivina collaris (Herbst) or *fossor* (L)	–	1	–	–	–	–	1
Pterostichus melanarius (Ill.)	–	–	1	–	–	–	1
Trechus obtusus Er. or *quadristriatus* (Schrank)	1	–	–	–	–	–	1
Dytiscidae							
Porhydrus lineatus (F)	–	–	1	–	–	–	1
Rhantus sp.	–	–	–	1	–	–	1
Colymbetes fuscus (L)	–	–	–	1	–	–	1
Hydrophilidae							
Helophorus aquaticus (L.)	–	–	–	–	–	2	2
H. brevipalpis Bed. (agg.)	–	5	3	–	–	–	8
H. grandis Ill.	–	1	–	–	–	–	1
H. nubilus F.	–	1	–	–	–	–	1
H. rufipes (Bosc)	2	–	–	–	–	–	2
Helophorus spp.	–	–	–	2	–	–	2
Sphaeridium sp.	4	–	–	–	–	–	4
Cercyon unipunctatus (L.)	1	–	–	–	1	–	2
Cercyon spp.	9	19	–	1	5	2	36
Cryptopleurum minutum (F.)	1	–	–	–	–	–	1
Hydrobius fuscipes (L.)	–	–	4	–	–	–	4
Histeridae							
Acritus nigricornis (Hoff.)	6	1	–	–	–	2	9
Onthophilus striatus (Forst.)	–	–	–	–	1	–	1
Hydraenidae							
Ochthebius Minimus (F.)	1	–	1	–	–	1	3
Staphylinidae							
Lesteva longoelytrata (Goeze)	1	4	–	–	–	–	5
Omalium sp.	3	–	–	–	1	–	4
Coprophilus striatulus (F.)	1	–	–	–	1	–	2
Carpelimus or *Thinobius* spp.	7	–	–	–	–	–	7
Platystethus arenarius (Fourc.)	7	–	–	–	3	–	10
Platystethus sp.	–	–	1	1	–	–	2
Anotylus nitidulus (Grav.)	1	–	–	–	–	–	1
A. rugosus (F.)	2	1	–	–	1	–	4
Anotylus sp.	–	–	1	–	–	1	2
Stenus spp.	–	–	2	–	–	–	2
Lathrobium sp.	–	–	–	–	1	–	1
Xantholinus linearis (01.)	3	–	–	–	–	–	3
Philonthus sp.	1	1	–	–	–	–	2
Tachyporinae *indet.*	–	–	–	–	1	–	1
Falagria caesa Er.	–	–	–	–	1	–	1
Aleocharinae *indet.*	12	16	2	–	8	2	40
Geotrupidae							
Geotrupes sp.	–	–	–	–	1	–	1
Scarabaeidae							
Aphodius spp.	11	32	1	2	4	2	52
Oxyomus sylvestris (Scop.)	7	4	–	–	5	–	16
Dryopidae							
Dryops spp.	–	1	–	–	–	1	2
Anobiidae							
Anobium punctatum (Deg.)	2	2	3	–	1	1	9
Coccinellidae							
Coccidula rufa (Herbst)	–	–	–	–	–	1	1
Lathridiidae							
Lathridius sp.	–	–	1	–	–	–	1
Anthicidae							
Anthicus floralis (L.)	1	–	–	–	2	–	3
Bruchidae							
Bruchus rufimanus Boh.	5	1	–	–	1	–	7
Apionidae							
Apion sp.	–	–	1	–	1	–	2
Curculionidae							
Tanysphyrus lemnae (Payk.)	–	–	1	–	–	–	1
Ceutorhynchus sp.	–	–	–	–	–	1	1
HYMENOPTERA							
Formicidae	–	–	5	–	–	–	5
Parasitica	–	–	1	–	–	–	1
DIPTERA							
Fam., Gen. et spp. indet. (puparia)	60	–	–	–	52	1	113

Fig. 18 Empire Cinema site. Arthropoda

fruit. Sample 116 shows a recurrence of the aquatic plants, *Ranunculus spp. Batrachium, Hydrochaeris morus-ranae* and *Potamogeton* possibly indicating some period of flooding which was of sufficient duration to allow their establishment, flowering and fruiting. Alternatively flooding from a nearby river could have deposited the disseminules.

Lychnis flos-cuculi would require a damp water-meadow type area, but as only one seed was found, it would hardly indicate the presence of a plant, the same applies in sample 100 with the meadow sweet. It is significant to note the record of the large deposits of fragmented *Agrostemma githargo* (corn cockle) especially in 96 and 116. This plant, probably introduced by the Romans has shown a rapid decline during the latter half of this century due to the more efficient method of cleaning cereals prior to sowing. Until recently it was a serious weed contaminant of cereal crops especially in the Midlands where the lighter sandy soils suit its growth requirements. The most serious problem with *Agrostemma* was the presence of the toxic chemical saponin in the seed, which could produce fatal results if sufficient seeds were ground up in the flour of a bread making wheat. References occur to the usage of the plants leaves being used to pickle bacon, and the seeds were quite often ground up and shaken with water to produce a lather, as with *Saponaria* (bouncing bet), the leaves of which are still recommended and sold as a soap substitute to use on finer or more delicate materials.

CONCLUSION

The overall picture seems to be a collection of plants usually found on open habitats, closely associated with, if not actual, cultivated ground, with maybe a hedgerow or small scrub close by containing sloe and blackberries. Possibly flooding occurred at some time with either sufficient time elapsing for the development of plant and consequent fruiting of the aquatics and marginals, and such plants as the ragged rboin and meadow sweet, or a seasonal overflow which deposited odd disseminules from a river. It would appear however that the site was mainly damp enough for plants such as *Conium* to become established in numbers.

Ditch infills 123 and 124 would definitely appear to have at some time contained deep running fresh water, which persisted long enough for the plants to complete a growth cycle.

A full list of plants species from the site can be consulted at Bedford Musueum as part of the excavation archive.

A charcoal sample taken from amongst the iron slag deposit, phase B, was analysed by Carole Keepax. Species present came mainly from mature timbers, and were chiefly of Oak (Quercus sp.) with a few fragments each of Hawthorn type (Rosaceae, subfamily Pomoideae), Ash (Fraxinus sp.) and Hazel (Corylus sp.).

TRENCH II, figs 1 and 20

Features from all three periods were identified. Phases A and B in period 1, and C, D and E in period 2 could be distinguished. These phases relate only to trench II and are not directly comparable with phases defined in other trenches.

Period 1, Ninth to twelfth centuries

Phase A

Time precluded the total excavation of trench II down to the natural gravel subsoil, and investigation of the earliest phases was confined to the two areas within the trench illustrated in figure 20. Cut into the natural were the remains of several stake holes and shallow slots, 366, 368 and 369. These features were somewhat insubstantial being not more than 0.10 m deep. They had a grey-black clay loam fill and there were no pottery finds.

Phase B

Several bands of clays with some gravel and charcoal patches were found, but there were no identifiable features. Clay layer 346 contained a sherd of A12 bar-lug pottery, probably of ninth–tenth century date.

Period 2, Twelfth to fourteenth centuries

Phase C

A number of small pits (320, 327, 331, 332, 337, 338, 341) post and stake holes (322, 323, 325, 330, 333, 340, 344) were discovered cutting the top of the clays of phase B. Pottery evidence indicates that they represent occupation during the twelfth–thirteenth centuries. No overall pattern or structure is suggested by these features. There were in addition, several strips of dark earth with dense charcoal patches, varying in length but all approximately 0.10 m wide and a few cm deep. They were all on a parallel alignment and were running east-west. In addition to those illustrated in figure 20, several more parallel charcoal strips were noted, cut by some of the small pits. It could be that these were the charred remains of a wooden fence or partition burnt down in situ.

DISSEMINULES FOUND IN SAMPLES FROM THE EMPIRE CINEMA, BEDFORD

		96	116	100	154	123	124
Ranunculus bulbosus L.	Achene	3					
R. repens L.	Achene				2	2	
R. sp.	Achene		1		1	7	
R. ssp. Batrachium	Achene	4	6			121	9
Chelidonium majus L.	Seed			2			
Papaver argemone L.	Seed	16	24	7			
P. rhoes L.	Seed	4	14	1		5	
P. sp.	Seed	3					
Brassica nigra (L) Koch.	Seed	4	4			1	
Raphanus raphanistrum L.	Seed & Pod					1	
Sinapis arvensis L.	Seed	8	3	3		6	1
Thlaspi arvense L.	Seed		2				
Viola sp.	Seed		1				
Hypericum sp.	Seed	1		4	1		
Argostemma githago L.	Seed	Frag.	1 + Frag	Frag.		2 + Frag.	
Cerastium holosteoides Fr.	Seed		8			10	
C. sp.	Seed	1	3				
Lychnis flos-cuculi L.	Seed		1				
Moehrengia trinervia (L) Clairv.	Seed		8			Many mod.	Many mod.
Silene alba (Mill) Krause	Seed	4	14	7			
S. dioica (Mill) Clairv.	Seed	1	3				
Stellaria graminea L.	Seed	24					
S. media (l) Vill.	Seed	1925	535	61	1	23	6
Atriplex patula L.	Seed	49	37 Mod.	23 Mod		3 Mod	1 Mod.
Chenopodium album agg.	Seed	773	78	28	5	33	
Malva sylvestris L.	Seed/fruit	5	10	1			
Convolvulus arvensis L.	Seed			1			
Hyoscymus niger L.	Seed	29	12	4		1	
Solanum dulcamara L.	Seed		11	1			
S. nigrum L.	Seed	12	11	1		2	
Odonites vernal (Bell) Dumort	Seed		1				
Verbena officinalis L.	Seed	1	1				
Ballota nigra L.	Nutlet	23	24				
Galeopsis tetrahit L.	Nutlet		1			1	
Lamium album L.	Nutlet	2	1	5	1		
L. hybridum Vill.	Nutlet	157	105	4		2	
Mentha sp.	Nutlet	7		5	1		
Stachys sp.	Nutlet		1				
Galium aparine L.	Mericarp	1					
Sambucus nigra L.	Seed	8	1	92		10	1
Anthemis cotula L.	Achene	15	7	27	16	113	3
Arctium lappa L.	Achene	3	1	4		3	
Centaurea scabiosa L.	Achene	9	8	27		2	
Cirsium arvense (L) Scop.	Achene		Frag.			1	
C. vulgare (Savi) Ten.	Achene	4		4			
Crepis sp.	Achene		1				1
Hieracium sp.	Achene	1					
Lapsana communis L.	Achene	4	2	4		2	
Leontodon autumnalis L.	Achene	1	3	1			
Picris echiodes L.	Achene	1		8			
Senecio vulgaris L.	Achene				1	1	
Sonchus arvensis L.	Achene	40	21	1		4	
S. asper (L) Hill.	Achene			1			3
Carduus acanthiodes L.	Achene	5	1			2	1

		96	116	100	154	123	124
Hydrochaeris morus-ranae L.	Seed		1				
Potamogeton crispus L.	Fruit		8			2	1
Vicia Sativa L.	Seed	1					
V. tetrasperma (L) Schreb.	Seed	1		1			
Filipendula ulmaria (L) Maxim	Achene			2			
Fragaria vesca L.	Achene	6	1	12			
Malus sp.	Pip	3	2				
Potentilla erecta (L) Rausch	Achene	5	1				
Prunus aviam (L) L.	Stone	13					
P. spinosa L.	Stone	2		8			
Rubus spp.	Stone	109	41	25		1	
Lythrum salicaria L	Seed		3		7		
Aethusa cynapium L.	Cremocarp				2	1	
Aegopodium podagaria L.	Cremocarp		1				
Apium nodiflorum L.	Cremocarp				2	2	
Conium maculatum L.	Cremocarp	48	73	10	7	2	
Torilis nodosa (L) Gaertn	Cremocarp	8	2	1		2	
Bryonia dioica	Seed					1	
Euphorbia exigua L.	Seed					2	
E. helioscopia L.	Seed				1	Frag.	
Polygonum aviculare L.	Achene	33	23	14	5	11	2
P. convolvulus L.	Achene	1	1		1	2	
P. lapathifolium L.	Achene				1	1	
Rumex crispus L.	Achene	3	2	1		1	
R. obtusifolius L.	Achene	29	17	14	1	23	1
Urtica dioca L.	Achene	6565	1249	129	2	146	100
U. urens L.	Achene	659	63	18			
Alnus glutinosa (I) Gaertn.	Achene			11			
Corylus avellana L.	Shell Frag.	Frag.	Frag.	Frag.		Frag.	
Anagallis arvensis L.	Seed	8	2			7	
Zannicheliia sp.	Fruit				*Numerous	*Numerous	*Numerous
Juncus sp.	Seed	100+	100+		1	6	
Carex flacca Schreb.	Achene	8	1	5		2	
C. sylvatica Huds.	Achene	2	1			1	
C.sp	Achene	1	2	5			
Scirpus sp.	Achene			5		1	

(Zanichellia sp. fruits too numerous to count, amount to several hundred of fragments of the fruits.

Fig. 19 Empire Cinema site. Disseminules

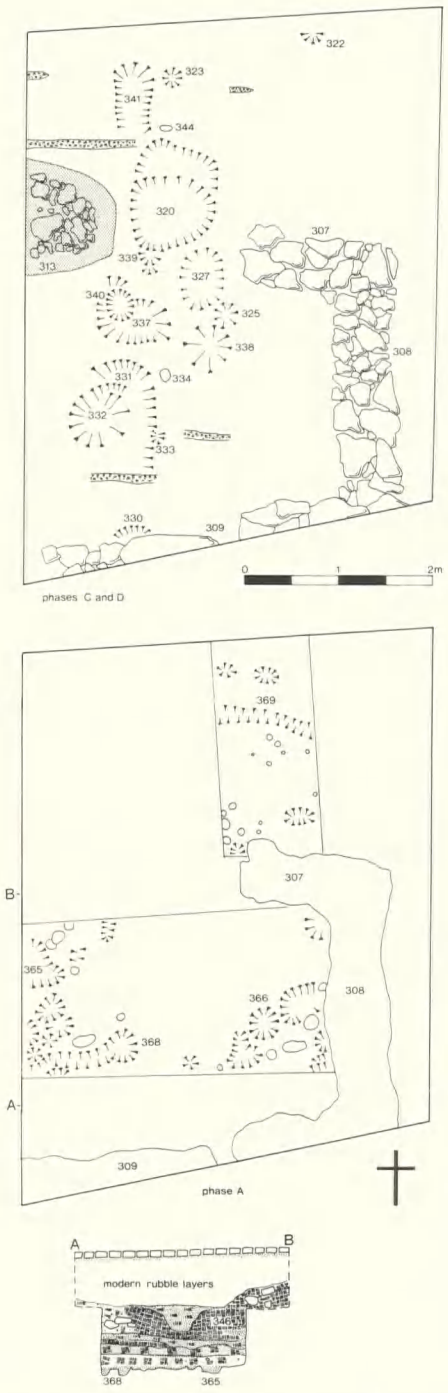

Fig. 20 Empire Cinema site. Trench II, Features from Period I and II

Phase D

The limestone wall footings 307, 308, 309, post-date C features, being separated from them by medieval clay spreads, including the associated floor level 311 (not shown). The walling was approximately 0.70 m wide and was extant to a depth of 0.50 m with three courses of stonework, for the most part. There was no indication that the short length of wall 307 running east-west continued westwards, and no trace of a return wall at the west end of the trench. Pottery evidence suggests a twelfth–thirteenth century date for this structure.

Phase E

A series of Medieval spread clay layers approximately 0.20 m thick overlay phase D wall footings.

Period 3, Post-Medieval

Phase F

313-315 may have been the remains of a Post-Medieval hearth. Nineteenth century footings and other recent disturbances are likely to have destroyed any other significant Post-Medieval features.

The Finds

There were few finds from this trench. A total of 0.845 kg of potsherds, of which 67% were B wares, were recovered. Fabrics included:

Phase B:	A12
Phase C:	pit 320 – B4, B8, B9; pit 341 – B4; post-hole 330 – B7.
Phase D:	wall 307, 308 – B4, B6, B8; floor level 311, 312 – B4, B7, B8, C3, C4, C9, C22.
Phase E:	spread clays – C3.

Very small amounts of animal bone, not analysed, were recovered chiefly from phase B and C features.

DISCUSSION

Although period 1 features were inconclusive, due in part to the small area sampled, there was sufficient evidence to indicate pre-Conquest occupation in this corner of the site. The majority of finds and features relate to activities during the twelfth–thirteenth centuries, including a building with stone footings. However, apart from testifying to Medieval occupation no positive details have emerged. The trench was too small to give a clear picture, and the surrounding area too disturbed to permit expansion.

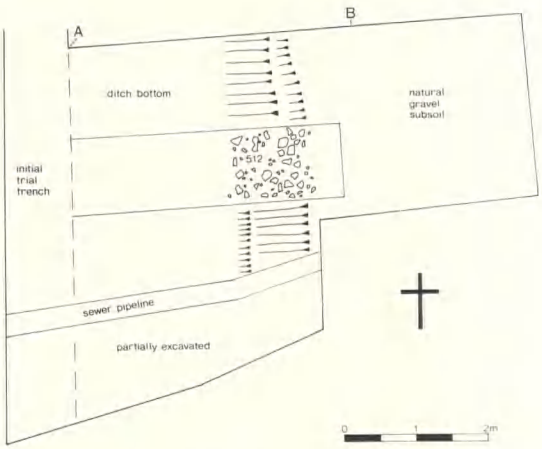

Fig. 21 Empire Cinema site. Trench III, Plan of Medieval features

The Post-Medieval period was barely represented, yet documentary evidence shows that dwellings did exist in this part of the town from the early sixteenth century (Henman 1945, 21; see also general discussion below). It seems likely that continuous occupation from then to the present day has destroyed any evidence.

TRENCH III Figs 21 and 22

Period 2, Twelfth to fourteenth centuries only

Approximately 1 m of modern overburden was mechanically removed to expose a series of Medieval clay spreads (501, 502, 504, 507, 509-511, 513, 520) covering the site. Most of these were patchy and none was more than a few cm deep. Pottery evidence suggests a twelfth–fourteenth century date for these layers. Beneath them lay a mass of tumbled limestones 512, some apparently edge-set, 508, covering the entire east side of the trench, interrupted to the south by a sewer pipe line. The edge-set stones formed a lining to the side of a ditch, about 1.80 m deep. A bank was noted to the east, composed of three or four layers of gravelly clays resting on the natural gravel subsoil. The ditch was approximately 4 m wide from the lip of the bank to the west edge of the trench, and was aligned north-south. The west edge of the ditch was not discovered and presumably is to be found somewhere beneath the line of Allhallows.

The Finds

There were few finds, and pottery from the Medieval clay spreads was chiefly fragmentary. However, identifiable sherds included B8 and C10 wares, and these along with some shelly bodysherds suggest the date range. No pottery was recovered from the ditch fill.

DISCUSSION

It was not possible to find the west edge of the ditch, or to excavate any more of it on this site. The projected line of the ditch is shown in figure 24. The indications are that it was wide and flat-bottomed, but no evidence has been found to link it with a late Saxon urban boundary or defence. Another, complete section needs to be examined to verify its date and structure. Possibly it had some other function, such as a fishpond.

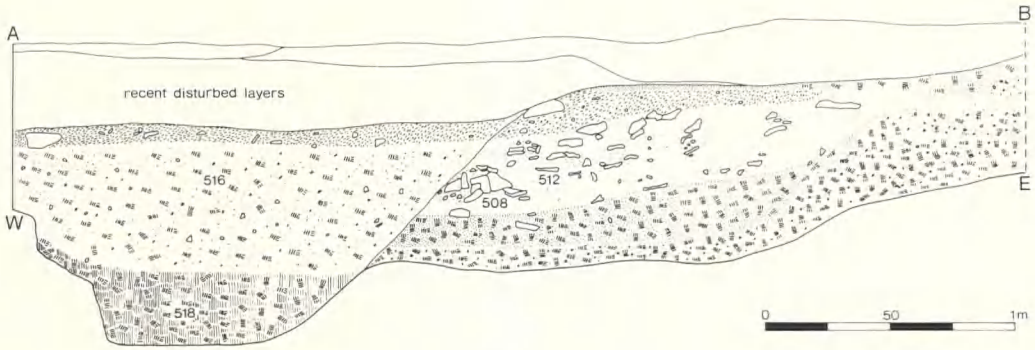

Fig. 22 Empire Cinema site. Trench III, Section of Period II ditch

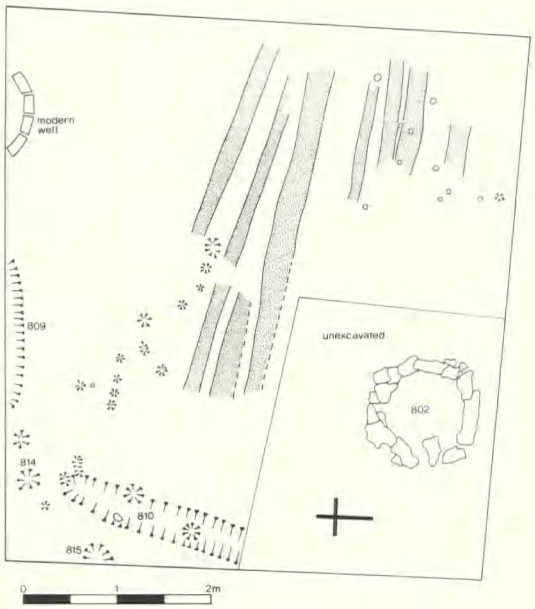

Fig. 23 Empire Cinema site. Trench IV, Plan of Medieval features

TRENCH IV Fig 23

Period II, Twelfth to fourteenth centuries

Trench IV was machine-excavated to the same level as the top of the ditch 16 in trench I, and work proceeded by hand. A post-Medieval well, 802 with associated disturbances were found in the south-west corner, and this area was left unexcavated.

A series of clay loam spreads with gravelly patches was found (803-808, 811) which contained no dating evidence. However, they were clean and their proximity and similarity to spreads from trench I suggest they relate to the twelfth-fourteenth centuries. The edge of a pit or possibly a linear feature 809, was found against the north section, cut into the Medieval clays. It contained a single sherd of B7 fabric (twelfth to thirteenth centuries).

Cut into the natural subsoil was a series of linear features running east-west across the trench, each approximately 0.20 m wide and varying in depth between 0.05 – 0.15 m. Even when they had no substance, their position could be seen as a dark soil stain on the gravel. These were presumably the remains of wooden joists or floor supports for a building. A beam-slot, 810, was uncovered at right angles to the joists, and this along with several post-holes formed the only structural features surviving in the trench. They represent the west edge of a building set parallel to Allhallows, lying a few metres east of the ditch alignment suggested in trench III.

The Finds

Very few objects were recovered. A fragmentary handful of animal bones, too small for identification, was found, and only 9 sherds of pottery (B7 and indeterminate shelly fabrics) weighing 50 g.

DISCUSSION

The lack of adequate dating evidence, or of many finds, precluded firm dating, but the indications are that these building remains relate to the Medieval period or earlier.

TRENCHES I – IV GENERAL DISCUSSION Fig 24

Despite the restrictions of modern disturbances etc, the four excavated trenches have yielded sufficient evidence to indicate occupation from the ninth to tenth century to the present day. As noted on other Bedford sites, except perhaps for Mill Street, (Baker 1974, 99-128) material evidence from the fourteenth to seventeenth centuries is particularly lacking.

Figure 24 shows the earliest features in all four trenches, and although the phases for each trench remain separate, it might be possible to suggest some linkage. The slot 149 (tenth–twelfth century) in the west extension of trench I is approximately parallel to slot 810 (twelfth to fourteenth century or earlier) in trench IV and 9 m from it. If 810 does relate to the earlier phase then it is likely that these two slots formed part of the same building.

There were few finds from either periods 2 or 3, and with the exception of some wells, and the hearth in trench II, no Post-Medieval features have survived the more recent building activities on the site. Documentary evidence shows that this site was occupied at the time of the Newnham Rental 1506/7 (Henman 1945, 21) and by 1700 (CRO Bedford Hagable Roll No. 2) there was 'a Porch adjoining the messuage' on the site. Subsequently a farmhouse called the Porch House existed here (CRO AD3974 Marriage settlement of 1728) but it

Fig 24. Empire Cinema Site. Plan of chief Medieval features.

was not possible to identifiy this archaeologically.

It is unlikely that future work will shed much light on the questions left open, particularly concerning the ditches in trenches I and III. The extent of redevelopment in this area of Bedford is almost total (Hassall and Baker 1974, fig 9) and the only places left for archaeological sampling may be today's roads and pavement areas. Sections across Allhallows and Midland Road could be of particular value.

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An Excavation at Sharpenhoe Clappers, Streatley, Bedfordshire

BRIAN DIX

SUMMARY

Excavation at Sharpenhoe Clappers, Streatley, Bedfordshire, showed that at the point where an archaeological trench was taken across the bank of the supposed Iron Age hillfort, the earthwork was of medieval date. It probably had been constructed as a rabbit warren, whence the name 'Clappers' is perhaps derived. A number of earlier features were sealed beneath the warren, among them a palisade trench and possible ditch terminal, dateable to the Iron Age.

Sharpenhoe Clappers (NGR : TL 066302) lies in the parish of Streatley, Bedfordshire, 1½ miles south-west of Barton-in-the-Clay and 6 miles north of Luton. The Clappers is the name given to the tip of a spur at the northern edge of the Chilterns. Sloping gently away from the main hill mass to its south, the area forms a natural promontory which commands views on three sides from the east round to the north and to the south-west. A beech wood at the summit adds to the attraction of the hilltop which is a National Trust property.

The wooded area is defined on the south by earthworks at either side of the neck of the promontory (fig. 1). Where the hillslope falls away on the eastern side, the level of the higher ground to the west is continued along the top of a bank, approximately 33m long and 6m to 8m wide. A more substantial, but undulating bank begins 36m to the west and extends to the other side of the promontory where it tips down the naturally steep hillside. It varies in its height from as low as 0.7m to almost 2m tall and ranges between 10m and 13m wide. It is roughly 58m long. A wide, hollowed area is visible in places to its south and accentuates the height of the bank as seen from that side (pl. 1).

Elsewhere, along the east and west sides of the promontory a slight, low bank at the top of the slope was likely formed by the line of trees with which it coincides. Along the north side, the tree line is set back from the top of the slope behind two terraces defined by outward-facing scarps. Other scarps on the south are cultivation earthworks.

The combination of surviving banks and commanding situation led to the identification of the spur end as the site of a 'British camp' as long ago as 1874.[1] Subsequently, there has been speculation concerning the nature and purpose of any former defences.[2] A scheme for interplanting and replacing timber that had reached its term prompted an investigation of the site which it was hoped would determine the degree of its preservation and suggest a plan for future action. A small excavation team working under the direction of the writer was employed at the site during September and October 1979.

THE EXCAVATION

The massive beeches which occupy the hilltop today were planted during the second quarter of the nineteenth century as shown by the Tithe Award of 1844 which for the first time referred to a plantation at the promontory.[3] The trees are closely set along the top and at either side of each bank and there are few places where cuttings through both features will not be hindered. In September 1979 a trench was set out across the western bank. It was sited 20.3m from the eastern end of the bank at a point where the tree cover was relatively slight, but even so one tree had to be felled and its stump removed from within the excavated area. Work was concentrated on examining the bank and investigating the state of preservation of the former ground surface and any structures built upon it, especially where these could have been sealed by the tail of the bank. Since space had to be left for access along the line of the hollow on the south side of the bank, only part of that area was available for excavation.

A cutting 26.3m long and 3m wide was made

Plate 1 Sharpenhoe, Bedfordshire. Earthwork seen from south-west.

through the bank and carried beyond it on either side. All excavation was undertaken by hand with a workforce averaging ten experienced persons.[4]

The bank (section, fig 2)

The bank stood 1.6m above the surrounding ground level. The materials of which it had been made were exposed across its top surface and to a lesser extent down the sides where they were partly concealed beneath patches of thin vegetation. A series of modern artefacts (see below) found within the humic and partly weathered material which had accumulated at the foot of the slope were evidence of the continuing effect of erosion and soil creep. Tree roots penetrated the upper levels of the earthwork to depths of 0.6 – 0.7m and rabbit holes had disturbed most layers.

The bank was made up of alternate layers of soil and chalk rubble which contained pieces of medieval pottery and earlier, abraded sherds (see below). In some places, the different levels of material had been mixed, perhaps through the collapse of animal burrows. The bank rested on an old ground surface which it covered to a breadth of 12m. Several weathered fragments of Romano-British pottery were found at this boundary which was marked by a discontinuous mat of grass roots, presumably a thin turf line, and also by a clear change to compressed, almost stone-free, very pale-brown soil.

The buried soil was covered by a thin layer of fine chalk which could represent trampling during the early stages of the construction of the bank. Above this, soils appear to have been dumped in

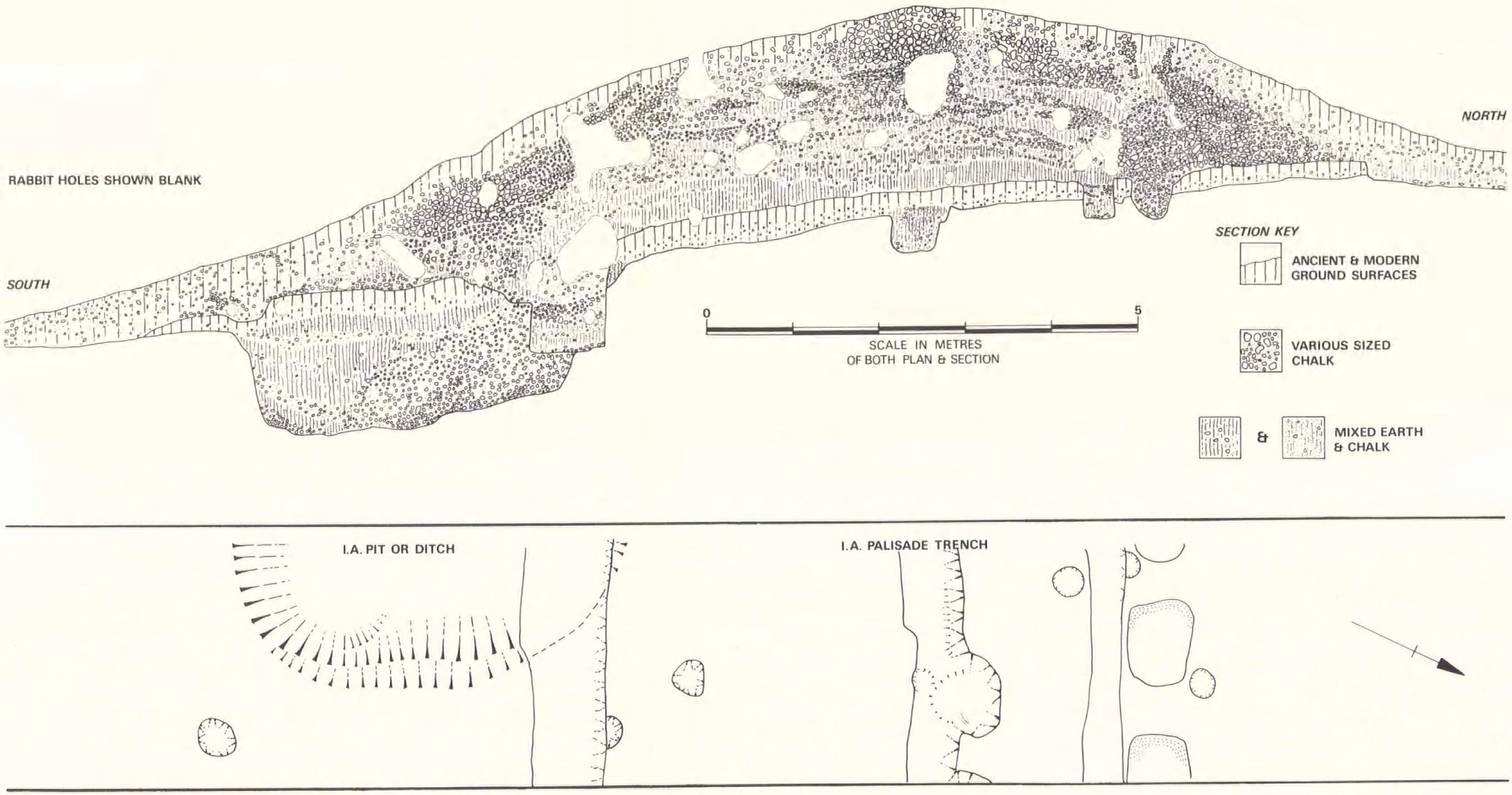

Fig 2 Sharpenhoe Clappers, Bedfordshire. Detail of section across bank with plan of underlying features.

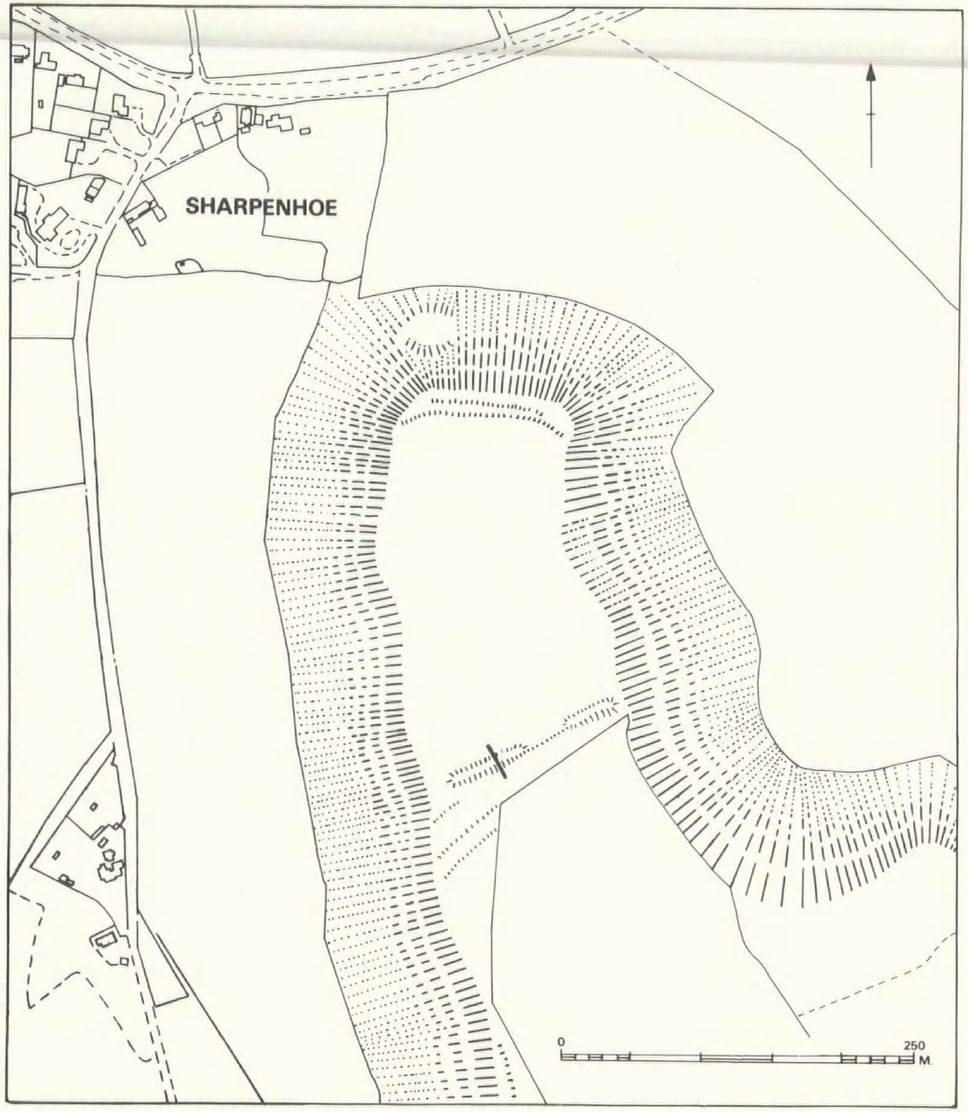

Fig 1 Sharpenhoe, Bedfordshire : The Clappers, showing the position of the 1979 excavation trench.

Plate 2 Sharpenhoe, Bedfordshire. East section-face of tench showing chalk revetment at north side of bank.
(scale in half-metres)
(Photograph: Beds. C.C.)

the natural order in which they were dug, with the first layer lowermost and subsequent layers on top. Some looser materials had perhaps been trampled or otherwise stabilised before the bank was built too high. Earth and chalky soil were most likely stripped from around the bank and a bare chalk bedrock surface left exposed on its north and south sides. A thin rendsina covers these areas today but beneath it the surface of the chalk substratum has a dirty and eroded appearance. A large regular disturbance located at the southern edge of the archaeological trench could be a related quarry.

The northern side of the bank was revetted. A solid facing or strengthening of rubbly chalk had been piled against the looser materials of the dumped bank. Spilling seems to have been contained by vertical timbers set closely in a series of roughly rectangular pits, 0.95m long by 0.75 – 0.80m wide, which had been dug 0.7m below the level of the old ground surface. That the posts had been removed before the chalk piled against them could settle was shown by the way in which rubbly chalk filled the void that each had left behind (pl.2).

A fence ran along the top of the bank at an unknown date after its construction. Individual postholes, roughly 0.5m across and almost as deep, indicate that it was most likely of post-and-rail type.

Contemporary features (plan, fig 2)

Two trenches had been dug into the chalk substratum from the surface on which the bank rested. They lay parallel to each other, one at

Plate 3 Sharpenhoe, Bedfordshire. Impression of tool marks.
(Scale in centimetres)
(Photograph: Beds. C.C.)

either side of the bank, and were at right-angles to the direction of slope of the ground. That on the south or down-slope was the largest. It had been dug with vertical, slightly undercut sides which were widened by chamfering at the top edge of the south wall so as to measure 1.5m or so across. Otherwise, the size of the trench measured approximately 0.8m wide and 1.2 – 1.3m deep. Its bottom was flat, being only slightly uneven where part of its length cut through an earlier feature (compare pl. 4). The trench had been infilled with alternate layers of fine chalky soil and coarse chalk lumps.

Similar stratification was present in the narrow trench which lay towards the rear of the bank. It was 0.4m wide and up to 0.5m deep below the level of the old ground surface. The sides and bottom preserved clear impressions of the implement by which they had been cut (fig 3; pl. 3). The tool used appears to have been some kind of narrow-bladed mattock, originally forged with strengthening ribs along the upper surface. The tip of the blade was 6-7cm broad and had become chipped and slightly burred, presumably through use. In addition to breaking up the chalk, the tool had also been used to level and straighten the appearance of the trench as shown by smoothing marks along its bottom and by the edges of oblique strokes cut into the almost vertical walls. The angle of these latter, together with the narrowness of the trench, indicates that each face was rendered straight and vertical by short chopping movements made either from a point at the top of the opposite wall or by the worker squatting in the trench itself. For this reason, the handle of the tool cannot have been very long and, correspond-

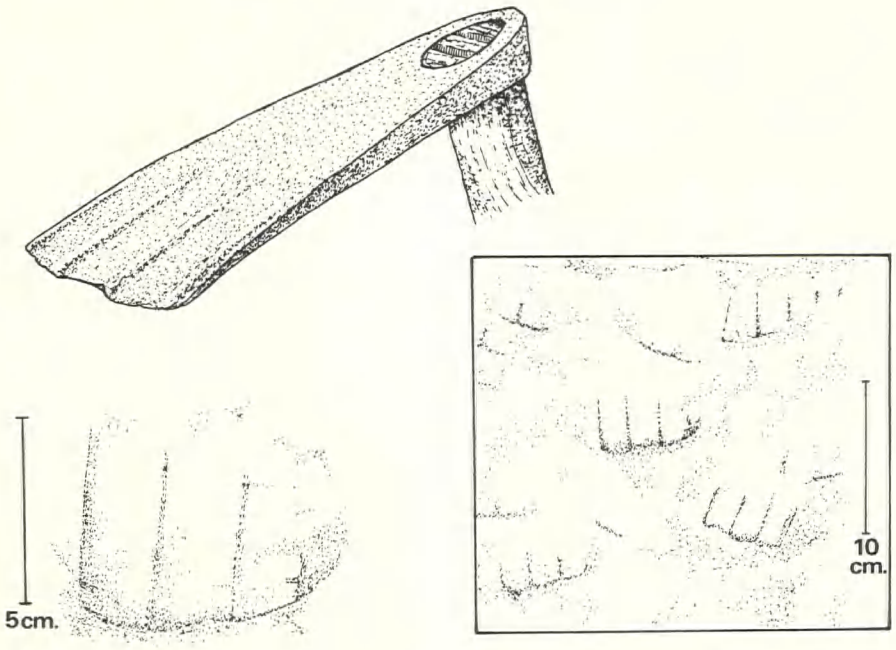

Fig 3 *Bottom right,* traces of tool marks preserved in the chalk floor of one drainage channel, with detail of an individual impression shown *lower left,* and suggested reconstruction of the implement, *centre top.* Compare pl.3.

ingly, the blade must have been of short length.

The sides of both trenches were clean and unweathered, suggesting that each had been filled almost as soon as it had been dug. Both trenches were covered by the materials of the bank. They lay at either side of its central core and, with their distinctive fillings, it is likely that they were designed to facilitate drainage of the soils towards the base of the bank. This would explain the necessity for a broader and deeper channel on the down-slope.

Earlier features

The soil on which the bank had been built contained body sherds of Romano-British pottery and fragments of earlier, Iron Age vessels. It sealed several features which cut into the chalk substratum.

One of these was a trench which lay across the main axis of the excavated cutting, but on a different alignment to the drainage channels associated with the later bank. It had a roughly U-shaped profile which penetrated the chalk to an average depth of 0.5m; sherds of early Iron Age pottery were found in the infilling considered below. It had been re-dug, perhaps for the removal of the posts which previously had been set in it. A series of depressions in the floor of the trench marked their former positions. Two of them, larger than the rest, were slightly off-set from the trench edge and could originally have held massive timbers. There was no evidence for a contemporary bank.

Several other post-holes were recorded. Some, perhaps most of them, could have been contemporary since there was general agreement amongst the heights of the horizontal levels to which each had been dug. But in the absence of dateable finds and the lack of stratigraphic links between the individual holes, interpretation is impossible. Additionally, the limited extent of the excavation did not permit individual patterns of post-settings or structures to be identified.

The only other feature sealed beneath the level of the old ground surface was a large disturbance, approximately 4.5m wide, which lay some 3m to the south of the palisade trench (pl. 4). Its rounded, almost squared, edge lay just within the ex-

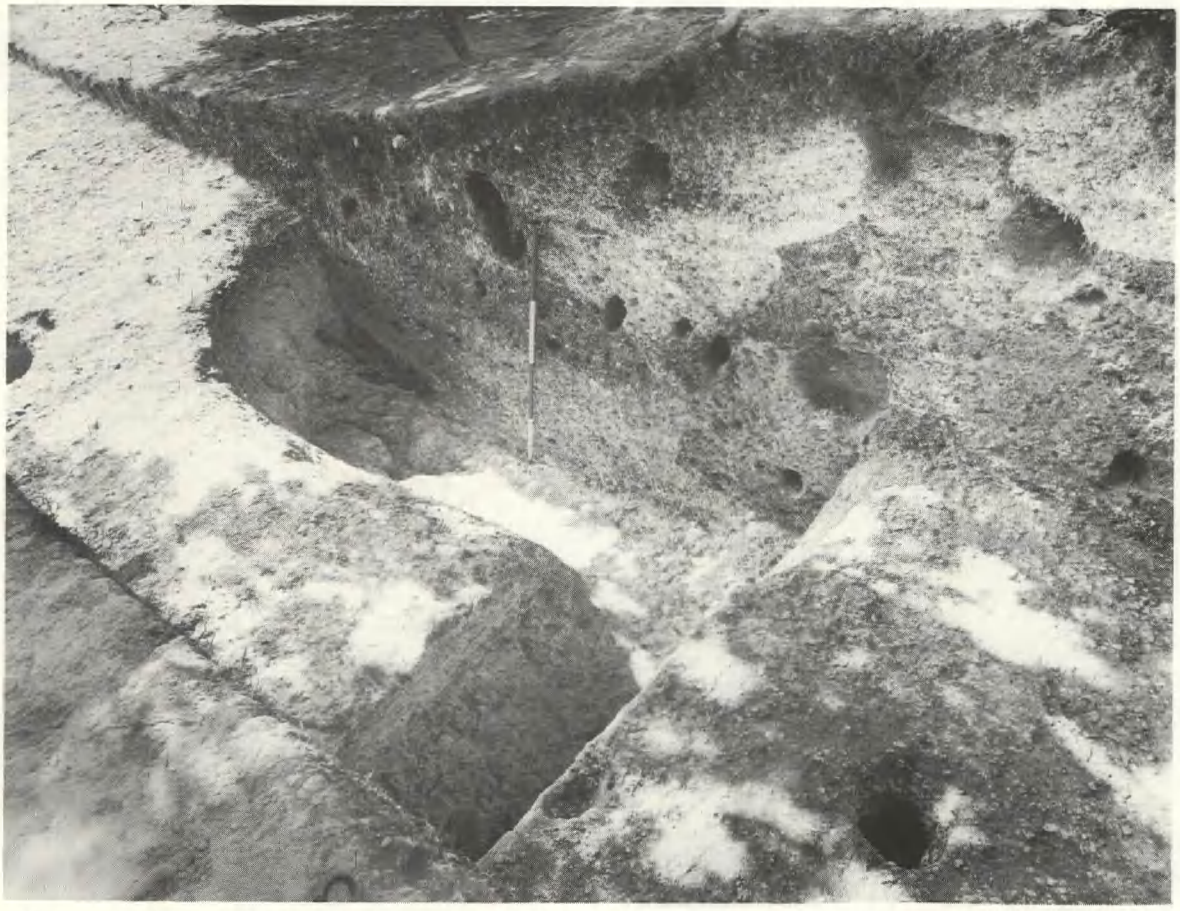

Plate 4 Sharpenhoe, Bedfordshire. Possible Iron Age ditch terminal cut by drain beneath medieval warren.
(scale in half-metres)
(Photograph: Beds. C.C.)

cavated area. Too small a part of it was exposed to show whether it was merely a pit or part of a larger feature. It had been cut into the chalk to a depth of over 1m. Perforce sectioned close to its edge, the stratigraphy of its infilling suggests that the feature had been re-cut at some time, perhaps indicating that it could represent the terminal of a ditch. Scraps of mostly undistinguished Iron Age pottery were found in the upper layers of its filling, but no stratigraphic link existed between the feature and the palisade trench.

THE FINDS[5]

Twentieth century material

Fragments of broken glass mineral water bottles, a cracked green 'Beetleware' bakelite cup, two empty shell cases spent from fire-arms use and the brass cap from a cartridge case were among the detritus of modern activity which had become buried in the humic soil that continues to accumulate at the base of the earthwork.

Medieval pottery (fig 4, nos. 1 – 5)

Medieval pottery occurred stratified in the layers of earth and chalk of which the bank was composed. Several different vessels were represented by sherds in a series of sandy and gritted fabrics. Some of their forms are not dissimilar to those of vessels in a group of late medieval pottery wasters from Flitwick, Beds., but only the fabric of fig 4, no. 3 is the same.[6]

1 Fragment of cooking-pot with rounded body and upright rim. Hard grey gritted fabric similar to Hertfordshire reduced ware. Late thirteenth to early fourteenth centuries.[7] From packed chalk beneath the rubbly

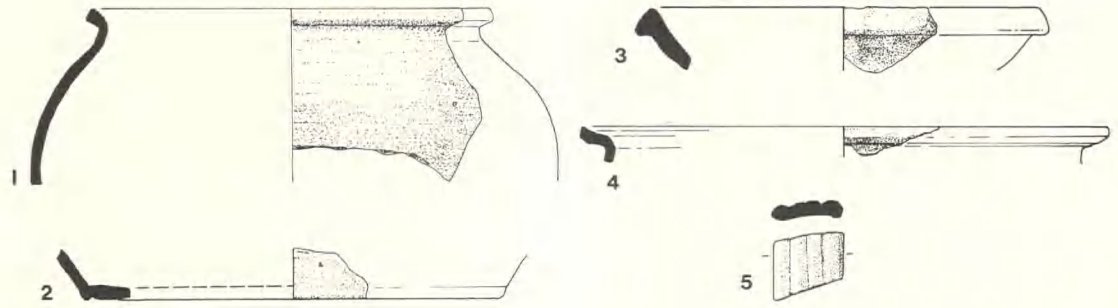

Fig 4 Medieval pottery. (Scale ¼)

chalk facing of the bank on its southern side.

2 Cooking-pot or storage jar base. Hard grey-brown coarse gritty fabric. Found in brown earth at the base of the bank.

3 Fragment of bowl with simple triangular rim. Hard dark grey coarse gritty fabric like those of wasters from Flitwick. From chalky brown earth towards the base of the bank.

4 Flanged rim of vessel in a moderately hard brown ware containing particles of powdered shell and fine sand. Fourteenth or fifteenth century. From a chalk layer near the top of the bank.

5 Fragment of handle in orange-buff smooth sandy ware. From the same layer as no. 4.

Romano-British and prehistoric pottery
(fig 5, nos. 6 – 12)

6 Everted rim of jar or cooking-pot in orange-brown shelly ware. Typically Romano-British. From brown earth at the base of the bank.

7 Rim sherd from small jar or beaker in Romano-British grey ware with traces of white coating on the exterior. Found with no. 6.

8 Fragment of hand-made pot with everted rim decorated with a row of fine finger-nail impressions along the inner edge. Fired with a brown exterior and grey-black inside. The clay body contains flint grits which protrude from its surfaces. From the palisade trench.

9 Rim sherd in dark grey coarse gritted fabric with flints protruding from the surfaces. From yellowish brown slightly chalky soil overlying the large pit or ditch terminal.

10 Flat-topped rim in fine grey-brown paste with occasional grits. Found in brown earth at the base of the bank.

11 Body sherd in smooth paste, preserving traces of a chevron pattern. Grey-brown outside with orange-brown interior. From chalky brown earth towards the base of the bank.

12 Fragment from the body of a pot in a soft black paste, scored on the outside with vertical lines. From the buried soil.

Not illustrated: A number of plain body sherds were found in the upper levels of infill of the large disturbance, in the buried soil, and in the soils which made up the medieval bank. They included flint-gritted pottery as well as sandier and shell-gritted fabrics.

The prehistoric pottery can be compared with early Iron Age material found at Puddlehill, Dunstable, 5½ miles to the south-west.[8] Fig 5, nos. 8 and 9, and a third unillustrated body sherd in a finer biscuit-coloured fabric which was found with no. 8, are like examples of Group 1 pottery from those excavations. A date in the sixth century B.C. has been suggested for them.[9] At Sharpenhoe this pottery was found in features sealed beneath the buried soil. The occurrence of later styles of pottery decoration, as fig 5, nos. 11 and 12, one of which survived as residual in the medieval bank, suggests that use of the site lasted beyond the beginning of the Iron Age. However, there is nothing in the sample of pottery recovered during excavation which needs to be dated to later than the third century B.C., and it is possible that most, perhaps all of the pieces could have been broken at a much earlier date.[10]

Animal bones

The few bones which were found in the earliest features are too fragmentary for identification and the only recognisable remains are those from the bank. With the exception of an eroded *Ovis* metatarsal and the remains of an individual Red fox *(Vulpes vulpes)*, all the bones are from rabbits. At least six adults are represented and several younger rabbits also, but their remains had become scattered during burrowing over a long period of time and no complete skeleton was found.

A fragmentary and badly preserved skeleton of a sheep (*Ovis*) lay on the bedrock beneath a thin soil cover to the north of the bank. The date of the burial is uncertain.

DISCUSSION

The limited extent of the archaeological work at Sharpenhoe Clappers permits only a few observations, some of which might be shown to be incorrect if excavation is resumed at a future time. No further work is envisaged at the present. Recent

results show unarguably that at the point where it was sectioned, the bank is of medieval or later date. Late medieval pottery was found in the soils of its make-up and it sealed a ground surface from which abraded sherds of Romano-British pottery were found. This level itself sealed a number of earlier features, but from most of them no dating evidence was obtained. Yet a palisade trench lying beneath the old soil contained Iron Age pottery as did also the upper layers of infill of a large disturbance a few metres to its south. There was no evidence for a bank associated with the palisade at this point, but set to one side of it were two large post-pits which by their size must have held massive timbers. No stratigraphic link could be established between the palisade and the other feature which produced pottery of the same period, and unfortunately not sufficient of the last could be excavated to determine if it was the terminal of a ditch. Were this so, and the ditch contemporary with the palisade trench behind, it would suggest that there had formerly existed an entrance in the vicinity. The negative evidence for a bank, then, is perhaps not conclusive; such strengthening behind the palisade may have been set back from the portal. The large post-pits, capable of holding substantial timbers, would certainly be consistent with the identification of an entrance or gateway at this point.

Subsequent to the excavation, a geophysical survey was undertaken to establish whether the palisade trench or the supposed ditch could be traced across the promontory, and so confirm the presence of pre-medieval defences.[11] The existence of an entrance could not be demonstrated by any direct tests on the bank itself because the response from the mixed earth and chalk fill was too erratic and also because of the disturbance caused by the excavation. However, magnetic survey traced a ditch extending to the east from a point next to the bank. It was located roughly in line with the excavated disturbance beneath the foot of the bank and it is possible that there could be an entrance 4 – 5m wide between them.

Assuming this, it might be argued that much of the bank could be of an Iron Age date and origin with only its original entrance infilled by the later earthwork which modern excavation has succeeded in finding. Against this is the fact that the ditch located in the magnetic survey is not precisely aligned with the surviving bank. Also, in order to accept the notion of a defence crossing the neck of the promontory, satisfactory account must be given for the total removal of what will have been a substantial rampart along a distance of 36m between the two, seemingly complete, banks at either side of the hill. The profiles of the two banks differ and it may be that they are not connected or even contemporary. Additionally, only a simple dump of material should have been found if it had been intended for blocking an existing gap. Yet the bank had been designed to be kept dry by two parallel drains running beneath it and sited lengthwise to the natural ground slope, and a revetment of rubbly chalk had been carefully built against its northern side. Such care taken over the design implies purpose and suggests that the entire length of bank is of similar and single build. It may be entirely fortuitous that its presence has preserved earlier features.

An indication of the original nature of the earthwork is perhaps provided by the place-name 'Clappers', by which the area has been known since at least the late sixteenth century. The word appears to be derived from Middle English **clapere** meaning warren and survives in dialect use as a term for rabbit burrows.[12] It occurs as an element in field-names in several different parts of England and is sometimes linked with ME **coni**, 'a rabbit', as at Pauntley, Gloucestershire,[13] and in the sixteenth century field-name *Conyclapers*, recorded from Westmorland.[14]

The earliest discovered use of the term at Sharpenhoe is in a document of 1575,[15] after which it is not found again until 1744.[16] Together, these are the only two documentary references earlier than the nineteenth century, when it appears that the name referred to the whole of the spur top area. Previously, however, it could have been restricted to a smaller part, and the land at the spur end was already regarded as old enclosure. The location, with the steep, probably scrub-covered scarp slopes around three sides, would have been particularly suitable for the establishment of a warren. The earthworks at either side of the neck of the promontory might originally have been constructed to encourage rabbits to inhabit the place and breed there.

Rabbits became a valuable source of food and fur during the later Middle Ages.[17] Individual charters of warren had been granted since the twelfth century, and by the middle of the fourteenth century it is likely that most lords of manors enjoyed exclusive rights of hunting and taking certain beasts in lands specially given to this pur-

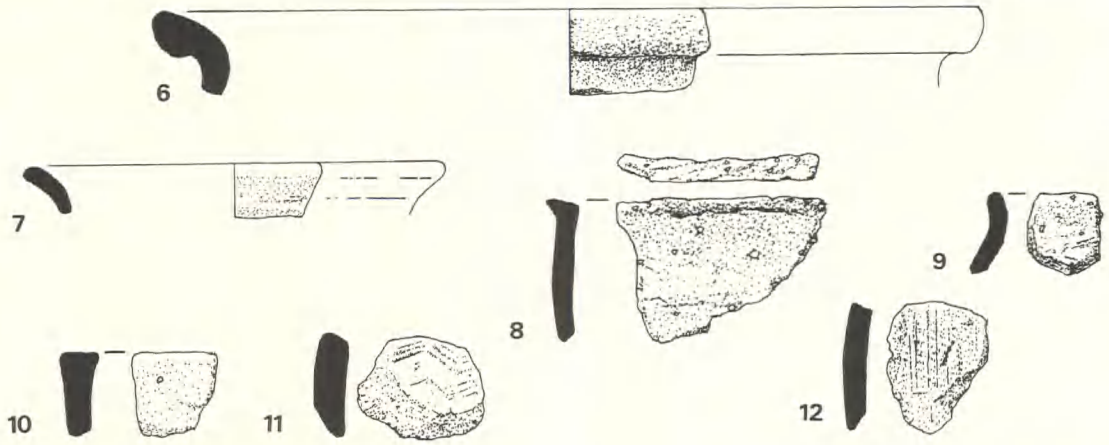

Fig 5 Romano-British and earlier pottery (Scale ½)

pose.[18] Initially, the hare was the principal beast of the warren but other animals included foxes and rabbits and there were also fowl such as pheasant and other birds.[19] Many early warrens must have comprised nothing more than rough lands perhaps enclosed in some instances by walls or low banks and ditches. Worthless land, like the barren heath or an area of thin, poor soil capable of supporting only the lightest vegetation, might thus be turned to profit.[20] Sir Thomas Tresham of Rushton will not have been alone in drawing valuable income from his warrens. At the beginning of the seventeenth century, carriers travelled between his Northamptonshire estate and London three times a week with boxes of rabbits and skins. Grey coneys, or adult rabbits, fetched £3 for the hundred, blacks sold for £5, and 'rich' at £10.[21] The metropolitan trade in coneys extended to Hertfordshire, Berkshire and Wiltshire among other counties,[22] and one merchant purchased 26,000 skins at a time for export to Danzig.[23]

As the economic importance of the rabbit increased, so it seems likely that special earthworks were constructed to encourage burrowing.[24] Sometimes existing features such as ancient burial mounds were enclosed as at Winterbourne Stoke, Wiltshire,[25] but in many instances low, flat-topped rectangular banks, between 0.25 and 0.5m tall, were set up and kept dry by shallow ditches surrounding them.[26] Such 'pillow mounds' might exist singly or be arranged in discrete groups, where the individual mounds were often closely sited to enable the rabbits to be netted.

Tall, but irregular mounds occur at Higham Ferrers, Northants., where an area of upcast dug from a fishpond can be identified as the *warrena cuniculorum* of the local court rolls.[27] Longer banks occur at several sites. For example, a pair of long mounds in Rockingham Park, near Corby, Northants., are respectively 100m and 105m long but only 0.6m high.[28] Banks of similar length have also been recorded from Ashdown Forest, Sussex,[29] and some Dartmoor examples are even longer, particularly those which utilise old and crumbling walls.[30] Another Northamptonshire site is the linear earthwork at Stowe Nine Churches, comprising three parallel banks with ditches at their eastern sides, which may represent the remains of an existing field monument that was also used as a warren. The largest bank rises some 1.5m above the bottom of the adjacent ditch.[31] Elsewhere, other banks, most certainly artificial rabbit warrens, up to 1.75m high and almost 8m wide, occur in the Sheepstor and Merrivale warrens on Dartmoor, and provide the closest parallels to the Sharpenhoe example.[32]

If the Sharpenhoe bank was indeed built in order to help rabbits burrow, it explains the disturbed nature of much of its stratification and the otherwise baffling feature of the two drains which lie beneath. The rubbly chalk on the north side of the bank will have presented a solid obstacle to burrowing in that direction, so that most of the entrances to the rabbit holes would easily have been covered at capturing time. In view of the size of the bank, it is most likely that ferrets were sent down the holes,

causing the rabbits to bolt to the surface where they could have been caught in purse-nets placed over the mouths of the burrows.

ACKNOWLEDGEMENTS

The National Trust, as owner of the site, readily gave permission for the work to be carried out and special thanks are owed to the regional land agent, Mr R.H. Mills, M.A. A.R.I.C.S., and to the local warden Mr A. White of Sharpenhoe, for their co-operation and help. John Niles and members of Bedfordshire County Council Forestry Gang, together with Ken Whitbread and Dave Stubbs of the Photographic Unit at County Hall, Bedford, contributed specialist advice and assistance. Excavating at the site was undertaken by persons employed under a Manpower Service Agency's STEP employment scheme operated in conjunction with Bedfordshire County Council. The work was carried out on behalf of the Department of the Environment.

NOTES

1 *PSA*^{2}., VI (1874), 186. Additional printed and unpublished references to the site are given in Bedfordshire County Council Sites & Monuments Record, PRN 238.
2 As, for example, James F. Dyer, 'Bedfordshire Earthworks IV : The Hill-Forts of Bedfordshire', *Bedfordshire Magazine,* VIII (1961-3), 114.
3 Beds. CRO : MAT 42/1, Tithe Map.
4 Field records and full details relating to the excavation are contained in the excavation archive deposited at Luton Museum, Wardown Park, Luton.
5 Deposited at Luton Museum.
6 D.C. Mynard, M.R. Petchey & P. Tilson, 'A medieval pottery at Church End, Flitwick', *Bedfordshire Archaeol. Journ.,* 16, 75-84. I am grateful to Dennis Mynard and Martin Petchey for discussing these finds with me.
7 CF. J.G. Hurst, 'The Kitchen Area of Northolt Manor, Middlesex', *Medieval Archaeol.,* V (1961), 267-70, Group K.
8 C.L. Matthews, *Occupation Sites on a Chiltern Ridge, Part 1 : Neolithic Bronze Age and Early Iron Age,* BAR 29 (1976).
9 C.F.C. Hawkes in Matthews *op. cit.,* 'Foreword and Summary', iv.
10 For discussion of contemporary pottery in the Chilterns see C. Saunders, 'The Pre-Belgic Iron Age in the Central and Western Chilterns', *Archaeol. Journ.,* CXXVIII (1971), 1-30. Mr. Saunders kindly commented on the prehistoric pottery at an early stage after excavation.
11 This work was carried out in February 1980 by Messrs. A. Bartlett and A. David of DOE AM Laboratory. The results given here are a summary of their report, *Geophysics G 2/80, Sharpenhoe,* (December 1980). A copy is deposited at Luton Museum.
12 Cf. Margaret Gelling, *The Place-Names of Berkshire, part III,* EPNS vol. LI (1976), 858.
13 A.H. Smith, *The Place-Names of Gloucestershire, part III,* EPNS vol. XL (1964), 184.
14 Idem, *The Place-Names of Westmorland, part II,* EPNS vol. XLIII (1967), 241.
15 Beds. CRO : SM 23.
16 Beds. CRO : A 56.
17 See Elspeth M. Veale, *The English Fur Trade in the later Middle Ages.* Oxford (1966), 176-8 and 'Appendix B : The Rabbit in England', 209-14.
18 G.J. Turner, ed., *Select Pleas of the Forest,* Selden Society vol. XIII for 1899 (1901; reprinted 1978), 'Introduction', cxxiii-cxxxiv. The medieval lords of Sharpenhoe manor received grants of free warren regarding their demesne lands in 1253, 1266, 1316 and 1349 : see Stephen R. Coleman, *Streatley with Sharpenhoe,* unpublished manuscript, Conservation Section, Beds. CC. (April 1980), 16. Which animals were to be reserved to the owners were not specified.
19 Turner, *op. cit.,* cxxviii-cxxxii.
20 Alan R.H. Baker and Robin A. Butlin, *Studies of Field Systems in the British Isles,* Cambridge (1973), 241.
21 Mary E. Finch, *The Wealth of Five Northamptonshire Families 1540-1640,* Northamptonshire Record Society vol. XIX (1956), 75-6. 'Rich' presumably refers to the skins of silver-grey rabbits.
22 Joan Thirsk, ed., *The Agrarian History of England & Wales, vol. IV 1500-1640,* Cambridge (1967), 509.
23 *Ibid.,* 529.
24 As also, for different reasons, during the eighteenth and nineteenth centuries. See John Sheail, *Rabbits and their history,* Newton Abbot (1971), 41-3.
25 Christopher Taylor, *Fieldwork in Medieval Archaeology,* London (1974), 108.
26 As, for example, at Fotheringhay, Northants. See RCHM (England), *An Inventory of the Historical Monuments in the County of Northampton. Vol. I : Archaeological Sites in North-East Northamptonshire,* London (1975), 47 and fig 58.
27 A.E. Brown, 'Higham Ferrers Castle – or otherwise', *Northamptonshire Past and Present,* V.2 (1974), 79-84; Rev. W.J.B. Kerr, *Higham Ferrers and its Ducal and Royal Castle and Park,* Northampton (n.d., but 1925), 115-7.
28 A.E. Brown and C.C. Taylor, 'The Earthworks of Rockingham and its Neighbourhood', *Northamptonshire Archaeol.,* 9 (1974), 71.
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31. W.R.G. Moore, 'Stowe Nine Churches', *Northamptonshire Archaeol.,* 8 (1973), 27-8; James Pickering, 'The Jurassic Spine', *Current Archaeol.,* VI.5 (1978), 140-1. See also RCHM (England), *An Inventory of the Historical Monuments in the County of Northampton. Vol. III : Archaeological Sites in North-West Northamptonshire,* London (1981), 182 and fig 136.
32. Catherine D. Linehan, 'Deserted Sites and Rabbit-Warrens on Dartmoor, Devon', *Medieval Archaeol.,* X (1966), 141.

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A Medieval Pottery at Church End, Flitwick, Bedfordshire

D.C. MYNARD, M.R. PETCHEY and P.G. TILSON*

SUMMARY

The excavation of a dump of kiln material is described. The pottery, in a hard grey sandy fabric, consists principally of bowls, but cooking-pots, jugs and fish dishes were also made. A fifteenth century date is ascribed to it.

INTRODUCTION

Flitwick is a village three and a half kilometres south of Ampthill. In recent years it has become a dormitory suburb of Luton and Bedford, and considerable building work has taken place, especially over the last decade. In 1975 wasters were discovered during the construction of 7, Church Lane, NGR TL 032 342. A kiln site was assumed to be adjacent and so further, though limited, investigation took place over two days in July of that year.

The site lies in Church End, one of the three medieval nucleii of Flitwick, on the northern slopes of the river Flit, its nearest source of water (Fig 1). Most of the parish of Flitwick lies on the Lower Greensand, but there are patches of Boulder clay and Oxford clay in the north, which were presumably utilised by the potters, even though they are more than a kilometre from the site. In the same area an eighteenth-century brickmaker was permitted to extract clay for a brick kiln site, also at Church End.

Unlike many of the local woods, which are nineteenth-century plantations by the Dukes of Bedford, Flitwick Wood displays many of the indications of medieval woodland. The earliest pre-enclosure maps[2] show it much in it s present form; it s plan has the sinuous boundaries with occasional re-entrant angles that typify the medieval wood. A wood-bank may be noticed in some areas, as well as some coppice stools. Finally, there is present a wide variety of species.[3] It may be assumed therefore that Flitwick Wood, 0.9 kilometres north-west of the site, was the source of fuel for the kiln since no other medieval woodland is suggested in the earliest maps.

There is no direct documentary evidence of pottery production in medieval Flitwick, but on a number of occasions between 1458 and 1468 Henry Potter appears both as a participant in land transfers and as a witness to them.[4] By the fifteenth century, surnames were becoming attached to individuals for dynastic reasons, rather than as actual descriptions of their profession. Furthermore this Henry Potter lived at East End, not Church End, so is unlikely to be himself the potter of the site under discussion. However, the appearance of 'Potter' as a Flitwick surname in the fifteenth century must have some small significance.

THE EXCAVATION

Two trenches were excavated immediately adjacent to and parallel with the rear wall of the plot, both 6m long by 1m wide and separated by a baulk 1m long. Both trenches were similar in their results. After removal of a thin covering of turf and topsoil, a layer consisting mainly of pottery in a black charcoaly sandy matrix was encountered, 0.5m deep and immediately above natural sand and gravel.

The layer of pottery is interpreted as a dump of wasters from an adjacent kiln. The two trenches hit the centre of the dump since its edges were not found, and no evidence of sloping layers was noted.

This suggestion is confirmed by the shortage of basal sherds when compared with rim sherds (see below). Being slightly heavier than rim

*The excavation was undertaken by PT, MRP supervised the processing of the pottery and the analysis is the joint work of DCM and MRP.

sherds, basal sherds would have tended to roll to the bottom and edges of the dump and are thus under-represented from a sample taken from its centre.

THE POTTERY

A total of 175.19 kilograms of sherds were recovered. Finds from both trenches are treated as coming from the same context. For the purpose of this report all the finds were treated as if they are the product of the adjacent kiln or group of kilns over one discrete period, though the occasional sherd of earlier date has crept in as, for example, those in type L.

The finds were sorted into fragment type, then into vessel type, and the weights of each group recorded. The results are tabulated at the end of the discussion of each form type. Those rims that were large enough were measured; the results are tabulated in the histograms in Figure 5.

FABRIC

The fabric is a typical late medieval hard grey sandy one, varying in surface colour from a light grey to a dark grey/buff colour, though the fabric is uniformly light grey in the break. There are some small grains of quartzite as inclusions, more rarely larger grains, and grog was not noted.

FORM

The sherds were divided among types of vessel fragment as follows:

Type	Weight (kg)	Percentage of total
Body sherds	120.94	69
Rims	27.05	15.4
Bases	14.49	8.4
Handles	10.89	6.2
Miscellaneous	1.82	1

(includes glazed body sherds and tile fragments)

It will be immediately noticed that there are considerably fewer bases than rims, whereas it might be expected that the proportion in a dump of kiln waste would be roughly similar.

This imbalance, as recorded by weight, might have hidden a true balance of numbers of fragments from complete vessels. This possibility was checked by taking a five per cent sample by weight of all rim and base sherds, and measuring the percentage of a complete vessel that each sherd represented, a measurement known as rim equivalence. The total rim equivalence of both the 5 per cent samples were then compared. The results were as follows:

Type	Weight (g)	Rim Equivalance (%)
5% bases	725	210
5% rims	1335	448.5

It is quite clear that there are therefore approximately only half as many basal sherds as there should be. The easiest explanation of this is that the sample of kiln pottery is biased because it comes from the centre rather than the edge of the kiln dump, where the slightly heavier basal sherds would have rolled (see above).

Only the rim sherds can tell us the proportions of the various vessel forms, which were as follows:

Form	Weight (kg)	Percentage of total
Bowls	14.74	54.5
Jugs	8.91	32.9
Cooking pots	3.09	11.4
Fish dishes	0.20	1.2

The predominance of bowls is to be expected in a group of pottery of fifteenth century date for the wealth of south-eastern England in the late medieval period enabled alternative materials to be used for cooking vessels, the predominating vessel of earlier centuries. It is apparent also at the kiln site in Higham Ferrers.[5]

The various rim forms are now analysed by vessel type. In addition, handles will be considered simultaneously with jug rims, to avoid separating discussion of different features of the same vessel type.

Bowls

Type A (Fig 2 nos. 1, 2, 3, 4)
This is the most common type, and at the same time the hardest to define. A small thickened flanged rim is occasionally undercut. The vessel is either straight sided (2, 4) or has a slight change of angle just below the rim (1, 3). The rim itself can be either rounded (3, 4) or squared (1, 2) on the outside.

Type B (Fig 2 no. 5)
This thickened flanged rim is allied to type A, but is noticeably smaller and squarer.

Type C (Fig 2 nos. 6, 7)
The rim of this type is once again flanged but unthickened; both straight and broken-sided vessel forms have this rim.

Type D (Fig 2 nos. 8, 9 and 10)
Type D rims are as type C, but have a groove in the flange, perhaps for a lid seating.

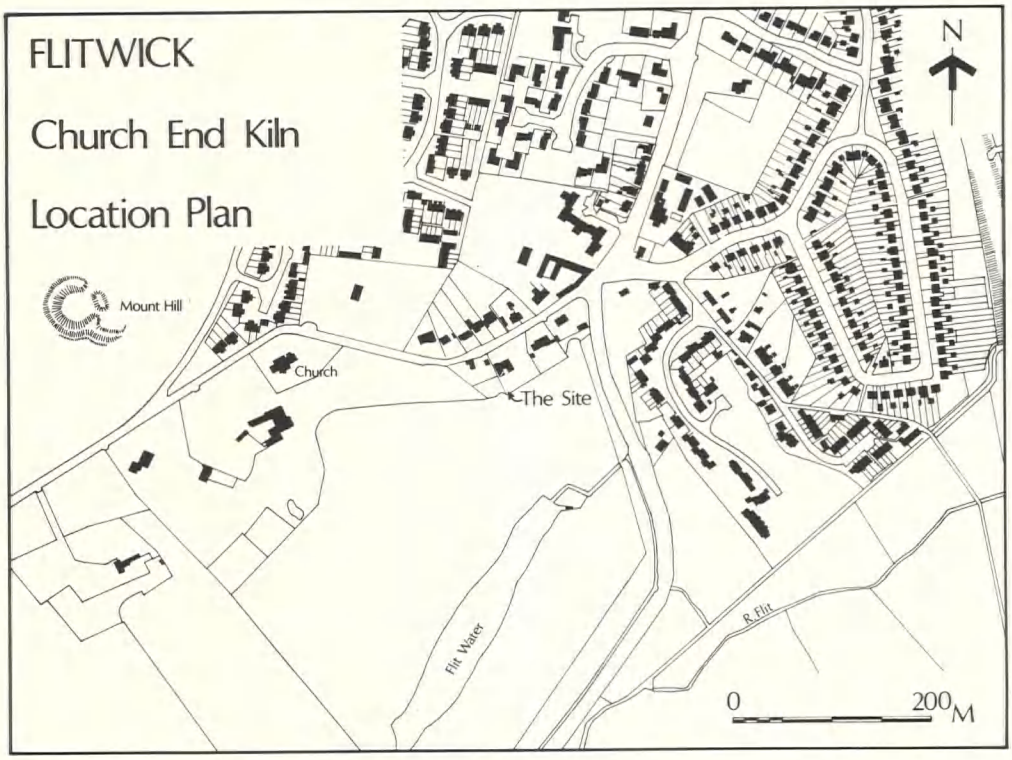

Fig 1 Flitwick: Plan showing location of kiln site.

Type E (Fig 2, nos. 11, 12, Fig 3 no. 13)
This is the most numerous of the two bowl types without flanged rims. It is formed by a simple thickening and rounding of the body of the pot.

Type F (Fig 3 no. 14)
Type F is distinguished by an unthickened, grooved rim.

Type	Weight (kg)	Percentage (of all bowls)
A	10.91	74
B	0.18	1.2
C	1.02	6.9
D	1.48	10
All flanged bowls		92.1
E	1.11	7.6
F	0.05	0.3
All unflanged bowls		7.9

Bowls ranged in size from 6 inches to 19 inches[6] apparent diameter (Fig 5), though the figures are, of course, distorted by wasters. The mean diameter was 14.54 inches, with a standard deviation of 2.462 inches. The majority of Flitwick bowls were therefore between twelve and seventeen inches in diameter.

Cooking pots
The principal cooking pot rim shape at Flitwick is a simple straight everted rim, variations on which are found on 88.3 per cent of cooking pots.

Type G (Fig 3 nos. 15, 16) is the basic straight everted rim, either rounded, (15) or squared (16).

Type H (Fig 3, nos. 17, 18) is the same rim but dished for a lid seating, and again either rounded, (18), or squared, (17).

Type I (Fig 3, no. 19) is the basic type G form, but with pie-crust decoration and slightly undercut.

Type J (Fig 3, no. 20) presents a variation on Type H but chamfered and undercut on the exterior.

Type K (Fig 3 no. 21), has a noticeably shorter everted rim, mostly undercut.

Type L (Fig 3 nos. 22, 23). Other everted rims have been placed into this category. The illustrated examples are appreciably earlier in form than the

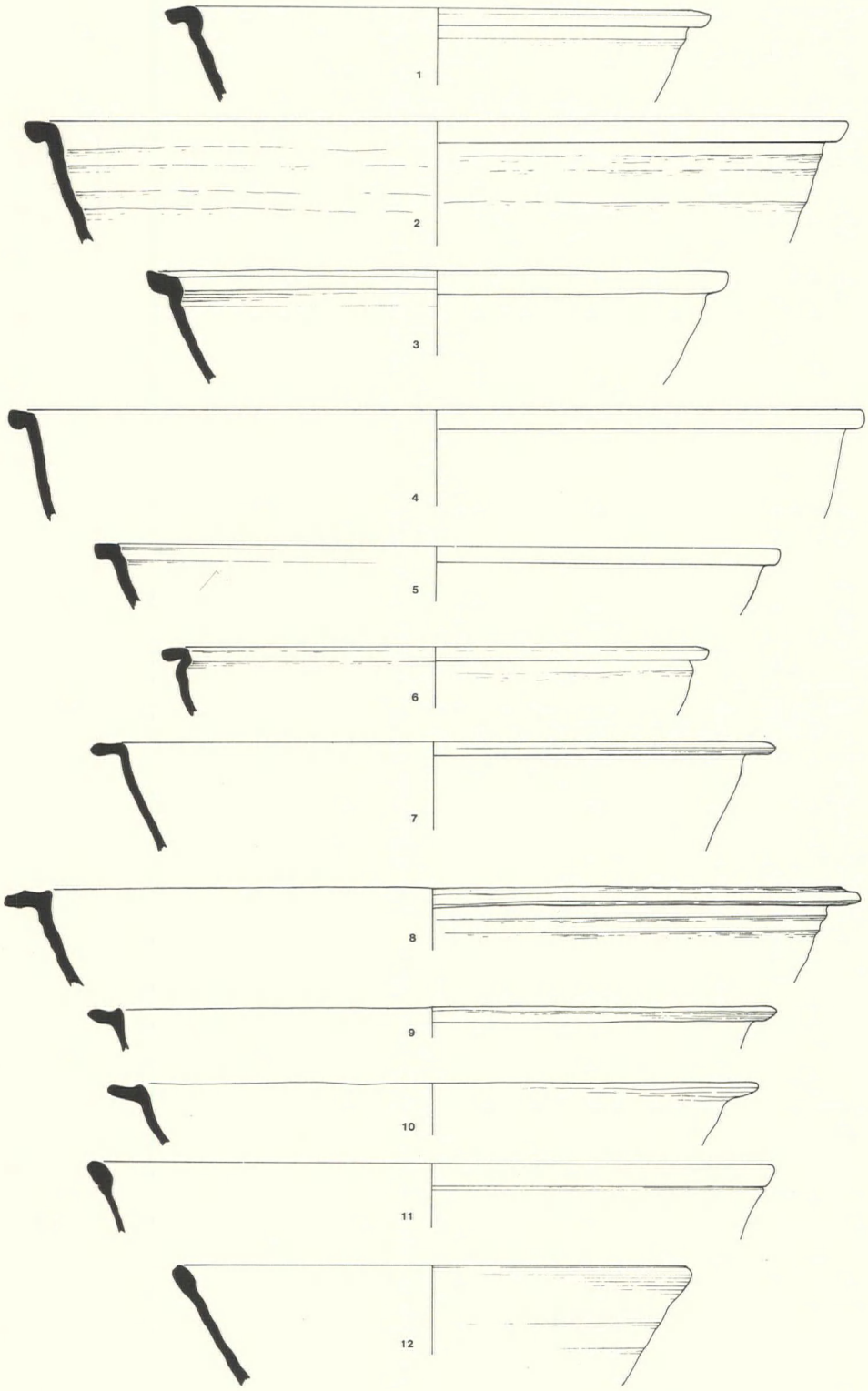

Fig 2 Flitwick: Bowls from Church End. (Scale ¼)

rest of the kiln material and are presumably strays from an earlier kiln.

Type M (Fig 3 no. 24) is a flat-topped everted rim type.

Type N (Fig 3 no. 25) has an upright and slightly thickened rim.

Type	Weight (kg)	Percentage (of all cooking pots)
G	0.72	23.0
H	0.73	23.6
I	0.35	11.3
J	0.30	9.7
K	0.53	17.2
L	0.21	6.8
M	0.11	3.6
N	0.25	8.1

Cooking pots ranged in size from 5 inches to 10.5 inches in rim diameter (Fig 5). The mean was 6.8 inches but a standard deviation of 2.5 inches shows a wide range of sizes. Slight peaks in the graph at 6 inches, 7 inches and 8 inches might suggest standard sizes being aimed at if not achieved.[7]

Jugs

Jug rims were not greatly differentiated and the three principal rim forms are found in much the same proportions.

Type 0 (Fig 3 no.26) has a small squared flanged rim.

Type P (Fig 3 no. 27). In type P the flange declines to outward rounded thickening of the rim.

Type Q (Fig 3 no. 28, 29) represents a further change, in which the thickening developes into a traingular flat-topped shape.

Type R (Fig 4, no. 30) has an upright unthickened rim.

Type	Weight (kg)	Percentage (of all jugs)
0	2.91	32.7
P	2.06	23.1
Q	3.32	37.3
R	0.62	6.9

As rim size is not a function of vessel size in jugs, the majority of jug rims fall within a narrow compass (Fig 5). The mean diameter was 4.32 inches, standard deviation was 1.03 inches, so the majority of jug rims must lie between 3.25 and 5.25 inches in diameter.

Handles

Flitwick handles have a wide variety of decoration, but all except one type are based on strap handles.

Type A (Fig 3, no. 27) undecorated strap handles.
B (Fig 3, no. 26) single column of oblique slash.
C (Fig 4, No. 31) single column of stabbing.
D (Fig 4, no. 32) single groove.
E (Fig 4, no. 33) multiple slash.
F (Fig 4, no. 34) multiple groove.
G (Fig 4, no. 35) single slash with parallel furrow.
H (Fig 4, no. 36) single slash with stabbing.
I (Fig 4, no. 37) multiple slash and groove.
J (Fig 3, no. 29) multiple stabbing and groove.
K (Fig 4, no. 38) undecorated rod handle.

The relative proportions of these forms are difficult to quantify because measurement by weight is distorted by attached rim or body fragments, but there is no equivalent to the 'rim equivalent' method to measure handles. The measurements have accordingly been laid out in two columns; one describing handle fragments and the other handles attached to rims.

Handle Type	Handles without rims		Rims with attached handles	
	Weight (kg)	Percentage	Weight (kg)	Percentage
A	3.92	36	2.6	49.1
B	3.64	33.4	1.95	36.8
C	0.2	1.8		
D	0.09	0.8		
E	0.65	6		
F	–	–	0.3	2.8
G	0.21	1.9		
H	0.38	3.5		
I	0.11	1		
J	–	–	0.15	5.7
K	0.04	0.4	0.3	5.7
Unidentifiable	1.65	15.2		

Cisterns

Some of the jugs might more properly be called cisterns as a small number of bungholes was found. They were decorated in the usual way with a number of thumb-pressed frills to the exterior thickening.

Fish dishes (Fig 4, no. 39, 40, 41)

A small proportion of the Flitwick kiln's output was devoted to producing fish dishes, none of which displayed a complete dimension except height from base to rim. All had a pie-crust rim.

Bases

Both thumbed and unthumbed bases were found

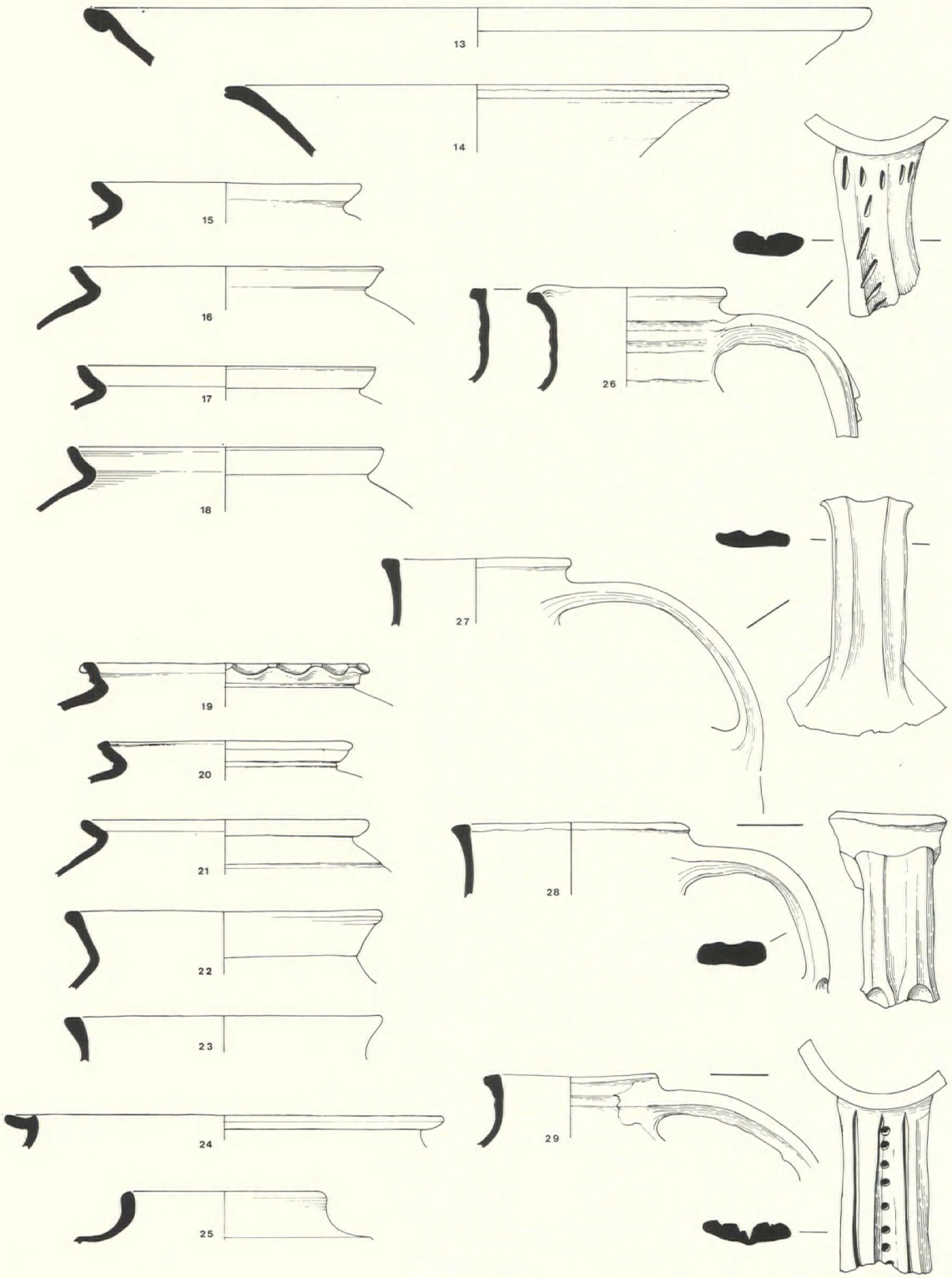

Fig 3 Flitwick: Bowls, cooking pots and jugs from Church End. (Scale ¼)

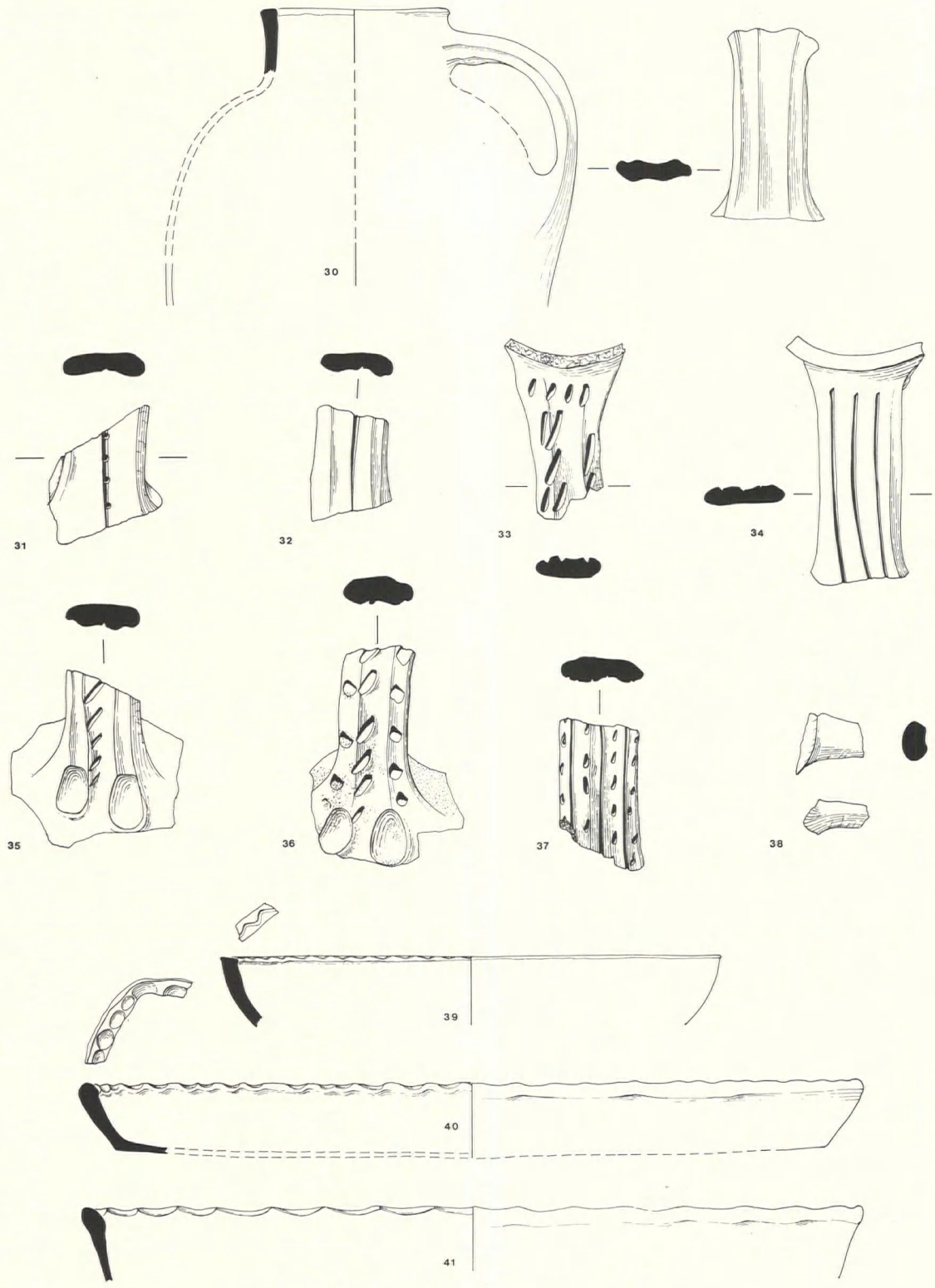

Fig 4 Flitwick: Jugs and fish dishes from Church End. (Scale ¼)

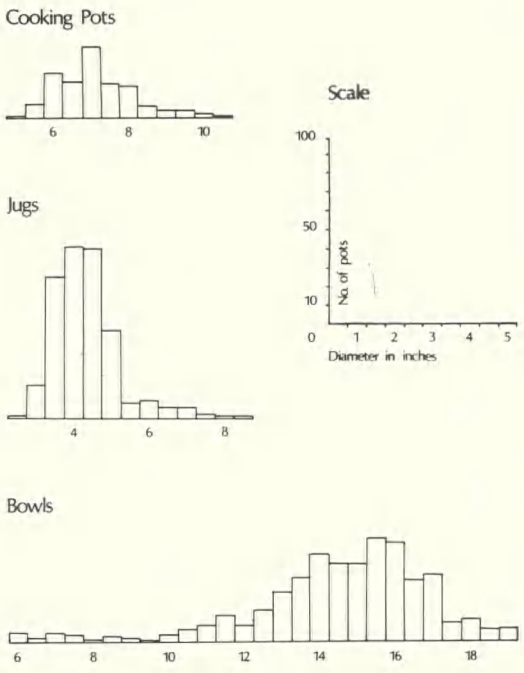

Fig 5 Flitwick: Histograms of rim diameter (to the nearest half-inch) of vessels from Church End.

in the following proportions:

Type	Weight (kg)	Percentage	Mean diameter	Standard deviation
Thumbed	2.86	19.7	7.493	1.406
Unthumbed	11.63	80.3	7.3	1.375

It is therefore to be presumed that not all jugs had thumbed bases, or they would have taken a higher percentage of base output, as over a third of Flitwick vessels were jugs.

There is no significant difference, by any statistical test, between the sizes of thumbed and unthumbed bases, and it must therefore be presumed that all vessels had a one-in-five chance of being decorated with a thumbed base.

DECORATION

There was no decoration found save for the occasional girth grooves around the shoulders of cooking pots and jugs, and a small amount of glazing.

The only recognisable form found glazed were jugs, usually with a dark green glaze straight on to the body, though one handle had a white slipped under-glaze. Only 0.9 per cent of all sherds (by weight) were glazed, or if assumed to be all from jugs, 2.8 per cent of all jugs.

DISCUSSION AND DATING

The slight extent of the excavation does not allow for many conclusions concerning the nature and extent of the kiln site. It is, however, possible to comment briefly on its location. Like most potteries in the South Midlands, the Flitwick kiln site is in the heart of the village nucleus, just as are those of Everton, Higham Ferrers, Brill, Harrold, Potterspury[8] and many others. This may be contrasted with the location of kilns in Essex or Kent where, though still a rural industry, they are set well away from areas of settlement, often on parish boundaries as, for example, the Mill Green, Mile End, or Sible Hedingham potteries in Essex.[9]

In the siting of the Essex potteries principal consideration seems to have been given to ease of access to markets, so that location close to a main road seems to have been important, and to the immediate availability of the three essential raw materials: water, clay and wood. Mile End lay in an area of royal forest; two areas of ancient coppice woodland can be identified within half a mile of the Gosfield kiln, an outlier of the Sible Hedingham industry.[10]

By contrast, the only immediately accessible material available to the Flitwick kilns was water from the River Flit. Both clay and wood must have been brought across the fields by cart to the site.

The difference must be related to the different field systems in operation in the two areas. The area of the South Midlands is the paradigm of champion country: the classic two or three common field cultivation system. There is strong evidence to suggest that much of the Essex landscape was enclosed at a very early date, and draws on boundaries existing in the pre-Roman Iron Age.[11] Whether the difference in kiln location is to be attributed to the tenurial or economic differences expressed by the difference in field systems i probably never likely to be elucidated.

The site did not produce any absolute dating evidence: the pottery must therefore be placed in context by parallels drawn from other sites in the region.

Shelly wares remained the principal fabric type in use in the South Midlands until the thirteenth century. The Flitwick pottery falls into a group of later medieval grey sandy wares, made in the region

at sites such as Potters' Lyveden, Everton or Higham Ferrers[12] during the fifteenth century.

These wares form part of the local tradition recently defined by Stephen Moorhouse, and called by him 'East Midlands late medieval reduced ware'.[13]

Although Moorhouse knew only of the kilns at Great Brickhill, the western outlier of the tradition, his general description of the area of distribution of the type is still valid. It seems confined to the Ouse and Nene valleys, though not present at either Northampton[14] or Cambridge in any quantity.

The Flitwick forms too are similar to the products of the other kilns in this tradition. Most useful for the purposes of comparison are the products of the kilns at Potters' Lyveden and Higham Ferrers, to both of which independent dates have been attributed. Flanged bowls were the largest single form at Higham Ferrers as at Flitwick. The major forms parallel Flitwick types C and D, a wide narrow flange, occasionally as in Flitwick type D with a groove in the upper side of the flange. However, these types form less than twenty per cent of flitwick bowls. Potters' Lyveden fabric 'C' bowl forms are in general similar, the three principal rim forms being the wide flange, narrower flange and the upright thickened varieties, paralleled by Flitwick types C and D, A and B, and E and F respectively. No information is presented on the relative frequencies of these types at Potters Lyveden.

Cooking pots are scarce at Higham Ferrers: only three forms are illustrated: one form is unrepresented at Flitwick, another is Flitwick form G and the third Flitwick form J.[15] Similar cooking pots are found in Potters' Lyveden C ware.[16]

The Potters' Lyveden C ware jugs exhibit rather more sophisticated rim forms than Flitwick jugs; on the other hand the repertoire of handle decoration is considerably less extensive, probably because the diamond-sectioned handle, unknown at Flitwick, does not lend itself to the exuberant decoration seen on Flitwick strap handles. At Higham Ferrers the jugs have simpler rim forms and the handles are mostly plain and undecorated.

It can be suggested therefore that the Flitwick material broadly parallels that from the two dated kiln sites at Potters' Lyveden and Higham Ferrers. Type C ware at Lyveden is dated in the fourth report on the site in two separate places as 1400-1500 and 1420-1470.[17] There are documentary references to potters at Higham Ferrers in 1436 and 1467,[18] so presumably a similar 1400-1500 date is applicable there, and might be extended also to the Flitwick pottery.

However, some of the Flitwick forms suggest earlier antecedents. The extensive repertoire of handle designs is much more reminiscent of the fourteenth century Potterspury repertoire than anything from the more austere fifteenth century.[19] Again, in some of the Potterspury ware bowls and cooking pots from Wythemail, there dated to the fourteenth century, can be seen the antecedents to the Flitwick cooking pot and bowl forms.[20] It might be prudent, therefore, to suggest that the kiln which produced the waster dump material under discussion started production a little earlier than Lyveden or Higham Ferrers, in the last quarter of the fourteenth or first quarter of the fifteenth centuries. It may therefore be argued that the present kiln at Flitwick flourished for some time between 1375 and 1500.

Recent excavations in Bedford have produced many examples of this ware, percipiently ascribed not to any of the then known sources of its type but to an unknown, more local, kiln,[21] which we suggest is at Flitwick.[22]

POSTSCRIPT NOTE

Since writing the above in 1979, a further small piece of evidence has come to our attention which throws a little more light on the organization of the Flitwick pottery industry. The valor of the estates of Edmund Grey, Earl of Kent, taken in 1468, includes in the accounts for Ampthill a reference to claypits, which because they were temporarily untenanted were not contributing to that year's income from the estate. Ampthill is the parish abutting Flitwick to the north, the area from which we surmised the potters' raw material must come. The Greys also owned lands in Flitwick, accounted for under Ampthill.[23]

ACKNOWLEDGEMENTS

The excavation was undertaken by members of the Bedford Archaeological Society. The processing was carried out by many volunteers from Bradwell Abbey Field Centre, Milton Keynes and the Milton Keynes Development Corporation Archaeology Unit, among whom Ross Tyrrell should be especially mentioned. Figures 2, 3 and 4 are the work of June Burbidge. The manuscript was typed by Anne Mynard and Doreen Eley.

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NOTES

1 Cox, 1979, 81.
2 e.g. Beds. C.R.O. map R1/250 of 1793.
3 These indicators are drawn from Rackham 1976, pp 107-134.
4 Beds. C.R.O. document LL. 1/48-51.
5 Hall, 1974, p.
6 All rims were measured in inches, as they presumably were by their manufacturer.
7 cf. Couchman 1976, p 177.
8 Everton: Hassall 1976
Higham Ferrers: Hall 1974
Harrold: Hall 1972
Potterspury: Mynard 1972
9 Mill Green: Sellers 1970
Mile End: Drury & Petchey 1975
Sible Hedingham: Webster & Cherry 1974
10 Couchman, 1976.
11 Rodwell, 1978.
12 Lyveden: Steane & Bryant, 1975
Everton: Hassall 1976
Higham Ferrers: Hall, 1974
13 Moorhouse, 1974.
14 Williams, 1979, 163.
15 Hall, 1974, nos. 214, 215 and 213 respectively.
16 Steane and Bryant, 1975, type C CR1 and no.3.10.
17 Steane and Bryant, 1975, 91 and 94.
18 Hall, 1974, 56.
19 Mynard, 1970.
20 Hurst and Hurst, 1969.
21 Baker *et al*, 1979, 212-217.
22 Jack (ed.), 1965, 107.
23 Paper submitted October 1979, postscript written September 1982.

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NOTES

A polished stone axe from Streatley

JAMES DYER

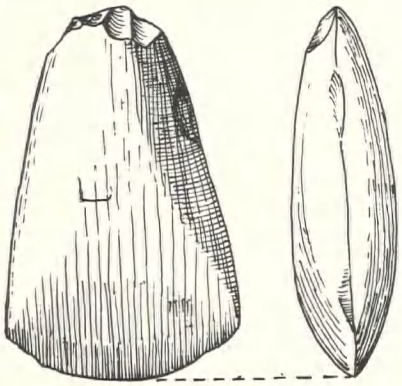


Fig 1 Greenstone axe from Streatley. (Scale ½)

The polished greenstone axe illustrated was found at Streatley in 1976 north-east of the point where the track of the old Bedford Road crosses the Streatley – Barton Hill Farm road (TL 085-285), and about 1 km north-west of the ring ditches excavated at Barton Hill Farm in 1954-5 *(Beds. Arch. J.,* 1, 1962, 1-24). It is now in the possession of Mr James Ashley-Cooper of Hexton Manor.

The axe is quite small, measuring only 9.5cm long and 5.6cm wide. It has been thin sectioned by the Implement Petrology Committee and belongs to petrological Group VI: the well-known axe factories of the Langdale area of Cumbria. Twenty-two Bedfordshire axes have now been thin sectioned, and Dr W.A. Cummins, Chairman of the Committee, reports that eleven of them belong to Group VI. Five come from Cornwall and two from Charnwood Forest. The origin of the others is still uncertain. The dominance of the Langdale axes reflects the national distribution. They are mainly concentrated around the mouth of the Humber, and the Bedfordshire examples may have reached the county by way of the east coast and the Great Ouse valley.

Iron Age features at Radwell gravel quarry

DAVID HALL and JOHN HUTCHINGS

During 1972-4 gravel working at Radwell (TL 010574) uncovered a multiperiod site ranging from the Bronze Age to the Roman periods. The site, lying on the gravel terraces of the Ouse in the northern part of the County, has already been described in the account of the Bronze Age and Roman discoveries.[1,2]

A small quantity of Iron Age material was also discovered. The remains revealed in 1972, consisting of an Early Iron Age cremation, a Belgic ditch, and four first-century AD burials, were also published in the first report.[3]

In 1973 further Iron Age material was recovered. The principal remains consisted of a domestic

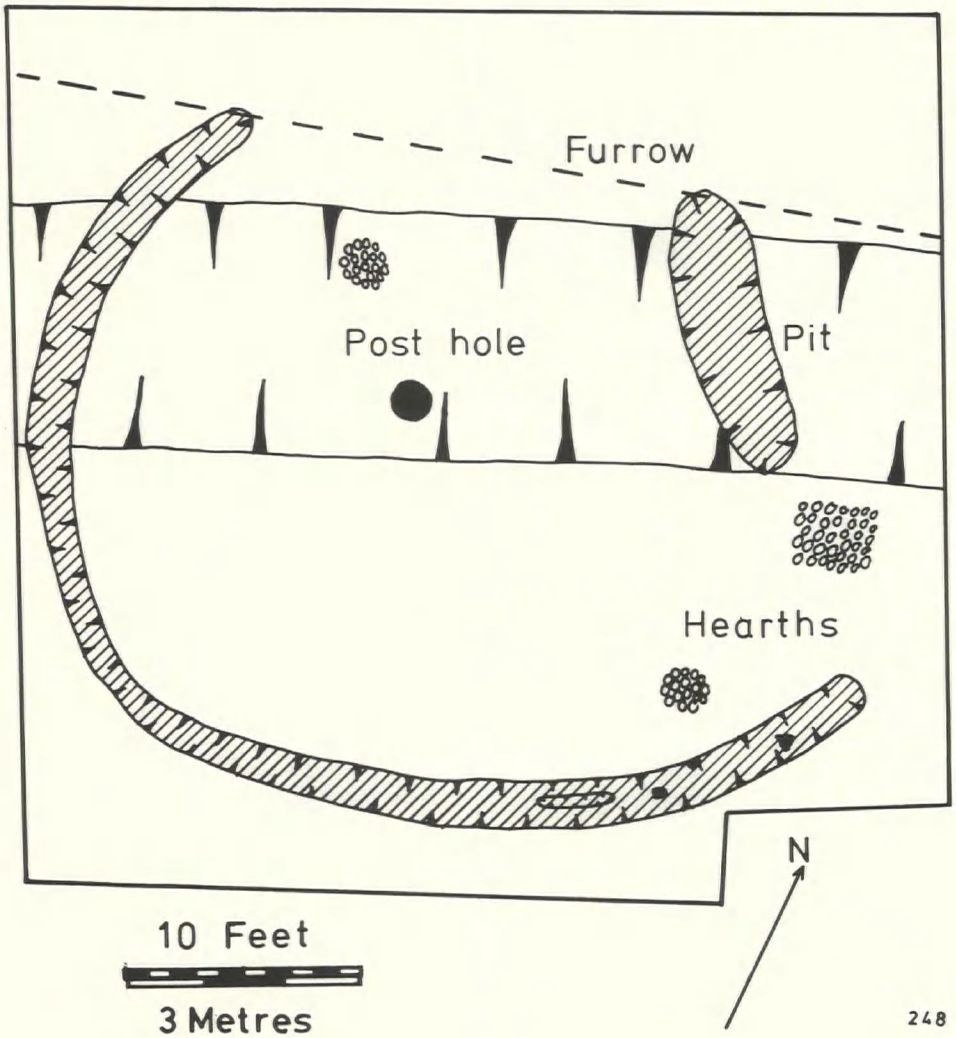


Figure 2 Iron Age features at Radwell Gravel Quarry

hut site. Rather unusually, this comprised of a ditch describing a semi-circle only (Fig 1). The width was about 0.6m and the depth varied from 0.1m to 1.0m, measured from the top of the gravel subsoil. The diameter of the circle was 11 metres, in the centre was a post hole 0.5m deep and 0.5m wide. Along the open side were three areas of ashes and burnt stones representing hearths.

No trace of any structure was found on the inside of the ditch. Indeed, the depth of the ditch and its steep sides, often vertical, strongly suggest that it was a pallisade trench and not a drip gully. Presumably the 'open' side was completed with a flimsy structure such as wattle, which did not penetrate the subsoil.

Outside the hut was a pit 3.7m long and 1.1m wide, but no stratigraphic evidence survived to show whether it was contemporary with the hut or not.

The ditch and pit were filled with dark deposits containing the usual debris of ash, charcoal, food, bones, and potsherds. The period of occupation would appear to be during the third and second century BC. Although large pottery sherds were found, all were from vessel bodies, and are not very diagnostic, and have not been drawn.

The gravel workings have now moved away from the area of intensive settlement, and no further discoveries seem likely in the immediate future.

ACKNOWLEDGEMENTS

We are grateful to Messrs Radwell Gravels for continued access to the quarries, and to P.W. Martin and A. Goldsworthy for help with the excavation.

NOTES

1 'Radwell excavations 1974-1975 : the Bronze Age ring ditches' David Hall and Peter Woodward, *Beds. Arch J.*, 12 (1977) 1-16.

2 'Rescue excavations at Radwell gravel pits 1972', D.N. Hall, *Beds. Arch. J.*, 8 (1973) 67-91.

3 Hall, *loc. cit.*, f.n.2.

Romano-Saxon Pottery: a critical note

DAVID H. KENNETT

In an article in 1956, J.N.L. Myres suggested that a group of pottery in typical Roman fabrics but with decoration possibly suggesting a Germanic influence on its production, could usefully be regarded as indicative of a cultural influence by Germanic settlers in Britain on the highly-specialised pottery industry of the province.[1] Since then, the thesis has been made more elaborate to the extent that one scholar has suggested that this pottery, termed by Myres 'Romano-Saxon Pottery', forms part of an evolving craft from late Roman to early Saxon.[2]

It is easy to see how pots with dimples arranged in patterns suggestive of pottery of a date anything up to a century beyond that of the wares under consideration might be regarded as precursors of the finger-tip ornament found on Saxon pots. It is tempting to suggest a relationship between Roman pots with a band of diagonal grooves and similar decoration found on Saxon pots. The presence of stamps and bosses on Roman pots could be construed as a continuum which precedes their occurrence on Saxon pots. Yet one problem of these Roman pots lies in their fabric.[3]

There seems to be no suspicion of the adoption of other than good Romano-British fabrics, often of the best quality. There is no hint even that these products use the friable fabrics of the native pots which are found on Roman sites. And irrespective of their date, the stamps and the bosses which are found on these pots seem far removed from these found on Saxon pots.

Late Roman stamped wares in Britain are as yet imperfectly understood; yet it seems evident that there is as great a range here as from continental sites on the borders of the Roman Empire.

There is another more considerable objection to regarding these wares as implying a Saxon connection. Probably more than five thousand Saxon cremation urns have been excavated and preserved, yet not one single sherd of this material has so far been published from an Anglo-Saxon cemetery.[4] Roman pots are used as cremation containers by fifth and sixth century Saxons; but these are pots of the second or even the first century.[5]

In this context, it is perhaps significant that the objections hitherto raised to the concept of 'Romano-Saxon' pottery have been made by scholars whose experience lies equally with Roman wares as with Saxon.[6]

From the viewpoint of the future settlers rather than that of the contemporary consumers 'Romano-Saxon' pottery is an unhelpful concept. For the pottery of the earliest English, as J.M. Kemble discerned more than a century ago,[7] a very respectable ancestry on the north European littoral can be seen and it did not require the use of the potter's wheel. There is a technological chasm between wheel-thrown pottery and that which is hand-made. The so called 'Romano-Saxon' pottery is wheel-made; its decoration exhibits a regularity possible only when placed on fast-rotating drum. Even the bosses are regularly done on what will

doubtless turn out to be one of several different styles of late Romano-British stamped wares. Their recognition has been long foreshaddowed.[8]

NOTES

1 J.N.L. Myres, 'Romano-Saxon Pottery', in D.B. Harden (ed.), *Dark-Age Britain: Studies presented to E.T. Leeds,* (Oxford, 1956), 16-39. See also J.N.L. Myres, 'Anglo-Saxon Pottery of the Pagan Period', *Med. Arch.,* 3 (1959), 8-13.

2 W. Rodwell, 'Some Romano-Saxon pottery from Essex', *Ant. J.,* 50 (1970), 262-276.

3 Myres, 1956, illustrates the supposed relationships.

4 The vessel from Caistor St. Edmund, Norfolk, may be discounted; it is from the Roman town of Venta Icenorum not from the Saxon cemetery. Myres, 1956, 20, and pl. 4 a.

5 One of the third century was even found as an accessory vessel at Kempston; British Museum, 1891, 6-24, 35.

6 M. Todd, *The Coritani,* (London, 1973), 125 with esp. n.66; P.D.C. Brown, 'Problems of Continuity', in T. Rowley (ed), *Anglo-Saxon Settlement and Landscape* (Oxford, 1974), 16-19. An earlier attempt to meet these criticisms is L. Alcock 'Roman Britons and Pagan Saxons: an archaeological appraisal', *Welsh Hist. Rev.,* 3 (1967), 229-249, esp. 245.

7 His paper in *Archaeologia,* 1856, is reprinted in *Horae Ferales* (1863).

8 D. Charlesworth, 'Three sherds of stamped ware from Aldborough (Isurium Brigantum)', in M.G. Jarrett and B. Dobson (eds), *Britain and Rome;* (Kendal, n.d. but 1965), 41-45; see also a sherd from Ruxox Farm, Maulden, *Beds. Arch. J.,* 7 (1972), 93 and pl. 8.

The Earliest Male Grave at Kempston

DAVID H. KENNETT

INTRODUCTION

The Kempston cemetery has long been recognised as one of the largest and most important Anglo-Saxon sites. It has been described as "a remarkable cemetery from which there an extensive series of relics is exhibited in the British Museum" and as "one of the critical Anglo-Saxon sites".[1] Assessments of its importance, however, have long been based on partial accounts, deriving ultimately from a portion rather than the whole of the surviving material.[2] A total re-evaluation of the cemetery's finds is in progress, a re-assessment which itself derives from an attempt in the late 1960s to collect together all the surviving material remains and to collate these to the several, differing contemporary accounts of the discovery of the cemetery.[3] As the ultimate form of the re-publication of the Kempston cemetery has yet to be decided and as this is unlikely to be ready for submission to an editor much before the late 1980s, the present author has embarked on a series of papers designed to draw attention to the most significant of the reconstructable grave groups. As part of that series of studies, this present paper is offered.

It is well-known that the Kempston cemetery includes three of the earliest Anglo-Saxon brooches in England. In the material in the British Museum are unassociated examples of a stuzarmfibel[4] and an equal-armed brooch.[5] Bedford Museum have an unassociated early cruciform brooch.[6] Each of these has been figured on more than one occasion. None of these items is thought to date to much beyond the middle decades of the fifth century A.D. The deposition of any one could belong to the first quarter of that century.

The present paper seeks to draw attention to a male grave contemporary with these better-known female objects.

KEMPSTON GRAVE 14

Original Record

The primary literary record for the Kempston cemetery is a printed diary of discoveries kept by the local curate, the Rev. S.E. Fitch. This begins early in June 1863 and continues until 8 July 1864, but there is a long gap in the record between 15 June and 20 October 1863.[7]

Among the several graves recorded by Fitch under 15 June 1863 is one noted as:

Grave II. Portions of a knife. Two pieces of bronze, tubular in form, enclosing woody fibre resembling yew; 4½ and 3½ in. long. One showed a rivet-hole. Two pieces of thin bronze, 1¾ in. long, rounded at one end, squared at the other, where was a rivet-hole. A bronze ring with a lipped upper edge : attached to this a piece of flattened bronze, with rivet-hole, as if it had once fastened the same to some leathern article, and the ring acted as a means of uniting it to another end.

Interpretation of Record

a: Knife fragments.
b: Two pieces of bronze, tubular in section, 4½ inches and 3½ inches long.
c: Two pieces of thin bronze, length 1¾ inches, rounded one end, squared the other.
d: Bronze ring, with attached plate.

Description of Objects

With the exception of the knife fragments, these pieces can be identified.

365 Tubular fitting, edging from sword scabbard; bronze unornamented; length 113 mm. (Bedford Museum, acc. no. 3845)

366 Tubular fitting, edging from sword scabbard; bronze ornamented with linear motif of raised lines; length 86 mm.

420 Small strip; bronze; grooved decoration on one face; length 41 mm. (Bedford Museum, acc. no. 3854/ii).

485 Small strip; bronze; no decoration; hole for rivet; length 41 mm. (Bedford Museum, acc. no. 3854/iv).

437 Belt fitting; bronze; ring of stepped cross-section with attached folded rectangular plate held by single rivet; diameter of ring 18 mm; width of plate 9 mm. (Bedford Museum, acc. no.

Discussion of Objects

Bronze bindings from sword scabbards are rarely discovered in Anglo-Saxon graves. There is one from grave 20 at Petersfinger, Wilts.,[8] and one of the six swords known from the cemetery at Droxford, Hants.,[9] has a length of bronze scabbard binding adhering to the surviving (unassociated) object. While from two sites in Hampshire, one may cite two swords with scabbard edging surviving, a more local area reveals no such survival. None of the four swords from Little Wilbraham and neither of those from Linton Heath, both Cambs., have scabbard edging[10] and the same lack of scabbard edging pieces is true of the two complete and the two fragments of the five swords from Kempston originally in the British Museum.[11] Scabbard mouth bindings, often elaborately ornamented, are known from all the sites quoted except for Droxford.[12]

One of the two pieces is plain. The other is

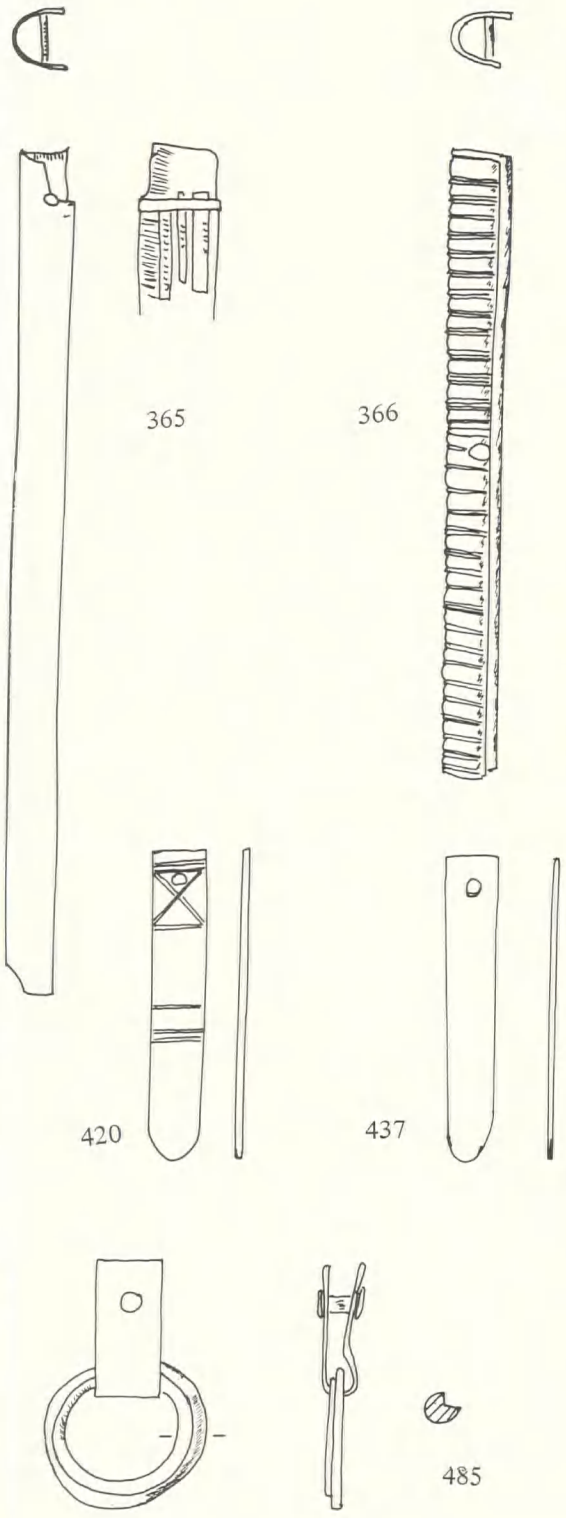


Figure 3 Metalwork from grave 14.
365 Scabbard binding
366 Scabbard binding
420 Strap end
437 Belt fitting
485 Strap end
(scale: full size)

ornamented in a distinctive style. This relates it to a well-known group of tubular mounts, of which the English examples are those found at Dorchester-on-Thames, Oxon,[13] and Milton-next-Sittingbourne, Kent.[14]

The two metal strips could be strap ends from a belt fitting. They are the same size and could have been affixed either side of the end of the same narrow piece of leather. There are a number of similar pieces of bronze bindings from belt fittings among the miscellaneous bronze fragments known from the Kempston cemetery.[15] As with the single ornamented item of the two definitely to be ascribed to grave 14, the ornamental style reminds one of the late Roman style current in the fittings of the man buried in the grave at Dorchester-on-Thames.[16]

The final items among the pieces from Kempston grave 14 is a metal ring with attached plate, a form of belt fitting found at Dorchester-on-Thames both with a plain metal band and with a rosette attachment.[17] The disc attachment plate is an ornamental means of hiding a rivet head.

Discussion of Grave

The comments on the objects have emphasised their individual relationship to certain objects found in a grave at Dorchester-on-Thames, Oxon., a grave which is generally taken to be late Roman in origin, although early fifth century in date. In particular, the ring and attachment plate belong to the series of objects there buried as much as to Kempston grave 14. The other items are akin in style rather than directly comparable but the general relationship is clear. In date, Kempston grave 14 is contemporary with the Dorchester-on-Thames grave.

The accepted interpretation of the Dorchester-on-Thames grave is of a German of officer rank serving in the late Roman army as part of the garrison defending the late Roman town. It has been recognised that this grave lacks ironwork, especially weapons.

The items recovered from grave 14 at Kempston are also clearly an incomplete record of the original burial. The scabbard edging pieces suggest that there was once a sword. The strap end suggest that more elaborate belt mounts may have been present. The single ring and attachment piece points to a more elaborate collection of these items. There are fragments of six such pieces in the Dorchester-on-Thames grave.

THE ORIGIN OF THE KEMPSTON CEMETERY

This incomplete, poorly recorded male grave of the early years of the fifth century raises immense questions, simply by its presence and its delineation.

It provides a ready answer to one nagging doubt about the Kempston cemetery. Three different early brooches, all presumed to be from female graves, have already been quoted. The man in grave 14 at least means that both sexes are represented in the early-fifth-century material from Kempston.

However, each of the three brooch types is one which has affinities with objects found in north Germany and Frisia. The male objects in grave 14 have their affinities with the late Roman world. It may, of course, be that the soldier buried in grave 14 was a German who had served in the late Roman army: there are such graves in north Germany, of which those at Helle, Kr Oldenburg, are the best known from outside the Roman Empire.[18] Most such graves are from the frontier regions: Nijmegen in the Netherlands,[19] various sites in Belgium,[20] Mainz in West Germany.[21] Opinion is that they predate the crossing of the Rhine by the barbarian tribes on 31 December 406. They are rather more richly furnished than the Kempston grave appears to be from the surviving record and the remaining contents.

It is perhaps too far fetched to suggest that grave 14 represents the remnants of the possessions of a man who had served on the European frontier before returning home to north Germany and then migrating to England. It is more probably that his connection with the Roman army was in Britain, possibly even at Kempston itself.

It is tempting to suggest that the origin of the Anglo-Saxon cemetery at Kempston lies in the burial of a German warrior with connections with the Roman army whose military function had been to oversee the guard at the ford over the River Great Ouse which later gave rise to the town of Bedford. It is certainly too great a speculation about which to be dogmatic.

Yet the intriguing possibility remains that the Roman origins of the Anglo-Saxon cemetery at Kempston, as represented by the ill-recorded pieces of bronze in grave 14, can be not merely postulated but also documented.[22]

NOTES

1 R.A. Smith in *V.C.H. Beds.* I (1904), 176; and in British Museum *Guide to* Anglo-Saxon and Foreign Teutonic Antiquities (1923).

2 See note 7 for contemporary accounts; note 1 for the more full summaries.

3 For a preliminary analysis see D.H. Kennett, 'The Anglo-Saxon Cemetery found at Kempston, Bedfordshire: a re-consideration' (typescript, 1968). Copies are available Bedfordshire County Record Office, Bedford, and the Department of Medieval and Later Antiquities, British Museum, London.

4 N. Aberg, *The Anglo-Saxons in England* (1926), fig 11.

5 Smith, 1904, col. pl.

6 E.T. Leeds, 'The Early Saxon Penetration . . ', *Ant J.* 13 (1933), 229-251; pl. 33b.

7 S.E.Fitch, 'Discoveries of Saxon Remains at Kempston', *A.A.S.R.*, 7 (1863-4), 269-299 of which pp. 279-299 is reprinted in C. Roach Smith (ed.), *Collectanea Antiqua* VI (1868), 201-221.

8 E.T. Leeds and H. Shortt, *An Anglo-Saxon Cemetery at Petersfinger, near Salisbury, Wilts.*, (1953), 13-16.

9 F.R. Aldsworth, 'The Droxford Anglo-Saxon cemetery', *Proc. Hants. Field Club* 35 (1978), 138 and fig 33.46.

10 D.H. Kennett, 'Graves with swords at Little Wilbraham and Linton Heath', *Proc. Camb. Ant. Soc.* 63 (1971), 9-26.

11 British Museum, reg. no. 1891, 6-24,75/78/79/80; sword, reg. no. 1891, 6-24, 77 has not been located. There are no swords from Kempston in Bedford Museum.

12 Kennett, 1971, 13-15 with list 24-25.

13 S.C. Hawkes and G.C. Dunning, 'Soldiers and Settlers . .. .', *Med Arch.* 5 (1961), fig 1.3 uppermost item.

14 Hawkes and Dunning, 1961, fig 2 d and e.

15 Bedford Museum, acc. nos. 3854/i, 3854/ii.

16 Hawkes and Dunning, 1961, fig 1.3, 4, 10.

17 Hawkes and Dunning, 1961, fig 1.5-10.

18 J. Werner, 'Kriegergraber aus der ersten Halfte des 5 Jahrhunderts . . .' *Bonner Jahrbucher,* 158 (1958), 372-414, esp. 385-387 with abb. 10-12.

19 Collections of the Rijksmuseum G.M. Kam, Nijmegen, Netherlands. References to the available literature were not to hand when these notes were written.

20 A. Dasnoy, 'La Necropole de Furfooz', Annales de la societie archaeologique de Namur 55 (1969), 121-193; A. Dasnoy, 'La Necropole de Samson', A.S.A.N., 54 (1968), 277-33; A. Dasnoy, Quelques ensembles archeologiques du bas empire provant de la region namuroise', A.S.A.N. 53 (1966), 169-231.

21. Werner, 1958, abb. 19; G. Behrens, Das fruchristliche und merowingerisch Mainz (1950), 17 and abb. 34.

22 Paper completed 28 November 1982; work done in May 1982. Literature sited is that readily available to the author. It is not intended to be comprehensive.

The Excavation of an Iron-smelting site at Easton Maudit, Northamptonshire

DAVID HALL

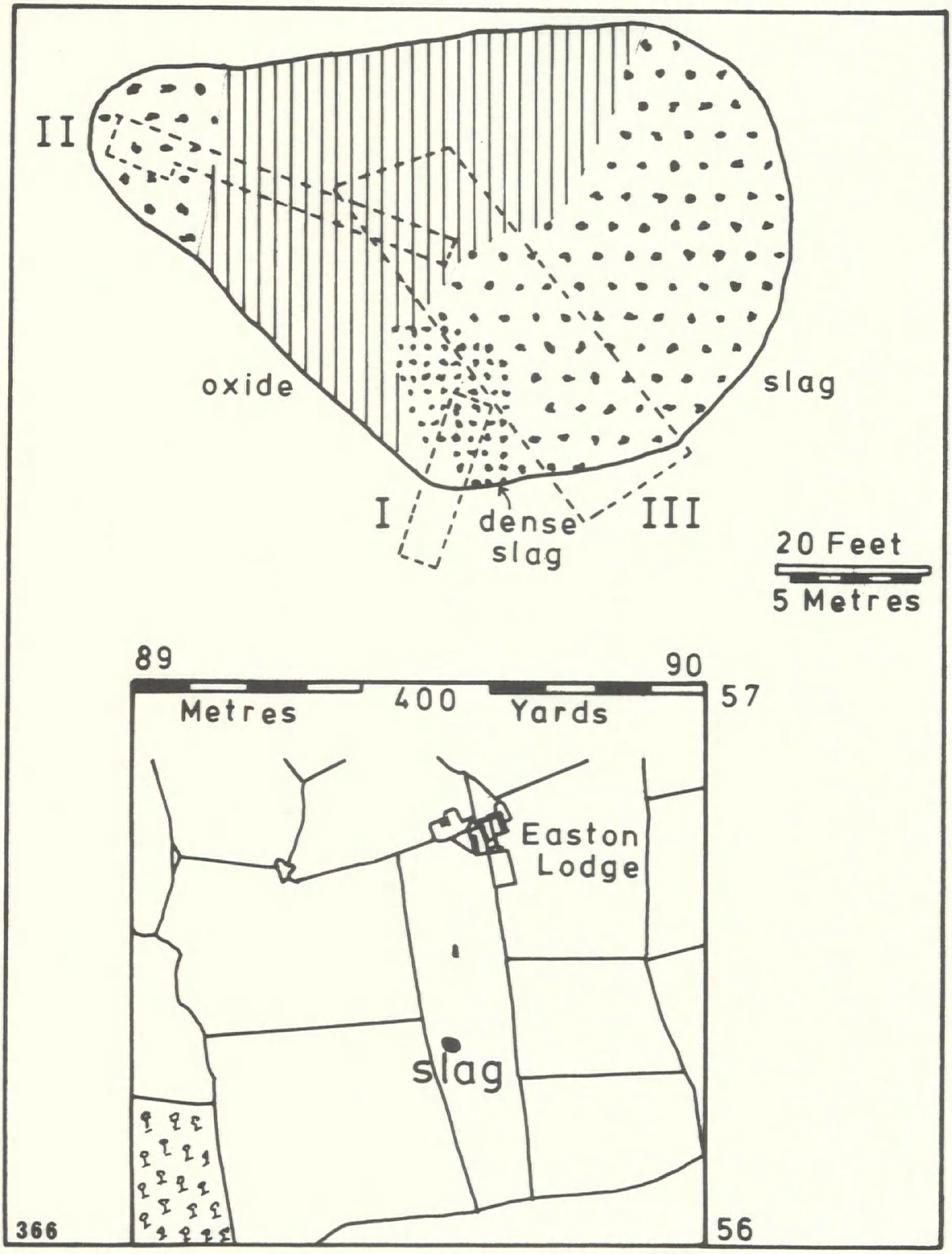
An extensive tract of boulder clay lies between the rivers Great Ouse and Nene, spanning the borders of the counties of Bedford, Buckingham, Huntingdon and Northampton. Place-name evidence and surviving authentic medieval woodland, show that, once, much of the area was forest.

Over most of this woodland area, particularly in Bedfordshire, are to be found iron smelting sites. On the ground the sites are readily detected as dark areas containing charcoal, much dense black iron slag, and sometimes reddish patches of roasted ore. The distribution of the sites has already been given at the state of knowledge in 1972[1] and further discussed recently.[2]

In an attempt to understand the nature and working of smelting sites one of the best examples available was excavated at Easton Maudit, Northamptonshire.

The site, coded E3 in previous publications, lies on boulder clay at 107 metres OD (SP89585-636) in an area with a preponderance of wold names.[3] In 1964 the field had not been long ploughed up from earthwork ridge-and-furrow, and this was still plainly visible as light-and-dark strips.

Figure 1 shows the location and plan of the smelting site, and the positions of the areas excavated in 1964 and 1967. Superficially there was a central reddish area with slag and charcoal at each


II
oxide
slag
I
dense
slag
III
20 Feet
5 Metres
89
90
Metres
400
Yards
57
Easton
Lodge
slag
366
56

end. The whole formed a pear shape of approximate dimensions 28m by 20m. In the southern part of the site was an area too dense for a probe to pass through.

Grid I (1½m by 7m) was dug entirely by hand, as it was considered the most likely region for survival of any structure. The only features encountered were ancient soils, and a dump of tipped slag and klinker mixed with large pieces of charcoal (see Fig 5 for plans and sections). There were also many fragments of burnt clay, lying thicker towards the centre of the smelting area. The subsoil was not burnt, so none of the slag could have lain *in situ.*

Grid II (3¾m by 40½m) was also dug by hand to examine the relation of the main clay area to the various red and black areas. Very little material was left undisturbed by ploughing, modern and medieval. Again no structure was discovered and all the slag had been dumped i.e. did not lie as run off from a furnace. Some of the iron oxide areas were entirely slag free (Fig 5 Grid II section).

A larger area (16m by 5m) was examined in 1967, the topsoil being cleared mechanically. Again all the features (i.e. patches of different coloured soils) were shallow and only just survived. Their condition had deteriorated since 1964. The plan shows the approximate position of the diffuse areas. No structure was detected. The unexcavated area was closely probed to ascertain the presence of stone or baked clay furnace, but none was found. A total excavation was therefore considered worthless.

The excavation demonstrated the following points. The first activity had been the roasting of iron ore: these patches were found at the lowest level and were entirely slag free. The remains discovered were no doubt the 'fines' sieved off to prevent clogging of a charge of ore and charcoal. The local iron ores consist of limonite and siderite, hydrated iron oxide and carbonate respectively, so an initial roasting is essential to achieve a high temperature during smelting.

Dumped on top of the oxide fines were various refuse heaps of charcoal fines and tapped slag. None of the slag was *in situ* because nowhere was the subsoil burnt, and often pieces of slag were upside down. Most of the refuse heaps included broken pieces of burnt red-and-black clay which doubtless represents the fabric of small furnaces. There was clearly no large furnace dug into the subsoil.

Fig 4 Easton Maudit, Northamptonshire, location and plan of iron-smelting site.

The excavation of a surviving smelting 'furnace' at Wakerley showed that the structure can be very small, as little as 20cm in diameter and about 40cm high. Such a structure would be easily destroyed by ploughing, and dispersed. Most of the ploughed smelting-sites are therefore likely to yield little information about structures, but sites where the refuse still lies in abundant heaps are likely candidates for survival such as, Harrold Park Wood, Beds., (SP93825853) and Gretton, Northants, (SP8940-9284).

The charcoal samples were examined at the Department of Forestry, Oxford. The species identified are given in table I.

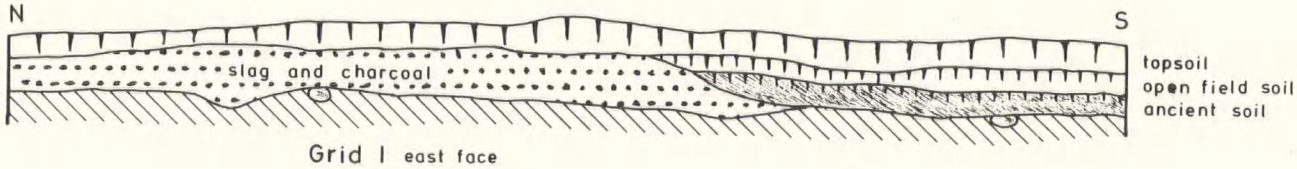
If this represents a true distribution of the species present in the surrounding woodland then it suggests an ancient oak dominated forest There is of course no way of knowing whether it is just that the charcoal burners preferred oak. Even if oak was really the dominant species there is no proof of 'primaeval' woodland; most of the charcoal had been made from small branches and twigs, so that source could equally well have been a forestry-managed coppice, cut down every 20 years or so.

The nature of the slag shows a primitive knowledge of the smelting process, with much loss of iron in the form of intractable silicate, there being no flux added. Typical analyses are:

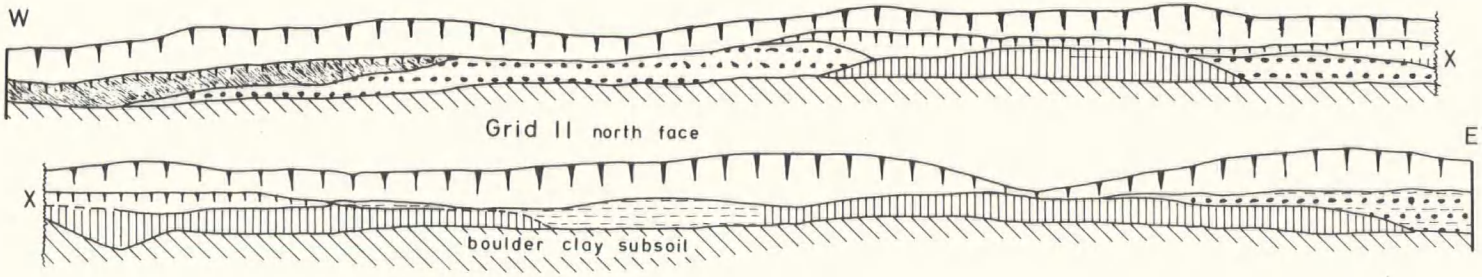
Calcium oxide	(CaO)	5.3	6.4
Magnesium oxide	(MgO)	1.6	1.5
Silicon oxide	(SiO_2)	19.1	21.4
Iron	(Fe)	46.0	40.8

A modern slag would contain no iron, consisting mainly of calcium silicate ($CaSiO_3$).

Samples from site Harrold I (SP956566) examined for iron only (after treatment with hydrofloric and sulphuric acids) gave valves of 45.7% and 46.7% iron. Some of the iron is acid extractable, i.e. must be present as ferrous oxide FeO. Easton Maudit slag gave an acid-soluble value of 12.78 leaving iron present as silicate at an average value of 37.5%. From which it is calculable that the slag has an approximate composition $FeSiO_3$-FeO. The admixture of small quantities of calcium and magnesium which come as accidental impurities in the iron ore accounts

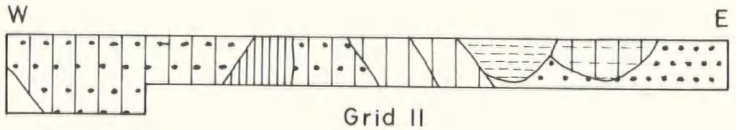


Grid I east face



Sections

0 1 2 3 Feet
0 1 Metre

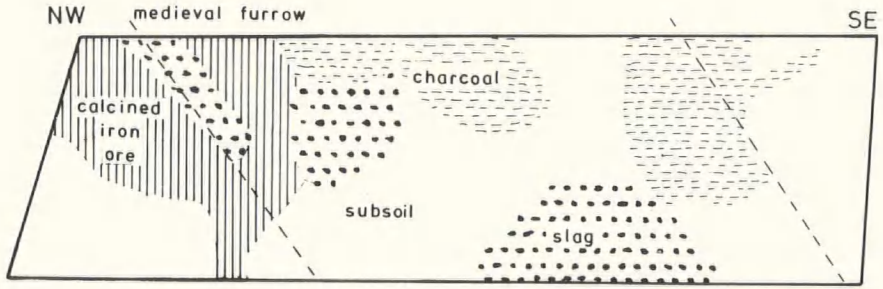


Grid II

S Plans

0 5 Feet
0 1 2 Metres

Grid III



365

TABLE I
Charcoal Samples

Species	1	2	3	4	5a	5b	Total	%
Oak	42	45	19	9	9	9	133	84.7
Hazel	1	1					2	1.3
Willow		1			1	1	3	1.9
Elm				1	8	6	15	9.5
Sweet chestnut					3	1	4	2.5
							157	

satisfactorily for the analyses given above.

If the quantities of slag for each site could be determined (assuming that an average value is taken for the sand content of the local iron ore), then it would be possible to calculate the total tonnage of iron smelted, and thus estimate the minimum amount of wood required.

The melting point of the slag would be at least 1100°C, and this temperature must have been reached juding by the manner the material has run into flat cakes. The two occurring forms of calcium silicate melt at 1540° and 1200°, ferrous silicate melts at 1550°, but a mixture of them would cause an eutectic lowering of the melting point.

The date of the smelting site was ascertained by the radiocarbon method.[5] A sample of charcoal was pretreated with acid and alkali, and using the Libby half life of 5570 years, gave a date of 1240 AD ± 100.

This is consistent with the historical evidence when the area on the periphery of the parish would be expected to be cleared for agriculture by the end of the thirteenth century. The actual date may be slightly before the mean value because the section shows there was an accumulation of an ancient soil on the lower parts of the slag.

The general significance of smelting sites has been recently discussed,[6] clearly they represent a woodland activity, and probably wood clearance. It is expected that they should be found on woodland sites, and not necessarily near the source of iron ore, because it is easier to carry ore than bulky loads of wood and charcoal. Potentially the sites are useful for interpreting the landscape at a given period, but unfortunately there is no easy way of dating them. At Harrold slag was found in context with Iron Age and Roman features, as was the Wakerley material. The Easton Maudit one was clearly medieval. So without a carbon 14 determination on each site no clear answer can be given. The correspondence of slag distribution with areas of known medieval woodland is no proof of a medieval date – there may have been Roman woodland there as well in approximately the same area. Boulder clay is always to be thought of as marginal land, except perhaps very recently.

Nevertheless the recognition and recording of smelting sites and the collection of slag and charcoal samples is essential. At some time in the future, when analysis costs are less, it may be possible to give a more satisfactory interpretation of the landscape implications of these interesting features.

Fig 5 Easton Maudit, Northamptonshire, plans and sections of iron smelting site.

NOTES

1 D.N. Hall and J.B. Hutchings, The distribution of archaeological sites between the Nene and Ouse valleys, *Beds. Arch. J.*, 7 (1972) 6.
2 D.N. Hall, The countryside of the south-east Midlands and Cambridgeshire, CBA Roman Conference at Oxford, January 1981.
3 See note 1, Fig 4 for a plan of the site location.
4 D.A. Jackson, 'Excavations at Wakerley, Northamptonshire, 1972-5', *Britannia* 9 151-66; and 'Roman Iron Working at Bulwick and Gretton', *Northants Archaeology* 14 (1979) 31-7.
5 F.W. Shotten, *Radiocarbon* 17 (1975).
6 See f.n.2.

ACKNOWLEDGEMENTS

I am grateful to my co-excavators Edgar Corby, Nigel Nickerson and Richard Thomas; to J.F. Hughs and T.E. Edwardson of the Department of Forestry Oxford University, for identifying the charcoal samples; to Messrs. Unilever Ltd. and Stewarts and Lloyds, Corby, for analysis of slag samples; and to Professor F.W. Shotten Department of Geology, Birmingham University, for the carbon-14 dating.

I am grateful to Mr. E. Skinner and Compton Estates for permission to excavate.

The Bedfordshire Archaeological Council is indebted to Bedford Museum, the North Bedfordshire Borough Council, and to the Higham Ferrers Hundred Archaeological Society for grants towards the costs of these notes.

The Bedfordshire and Huntingdonshire Landscape, by Peter Bigmore (Hodder and Stoughton, 1979, £8.95).

Volumes in 'The Making of the English Landscape' series are always eagerly awaited. This is the seventeenth volume to appear and the first to consider two counties rather than one: Yorkshire's Ridings it appears will be individually treated. Bedfordshire, as in an earlier series from the same publishers is treated jointly with its north-eastern neighbour, the now superseded Huntingdonshire, and the result is an unhappy conjunction. In the Middle Ages, Bedfordshire and Buckinghamshire shared a sheriff; the eastern parishes of Bedfordshire are indistinguishable from much of west Cambridgeshire; and historically, Luton is akin to north Hertfordshire. Only Eaton Socon, Little Staughton, Pertenhall, and perhaps Bolnhurst and Keysoe merge into Huntingdonshire.

The parishes round these – Colmworth, Dean, Shelton, Swineshead – find no mention in Bigmore's pages, nor indeed do another twenty-two of Bedfordshire's villages, although some not mentioned are marked on the end paper map: Renhold, Roxton, Stagsden and Eyeworth. The eastern fringe is not considered: Stotfold, Henlow and Langford are major omissions. The area of the lesser estates, for example the Carterets at Haynes and Wilstead, receives scant attention, and this leads to the first of several remarkable, and to this reviewer dubious statements. On page 27, Bigmore states:

> Few of the great landed proprietors held large estates in the northern claylands and it is significant that documents held in the County Record Office are much richer from the southern parishes.

Although, north, south and mid are not defined as terms for Bedfordshire, the St John estate at its height covered Melchbourne, Bletsoe, Bolnhurst, Yielden, Keysoe and Riseley, either in part or totally; the Crawley estate although based on Stockwood Park, Luton, included over 4,000 acres in Thurleigh, Keysoe and Little Staughton. Lesser owners like the Francklins at Great Barford and Bolnhurst, the Wade-Gerys at Bushmead, Bolnhurst and Colmworth and the Beechers and the Polhills at Renhold and Great Barford were confined to the north-east of Bedfordshire: each has extensive muniments.

Bigmore's treatment of timber-framed buildings seems to suggest a superficial acquantance with much of Bedfordshire; his comparison with Norfolk (p.169) strikes this reviewer as unreal. It is true that the wealth of buildings in say Great Hockham, Binham St Mary and Pulham Market could be matched by the dearth in Houghton Conquest, Haynes and Ravensden but it could be equalled in numbers and quality of timberwork in Sutton, Silsoe, Harlington, Eversholt, Maulden, Roxton and Tempsford. Similarly his discussion of Someries Castle, near Luton, is confused: the spiral staircase is to the west of and part of the same building as the gatehouse while the chapel is to the east of the gatehouse and of a later date.

Of Bigmore's 215 pages, a mere thirty (pp.32-62) are devoted to the prehistoric, Roman and early Saxon periods. The palaeolithic is dismissed in a sentence; comment on the neolithic and Bronze Age periods is concentrated to the chalk of south Bedfordshire which must now be seen as an imbalance in view of the excavation of ring ditches at Radwell and Roxton. Discussion of the pre-Roman Iron Age is sacrificed for an extended treatment of the Romans, which is marred by confusions about individual sites. For the formative centuries a remarkable and to this reviewer at first unintelligible statement about the Kempston cemetery needs correction. Bigmore writes (p.55):

> At Kempston a large pagan cemetery has produced a number of pots and urns that find their parallel in those uncovered from the camps of mercenary soldiers outside the gates of Roman York and Cambridge.

The origin of the last remark would seem to be *Medieval Archaeology* 14, (1970), 25 where a vessel with chevron-and-dot ornament found at Sandy is compared to urns found at York and Cambridge, but no pots at Kempston have chevron-and-dot ornament, at least from those surviving, or known from Bradford Rudge's illustrations.

Reviewing is a thankless task, and if this notice has concentrated on points of disagreement one

should not detract from the pleasure at seeing the book appear and for the valuable things in it: hedges, Huntingdonshire and post-medieval history seem particularly well-served.

D.H.K.

Survey of Bedfordshire: Brickmaking, a History and Gazetteer by Alan Cox (Bedfordshire County Council and Royal Commission on Historical Monuments, 1979, £2.00).

This publication, a joint venture by the County Council and the Royal Commission on Historical Monuments, begins with a summary of early brickmaking within the county, although until the sixteenth century the evidence comes from the buildings themselves rather than from extant documents. The textbook mythology of large-scale importation during the Middle Ages is not, happily, repeated and Mr Cox rightly urges local manufacture despite the lack of any hard evidence from this particular county (there is plenty from elsewhere). He locates a period of growth from 1600 to 1725, followed by a further period of expansion to 1850; throughout this time brickmaking remained local and small-scale. The period of expansion which Mr Cox locates is probably largely due to the fact that brick prices remained steady throughout the Tudor inflation and beyond, so that in real terms brick became a much cheaper material, although this is not discussed in the book. The part played by the Brick Tax of 1784-1850 is given some discussion, though the visual evidence seems strongly against any serious retardation of the industry by the Tax. Further, as H.A. Shannon has shown, brick manufacture increased markedly throughout the period of the Tax. Its effect on prices is, in any case, impossible to gauge, since its imposition coincided with a chronic rise in all prices due to the Napoleonic Wars. Certainly there is an increase in the number of yards operating after repeal of the Tax, but aggregate figures over a period may be misleading: R.N. Price has shown that in the Manchester area between 1859 and 1870 there was a rapid turnover, with many small yards operating for only a short period before being replaced by others. The directory evidence for Bedfordshire shows an only slightly better situation: of twenty-three brickmakers recorded in 1854 only seven (30%) are mentioned in 1869 (out of a total of thirty-eight for that year). The 'post-Tax' industry was certainly competitive, but given the small-scale nature of most of the yards, such competition may actually have made for a somewhat *less* stable industry than in the Tax years.

In the next section Mr Cox discusses the main forms of operation: temporary works, commercial yards, estate works, and an intriguing parish brickyard at Marston Moretaine. The following section must be one of the best recent discussions of manufacturing methods available in print.

If there was an industrial revolution at all in brickmaking it came only in the second half of the nineteenth century – as a study of relevant patents reveals – and Mr Cox spends some time on the new developments of that period, including brickmaking machinery and the new types of kilns, which allowed for continuous firing and thus cut out much of the earlier wastage; the importance of the railway in distributing the finished products is not neglected. At this point it might have been useful to analyse some of the material in the gazetteer – specifically, distribution maps for different (short) periods might have been provided. From directory evidence alone it is clear that there were the beginnings of a concentration on the Oxford Clay as early as 1869, possibly as early as 1854 – long before the Fletton process was discovered. These yards used the superficial deposits rather than the Oxford Clay itself: but the pattern is interesting. The Fletton industry, from its eponymous origins near Peterborough through to the present day, is fully described, and there is a conclusion on the future of the industry.

The second half of the book is a gazetteer of all known brickmaking sites from all periods, full details of each being given. This is the raw material for much further historical work, and for such data alone we are greatly indebted to Mr Cox. The compilation has been painstaking.

But more than that, Mr Cox has provided an admirably documented, clearly illustrated, and fully indexed study – a most worthy beginning to the projected Survey of Bedfordshire.

T.P. SMITH

The Buckinghamshire Landscape by Michael Reed (Hodder and Stoughton, 1979), £8.95; *A History of Northamptonshire and the Soke of Peterborough* by R.L. Greenall (Phillimore, 1979), £6.95.

These two books, in different series, on Bedfordshire's neighbours illustrate the strengths and the weeknesses of the firms which commissioned them, and incidentally the standards which these publishers are prepared to accept. Reed has 288 pages, 57 plates and 29 maps and plans. It is a joy to handle, clear in its cartography, excellent in its photographs and well written. Greenhall's book is shorter, with only 128 pages, 45 plates and 22 maps. There are also 94 drawings of items of Northamptonshire interest, ranging from a Bronze Age dagger to the Greyfriars Bus Station. The overall effect is off-putting; the purchase of a good set of stencils and some symbols templates would have improved the cartography. One feels the publishers asked too much of the draughtsman (Bruce Bailey) and gave him insufficient time to prepare his work. The photographs are good, including two in colour.

The texts of the two volumes concentrate differently. Reed devotes pages 25 to 52 to prehistoric and Roman Buckinghamshire; pages 53 to 87 to the period between 400 and 1150; and an extensive section, (pages 88 to 143) to what he terms "the early medieval landscape" covering 1150 to 1350; the remaining five chapters cover late medieval and post-medieval Buckinghamshire. For Greenall, pages 17 to 29 suffice to cover everything before 1066: Domesday Book and beyond is called "later medieval". Most of the book is devoted to post-medieval material, mainly industrial and urban topics. The early centuries are dismissed as "obscure".

Within Greenall's pages there is no evaluation of the sources for the later first millenium A.D. as with the bald use of Cyril Hart's suggestion that the southern boundary of Northamptonshire from Fotheringay to Stony Stratford represents the limit of Outer Mercia. A tribe called the "Middle Angles" are located on map 5 and in the text, but no such political grouping is mentioned in the Tribal Hidage or any other contemporary document.

On a larger compass, Michael Reed can be more sensitive with nuances and interpretations finely judged. Suggestions for future research as with the location of Scandinavian place-names are interwoven into his text. The footnotes suggest a reading of the depth requisite to write a general history of a county. His discussion of the Tribal Hidage and the *Ciltern saetna* contains the suggestion that the latter represents a social unit of the pre-Roman Iron Age, if not earlier, it deserves careful examination. A preliminary comment may point to the fact that it also included south Bedfordshire if the place name Chiltern Green means the green of the Chiltern dwelling people as distinct to some other group to the east or the south. Reed does not attempt to define the boundary of the *Ciltern saetna* as being a grouping covering four counties it is beyond his scope.

Perhaps the next series an enterprising publisher should sponsor should be concerned with areas like the Chilterns and the Fenland rather than with counties. If one does, let us hope the standards he adopts will not be the slipshod and the second-rate but rather that they will emulate both in content and production those with which *The Buckinghamshire Landscape* is served.

D.H.K.

The Bedfordshire Archaeological Council is indebted to Bedford Museum, the North Bedfordshire Borough Council, for a grant towards the costs of this paper.

The Bedfordshire Archaeological Council have available copies of most back issues of the *Bedfordshire Archaeological Journal.*

Bedfordshire Archaeological Journal **5**, 1970:
M.G. Spratling: the late pre-Roman bronze mirror from Old Warden.
B.N. Eagles and V.I. Evison: Excavations at Harrold, 1951 – 1953.
D.N. Hall and N. Nickerson: A circular Roman building at Bozeat.

Bedfordshire Archaeological Journal 7, 1972:
C.L. Matthews: A Roman well at Dunstable.
R.K. Hagen: A Roman ditch in Dunstable Priory Meadow.
D.N. Hall and J.B. Hutchings: The distribution of archaeological sites between the Nene and Ouse valleys.

Bedfordshire Archaeological Journal 8, 1973:
A. Simco: The Iron Age in the Bedford Region.
P. Tilson: A Belgic and Romano-British site at Bromham.
D.N. Hall: Rescue Excavations at Radwell Gravel Pits.

Bedfordshire Archaeological Journal **11**, 1976:
J. Dyer: The Bedfordshire Region in the First Millenium B.C.
D.H. Kennett: Felmersham and Ostia: a metalwork comparison.
K. Fadden: The excavation of a Roman corn-drying oven at Manor Way, Flitwick.

Bedfordshire Archaeological Journal **12**, 1977:
D.H. Kennett: Shale vessels of the late pre-Roman iron age.
R.F. White: A Roman lime kiln near Cardington Mill, Bedford.
P.J. Woodward: Excavations at Pear Tree Farm, Elstow, 1976.

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